



www.ohstormwaterconference.com

REGISTRATION INFORMATION 2022 OHIO STORMWATER CONFERENCE

Kalahari Conference Center - Sandusky | May 12-13, 2022



15th Annual Ohio Stormwater Conference

Conference Overview

Recognizing that watershed and stormwater management involves people of varying disciplines and degrees of experience, our conference engages speakers experienced in many aspects of stormwater or water resource management. Speakers will address: examples of planning and design; new standards being developed; incorporating environmental goals into traditional stormwater areas; practice effectiveness; program administration and management; communications; as well as meeting regulatory requirements. Beyond learning from listening and dialogue with speakers, the conference provides an excellent opportunity to meet, network and collaborate with peers.

Who Should Attend?

Planned by a committee of professionals who deal with stormwater issues on a daily basis, the conference is appropriate for public and private engineers, planners, policy makers, scientists, managers, and elected officials throughout Ohio and the region. Those interested in innovative solutions to common issues relating to stormwater management should attend.

Continuing Education

A Certificate of Attendance will be provided to all individuals who attend the conference. This certificate, along with a copy of the agenda, will assist individuals needing to document professional development hours for their technical profession. We are also seeking to get approved hours from a variety of professions. Please contact Harry Stark with any questions at 216-385-5248 or harry@tinkerscreekwatershed.org.

In-Person at Kalahari

Conference Center

Kalahari Resort and Conference Center is located at 7000 Kalahari Drive, Sandusky, Ohio 44870. Complete directions can be found on the conference website.

Virtual Information

Starting May 16th, all presentations will be available online virtually. You can register for virtual only or in-person. All in-person attendees will have access to the virtual sessions.

Hotel Information

The Conference Committee has secured group rates for the Kalahari Resort and Conference Center. We are pleased to announce that the Conference has secured a group rate of \$127 per night for the conference.

Booking Website:

<https://book.passkey.com/e/50154717>

Go to the conference website and under hotel/travel is a direct link to the reservation page.

Note: The Resort Fee has been waived and will not be charged on any guest room. The standard wording on their website and confirmation letters though cannot be changed so it will reference the Resort Fee but no fee will be assessed.

Presented By

The Ohio Stormwater Conference is presented annually by Tinker's Creek Watershed Partners and the Ohio Stormwater Association.



Conference Schedule

The Below Schedule is Subject to Change

Thursday, May 12, 2022

Exhibit Area Open 9:00 a.m. - 7:30 p.m.

7:00 a.m. - 8:30 a.m.	Registration / Breakfast
8:15 a.m. - 12:00 p.m.	Concurrent Sessions with breaks
12:00 p.m. - 1:30 p.m.	Luncheon
1:30 p.m. - 5:30 p.m.	Concurrent Sessions with breaks
5:30 p.m. - 7:30 p.m.	Opening Reception

Friday, May 13, 2022

Exhibit Area Open 9:00 a.m. - 1:00 p.m.

7:30 a.m. - 8:30 a.m.	Registration / Breakfast
8:15 a.m. - 12:00 p.m.	Concurrent Sessions with breaks
12:00 p.m. - 1:00 p.m.	Luncheon
1:00 p.m. - 3:00 p.m.	Concurrent Sessions with breaks

Registration Type/Fee

Attendee	Speaker	Student	Scholarship
\$225.00 In Person (\$250 after 4/20/22)	\$100.00	\$95.00	\$95.00
\$150.00 Virtual/Webinar of all presentations starting May 16, 2022			

Registration Includes:

- Unlimited admission to the sessions of your choice on both days
- Access to all recorded presentations after the event.
- Admission to morning breakfasts on both days and all breaks
- Admission to luncheons on Thursday and Friday
- Admission to the Reception on Thursday



Register online
ohstormwaterconference.com

Questions? Contact us at
216-385-5248 or e-mail at
harry@tinkercreekwatershed.org

MS4 BOOTCAMP

MS4 Boot Camp

May 11, 2022

Whether you have been recently designated a Municipal Storm Sewer System (MS4) community or you have been working with the MS4 program for years, come learn about how other communities meet the requirements of the permit. Join us, virtually, to better understand permit requirements and compliance challenges from other MS4 communities and Ohio EPA stormwater staff. This training will provide all the information and tools your community needs to manage a successful MS4 program compliant with the latest Ohio stormwater general permit. The session will wrap-up with a Q&A session, where you may ask all your program questions and receive program-experienced answers.

Topic: MS4 Bootcamp

Time: May 11, 2022 09:00 AM Eastern Time (US and Canada)

WMAO / OSWA Members: US\$ 20.00

Non-Members: US\$ 50.00

Register here: https://wmao.org/content.aspx?page_id=4002&club_id=259593&item_id=1647705



Program Sessions and Topics

Opening and Keynote

Thursday 8:15 - 9:30 am

Division of Surface Water Program Updates, Infrastructure Funding, and the Maumee Watershed Nutrient TMDL: Wasteload allocations for MS4s and load allocations for storm water.

Tiffani Kavalec, Chief, Division of Surface Water

Josh Griffin, Lake Erie Program Manager, Ohio Environmental Protection Agency

Monitoring, Inspection, and Maintenance

Thursday 10:00 - 11:00 am

Effects of Land Use on Urban Stormwater Quality and Quantity

Ian M. Simpson, Ohio State University

Monitoring of stormwater hydrology, quality, and temperature at sewer outfalls from 18 urban watersheds provided data that is currently limited in Ohio. With these data, we found explanatory variables that can be used to predict stormwater characteristics and target hot spots of pollution to better optimize stormwater management design.

Thursday 11:10 am - 12:10 pm

Fiscally Responsible and Better-than-Expected Stormwater Infrastructure using Sensor Systems

Joseph Diekfuss, P4 Infrastructure

Todd Weik, CBC Engineers and Associates

Matthew Kamenick, StormTrap

This presentation will showcase new technology and analytical methods, accepted by the Wisconsin Department of Natural Resources, that documents health and performance of in-service stormwater infrastructure. Several project examples and a case study will be discussed.

Thursday 1:30 - 2:30 pm

A Tale of New Cities (and Engineers)

Jakob Hamlescher and Lauren Conard, Cuyahoga Soil & Water Conservation District

Cuyahoga Soil and Water shares lessons learned for establishing meaningful working relationships and instituting consistent standards when working with new communities or new staff.

Asset Management: Data-Driven Risk Assessments to Develop a Stormwater Program

Kelly Kuhbander, P.E., LEED AP, Strand Associates, Inc.

How should a community prioritize stormwater projects while balancing CIP budgets? Where might the next stormwater pipe failure occur? This asset management approach utilizes data-driven, risk-based assessments to better understand asset needs and prioritize projects based on the probability and consequence of failure.

Thursday 2:40 - 3:40 pm

Case Study: Integrated Tools for BMP Inventory and Inspection Programs

Jessie Fears, Geosyntec Consultants

Tool-based platforms allow program managers and implementers to streamline, manage, and use data in more efficient and effective ways. This presentation will provide case studies highlighting client experiences using the tool to update and manage BMP inventories and review the benefits and efficiencies of this approach.

When SWP3 Inspections Go Sideways

Chris Vasco, Cuyahoga SWCD

Construction sites present challenges with regard to implementing BMPs to control stormwater runoff, and routine SWP3 inspections do not always go according to plan. When a routine SWP3 inspection goes sideways, and an illicit discharge has great potential to occur or is actively occurring, how should this scenario be handled?

Thursday 4:00 - 5:30 pm

Conducting Stormwater BMP Inspections During the Pandemic

Saya Qualls-Hickey, Hazen and Sawyer

During early 2020, Hazen and Sawyer conducted inspections of 45 stormwater BMPs for the City of Nashua, NH. Inspector training and inspection procedures were adjusted to comply with COVID protocols. The inspections yielded a prioritized list of recommended BMP maintenance and/or repairs.

How Technology is Evolving Stormwater Data Collection & Analysis

Rylan Farr, Apex Companies, LLC

Technology is changing the way we collect information in the field to make quality decisions to reduce environmental liability and risk and is essential to this process. By relaying quality information from the field, a comprehensive program can be established to achieve compliance and reduce stormwater quality issues.

Stormwater and the Infrastructure Bill

Josh Herchl, Advanced Drainage Systems

Just kidding, play on words there friends, there are obviously more than \$1.2T ways our region will benefit. But if you're reading, you're a numbers person, and this presentation will dig into the numbers, the programs, the funding, and the timing for Ohio and surrounding states, specifically relating to stormwater.

Friday 8:15 - 9:15 am

GIS for MS4 Compliance at Lorain County Stormwater Management District

Mark Rufener, K.E. McCartney & Associates, Inc.

Matthew Arnold, Lorain County Stormwater Management District

Lorain County Stormwater Management District developed a fully integrated GIS with access to photos and construction plans of infrastructure, inspection and maintenance agreements for stormwater control measures, complaint tracking, inspections, and custom reporting. Join us as we share how this program was developed and what we learned along the way.

Stormwater Project Delivery in a Supply and Labor Challenged World
Michael Cook, Advanced Drainage Systems, Inc.

Engineers and project managers currently face unprecedented challenges that impact their ability to deliver a completed project to the owner in an efficient manner. Rising costs, limited labor supply, lead times, transportation, and COVID impact projects costs and schedules. We will analyze new ideas and strategies to best navigate these challenges..

Friday 9:45 - 10:45 am

Water Quality: Steps for Understanding and Implementing an NPDES Monitoring
Juliana Morelli, POWER Engineers, inc.

How does a permittee set up a successful monitoring program? What records should be maintained to show that an approved methodology was used in the monitoring process? Can effluent limitations be predicted and where should an outfall be located to aide in compliant discharges? Answers to these questions will be provided.

Friday 11:00 - 12:00pm

Innovative Approach to Agricultural Storm Water Runoff Sampling
John Hoffman and Jessica Begonia, Alloway

EnviroGo trailers were recently deployed at the Defiance County Agricultural Cascades as part of a nutrient monitoring study. EnviroGo explores innovative ways to collect grab samples, composite samples, monitor and record weather using a mobile sampling platform with net zero energy usage.

Detection of the Novel Coronavirus in Urban Stormwater
Ryan Winston, Ohio State University

Stormwater collected at outfalls in central Ohio was tested for genes of the novel coronavirus. The virus was detected in 88% of collected samples, suggesting fecal contamination of stormwater by human or non-human mammal waste.

Friday 1:00-2:00 PM

How to Identify and Resolve River Intrusion in Collection System
Julie Qiuli Lu and Hazem Gheith, Arcadis

A case study for Columbus, OH proved the procedure is vital to identify river intrusion condition that generated nearly 50-100 MGD of river water in the collection system during two big events in 2020. Available GIS and FEMA maps were used to identify the potential locations for river intrusion.

Curving Concrete Pipe: What a Relief

Kevin Wojciechowski and Jesse Rufener, GPD Group

This project was designed as a result of flow monitoring and modeling of the separate sewers in the area. High amounts of I/I were observed in the common trench sanitary system. Two of five phases have been constructed. Post-construction monitoring confirmed modeling efforts and the need for additional phases.

Friday 2:00 - 3:00 pm

Using Skimmers in Sediment Basins & Post Construction Stormwater Ponds
Brian Free and Warren Faircloth, J.W. Faircloth & Son

Floating surface drains, commonly referred to as skimmers, are an effective way to reduce sediment loads and the velocity of stormwater. We will discuss the fundamentals of selecting, sizing, installing, inspecting, and maintaining skimmers for both temporary sediment basins and permanent stormwater ponds.

Watershed Planning and Restoration

Thursday 10:00 - 11:00 am

Teamwork Makes the Stream Work: Construction Design/Build Perspectives
Christina Znidarsic, Davey Resource Group
Mark Szakacs, Jr, Marks Construction

A discussion of the design/build delivery method primarily from the construction perspective. Challenges and successes will be identified using case studies and a little humor.

Beaver Dam Analogs as a Pollutant Removal Tool
Michael Thompson, Meadville Land Service

Beaver dam analogs use on-site materials to create stable stream systems and are another approach available to allow designers to reconnect a stream to its floodplain. This method can save construction costs and time and help the client to meet pollutant reduction goals.

Thursday 11:10 am - 12:10 pm

Stormwater Curriculum and Student Engagement in Restoration Planning
Scott Lenhart, Laura Frost, and Eric Diefenderfer, Boardman Glenwood Junior High School

Boardman Glenwood Junior High School students and teachers will discuss their involvement in a restoration project that daylight a headwater stream in a new 15-acre passive stormwater park. The restoration project will help alleviate community flooding and improve water quality. See how student immersion positively impacted the project..

Uncovering Streams in Washington DC - A Citywide Daylight Study
Joe Arrowsmith, Straughan Environmental

The history of every city is written in its waterways. From 2020-2021, Straughan completed a grant-funded effort to provide DOEE with an interactive online educational tool to tell the story of the waterways in Washington, DC with both an eye towards the past and a hope for the future.

Thursday 1:30 - 2:30 pm

Save The Lake!!!...or Should We?: Balancing Science and Passion
Jeff Jowett and Michael Blair, Northeast Ohio Regional Sewer District

A beloved Ohio lake holds special historical and aesthetic significance to its surrounding residents. Unfortunately, the lake's Class 1 dam is failing, and it provides minimal regional stormwater benefit. How do you respond to a community's emotional attachment to an aesthetic lake when science can't justify its multi-million dollar replacement?

Thursday 2:40 - 3:40 pm

Restoration of Gorge Falls and the Cuyahoga River near Akron
Troy Naperala, AECOM
Matt Lascola, GPD Group

The speakers will discuss the Gorge Dam removal project. This ongoing, multi-year project will have significant positive benefits to the Cuyahoga River. The presentation will focus on the engineering and scientific approach to developing a safe and effective dam removal scheme while planning for the ecological restoration of the river.

Thursday 4:00 - 5:30 pm

From farmland to wetlands, restoration at the Redhorse Bend Preserve
Kevin Grieser, Biohabitats

This session highlights a recent H2Ohio wetland restoration project along the Sandusky River and the restoration techniques that were used to restore 55 acres of marginal farmland to emergent marsh, floodplain, and riparian forest, and meadow and how they met the goals of the H2Ohio Program.

Putting the S back in Stream: Stream Restoration in Mentor
Josh Myers, Chagrin River Watershed Partners
Christina Znidarsic, Davey Resource Group

Chagrin River Watershed Partners and Davey Resource Group will discuss a restoration project completed in the City of Mentor. Several restoration techniques were utilized on 650 linear feet of stream channel and 1 acre of riparian area to improve water quality, stabilize eroding stream banks, and increase habitat. Win-

Win! Opportunities and Benefits of Removing Dams to Restore Watersheds
Mark Pennell and Katherine Fontaine, Burgess & Niple

Are you considering dam removal or interested in learning about dam removal? This presentation provides attendees background on the process and considerations to aid in evaluating whether to remove a dam and provides specific examples of projects that have accomplished watershed and green infrastructure improvements and restoration.

Friday 8:15 - 9:15 am

Marco-Polo: Finding Funding to Combat Effects of Climate Change
Betsy Ehler, Burgess & Niple
Eric Saas, ODNR
Steve Ferryman, Ohio Emergency Management Agency
Steven Malone, OEPA

Join this session to learn more about existing Ohio and federal grant resources that can fund solutions for climate change and what's next for upcoming federal resources in the stimulus legislation pipeline.

Friday 9:45 - 10:45 am

GIS-based Data Management and Visualization for Regional Stormwater Management Planning
Sarah Fuller, Wade Trim
Leila Jackson, Northeast Ohio Regional Sewer District

Overview of GIS-based data management and visualization for the Northeast Ohio Regional Sewer District's Chagrin River/Lake Erie Direct Tributaries Stormwater Master Plan. This presentation describes integrating inspection data, modeling results, and stormwater master planning standards, and demonstrates how to comprehensively present master plan recommendations across a regional stormwater service area.

Process-based Ecological Restoration – what does this mean for streams?
Suzanne Hoehne, Biohabitats

Ecological restoration must consider natural systems as diverse and dynamic. Restoration of Stage 0 systems is a process-based approach for alluvial based

systems that restores key physical processes, which in turn restores missing ecological processes. This presentation will examine the approach and look at some recent Ohio project examples.

Friday 11:00 - 12:00pm

Rise of the Clones: Unisexual Mole Salamanders in Restored Wetlands
Mike Benard, Case Western Reserve University
Sarah Rehner, Northeast Ohio Regional Sewer District
Michael Liptak, EnviroScience Inc.

Unisexual mole salamanders showed a positive response to forested wetland/vernal pool restoration at the Euclid Creek Dugway Storage Tunnel System Mitigation project. The project included constructing vernal pools in existing forests, enhancing and preserving existing wetlands, and restoring forested wetlands in an extremely urbanized landscape.

Friday 1:00-2:00 PM

Floodplain Wetlands Can Cost-effectively Reduce Nutrient Loads and Stream Erosion
Bob Hawley, Shelby Acosta, and Nora Korth, Sustainable Streams, LLC

Insights from design/modeling of numerous bankfull/floodplain wetland projects completed in partnership with US Fish and Wildlife, US EPA, and Clermont Soil and Water will be presented. Benefits include expanded flood storage, restored off-channel habitat, improved water quality, reduced erosion, and socioeconomically sustainable sources of high-quality topsoil.

Friday 2:00 - 3:00 pm

Big Darby Creek, Watershed And Special Permit Conditions Overview
Wesley Sluga and Andrew Phillips, OEPA

Big Darby Creek is a unique and highly valuable waterbody. Come learn about what makes it so special and how it is being protected. Developers, engineers, and plan reviewers should attend to better understand the requirements for development under Ohio's NPDES Construction General Permit in the Big Darby watershed.

Stormwater Practices, BMPs, Planning and Design

Thursday 10:00 - 11:00 am

Irishtown Bend Stormwater and Green Bulkhead Design Challenges
Biljana Sverko, PE, CFM, Osborn Engineering
Tom Denbow, Biohabitats

Located in historic Irishtown Bend in Cleveland, Ohio, this \$45 million public improvement project includes slope stabilization and bulkhead installation to prevent hillside slope failure from blocking the Cuyahoga River. Stormwater improvements like water quality ponds and green bulkhead were developed to meet the NPDES discharge requirements.

Thursday 11:10 - 12:10 pm

Field Notes from Eagle Creek
Dave Gleason, Stantec

This presentation steps through the process of planning, collecting, and managing a multi-discipline, multi-season field data collection program in support of one of Northwest Ohio's largest flood control projects. Hear how the field team organized and reviewed data collected over dozens of miles on more than 100 properties.

Restoring Nature and Its Services to Urban Neighborhoods in Oregon

Gregory A. Buhoveckey, P.E., The Mannik & Smith Group, Inc.

Don Nelson, City of Oregon

The City of Oregon and The Mannik and Smith Group, Inc. will present how the Urban Runoff Capture and Otter Creek Restoration Project reduced streambank and channel erosion, reconnected Otter Creek to the adjacent floodplain, created wetland and wildlife habitat, and increased natural, passive recreational green space within the urban neighborhoods.

Thursday 1:30 - 2:30 pm

Rainwater and Land Development Manual: New and Updated Material

Justin Reinhart, OEPA

Ohio EPA began a process last year to update the Rainwater and Land Development manual. This presentation details recently completed and in-process revisions to certain post-construction stormwater management practices. The key changes to technical design criteria for runoff reduction and extended detention practices is the focus of our discussion.

Can Biofilters Remove Phosphate and Grow Plants?

Andy Erickson, St. Anthony Falls Laboratory, Univ. of MN

This presentation will share performance results from biofilter mesocosms over three summers that measured filtration rate, phosphate concentration, and vegetation growth. With this information, stormwater practitioners will be able to design better biofiltration practices that capture phosphorus and support healthy vegetation while also maintaining adequate filtration rates.

Thursday 2:40 - 3:40 pm

Stormwater Management Fails - Are You Making the Same Mistakes?

Carla Regener, Cuyahoga SWCD

Come learn from others about what not to do! This presentation will review common on-the-ground problems associated with the design, installation and maintenance of post-construction BMPs. Using real-world examples, attendees will learn how they can avoid these issues on their next project.

Implementing Stormwater Design on a Highly Complex and Unique Site

Laurel Christian, Strand Associates, Inc.

The steep topography and limited space at the Cincinnati Art Museum located in the combined sewer area proved challenging to implement stormwater management. Our approach incorporated the long-term vision of the Museum to develop a comprehensive Stormwater Master Plan on this unique and challenging site.

Thursday 4:00 - 5:30 pm

Adapting Our Design Approach for a Changing Climate

Danny Ketzner, Burgess & Niple

The global climate is predicted to become more extreme in the coming decades. However, we often base design on historic storm records. This presentation will discuss three broad approaches to achieve a system that functions as intended, despite a changing climate, each with challenges, costs and constraints.

Core Stormwater Management Strategies: Ohio & Beyond

John Swartzbaugh and Mike Mills, Burgess & Niple

Stormwater management requirements vary by state, with some being more stringent than others. This presentation will discuss case studies in three states. Each project uses a unique approach to stormwater management, including gray and green infrastructure. The case studies will include design considerations and project results.

There are fines? The impact of PSD on BMP performance

Chris Allen, Contech Engineered Solutions LLC

Decades of BMP performance data has made it clear that the particle sizes

of suspended solids in stormwater impact how well a BMP can remove those solids. By reviewing multiple studies, this presentation will highlight the importance of clarifying current performance standards and regulations with a target PSD.

Friday 8:15 - 9:15 am

A Fresh Look at an Existing Stormwater Issue

Taymour El-Hosseiny, HDR

Grace McInerney, City of Columbus, Division of Sewerage and Drainage

The Krieger Court project was identified to alleviate known drainage issues at and near the Krieger Court retention basin. The recommended improvements include modifications to the existing retention basin outlet and new storm sewer downstream of the retention basin. With a fresh look, the design team identified a feasible solution

Tree systems for sustainable stormwater management and healthy growth

Paul Iorio, StormTree

Tree filter systems integrate common street trees with stormwater management as a viable and sustainable alternative to traditional end-of-pipe practices in achieving volume control and nutrient reduction, while providing non-compacted soil for healthy and vigorous tree growth and maintaining pavement support.

Friday 9:45 - 10:45 am

Fearing Constrained by your Floodplain? Let's Stormwater Master Plan!

Tom Dietrich and Liz Miller, Gresham Smith

Holly Boyer, City of Columbus, Department of Public Utilities

This presentation highlights successes and challenges of developing a comprehensive stormwater master plan, addressing constraints of the regulated floodplain, coordination across City departments, and complex regulatory requirements. Lessons will be presented from Gresham Smith's work on the City of Columbus's Jackson Pike Wastewater Treatment Plant Stormwater and Floodplain Improvements Project.

Friday 11:00 - 12:00 pm

NEPA for Beginners

Rick Fitch, Burgess & Niple

The National Environmental Policy Act (NEPA) became effective in 1970. Does NEPA pertain to my project? What does it take to comply with the Act? When does NEPA need to be satisfied for funding? Join B&N's Rick Fitch, AICP to learn the answers to these and other questions.

Performance Testing and Overview of an Innovative Biofiltration System

Derek M Berg, Contech Engineered Solutions LLC

Stormwater management regulations have shifted toward stormwater management solutions that mimic natural processes. This has led to the greening of stormwater ordinances and increased reliance on BMPs subcategorized as green infrastructure. Results of recent lab and field monitoring of a innovative high rate biofiltration practice will be presented.

Friday 1:00 - 2:00 pm

North Reservoir Dam Improvements - An Innovative Overtopping Solution

Pete Nix, Tetra Tech

North Reservoir is a high-hazard embankment dam constructed in 1908 that is now severely deficient and out of compliance. An innovative overtopping design addressed the spillway deficiency, allowed construction to occur at full pool, and minimized impacts to the adjacent landowners.

Resilient & Sustainable Stormwater Conveyance with a 100 Year DSL

Kevin Hendrickson and Matthew Mace, Advanced Drainage Systems

The demand for both resiliency and sustainability in engineering design, construction, and resource management is a growing trend throughout the U.S. This presentation will discuss infrastructure options that narrow the funding gap by choosing materials that are not only time, installation, and weather resilient but also sustainable through recycling.

Stormwater Retrofits

Thursday 10:00 - 11:00 am

Lancaster County Municipalities Implementing Stormwater Controls for Pollutant Reduction Credits

Kara Kalupson and Brandon Williams, Rettew Associates

Through case studies, this presentation will showcase the different strategies MS4 municipalities in Lancaster County, Pennsylvania, are taking to implement stormwater control projects that achieve required pollutant reductions as cost-effectively as possible. The presentation will include the benefits and challenges inherent in each strategy.

Thursday 11:10 - 12:10 pm

Smart Watershed Network Management - Cleaner Water, Healthier Communities
Dayton Marchese, OptiRTC

The 2021 Report Card for America's Infrastructure highlights real-time control systems that leverage complex modeling, cloud computing, and predictive analysis as an innovative way to raise Stormwater's D grade. This presentation will detail how Albany, NY is leveraging smart watershed network management to improve quality of life in the community.

First Successes of the Trash Trap Program in Toledo

Edith Preciosa Kippenhan and Julianne Badreddinne, City of Toledo

The City of Toledo, with funding from a GLRI Trash-Free Great Lakes grant, installed multiple devices in waterways to capture trash before it gets to Lake Erie. This presentation will discuss the challenges and successes of the first year of the project.

Thursday 1:30 - 2:30 pm

Cost-Effective Stormwater Basin Retrofit Screening Tool for Northern Ohio

Bob Hawley and Nora Korth, Sustainable Streams

Kimberly Brewster Shefelton, Chagrin River Watershed Partners

Sustainable Streams developed a stormwater basin retrofit screening tool to be used by the Central Lake Erie Basin Collaborative, a network of northern Ohio watershed organizations and initiatives, and Collaborative partners. Learn about the development and use of this tool to improve water quality for Ohio's streams and Lake Erie.

Thursday 2:40 - 3:40 pm

Transforming a Utility into a Park: Morgan Street Reservoirs Revitalization

Kellie Pike and Katherine Holmok, Environmental Design Group

Oberlin owns 2 Class II dams built 100 years ago. A 2018 ODNR Inspection noted numerous remedial measures, so the City hired EDG to develop alternatives for the site. The selected alternative would remove the structures from ODNR's jurisdiction. This presentation outlines the 20-month process to develop, plan, and construct.

Predictive Weather Technology for Water Quality Benefits in Large-Scale Detention

Chris Rust and Kelly Kuhbander, Strand Associates, Inc.

This evaluation demonstrates the potential water quality benefits of using modern

technology to regulate stormwater flow rates more effectively from two existing large-scale detention facilities at the CVG airport. Reducing erosive flows in downstream watersheds is anticipated to result in measurable improvements to hydromodification or stream erosion in Northern Kentucky.

Green Infrastructure

Thursday 4:00 - 5:00 pm

Embracing Stormwater Wetlands within Urban Neighborhoods

Scott Hostetler, CCM, Anser Advisory

David Wright, City of Akron

Infrastructure changes within a dense neighborhood invites many challenges—from local resident opposition, to coordination, scheduling and safety. This presentation will highlight how the City of Akron, Ohio integrated the construction of six separate green infrastructure sites within one urban neighborhood.

Green Infrastructure In Lieu Fee

Ivan Valentic PLA, GPD Group

Colette Easter, PE, Louisville MSD

This presentation will provide an overview of challenges solutions encountered during the development of a GI Calculator to support a fee-in-lieu-of program that will implement several GI measures throughout the MSD service area by utilizing funds from local development projects.

Friday 8:15 - 9:15 am

Landscape Scale GI Maintenance, Lessons Learned from Cincinnati and Cleveland

Bekah Strait and David Gamstetter, Davey Resource Group

Large scale stormwater control measures (SCMs) require expansive solutions to maintaining peak performance. The presentation will provide examples of SCMs and identify key factors that are critical to ensuring attractive and functional GI. Examples will cover inspection protocol, reporting, communication techniques, and routine as well as unexpected maintenance concerns.

Friday 9:45 - 10:45 am

Winter De-icing of Permeable Interlocking Concrete Compared to Asphalt

David R. Smith

The environmental and economic damage to lakes and recreation income from deicers is well known. Permeable pavements have demonstrated the need for less deicers and hold the potential to slow or stop degradation of lakes and streams in northern climates. This presentation demonstrates deicer reductions from permeable interlocking concrete pavement.

Planning Large GI Programs Using Automated Tools

Khaled Abdo, Arcadis

This presentation details the steps to generate a GI siting tool that provides a consistent and fast processing approach to identify the most favorable site locations that meet the siting objectives as defined by the user.

Friday 11:00 - 12:00 pm

Low Impact Development & Green Infrastructure

Doug McCluskey, Everett J Prescott

This course is designed to provide an education on how to utilize green infrastructure and low impact development strategies to manage stormwater. In addition to being low-cost when compared to conventional grey infrastructure, GI/LID strategies offer several benefits that will be discussed.

Friday 1:00 - 2:00 pm

2021 GSI Designer Survey--The Results

Rob Woodman, PE, Ferguson Waterworks

Civil engineers and landscape architects were asked 30 questions about green infrastructure endeavors from design, to installation, to maintenance. The results are interesting and may serve as a goal to embrace more collaboration and consideration to specific details in future GSI projects..

Friday 2:00 - 3:00 pm

Restoration Planning: Stormwater Parks in Urban Watersheds

Mark Delisio, CT Consultants

Jason Loree, ABC Stormwater District

The ABC Stormwater District acquired a 15-acre property in the headwaters of an urban watershed. This impaired Mahoning River tributary is subjected to urban runoff, channelization, and loss of riparian area. The proposed project will transform the property into a passive stormwater park, including daylighting the stream and floodplain restoration.

Next Generation Stormwater Master Planning

Matthew Jones and Kathleen Smith, Hazen and Sawyer

Stormwater challenges are becoming more complex and dynamic. Tools like 2D modeling, dynamic dashboards, and interactive visualizations provide increased utility and longevity of master planning efforts, better addressing stormwater challenges and communicating those solutions to key stakeholders.

Roundtable

Thursday 10:00 - 11:00 am

Ohio EPA

John Matthews, Jason Fyffe, OEPA

Representatives from Ohio EPA will provide regulatory updates and answer audience questions.

Modeling and Research

Thursday 11:10-12:10 pm

Flood Mitigation in a Canal Community

Alex Litofsky and Nancy Russell, OHM Advisors

The City of Reminderville has a unique stormwater drainage system that challenges conventional thinking about flood mitigation. Collaboration with the community was key to developing a solution, amid environmental and budget constraints, from a complex stormwater model and alternative scenario analysis.

Stormwater Cost Analysis Comparison of Green Infrastructure versus Gray Infrastructure

MaryAnne Hejna and Josiah Denson, CT Consultants

The Village of Chagrin Falls performed a stormwater study to understand existing conditions in one of its watersheds that experiences historical flooding. Once flow monitoring and model calibration were completed, a

series of green and gray alternatives were analyzed. The presentation will summarize the proposed models and economic outcomes.

Thursday 1:30 - 2:30 pm

Project Prioritization through Quantifiable Metrics

David Anderson, Stantec

George Remias and Rachel Webb, Northeast Ohio Regional Sewer District

The lack of stormwater management regulations during the peak development period has created the need for extensive, costly improvements to reduce flood risk. Come learn about an exhilarating prioritization process that leverages model data to cost-effectively sequence projects based on probable annual risk score reductions at flooded assets!

Thursday 2:40-3:40 pm

How Aerial Data Acquisition Enhances Municipal Stormwater Planning

Mark Delisio, CT Consultants

Various technologies are available today which make aerial data acquisition cost effective. Understanding the technologies, the typical project delivery process for acquiring aerial data, uses and benefits of the data, accuracy ranges, and costs will all help communities determine when/how to utilize available technologies that can advance your stormwater program.

Thursday 4:00 - 5:30 pm

Litter Data: Getting to the Root of the Problem

Jeff Kirschner, Litterati

What if we empower a global community to create a litter-free world? What started with one person picking up a single cigarette has grown into a worldwide movement that has cataloged, mapped, and collected over 15,000,000 objects, materials, and brands.

Talking Trash

Phillip Taylor, Hydro International

In collaboration with the City of South Portland and Cumberland County Soil and Water Conservation District, this long term study has been collecting, sorting, and weighing trash since 2016. Do you know your trash? Our trash talk may surprise you!

Setting The Standard For Trash and Litter Capture

Greg Williams, StormTrap

This presentation will discuss the new ASTM Standard Test Method for Determining Trash and/or Debris Removal Performance of Manufactured Treatment Devices. It will review the various device designs and test procedures used in the standard and review data tested under this standard as it becomes available.

Legal

Friday 8:15 - 9:15 am

Ohio Water Law 101

Louis McMahon, McMahon DeGulis LLP.

Curious about the underlying legal principles that drive stormwater planning? This presentation will review the basics surrounding the multiple sources and regulators of water law in Ohio. Highlights include common law property and tort doctrines, local authority, state regulation and federal jurisdiction.

Water Law 102: Basic Legal Issues

Louis McMahon, McMahon DeGulis LLP

An overview of the nuts and bolts legal issues often encountered by stormwater utilities. The presentation will touch on specific issues, including

ditch law, the examination of the practical implications of Sovereign Immunity, citizen suit protections available under the CWA, and flood insurance/flood mapping issues.

Friday 9:45 - 10:45 am

Legal Hot Topics and Headlines in Stormwater Management
Wendlene Lavey and Megan Goedeker, McMahan DeGulis LLP

Get informed on the latest stormwater-related litigation and other timely, legal hot topics and the practical implications for all who have a direct stake in stormwater management, non-point source pollution or the modeling of urban water systems.

Legal Hot Topics and Headlines in Stormwater Management
Louis McMahan and Wendlene Lavey, McMahan DeGulis LLP

Communities face a number of legal issues related to stormwater management: from assessing the authority to regulate to the right to inspect and maintain control measures. In this session, facilitated by attorneys but engaged by conference participants, we will discuss and address topics and compare notes on legal issues.

Friday 11:00 - 12:00 pm

Increasing Stormwater Resiliency Through Innovative Codes & Ordinances
Tom Batrone, AKRF
James Stitt, PWSA

In 2021, the Pittsburgh Water and Sewer Authority updated its stormwater codes and ordinances to create a more robust language to protect public infrastructure from the impacts of future climate change rainfall and increased peak flows in known flood prone watersheds.

Meeting PIPE Requirements of the Small MS4 General Permit
Sara Guiher and Eric Kostecky, Toledo Metropolitan Area Council of Governments

A public involvement and education resource was created to assist communities in meeting requirements of addressing requisite TMDL pollutants in the updated NPDES small MS4 general permit. Presenters will discuss the development process and opportunities to apply in other areas.

Friday 1:00 - 2:00 pm

The Municipal Toolbox: Tools and Legal Strategies for Stormwater Management

Louis McMahan and Megan Goedeker, McMahan DeGulis LLP

Is your municipality using all the tools at its disposal as you plan your stormwater management strategy? Come hear about how to best employ concepts including credit regimes, impervious surface fee adoption, infrastructure improvement, and integrated planning and affordability.

Nutrients, Nutrients, Nutrients!
Wendlene Lavey, McMahan DeGulis LLP

Nutrients are found in all of Ohio's many lakes, rivers, and streams. The regulatory strategy to mitigate this pollution continues to evolve. Learn how this will affect municipal stormwater management strategies.

Friday 2:00 - 3:00 pm

Conservancy Districts and Flood Reduction
John Hoopingarner, McMahan DeGulis LLP

Boris Slogar, Muskingum Watershed Conservancy District

A lessons learned approach that will appeal to water managers and stormwater utilities alike.

Industrial

Thursday 10:00 - 11:00 am

Innovative uses of geospatial data processes improve Toledo's Stormwater Utility

Brian Stevens, CP, GISP, Woolpert

Lorie Haslinger and Christy Soncrant, City of Toledo

This presentation will focus on Toledo's implementation of AI/machine learning technology and the processes used to accurately delineate impervious surfaces in support of stormwater utility development and maintenance.

Thursday 11:10 - 12:10 pm

Tips for figuring out Multi-State Industrial Stormwater Compliance

Nathan Collier, POWER Engineers, Inc.

This presentation will provide an overview of the relationship between the EPA Multi-Sector General Permit (MSGP) and corresponding state industrial stormwater general permits. Attendees will learn useful tricks to help them confidently tackle industrial stormwater compliance when faced with an unfamiliar state's regulations.

Thursday 1:30 - 2:30 pm

Utility Federal Funding Update: American Rescue Plan and Infrastructure Act

Jeffrey P. Rowe, CPA, Jeffrey P. Rowe, CPA

This presentation will provide the eligible uses of the American Rescue Plan's Fiscal Recovery Funds for stormwater projects as well as an update on the Infrastructure Act, including what stormwater utilities can do now to plan ahead and develop effective strategies for leveraging pending infrastructure dollars.

Thursday 2:40 - 3:40 pm

Capturing Sediment on the Go, Enabling Clean Water to Flow.

Corydon Coppola, Flo-Water

This session provides approaches on sediment and erosion control and review on how optimal stormwater quality is achieved when erosion and sediment control are both addressed. Post-construction storm drain inlet protection systems that grab the sediment, debris, trash, and more before hitting our waters will be presented.

Transportation

Thursday 4:00 - 5:30 pm

ODOT Culvert Replacement Cost Benefit Analysis

Katie Nolan, Gresham Smith

ODOT's culvert database contains in excess of 83,000 culvert records. The Cost Benefit Analysis reviewed multiple attributes through fatal flaw and preferred method analyses to determine which replacement/rehabilitation method was most appropriate. Results of this analysis allowed ODOT to determine if it was cost-effective to self-perform culvert replacement.

ODOT Research – Soil Amendment for Stormwater Volume Reduction

Justin Kerns, ms consultants, inc.

Jonathan Prier, ODOT

ODOT's Office of Hydraulic Engineering Research, in collaboration with ms consultants, STONE Environmental, and United States Geological Survey, recently completed a research project to determine the effectiveness of soil amendment as a stormwater runoff volume reducing BMP.

ODOT Stormwater Management Program Update

Kathryn Gruver and Greg Stacy, HDR

ODOT's dynamic stormwater management program completed strategic revisions to its stormwater management plan to meet the 2021 updated compliance requirements of the Ohio EPA MS4 permit.

Friday 8:15 - 9:15 am

Transportation Round table

Jon Prier, ODOT

Mark McCabe, JEO Consulting Group

This roundtable session includes attendee interaction and sharing of current transportation stormwater issues, design requirements, water quality information.

Friday 9:45 - 10:45 am

Sustainability and Resilience: The Key to Reducing Climate Change Impacts

Julie Buffenbarger, Beton Consulting Engineers

Engineering practitioners have traditionally focused on the safety and reliability of significant infrastructure components without deliberate design and incorporating sustainable and resilient considerations. Approaches to help achieve higher sustainability and resilience for infrastructure include using new materials, construction techniques, and designs that enable longer-lasting life spans and improved life-cycle management.

Performance of Undersized Sediment Basins with Varying Dewatering Times

Alec Grimm, The Ohio State University

Three sediment basins, undersized according to state of Ohio design guidance, were monitored for TSS removal, turbidity removal, and particle capture efficiency. Drawdown times varied from 12 to 48 hours to determine how this factor affected sediment basin performance. We will offer practical guidance from this work on sediment basin design.

Friday 11:00 - 12:00 pm

Scioto Peninsula, Columbus - Urban Stormwater Planning and BMP Implementation

Robert Ferguson, EMH&T

The presentation will provide a case study of the planning, design, and construction of stormwater management facilities in a dense urban neighborhood in downtown Columbus, Ohio. The implementation of Green BMPs was a primary focus for the project.

Friday 1:00 - 2:00 pm

Bridging Waterway Challenges

Hans Gucker and Adrienne Earley, ODOT

Temporary access fills (cofferdams, causeways, etc.) are necessary for completion of many bridge projects impacting regulated waterways. Project owners and planners can face many regulatory, design and construction challenges associated with temporary access fills. Representatives of ODOT will discuss how to successfully manage these challenges using real project examples.

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