



2019
**OHIO STORMWATER
CONFERENCE**
12th Annual



Dedicated to the advancement of stormwater and natural resources management



www.ohstormwaterconference.com



REGISTRATION INFORMATION
2019 OHIO STORMWATER CONFERENCE

Sharonville Convention Center - Sharonville | May 8-10, 2019



12th 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 hstark@ohstormwaterconference.com.

Sharonville Convention Center

Sharonville Convention Center is located at 11355 Chester Rd, Cincinnati, OH 45246. Complete directions can be found on the conference website.

Hotel Information

The Conference Committee has secured group rates for a number of hotels in the Sharonville area.

- Hyatt Place – Sharonville Convention Center. This hotel is connected to the convention center.
- Drury Inn & Suites Cincinnati Sharonville
- LivINN Hotel
- Fairfield Inn and Suites

Information on group codes and contact information for each hotel can be found on our website at: <https://ohstormwaterconference.com/hoteltravel-info/>

Presented By

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



Conference Schedule

Tuesday, May 7, 2019

8:00 a.m. - 5:00 p.m.

Envirocert Review Class's

8:00 a.m. - 4:00 p.m.

Inspection & Maintenance Certification

Wednesday, May 8, 2019

9:00 a.m. - 2:00 p.m.

Envirocert Review Exams

8:00 a.m. - 4:00 p.m.

Inspection & Maintenance Certification

10:00 a.m. - 2:00 p.m.

2019 MS4 Training Managing an Effective Stormwater Program: Overcoming issues in your MS4 program!

12:30 p.m. - 4:00 p.m.

Canoe Tour of Cincinnati

1:00 p.m. - 4:00 p.m.

Lick Run and Other Best Management Practices in Cincinnati

6:00 p.m. - 10:00 p.m.

Bourbon Dinner Cruise

Thursday, May 9, 2019

Exhibit Area Open 9:00 a.m. - 12:00 p.m. and 1:00 p.m. - 7:30 p.m.

7:30 a.m. - 8:30 a.m.

Registration / Breakfast

8:30 a.m. - 10:00 a.m.

Opening Session / Keynote Speaker

10:00 a.m. - 10:30 a.m.

Morning Refreshment Break / Exhibits

10:30 a.m. - 12:00 p.m.

Concurrent Sessions

12:00 p.m. - 1:30 p.m.

Luncheon

1:30 p.m. - 3:00 p.m.

Concurrent Sessions

3:00 p.m. - 3:30 p.m.

Afternoon Refreshment Break / Exhibits

3:30 p.m. - 5:00 p.m.

Concurrent Sessions

5:00 p.m. - 7:00 p.m.

Opening Reception

Friday, May 10, 2019

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

7:30 a.m. - 8:30 a.m.

Registration / Breakfast

8:30 a.m. - 10:00 a.m.

Concurrent Sessions

10:00 a.m. - 10:30 a.m.

Morning Refreshment Break / Exhibits

10:30 a.m. - 12:00 p.m.

Concurrent Sessions

12:00 p.m. - 1:00 p.m.

Luncheon

1:00 p.m. - 2:00 p.m.

Concurrent Sessions

2:10 p.m. - 3:10 p.m.

Concurrent Sessions

Registration Type/Fee

Attendee

Speaker

Student

Scholarship

\$195.00 (postmarked by April 15, 2019)

\$100.00

\$95.00

\$95.00

\$245.00 (postmarked after April 15, 2019)

Registration Includes:

- Unlimited admission to the sessions of your choice on both days
- Admission to morning breakfasts on both days and all breaks
- Admission to luncheons on Thursday, May 9 and Friday, May 10, 2019
- Admission to the Reception on Thursday, May 9, 2019

Register online
ohstormwaterconference.com

Questions? Contact us at
216-385-5248 or e-mail at
hstark@ohstormwaterconference.com

Certification Class/Exams and Tours

Certification Class - May 7, 2019; Certification Exams - May 8, 2019

EnviroCert International (ECI) is a Non-Profit Organization whose purpose is to elevate knowledge and inspire conservation of the global environment through professional certification. ECI is the only stormwater and environmental organization that has a demonstrated accreditation compliant program that offers Professional Certifications, which include: Erosion and Sediment Control (CPESC), Stormwater Inspections (CESSWI), Stormwater Quality (CPSWQ), Municipal Stormwater Management (CPMSM), and Industrial Stormwater Management (CPISM).

EnviroCert General Principles Reviews and certification exams will be offered at the Ohio Stormwater Conference. Four (4) reviews will take place on Tuesday, May 7, 2019 from 8:00 AM – 5:00 PM. The exams for all five (5) certifications will take place on Wednesday, May 8, 2019 from 9AM to 2PM. To register for reviews and/or exams visit the ECI event calendar at <http://www.envirocertintl.org/events/list/>

Inspection & Maintenance Certification for Stormwater Control Measures in Ohio - May 7 and 8, 2019

The Ohio State University and Summit Soil and Water Conservation District have developed a curriculum based on Ohio maintenance standards and design specifications for Stormwater Control Measures (SCM). This course was developed to educate and train a workforce to fill this growing niche. This certifying course will provide attendees the required knowledge to confidently identify the SCM, inspect the facility, develop reports, make recommendations to solve common maintenance issues, and carry out the maintenance or develop task orders for maintenance personnel. This 1.5-day course involves classroom modules on each SCM approved for use in Ohio, conducting realistic inspections of SCMs in a field-learning portion, and an exam to get certified. Participants will receive resources to assist with the classroom modules and learn the about Ohio SCM designs and their inspections.

Course Objectives: Attendees will be able to: identify different SCMs and how they function; identify common deficiencies or issues and recommend corrective measures; document issues and maintenance activities performed; identify appropriate maintenance frequency; provide proficient reports; identify ways to lessen maintenance cost

Upon completion of the course and successfully passing the exam, the attendee will be awarded a certification and a personal certificate number. The certification is good for 3 years. There are no annual fees or membership dues. **The cost of this course at the Ohio Stormwater Conference is \$250.00.** There are no annual fees or membership dues. To learn more about the program and register for this class, please visit: <https://sswcd.summitoh.net/node/35>

2019 MS4 Training Managing an Effective Stormwater Program: Overcoming issues in your MS4 program! - Wednesday, May 8, 2019

Whether you have been recently designated an MS4 community or you have been working with the MS4 program for years, come learn about the “nuts and bolts” of a good program and how to resolve programmatic issues. Join us for a half-day workshop to better understand permit requirements and compliance issues while networking with 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. Ohio EPA will provide insight on recent NPDES program audits and existing successful MS4 communities will share their perspectives on the “must know” and “what’s new” program elements. The session will culminate with a panel question and answer session, where you may ask all your program questions and receive program-experienced answers.

After the workshop, all attendees will receive a pass into the Aquarium to enjoy their remaining afternoon.

Time: 10:00 a.m. – 2:00 p.m.

Cost: \$50.00 (Cost includes parking, refreshments, lunch, useful handouts, great contacts and Aquarium admission!)

Register at: <https://co.clickandpledge.com/advanced/default.aspx?wid=149011>



Tours - Wednesday May 8, 2019

Canoe Tour of Cincinnati

Date: May 8, 2019 Time: 12:30 PM- 4 PM Cost: \$30 Max number: 20
Buses leave from: Sharonville Convention Center, 11355 Chester Road, Cincinnati OH
Destination: Sharonville boat launch Tour leader: Bruce Koehler, Mill Creek Yacht Club
Bring: comfortable shoes, sunscreen, snacks, water.

Take a canoe tour of Cincinnati! Enjoy a guided tour of the utterly fascinating and perfectly weird Mill Creek. Paddle down Mill Creek with the river with knowledgeable tour guides from The Mill Creek Yacht Club and get to know the City in a whole new way. We will see completed restoration projects as well as the location of future restoration projects. You will carpool to the takeout location (TBD) and then be shuttled to the put-in location. At the end of the tour, you will receive a Mill Creek T-shirt (please specify your shirt size prior to arriving). Bring snacks and water.

Lick Run and Other Best Management Practices in Cincinnati

Date: May 8, 2019 Time: 1-5 PM Cost: \$30 Max number: 24
Buses leave from: Sharonville Convention Center, 11355 Chester Road, Cincinnati OH
Destination: Public Service Park, 1045 Eaton Drive, Ft. Wright, KY 41017
Bring: comfortable shoes, sunscreen, water.

Cincinnati is gaining a national reputation in the sustainable management of stormwater to reduce combined sewer overflows (CSOs). MSD is currently implementing stormwater solutions that range from rain gardens and bioswales to stormwater detention basins, stream restoration, and a bioengineered stream. A highlight of this tour will be the Lick Run Project, which includes the \$90 million Lick Run Greenway project in South Fairmount, the largest stormwater control project in the United States. The tour will also visit two other sites in the area where MSD helped design/construct stormwater projects: the Civic Garden Center's Green Learning Station and a variety of green infrastructure at Cincinnati State Technical & Community College (e.g., rain gardens, living wall, pervious pavement, level spreader)

For more information on this tour, visit the conference website.

Bernstein's Batch Bourbon Dinner Cruise

Date: May 8, 2019 Boarding Time: 6:00pm Sail Time: 7:00 - 9:30 pm Cost: \$60 Max number: 50
Buses leave from: Sharonville Convention Center, 11355 Chester Road, Cincinnati OH

Take in the skyline, watch the river go by, and enjoy a fantastic meal aboard one of Captain's Dinner cruises. Two and a half hour cruise along the mighty Ohio River with views of Cincinnati, Ohio including Great American Ballpark and Paul Brown Stadium. See the city murals along the banks of the smaller river city, Covington, KY. Make sure to check out the paddle wheel propelling the riverboat from the Aft of the boat. You can view this from the observation deck.

Menu includes: Tossed salad with cucumbers & tomatoes (on salad) & accoutrements with ranch & balsamic vinaigrette dressings, dinner rolls and butter, roast beef striploin with auju and creamy horseradish, Bourbon glazed chicken breast, baked stuffed sole, Roasted vegetables, green bean casserole, roasted potatoes, marinated corn salad, and pecan pie and bourbon carmel topped cheesecake. Included will be a tasting of four select bourbons.

Thursday, May 9, 2019

REGISTRATION / BREAKFAST

WELCOME - 8:30 a.m.

OPENING SPEAKER - 8:45 a.m. - To Be Announced

KEYNOTE SPEAKER - 9:00 a.m. - To Be Announced

BREAK / VISIT EXHIBITORS - 10:00 to 10:30 a.m.

SESSIONS / TRACKS - 10:30 to 12:00 p.m.

T1A: Stormwater Practices and BMPs Planning and Design

Cover Your Assets: Long-Term Solutions to Stream Erosion (30 min.)

Kelly Kuhbander, Strand Associates

This project includes 14 locations experiencing stream bank erosion threatening/undermining existing infrastructure. By addressing the root cause of the problem and understanding the stream's unique characteristics, long-term stability can be achieved. Proactively protecting the infrastructure by stabilizing the stream is more cost-effective than replacing/repairing the infrastructure after failure.

Highway Agronomy : Requirements for Establishing Vegetation on Disturbed Soils (60 min.)

Ron Trivisonno, P.E., Terracon, Sr Environmental Engineer

Application of lime, fertilizer, seed and mulch can modify disturbed soils to promote vegetative growth. A basic understanding of the relationships between soil pH, buffer capacity, cation exchange capacity, moisture holding capacity and organic matter content are needed to change an embankment into a substrate that can support perennial vegetation.

T1B: Green Infrastructure

Columbus, Ohio Regional Bioretention Pilot Project Inspection & Maintenance Assessment (30 min.)

Caitlin Ruza, AECOM Project Manager

AECOM designed GI features in the Barthman Parson Integrated Solutions Project Area. During the first two growing seasons site inspections were performed to evaluate GI features. Inspection forms were developed with a matrix to score criteria and data was used to evaluate facility performance, common maintenance tasks, and form modifications.

Pervious Pavement - Lessons Learned During Construction (60 min.)

Douglas C. Turney, EMH&T

The structural design and materials used in a pervious pavement system are critical to its long term success. Analysis of two structural failures will be presented illustrating the importance of material selection and construction oversight to insure the long-term success of a pervious pavement installation.

T1C: Watershed Planning and Restoration

Forests for the Future: Adapting Riparian Habitats in Northeast Ohio (30 min.)

Alicia Beattie, Chagrin River Watershed Partners, Senior Project Manager

Climate change is altering our forest ecosystems and may interact with and intensify many other stressors including deer browse, pests, pathogens, and invasive species. In Northeast Ohio, several park districts and The Holden Arboretum are using a targeted approach to assess and manage 500 acres of forest surrounding coldwater streams.

Nature's Solution for Streambank Stabilization: Engineered Log Complexes (30 min.)

Kevin Grieser, Biohabitats, Landscape Ecologist

Suzanne Hoehne, Biohabitats

Josh Myers, Chagrin River Watershed Partners

Traditional streambank stabilization projects have relied on hard-engineering techniques that are anything but wild and scenic. Fortunately, Nature offers an appealing alternative: large, woody debris, which can be used for engineered log complexes. This session describes what engineered log complexes are, and provides a recent local example.

Low-cost Stream Enhancement Using Hand-placed Log Structures: Lessons Learned (30 min.)

Bob Hawley, Ph.D., P.E., Sustainable Streams, Principal Scientist

This presentation covers the fundamentals of hand-placed log structures along with lessons learned from over 400 installations spanning ~3,500 feet across a variety of settings. The low-cost strategy is best suited for smaller channels in valleys with well-established trees where risks of additional bank erosion are acceptable to stakeholders.

T1D: MS4 Program Management

How a small MS4 implements Green Infrastructure (30 min.)

Sherry Wilkins, Director, Huntington Stormwater Utility

Lessons learned: How the Huntington Stormwater Utility has overcome challenges of a small MS4 and is successfully implementing green infrastructure, by creating efficiencies and developing unique partnerships.

Panel Discussion Focused on Co-Permittee MS4s (60 min.)

Afaf Musa, CDM Smith

T1E: Transportation

Do you have your MS4 Data and Assets accounted for? (30 min.)

Mark McCabe, Gresham Smith

Provides information for MS4 managers, storm water coordinators on how to assess MS4 program data and begin using this data to make program decisions. This presentation will touch on several data types and provide examples as to how this data could be used to make informed data supported program decisions.

Let's All Calm Down about Climate Change (60 min.)

Jon Prier, ODOT - Environmental Hydraulic Engineer

Climate change is real, and people are probably impacting it, so... WE'VE GOT TO DO SOMETHING ABOUT IT!!! We could take a common-sense approach to considering unknowns. This presentation will address many unknowns in stormwater design as well some accidental (and intentional) misleading statements from climate reports.

T1F: Modeling and Research

Testing Unique Stormwater Structure Designs with Physical Models (30 min.)

Troy Lyons, The University of Iowa, Principal Engineer

Physical models can be a valuable tool for analyzing designs of stormwater conveyance structures. Common design challenges include gates, screens, interception chambers, drop shafts, air management, and tunnel flows. This presentation will provide an overview projects that have utilized physical modeling, and provide specific examples of design optimizations.

Calibrating 2D Models to Hurricane Harvey (60 min.)

Maegan Nunley, Senior Project Engineer, Stantec

Hurricane Harvey was an unprecedented storm event that prompted studies in the 2D modeling environment. The goal was to create accurate models to identify problem areas in existing drainage infrastructure and plan for the next record-setting storm event. This presentation will review methods for calibrating 2D/Unsteady models with limited data.

T1G: Legal

Ohio Water Law 101 (30 min.)

Louis L. McMahon, McMahon DeGulis LLP

Participants will gain an understanding of the multiple sources and regulators of water law in Ohio, including the common law property and tort doctrines, local authority, state regulation and federal jurisdiction.

Hot Topics in Stormwater Law and Litigation (60 min.)

Andrea M. Salimbene, Esq., Frost Brown Todd LLC, Member

Receive an overview of key legal developments in stormwater and look ahead to hot topics on the horizon. Learn about Ohio rulemaking activity impacting stormwater; policy and enforcement news; permit changes and implementation items; interesting Ohio stormwater-related litigation, and national initiatives and litigation with the potential to impact Ohio.

LUNCH - 12:00 to 1:30 p.m.

SESSIONS / TRACKS - 1:30 to 3:00 p.m.

T2A: Stormwater Practices and BMPs Planning and Design

Navigating Local Regulations for Effective Design (60 min.)

Brian Yates, Burgess & Niple, Environmental Engineer

Local regulations can be tricky to effectively navigate to keep projects on budget and schedule. This presentation focuses on innovative solutions to design challenges and stakeholder coordination associated with the City of Columbus stormwater BMP and stream corridor protection requirements as they applied to a \$32M recent urban transportation project.

Testing to Determine Design Infiltration Rates for Infiltration BMPs (30 min.)

Jay Dorsey, Research Scientist, Ohio State University Stormwater Management Program

This presentation outlines procedures for field determination of subgrade infiltration rates that can be used for the design of infiltrating stormwater practices.

T2B: Green Infrastructure

Green Infrastructure Enhances CSO Control Project and Beautifies Elyria Neighborhood (60 min.)

Tom Evans, AECOM Green Infrastructure Design Lead

Green Infrastructure measures were incorporated into Elyria's East Avenue Relief Sewer project to reduce combined sewer overflows to the Black River. The street was rebuilt with bioretention cells designed to infiltrate roadway runoff. Innovative design features include vertical drains to enhance infiltration into the underlying sandy soils.

Helping Residents Reduce their Stormwater Footprint in Northeast Ohio (30 min.)

Kristen Hebebrand, Chagrin River Watershed Partners, Inc., Project Manager

We will discuss resident interest in adopting stormwater control measures (SCMs) across the Northeast Ohio Regional Sewer District's stormwater service area and input from residents and communities regarding potential SCM incentives. An onsite consultation method to help residents select and plan SCMs and obtain stormwater fee credits will be shared.

T2C: Watershed Planning and Restoration

Cleveland's Doan Brook: The Home of Rock and Roque (30 min.)

Kristen Buccier, Northeast Ohio Regional Sewer District, Project Manager

Sara, Rehner, Northeast Ohio Regional Sewer District, Project Manager

Doan Brook is a highly urbanized, channelized, and culverted stream flowing through historic districts and culturally significant places in the City of Cleveland. This presentation will focus on permitting coordination strategies to complete a streambank stabilization project along Doan Brook and management of an undocumented discovery made during construction.

Recommended Solutions for Cuyahoga South Watershed Master Plan (30 min.)

Kimberly Colich, NEORSD, Manager of Stormwater Design

The Northeast Ohio Regional Sewer District is preparing a Stormwater Master Plan for the Cuyahoga River South watershed. The presentation consists of case studies illustrating recommended projects and strategies that mitigate flooding/erosion, promote stream health, and protect assets.

Restoring Ecological Function to Headwater Streams (30 min.)

Suzanne Hoehne, Biohabitats, Inc Ecological Engineer

Land development code focuses on managing the hydrologic and hydraulic processes within headwater systems and doesn't include preservation or restoration. This presentation will discuss implementing restoration practices that return ecological processes into headwater systems, review these practices potential in urban systems, and discuss how to reduce impacts to headwater systems.

T2D: MS4 Program Management

Ohio EPA's 2019 MS4 Permit Renewal (60 min.)

John Mathews, Ohio EPA, Manager of Stormwater Program

Ohio's MS4 permit is being updated in 2019. Hear the potential changes in the permit that have arisen as communities have implemented storm water management plans, reported progress and been audited. These themes and the proposed updates of the permit will be presented with an opportunity for input and discussion.

MS4 Compliance on a Budget: Lessons from a Small Town (30 min.)

Sky Schelle, City of Piqua Ohio

Explore examples of online resources and technology that can help MS4s meet permit requirements. Emphasis will be placed on real-world examples the City of Piqua has used and other small MS4s might find applicable in searching for economical compliance.

T2E: Transportation

Saving Time and Cost Through an Umbrella Pollution Prevention Plan (30 min.)

Sarah Maistros, Arcadis, Water Resource Engineer

Developing Stormwater Pollution Prevention Plans for operators with multiple facilities and types can be time consuming. Reduce time, effort,

and cost by creating an umbrella document providing a comprehensive overview of all facility types and pollution prevention control measures to guide and significantly reduce the effort to prepare site-specific SWPPPs.

Sustainable Stormwater Management in Linear Transportation Projects (30 min.)

Michelle Johnson, Environmental Design Group, Director

Designing sustainable and effective stormwater management solutions can be a challenge, especially in urban environments. We will explore various sustainable stormwater BMPs, specifically related to linear transportation projects in Cleveland's urban core. Constructed wetlands, permeable pavers, infiltration and bioretention design components will all be discussed, including related environmental restoration measures.

Transportation Roundtable (30 min.)

Jon Prier, ODOT

Mark McCabe, Gresham Smith

2F: Modeling and Research

Resiliency of Stormwater Controls in NE Ohio (60 min.)

Jay Mosley, Environmental Design Group

Recent available climate data and climate change projections will be used to evaluate the impacts of observed and projected changes on existing storm water controls in NE Ohio and the region. The modeling will provide an evaluation of the resiliency of storm water controls such as basins to climate changes.

Automation in an Asset Management Approach to Stormwater Master Planning (30 min.)

Daniel Baldwin, Jacobs Engineering Group, Inc., Water Engineer

This presentation will discuss how GIS and H/H model-based tools were used to support the master planning process and address the many challenges. Web-based GIS tools, H&H models, and python scripts were successfully used to automate processes and create a quantitative and repeatable way of measuring benefits from proposed alternatives.

T2G: Legal

Impact of Ohio EPA's Nutrient Reduction Strategies on Stormwater Permitting (60 min.)

Stephen P. Samuels, Esq., Frost Brown Todd LLC, Member

Stephen N. Haughey, Frost brown Todd LLC

Learn about the role point and nonpoint sources of stormwater play in nutrient-related impacts to Ohio's rivers and streams, and the ways existing stormwater permitting programs for MS4 communities, industries and developers are likely to be revised in the near future in an further effort to reduce nutrient loadings.

Who Owns Which Ditch: The Basics of Ohio Ditch Law (30 min.)

Camille Yancey, McMahon DeGulis LLP, Of Counsel

This presentation will provide an overview of the legal framework governing ditch maintenance, including ownership issues, the petition ditch process, landowner responsibility, assessments, drainage easements, maintenance obligations, and liability.

BREAK / VISIT EXHIBITORS - 3:00 to 3:30 p.m.

SESSIONS / TRACKS - 3:30 to 5:00 p.m.

T3A: Stormwater Practices and BMPs Planning and Design

Designing Underground Storm Water Management Systems for Water Quality (30 min.)

Justin Reinhart, Ohio EPA, Engineer

Ohio's NPDES Construction General Permit identifies an underground storm water management system as a standard post-construction practice pre-

approved for general use. This presentation will explore how to make this BMP a successful water quality treatment practice as well as meet the post-construction requirements of the permit.

Interagency Coordination-Best Management Practices for Stormwater Management (30 min.)

Kari Mackenbach, Director of Sustainability, ms consultants.

Interagency coordination can help with the implementation and longevity of community projects. Several examples and case studies will be provided as examples.

When Green Infrastructure Isn't an Option: Retrofits in Tight Spaces (30 min.)

David Bridenstine, OHM Advisors, Design Engineer

Urban storm sewer retrofits do not always provide the right 'canvas' for Green Infrastructure (GI). In some cases, conventional (gray infrastructure) solutions can be implemented to address frequent hydrology and have a meaningful and positive impact on flood control and water quality.

T3B: Green Infrastructure

Overcoming Urban Infrastructure Challenges – the Woodland Central Green Infrastructure (30 min.)

Kim Colich, Northeast Ohio Regional Sewer District

The Northeast Ohio Regional Sewer District's \$10 million Woodland Central Green Infrastructure Project removes more than 80 acres of drainage area from the combined sewer system and reduces millions of gallons of CSOs. The project's urban location presented environmental, spatial, and hydraulic challenges to integrating large-scale green infrastructure.

Aqueduct Street Green Project (30 min.)

Katherine Holmok, Director, Environmental Design Group

Controlling stormwater within the road right-of-way has many challenges beyond utility coordination, cost controls and maintenance of traffic. We will present the bright and dull spots from planning, design and construction for this ¼ mile urban green and complete street in Akron.

Siting and Prioritizing Green Infrastructure for Phosphorus Load Reduction (30 min.)

Alysondria Eason, Principal Engineer

An area-wide approach to green infrastructure opportunity identification, prioritization, and conceptual design was piloted for a 1,000-acre watershed within Boston to reduce stormwater phosphorus loads. The initiative included a tracking framework for opportunities and constraints, streamlined soil and water quality testing, and concept design packages to inform future efforts.

T3C: Watershed Planning and Restoration

Guiding Stormwater Management Using Biological Potential (30 min.)

Michael Paul, Tetra Tech Inc, Ecological Sciences; Senior Scientist/Director

We discuss a model to predict biological condition in urban streams that can be used to more appropriately assess, prioritize, and restore urban watersheds. The approach advocates moving away from one size fits all management and recognize that urbanization presents real constraints on what is achievable in urban streams.

NEORS D Stickney Creek Stream Restoration: Asset Protection Utilizing Ecological Restoration (30 min.)

Tyler Charles, PE, JMT, Associate, Water Resources Engineer

The NEORS D Stickney Creek Stream Restoration project applied ecological restoration in an urban setting to provide long-term stability to an exposed portion of combined sewer within the stream channel. Improvements to the project area considered past/present geomorphic and anthropogenic impacts to provide a cost effective, resilient solution for asset protection.

Aquatic Habitat Restoration along the Black River Using Fish Shelves (30 min.)

Kate Golden, Stormwater Manager, City of Lorain

Chip Wendt, Coldwater Consulting

Modified/hardened shorelines provide limited opportunities for habitat improvement. This presentation includes an overview of two methodologies employed in the Black River including an innovative approach to install fish habitat on a hardened/bulkheaded waterfront. Design, construction, biological monitoring, and the applicability of these structures along waterfront communities will be highlighted.

T3D: MS4 Program Management

MS4 Construction and Post-Construction Audits: Lessons Learned (30 min.)

Heather Buck, Christopher B Burke Engineering, LLC

This presentation will provide an overview of several actual audits and show the materials that were developed to prepare for the audit as well as complete a post-audit response package.

Clear Choices Clean Water Program (30 min.)

Jill Hoffmann, White River Alliance

Ever wonder how to create a grassroots public engagement program that brings about real, measurable environmental change? How about creating a program where others pay you to help widely share your stormwater messages? Or maybe even pay you to learn critical, hands-on construction site BMPs? Come, copy our models!

STEPP Initiative - BMP Performance Verification Program (30 min.)

Kathy Allen, Stantec, Principal Landscape Architect

Through the Stormwater Institute, the Water Environment Federation (WEF) initiated the Stormwater Testing and Evaluation for Products and Practices (STEPP) project to fill the void created by the lack of a national stormwater BMP testing and verification program. This presentation will provide an update on STEPP initiative progress.

T3E: Transportation

Monitoring Runoff Particle Size Distribution and Trash from Ohio Roads (30 min.)

Ryan Winston, Ohio State University, Assistant Professor

This presentation will describe a field research project undertaken to quantify particle size distribution and trash in urban runoff from Ohio's roads. These data will be utilized to determine which BMPs Ohio Department of Transportation will utilize for future development projects.

Catch Basin Inserts for Ohio Roadways—Are they for you? (30 min.)

Thomas Dietrich, Gresham Smith, Senior Environmental Engineer

Can catch basin inserts be used for post-construction stormwater BMPs? To answer that question, come find out the results from a 12-month field study and full-scale lab testing of catch basin inserts conducted under ODOT's statewide research program.

ODOT Research – Soil Amendment for Stormwater Volume Reduction (30 min.)

Justin Kerns, ms consultants, Project Engineer

The Ohio Department of Transportation Office of Hydraulic Engineering Research, in collaboration with ms consultants, and the United States Geological Survey (USGS) is conducting a research project to determine the effectiveness of soil amendment within grassed shoulders and medians as a volume reducing post-construction stormwater BMP for transportation projects.

T3F: Modeling and Research

The Western Lake Erie Basin Nutrient Source Inventory (30 min.)

Timothy D. Murphy, Civil & Environmental Consultants, Inc.

The Nutrient Source Inventory (NSI) will be presented in an interactive manner. Recent water quality and nutrient data updates and additional SWAT models will be highlighted. The presentation will demonstrate the applicability of the NSI in determining priority areas for nutrient reduction and resource allocation for nutrient reduction efforts.

Improvements to HEC-RAS Floodplain Elevations in Allen Creek using EPA-SWMM (30 min.)

Nathan Zgnilec, OHM Advisors, Environmental Engineer

An EPA SWMM model was used to evaluate hydraulic improvements in Ann Arbor, Michigan, to reduce the surrounding floodplain (originally defined with HEC-RAS) by up to 5.4ft. Proposed improvements required a FEMA LOMR. This effort required careful documentation, given the significant differences in the modeling framework between HEC-RAS and SWMM.

Dynamically Coupling Enhanced 1-D Sewer Network and 2-D Surface Routing (30 min.)

Qiuli Julie Lu, ARCADIS, Principal Water Engineer

Constraints of overland surfaces uses aggregated parameters; Enhanced 1-D sewer network to model flow dynamics of urban storm drainage; Local 2-D surface routing to understand the surface flooding route, flooding depth and spreading.

T3G: Legal

Funding Stormwater Solutions: Legal and Practical Considerations (60 min.)

Erin McDevitt-Frantz, McMahon DeGulis LLP, Associate

The best stormwater management solution is ineffective unless it can be constructed, operated, and maintained. This presentation will analyze issues associated with financing stormwater infrastructure on private property using the Avon Lake Later Loan Program as an example in successful innovation and collaboration.

Legal Roundtable (30 min.)

Andrea M. Salimbene, McMahon DeGulis LLP

Camille Yancey, McMahon DeGulis LLP, Of Counsel

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'll discuss and address topics and compare notes on legal issues top-of-mind for participants.

RECEPTION - 5:00 to 7:00 p.m.

A casual networking opportunity and time to gather while enjoying appetizers and drinks.

Friday, May 10, 2019

REGISTRATION / BREAKFAST - 7:30 to 8:30 a.m.

SESSIONS / TRACKS - 8:30 to 10:00 a.m.

F1A: Stormwater Practices and BMPs Planning and Design

Using Urban BMPs to Reduce Nutrient Loads from Agricultural Runoff (30 min.)

Hannah Lubbers, Clermont County Office of Environmental Quality, Project Manager

In 2014, the Clermont Soil & Water Conservation District completed construction of an innovative agricultural BMP in an eroded grassed waterway using practices typically found in an urban setting. This presentation will highlight the design of the system and its ability to reduce nutrient loadings from farm field runoff.

It's Complicated: Implementing Post-Construction Water Quality Treatment on Non-Traditional Sites (60 min.)

Justin Reinhart, Ohio EPA, Engineer

Not all developments are equal. While some projects are straightforward, others present a myriad of challenges to meet post-construction water quality treatment requirements. This presentation provides guidance on situations where post-construction practices may seem infeasible or impractical, lays out possible options, and explores nuances within Ohio's Construction General Permit.

F1B: Green Infrastructure

How a Tree Plan Can Help with Stormwater (30 min.)

Shirley Vaughn, Davey Resource Group, Inc

ShoreRivers and Greensboro, MD realized that every effort communities along waterways can take to reduce pollutant loading and manage runoff entering the Chesapeake Bay is noteworthy, even non-traditional avenues. For that reason, they developed a seven-year plan to use tree canopy as a tool to improve local water quality.

Constructed Wetlands for Watershed Improvement and Habitat Restoration (30 min.)

Brian Tornes, PE, Burgess & Niple, Director of Environmental Engineering Section

Jennifer Conroy, Burgess & Niple, Project Manager

John Watts, Columbus & Franklin County Metroparks

Converting 6,000 acres of agricultural land to swamp forest, wet prairie, and upland habitats in the Big Darby Watershed resulted in quality and quantity improvements of site runoff and significant growth in amphibian and bird populations. This presentation will review design techniques used to meet Metro Parks' MS4 MCM goals.

F1C: Watershed Planning and Restoration

USACE Water Resources - Programs, Authorities, & Assistance (30 min.)

Brandon Brummett, US Army Corps of Engineers Louisville District

Overview of the US Army Corps of Engineers programs and authorities available to assist local communities with their flood risk management, watershed planning, aquatic ecosystem restoration, or other water resources related issues.

ODOT's Tait Station Dam Removal Project: A Public Partnership Success (60 min.)

Joel Thrash, Cardno, Inc., Sr. Consultant/Principal

Heather Schwar, Cardno

The Tait Station Dam Removal Project was completed in 2018 by ODOT as mitigation for unavoidable impacts in the Lower GMR Watershed. This presentation will discuss the history of the Project, its unique public-private partnership, and its strategic planning and development as well as the challenges and successes.

F1D CSO/SSO/I&I

Gray to Green: The Toledo Swan Creek Project (30 Min)

Jamie Brescol, Tetra Tech, Inc

The City of Toledo's LTCP identified a tunnel expansion project for control of four outfalls to Swan Creek. The City identified a stormwater separation and GSI project to achieve the performance goals, reduce pollutant loadings, and reduce program costs. This presentation discusses the planning, negotiations, and design of these improvements.

SSO Field Investigation and Elimination Design Solutions(60 min.)

David McCallops, PE, Environmental Design Group

George Sendry, Environmental Design Group

Environmental Design Group was hired by Summit County DSSS to provide engineering services to eliminate the Hudson Area L SSO. Services included I/I flow monitoring, wet weather observations, dye testing, and smoke testing, along with detailed design services, including plans, specifications and the OEPA PTI.

F1E: Ethics

Ethics and Public Outreach (30 min.)

Julie Lawson, Environmental Design Group - Project Manager

Public involvement is important for the success of public projects. Make sure that your public outreach efforts follow the 8 Canons of the ASCE Code of Ethics whether they are verbal or written on any platforms.

Engineering and Surveying Ethics, Laws (60 min.)

John F. Greenhalge

A presentation that ensures the listener will have a better understanding of Ohio's laws and rules concerning the practices of engineering and surveying. In addition, the presentation will thoroughly explain the professional ethics requirements for engineers and surveyors.

F1F: Stormwater Retrofits

Designing a Successful Retrofit Program: A Green Infrastructure Developer's Perspective (30 min.)

April Mendez, Greenprint Partners, VP of Programs

Retrofit incentive programs promise to accelerate green infrastructure development, however no two programs are alike, and each market has experienced different challenges. Greenprint Partners has aggregated lessons learned in these markets to help design a better a solution that is attractive to developers.

Stormwater Project Challenges: Lessons Learned from a Culvert Rehabilitation Project (30 min.)

Derek Vogel, Northeast Ohio Regional Sewer District, Project Manager

This presentation aims to review the techniques used for a stormwater culvert rehabilitation project to meet a highly accelerated schedule and the approaches used to overcome the unique challenges that this project faced.

Forest Preserve Restoration Provides Backbone for Major Flood Mitigation Project (30 min.)

John Lyons, P.E., Project Engineer, Strand Associates, Inc.

The Village of Winnetka, Illinois is located between Lake Michigan and the Skokie River and experiences frequent severe street and structure flooding. This presentation highlights a recent watershed based study which identified creative and cost-effective flood control solutions resulting in the development of a \$57.7 million flood control master plan.

F1G: Monitoring, Inspections and Maintenance

Commercial GI Retrofits: Runoff Hydrology, Construction, and Maintenance Lessons Learned (30 min.)

Ryan Winston, Ohio State University, Assistant Professor

This presentation will describe a field research project undertaken to quantify particle size distribution and trash in urban runoff from Ohio's roads. These data will be utilized to determine which BMPs Ohio Department of Transportation will utilize for future development projects.

An Urban Stream Manager's Guide to Field-Based Master Planning (60 min.)

George Remias, NEORSD Manager of Stormwater Inspection and Maintenance

Urban stream management has unique complexities and challenges to both understand and mitigate stormwater problems. This presentation discusses the NEORSD's holistic field-based master planning approach to urban stream management, using case studies, successes, and lessons learned that any urban stream manager can apply.

SESSIONS / TRACKS - 10:30 to 12:00 p.m.

F2A: Stormwater Practices and BMPs Planning and Design

Inspection and Maintenance Case Studies focused on Post-Construction BMPs (30 min.)

Mohammad Islam, Hamilton County Planning and Development, Project Engineering Manager

This presentation will explore case studies of Post-Construction BMPs starting in the design phase, through construction, approval, and post-construction annual inspections. Exploring common issues that arise with design, construction, inventory management, and results from BMP inspections.

Estimating Subgrade Infiltration Rates for Post-Construction Site Planning (30 min.)

Jay Dorsey, Research Scientist, Ohio State University Stormwater Management Program

This presentation outlines a procedure for developing planning-level infiltration rate estimates for infiltrating post-construction stormwater management practices.

Design Strategies for ESD, Reducing Maintenance and Increasing Acceptance (30 min.)

Donna Evans, Montgomery County MD, Planning Specialist

There is a need to reevaluate how we design ESD to be more sustainable and reduce maintenance costs. Over engineering, not understanding landscape design principles and horticulture are some of the key factors we need to address to overcome the hurdle of maintenance issues and public acceptance.

F2B: Green Infrastructure

Demonstrating Innovative Approaches to Storm Water Management in N.E. Ohio. (30 min.)

Craig E. Cawrse, Senior Landscape Architect

A case study of an office building site in northeast Ohio that uses low impact and green infrastructure as innovative storm water control measures. The site has been monitored by USGS for (11) years to track performance of the storm water measures.

City of Defiance Bio-Tree Trench Case Study and Lessons Learned (30 min.)

Chad Boyer, ms consultants, inc.

ms consultants has designed a new, innovative green infrastructure post-construction BMP in the City of Defiance, Ohio. Known as the Bio-Tree Trench, this BMP combines permeable pavers, bioretention, and tree trenches into one continuous, interconnected system. Learn about the design and construction of this new BMP, plus lessons learned.

Returning Mussels to the Restored Mill Creek in Cincinnati (30 min.)

Warren C. High, Wood Environment & Infrastructure Solutions, Senior Associate

An abundance of mussels associated with a dam removal offered an opportunity to restore them to an adjacent watershed where they have been absent for over 100 years. Discussion centers on the restoration, biological monitoring, idea development, agency approval, volunteer involvement, and methods that were used to meet success.

F2C: Watershed Planning and Restoration

The TRAILS and Tribulations of Restoring Beechers Brook (30 min.)

Ivan Valentic, GPD Group

Kristen Buccier, Northeast Ohio Regional Sewer District

This presentation will provide an overview of challenges encountered during design and construction of a stream stabilization project along Beechers Brook, a tributary to the Chagrin River. The presenters will discuss how the team overcame these challenges to provide a restored stream with the support of neighboring residents and community.

Prioritizing Stormwater Project Alternatives Using Multiple Criteria Decision Analysis (30 min.)

Gina Beim, PE, M ASCE, MCDA Consulting LLC, President

Summary of Multi Criteria Decision Analysis theory, followed by a literature review of use in Watershed Planning and Restoration, selection of Green Infrastructure solutions and Best Management Practices.

Getting Strategic with Nine-Element Nonpoint Source- Implementation Strategies (NPS-IS) (30 min.)

Deanna Bobak, Civil & Environmental Consultants, Inc., Project Manager

Sara Guiher, Toledo Metropolitan Council of Governments

Nonpoint Source-Implementation Strategies (NPS-IS) are developed as living documents for HUC-12 watersheds. Over 20 plans have been developed in the Lower Maumee River watershed, and stakeholders are working together to find ways to prioritize further plan development and identify sustainable means for regular review and updating of approved plans.

F2D: CSO/SSO/I&I

Two Green Giants: Factors Affecting CSO Control through Green Infrastructure (30 min.)

John Aldrich, CDM Smith Senior Water Resources Engineer

This presentation will illustrate the challenges of integrating green infrastructure into NEORSD's \$3 billion, 25-year Project Clean Lake CSO control program through case studies of two design projects – one yielding significant cost savings while the other downsized due to low cost-effectiveness and significant infrastructure interference.

Ohio EPA Roundtable (60 min.)

Jason Fyffe, Ohio EPA

F2E: Ethics

State Board Investigations (60 min.)

Jason Mclean, Ohio Board of Registration for Professional Engineers and Surveyors

A presentation that will give the audience a thorough grasp of the laws and rules related to the practices of engineering and surveying in Ohio, to include, the investigative and hearing process that follows a violation of Ohio laws and rules related to Ohio Revised Code Section 4733.

F2F: Stormwater Retrofits

Two Birds/One Stone: Funding Flood Mitigation/Infrastructure Repair with FEMA Grants (30 min.)

David Hayson, Senior Project Engineer, Stantec

Downtown Sharonville, OH is at risk of riverine flooding. Stantec collaborated with Sharonville to apply for FEMA grants to fund projects that would reduce the risk of flooding, while at the same time provide benefits for infrastructure in need of repair - All with limited cost to the community.

Green Lake Dam Infrastructure Improvements (30 min.)

Joshua Shackelford, PE, Project Manager and Senior Engineer, AECOM

Green Lake Dam currently cannot manage the design storm event as required by ODNR. This presentation will explore the alternatives analyzed and discuss the alternative selected to increase the spillway system capacity. We will also discuss the recently completed dredging project at this facility.

Big Creek Watershed (30 min.)

David Anderson, Water Resources Engineer at Jacobs Engineering

Come learn about the unique model-based approach to solving flooding and erosion issues and improving water quality in the Big Creek watershed. In addition, learn about simplified model-based methods of representing stormwater regulations.

F2G: Monitoring, Inspections and Maintenance

Four Key Elements in Developing an Operations and Maintenance Program (30 min.)

William Landshof, Arcadis, Principal Water Engineer

Developing a large-scale green infrastructure operations and maintenance program is the next phase for many municipalities. The complexities of such a feat are presented in four key elements for a successful program: The workforce, inspections and data management, corrective action, and leveraging best practices.

Stormwater BMP Management Retention/Detention Basin Inspections (60 min.)

Joseph Reitz, P.E., Public Works Director, City of Avon Lake

Avon Lakes approach to working with property owners has created a very realistic and cooperative environment for owners charged with managing their retention/detention basins. This discussion will share the years worth of experience in plan reviews, long term maintenance and resident education on many aspects of BMP maintenance.

LUNCH - 12:00 to 1:00 p.m.

SESSIONS / TRACKS - 1:00 to 2:00 p.m.

F3A: Stormwater Practices and BMPs Planning and Design

Anionic Polyacrylamide: An Innovative and Effective Tool for Stormwater Management (60 min.)

Kyla J. Iwinski-Wood, Applied Polymer Systems, Inc., VP R&D

This presentation focuses on the use of environmentally safe, anionic polyacrylamides (PAMs) as a tool to manage stormwater runoff and improve water quality. PAM is a versatile material that can prevent harmful contaminants from leaving disturbed sites as well as flocculate and remove dissolved and particulate material from runoff water.

F3B: Green Infrastructure

Key Considerations for Choosing Underground Detention and Manufactured WQ Solutions (60 min.)

Dana Hinaman, Contech

As development and redevelopment continues in urbanized area, underground detention and water quality solutions are frequently selected to accommodate site constraints and comply with local regulations. Design engineers, owners, and plan reviewers will gain better insight into key parameters in choosing the most cost-effective/appropriate underground detention solutions and MTDs.

F3C: Watershed Planning and Restoration

Five Years Later: Active Watershed Management Demonstrates Consistent Pollution Reduction (60 min.)

Jessica Glowczewski, City of Akron Water Supply, Watershed Superintendent
Charles Lacy, City of Akron

This presentation will discuss Akron's Ohio EPA approved Watershed Management Program, exploring both effective and ineffective strategies implemented during the last five years that lead to a demonstrable reduction in nutrient and biological contamination into Lake Rockwell Reservoir, the raw water supply for the City of Akron.

F3D: Modeling and GIS

Applying i-Tree Hydro in Urban Forest and Land Use Planning (60 min.)

Will Ayersman, Davey Resource Group - GIS Services Coordinator

i-Tree Hydro is a stand-alone desktop application designed to simulate the effects of changes in urban tree cover and impervious surfaces on the hydrological cycle, including streamflow and water quality, for watershed and non-watershed areas. Common applications and use cases will be discussed throughout the presentation.

F3E: MS4 Program Management

Exploring Stormwater Rate Affordability (60 min.)

Jeffrey Rowe, H.J. Umbaugh and Associates

Are your stormwater rates affordable? This presentation will explore the topic of rate affordability and share information as to what municipalities are doing to define and address rate affordability at the local level. This presentation will also present stormwater rate statistics for the State of Ohio.

F3F: Stormwater Retrofits

Using Skimmers to retrofit older basins for enhanced Water Quality (60 min.)

Jamie McCutchen, Rymar Waterworks Innovations, President

This presentation will review case studies to show how skimmers were used to enhance water quality and reduce maintenance for two older stormwater basins. In addition, it will provide information on how skimmers can be used to retrofit older basins that were constructed prior to water quality requirements.

F3G: Monitoring, Inspections and Maintenance

The Evolution of NEORSD's Stormwater Inspection and Maintenance Program (60 min.)

Claire Posius, NEORSD - Stormwater Maintenance Project Coordinator

Lessons learned and program evolution within the Northeast Ohio Regional Sewer District's Stormwater Inspection and Maintenance Department, with a focus on inspection methods and procedures, field data collection utilizing AGO applications, GIS database updates, and the expanding role of maintenance project coordinators

SESSIONS / TRACKS - 2:10 to 3:10 p.m.

F4A: Stormwater Practices and BMPs Planning and Design

Advanced Impervious Surface Delineation for Stormwater Utilities (30 min.)

Brian Stevens, Woolpert, Geospatial Program Director

This presentation will discuss the advanced technology and automated processes

used to accurately delineate impervious surfaces in support of stormwater utility development and maintenance. Real-world examples will demonstrate the short- and long-term benefits available to communities throughout Ohio.

Capitalizing on Redevelopment to Reduce Flooding in Downtown Lexington (30 min.)

Chris Rust, Strand Associates, Project Engineer

The redevelopment of the Lexington Convention Center had to contend with historic flooding issues in downtown Lexington due to conveyance limitations with existing storm infrastructure. A detailed watershed study and extensive stormwater modeling was initiated to inform critical design components with the redevelopment project needed to mitigate the flooding issues.

F4B: Green Infrastructure

Streambank Failure Mechanisms and Streambank Stabilization on Pistol Creek (30 min.)

Patrick McMahon, Senior Engineer

This presentation provides a brief overview of the two most common mechanisms associated with streambank failure. Green gabions are introduced as a potential solution for streambank stabilization in urban settings. Lessons learned from our design and construction experience at Pistol Creek, in Maryville, Tennessee will be shared.

Implementing Green Infrastructure in a Neighborhood Street Project (30 min.)

Robert Page, HNTB Corporation, Water Resources Section Manager

The presentation will include aspects of how we implemented green infrastructure solutions in a neighborhood street project to alleviate ponding water. The presentation will discuss how HNTB analyzed the problem and developed green solutions to fit within the neighborhood aesthetics while also fixing long standing roadway issues.

F4C: Watershed Planning and Restoration

Partnership Results in an Alternative to a Traditional TMDL (30 min.)

Brooke Shireman, SD1, Environmental Compliance Manager

This presentation provides an overview of the efforts of Sanitation District No. 1 of Northern Kentucky (SD1) and the Gunpowder Creek Watershed Initiative (GCWI) to develop the first approved Total Maximum Daily Load (TMDL) Alternative in Kentucky as well as the projects underway to improve water quality in Gunpowder Creek.

Improving Stream Hydrology, Geomorphology, and Biology with Watershed BMPs (30 min.)

Nora Korth, P.E., Sustainable Streams, LLC

This presentation will focus on several constructed examples of open stormwater facilities used to restore a more natural flow and disturbance regime, filter stormwater, prolong detention time, and extend baseflows downstream. Modeling and available in-stream monitoring results will be presented. Examples are located in the developed portions of the watershed.

F4D: CSO/SSO/I&I

Using GIS to Assess Risks to Stormwater Assets (30 min.)

Kacey Bates, CDM Smith, GIS Specialist III

CDM Smith is providing GIS support to the Northeast Ohio Regional Sewer District's Cuyahoga River South Stormwater Master plan. This presentation will address how CDM Smith automated the process of determining the Business Risk Exposure score of regional stormwater assets, and a solution to graphically representing multifactor asset ratings

Integrated Watershed and Storm Water Management: Smart Tools for MS4s (30 min.)

Lindsay Birt, Ph.D., Hickory Creek Watershed Planning Group

Participation in a watershed group organized to implement BMPs, in addition

to public education and monitoring can ease the burden of managing an MS4 program. This presentation will highlight BMPs implemented in the Village of Mokena and the usage of geospatial tools in partnership with Hickory Creek Watershed Planning Group.

F4F: Stormwater Retrofits

Kicking Asphalt to the Curb (30 min.)

Jay Womack, ASLA, LEED AP, Huff & Huff, Senior Landscape Architect

Woodridge School District 68, Woodridge, IL was tired of the headaches that accompany asphalt parking lots. Their Green Campus Initiative is a multi-year effort to replace every asphalt surface in the District with permeable pavements. The results of the Green Campus Initiative have been overwhelmingly positive for the District.

Trees & Water Sensitive Urban Design (30 min.)

Jeremy Bailey, Senior Consultant, GreenBlue Urban

Urban trees can be an asset to cities. When designed correctly, trees can efficiently and sustainably assist in managing stormwater through the reduction of runoff and the improvement of water quality. But what are the key factors that must be considered to successfully integrate these beautiful elements into LID schemes?

F4G: Monitoring, Inspections and Maintenance

NPDES: After the NOT, What's Next? (60 mins)

Anna Griggs, Business Development Manager, Apex

The federal NPDES program now requires all Phase II MS4 post construction and retrofit projects to implement regular/annual inspections and maintenance of installed stormwater systems. In the long run, regular inspections and maintenance lead to a properly managed maintenance and repair program and reduces overall costs of the system..

Sponsors

Platinum Level

ADS
Butler County Storm Water District
Environmental Design Group
Northeast Ohio Regional Sewer District

Gold Level

AECOM
CDM Smith
Cleanway Environmental Partners
Contech
Dandy Products, Inc.
Davey Resource Group
Envirocert
GPD Group
Grande Water Management
JW Faircloth & Son, Inc
McMahon DeGulis, LLP
ODNR
Stantec Consulting Services, Inc.
Trench Drain Systems
Woolpert

Silver Level

ARCADIS - US, Inc.
Brown and Caldwell
Cardno
CBI Systems - MS4web.com
DBi Services
EMH&T
Frost Brown Todd LLC
ms consultants, Inc.
OEPA
OHM Advisors
Stoett Industries, Inc.
Stormwater Solutions
Terracon Consultants, Inc.
Water Environment Federation

Bronze Level

Best Management Products, Inc.
Biohabitats
Coldwater Consulting
Coyle SWPPP Professionals
CT Consultants, Inc.
DeepRoot Green Infrastructure
DLZ Ohio Inc.
Environmental Management Specialists.
EnviroScience, Inc.
Hazen and Sawyer
Hydra TMDL Systems
Kurtz Brothers
Meadville Land Service Inc
NTH Consultants, Ltd.
Oldcastle Infrastructure
Odle, Inc. Coating & Painting
POWER Engineers, Inc.
Rymar Waterworks Innovations
SWPPPTrack
Tetra Tech
The Mannik & Smith Group, Inc.
V3
Warren County Soil & Water Conservation
Wood

Exhibitors

ADS
Advanced Rehabilitation Technology
AECOM
AQUA Doc
Apex
Baughman Tile Company
Best Management Products, Inc.
Bio Clean, a Forterra Company
Biohabitats, Inc.
BL Companies
Cardno
CBI Systems - MS4web.com
CDM Smith
Civil & Environmental Consultants, Inc.
Cleanway Environmental Partners
CloudCompli
Coldwater Consulting
Contech Engineered Solutions
Coyle SWPPP Professionals
Dandy Products
Davey Resource Group
DBi Services
DeepRoot Green Infrastructure, LLC
DW Clonch LLC
EJ
EJ Prescott
EMH&T
ENTEL, Inc.
EnviroCert International
Envirolok
Environmental Design Group

Environmental Management Special-
ists, Inc.
EnviroScience, Inc.
Ernst Conservation Seeds
Flexamat
FloodBreak
Fondriest Environmental
GeoStabilization International
GPD Group
Grande Water Management
GZA
Hull & Associates
Hydra Tech Engineered Products
Hydro International
Hydra TMDL Systems
Insight Pipe Contracting, LLC
JW Faircloth & Sons
Jack Doheny Supplies
Johnson, Mirmiran & Thompson
Kanaflex
K.E.McCartney & Associates, Inc.
Kuert Concrete, Inc.
Kurtz Bros
Mar Mac Construction Products
Meredith Brothers, Inc.
ms consultants
M Tech Company
National Gunitite
NDS, Inc
Neenah Foundry
Northeast Ohio Regional Sewer District

Norwalk Concrete Industries
Ohio Department Natural Resources
Ohio Environmental Council
Ohio EPA
OHM Advisors
Oldcastle Infrastructure
Odle, Inc. Coating & Painting
OWEA
Pine Hall Brick
POWER Engineers, Inc.
Precision Laser & Instrument, Inc.
Redi Rock Structures of OKI
Rymar Waterworks Innovations
Silt Saver
Site Supply, Inc.
Source One Environmental
Stantec Consulting Services Inc.
Stoett Industries, Inc.
Storm Trap
SWPPPTrack
Storm Water Solutions
Terracon Consultants, Inc.
Trench Drain Systems
Triton Environmental
Umbaugh
Underground Rehab Solutions, LLC
V3
Water Environment Federation
Wood
Woolpert

Registration Form

First Name: _____ Last Name: _____

Company/Agency/Affiliation: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Phone: _____ Fax: _____

E-mail: _____

Primary Business: _____

Are you an Ohio Certified Operator (waste water or drinking water) and wish receive a credit certificate for sessions that receive Ohio EPA Operator Certification Unit approval (application is being processed)?

Yes

No

Please provide your operator certification number: _____

Select Registration Type Below

Full Registration

Speaker (\$100)

Student (\$95)

Scholarship (\$95)

Postmarked before April 15, 2019 (\$195)

(See Below)

Postmarked after April 15, 2019 (\$245)

I am attending Evening Reception, May 19, 2019
(included in registration fee)

Additional Registration Options (see page 5) - **Wednesday May 8, 2019**

- \$30 per person Canoe Tour of Cincinnati

- \$30 per person Lick Run and Other Best Management Practices in Cincinnati

- \$60 per person Bourbon Dinner Cruise

Vegetarian options at meals will be available. If **Vegan** option is needed, please check box.

Please indicate method of payment:

Check (Please make check payable to **Tinkers Creek Watershed Partners**). Any processing fees will be billed to the registrant.

Purchase Order Number: _____

(PO number must be enclosed with this form. Fee is to be paid in full prior to the 2019 Ohio Stormwater Conference)

Or, register on-line at www.ohstormwaterconference.com under the conference section of our web site.

If you are paying by check or purchase order, please mail the registration form with your payment.

Cancellation Policy: Cancellations before April 22, 2019, may be subject to a processing fee. After April 22, 2019, registration fees will not be refunded, but may be applied to another individual's registration fees.

**Register on-line at WWW.OHSTORMWATERCONFERENCE.COM or submit this completed form to:
Tinkers Creek Watershed Partners, P.O. Box 444, Twinsburg, Ohio 44087**

Stormwater Awards

Ohio Stormwater Association Awards will be presented at this year's Ohio Stormwater Conference. The purpose of these awards is to recognize outstanding individuals, programs and projects in the profession of stormwater management, and the benefits they provide to the environment and local citizens.

To nominate someone for an award, please go to the Ohio Stormwater Conference website at www.ohioswa.com. The award nominations are due no later than April 1, 2019.

Visit the Conference website to register online and for updated information on the conference. www.ohstormwaterconference.com

OHIO STORMWATER CONFERENCE
Sharonville Convention Center
May 8-10, 2019

