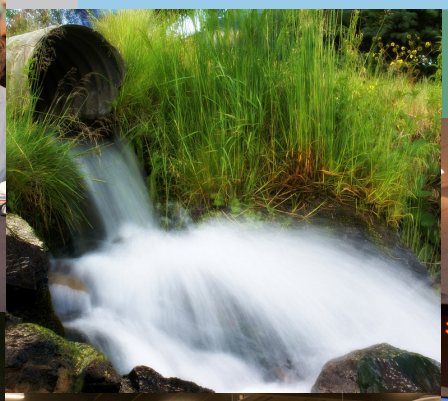
2014 OHIO STORMWATER CONFERENCE



*Dedicated to the advancement of stormwater and natural resources*

www.ohiostormcon.com

# REGISTRATION INFORMATION
## 2014 OHIO STORMWATER CONFERENCE

John S. Knight Center | Akron, Ohio | June 4-6, 2014

# 7th 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 the best circumstance 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 offered to those individuals who request one on the registration form. 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@ohiostormcon.com.

## John S. Knight Conference Center

The Convention Center is located at 77 E. Mill Street, Akron, Ohio 44308. Complete directions can be found on the conference website.

## Hotel Information

The Conference Committee has secured group rates for the following hotels including:

### Akron CityCenter Hotel

Located at 20 West Mill Street, Akron. The rate offered for the conference is $79 per night, plus taxes; this rate is not guaranteed after April 1, 2014.

Reservations by individuals may be made by calling 330-384-1500. The group code is Ohio Stormwater Conference.

### The Radisson Hotel Akron/Fairlawn

Located at 200 Montrose West Avenue, Akron. The rate offered for the conference is $89.99 per night, plus tax. This rate is not guaranteed after May 10th, 2014

Reservations by individuals may be made by calling 330-666-9300, or via their website at http://www.radisson.com/reservation/itineraryEntrance.do?hotelCode=AKRON&promotionalCode=OWATER . Code is OWATER.

### Sheraton Suites

Located at 1989 Front Street, Cuyahoga Falls. The rate offered for the conference is 139 per night, plus taxes. This rate is not guaranteed after May 1, 2014.

Reservations by individuals may be made by calling 330-666-9300 or via their website at https://www.starwood-meeting.com/Book/ohiostormwater The name of the group block is Ohio Stormwater.

## Presented By

The Ohio Stormwater Conference is presented annually by the Tinkers Creek Watershed Partners with assistance from the Ohio Stormwater Association.

Tinker's Creek WATERSHED PARTNERS
Rediscover • Respect • Revitalize

OHIO STORMWATER ASSOCIATION

# Conference Schedule

## Wednesday, June 4, 2014

| | |
|---|---|
| 9:00 a.m. - 3:00 p.m. | CESSWI, CPESC, CPSWQ AND CMS4S Exams |
| 1:00 p.m. - 6:00 p.m. | West Creek Stewardship Center and Restoration Tour |
| 1:00 p.m. - 5:00 p.m. | Bridgestone America's and New Franklin Stormwater BMP Tour |
| 1:00 p.m. - 6:00 p.m. | Middle Cuyahoga River Restoration Tour |
| 1:00 p.m. - 6:00 p.m. | Northeast Ohio Regional Sewer District Projects Tour |
| 1:00 p.m. - 6:00 p.m. | Restoration Tour: Bear, Laurel, Pond Brook and Hudson Run |
| 1:00 p.m. - 6:00 p.m. | Euclid Creek Restoration Tour |

*For more information on tours, see page 5.

## Thursday, June 5, 2014

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 |
| 8:00 a.m. - 1:00 p.m. | EnviroCert Exams |
| 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, June 6, 2014

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. - 1:30 p.m. | Luncheon |
| 1:30 p.m. - 2:30 p.m. | Concurrent Sessions |
| 2:45 p.m. - 3:45 p.m. | Concurrent Sessions |

## Registration Type/Fee

| Attendee | Speaker | Student | Scholarship |
|---|---|---|---|
| $195.00 (postmarked by May 15, 2014) | $100.00 | $95.00 | $95.00 |
| $245.00 (postmarked after May 15, 2014) | | | |

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, June 5 and Friday, June 6, 2014
- Admission to the Reception on Thursday, June 5, 2014

*Register on line*
*ohiostormcon.com*

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

# Certification Exams & Tours

***EXAMS: CESSWI, CPESC, CPSWQ, and CMS4S  Cost: $50 per person  9:00 a.m. - 3:00 p.m.***

The Ohio Stormwater Association (OSA) in conjunction with EnviroCert are offering the following certification examinations for CESSWI, CPESC, CPSWQ and CMS4S. If you are interested in taking any one of these certification exams, please complete the appropriate application process with Envirocert for the exam you wish to take and are interested in becoming certified. Envirocert will handle and process all the application requests and will notify you of your application status. The application process does take around 45 days. Envirocert's webpage is: ***http://envirocertintl.org/***. Please go to the website for application information and to register for the exams. You are not eligible to take the exam unless you have received a confirmation letter by mail from Envirocert prior to the exam date.

**Exam Application Deadline:**

The various Envirocert review committees need 45 days to evaluate your information and confirm your eligibility to sit for the exam. Your materials must be received by Envirocert Inc. no later than April 15, 2014, to allow enough time. Once you have started the application process with Envirocert, please contact Harry Stark at 216-385-5248 or hstark@ohiostormcon.com to register to take the exam at the conference.

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### *West Creek Watershed Stewardship Center and Restoration Project Tour*

Tour Leader: Jen Grieser, Derek Schafer. Cost per attendee $25. Time Frame: June 4, 2014: 1:00-6:00 pm
Leaves from: Sheraton Suites, 1989 Front St, Cuyahoga Falls, OH 44221

This field trip will visit three stormwater-related education and restoration projects within the West Creek watershed. Cleveland Metroparks and West Creek Conservancy will host this fieldtrip. The tour begins on a residential street where right-of-way rain gardens and rain barrels and associated monitoring has been installed to reduce peak storm flows and measure these results. A walk through West Creek Reservation will take participants to the newly opened Watershed Stewardship Center at West Creek, which includes over 30 stormwater control measures outside and numerous watershed-based exhibits inside.

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### *Bridgestone America's Technical Center and New Franklin Stormwater BMP Tour*

Tour Leader: Jill Ward, Kyle Lukes Cost per attendee $25.00 Time Frame: June 4, 2014: 1:00-5:00 pm
Leaves from: Sheraton Suites, 1989 Front St, Cuyahoga Falls, OH 44221

The field trip begins at Bridgestone Americas Technical Center and World Headquarters in Akron, Ohio, a recipient of the Ohio Stormwater Association 2013 Private Project Excellence Award. The comprehensive and sustainable stormwater management plan is to reduce site runoff, improve water quality, and promote storm-water infiltration. Following that stop, the tour will visit New Franklin City Hall. In response to local flooding and with assistance of the Ohio EPA 319 grant, the City of New Franklin responded by installing various storm-water BMPs such as porous pavement, biofiltration, constructed wetlands and meadow conversion.

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### *Middle Cuyahoga River Restoration Tour*

Tour Leader: Joel Bingham, Kevin Grieser Cost per attendee $25.00 Time Frame: June 4, 2014: 1:00-6:00 pm
Leaves from: Sheraton Suites, 1989 Front St, Cuyahoga Falls, OH 44221

Field trip participants will have the opportunity to see a variety of completed ecosystem restoration projects within the Middle Cuyahoga River, from headwater streams to the Little Cuyahoga River and the Cuyahoga River itself. The tour will begin at Haleys Run, a PCB remediation project for Lockheed Martin that turned an off-limits contaminated site into a safe and inviting public park. Next stop is the site of the Little Cuyahoga River restoration project in downtown Akron. The tour will then proceed to Kelsey Creek, an urban head-water stream in Cuyahoga Falls that was restored to address a headcut, eroding banks, and threatened infra-structure. The tour will finally conclude at the Cuyahoga Falls dam removal project on the mainstem of the Cuyahoga River.

# Wednesday, June 4, 2014

### *Northeast Ohio Regional Sewer District Projects Tour*

Tour Leader: Robin Halperin, Victoria McCauley, Paul Kovalcik Cost per attendee $25
Time Frame: June 4, 2014: 1:00-6:00 pm
Leaves from: Sheraton Suites, 1989 Front St, Cuyahoga Falls, OH 44221

This field trip will visit the Dugway Tunnel, the largest single stormwater construction project in NEORSD history, as well as wetland restoration and preservation projects associated with the tunnel and other NEORSD projects. The Dugway Tunnel System is a network of sewers and tunnels being constructed to drastically reduce combined sewer overflows (or CSO), ensuring a cleaner environment for Northeast Ohio. This is part of the Euclid Creek and Dugway Storage Tunnel system which, when completed, should reduce CSOs and decrease flooding. After examining the tunnel construction site, the tour will visit both the restored wetlands onsite and the restored wetlands on an adjacent property. Following these site visits, the tour will visit the mitigation wetlands at the Southerly Wastewater Treatment Plant.

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### *Restoration Sites Tour: Bear Creek, Laurel Creek, Pond Brook and Hudson Run*

Tour Leaders: Babette Oestreicher, Michael Liptak, Meiring Borcherds, Jessica Miller
Cost per attendee $25 Time Frame: June 4, 2014: 1:00-6:00 pm
Leaves from: Sheraton Suites, 1989 Front St, Cuyahoga Falls, OH 44221

This field trip will visit four restoration projects in northeast Ohio, each of which has unique clients, goals, and methods. The tour will begin at the Bear Creek Restoration Project, which includes the restoration of a stream in a heavily urbanized environment in Warrensville Heights. Following the visit to Bear Creek, the tour will visit Laurel Creek, an urban headwater stream in Twinsburg. The tour will continue with a visit to the Pond Brook stream and wetlands mitigation site, located in Liberty Park. From there, the tour will end with a stop at Hudson Run, a stream and wetlands restoration project on the grounds of Hudson High School. The project was designed to serve as a 6-acre Land Lab for Hudson High School as well as providing significant stormwater retention for the City of Hudson.

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### *Euclid Creek Restoration Tour*

Tour Leader: Claire Posius Cost per attendee $25 Time Frame: June 4, 2014: 1:00-6:00 pm
Leaves from: Sheraton Suites, 1989 Front St, Cuyahoga Falls, OH 44221

Join the Euclid Creek Watershed Program partners as we visit three restoration projects in our Watershed Council communities. The field trip will begin at the mouth of Euclid Creek and Lake Erie to see a 2.3-acre restored wetland in an estuarine zone within a federal flood control channel. We will move upstream to visit a low head dam removal project – the site topography and infrastructure made for complex engineering and solutions. The tour ends in a neighboring watershed to see a detention basin that was retrofit into a series of wetland step pools at the headwaters of the Nine Mile Watershed. Both watersheds are fully developed urban/suburban watersheds, highly impacted by flashy flows and storm water runoff. Each stop has a unique story of collaboration, funding, implementation, monitoring and lessons learned.

# Thursday, June 5, 2014

REGISTRATION / BREAKFAST

WELCOME - 8:30 a.m.

OPENING SPEAKER - 8:35 a.m.

James P. (Jim) Tressel

The author of two motivational books, The Winners Manual: For the Game of Life and Life Promises for Success, Tressel spent more than 35 years in college athletics. He became a national figure in college sports at The Ohio State University and Youngstown State University, where he spent 25 years as head coach of championship football teams and successful student athletes.

KEYNOTE PROJECTS - 9:00 a.m.

Quantifying the Benefits of Improvement Projects in an Urban Watershed

John F. Herchl, PE, CDM Smith, Project Manager

Jennifer Eismeier, Executive Director, Mill Creek Watershed Council of Communities

The Mill Creek Volunteer Water Quality Monitoring Program, made up of scientists, residents, and volunteers, is assessing the environmental and economic benefits achieved through the implementation of stream restoration and stormwater best management practices. This presentation will describe the current state of Mill Creek, current monitoring activities, program methods and objectives, and initial findings demonstrating watershed improvement and project effectiveness in achieving attainment of Aquatic Life Use standards in this highly impaired urban watershed.

The Flow Must Go On: Present & Future Wet-Weather Programs at NEORSD

Kyle Dreyfuss-Wells, Manager of Watershed Programs Northeast Ohio Regional Sewer District

NEORSD provides clean-water services to Cleveland and 61 suburbs across the Rocky, Cuyahoga, Lake Erie Direct Tributaries, and Chagrin River watersheds. NEORSD manages sanitary sewage, works with communities to ensure streams are maintained, and provides support services to meet Northeast Ohio's clean-water needs. This presentation discusses NEORSD's wet-weather programs – Project Clean Lake and the Regional Stormwater Management Program. Project Clean Lake is a 25-year, $3 billion effort to address CSOs and includes an innovative mix of gray and green infrastructure. The Regional Stormwater Management Program holistically addresses flooding and erosion. This Program is halted and the presentation updates on efforts to address ever-increasing stormwater management needs.

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

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

T1A: Monitoring, Modeling and Research

USGS Monitoring of Rain Gardens, Bioretention Swales, and Porous Pavers in Ohio: BMP Function vs. Design

Rob Darner, USGS Hydrologist

Analysis of flow data collected in real-world stormwater practices will be presented. Soil moisture data will be used to show how water moves through practices and how much of the practice is utilized. Flow into and out of rain gardens, bioretention swales, and porous pavers (located in Cincinnati, Columbus, and Cleveland areas) as well as soil moisture and ancillary meteorological information indicate that these BMPs often function differently than originally designed.

Assessing Performance of Green Infrastructure Over Time Using Observational Metrics

Nancy Ellwood , CDM Smith, Inc.

Measuring performance of green infrastructure (GI) as a stormwater control practice must be preceded by a basic question: Can GI practices mature and survive in an urban setting long enough to achieve their intended design objectives? This presentation will help attendees understand how GI can succeed in varying terrain over time utilizing numerous sites throughout the Cincinnati area.

T1B: Stormwater & MS4 Program Management

Incentivizing A Green Water Quality Program

Peter Yakimowich, PE, ARCADIS US, Discipline Leader Green Infrastructure

This presentation will discuss how the City of Chattanooga has developed and designed a market based system of credit and incentives to meet both the explicit and implicit requirements of their NPDES permit. The system holds potential benefits to achieve water quality goals and engage the development community in a proactive and positive manner. This credit and incentive program encourages retrofitting and redevelopment, provides flexibility to developers, and can help stimulate the local economy.

Integrated Green Infrastructure Plan to Address CSOs in Lancaster City, PA

Charlotte Katzenmoyer, City of Lancaster Director of Public Works

Hear an overview of Lancaster City's 2011 Green Infrastructure Plan, highlighting the completed construction projects. The plan's approaches allow public works programs to leverage public investments to meet clean water goals for CSO, MS4, and nutrient TMDLs, while restoring city infrastructure in parks, roads, and buildings. This presentation will share lessons learned in cost savings approaches including City Park projects, private sector and public partnerships, stormwater utility fee structures and rebate and incentive programs.

T1C: Stormwater Practice, Planning and Design

Pairing Brownfield Revitalization and Waterway Management

Sally Gladwell, The Mannik & Smith Group, Inc.

Daryl Dwyer, Ph.D. University of Toledo

The USEPA estimates that Ohio is home to 574 brownfield cleanup sites. Some of these, even after successful remediation, have restrictions that make construction of stormwater BMPs daunting. But opportunities are plentiful for those willing to envision a host of sustainable stormwater management features such as bioswales, wetlands, raingardens, and "stormwater amphitheaters." This presentation will review challenges and opportunities and focus on one substantial brownfield in Ohio: the former Toledo Jeep Assembly Plant.

GI Implementation: 5 Years - $80 million

Vicky McCauley PE, Northeast Ohio Regional Sewer District - Design Manager

NEORSD is now implementing its Green Infrastructure program. Over the next 5 years, NEORSD anticipates expending approximately $80 million dollars designing and constructing 10 new GI projects. This presentation overviews the 10 planned projects and will describe the current projects under construction. Opportunities, challenges, and interesting issues inherent to rebuilding stormwater infrastructure in combined sewers dominated area will be discussed, as well as introducing the monitoring and maintenance phase of the District's GI program.

T1D: Watershed Planning

Cuyahoga AOC Restoration: Riparian Habitat on an Industrial River

Matt Hils, ASLA, Behnke Landscape Architecture, Principal

This presentation will show the successful riparian restoration of the Towpath Trail section between Zoar and Cleveland in an industrial, urban setting. This project restored 4.75 acres of upland riparian buffer and 3,000 feet of aquatic edge, along the lower Cuyahoga River shipping channel. This project was a collaborative effort of Behnke Associates, Michael Baker Corporation Cuyahoga County Engineer, Ohio Canal Corridor, City of Cleveland, and Cleveland Metroparks.

Green Bulkheads in the Cuyahoga River Navigation Channel

Jennifer Zielinski, PE, Biohabitats, Senior Water Resources Engineer

Elaine Price, Cuyahoga County Planning Commission, Program Manager

The Cuyahoga River is critical for maritime commerce, but is a daunting corridor for fish that must migrate down to Lake Erie as juveniles and upriver to spawn. Since 2006, habitat technologies have been studied that allow navigation channel maintenance. Cuyahoga County has initiated retrofits that provide both navigational and ecological function using "Biomimicry", a design approach that seeks to emulate nature's patterns. The bulkhead retrofits will be described as well as its potential for other urban waterways.

T1E: Legal

CAFOs Are Full of It: Understanding Regulations and Modern Management Practices for Confined Animal Operations in Ohio

Stacey Pilling, Department of Defense - Environmental Protection Specialist

Sara Ernst Franklin County Soil and Water Conservation District

Over the last several decades, concentrated animal feeding operations (CAFOS) increasingly present challenges to environmentalists, agriculturalists, and regulatory bodies alike. In Ohio, the stormwater permitting process for CAFOs has led to debate regarding what facilities qualify, the potential public health implications for surrounding communities, and their importance to local economies. More needs to be understood about the research and outcomes of best management practices and how the history of the Clean Water Act affects modern decision-making.

Legal Options for Dealing with Basement Backups: Political Subdivision

Erica Spitzig, McMahon DeGulis LLP, Associate

Louis L. McMahon, Partner, McMahon DeGulis LLP

The presentation will discuss Ohio law regarding political subdivision immunity for capacity related basement backups, as well as practical and legal considerations for dealing with backups. Topics covered will include how EPA's Integrated Planning Framework allows for communities to use green and sustainable infrastructure to provide an increased level of service, as well as examples of how Ohio communities are currently addressing the issue.

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

Speaker: Seth Brown, WEF, Stormwater Program and Policy Manager

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

T2A: Monitoring, Modeling and Research

An Engineering Perspective on Green Infrastructure

Jonathan Moody, US EPA, Environmental Engineer

The presentation will discuss various aspects of GI and LID modeling in regard to assessing compliance with environmental standards. As Green Infrastructure and LID practices become a more accepted practice for achieving compliance with environmental standards, regulators need to be able to assess the reasonableness of GI incorporation into hydrologic and hydraulic models and control plans. EPA has worked on two documents aimed at equipping regulators with the tools to evaluate the benefits of Green Infrastructure and LID practices.

Green Infrastructure to Reduce Stormwater Runoff in New York City

Julie Stein, HDR, Inc., Northeast Area Stormwater Lead

Water quality in New York Harbor is currently impacted by combined sewage and stormwater discharges during large or intense rainfall events. In accordance with the 2012 Modified CSO Consent Order, the New York City Department of Environmental Protection will implement green infrastructure practices incrementally over the next two decades to manage one inch of runoff from 10% of its impervious surfaces in combined sewer areas citywide. This presentation will show how the performance of the green infrastructure systems vary with storm size and watershed as well as other factors such as upstream controls, subsurface conditions, land use and design.

T2B: Stormwater & MS4 Program Management

A Holistic Approach to Regulatory Compliance in the Chesapeake Bay Watershed

Fernando Pasquel, Director of Stormwater & Watersheds

Mark VanAuken, ARCADIS U.S., Stormwater/MS4 Discipline Leader

Many communities are faced with meeting multiple regulatory requirements and dealing with budget struggles and interdepartmental issues. Using an integrated watershed management approach can help these communities identify and select the most cost-effective approach to stormwater management – and maintain regulatory compliance. Individuals will learn what integrated watershed management is and how it can help communities maintain regulatory compliance and provide cost-effective stormwater management.

MS4 Permits as a Driver for Watershed Restoration

Jennifer Zielinski, PE, Biohabitats, Senior Water Resources Engineer

Hear how Montgomery County's watershed assessment approach was used to identify potential restoration projects for MS4 and TMDL compliance. Analysis identified hundreds of potential sites for new stormwater BMPs, green streets, stream restoration, reforestation and neighborhood on-lot practices. Descriptions of field assessments, prioritization of restoration, development of concept designs will be used to show how the effort populated County's capital improvement program (CIP) for restoration work.

T2C: Stormwater Practice, Planning and Design

Bioretention Basin Design within an Industrial Land Use Setting

James Akins, EMH&T, Water Quality Compliance Manager

An industrial operator addressed violations to the Ohio EPA's Multi-sector Stormwater General Permit and small MS4 community stormwater management regulations by preparing a design of a water quality BMP system. The design was in collaboration with the facility operator, the Ohio EPA and the small MS4 community. Water quality design provided treatment of stormwater runoff and log spraying runoff within outdoor log storage yard prior to discharging to the small MS4 system.

Lessons from Design and Construction of Bioretention and Permeable Pavement
Jay Dorsey, Water Resources Engineer, ODNR, Division of Soil and Water Resources
Amy Brennan Director, Chagrin River Watershed Partners, Inc

A partnership of Northeast Ohio stormwater professionals are engaged in a collaborative effort to demonstrate innovative stormwater approaches in Ohio's Lake Erie watershed and increase the understanding of BMP hydrologic function. This presentation highlights valuable lessons learned during design and construction of three bioretention cells and permeable pavements in the Chagrin River Watershed.

T2D: Watershed Planning

Restoring the Little Cuyahoga, Akron's Forgotten River
Eric Akin, NEFCO, Environmental Planner

This presentation will discuss implementation of balanced growth planning in a urban stream with combined sewer overflows. As Akron works to eliminate CSOs from the Little Cuyahoga River, other communities are now organizing to address historic watershed problems upstream of the CSOs. For the first time, communities from the rural headwaters in Portage County to the confluence with the Cuyahoga River in urban Akron are working together to improve the entire Little Cuyahoga River.

The Story of Two Urban Streams
Vicky McCauley PE, Northeast Ohio Regional Sewer District - Design Manager

NEORSD is managing two stream projects for partners within the Doan Brook and West Creek watersheds. Although the projects have similar goals; they are very different in project funding, procurement methods, motivation for the project, issues, obstacles and challenges. This presentation will overview the projects from design to completion of construction. The project challenges will be highlighted, as well as the successes in meeting the project goals.

T2E: Legal

Watershed Management through the Conservancy Act
James L. Rozelle, PE, PS, F. ASCE, Storm Water Engineering LLC

This presentation will discuss the feasibility of establishing a Conservancy District to deal with water resource issues on a watershed basis. Historically, the Ohio Conservancy Act (ORC 6101), has been used primarily for major flood control projects in large watersheds. Today however, many communities are attempting to deal with local flooding issues, storm water management or watershed protection with only limited ability to resolve these problems because much of the watershed is outside their political boundaries. The Conservancy Act provides an opportunity for local jurisdictions to join together to resolve their problems on a watershed basis.

Trends in Stormwater Surrogacy
Andrea M. Salimbene, McMahon DeGulis LLP

This presentation will discuss legal trends in stormwater surrogacy – the concept of substituting indicators, such as turbidity, sedimentation, impervious cover or flow, for pollutants. The presentation will discuss the evolution of these concepts and provide a status update in light of the Virginia Department of Transportation v. EPA case decided in 2013 in the U.S. District Court for the Eastern District of Virginia.

T2F:

Or Approved Equal – Understanding Proprietary Treatment Manhole Sizing and Use
Phillip Taylor, Hydro International - Stormwater Solutions Specialist

Manufactured treatment manholes are commonly employed solutions for meeting water quality objectives. However determining the best method for sizing and comparing performance claims between different options can be very confusing. This presentation overviews methods of sizing these systems using the typical available product information and works through a process engineers and reviewers can use to confirm the devices are appropriate, and alternates meet the water quality objectives.

Getting the Most Out of Your Design Software
Dino Lustri, IMAGINiT Technologies, Senior Application Expert

You have access to a variety of water resource tools in the applications you own. In this class, you get a better understanding of what equations are being used in which applications and how to find the right fit for the project requirements that are being passed on down to you. We review Storm Sewers, Hydrographs, Express Tools, SSA, and River Analysis.

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

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

T3A: Monitoring, Modeling and Research

The Hydrologic Benefits of Naturalizing Storm Water BMPs
Scott Dierks, Senior Water Resources Engineer, Cardno JFNew
Jay Dorsey, PE, PhD ,Water Resources Engineer Ohio DNR

If hydrologic efficiency, in terms of runoff capture, is one the goals of vegetated storm water BMPs, than the research is clear that deep-rooted native plants with robust rhizosphere ecosystems are the BMP of choice. The presentation will present a summary of research on monitored BMPs that show an improvement in hydrologic performance over time due to the maturation of deep-rooted native plant ecosystems. We will also present the results of an extended DRAINMOD model analysis to demonstrate the range of hydrologic impacts that can accrue from "naturalizing" stormwater BMPs.

Design Modifications to Enable BMP Monitoring
Ryan Winston, Extension Associate Engineer, North Carolina State University

Monitoring of stormwater control measures provides valuable information about their performance. This presentation outlines the considerations that are necessary during design in order to facilitate hydrologic monitoring of permeable pavement and bioretention systems using specific examples from Northeast Ohio demonstration projects.

Hydrologic Performance of Permeable Pavement and Bioretention on Clayey Ohio Soils
Ryan Winston, Extension Associate Engineer, North Carolina State University

This presentation shares results of field monitoring of permeable pavement and bioretention systems on clayey soils in northern Ohio. It will show that the volume reduction on even these soils is significant and should be part of the overall post-construction stormwater management strategy and that good measurements or estimates of soil hydraulic conductivity are important for predicting how LID stormwater controls will perform.

T3B: Stormwater & MS4 Program Management

Ohio EPA Updates and Discussion

Hear updates from the Ohio EPA on stormwater and watershed issues.

T3C: Stormwater Practice, Planning and Design

A Risk-Based Approach to Management of Stormwater Assets
Kevin Slaven, Senior Asset Management Consultant
Mark VanAuken, Stormwater/MS4 Discipline Leader, ARCADIS U.S.

Asset management is becoming a preferred business process for municipalities and DOTs. A risk-based approach to stormwater system asset management can help communities/agencies inventory their assets, determine the current physical state and performance capabilities of each asset, establish its probability of failure and its consequence of failure, and lead to a cost-effective prioritization of future capital investments. Individuals will learn what risk-based asset management is and how it can help communities address regulatory requirements, prioritize stormwater capital investments, and avoid stormwater system failures.

Stormwater Planning: Balancing Asset Renewal with Water Quality Compliance Requirements
Lisa Jeffrey, PE, Brown and Caldwell, Senior Associate

This presentation will include discussion of a comprehensive stormwater master planning project that was conducted on a facility-wide basis in Maryland. As part of the master planning process, asset renewal needs were balanced and prioritized in conjunction with the water quality compliance requirements in keeping with both the MS4 Permit and the Chesapeake Bay TMDL.

Implementation of Low Impact Development in West Virginia
Dr. Sebastian Donner, WV DEP Stormwater Specialist

The West Virginia Department of Environmental Protection, in collaboration with other government agencies, non-profits, businesses, and residents, is raising awareness about Low Impact Development and post-construction runoff reduction. This presentation details approaches that WV DEP has taken to address stormwater management issues in both regulated MS4s and in non-regulated areas.

T3D: Watershed Planning

Making Flood Prediction Work For Your Community
Mary Whitehead, PE, AECOM, Project Engineer

The City of Columbus owns the West Columbus Local Protection Project (WCLPP) or Franklinton Floodwall, and has responsibility to operate their flood control system in response to credible flood warning information. This presentation discusses conclusions from an existing system evaluation, the process used to assess augmentation alternatives and the alternative the City selected in moving forward toward an improved flood prediction process.

Illicit Discharge Screening Success with Novel Infrared Aerial Imagery Technology
Bradford Derrick, P.E., DLZ, Civil Engineer
Meghan Sigford, CFM, URS Corporation, GIS Specialist

The data processing and evaluation methodology used to identify over 150 thermal anomaly sites indicating the location of potential Illicit Discharges will be discussed. The process used to further evaluate these sites for ranking and in some cases field inspections will be evaluated, along with methodology developed for field inspections of approximately 1/3 of anomalies, including rapid visual assessments and real-time, in-field water quality evaluations.

Pond Brook: Restoration of a Ditch Through a Coalition of Partners
Mike Johnson, Metro Parks Serving Summit County, Chief

The Pond Brook project is an on-going effort to restore nearly 4 miles of stream and hundreds of acres of degraded wetlands. This presentation will focus on how Ohio's water quality standards guided the planning and development of this project including some aspects that were counter intuitive to a fully functioning ecosystem restoration. Funding strategies will be explored and the value of working with a coalition of partners will be discussed.

T3E: Legal

Creative Solutions for Funding Stormwater Projects
Sarah J. Gable, McMahon DeGulis LLP, Associate
Kristen Risch Coldwater Consulting LLC, Prinicpal/Owner

This presentation will make audience members aware of the variety of funding sources for stormwater projects. We will describe creative ways to fund your stormwater project. We will review classic funding sources such as state and federal stormwater grants as well as more creative grant solutions. We will also explore ways to recover match funding and any other out of pocket expenses incurred throughout the process.

Legal Roundtable

T2F:

Economics of Grey vs. Green/LID Stormwater BMPs
Stephen Spoonamore, CEO ABS Materials Inc.

This presentation documents the total capital expense, operating expense, return on investment and performance values (water quality and nutrient loading) of 10 working Green/LID stormwater systems including systems treating leachates from landfills and garbage truck parking structures. Lifecycle treatment costs of $0.0012/gallon or less will be presented as well as economic models for agencies, planners and stormwater system designers utilizing access from corporate entities, the National Science Foundation, and the Department of Energy.

Performance Monitoring of a High Flow Bioretention System in Washington
Chris French, Filterra Bioretention Systems, R&D Manager

Monitoring results of the Filterra® Bioretention System and subsequent approved through the Washington State Technology Assessment Protocol – Ecology (TAPE) in the fall of 2013 will be presented. This high-flow bioretention practice was installed to remove suspended sediments, nutrients, heavy metals, bacteria and oil & grease from storm flows in the City of Bellingham, Washington. Sediment and phosphorus bioretention removal mechanisms will be discussed as well as the Washington TAPE protocol.

Performance and Capacity of Compost Biofilters in Urban Runoff and Green Infrastructure Applications
Dr. Britt Faucette, Filtrexx Performance of Compost Biofilters

The objective of this study was to: i) determine the multiple event removal efficiency and capacity of compost filter socks (FS) and FS + natural sorbents (NS) to remove soluble phosphorus, ammonium-nitrogen, nitrate-nitrogen, E. coli, Enterococcus, and oil from urban storm water runoff. Treatments were exposed to a maximum of 25 runoff events or when removal efficiencies were ≤ 25%, whichever occurred first.

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

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

# Friday, June 6, 2014

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

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

F1A: Monitoring, Modeling and Research

SWMM Modeling Procedure for Green Infrastructures to Understand Effects of Street Flooding

Hazem Gheith, ARCADIS, Central Urban Drainage Planning Leader

Qiuli Lu , Arcadis, Project Water Resource Engineer

This presentation will illustrate the decision-making involved in the types of detailed multi-objective planning projects and a detailed approach to model GIS using SWMM through two case studies from Columbus, Ohio. It will demonstrate how consideration is necessary to assure that improvements to one collection system (storm or sanitary) will not be at the expense of adding flows to the other system.

Comprehensive LID BMP Hydrologic Performance Assessment

Scott Dierks, PE, Senior Water Resources Engineer, Cardno JFNew

Jay Dorsey, PE, PhD Water Resources Engineer Ohio DNR

The Chagrin River Watershed Partners and Old Woman Creek National Estuarine Research Reserve are leading a collaborative group of stakeholders in an extensive LID BMP research project. Key project goals are to develop performance expectations and a crediting system for BMPs in Ohio's Rainwater and Land Development Manual. This talk summarizes the results from extensive SWMM modelling on eight primary LID BMPS – bioretention, permeable pavement, green roofs, vegetated swales, underground detention, infiltration trenches, filter strips, soil renovation and dry detention.

F1B: Stormwater & MS4 Program Management

How Does a Community Maintain a Stormwater Infrastructure Database?

Adam Pooler, GISP, Stantec Consulting, Senior GIS Analyst

Troy Sova, GIS Analyst, Stantec Consulting

Stantec Consulting completed a stormwater infrastructure database project for an urbanized city. The initial phase of this project was to gather paper as-built drawings and collect storm water features through digitization. The next phase incorporated all digital storm water features into ESRIs Local Government Information Model. The city chose the Local Government model because of its standardized layout of features and attributes.

Lesson's Learned- How to Conduct Stormwater Asset Inventory and Inspection

Eric Baker, Northeast Ohio Regional Sewer District, GIS Analyst

Miklos Nadas, Brown and Caldwell,

Costas Kontos, URS Corp

As part of implementing a regional stormwater management program, the Northeast Ohio Regional Sewer District (NEORSD) initiated inspections of 400 miles of streams, collecting observations and photos of operations and maintenance issues. This presentation will describe the implementation of a field-to-office-to-field workflow using mobile data collection technology to disseminate field information to non-GIS users, facilitating a quick turnaround between problem discovery and mitigation.

F1C: Stormwater Practice, Planning and Design

Stormwater Chic

Jeffrey R. Kerr, AICP, ASLA, Environmental Design Group, Principal

Stormwater features are starting to move from the backwaters of the project to "in vogue". This session will showcase how green infrastructure elements have been center stage elements in project design solutions. Local and national examples will be explored where stormwater best management practices have set the stage for the overall design by creative aesthetic treatments to whimsical artistic expressions while still managing regulatory requirements.

UCI Mariott Hotel Infiltration System

Ken Bukowski, P.E., GPD Group, Civil Engineer

Kim Colich, P.E., NEORSD

A 1.2 acre ultra-urban redevelopment site located in University Circle Downtown Cleveland, Ohio has eliminated stormwater flows from going into a combined sewer leading to Doan Brook and Lake Erie. This redevelopment had numerous stakeholders including NEORSD. Rooftop discharge is also infiltrated through the pervious pavers system using chambers and perforated sewer trenches. The site's systems are being monitored, and have proven no discharges from the site. This project has integrated multiple innovative green infrastructures into traditional design practices and takes advantage of unique site infiltration opportunities..

F1D: Watershed Planning

Restoring Ward Creek at Lost Nation Municipal Golf Course

Keely Davidson-Bennett, Chagrin River Watershed Partners, Inc.

Chagrin River Watershed Partners, Inc. and the City of Willoughby partnered to stabilize eroding streambanks, increase floodplains, and plant native woody vegetation and short grass riparian meadow along Ward Creek on the Lost Nation Municipal Golf Course. This project demonstrates that stream restoration can successfully occur on currently operating golf courses and meet the needs and concerns of golf course operators while improving water quality.

A Watershed-friendly Stream Maintenance Guide for Communities

Jared Bartley, Rocky River Watershed Coordinator

Many communities struggle constantly with stream maintenance issues such as eroding streambanks, clogged culverts and debris jams that threaten private property and public infrastructure, relying on resident complaints and expensive emergency fixes that too often have a negative impact on stream health. Workshop participants will learn the technical, programmatic and Army Corps/Ohio EPA permit-related tools necessary to implement a systematic, proactive watershed-friendly stream maintenance program.

F1E: Transportation

Interchanges: Are There Stormwater Management or Water Quality Benefits Available?

Mark McCabe, Gresham, Smith and Partners - Program Manager

Becky Humphreys, ODOT, Environmental Hydraulic Engineer

This presentation will include a general overview of what other DOTs across the country are doing with interchanges and are they levering these as potential stormwater management opportunities, water quality best management practices. This presentation will also explore what potential hurdles might exist from a regulatory perspective and what might need to be developed, researched or demonstrated in order to understand and incorporate aspects of the interchange areas as stormwater management controls or BMPs.

Managing Wastes from a Non-Traditional MS4

Christopher Miller, University of Akron - Associate Professor

Hans Gucker ODOT - Construction Hydraulic Engineer

Managing of wastes generated by stormwater system cleaning and street sweeping is required under the Ohio EPA MS4 Permit. This ses-

sion will discuss how these wastes are regulated and permit requirements of MS4 permitted communities. ODOT, a non-traditional MS4 entity, will discuss challenges of meeting these permit requirements in a linear environment. The University of Akron will present current research being conducted through ODOT to develop a comprehensive strategy for cost effective management of the wastes. Best practices for operation will also be discussed.

F1F

Solutions for Metals; Peat Sorption Media, Downspout Filters and Permeable Pavement.
Paul Eger, Environmental Engineer, Global Minerals Engineering LLC

American Peat Technology (APT) has developed a peat-based ion exchange media, APTsorbTM, which harnesses the natural affinity of reed-sedge peat to remove heavy metals from stormwater. APTsorbTM has been used successfully in the treatment of mine discharge and industrial stormwater. In 2013 an industrial downspout filter was installed to remove zinc from roof runoff and in the spring of 2014 a passive stormwater treatment system will begin treating parking lot runoff in Aitkin, MN.

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

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

F2A: Monitoring, Modeling and Research

Lessons Learned from Stormwater BMP Monitoring in Cincinnati
Laith Alfaqih, Metropolitan Sewer District of Greater Cincinnati

MSDGC stormwater green infrastructure BMPs are currently monitored and its data being analyzed to inform the operation and maintenance and the future designs of BMPs within MSDGC's service area. Assessment of the performance of the installed green infrastructure is critical to MSD. Quantitative monitoring of selected green infrastructure, or combinations thereof, is being performed with USEPA and USGS. Lessons learned from existing green infrastructure construction, maintenance, and operation methods in Cincinnati will be discussed.

Cincinnati Green Infrastructure O&M Successes, Challenges & Lessons Learned
Amy Still, Metropolitan Sewer District of Greater Cincinnati

Hear lessons learned as the MSD has partnered to fund the installation of green infrastructure through the Enabled Impact Program. Partners agree to maintain and operate the stormwater controls and MSD regularly inspects to ensure maintenance and continuing function and also tracks the related O&M activities at each stormwater control. Tracking provides feedback that improves life cycle costs, designs, and maintenance activities that extend the life of stormwater controls.

Urban Retrofit Model for Stormwater Improvement Planning
Suzanne Ciavola, AECOM, Project Engineer
Zachary Keegan AECOM, Project Manager

This presentation will discuss the Urban Retrofit Model, a spreadsheet developed by to assist municipalities/jurisdictions in determining their retrofit goals toward TMDL compliance and to identify stormwater retrofit options to achieve pollutant reductions. This model provides a streamlined mechanism to estimate the impact of small and large scale BMPs for water quality improvements across multiple drainage basins at the county, municipality, or facility level.

F2B: Stormwater & MS4 Program Management

Maximizing Funding and Resources to Meet Multiple Objectives
Kevin Grieser, Biohabitats, Landscape Ecologist
Becky McCleary City of Cuyahoga Falls, Public Utilities Customer Advocate

In 2013 the City of Cuyahoga Falls restored approximately 1,000 linear feet of degraded Kelsey Creek using funding from Ohio EPA's Surface Water Improvement Fund and the City themselves. Using a valley restoration approach the project met multiple objectives including: stabilizing the channel, protecting infrastructure, improving habitat, enhancing the City's Bicentennial Arboretum, and creating a school land lab. The project is an example of maximizing restoration dollars to meet multiple objectives.

Stormwater Program Evaluation – Always Room for Improvement
Peter Yakimowich PE, ARCADIS US Princ Consultant, Discipline Ldr Green Infrastructure
Carol Malesky, Principal Consultant, Red Oak Consulting

Since creating your stormwater utility, program needs and expectations have likely changed. In the spirit of adaptive management, this presentation will demonstrate tool a utility can use to incorporate continuous improvement into their stormwater program. Attendees will understand why stormwater program evaluation is needed, identify how to improve a stormwater program using a score card framework, and identify who should use the score card and who should be involved.

Development Regulations for Post-Construction Runoff Control: New Tools & Models
Kirby Date, AICP, Community Planning Program Manager, Cleveland State University
Amy Brennan, Director, Chagrin River Watershed Partners

MCM 5 is focused on the post-construction runoff characteristics of development sites. These are best addressed during the project design phase, through local government planning policy and regulations for zoning, site development, stream/slope protection, woodland protection, and similar provisions. This session will provide an overview of best practices, and new tools and resources, including web tools and technical assistance, that are available to help local governments implement them. In particular, new model and example regulations, and a zoning code checklist, have been developed, which should be useful to MS4 program communities.

F2C: Stormwater Practice, Planning and Design

A Comparison of Two Detention Basin Retrofit Approaches
Kelly Kuhbander, P.E., LEED AP, Strand Associates, Project Engineer

Stormwater management techniques to address water quality and TMDL requirements continue to evolve. Cost-effective opportunities to treat stormwater runoff from previously developed areas presents a variety of challenges. One solution that has recently emerged is detention basin retrofits. This presentation will demonstrate a case study of two detention basin retrofits recently constructed in Northern Kentucky by the Banklick Watershed Council.

Green Infrastructure Demonstration Showcase at Mayfield Heights City Hall
Thomas M. Evans, ASLA LEED AP, URS Corporation

Mayfield Heights is a built out, suburban community east of Cleveland, facing stormwater issues common to many older communities. The City realizes it must reduce stormwater runoff and control nonpoint source pollution at its source by weaving innovative stormwater solutions into the existing urban fabric. The Green Infrastructure Demonstration Showcase project demonstrates cost effective, retrofit, nonpoint source control measures to local businesses and residents.

Utilizing Infiltration Trenches to Meet Post-Construction Requirements
Jay Dorsey, PE, PhD Water Resources Engineer Ohio DNR

Infiltration trenches can be an effective complementary post-construction stormwater practice in the right setting but it is important to understand what soil and site characteristics suggest this option. This presentation uses a

case study from the Cleveland area to illustrate appropriate planning, site evaluation and design.

F2D: Watershed Planning

Using Stream Restoration to Meet TMDL Requirements

Kelly Mattfield, Brown and Caldwell, Supervising Water Resources Engineer

This presentation will discuss how stream restoration can be used to meet TMDL requirements and present project examples that were (or will be) used to meet regulatory compliance goals. The planning, design and construction process of various projects will be discussed in the presentation along with a discussion of how the projects fit into TMDL compliance plan and pollutant reduction strategies for various communities.

Construction of a Floodplain Non-point Source Pollutant Attenuation System

Craig Straub, Apex Companies: Restoration Ecologist

This presentation, regarding the East Fork Mill Creek, will exhibit how problems associated with channel erosion, flooding, woody debris jams, and water quality impairments can be resolved with a floodplain pollutant attenuation system to improve water quality and enhance aquatic and riparian habitat. Ecological restoration techniques will be discussed as a mechanism to accelerate the secondary successional processes to improve ecosystem function, reduce nutrient loading and increase biodiversity.

Post Construction Status: Tinkers Creek Slope Stabilization and Stream Restoration

Ivan Valentic, URS Corp. Project Manager/Landscape Architect

Jay Mosley, URS Corp, Hydrologist/Storm Water Engineer

The Tinkers Creek Slope Stabilization and Stream Restoration project was completed in 2010. This presentation review the current conditions, and analyzes the success or failures of the project 4 years later. The conclusions and analysis will summarize the following topics: occurrence of overbank events, and data on the stream habitat, bank stability, stream structures, vegetation conditions, and slope conditions in Tinkers Creek since the completion of the project.

F2E: Transportation

ODOT Off-site Mitigation and Fee In-Lieu Program

Jon Prier, P.E., ODNR, Natural Resources Engineer

The Ohio Department of Transportation (ODOT) encounters various issues associated with meeting water quality treatment requirements in urban settings. The lack of available space to implement traditional stormwater BMPs can make onsite water quality treatment expensive and sometimes infeasible. Therefore, ODOT is working with the Ohio Environmental Protection Agency (OEPA) and the Ohio Department of Natural Resources (ODNR) to initiate a pilot system to facilitate off-site mitigation. This presentation includes the initial findings of that pilot system and discusses considerations for implementing off-site mitigation.

LPA Projects & Addressing Post Construction Water Quality and Erosion and Sediment Control

Jennifer Deaton, Coyle SWPPP Professionals, Vice President

Hear the differences between Local Public Agency projects and standard local projects and how rules and regulations apply to each project type. Local projects accepting FHWA funding (LPA) must abide by ODOT Supplementation Specification 832 for temporary erosion and sediment controls. This may differ from the policy set forth from non-federally funded projects. This presentation will explain the different approach to managing federally funded local projects.

Design and Construction of Permeable Pavements for Roadway Shoulders

David Hein, Applied Research Associates, Inc., Principal Engineer

This presentation reports findings of the National Cooperative Highway Research Program (NCHRP) investigation of the suitability for permeable pavements for use for roadway and highway shoulders. It will also introduce the resources such as evaluation and suitability matrix that are provided in the technical report (Published October 2013) and help the audience to understand issues related to the suitability and design of permeable shoulders for roadway applications.

F2F

Elevating the Quality of a Turf Reinforcement Mat Design

Randy Thompson, P.E., Propex Inc. - Technical Services Engineer

For years, engineers have been designing with Turf Reinforcement Mats (TRMs) based on water velocity and shear stress values determined in a laboratory. This presentation seeks to elevate the quality of TRM designs by discussing recently published data from Colorado State University confirming the construction of the material matrix may be more critical to field performance than the reported hydraulic lab values used currently for selection.

Centrifugally Cast Concrete Pipe (CCCP)

Joseph M. O'Brien, ENTEL, Inc.

Hear details on the uses, constraints, advantages and cost effectiveness of Centrifugally Cast Concrete Pipe (CCCP) compared to other trenchless pipe rehabilitation methodologies. The presentation will demonstrate why CCCP is an excellent technology for saving capital on storm water infrastructure projects while greatly extending the life of infrastructure. CCCP has been approved by ODOT for culvert rehabilitation and has been used on ODOT, municipal, and county projects.

Preventative Maintenance and Repair of Storm Drains

Peter Blais, PE, HydraTech Engineered Products, LLC

The Presentation is intended to educate the audience on the various rehabilitation methods to repair storm drain culverts and the cost effectiveness of these methods. It focuses on the identification and understanding of the failure mechanism in corrugated metal pipe (CMP) and the developments in spray applied technologies that have proven to be cost effective maintenance solutions to significantly extend the design life of CMP.

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

SESSIONS / TRACKS - 1:30 to 2:30 p.m.

F3A: Monitoring, Modeling and Research

Modeling Runoff and Finding Solutions through GIS Tree Canopy Analysis

Will Ayersman, Davey Resource Group, GIS Analyst

Trees provide significant environmental benefits and reduce stormwater runoff. GIS assessment of urban tree canopy (UTC) and the variables and technologies needed to model and rank runoff potential will be presented. I-Tree software that estimates runoff and estimates of ecosystem benefits of tree canopy will be discussed as well as examples of projects from Ohio communities in order to show how results can be utilized in their work.

Retrofitting to Reduce Runoff through GIS, Green Infrastructure and Trees

Shirley Vaughn, Davey Resource Group, Business Developer

Learn how the Village of Richfield identified areas with high runoff potential using GIS, and ranked them as opportunities for tree planting and green infrastructure. Details of the GIS assessment and stormwater modeling will be discussed as well as how they were utilized to create site plans used for retrofitting two sites in 2013. Discussion will illustrate this turnkey stormwater management project.

F3B: Stormwater & MS4 Program Management

Implementing Residential Stormwater Management in Newell/Ward Creek

Christina Znidarsic, Chagrin River Watershed Partners, Inc.

Highlights of Chagrin River Watershed Partners, Inc.'s Great Lakes Restoration Initiative funded outreach campaign promoting residential installation of rain

barrels, rain gardens or shade trees in the Newell/Ward Creek subwatershed of the Chagrin River. The presentation includes program components, successes, costs, next steps and details how outcomes from earlier CRWP programs and other stormwater subsidization programs in the United States informed the Newell/Ward Creek program.

Private Property Recruitment for Street-Scale Stormwater Project
Jennifer Grieser, Cleveland Metroparks, Senior Natural Resources Manager
Derek Schafer, West Creek Conservancy, Executive Director

This presentation shares insight into private homeowner motivation and participation in a stormwater retrofit project (the Neighborhood Stormwater Stewardship Initiative) on two streets adjacent to West Creek Reservation. Additional social outcomes and lessons learned (i.e. aesthetics, community development) will also be discussed, including recommendations for future similar projects. Attendees will learn how homeowners respond to different outreach mechanisms.

F3C: Stormwater Practice, Planning and Design
Greener Grounds: Urban Regeneration Anchored by Vacant Parcel Green Infrastructure Installations
Steven D. Thompson, P.E., AECOM, Project Engineer
Tim Fallara, City of Columbus Project Manager
Eric D. Onderak, AECOM Project Manager

The purpose of this project is to manage storm water using available Green Infrastructure and Low Impact Development technologies on vacant land while providing a cost-effective benefit in terms of water quality and quantity to CSO, DSR, WIB, and storm water discharges. AECOM coordinated with the City Land Redevelopment Office and identified 7 vacant sites and associated green infrastructure concepts as part of the preliminary design effort. These include 5 sites located in the Southern Orchards residential area and include bioswales, rain gardens, bioretention cells, and tree planters to manage storm water from homes, alleys, and streets prior to entering the combined system.

Stormwater Retrofits in the NYC Watershed: Planning and Implementation
Lowell A. Kachalsky, P.E., O'Brien & Gere Engineers Inc, Vice President
Andric V. Rodriguez, P.E. O'Brien & Gere Engineers Inc, Project Manager

Per the NYSDEC MS4 General Permit for Stormwater Discharges (GP-0-10-002), municipalities within the NYC EOH Watershed are required to develop a Stormwater Retrofit Plan geared towards phosphorus reduction. The Northern Westchester Municipalities within the NYC Watershed joined forces to form an intermunicipal coalition (EOHWC). A region-wide Stormwater Retrofit Plan for these municipalities was developed to meet the requirements of GP-0-10-002 and provided detailed designs for several of the recommended stormwater retrofits.

F3D: Watershed Planning
Looking Downstream from Stormwater Outfalls: Stream Geomorphology and Ecology 101
Robert J. Hawley, Ph.D., P.E., Sustainable Streams, LLC; Principal Scientist

This presentation is an introduction to stream geomorphology and ecology will provide stormwater professionals with a baseline understanding of what their programs and designs are trying to preserve. It will share specific insights related to stormwater management from regional research in southern Ohio/northern Kentucky. Biological function, habitat niches, geomorphic disturbance, and the natural flow regime will all be discussed as they relate to stream integrity.

BREAK - 2:30 to 2:45 p.m.

SESSIONS / TRACKS - 2:45 to 3:45 p.m.

F4A: Monitoring, Modeling and Research
Green Infrastructure Monitoring and Lessons Learned for O&M Strategies
John Ricketts, PE, URS, Senior Project Engineer
Kari Mackenbach, CFM, URS, National Green Infrastructure Practice Leader

Louisville MSD is integrating green infrastructure to reduce the stormwater volume contributing to the combined sewer system as part of its Integrated Overflow Abatement Plan. The first project is roughly 28 acres and utilizes pervious pavement and tree box design technologies designed and sized to meet consent decree compliance requirements. The presentation will evaluate lessons learned in design and installation as well as evaluate available performance data and maintenance needs.

F4B: Stormwater & MS4 Program Management
Advancing the Mill Creek Watershed Monitoring Program through Innovative Technology
Kara Scheerhorn, Mill Creek Watershed Council of Communities

Collection of data allows us to track trends, draw conclusions, and better understand the world we live in. For water quality monitoring groups, especially volunteer-based groups, volunteer time and the ability to retain volunteers is always a challenge. Using smartphones and tablets "Liquid Field Notes (LFN)" collects, stores, analyzes, secures and distributes scientific data while out in the field.

F4C: Stormwater Practice, Planning and Design
Green Infrastructure at University of Cincinnati Clermont College
Chris Rust, Strand Associates, Inc. - Project Manager

The University of Cincinnati initiated a stormwater master plan at their Clermont College campus in Batavia, Ohio, with an emphasis on green infrastructure to improve water quality on the campus. The stormwater master plan included a variety of green infrastructure features intended to function together to improve water quality, enhance the aesthetics of the campus, and provide educational opportunities for students.

Porous Asphalt - An Owner's Perspective
Paul Wilkerson, PE, Metro Parks, Serving Summit County (Retired)

Metro Parks, Serving Summit County has constructed several parking areas using porous pavements, since 2007. Metro Parks now owns and manages five porous asphalt lots, plus one with pervious concrete, and one with permeable unit pavers. A variety of factors must be considered when designing for porous pavements, but most are common practice in the design and construction industry. Owners should be aware of the unique qualities.

F4D: Watershed Planning
Dam Removal Success with Design-Build Partnering
Joel Bingham, EnviroScience, Inc. - Restoration Group Manager

This presentation will discuss the design-build approach to successful dam removal considering ecological restoration objectives and perspective of multiple stakeholders. Based on a case project, the design-build team will provide an overview of the process to navigate through unknown circumstances and achieve the successful removal of two 100-year old dams in Cuyahoga Falls, Ohio. The team will discuss unique site circumstances that provided advantages and challenges.

F4E: Watershed Planning
Pervious Concrete - An In-Depth Review in 2014
Bob Banka, Concrete Management Solutions - President

Our program will cover advances made in the pervious concrete industry over the past 35+ years and bring the attendee up to date with the latest information, materials and tools required to do work that will generate more work. By learning about material choices and installation methods that work and some that have not worked you will go back to your business armed with the knowledge needed to do outstanding pervious installations.

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S&ME, Inc.
Site Supply, Inc
Stantec Consulting Services Inc.
StrataWORKS LLC
The Trust for Public Land
URS
Williams Creek Consulting
WEF

## 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.ohiostormcon.com. The award nominations are due no later than April 1, 2014.

# Registration Form

First Name: _____ Last Name: _____

Company/Agency/Affiliation: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Phone: _____ Fax: _____

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Select Registration Type Below

❑ Full Registration
Postmarked before May 15, 2014 ($195)
Postmarked after May 15, 2014 ($245)

❑ Speaker ($100)

❑ Student ($95)

❑ Scholarship ($95)
(See Below)

❑ I am attending Evening Reception, June 5, 2014
(included in registration fee)

Additional Registration Options (see page 5) - **Wednesday June 4, 2014**

❑ West Creek Stewardship Center & Restoration Tour - $25 per person
❑ Bridgestone America's and New Franklin Stormwater BMP Tour - $25 per person
❑ Middle Cuyahoga River Restoration Tour - $25 per person
❑ Northeast Ohio Regional Sewer District Projects Tour - $25 per person
❑ Restoration Tour: Bear, Laurel, Pond Brook and Hudson Run - $25 per person
❑ Euclid Creek Restoration Tour- $25 per person

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 2014 Ohio Stormwater Conference)

Or, register on-line at www.ohiostormcon.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 May 22, 2014, may be subject to a processing fee. After May 22, 2014, registration fees will not be refunded, but may be applied to another individual's registration fees.

## Scholarship Information

On behalf of the generosity of the Ohio Department of Natural Resource's Ohio Coastal Training Program, we are pleased to offer a limited number of scholarships to assist with conference fees. Applicants will be considered in the order received. Lake Erie Basin Watershed government employees are eligible to apply for the Ohio Coastal Training Program scholarship in the amount of $95.

To apply for this scholarship, please contact Harry Stark at hstark@ohiostormcon.com or 216-385-5248.

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

2014 Ohio Stormwater Conference
Tinkers Creek Watershed Partners
P.O. Box 444
Twinsburg, Ohio 44087

Visit the Conference website to register online and for updated information on the conference.
http://www.ohiostorm.com/

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