

2020
**OHIO STORMWATER
CONFERENCE**
13th Annual



Dedicated to the advancement of stormwater
and natural resources management



www.ohstormwaterconference.com

REGISTRATION INFORMATION
2020 OHIO STORMWATER CONFERENCE

Kalahari Conference Center - Sandusky | August 26-28, 2020

13th 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.

Kalahari Conference Center

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

Hotel Information

The Conference Committee has secured group rates for the Kalahari Resort and Conference Center.

We are pleased to announce that the Conference has secured a group rate of \$124 per night for the conference.

Booking Website:

<https://book.passkey.com/e/49897783>

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

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

Presented By

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



Conference Schedule

Tuesday, August 25, 2020

8:00 a.m. - 5:00 p.m. Envirocert Review Classes

Wednesday, August 26, 2020

9:00 a.m. - 2:00 p.m. Envirocert Review Exams
9:00 a.m. - 2:00 p.m. MS4 Boot Camp Training Managing an Effective Stormwater Program!
1:00 p.m. - 5:00 p.m. East Sandusky Bay (Putnam Marsh) Kayak/Canoe Tour
2:00 p.m. - 5:00 p.m. Green Infrastructure Bike Tour in Sandusky
6:00 p.m. - 10:00 p.m. Firelands Winery Dinner Event

Thursday, August 27, 2020

Exhibit Area Open 9:00 a.m. - 12:00 p.m. and 1:00 p.m. - 7:30 p.m.
7:00 a.m. - 8:30 a.m. Registration / Breakfast
8:00 a.m. - 10:00 a.m. Opening Session
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, August 28, 2020

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 In Person (by July 15, 2020)	\$100.00	\$95.00	\$95.00
\$165.00 Virtual/Webinar of all presentations			
\$245.00 (postmarked after July 15, 2020)			

Registration Includes:

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

Register online
ohstormwaterconference.com

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



Certification Class/Exams and Tours

Certification Class - August 25, 2020; Certification Exams - August 26, 2020

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 reviews will take place on Tuesday, May 5, 2020 from 8:00 am – 5:00 pm. The exams for all five certifications will take place on Wednesday, May 6, 2020 from 9am - 2pm. To register for reviews and/or exams visit the ECI event calendar at <http://www.envirocertintl.org/events/list/>

MS4 Boot Camp: Training Managing an Effective Stormwater Program! August 26, 2020

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 the NPDES program 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.

Link to register: https://wmao.clubexpress.com/content.aspx?page_id=4002&club_id=259593&item_id=1150597

Time: 9:00 a.m. – 2:00 p.m.

Cost: \$50.00 OSPA Member and \$55.00 Non-Member



Tours

August 26, 2020

East Sandusky Bay (Putnam Marsh) Kayak/Canoe Tour

Date: August 26, 2020 **Time:** 1:00 p.m.- 5:00 p.m. **Cost:** \$50 **Max number:** 15

Buses leave from: Kalahari, 7000 Kalahari Dr., Sandusky OH

Destination: Explore East and Eastern Sandusky Bay following the Water Trail with stops at Landing Point, Eagle Point, Big City, Cedar Point Causeway, and end up in Downtown Sandusky for refreshments.

Tour leaders: Tom Denbow, Biohabitats, Inc., Aaron Klein, Public Works Director, City of Sandusky

Bring: binoculars, sunscreen, water, hat, and wading shoes. Encourage bringing a change of clothes. Kayaks/canoes, paddles, and life jackets will be provided.

Come learn about some of the coastal natural resources that make Sandusky such an exciting place to live and play. Learn about the water quality challenges facing the area and initiatives underway to restore coastal wetland ecosystem benefits. View proposed coastal wetland restoration sites and coastal waterfront projects designed to connect citizens and visitors to the area's great coastal natural resources. Highlights will include a Kayak Tour of the Back Bay (East Sandusky Bay) where we will visit the proposed Pipe Creek nature-based shoreline restoration project, Cedar Point's Landing Point project site, Eagle Point (Erie Metroparks), the Big Island Wetland complex, and proposed Cedar Point Beneficial Re-use Coastal Wetland Site located along the causeway to Cedar Point. The trip will end with a visit to Sandusky's Waterfront and explore recently completed and proposed waterfront initiatives.

Green Infrastructure Bike Tour in Sandusky

Date: August 26, 2020 **Time:** 2 p.m. -5 p.m. **Cost:** \$25 **Max number:** 20

Tour Meeting Location: We will meet at the Jackson Street Parking Lot (134 Jackson Street)

Destination: Bicycles leave from: Sandusky's Jackson Street Parking Lot (134 Jackson Street)

Bring: comfortable shoes, sunscreen, water. If you have a bicycle, please bring it. If not, we will have up to 15 bicycles available– please select this option when registering.

Eco Tourism revitalization has been evident in Sandusky through the construction of multiple green infrastructure projects, seamlessly integrated into the vibrant town. The installation of a living shoreline demonstration project which involved the propagation and installation of native vegetation along approximately 500 feet of shoreline within two boat slips in Shoreline Park is one example along the tour. Two other stops include a green infrastructure retrofit parking lot that doubles as an outdoor event space for Bike Week, an annual tourist event that attracts over 50,000 visitors, and bioretention and shoreline restoration within an existing park. This tour is open to anyone interested learning about all the innovative and sustainable projects in Sandusky. This is a great opportunity to see how far this coastal city has come in managing its resources and learn about the different projects, all from the seat of your bike!

Firelands Winery Dinner Event

Date: August 26, 2020 **Time:** 6:00 pm **Cost:** \$65 **Max number:** 50

Buses leave from: Kalahari, 7000 Kalahari Dr., Sandusky OH

Firelands Winery is the largest winery in the state of Ohio, and is the winner of national and international awards for the quality of their wine. Start your evening with a tour of the winery, where you will learn how the Firelands Winery creates their award-winning wines. Then enjoy a dinner with complementary wine pairings. Transportation to and from Kalahari is included.

Thursday, August 27, 2020

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

Climate Uncertainty: Stormwater Resiliency using Updated Precipitation Frequency Estimates (30 min.)

Julie Lawson, PE, CFM, Environmental Design Group

The data behind precipitation frequency estimates, how changing precipitation patterns impact plans and designs, and how to implement different methodologies to create resiliency in this time of climate uncertainty will be discussed in this presentation. Real-world analyses and examples will be presented.

Extending the Discussion on Extended Detention (60 min.)

Justin Reinhart, Ohio EPA

Extended detention practices remain a popular choice for post-construction stormwater treatment. This presentation will discuss and answer old questions that persist, such as the WQV drawdown, as well as newer topics like forebay and micropool alternatives, with a focus on design and SWPPP development.

T1B: Green Infrastructure

Advancing Stormwater Management at Marinas in the Great Lakes (30 min.)

Scott Hardy and Sarah Orlando, Ohio Sea Grant

The Advancing Stormwater Management at Marinas in the Great Lakes project proposes the development of a decision support tool that will help marinas select the most appropriate site-specific green infrastructure practice to manage stormwater, reduce nutrient and sediment loading, and stabilize shorelines of the Great Lakes.

Green Infrastructure Monitoring through a Cleveland Metroparks-Kent State University Partnership (60 min.)

Anne J Jefferson and Lauren Kinsman-Costello, Kent State University

Jennifer Grieser, Cleveland Metroparks

This presentation will summarize a 5-year monitoring and education partnership focused on green infrastructure at Cleveland Metroparks' Watershed Stewardship Center. Key results of monitoring water quantity and quality of constructed wetlands, bioretention cells, and a green roof; and also advantages and lessons learned by this park-university partnership will be presented.

T1C: Watershed Planning and Restoration

Sandusky Bay Strategic Restoration Initiative Plan: Solving Bay WQ Problems (30 min.)

Tom Denbow, Biohabitats, Inc. Great Lakes Bioregion

Aaron Klein, P.E., City of Sandusky

The Sandusky Bay Strategic Restoration Initiative (SBSRI) Plan presentation will summarize bay restoration problems and landscape scale challenges; research initiatives; regional ecosystem restoration targets; and proposed

strategies and recommended Tier I projects for reducing sediment resuspension, improving nutrient retention and water quality, and improving fish and wildlife habitat.

Wetland Restoration at the Euclid Creek Dugway Tunnel Storage System (60 min.)

Michael Liptak, EnviroScience, Inc.

Sarah Rehner, Northeast Ohio Regional Sewer District

The Euclid Creek Dugway Storage Tunnel System is a \$350 million, 6.25-mile CSO tunnel system that impacted 5.65 acre of forested wetlands in Bratenahl, Ohio in 2012. Mitigation included constructing vernal pools in existing forests, enhancing and preserving existing wetlands, and restoring forested wetlands in an extremely urbanized landscape.

T1D: Monitoring, Inspection, Maintenance

Advancements in Testing Infiltration (Hydraulic Conductivity) of Green Infrastructure Practices (30 min.)

A.J. Schwidder, Upstream Technologies

This presentation describes six methods to test green infrastructure practices for saturated hydraulic conductivity, discusses a case where they were used to evaluate a failing rain garden, and concludes with lessons learned three years into a multi-year testing program in Omaha, Nebraska.

Green Infrastructure and Stormwater Control Measure Certification Programs in Ohio (60 min.)

Brian Prunty, Summit SWCD

Chris Hartman, Northeast Ohio Regional Sewer District

There are only two SCM inspection and maintenance certifications in Ohio. The two programs offered, why they were developed, their differences, and desired outcomes will be dissected. They are designed to develop a knowledgeable workforce and assist communities to meet the demands of their program.

T1E: MS4 Program Management

WEF Stormwater Institute's National MS4 Needs Assessment Survey (30 min.)

Rebecca Arvin-Colon, Water Environment Federation

WEF's Stormwater Institute completed a first-of-its-kind national MS4 needs assessment survey in 2018 to better understand both the challenges and possibilities to which the regulated sector are subject. The presenter will explain some of the highlights of the national survey results as well as next steps.

Stormwater Billing – Simple or Not? (60 min.)

Jeffrey Duke, Northeast Ohio Regional Sewer District

Keith Readling, Raftelis

For NEORSRD, it was discovered that developing, maintaining and billing a stormwater fee was more challenging and complex than decision-makers ever imagined. Stormwater fee-related policies meant implementation and maintenance also became complex. In the end, NEORSRD implemented a robust program, befitting the robust and complex regional stormwater management program.

T1F: Transportation

Unique Solutions Post Construction BMP's for Transportation Projects – Case (30 min.)

Chad Boyer, ms consultants, inc.

This presentation will discuss three case studies for transportation projects in Central Ohio focusing on the post-construction stormwater management. The presenters will discuss design challenges, solutions, construction and maintenance concerns, and construction costs for all three projects.

Permitting 101: The Difference Between Linear and Sitework Post BMP's (60 min.)

Michelle Johnson, Environmental Design Group

Not all design manuals allow and accept all BMPs and not all BMPs are created equal! This presentation will focus on the differences between site work and linear transportation as it relates to permitting and best management practices.

T1G: Legal

Ohio Water Law 101 (30 min.)

Louis L. McMahon, McMahon DeGulis LLP

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

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

The Benefits of Using Park Open Space for Stormwater Management (60 min.)

Rachael Rhodes, P.E., MBA, LEED® Green Associate, V3 Companies

Don Staley, PLA, LEED AP®, V3 Companies

By utilizing green infrastructure in open space at Sunset Park to reduce peak flows to their combined sewer system, Middletown, Ohio introduced native plant habitat, provided environmental education, upgraded recreation facilities, and provided accessible connectivity. These benefits to the community would not have been realized with conventional infrastructure solutions.

Utilizing Lidar for Stormwater Management (30 min.)

Brian Stevens, Woolpert

David Blackstone, Ohio Geographically Referenced Information Program

This presentation will discuss lidar technology and automated processes that utilize aerial lidar to accurately delineate ground features, including impervious surfaces, land cover/use, and drainage patterns in support of stormwater utility development and maintenance. Real-world examples will demonstrate the short- and long-term benefits available to communities throughout Ohio.

T2B: Green Infrastructure

Greening "The Land" for a Consent Decree Demand (60 min.)

Kimberly Colich, PE and Rachel Webb, NEORS

NEORS's CSO Consent Decree, signed in 2011, required a green infrastructure component to reduce CSO overflows. This presentation will tell the story of the planning, design, construction, performance, and maintenance of these GI projects.

Ecological Benefits of Newly Installed Bioretention Basins (30 min.)

David Wituszynski, The Ohio State University

Surveys of bird and insect communities in a neighborhood of Columbus, Ohio, were performed during and after a large bioretention basin retrofit project. The results highlight some of the ecological benefits provided by bioretention basins and point out uncertainties that still remain.

T2C: Watershed Planning and Restoration

It's 9-Elementary, My Dear Watershed (60 min.)

Stephanie Dyer, Eastgate Regional Council of Governments

Christina Znidarsic, Environmental Design Group

Developing 9-Element watershed plans can seem as challenging as catching Moriarty for those unfamiliar with them, but it doesn't have to be a mystery! Come hear about the successful development of the first 9-Element plans in the Mahoning watershed and how 9-Element planning fits into environmental and economic development goals.

Reconnecting Streams with their Floodplains in the Chagrin River Watershed (30 min.)

Kristen Hebebrand, Chagrin River Watershed Partners

Chagrin River Watershed Partners, Inc (CRWP) works closely with its members, conservation partners, and contractors to develop cost-effective natural solutions to address impairments. This presentation will cover several stream restoration and floodplain reconnection projects in the Chagrin River Watershed and share CRWP's project planning and management approach.

T2D: Monitoring, Inspection, Maintenance

After the Assessment - What Now? (60 min.)

Matthew Neigh, Apex Companies

Are you responsible for managing stormwater assets across multiple sites? If so, please join Matt Neigh of Apex Companies to learn real world strategies for building an asset inventory, developing an action plan, allocating budget, and how to proactively manage an SCM program after the assessment.

Development of Stream Peak Stage Elevation Data Collection Program (30 min.)

Saul Grudzys, PE, R2O Consulting

Stream peak stage elevation data was key for successful development and calibration of the NEORS Stormwater Master Plan hydraulic and hydrologic models. The recent large-scale SWMP efforts within the NEORS service area prompted research and implementation of relevant methodology that would meet the needs of such data collection.

T2E: MS4 Program Management

Collaborative Approaches to MS4 Permit Compliance in Southeast Michigan (60 min.)

Annette DeMaria, Environmental Consulting & Technology, Inc.

Collaborative approaches to MS4 permit compliance has lead to more

effective public education, illicit discharge, and total maximum daily load programs. The pooling of resources is allowing southeast Michigan municipalities to focus on the most impacted areas in the watershed while meeting permit requirements at a lower cost.

Utilizing College Interns to Meet MS4 Requirements (30 min.)

Beth A. Seibert and Casey M. Heilman, Allen SWCD

Allen County SWCD depends on college interns to accomplish annual dry weather outfall monitoring and storm drain network inventory, mapping, and marking. To date, Allen SWCD has hosted internships for 41 college students from 12 different universities. Learn how they recruit, select, fund, train, and set their interns to work.

2F: Transportation

Reconstructing I-95 - Green Infrastructure Paves the Way (60 min.)

Christian Lynn, AECOM

The reconstruction of I-95's Girard Avenue Interchange is a precedent-setting transportation, green infrastructure, and community place-making project in Philadelphia. The project is unique for its scale, leveraging of dollars and layered partnerships, use of large-scale application of green infrastructure, and for the depth of green infrastructure data.

Southeast Michigan Flooding Study: Assessing Risk & Building Resilience (30 min.)

Rachael Barlock and Kelly Karll, PE, Southeast Michigan Council of Governments

This presentation will review a study conducted to understand and manage flood risks to transportation infrastructure in a 7-county area in Southeast Michigan. The study includes a flooding risk assessment for roads, bridges, culverts, and pump stations in the area and integration of the results in transportation planning efforts.

T2G: Legal

Funding Stormwater Management Projects (60 min.)

Erin McDevitt-Frantz, McMahon DeGulis LLP

Communities are facing increased pressure to manage stormwater, but, unlike rain, money doesn't fall from the sky. This presentation will review legal issues associated with structuring and funding a stormwater management program, including selecting a fee structure and calculating rates. Issues with funding individual projects will be discussed.

Lakewood's Integrated Plan: Stormwater Modeling Creates Legal Protection (30 min.)

Louis L. McMahon, McMahon DeGulis LLP

Mark Delisio, CT Consultants

Lakewood's IWWIP, a national leader of CWA Integrated Planning, relies upon an all-pipes pollutant model. This presentation includes an overview of this model, describes how it is loaded, and reviews how cost-effective integrated planning decisions can be made to optimize new legal authority given to communities.

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 Infiltration BMPs for New, Retrofit, and Relocated Applications (30 min.)

Matthew Hasel, PE, Adaptive Engineering Group, LLC

Mount Vernon City School District undertook construction of a field house, maintenance facility, and bus parking lot that worked with the MS4 and neighbors to optimize stormwater benefits. This presentation describes challenges of

this approach, practices used to meet project goals, and unique solutions to consider in similar settings.

Maintaining Sediment & Erosion Controls in the Urban Environment (30 min.)

Kelly Parker and Megan Smith, Cuyahoga SWCD

Sometimes urban environments make implementing routine sediment and erosion controls difficult. Cuyahoga SWCD will share examples of battling the urban environment during construction and showcase creative solutions to unique and difficult situations.

Resilience in Infrastructure (30 min.)

Joshua D. Herchl, LEED AP, Advanced Drainage Systems, Inc.

Resilient infrastructure refers to the ability of infrastructure systems to absorb disturbance and retain basic function and structural capacity. This discussion focuses on societal changes necessary to design for resilience and infrastructure that narrows the gap by choosing designs and materials that are time, installation, and weather/natural disaster resilient.

T3B: Green Infrastructure

Designing Green Infrastructure with O&M in Mind (30 min.)

Carmen Franks and Tiffany Ashforth, Brown & Caldwell

Mark Hornyak, Northeast Ohio Regional Sewer District

Green infrastructure practices often fail when maintenance is not considered during design. This presentation will cover design considerations to keep BMPs functioning properly, examples of what can happen when BMPs were not designed for a realistic level of maintenance, and how to retrofit GI to allow for proper maintenance.

Green Infrastructure Improvements in Toledo's Delaware Creek Corridor (30 min.)

Jordan Rofkar, Ph.D., Hull & Associates, Inc.

Shawna Towns, City of Toledo Division of Environmental Services

Delaware Creek is highly impacted by significant stormwater runoff. The City of Toledo is installing several green infrastructure improvements, including bioswales and rain gardens, to capture surface runoff and control erosion. Presenters will share green infrastructure solutions that improve water quality and habitat while also promoting strong citizen engagement.

Integration of Artful Stormwater Management at Kingwood Center Gardens (30 min.)

Rob Thompson, Terra Design Studios

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

Kingwood Center Gardens has begun implementing the first phase of its 2014 Master Plan, seeking to "Honor the Past while Growing the Future". Learn how Kingwood transformed what had been considered a liability into an asset through the integration of artful green infrastructure practices into The Garden Gateway Project.

T3C: Watershed Planning and Restoration

Dam Removals and Urban River Restoration in Flint, Michigan (30 min.)

Jason Kenyon, Wade Trim, Inc.

Propelled by the need to address the crumbling high-hazard dam in downtown Flint, Michigan, the Flint River Restoration Plan was developed to rejuvenate the river and downtown riverfront through environmental clean-up, two dam removals, river naturalization, and ecosystem restoration. This presentation will provide an overview of the project challenges.

Good Streams Make Good Neighbors: Enhancing Projects Through Property Acquisitions (30 min.)

Kristen Buccier and Dave Ritter, Northeast Ohio Regional Sewer District

This presentation will provide an overview of the development of NEORSD's Regional Stormwater Management Program property acquisition process

and present case studies of how property acquisitions along the Regional Stormwater System have created opportunities to construct stream and floodplain restoration projects using more naturalized means and less hardened structures.

[The More the Merrier: Partnering for Restoration at NASA Glenn \(30 min.\)](#)

[Jared Bartley, Cuyahoga Soil & Water Conservation District](#)

[Pat Nortz, Otisco Engineering](#)

Many hands make light work! Presenters will highlight how the Rocky River Watershed Council, Cuyahoga SWCD, and NASA teamed up with Fairview High School to enhance Guerin Ditch and install a bioswale at NASA's Glenn Research Center in Cleveland, while engaging students throughout the monitoring, planning, and implementation processes.

[T3D: Monitoring, Inspection, Maintenance](#)

[Effective maintenance practices for restoring permeable pavement infiltration rate \(30 min.\)](#)

[Ryan Winston, Ohio State University](#)

This presentation will focus on at least three new methods to unclog porous pavements. Topics discussed include: maintenance needs, how often to prescribe maintenance, and how much clogging material must be removed before substantial improvement in pavement infiltration rate.

[Inspection of Storm and Combined Sewers 100 Years Old \(30 min.\)](#)

[Cecilia Mazzei, City of Cleveland Division of Water Pollution Control](#)

[Elizabeth McIlwee, AECOM](#)

The Cleveland Division of Water Pollution Control (WPC) is responsible for managing the stormwater/combined collection system. WPC estimates 27% of the sewer system is older than 100 years. The project utilized pole cameras to screen and inspect and used CCTV and ArcGIS to manage data/results. This methodology saved \$12M in inspection costs.

[Streamflow, Water-Quality Monitoring, and Loads \(30 min.\)](#)

[Kimberly Shaffer, Dennis Finnegan, Donna Runkle and Stephanie Kula, USGS](#)

In this three part presentation, the USGS streamflow and stream water quality data are described. Topics include: understanding streamflow gages; describing stream water quality monitoring and sampling networks; and computing daily concentrations and loads for sediment and nutrients in the Western Lake Erie Basin.

[T3E: MS4 Program Management](#)

[Effective Stormwater Program Management: Transitioning from Reactive to Proactive \(30 min.\)](#)

[John Lyon, Strand Associates, Inc.](#)

This presentation will focus on cost-effective strategies and practices for stormwater program managers to move their programs from a reactionary state into a more proactive program.

[Operation & Maintenance Inspection Programs: Common Issues and Future Viability \(30 min.\)](#)

[Brent A. Eysenbach and Carla Regener, Cuyahoga Soil and Water](#)

Long-term operations and maintenance programs are as varied as the number of MS4 communities. Regulations requiring adequate programs provide minimal direction. This presentation will examine the state of LTOM programs of the past, the present, and possibilities for the future. Real-world examples of maintenance issues will be covered.

[Using Power BI to Track Cleveland WPC Levels of Service \(30 min.\)](#)

[Michael McGlinchy, GPD Group, Inc](#)

[Corinne Sackett, Hazen and Sawyer](#)

[Cecilia Mazzei, City of Cleveland Division of Water Pollution Control](#)

Cleveland WPC dashboards created with Power BI provide an interactive visual format for WPC and Department management to track organizational performance. Dashboards compile and aggregate data from various City applications into a visual application that provides high-level to detailed views to meet WPC's needs.

[T3F: Transportation](#)

[Coastal Nonpoint Strategy Development in Ohio \(30 min.\)](#)

[Steve Holland, Ohio Coastal Management Program](#)

[Josh Myers, Chagrin River Watershed Partners](#)

This presentation focuses on the history of the Ohio Coastal Nonpoint Pollution Control Program, administered through the Ohio Coastal Management Program, and the efforts made to overcome challenges in obtaining program approval, particularly with the last approved management measure that focuses on local roads, highways, and bridges.

[East Summit Street – Water Quality Monitoring after Transportation Improvement \(30 min.\)](#)

[Michael Woodring, PE, CPESC, AECOM](#)

[Noel Miavez, Kent State University](#)

KSU and the City of Kent partnered to create a transformative improvement along Summit Street, which addressed safety, congestion and access management issues; mitigated neighborhood flooding and improved stormwater quality. KSU developed a robust water quality monitoring program and will present the preliminary hydrologic and water quality results of the stormwater control measures.

[Turnkey Water Quality Solutions \(30 min.\)](#)

[Mike Sachs, RES](#)

RES has experienced increased interest in turnkey water quality solutions from stormwater stakeholders. These include developers, municipalities, and state agencies that wish to eliminate administrative burdens, reduce cost of compliance, and transfer regulatory liability. This presentation demonstrates two case studies explaining the turnkey project delivery method in differing settings.

[T3G: Legal](#)

[On Golden Pond? Risk of Liability: Ponds, Dams, and Flooding \(30 min.\)](#)

[Andrea M. Salimbene and Christina Wieg, Frost Brown Todd LLC](#)

Ponds and dams may be common stormwater controls, but they can come with liability. Increased storm events, aging infrastructure, and deferred maintenance may lead to performance and maintenance issues. Learn about recent disputes related to infrastructure liability, examine legal theories, and discuss steps that can be taken to limit risks.

[What's the WRDA? The 411 on 214 from the 216 \(60 min.\)](#)

[Sarah Rehner, NEORS](#)

[Keith Sendziak, USACE I](#)

Section 214 of the Water Resources Development Act of 2000 allows the USACE to accept and expend funds contributed by non-federal public entities and public-utility companies to expedite permit reviews. This presentation will focus on the benefits of this funding and map out a pathway to a successful agreement.

[RECEPTION - 5:00 to 7:00 p.m.](#)

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

Friday, August 28, 2020

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

The Frac Out That Screwed Things Up for Everybody Else (30 min.)

Ababu Gelaye, CPESC, P.G., Civil & Environmental Consultants, Inc.

The frac-out that screwed things up for everybody else: this presentation will showcase the consequences of a frac-out event on construction of oil and gas pipelines in Ohio. The presentation will cover introduction, understanding the basics/background, pre-regulatory drivers, agencies, and latest developments in Ohio.

What if there are no special plants for a raingarden? (60 min.)

James Funai, Cuyahoga Community College

This presentation will share the outcomes following four years of soil research in rain gardens, which suggest it is the soil recipe that matters more than finding specific plants for these gardens.

F1B: Green Infrastructure

Delivering Assets And Strengthening Communities: CBP3 for Green Infrastructure (30 min.)

Laura Adams, PE, Env SP, Black & Veatch

Community-based public-private partnerships (CBP3s) have become a hot topic of conversation in the offices of stormwater managers, civic leaders, and regulators. This presentation will empower you to understand how CBP3s can benefit communities and how they are used to facilitate implementation of distributed solutions like green infrastructure.

Restoring Stormwater Services to Urban Soils (60 min.)

Stu Schwartz, UMBC

Disturbed compacted urban soils limit stormwater infiltration and vegetation success. This presentation describes the use of soil decompaction and amendment to restore stormwater services, creating green infrastructure in the urban pervious landscape. Field examples illustrate protocols to quantify and credit suburban subsoiling as a cost-effective stormwater BMP.

F1C: Watershed Planning and Restoration

Moments in the Marsh: Restoring and Protecting a Coastal Gem (30 min.)

Sally Gladwell, The Mannik & Smith Group, Inc.

Eric Kraus, Standing Rush, LLC

This presentation will focus on the various projects completed, underway, and planned for the several-hundred-acre coastal Standing Rush Marsh located in Erie County. Included will be an interactive version of a "Marsh Jeopardy" game to invite the audience to reflect back what they learned about Standing Rush Marsh.

Rocky River Stormwater Masterplan – A Baldwin Creek Case Study (60 min.)

Jennifer Zajic, Stantec

Michael Blair, NEORS

This presentation spotlights a case study in Baldwin Creek from NEORS's Rocky River Stormwater Master Plan. The case study highlights how NEORS is working with member communities by providing funding and resources to solve regional problems and will explain how the SWMP approach is used to identify problems and develop solutions.

F1D Monitoring, Inspection, Maintenance

Adaptive, Catchment-Based Approach to Ongoing Surveillance of MS4 Outfalls (30 Min)

Nancy K Ellwood, CDM Smith

Knowledge gained from 10 years of conducting traditional dry weather

screening sites for thousands of outfalls in a large, co-permittee stormwater district was used as the basis for creating an innovative, catchment-based ongoing outfall screening program.

What to Do When Your Routine Inspection Goes Sideways (60 min.)

Chris Vasco and Brent Eysenbach, Cuyahoga Soil and Water

Routine inspections do not always go according to plan. This presentation focuses on what to do when an illicit discharge is observed or imminent. Discussion will include proper reporting procedures, the use of BMPs, containment methods, cleanup requirements, and enforcement escalation.

F1E: Research & Modeling

Rainfall Runoff Time Estimations for Stormwater Modeling in Small Watersheds (30 min.)

Ken Kagy, City of Milton

Time of concentration graphs are created to demonstrate how watershed characteristics affect stormwater runoff. These comparisons employ empirical equations and NRCS velocity equations used in time computations for storm water runoff. The study compares Manning's sheet flow coefficients with watershed impervious surface, rational method coefficients, and NRCS curve numbers.

Using Skimmers to Meet Post-Construction Water Quality Requirements (60 min.)

Jamie McCutchen, Rymar Waterworks Innovations

Introducing a major change in meeting water quality requirements in detention ponds. Through the use of skimmers and the addition of filtration media, detention ponds can now provide a higher level of stormwater treatment, treat a wider range of storms and reduce basin size!

F1F: Stormwater Retrofits

Adaptive Stormwater Controls for CSO Reduction and Flood Risk Mitigation (30 min.)

Dayton Marchese, PE, GOptiRTC, Inc.

Real-time adaptive stormwater controls are being adopted across the country to reduce CSOs and mitigate flood risk. This presentation will describe how the City of Albany, NY is using adaptive controls to increase wet weather capture from 12% to 89% in the Beaver Creek Sewershed.

Retrofitting Storm Sewers to Reduce the Frequency of Stream Disturbances (60 min.)

Adam Lehmann and Dr. Anne Mikelonis, US EPA

Is it feasible to utilize existing storage capacity in storm sewer systems to detain runoff from the most common storm events that drive in-stream disturbances? This presentation explores insights, lessons-learned, and modeling results from a multi-agency effort to turn this novel concept into a reality.

F1G: PIPE & Other

The One Water Campaign for Southeast Michigan (30 min.)

Katie Grantham, Southeast Michigan Council of Governments

The One Water Campaign for Southeast Michigan was developed to help the public attain a greater awareness and mutual shared responsibility for water resources. This presentation will discuss the importance of water investment, public education, and lessons learned from the first year of the project.

Thirty Years of the Student Watershed Watch Program (60 min.)

Sara Guiher, Toledo Metropolitan Area Council of Governments

The TMACOG Student Watershed Watch has been a NW Ohio water quality educational program for thirty years, providing testing supplies to over 20,000 students. Support of this program by MS4 communities helps to fulfill requirements for public information and education while building the next generation of water quality stewards.

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

F2A: Stormwater Practices and BMPs Planning and Design

BMP Stormwater Management on Private Property (30 min.)

Joseph R. Reitz, P.E., CPESC, CESSWI, City of Avon Lake

The City of Avon Lake has been a proud Lake Erie steward for 30 years. Let the lessons learned by this coastal community help others learn how to work with the property owners to better manage the stormwater infrastructure in an up-front and positive way.

Squires Avenue and City Hall - A Case Study (30 min.)

Todd Weik, CBC Engineers and Associates

This is a case study of an award-winning project in the City of Cudahy, WI that used blast furnace slag as an aggregate base for their City Hall and Squires Avenue lots and a green alley as a phosphorus removal tool.

Underground Storage and Pretreatment: Design Methods in Ohio (30 min.)

Michael Cook, Advanced Drainage Systems, Inc.

Design calculations and methods for extended detention and infiltration have changed in Ohio with the introduction of the 2018 Construction Stormwater General Permit. This presentation shows the calculations and costs associated with underground storage and pretreatment options for your site's post-construction stormwater management.

F2B: Green Infrastructure

Enhancing an Aging Residential Neighborhood through Green Infrastructure Techniques (30 min.)

Craig Cawrse, FASLA, CT Consultants

William A. Tomko, Village of Chagrin Falls

This case study of green infrastructure enhancement using rain gardens within an aging residential neighborhood serves as a model to address stormwater control improvements within similar older neighborhoods during infrastructure replacement projects. The street improvements used modified road ditches and rain gardens to manage stormwater.

Permeable Pavement in Northern Ohio: Hydrologic and Water Quality Performance (30 min.)

Andrew Tirpak, The Ohio State University

Hydrologic and water quality monitoring was conducted on a permeable pavement practice three years after its installation. The system reduced the concentration of particulates and sediment and provided significant pollutant load and runoff volume reductions. Analysis showed that timely maintenance performed throughout the year may further improve the system's effectiveness.

GI: Developing a Universal Framework for Different Cultures and Climates (30 min.)

David Gamstetter, Davey Resource Group

The study involves all types of GI, including parks and trees. The presentation will focus almost exclusively on urban GI stormwater BMPs. Examples of projects in three cities, spanning green roofs, bioinfiltration,

wetlands, detention, and conveyance will be presented.

F2C: Watershed Planning and Restoration

Evaluating Flood Solutions in an Urban Setting with Complex Geology (30 min.)

Jessie Fears, Geosyntec Consultants

In response to February 2019 flooding that resulted in \$40 million in damages, Geosyntec worked with Knox County, TN to evaluate engineering and policy-based solutions for future flood mitigation. This presentation will be helpful for policy-makers, designers, and technical managers interested in surface water management in karst terrains.

Managing Stormwater - Regionally and Collaboratively (30 min.)

Frank Greenland, PE, Northeast Ohio Regional Sewer District

NEORS's Regional Stormwater Management Program is studying, inspecting, maintaining, designing, and constructing along the regional stormwater system to reduce flooding, arrest erosion, and improve water quality. This work is done collaboratively with many partners seeking similar goals. Many successes have already been realized from this regional program.

Stormwater Management Planning in a Regional Parks System (30 min.)

Kayla McRobb, OHM Advisors

The Huron-Clinton Metropolitan Authority developed a stormwater management plan for their 24,000-acre park system that focused on streambank, lakeshore, and stormwater infrastructure condition assessments. The assessments informed recommendations for lakeshore and streambank restoration, stormwater system improvements, and green infrastructure treatments which were then prioritized into a watershed-wide plan.

F2D: Monitoring, Inspection, Maintenance

How Screening Assists State Transportation Departments for Culvert Inspection (30 min.)

Elizabeth McIlwee and Costas Kontos, AECOM

Two state transportation agencies required culvert inspection to assess the condition of previously inventoried assets identified as being in poor condition. The projects used a phased approach for planning, site screening, inspection implementation, and reporting which led to better planning for future investigations.

Stormwater Master Plan Support Through GIS Services (30 min.)

Kenny Krise and Joe Pavlick, R2O Consulting

Recent regional sanitary sewer and stormwater master plan studies have necessitated data collection and analysis. R2O Consulting has supported NEORS's study efforts through various roles, including GIS. The presentation will focus on customized GIS tools and workflows R2O developed in support of the regional studies.

Urban Land Use Impacts on Stormwater Runoff (30 min.)

Ian Simpson and Ryan Winston, The Ohio State University

The presented work summarizes stormwater runoff quality from distinct urban land uses on a global scale and stormwater runoff pollution from urban and suburban areas on a local scale. The conglomerated results will aid city planners and engineers in their stormwater control designs.

F2E: Research & Modeling

Analysis of Rainfall on Nutrient Levels in Euclid Creek Watershed (30 min.)

MaryAnne Hejna and Dr. Teresa Cutright, The University of Akron

The presentation begins with overall research objectives and experimental

methods. Emphasis will be on data analysis. Analytics will include discussion of PO4, NO3, land use, land cover, rainfall, historical data, pH, conductivity, river velocity, flow and temperature, as well as how the parameters impact water quality in the watershed.

Assessment of Bioretention Performance for Hydrology and Hydrocarbons (30 min.)
Abigail Tamkin, The Ohio State University

The presentation focuses on research addressing the gap in knowledge for long-term hydrologic performance of bioretention as well as hydrocarbon treatment performance. Data presented include volume reduction, local water table height, hydrocarbon input/output concentrations, and hydrocarbon soil accumulation concentrations.

Exploring Techniques for Continuous, Real-Time Bacteria Monitoring in Southeast Michigan (30 min.)

Nathan D. Zgnilec and Karlin Danielsen, OHM Advisors

This presentation will present findings from the water quality component of the Clinton River Sensor Project. This component of the project explored techniques for continuous, real-time monitoring of bacteria contamination across the watershed to guide water quality management.

F2F: Stormwater Retrofits

Suspended Pavement Systems to reduce CSO overflows in Spokane, WA (30 min.)
Albert Key, DeepRoot Green Infrastructure, Inc.

Researchers recognize the suitability of suspended pavement facilities in lowering pollutant concentrations in runoff as well as reducing the peak flow from impervious areas. Learn how the City of Tacoma has reduced CSO frequency in critical watersheds through the utilization of suspended pavement systems.

Cincinnati Art Museum Stormwater Master Plan: A Collective Approach (30 min.)
Laurel Christian, Strand Associates

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

How Storm Water Quality Reduces Flooding -Dover Ditch Restoration Project (30 min.)

Robert Kelly and James Smolik, City of Westlake

Creating stormwater quality basins like the Dover Ditch Restoration Project provide all the environmental requirements for developing communities while mitigating the localized flooding by providing 2 million cubic feet of additional stormwater storage, which lowered the 100-year floodplain by nearly 2.5 feet.

F2G: PIPE & Other

Ohio Environmental Education Fund Water Quality Education Projects (30 min.)
Ryan Bourgart, Ohio EPA

Highlighted in this presentation will be some Ohio EPA education projects that communicate how to improve water quality. These projects demonstrate how to effectively educate a variety of target audiences about green infrastructure in unique ways through implementing new exhibit technology and upgrading traditional volunteer monitoring programs.

Start with Schools: Stream Restoration & STEM: A Perfect Match (30 min.)

Elizabeth Hiser, Cuyahoga SWCD

Kevin Grieser, Biohabitats, Inc.

This presentation will highlight lessons learned from engaging STEM students and teachers in a stream restoration project along the East Branch of Euclid Creek in Willoughby Hills, Ohio. The project created a Living Land Lab, with students providing design, monitoring, planting, and long-term management support.

Innovative Public Outreach Strategies for Integrated Planning (30 min.)

Kari Mackenbach and Monica Backs, ms consultants inc.

This presentation will focus on innovative outreach strategies that are powerful, cost-effective, and easily accessible. This presentation will demonstrate how ms consultants inc. is leveraging visual technologies to contribute to a better consensus-driven process.

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

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

F3A: Stormwater Practices and BMPs Planning and Design

Biofiltration: Design Considerations for Performance and Longevity (60 min.)

Chris Allen and Dana Hinaman, Contech Engineered Solutions

Biofilters are commonly being designed and implemented to treat stormwater runoff and meet green infrastructure initiatives. This presentation will review the key considerations for the successful design of biofilters to ensure consistent performance as well as address the important considerations for maintaining the longevity of such devices.

Industrial Stormwater Permit Compliance for Consultants and Engineers (30 min.)

Ted Lathrop, StormwaterRx LLC

Learn all you need to know about consulting with customers about industrial stormwater permit compliance and management, including stormwater chemistry, design techniques, and BMPs. MS4 and construction permits will be covered briefly to highlight how they differ from industrial stormwater permits.

Urban Stormwater Design Constraints (30 min.)

James Jones and Cynthia Paschke, BL Companies

Land development projects are continually becoming more complex. Sites involve more constraints, issues, and expense. Additionally, there are increasing regulatory requirements to be met to maintain downstream water quality. Increased coordination and innovation is required to successfully permit and construct projects on smaller sites.

F3B: Green Infrastructure

Multi-Community Collaboration to Reduce Wet Weather Flows through Green Infrastructure (60 min.)

Nancy Russell and Valerie Novaes, OHM Advisors

Oakland County, Michigan, in collaboration with 14 communities served by the George W. Kuhn Drainage District, successfully secured a grant from SEMCOG. The purpose of the grant was to review existing stormwater design standards for the combined sewer system and review existing ordinances that create barriers to GI.

Stormwater Green Infrastructure, v.2.0 – An Ecosystem Approach (30 min.)

Scott Dierks, GEI Consultants

From the day the concrete is poured, the clock starts ticking on its eventual dissolution. Plants and trees grow and alter their environment over a broad continuum of scales and processes. This presentation will show how a better understanding of ecohydrology can lead to better management of rainfall and runoff.

The Next Green Wave (30 min.)

Katherine Holmok and Ryan Bentley, Environmental Design Group

You've installed green infrastructure...now what? With more intense weather patterns, land use stresses, and increased dependence on natural resources, do the practices installed function for the future? The presentation will identify and discuss trends in recycled materials research, new technology approaches, and research trends in the industry.

F3C: Watershed Planning and Restoration

Ecologically Sustainable Solution to Urban Flooding (60 min.)

Chip Wendt, Coldwater Consulting, LLC

Donald Romancak, Lorain County Community Development Dept.

Ecologically sustainable solutions to urban flooding can be used to cost-

effectively address flooding issues while restoring habitat. This presentation provides an overview of a stream and wetland restoration project that improved habitat while reducing streambank erosion, storm surge energy, and downstream flooding. Design, permitting, and construction methods will be discussed.

The Value of Design-Build in Ecological Restoration (30 min.)

John Herchl, Kevin Grieser and Steve Fabian, Biohabitats

Ecological restoration projects are more frequently being delivered as design-build projects. This presentation will illustrate how design-build projects can align owner interests with ecological restoration objectives and engineer/contractor interests to deliver the most valuable and efficient project.

Watershed-Scale Restoration; Upper Ohio and Tuscarawas Stream Restoration (30 min.)

Conner Smith, PE, Hull & Associates, Inc.

The Tuscarawas and Upper Ohio Mitigation Banks are large-scale watershed restoration sites including restoration and protection of approximately 10 miles of restored stream and nearly 455 acres of riparian habitat in eastern Ohio. Hear an overview of the planning, design, and unique design-build construction approach of this restoration.

F3D: Monitoring, Inspection, Maintenance

Flood Prevention using Automated Controls for Weir Gate and Pumping (60 min.)

Scott Morrow, Hazen and Sawyer

The presentation will highlight the planning, design, and construction of two neighborhood flood control projects in the City of Virginia Beach, VA. The project design elements consisted of stormwater pumping facilities, a tidal gate weir control structure, and automated instrumentation and controls. Lessons learned will be discussed in the presentation.

Wood Is Good For Restoring Eroding Streambanks (30 min.)

Mark Link and Claire Posius, NEORS

The Northeast Ohio Regional Sewer District successfully implemented a streambank stabilization project utilizing on-site wood as the stabilization source. All the wood and rock materials for the project were harvested on-site. This presentation will showcase the design and construction tasks for the project and highlight some of the lessons learned.

You Don't Know What You Don't Know (30 min.)

Phillip Taylor, Hydro International

Data loggers installed in BMP's are unlocking new site details that need to be considered to ensure maximum performance. The advantage of data loggers was evident on industrial permit sites. Overlaying weather and tidal data helped identify abnormal site characteristics that can resolve BMP questions.

F3E: Research & Modeling

Grassy Creek Stormwater Master Plan Tackles Neighborhood Flooding (60 min.)

Kathleen Smith, PE, PMP, ENV SP, Hazen and Sawyer

Lauren Rush, CESSWI, City of Perrysburg

The City of Perrysburg's Grassy Creek neighborhood has chronic flooding. Hazen and Sawyer engaged the neighbors and studied the neighborhood to create a 2D model so that surface flooding could be simulated and cost-effective solutions to alleviate the flooding could be determined.

West Creek - 2D or not 2D (30 min.)

Jesse Rufener and Ivan Valentic, GPD Group

The presentation will provide an overview of the modeling challenges and erosive conditions encountered during the design of a stream restoration

project. The presenters will discuss the different techniques and software used to analyze the hydraulic conditions during the design of the project.

When to use 2D Models and How to Build Them (30 min.)

Maegan Nunley, Luna Engineering

2D modeling seems to be the future of the hydrologic and hydraulic modeling industry, but deciding when it is actually needed can be challenging. This presentation will discuss when a 2D model is necessary, which software is most applicable to different types of projects, and building 2D models from scratch.

F3F: Stormwater Retrofits

Green Stormwater Infrastructure Opportunities at Marinas (60 min.)

Jay Dorsey, The Ohio State University

GI stormwater controls at marinas can focus on water quality but must address a number of issues specific to marinas. A combination of traditional GI practices and manufactured systems likely will be needed to address water quality. Working with marina staff early on can identify best options/locations.

Reducing Yellow Creek Erosion with Stormwater Management and Stream Restoration (30 min.)

Bob Hawley, Ph.D., P.E. Sustainable Streams, LLC

Dave Koontz, P.E., S.I., Summit County Engineer's Office

In a large (~31 square mile) suburban watershed in Summit County, Ohio with extensive channel erosion, watershed-scale planning targeted primarily out-of-the-box BMPs such as detention basin retrofits and bankfull wetlands (~10-100 times more cost-effective than conventional BMPs), coupled with in-stream restoration along high priority reaches with at-risk infrastructure.

Using modified BMPs to address nuisance drainage problems in Toledo (30 min.)

Andy Stepnick, City of Toledo

Using bioretention-like typical sections, and experience from an initial proof-of-concept project (presented here 2018), Toledo improved drainage at two more sites. Other municipalities and designers may appreciate the familiar site constraints and challenges. New typical sections and new public involvement methods made the solutions possible.

F3G: PIPE & Other

Reinforcing the Triple Bottom Line: People-Planet-Profits (60 min.)

Julie Morelli, POWER Engineers, Inc.

The Triple Bottom Line: People, Planet and Profits can define a successful strategy for stormwater management programs that solve problems unique to MS4 communities. The opinions of citizens and elected officials, ongoing infrastructure needs, and limited budgets force MS4 operators to consider each project from a variety of perspectives.

Ohio Comparative Stormwater Rate Study (30 min.)

Jeff Rowe, CPA, Baker Tilly Municipal Advisors

The costs of handling stormwater have increased which requires municipalities to reconsider what they charge for stormwater fees. In this presentation, we will share the results of the statewide study based on 103 stormwater utilities in the State of Ohio.

Drainage: How do you determine what you need? (30 min.)

Michael Schroer

Stormwater presents flooding challenges in every industry. Join Michael, a drainage industry expert, as he discusses some of the main considerations for determining what type of drainage is needed for projects.

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Additional Registration Options (see page 5) - **Wednesday May 6, 2020**

☐ - \$50 per person East Sandusky Bay (Putnam Marsh) Kayak/Canoe Tour

☐ - \$25 per person Green Infrastructure Bike Tour in Sandusky

☐ - \$65 per person Firelands Winery Dinner Event

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

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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 August 10, 2020, may be subject to a processing fee. After August 10, 2020, 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:
Tinker's 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 July 15, 2020.

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

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