

# 2019 Conference Presentations

(listed alphabetically)

## **A Successful MS4 Mindset: Resource versus Requirement**

**Presenter(s):** Al Walus

**Description:** Managing an MS4 program can be viewed as a frustrating exercise in completing an endless number of NPDES Stormwater Permit requirements to ‘check off’ regulatory compliance boxes. This presentation will provide an alternative to the ‘requirement’ mindset and identify MS4 program implementation steps that can demonstrate your MS4 program is a resource for your community. Discussions will cover: MS4 program challenges using actual MS4 case studies; methods for turning challenges into opportunities with examples and ideas for overcoming them, including engaging other departments and staff to help address them; utilizing self-assessments of your program’s strengths and weaknesses to improve your MS4 programs; and aligning MS4 program enhancements with your community’s needs.

## **Advanced Impervious Surface Delineation for Stormwater Utilities**

**Presenter(s):** Kent L Park

**Description:** Indiana communities recognize the need for accurate impervious surface assessments. Stormwater departments rely on the data not only for utility revenue generation, but also for environmental oversight. While traditional manual calculation methods are time consuming, costly and labor intensive, there is a more time- and cost-efficient approach; remotely sensed feature extraction. By fusing orthoimagery, lidar and patent-pending algorithms, communities can calculate precise impervious surface values that support the development and maintenance of accurate, fair and defensible stormwater utilities.

## **An Easier Way to Complete Surveys**

**Presenter(s):** Amy Harvell

**Description:** The INAFSM Stormwater MCM 6 (Pollution Prevention & Good Housekeeping) Work Group will discuss possible questions for surveys for employees involved in pollution prevention and good housekeeping tasks, general employees, and public citizens. Surveys can be used to determine the knowledge level of employees/citizens on stormwater issues and areas that need additional training. The Work Group will explain how to use Survey Monkey as a tool for easy surveys and present the results to the session attendees.

## **Artificial Neural Network Approach to Flood Forecasting (Early Bird Floodplain Session)**

**Presenter(s):** William Knight

**Description:** An Artificial Neural Network (ANN) approach to flood forecasting has been developed for the City of Columbus, OH. The ANN model produces highly accurate flood predictions using data inputs available online. An application for flood forecasting and early warning is presented for the Scioto River in Columbus, OH.

## **"Blue Skies to Grey Skies and Back Again"**

**Presenter(s):** Greg Ramoni

**Description:** Do you know your role in a flood disaster? When Floodplain Administrators and Emergency Managers bridge the communication gap before a flood disaster, everyone wins! Unfortunately, these professionals don't always meet until after disaster strikes. In this session we will explore several ways that mitigation and response staff can learn, work and train along side one another so that their community is more resilient to loss, they work together more efficiently and their road to recovery is shorter.

## **Building Natural Infrastructure - Innovations in the use and funding of natural systems in water management**

**Presenter(s):** Gary Belan

**Description:** The changes in climate and weather patterns is having an outsized effect on water resources. In the face of such a daunting challenge, natural infrastructure can help mitigate the impacts. But using these systems also means looking at new and different ways of funding them. Natural infrastructure is the practice of maintaining natural systems as part of traditional infrastructure or using natural processes in engineered systems to mimic natural systems. These approaches offer greater flexibility in water management, improve environmental outcomes and offer a greater range of community benefit. Because this is a non-traditional approach, funding it at scale requires a non-traditional approach. This presentation will include some outside-the-box ideas to funding natural infrastructure.

## **Collaborative Watershed Improvements a Case Study in Partnerships (Symons and Krause Drain)**

**Presenter(s):** Joe Miller

**Description:** Through the course of the plan study and implementation, the Town of Sheridan and Hamilton County have worked together extensively. The Town has implemented a stormwater utility fee and received a grant from OCRA. Under the guidance and direction of the Surveyor's office the watershed plan has remained on track as funds become available. The plan is an excellent example of how working together municipalities can complete projects together and fund them in innovative ways. In addition, this project worked with staff at USDA RD to develop an innovative funding approach we are hopeful that other small communities and counties can use. The "stormwater capacity fee" can help bridge municipal boundaries and fund projects that will address stormwater and floodplain issues.

## **Elevation Certificate Case Studies – Identifying Costly Mistakes**

**Presenter(s):** Rodney Renkenberger

**Description:**

## **Extreme Events - An Interactive Flood Response Activity**

**Presenter(s):** Matt Rummel

**Description:** This in-person role-playing game gives participants a taste of what it takes to build community resilience in the face of disaster. Players work together to make decisions and solve problems during an engaging, fast-paced disaster simulation. Players begin by selecting a role to play in one of six sectors: households, community groups, businesses, first responders, local and state government, and federal government. As the game gets underway, each sector must decide which resources to invest in to help make their city more resilient. Then a flood occurs! The game becomes more intense as players use their resources and collaborate with each other to solve challenges in neighborhoods around the city.

## **Fort Wayne Riverfront - Phase I Engineering**

**Presenter(s):** Kurt Heidenreich, Patrick Zaharako

**Description:** The presentation will cover the following different aspects of the City of Fort Wayne's \$20 million-dollar riverfront park project opened in July of this year: seawalls, sheetpile shoring, tree canopy walk, levee modifications, bridge improvements, water features, pavilion and other features of the Promenade Park. The presentation will also discuss the permitting hurdles required and provide a timeline photo history of the construction progress through completion of the project.

## **Give My Floodplain Back to Me! - Naturalization of the Kankakee River Corridor in Indiana**

**Presenter(s):** Siavash Beik, Robert Barr

**Description:** The Kankakee River Basin is one of the most extensively modified and heavily studied watersheds in Indiana. The massive effort to drain the Grand Kankakee Marsh had proven to be only partially successful. Flooding problems that were bad are now worse. The flooding is now to the point where a new plan needs to be considered. This is the story of that plan.

## **IDNR / FEMA floodplain mapping updates**

**Presenter(s):** David Knipe

**Description:** Presentation of mapping updates for Flood Insurance Rate Maps for FY18 and FY19 grant cycles.

## **Improving Functionality & Resiliency of Constructed Wetlands**

**Presenter(s):** Jason Martin

**Description:** Wetland mitigation often fails to replace lost ecological functionality. We are developing a watershed-based approach that integrates habitat connectivity into wetland design. This will help achieve regulatory compliance, improve ecosystem services provided, and minimize maintenance investments.

## **INAFSM Inspectors' Group and IDDE Work Group Fireside Chat**

**Presenter(s):** IDDE and Inspectors' Groups

**Description:** The INAFSM Inspectors' Group chair (Dennis Nail) will lead a discussion on construction site inspection consistency and communication as we work to bridge the gap between inspectors and contractors across the state. The Illicit Discharge Detection & Elimination Work Group chair (Dana Wilkinson) will present strategies for preparing for an IDEM program audit and other tips for IDDE program success.

## **Indiana Floodplain Information Portal (INFIP) Focus Group**

**Presenter(s):** David Knipe

**Description:** The Indiana Floodplain Information Portal (INFIP), is IDNR's award winning tool for serving floodplain mapping information to the general public. However, the tool is now over 10 years old (!), and is badly in need of an update. This is a chance for one of our main user groups (Floodplain Managers) to weigh in on what they'd want to see in a new INFIP. This session will be an interactive focus group to gather data that will influence the redesign of this vital resource. Please come by and let us know what you like about INFIP, and what we can do to improve it. We'll also show some similar portals from other states / communities, to demonstrate what the state of the art is in Floodplain Mapping portals.

## **Indianapolis Flood Response Plan - Going Digital**

**Presenter(s):** Matt Rummel

**Description:** In 2018, the City of Indianapolis envisioned something different for their updated Flood Response Plan --- an all online and interactive plan. Christopher B. Burke embraced this opportunity and using ArcGIS Pro with ArcGIS Online, CBBEL developed an online, interactive Flood Response Plan that would allow for city staff to coordinate their flood response efforts with teams out in the field. Flooding depths of roads and houses, flood-safe routes, and links to real-time USGS gages are just some of the features available in the mapping application. This presentation will provide a brief overview of the planning process, demonstrate the plan in action, and discuss some of the methodologies that were used to successfully build the Web Mapping Application.

## **Legislative Panel**

**Presenter(s):** Kerry Daily, Jeff Rowe, Joel Bowers

**Description:** Panel Discussion surrounding legislative issues concerning stormwater and floodplain professionals



## **Make the Most of Your Budget by Maximizing Funding Opportunities**

**Presenter(s):** Mark Krenzke

**Description:** This presentation outlines a case study of how the Town of Edinburgh, Indiana, utilized a combination of an OCRA Stormwater Grant and INDOT Community Crossings funding to maximize their available local dollars, resulting in 2,590 feet of new storm sewer and 6 blocks of reconstructed roadway. The Town was able to complete approximately \$2,140,000 of improvements using \$560,000 of local funds. An overview of the design characteristics of each phase of the overall project will be provided, along with the funding mechanisms used and the local coordination necessary to successfully complete the project.

## **Monitoring Stormwater Reduction Strategies in a Permeable Surficial Aquifer System, Gary, Indiana.**

**Presenter(s):** David C Lampe

**Description:** The USGS is monitoring components of the water budget to investigate effects of stormwater reduction strategies installed at a newly constructed plaza south of Gary City Hall. Plaza construction included removal of impervious cover, repair of a failed subsurface drainage system, and redirection of stormwater from existing parking lot drains to a rain garden structure. Hydrologic data were collected before and after the installation of green infrastructure to record the responses of sewer flow, overland flow, soil moisture, and groundwater elevation to precipitation and evapotranspiration. Response of the water budget to runoff and infiltration from stormflows before and after the installation of green infrastructure will be discussed.

## **MS4 Permit Updates**

**Presenter(s):** IDEM

**Description:**

## **NFIP and Floodplain Manager Basics**

**Presenter(s):** Douglas A Wagner, Darren Pearson, Anita Nance

**Description:** This workshop covers the overall context of floodplain management, floodplain mapping, NFIP regulatory standards, regulatory administrative procedures, flood insurance, flood hazard mitigation, and natural and beneficial functions. This workshop will also provide additional review for individuals that are taking the Certified Floodplain Manager (CFM) exam. For those who may be still learning about floodplain management, it provides more insight into the NFIP, various federal regulations, procedures and standards, mapping, background, and generally important floodplain information. Anita Nance, CFM and Darren Person, CFM will co-present the session. Bios for Darren and Anita will be sent email.

## **Nutrients in Fido's Feces**

**Presenter(s):** Brad D Lee

**Description:** Analyses of 1005 samples indicates dog feces contains 3.9% nitrogen (N) and 3.1% phosphorus (P). On average, one dog adds 3.3 lbs. N and 2.6 lbs. P to the urban environment annually. At this rate, Kentucky canines contribute 2500 tons N and 2000 tons P to the urban Kentucky per year. One average dog will apply enough N to cover a 1667 square foot lawn and 2 times the amount of P applied at the N-equivalent rate of a 10-10-10 fertilizer.

## **Professional CFM Ethics**

**Presenter(s):** Alicia Silverio

**Description:**

## **Rain garden revival: Indianapolis urban bioretention area operations and maintenance from a restoration perspective**

**Presenter(s):** Katherine Lynn Zaiger

**Description:** In 2014, Eco Logic signed a multi-year contract with the city of Indianapolis to restore and maintain failing urban bioretention areas. We currently manage 10 locations with 37 bioretention areas. Here we present a restoration perspective of rain garden remediation, maintenance, and retrofitting for success. Using an ecological restoration perspective, we used biotic and abiotic strategies to restore functionality and aesthetic appeal to these systems. Our native plant ecologists created sustainable landscapes that both serve basic functions of vegetation in a rain garden and help remedy specialized problems. Abiotic retrofitting also aided in restoring function to these areas. Finally, continued maintenance by knowledgeable experts was essential for sustained success.

## **Riverfront Ft. Wayne**

**Presenter(s):** Brian Starnesnick

**Description:** Resiliency and climate change often center around coastal catastrophe mitigation. Recent resurgence in second+third-tier urban redevelopment, coupled with changing climate pattern, have resulted in a shifting boundary of the current FEMA flood mapping. How is the "middle coast" preparing for this new reality? A discussion of the uniqueness of the three rivers, and the site's location on the continental divide. The design considerations and impacts of designing on the riverfront, in the floodplain, on the embankments and within the corridor. Lessons learned during design process, permitting and preparation of construction documents.

## **Stormwater: You've Got to Move It, Move It!**

**Presenter(s):** Wendy Reust

**Description:** Stormwater. It sounds so simple. Just one little word, and yet, stormwater is a challenging and at times a controversial topic. For customers and residents, stormwater is typically a problem or nuisance that needs to be addressed. As engineers and professional practitioners, we understand that stormwater is more than water running downhill. Stormwater is a highly complex matter which requires creativity to address the problems it can create. Many times, the solution is more than just simple engineering. As stormwater professionals, we know that moving stormwater is not always an easy task. We also understand that with patience and creativity, along with great project partners, we can have great success in our projects and stormwater programs.

## **Successful BMP Maintenance: Guiding Property Owner Compliance in Birmingham, AL**

**Presenter(s):** Heather Williams

**Description:** Birmingham has a new Post-Construction Stormwater Management Program. Successful implementation depends on BMP maintenance and tracking. Detailed requirements and specifications are addressed in a Manual geared towards an experienced audience. All BMPs have enforceable Maintenance Agreements with property owners. Due to the large number of new BMPs and inexperienced property owners anticipated, a self-guided and self-reported procedure to ensure maintenance compliance is required. A maintenance manual guides property owners through stormwater management with "dos and don'ts" and example photographs that promote preventative maintenance. BMPs are broken into core components and potential issues are broken into categories for simplicity. Annotated checklists certify annual inspections.

## **The ASFPM Foundation**

**Presenter(s):** George Riedel

**Description:** This presentation will be an update and current status of the ASFPM Foundation. The presentation will present the Vision, Mission, Goals and Purpose of the ASFPM Foundation. I will discuss the activities and events of the Foundation in 2018. I will also discuss the status of current projects funded by the ASFPM Foundation.

## **The Benefits of Rolled Filtration BMP's . Taming the Wild West and separating BMP's by using ASTM standards**

**Presenter(s):** Joe Lee Moore

**Description:** Presenter will start with EPA regulation, working to state and municipal regs. (A 30,000 ft view on the Clean Water Act) Presenter will then move on to Third Party Testing, and the results associated with ASTM testing standards. Presenter will share results for multiple construction site BMP's and presentation will be educational in nature, and not a commercial for any one brand.

## **The Multiple Layers of Floodplain Compliance**

**Presenter(s):** Jon Eggen

**Description:** There are many layers of compliance and enforcement regulation all intertwined. To effectively enforce the Flood Control Act, the associated rules and the local ordinances requires education, coordination and information flow. We will look at the key players to involve, who else to bring in and when, reoccurring pitfalls to avoid, and potential solutions. We will talk about development creep and how it happens and what to do when someone says “but it’s just a fishing cabin”.

## **Train the Trainer: Ward’s 3D Stormwater Floodplain Simulation System Model**

**Presenter(s):** Mark Walton

**Description:** This session will introduce and demonstrate our newly acquired education tool, used to teach classroom age children and adults about flooding. The process for scheduling use of the model will be explained.

## **Trees & Water Sensitive Urban Design**

**Presenter(s):** Troy Holmes

**Description:** The presentation will evaluate the parameters that must be considered to release the potential that trees can offer to reduce runoff and improve quality. Traditional surface water drainage was designed to convey rainfall as rapidly as possible from where it falls to either a temporary storage area or a watercourse. This old method increases the risks of flooding, environmental damage, and urban diffuse pollution. The implementation of sustainable drainage systems, demonstrated in outline as well as detailed applications and design submissions, is now required as a prerequisite of planning consideration. This session uses GreenBlue Urban’s 27 years of field experience, as well as research done with universities and municipalities.

## **USACE Water Resources Programs & Authorities**

**Presenter(s):** Brandon Brummett

**Description:** The US Army Corps of Engineers has a broad and diverse mission set covering a variety of water resources issues throughout the country. This presentation would focus on example projects for communities looking for assistance with their water resources problems, and how to tap into those programs for further assistance. The US Army Corps of Engineers is responsible for a variety of water resources related issues across Indiana and throughout the country. This presentation would focus on each of those water resources topics, what authorities/programs USACE has to offer local communities, as well as example projects under each of those topics. Topics discussed will include inland navigation, flood and storm risk management, ecosystem restoration, general watershed planning, and the Indiana's award-winning and nationally recognized Silver Jackets Program. The presentation will also help local communities understand how to tap into these programs, resources, and authorities, as well as a general overview of what the process would entail.

## **Using Cityworks to Manage Stormwater Operations**

**Presenter(s):** Tom Maggard

**Description:** The City of Greenwood’s Stormwater Dept began utilizing Cityworks in the fall of 2016 to track line locates. Since then the department has increased its use of Cityworks to manage and track most work activities. This presentation will show the work activities that are managed and tracked in Cityworks with Service Requests, Work Order, Inspections, and Permits. We will discuss how Cityworks has the ability to link each type of work activity and schedule work. Finally we will explain how we use Cityworks to obtain metrics, from tracking labor costs to managing project costs.

## **Valley Street: Managing Stormwater Runoff and Reducing Peak Flow Discharges to a Combined Sewer System**

**Presenter(s):** Emily Nelson

**Description:** A case study of a stormwater management improvements project along Valley Street in Lafayette, Indiana. The two primary project goals were to reduce the peak flow discharges into the combined sewer system and to redirect stormwater runoff that flowed over pavement into new infrastructure. The project sought opportunities for slowing the flow of stormwater in order to reduce peak flow discharges to the combined sewer and decrease the storm sewer pipe size required. Traditional stormwater management and green infrastructure practices were considered and evaluated.

## **Vegetated Stormwater and Floodplain Soil Stabilization with Benefits**

**Presenter(s):** Ron Geater

**Description:** The City of Indianapolis Department of Public works monitors, manages, and maintains thousands of stormwater outfalls, as well as miles of channels and slopes above and within the floodplain elevation. Assessing the erosive energy and cost effectively stabilizing these areas can be challenging. This presentation will walk attendees through the assessment, budgeting, design, specification, installation, construction inspection, post construction monitoring, and the maintenance of permanent vegetated hard armor mats for stabilizing outfalls, low water crossings, roadside ditches and other channels above the floodplain elevation, as well as riverbanks, channels, and buffer areas below the floodplain elevation.

## **Wetland Systems - An Innovative Approach to Treat Mercury-Laden Runoff**

**Presenter(s):** DJ O'Toole

**Description:** At coal-fired power plants, coal ash and soot cleaned from coal scrubbers is generally placed in a landfill. Runoff from these landfills is captured in settling ponds and clarifying ponds. The ponds help reduce the mercury and sulfur from the effluent stream before being released from the site, per the plant's NPDES permit. When the EPA reduced wastewater effluent standards for mercury, a large coal-fired power plant in Ohio requested Williams Creek's (V3's) help. By implementing an additional step of passing the wastewater through an innovative vertical flow wetland system, the new effluent standards were met.

## **What kind of a river is this? The St Marys River Channel Stability and Flood Risk Assessment**

**Presenter(s):** Robert Barr

**Description:** The St Mary's River has a history of flooding, and in recent years has been identified as a potential large source of nutrient contributing to algal blooms in the western Lake Erie basin. To better understand the functioning of the river the MRBC conducted a system-wide assessment. In this presentation we will present the key results of that study.

## **Whitewater River Study - 41 miles in 2 months**

**Presenter(s):** Robert Page

**Description:** This presentation will focus on how we developed a flood insurance study for the Whitewater River in Wayne and Fayette Counties. The stretch of stream encompassed approximately 41 miles, which was done in a little over 2 months time frame. We will focus on the challenges faced in the tight time frame, along with how we managed to study the stretch in a short time.

## **Why (almost) every Indiana community should be in CRS**

**Presenter(s):** John Devine

**Description:** The CRS program offers flood insurance discounts. Most communities in Indiana with the State's higher standards already have almost enough points to enter the CRS program. This presentation will break down the different activities in the program and provide a detailed guidance on how to join. This will be a two person presentation. John Devine from FEMA Region V and Tracie Belongia Indiana's CRS Specialist.