

MWEA Stormwater Conference

Abstracts & Bios

Stoney Creek Lodge - Columbia, MO
Wednesday, November 5, 2025
1:00pm - 5:00pm

10:00 AM - 11:30 AM

Optional Activity: 3M Wetlands Tour

Location: Meet at [3M Flat Branch-Hinkson Creek Wetlands, M-K-T Nature/Fitness Trail \(Columbia to McBaine\), Columbia, MO 65203](#)

Speakers:

- **Tom Wellman, Columbia Public Works** - I tried a few things, including service in Peace Corps Kenya, before settling on Civil Engineering as a profession. After returning from Kenya, I enrolled in the Civil Engineering program at MU Columbia. While finishing that degree, I got part-time work in the Columbia Public Works Department. I became the Department's stormwater engineer in 1999 and have been involved in stormwater ever since. Please note, though I often behave professionally, I'm not a P.E.

Description: The 3M wetland is on the site of the former Columbia Wastewater Treatment Plant #2. The site was more or less transferred to the City's Parks and Recreation Department when the City established its Regional Waste Water Treatment Plant in the 1980s. The site lay vacant until the late 2000s when local 3M leaders approached Parks and Recreation about applying for a grant from 3M to develop an environmentally focused project. Parks and Recreation leveraged the money from 3M to develop a partnership of Federal, State and Local programs, including other City Departments and Divisions to develop the wetland project. The Park was dedicated in 2014. It has since been the focus of many volunteer efforts to plant additional trees and shrubs and remove invasive plants.

11:30 AM - 1:00 PM | Lunch on Your Own

1:00 PM - 1:50 PM

All Sessions Located in
Stoney Creek Room 1

Session: Update on the Final St. Joseph Integrated Plan for Wastewater and Stormwater

Speakers:

- **David Carani, HDR-** David has worked in HDR's water quality and regulatory compliance group for the last 10 years in Columbia, MO. He also currently serves as HDR's Water Business Development Manager for Missouri and Kansas.

Abstract: Over the past decades, aging infrastructure, increasingly complex water quality issues, forever chemicals, and challenging economic conditions due to unprecedented events have strained municipal public works management across the country. This situation has been further complicated by federal and state regulatory processes that historically focused on enforcing individual Clean Water Act requirements on fixed schedules, without full consideration of all obligations that a utility may be facing or whether compliance efforts will even result in meaningful improvements in environmental and public health.

The City of St. Joseph, Missouri (City) understands the challenges these traditional regulatory requirements frameworks can create for a public utility and its customers. The City's current Combined Sewer Overflow Long Term Control Plan (LTCP) outlines \$464 million (in 2009 \$) of collection system, wastewater treatment, and stormwater system improvements that the City would implement over a 20 to 30-year timeframe to achieve the goal of capturing 85% of the wet weather flow volume. This implementation schedule came with significant affordability concerns for the City and its customers, particularly lower-income households. Since 2000, the City has had to increase sewer rates by more than 400% to pay for these improvements, with additional rate increases anticipated. These burdens are likely to be exacerbated when new and evolving regulatory drivers continue to force additional upgrades beyond those required by the LTCP in the City's wastewater and stormwater systems.

In 2012, the US Environmental Protection Agency (EPA) developed the Integrated Municipal Stormwater and Wastewater Planning Approach Framework to support communities in developing plans that balance long-term system improvements with environmental needs planning efforts. EPA's Framework provides St. Joseph with a useful approach for developing a long-term investment strategy that appropriately prioritizes and schedules wastewater and stormwater work that protects human health and the environment, aligns with community priorities, meets regulatory obligations, and is affordable.

This presentation will present the results of the City's IP effort, including their approach for considering community affordability, identifying new capital and operating solutions, and the regulatory and financial outcomes.

1:50 PM - 2:20 PM

Session: HEC-RAS in 2025. What's new?!

Speakers:

- **Brian Fairchild, PE, CFM, HDR** - Brian Fairchild is a Water Resources Project Manager and Design Engineer at HDR. Brian attended KU for his undergraduate and graduate degree, with his graduate coursework focused entirely on Water Resources. He has now been in the industry for nine years, working on infrastructure rehabilitation, master planning, H&H modeling, streambank stabilization, and flood risk mitigation. His professional interests include working on H&H models, improving stormwater resiliency, and helping people manage stormwater as a precious resource that is vital to the community's wellbeing.
- **Kalyn Bishop, CFM, HDR** - Kalyn Bishop is a Water Resources Engineer at HDR and has been in the industry for 6 years. She has experience in H&H modeling, streambank stabilization, scour design, watershed planning, and flood risk management projects. Kalyn is a Certified Floodplain Manager and has utilized her knowledge on various design and planning projects throughout her career. Kalyn offers specialized experience in a wide variety of hydrologic and hydraulic modeling, including both 1D and 2D analysis, GIS applications, and MicroStation/CAD."

Abstract: Join us as we discuss what's new to using HEC-RAS in 2025! This presentation will include a live demonstration of RAS 2025's alpha build and the new pipe network modeling features in the most recent full-release of HEC RAS Version 6. We will finish off the presentation with news and updates on topics like 2D floodway modeling, no-rise analysis, and the overall direction we see 2D hydraulic modeling going with FEMA.

2:20 PM - 2:30 PM | BREAK

2:30 PM - 3:00 PM

Session: Chloride Conundrum: Unraveling Urban Stream Challenges

Speakers:

- **Michele Woolbright Hickman, Boone County** - Michele Woolbright Hickman serves as the Boone County Stormwater Educator. She focuses on communication and outreach efforts to help the community positively impact local water resources. Michele holds an interdisciplinary degree in Environmental Science and has obtained certifications in

Certified Professional in Storm Water Quality (CPSWQ), interpretation, and water education.

Abstract: Chloride is becoming a growing concern in urban streams. The use of chloride-based road salt is a key component for public safety and for maintaining the cultural norm of roads being drivable all year. Boone County Stormwater Management has been collaborating with its MS4 partners and stakeholders to form a Chloride Task Force. This Task Force aimed to develop an interdisciplinary understanding of the actions and motivations driving the use of chloride-based deicers in the watershed, as well as the resulting impacts on water quality, infrastructure, ecosystems, and human safety. The goal of the Chloride Task Force was to provide a pathway for expanding community members' understanding of the impacts of chloride and the Best Management Practices that can be adopted by applicators. Based on work sessions and professional experiences, the Task Force recommends the following: weather information systems, assessing and addressing knowledge gaps, and implementing outreach, information, and education programs.

3:00 PM - 3:50 PM

Session: Today's Stormwater Solutions Need to Do More

Speakers:

- **Andy Sauer, Burns & McDonnell** - Andy is the National Stormwater Management Practice Leader for Burns & McDonnell's Water Global Practice. Andy has more than 27 years of experience in water resources and urban wet weather issues. He specializes in creating smarter, more resilient stormwater solutions that provide a greater public value. He has completed smart stormwater solutions in various urban settings, including green infrastructure within combined sewer areas, optimizing stormwater collections systems in older urban areas, and creating more holistic watershed solutions. His experience ranges from small, rural communities to large urban municipalities. He is currently leading teams updating regional stormwater design standards, completing comprehensive watershed modeling, and stormwater design. Andy is a registered professional engineer, an Envision certified sustainability professional, and the current chair of WEF Stormwater Policy & Governance subcommittee.

Abstract: In today's world of limited funding, aging infrastructure, degrading streams, and changing rainfall patterns, stormwater solutions need to provide more functional value while remaining cost-effective. Increased functional value can be achieved by developing integrated stormwater designs that consider more resilient methods of collecting, storing, and conveying stormwater. Instead of meeting one static stormwater level of service, dynamic watershed computer models can be used to evaluate a range of rainfall events to determine the most cost-effective stormwater performance for different solutions. Technology can be applied so in

real-time rainfall data and gauge data can be evaluated to determine when to hold or release stormwater. Today, stormwater solutions can do more.

This presentation will provide real-world examples of how stormwater solutions can do more when new approaches to stormwater management are applied to meet multiple benefits including flood reduction, water quality improvement, and stream geomorphology. These project examples will also be used to demonstrate why stormwater design criteria need to be improved, how 2D watershed models better communicate the complete stormwater picture to stakeholders, and how as stormwater professionals we can improve our designs in a changing world.

3:50 PM - 4:00 PM | BREAK

4:00 PM - 4:30 PM

Session: City of Memphis, Tennessee April 2025-Storm Event Analysis

Speakers:

- **Kaitlyn Loeffler, Black & Veatch** – Kaitlyn is an Water Resource Scientist with 6 years of experience in the stormwater field. She specializes in hydrologic and hydraulic modeling, stormwater asset management, watershed planning, GIS analysis, and BMP technologies.

Abstract: "The City of Memphis, Tennessee experienced a large rain event in April of 2025. This rain event caused widespread flooding within the city and the city received over 750 calls from residents and city staff related to flooding. The accumulated rainfall from this storm event suggests that between a 100-year and 500-year storm occurred over a four-day period. The City requested that Allworld Project Management and Black & Veatch analyze the rain event and categorize the flooding calls to best address the flooding issues around the city. This presentation will describe the analysis of this rain event and the next steps for the stormwater program based on the analysis. Some of the analysis that will be discussed include:

- Rainfall amounts and storm events,
- Rain gauge locations,
- Flooding tickets from City staff and residents
- How the analysis impacts hydrologic and hydraulic modeling
- Flooding prevention

4:30 PM - 5:00 PM

Session: What's in a Distribution? A Comparison of Stormwater Ordinances

Speakers:

- **Henry Schmitz, Crawford, Murphy & Tilly** - Henry Schmitz, PE, CFM is a civil engineer with 14 years of experience in the water resources and stormwater fields. His work has included collection system and stormwater studies, as well as the design of pump stations, excess flow treatment facilities, and sewer improvements. Henry's expertise in building and calibrating hydraulic and hydrologic models has led to stormwater experience across all CMT business units. He is passionate about reducing the negative impacts of flooding on communities.

Abstract: Most stormwater management ordinances include a required rainfall distribution to accompany design storm return frequencies. But what are the implications of requiring a Huff distribution versus an SCS distribution? What if the ordinance allows either distribution? What if the ordinance doesn't specify a distribution? It can seem like a minor detail, but this presentation will quantify the significance of rainfall distribution. By analyzing a fictional site development requiring stormwater detention, the resulting volumes and discharges from the stormwater facility will be compared using different sample ordinances. Suggestions for ways to bring consistency to detention design will be discussed.