

STORMWATER SUMMIT 2023

TECHNICAL PROGRAM

JUNE 27 - 29
KANSAS CITY, MO



WEF Stormwater Summit 2023

June 27-29, 2023

Kansas City Convention Center,
Kansas City, Missouri, USA

Technical Program

(last updated March 2, 2023)

Workshop A: Hope for the Future: Using Envision to Improve Sustainability
Tuesday, June 27, 2023
8:30 a.m. – 5:00 p.m.

Coordinator: John Phillips, Parametrix

Speakers: Christopher Ranck, Black & Veatch; Jeff Martin, Lara Isch, KC Water; Jesse Lee Williams, Jacobs

Envision is a framework that includes 64 sustainability and resilience indicators, called 'credits', organized around five categories: Quality of Life, Leadership, Resource Allocation, Natural World, and Climate and Resilience. These collectively address areas of human wellbeing, mobility, community development, collaboration, planning, economy, materials, energy, water, siting, conservation, ecology, emissions, and resilience. These indicators collectively become the foundation of what constitutes sustainability in infrastructure.

This workshop will provide clean water professionals with an advanced understanding of Envision and the tools for assessing a clean water project through Envision. In this workshop, participants will learn about Envision from the Institute for Sustainable Infrastructure and receive an overview of the categories and credits. Understand the different ways to use Envision in a capital program portfolio. See examples of how different utilities use Envision and what are some lessons learned from experienced utilities. Learn about different tools to assessing projects through a go/no-go process. Learn how to do a self-assessment. Develop hands on self-assessment tools and walk away with a plan to institute Envision at their utility or company.

The workshop will kick off with an introduction to sustainability in Kansas City. Kansas City just completed a comprehensive climate action plan and sustainability approach. Along with KC Water the workshop will take advantage of local presence with national expertise.

Workshop B: Building Stormwater Programs of the Future: Use Cases and Lessons-Learned for Aligning Technology with the Needs of the Stormwater Industry

Tuesday, June 27, 2023

1:30 p.m. – 5:00 p.m.

Coordinator: Seth Johnstone, 1898 & Co.

Approaches to managing stormwater across the United States vary dramatically depending on factors including geography, geology, topography, funding, governance, staffing, and technology. As stormwater infrastructure ages, extreme instances of flooding increase, and more focus is put on water quality, the stormwater workforce is becoming increasingly stressed and stormwater fees or taxes (when they do exist) are less affordable to lower income rate payers. These challenges show no signs of slowing down, so stormwater managers need to be creative in how they manage their stormwater systems using a best-fit approach of available technologies. To do this, they need to understand how technologies benefit specific workflows and how to quantify the benefits of these new technologies.

This workshop will help stormwater professionals build their skills around the application of new and existing technologies to align with the business needs of stormwater programs. Stormwater programs including Johnson County, Kansas and Lawrence, Kansas along with consulting firms of Burns & McDonnell/1898 & Co., Black & Veatch, and TREKK will share their recent experiences applying technology-based approaches to key workflows common to all stormwater programs. Some of these workflows and processes will include field data collection, asset inventory, asset planning, real-time monitoring, real-time controls, digital dashboard development, and modeling. Other areas will be discussed as the broader technology landscape in general with examples and vendors for different technologies and applications. Each participant will also share areas where technology applications have worked well and areas where deployment of technology has been challenging along with lessons-learned from these deployments.

Opening General Session
Wednesday, June 28, 2023
8:30 a.m. – 10:00 a.m.

More information about the opening general session is coming soon.

Session 01: Outreach and Community Engagement

Wednesday, June 28, 2023

10:45 a.m. - 12:15 p.m.

10:45 a.m. Contain the Rain - How Johnson County, KS is Improving Water Quality Through Public Engagement and Rebates

Ian Fannin-Hughes, Johnson County KS - Stormwater Management Program;
Cloey Adrian, City of Overland Park, KS

11:15 a.m. Still Thinking Blue!: How to Refresh a 20 Year Brand and Re-engage Stakeholders

Bethany Bezak; Craig Gustafson, City of San Diego

11:45 a.m. Listen First, Engineer Second: How “Water Talks” Generated a Community-Led Solution to Flooding in Acton, CA

Serena Zhu, Gurjot Kohli, Stantec

12:15 p.m. Session adjourns for networking luncheon in exhibit hall

Alternate MS4s and Missouri Stream Team Program Partnerships

Sarah Wright, Missouri Department of Natural Resources; Brian Waldrop,
Missouri Department of Conservation

Session 02: It Won't Work if it's Broke (O&M)

Wednesday, June 28, 2023

10:45 a.m. - 12:15 p.m.

10:45 a.m. Building Green Infrastructure — Why it Matters that Contractors Know How to Construct Green Infrastructure
Madison Gibler, Burns & McDonnell

11:15 a.m. How to Avoid Green Elephants: Green Infrastructure Asset Management for Good Governance and Resilience
Jennifer Court, GHD

11:45 a.m. Green Infrastructure Maintenance. Applying the New Urban Stormwater Controls Operations & Maintenance Manual
Andrew Sauer, Burns & McDonnell; Fernando Pasquel

12:15 p.m. Session adjourns for networking luncheon in exhibit hall

Alternate Developing Comprehensive, Cooperative Solutions for Stormwater BMP Operations and Maintenance
Anna Eleria, Mark Doneux, Forrest Kelley, Capital Region Watershed District

Session 03: Applying Technology to Elevate Stormwater Management

Wednesday, June 28, 2023

10:45 a.m. - 3:00 p.m.

- 10:45 a.m. Real Time Hydraulic Modeling and Flood Forecasting for the Johnson County Stormwater Management Program, Kansas**
Elango Thevar, NEER; Sarah Smith
- 11:15 a.m. Mitigating High-Flows and Improving Water Quality in a Stormwater Impaired Brook**
Dayton Marchese, OptiRTC; James Sherrard, City of Burlington, Vermont
- 11:45 a.m. An Automated Open-Channel Encroachment Identification Model Based on Machine Learning in Los Angeles County**
Jinshu Li, Stantec; Darin Son; Martha Farella, Jonathan Abelson, Stantec; Danna Shelleh, Yao Kouwonou, Los Angeles County Public Works
- 12:15 p.m. Break for networking luncheon in exhibit hall**
- 1:30 p.m. Community Flood Response & Watershed Resilience Using Sensors, Maps, and Alerts**
Brandon Wong, Hyfi; Branko Kerkez
- 2:00 p.m. Stormwater Capture and Use — A Planning Approach and Future Research Topics**
Jim Rasmus, Stantec; Harry Zhang, The Water Research Foundation; Elisa Garvey, Carollo; Seth Brown, Storm and Stream Solutions and NMSA
- 2:30 p.m. Green Infrastructure Program in New York City**
Dmitrijs Obolevics, Arup
- 3:00 p.m. Session adjourns for networking break in exhibit hall**
- Alternate Application of Machine Learning in Stormwater Risk Management for the Johnson County Stormwater Management Program, Kansas**
Elango Thevar, NEER; Sarah Smith

Session 04: Stormwater Asset Management

Wednesday, June 28, 2023

1:30 p.m. - 4:45 p.m.

1:30 p.m. Comprehensive Asset Management Program Development for Flood Risk Infrastructure in Harris County, Texas
Chad Richards, Brett Sachtleben, Atkins North America; Jeremy Phillips, Jason Krahn, Harris County Flood Control District

2:00 p.m. GIS-Based Data Management and Visualization for Stormwater Asset Management and Planning
Sarah Fuller, Wade Trim

2:30 p.m. E. coli Reduction in Storm Sewers — Investigation, Rehabilitation & Monitoring Results
Carla Coveart, GM BluePlan Engineering

3:00 p.m. Networking break in exhibit hall

3:45 p.m. Managing Storm Sewer Assets in Arlington Heights, IL
Karol Giokas, RJN Group

4:15 p.m. Finding Balance in Stormwater Management
Aaron Jones, TREKK Design Group

4:45 p.m. Session adjourns for networking reception in exhibit hall

Alternate Application of a Risk-Based Asset Management Framework for the Des Moines Stormwater Master Plan
Jessica Stanton, John Aldrich, CDM Smith; Chad Johnson, Erica Wellen; Dana Giesy; Travis Gardner, Allison Wagner, CDM Smith

Session 05: Strategies for Stormwater Sustainability and Resiliency
Wednesday, June 28, 2023
1:30 p.m. - 4:45 p.m.

- 1:30 p.m. Planning Future Stormwater Infrastructure: Incorporating Climate Change Projections into Engineering Design**
Phetmano Phannavong, Atkins North America; Felicio Cassalho
- 2:00 p.m. Analyzing Flood Risk – Mapping a Framework to a Safer, Equitable, and Resilient Fairfax County**
Catie Torgersen, Brett Martin, Saurabh Raje, Fairfax County Department of Public Works and Environmental Services
- 2:30 p.m. Strategies and Conceptual Designs for Climate Adaptation and Coastal Stormwater Discharge in Boston**
Benjamin Agrawal, Hazen and Sawyer; Charlie Jewell, Boston Water and Sewer Commission; Charles Wilson, Hazen and Sawyer; John Sullivan, Boston Water & Sewer Commission
- 3:00 p.m. Networking break in exhibit hall**
- 3:45 p.m. Intermodal Rail Logistics Park Prioritizes Stormwater and Sustainability with Ecological Conservation Corridor in Kansas City**
Garland Pennison, John Denlinger, HDR
- 4:15 p.m. Stormwater Capture to Enhance Water Resiliency and Sustainability in Southern California**
Masih Bari, Cristian Hernandez, Atkins
- 4:45 p.m. Session adjourns for networking reception in exhibit hall**
- Alternate West Riverside Energy Center: How Nature Based Stormwater Solutions Led to Envision Platinum Verification**
Michael Ryan, HDR
- Alternate Regional, Nature-based Solutions to Stormwater Management**
Shayne Paynter, Atkins

Session 06: Environmental Justice in Action

Wednesday, June 28, 2023

3:45 p.m. - 4:45 p.m.

3:45 p.m. Equity Considerations for Stormwater Management: Existing State, Local and Federal Efforts to Address Needs of Historically Underserved Communities

Ummekulsoom Lalani, Phetmano Phannavong, Atkins North America

4:15 p.m. Creating a Stormwater Park over an Interstate: Restoring Community Connections with a Highway Cap and Green Infrastructure

Thomas Batronev, HDR

4:45 p.m. Session adjourns for networking reception in exhibit hall

Alternate Increasing Community Benefits and Grant Funding Opportunities through Multi-Benefit Projects

Nathan Schreiner, Alex Yescas, HDR

Session 07: Funding and Financing

Thursday, June 29, 2023

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

8:30 a.m. **Shifting Paradigms: Solutions for Watershed Infrastructure Financing**

Lisa Bechini, Tahne Corcutt, Northbridge Environmental

9:00 a.m. **Funding Resiliency Through Unique Stormwater Fees**

Andrew Burnham, Kelly Westover, Stantec

9:30 a.m. **Full-delivery Stormwater Management P3s with DOTs**

Micah Shapiro, Resource Environmental Solutions

10:00 a.m. **Session adjourns for networking break in exhibit hall**

Alternate **Leveraging CWSRF for Green Infrastructure and O&M Solutions**

Caroline Koch, WaterNow Alliance; Stephanie Vo, Environmental Policy Innovation Center; Amy Weinfurter, WaterNow Alliance

Session 08: Modeling and Water Quality at the Watershed Scale
Thursday, June 29, 2023
8:30 a.m. - 12:15 p.m.

- 8:30 a.m. Going Beyond the Modeling to Create Resilient, Sustainable, and Value-Driven Stormwater Solutions**
Jeff Doudrick, Burns & McDonnell; Mitchell Goedecken
- 9:00 a.m. Base Level Engineering — A foundational tool for stormwater management**
Seth Ahrens, Atkins North America
- 9:30 a.m. Integrating 1D and 2D Riverine and Collection System Models**
Mary Whitehead, Mark Van Auken, Arcadis
- 10:00 a.m. Networking break in exhibit hall**
- 10:45 a.m. Tijuana River: Collaboration and Complex Technical Assessments to Improve Water Quality in one of California’s Most Polluted Rivers**
Nathan Schreiner, Alex Yescas, HDR
- 11:15 a.m. Achieving Bacteria Compliance in the Upper Los Angeles River Watershed Through a Human Health Risk-Based Approach**
Brianna Datti, Craftwater Engineering Inc.; Dawn Petschauer, City of Pasadena
- 11:45 a.m. The Impact of Microplastics and Emerging Micropollutants in Highway Runoff: The Italian Job**
Stefano Biondi, Martina Favarin, Francesca Sambo, SWI Group Srl
- 12:15 p.m. Session adjourns for networking luncheon in exhibit hall**
- Alternate A Collaborative Vision: Regional Stormwater Management at 325 Blake Road**
Michael Ryan, HDR

**Session 09: Bioretention with Load Bearing Modules: Utilizing Municipal Soil
Volume Regulations**

Thursday, June 29, 2023

8:30 a.m. – 10:00 a.m.

Coordinator: Albert Key, DeepRoot Green Infrastructure, LLC

This session will provide an overview of integrating large urban trees and their associated soil volumes into ESD solutions, particularly in the densest urban areas. Many cities already have tree and soil volume requirement ordinances; however, the green infrastructure component - large trees and their required soil volumes - presents an underrealized opportunity for stormwater management. The presentation, utilizing pertinent case studies, will examine ultra-urban storm water management suspended pavement technologies at various scales.

Session 10: Regulations, Policy, and Guidance

Thursday, June 29, 2023

10:45 a.m. - 12:15 p.m.

- 10:45 a.m. WEF MS4 Survey: Interesting Findings from 3 Years of Data**
Scott Taylor, Michael Baker International; Bianca Pinto, Water Environment Federation; Seth Brown
- 11:15 a.m. Modernizing Stormwater Design Criteria for Today's Multi-Benefit Solutions**
Andrew Sauer, Burns & McDonnell
- 11:45 a.m. Introducing a New ASTM Standard Method for Measuring Trash Capture**
Gregory Williams, StormTrap
- 12:15 p.m. Session adjourns for networking luncheon in exhibit hall**
- Alternate Stormwater and Nature-Based Solutions, Using all of the Tools in the Toolbox**
Patrick Bradley, RES

Session 11: Creating a Place for Stormwater: A Multi-Benefit Approach to Stormwater Retrofits

Thursday, June 29, 2023

10:45 a.m. - 12:15 p.m.

Coordinator: Paul Fendt, Parametrix

Speakers: John Phillips, Julie Brandt, Parametrix

Stormwater contamination is one of the most significant on-going threats to the health of water resources across the county. While permits, programs, and practices to address stormwater quality have been in place since the late 1980s, ongoing impacts are occurring, often due to the legacy development and systems that were in place before our current programs. Great strides have been made toward addressing new development and sources, but less focus has been on addressing legacy development, unless motivated by other water quality programs, such as combined sewer overflow reduction programs.

Several municipalities in the Pacific northwest have taken on stormwater retrofit planning and projects on their own and implemented a variety of stormwater retrofitting projects. In some instances, local stormwater practitioners are prioritizing new "regional" facilities for large scale basin retrofitting in place-making projects referred to as "Stormwater Parks."

Attendees to this session will learn how to identify the gaps for legacy stormwater treatment, prioritize for the greatest need and opportunity; utilizing treatment coverage, operations and maintenance requirements, and locate funding and financing.

Session 12: Moving Beyond Site Based Green Infrastructure

Thursday, June 29, 2023

1:30 p.m. - 4:45 p.m.

- 1:30 p.m.** **Natural Drainage System Partnering in Seattle: A Portfolio of Innovations to Address Challenges and Opportunities in Retrofitting Informal Right-of-way**
Dustin Atchison, Juan Romero, Jacobs; Greg Stevens, Shanti Colwell, Seattle
Public Utilities
- 2:00 p.m.** **Market District Green Infrastructure: Designing and Constructing one of the Largest Green Infrastructure Projects in the Midwest. Made Possible Through Public-Private Partnership**
Craig Clarkson, ISG
- 2:30 p.m.** **Village of Wilmette Neighborhood Storage Project - An Urban Flooding Relief Project is the Largest Capital Project in the Village's History**
Darren Olson, Christopher B. Burke Engineering, Ltd
- 3:00 p.m.** **Networking break in exhibit hall**
- 3:45 p.m.** **Creating Higher Value Infrastructure — Integrating Green Infrastructure into Linear Corridors**
Brenda Macke, Lauren Moore, Burns & McDonnell
- 4:15 p.m.** **Naturalization of Fassnacht Creek, An Urban Stormwater Success Story**
Eric Dove, HDR; Kirkland Preston, City of Springfield
- 4:45 p.m.** **Conference adjourns**
- Alternate** **Improving Water Resources and Creating Livable Communities with Sustainable Urban Drainage Systems (SUDS)**
Jesse Williams, Dustin Atchison, Jacobs

Session 13: Advancements in Modeling

Thursday, June 29, 2023

1:30 p.m. - 4:45 p.m.

- 1:30 p.m. Meeting Stormwater Regulatory Requirements Using Continuous Simulation Models**
Robert Traver, Amanda Hess, Joseph Erskine, Villanova University
- 2:00 p.m. Am I Missing Something in My Stormwater Design?**
Ryan Brown, P.E., Autodesk
- 2:30 p.m. Connecting a Community Through Innovative Modeling of the Withlacoochee River**
Joe Walter, Atkins
- 3:00 p.m. Networking break in exhibit hall**
- 3:45 p.m. Bringing Fairfax County, VA Flood Maps To The 21st Century**
Rebecca Purvis, Atkins; Kenneth Hunu
- 4:15 p.m. Creating Affordable Multi-Benefit Flood Solutions within a CSO Basin Requires Bigger Thinking**
Andrew Sauer, Lauren Moore, Burns & McDonnell
- 4:45 p.m. Conference adjourns**
- Alternate 2-D Watershed Modeling in Johnson County, KS: Flood Risk Identification and Beyond**
Thomas Morey, Stantec; Sarah Smith

Session 14: From Strategic Planning and Program Management to Implementation

Thursday, June 29, 2023

1:30 p.m. - 4:45 p.m.

- 1:30 p.m. Eyes on the Prize: Strategic Planning for Stormwater Success**
Bethany Bezak; Brianna Datti, Craftwater Engineering Inc.
- 2:00 p.m. Planning for Holistic, Watershed-Based Stormwater Management in Johnson County, Kansas**
Heather Schmidt, Johnson County KS Government
- 2:30 p.m. A Novel Planning-Level Optimization Tool for Placement of Green Infrastructure**
Ali Shojaeizadeh, Atkins
- 3:00 p.m. Networking break in exhibit hall**
- 3:45 p.m. Creating an Equitable Stormwater Utility in the City of Chester, PA**
Lauren Van Meter, Suhas Nagavalli, HDR; Horace Strand, Stormwater Authority of the City of Chester
- 4:15 p.m. A Tale of Two Communities and Their Approaches to Master Planning Their Futures**
Richard Greuel, Arcadis
- 4:45 p.m. Conference adjourns**
- Alternate Balancing Roadways with Vegetated Systems: Seeking Resilient Stormwater Management in a Linear Environment to meet MS4 Requirements**
Brenda Macke, Kylie Clark, Burns & McDonnell; Dale Kirmer, Kansas Department of Transportation