



STORMWATER SYMPOSIUM | 2026

PROPELLING SOLUTIONS

ABSTRACT TITLE GUIDE WEDNESDAY, OCTOBER 14

10:15 am - Flood Risk Assessment and Urban Flood Modeling

The Villanova Room

Moderator: Jeff MacKay, MS, PE, CPESC - NTM Engineering, Inc

- ***Present and Future Damage: Quantifying Urban Flood Impacts in Philadelphia***
Patrick Perhosky¹, PE; Sue Patterson¹, CFM; Elise Ibendahl², PE, PMP, CFM, FASCE; Monique Epitropou², PE; Courtney Finneran², PMP; Katherine Everett²
Philadelphia Water Department¹; Jacobs Engineering Group Inc²
- ***Development? Inevitable. Storms? Unstoppable; Flooding Evaluation of the Route 51 Corridor***
Ifeanyi Odigboh¹, MS, PE, CFM, SPESC; Sergio Carvajal¹, PE
Greenman-Pedersen, Inc¹
- ***Pluvial Flooding in Karst Watersheds: Simulation Example and Design Guidance Review***
Matthew Vanaskie¹, MS, PE; Adam Wilusz¹, PE
Herbert, Rowland and Grubic, Inc¹
- ***Flood Forecasting for Real-Time Decision Support and Resilient Planning***
Cara Reichenbach¹, MS, PE, EIT, CFM; F. Warren McKinnie¹, PE, CFM, GISP¹
Streamline Technologies, Inc¹

10:15 am - Advanced Hydraulic and Hydrologic Modeling

The Cinema

Moderator: Carolyn Paone, PE, LEED AP - AKRF, Inc

- ***Rain-on-Grid Modeling in Mountainous Terrain: A Case Study at Five Chilean Mining Sites***
Catherine Marino¹, MS, EIT; Joseph Bellini¹, PE, PH, BC.WRE, CFM
Aterra Solutions¹
- ***Beyond the Barrel: Leveraging 2D Hydraulic Modeling to Optimize Culvert Design and Evaluate Downstream Impacts***
Sergio Carvajal¹, MS, PE; Thomas Logan, EIT¹
Greenman-Pedersen, Inc.¹

- **Comparison of 1D, 2D, and 3D Model for Labyrinth Spillway Design**
Madhat Fares¹ MS; Tadd Alexandar¹, PE; Joseph Bellini¹, PE, PH, BC.WRE, CFM; Petr Masopust¹, PE, CFM
Aterra Solutions¹
- **Legacy In the Flow: Forensic Hydraulics for Clomr Design at Historic Urban Bridges**
Melika Riley¹; Nora Schmidt, MS, PE¹
ARKF, Inc¹

11:35 am - Green Stormwater Infrastructure Design and Performance

The Villanova Room

Moderator: Zach Ranstead, PE, LEED-AP, CFM - T&M Associates

- **Watershed-Scale Flood Mitigation by Green Stormwater Infrastructure: Current Evidence and Future Directions**
Bishwodeep Adhikari¹, MS, PhD; Olga Belousov¹; Seyed Ghasem Razavi¹; Shirley E. Clark¹, PhD, PE. D. WRE, ENV SP, F. EWRI
Penn State Harrisburg¹
- **Evaluating the Climate Resilience of an Interconnected Green Stormwater Infrastructure System Using PC-SWMM Model**
Mahmid Saminur Rahman¹, MS, PE, CEM, ENV SP; Mithila Parvin¹; Bridget Wadzuk², PhD
Philadelphia Water Department¹; Villanova Univerisity²
- **Assessing Flood Mitigation Performance in Urban Landscapes with Compacted Soils**
Seyed Ghasem Razavi¹, MS
The Pennsylvania State University¹
- **Symbiotic Subsurface Bioretention**
Stephen Shiffer¹, MS, PE; Rob Woodman¹, PE, CPESC, NGICP, LEED Green Associate
Ferguson Waterworks¹

11:35 am - GSI Construction, Materials, and Maintenance

The Cinema

Moderator: Edwina Lam, PE - AECOM

- **Delivering Urban Green Stormwater Infrastructure: Lessons from Planning, Design, and Construction**
Suhas Nagavalli¹, MS
HDR Inc¹
- **Subsurface Gravel Wetlands: Lessons Learned 2+ Years After Construction**
Jason Wright¹; MS; Blake Cary¹, MS
Tetra Tech¹
- **Green Stormwater Infrastructure Management: The Design/Maintenance Connection**
David Hirschman¹, MS; Jason Swope²; Beth Ginter²; Katie Pinkham²; Melissa Dombrowski²
Hirschman Water & Environment, LLC¹; Chesapeake Conservation Landscaping Council²

2:00 pm - Stormwater and Watershed Water Quality and Treatment

The Villanova Room

Moderator: Matthew Vanaskie, MS, PE - Herbert, Rowland and Grubic, Inc.

- ***Prioritizing effectiveness and efficiency in pollutant removal: Recommended strategies for NJDEP's Watershed Improvement Plan***
Carolyn Paone¹, PE, LEEP AP; Jordan Shuster¹, MS, PE
AKRF, Inc¹
- ***Soil metal and carbon patterns in stormwater biofiltration GSI in Lancaster, PA***
Lauren McPhillips¹, MS, PhD
The Pennsylvania State University¹
- ***Geosynthetic-Based Stormwater Quality Rain Garden***
Terry Sheridan¹, PE
GeoStorage Corp¹
- ***Assessment and Application of CrAssphage, HF183 and pBI143 as Markers of Human Fecal Contamination in Maryland, United States***
Saheeb Idris¹, Ocean Thakali¹, Mustafa Ali¹, Samendra Sherchan¹
Morgan State University¹
- ***Improving Infiltration Modeling in Urban Soils through Field Testing and Soil Moisture Sensor Data***
Shirley Clark¹, PhD, PE, F ASCE; Ghasem Razavi¹; Bishwodeep Adhikari¹, PhD
Pennsylvania State University at Harrisburg¹

2:00 pm - Climate Resilience and Community Adaptation

The Cinema

Moderator: Colette McDonald, EIT, ENV SP - Jacobs

- ***From Brownfield to Resilience: Collaborative Stormwater Innovation at Overbrook Environmental Education Center***
Michael Busch¹, EIT
Meliora Design¹
- ***NYC Cloudburst Resiliency: Transformational Community Adaptation through Strong Partnerships***
Alan Cohn¹; John Brock¹; Melissa Enoch¹, Roopesh Joshi¹, PE; Anni Luck², PE, PMP, ENV SP; Mihir Gupta, MS, PE²
New York City Department of Environmental Protection¹; Hazen and Sawyer²
- ***Building Flood Resilience in Selinsgrove Borough***
Megan Schmidt¹, MS; Carolyn Paone¹, PE, LEEP AP
AKRF, Inc¹
- ***The Smith Cove Project – A Middle Branch Resiliency Initiative Effort***
A. Forbes¹, PE, ENV SP; Nate Lehigh¹, MS
GreenVest, LLC¹
- ***How the 'Envision the Choptank' Collaborative Accelerates Clean Water Goals***
Amanda Pollack¹, PE
Center for Watershed Protection¹

4:00 pm - Smart Stormwater Systems, Monitoring, and Digital Tools

The Villanova Room

Moderator: Andrew Anderson, MS, PE - Hazen and Sawyer

- ***Scaling Down to Scale Up: Smart Stormwater Controls for Extreme Rainfall Resilience***
Robert Bathurst¹, PE, MSIA, BC.WRE, LEED AP
RGB Civil Engineering, LLC¹
- ***A Digital O&M Toolkit: Conditional Forms and a Database of Routine Stormwater Management Inspections***
Blake Cary¹, MS; Jack Wright¹, PE; Aric Torreyson¹, PE, Env Sp
Tetra Tech¹
- ***Private SMPs, Public Value: Insights from Monitoring Privately Owned GSI***
Richard Schaeffer¹; Max Avenier¹; Travis Stables¹; Katelyn Csatori¹, CFM, EIT
Philadelphia Water Department¹

4:00 pm - Ecology, Restoration, and Nature-Based Solutions

The Cinema

Moderator: Derek Berg - Contech Engineered Solutions

- ***Interacting Effects of Deicing Salt and Drought on Plant Performance and Soil Microbial Function in Stormwater Basins***
Joshua Caplan¹, PhD; Joni Baumgarten¹, PhD; Katherine Opila¹, R. Klinger¹; Bram Stone²; Robert E. Warburton²; Giovana Simao Slanzon³, PhD; Nhu Nguyen³, PhD; and Sasha Eisenman, PhD¹
Temple University¹
Pacific Northwest National Laboratory²
University of Hawai'i at Mānoa³
- ***A Look at Urbanization's Acceleration of Salmon Mortality due to 6PPD-Q and How Green Infrastructure Can Help***
Emily Van Assendelft¹, MS, EIT
Villanova University¹
- ***Daylighting Tibbetts Brook: Reconnecting a Lost Waterway to Reduce CSOs and Restore Urban Ecology***
R. Joshi¹; A. Motzny¹; John Brennan², PE; S. Mehrotra²; D. Thompson²
New York City Department of Environmental Protection¹; Hazen and Sawyer²
- ***Beyond Traditional Procurement: The Community-Based Partnership Model for Equitable Green Stormwater Infrastructure at Scale***
Marco Finazzi¹, MS, PE, PMP; Roland Jones¹
Corvias Infrastructure Solutions¹