

Southeast PA Engineers Workshop

December 5th, 9:00AM – 3:00PM

Hosted by Southeast PA RC&D Council and SE PA Conservation Districts

Montgomery County Public Safety Training Campus, Auditorium

1175 Conshohocken Rd, Conshohocken, PA 19428

9:00-9:30 - Check in & refreshments

9:30-9:45 – Opening Remarks

9:45 – 11:00: “Navigating the New Draft MS4 Permit: Improving Water Quality”

Beth Uhler, Center for Watershed Protection

The new draft MS4 Permit shifts the Commonwealth’s current water quality improvement approach of reducing sediment and nutrient pollutants from urban sources to managing stormwater runoff volume, creating opportunities to address localized flooding concerns while improving Pennsylvania’s waters. This session outlines key changes and how the draft permit considers the socioeconomic status of municipalities, incentivizes intermunicipal collaboration, and encourages other co-benefits.

11:00 – 11:45: "Resiliency in PCSM Design through a Biofiltration Example"

Dr. Rob Traver & Dr. Amanda Hess, Villanova University

The authors will discuss, from the perspective of resiliency incorporated in the Draft Post Construction Stormwater Management (PCSM), the roles of infiltration and evapotranspiration in a bioinfiltration stormwater control measure (SCM) design and modeling. Both continuous simulation and design storm modeling methods will be discussed. Results from SCM monitoring research will be included with practical lessons learned on runoff capture and maintenance.

11:45 - 12:30 - Lunch (provided on-site)

12:30 – 1:30 - "Managed Release Concept: Main Concepts and Current Practice"

Dr. Rob Traver & Dr. Amanda Hess, Villanova University

The managed release concept (MRC) is a stormwater management method for stormwater control measures (SCM) where infiltration is not feasible or not desirable. This presentation will discuss the "why" behind the MRC SCM criteria, how different MRC SCM variations accomplish the MRC criteria (such as through pretreatment via Manufactured Treatment Devices and diversions), and reporting in the spreadsheet.

1:30 – 2:00 – Erosion Potential Analysis

Bill Himes, PA DEP

Understanding when an Erosion Potential Analysis is required on NPDES permit applications, and how to properly complete it.

2:00 – 2:45 – Conservation District staff presentation block: “As Seen in the Field”

2:45 – 3:00 - Closing remarks

Speakers:

Dr. Amanda Jean Hess, PE, is an Assistant Research Professor at Villanova University in the Villanova Center for Resilient Water Systems where she works on the rewrite of the PA DEP Stormwater Manual and monitoring and research efforts of PennDOT's I-95 reconstruction project. Amanda's industry experience focuses on stormwater infrastructure in Philadelphia and implementation of smart stormwater controls in across the United States. Amanda received her Master's and PhD from Villanova University in 2014 and 2017, respectively, where she focused on quantifying evapotranspiration from rain garden plants.

Dr. Robert Traver, PE, is a Professor in the Villanova Department of Civil and Environmental Engineering, a Professional Engineer, and the founding Director of the Villanova Center for Resilient Water Systems. His over thirty years of research on green stormwater infrastructure is aimed to improve our engineering practices through understanding of the unit processes. Dr. Traver created the Stormwater Green Infrastructure Demonstration and Research Park at Villanova and is an associate editor of the ASCE Journal Sustainable Water in the Build Environment which he helped to create.

He was a committee member of the National Research Council Committee that authored "Urban Stormwater Management in the United States" (2009), and coauthored the textbook Green Stormwater Infrastructure Fundamentals and Design (Wiley) More recently he was awarded the American Academy of Water Resource Engineer Outstanding Research and Innovation Award in 2023, and the ASCE University Water Resources Research Council Service Award (2024).

Dr. Traver is a fellow of the American Society of Civil Engineering, and a Diplomate of the American Academy of Water Resource Engineers which he served as president. In 2007 he received the USACOE Outstanding Civilian Service Medal for his work on ASCE's External Review Panel (ERP) of the Corps investigation of Hurricane Katrina. Dr Traver received his BSCE degree from the Virginia Military Institute, his MCE from Villanova, and his Ph.D. from The Pennsylvania State University.

Beth Uhler, Pennsylvania Director, Center for Watershed Protection

Beth serves as the Pennsylvania Director for the Center for Watershed Protection, with over 20 years of expertise in various areas including stormwater management, watershed planning, GIS solutions, wetland science, and NPDES MS4 permit compliance. Her contributions have been instrumental for local governments and stewards of Pennsylvania's waters and beyond. Beth adopts a collaborative and technology-driven approach, providing sound scientific and regulatory advice while delivering project and program guidance. Additionally, she conducts water resources trainings and presentations, and serves as a subject matter expert for stormwater management programs. Beth is currently Vice Chair of the PA DEP's Water Resources Advisory Committee, providing input on state policy and regulation and serving as an intergovernmental liaison among local, state, and federal entities. She holds a Bachelor of Science in Geo-environmental Studies from Shippensburg University.