



## STORMWATER SYMPOSIUM | 2022

Infrastructure. Resilience. Equity.

### ABSTRACT TITLE GUIDE THURSDAY, OCTOBER 13

#### 8:30 AM – Changing Climate

[The Villanova Room](#)

*Rainfall Analysis and Climate Change Projections for Municipal Infrastructure Planning*

E. Rakestraw<sup>1</sup> & A. Potts<sup>1</sup> (Presenter)

T. Jantzen<sup>1</sup> & S. Campbell<sup>2</sup>

Jacobs Engineering Group<sup>1</sup>, City of Lancaster<sup>2</sup>

*Future Climate Impact on Raingarden Effectiveness in a Suburban Watershed*

R. J. Ryan<sup>1</sup>

Department of Civil and Environmental Engineering, Temple University<sup>1</sup>

*Design of Stormwater Control Measures for Extreme Rainfall*

M. D. Bowen<sup>1,2</sup>

NTM Engineering<sup>1</sup>, Delaware Basin Regional Water Resource Committee, State Water Plan Update<sup>2</sup>

#### 8:30 AM – I-95 Girard Avenue Interchange Stormwater Project—Lessons Learned From Collaborative Research

[The Cinema](#)

*Villanova and Temple University are working collaboratively with PennDOT through AECOM to conduct research “that supports a resilient PennDOT Stormwater Strategy that reduces overall costs through reduction of risk, enhanced performance, extended lifecycle, and reduced targeted maintenance costs of SMPs.” The panelist will first present an overview of the project, and then will discuss what has been learned, and the benefits gained from this collaboration.*

E. Lam<sup>1</sup>

C. Lynn<sup>1</sup>, L. Toran<sup>2</sup>, & R. Traver<sup>3</sup>

AECOM<sup>1</sup>, Temple University<sup>2</sup>, Villanova Urban Stormwater Partnership, Villanova University<sup>3</sup>

**10:40 AM – Philadelphia Water Department Operations and Performance of Green Stormwater Infrastructure**  
**The Villanova Room**

*An Overview of PWD's Green Stormwater Operations Unit (GSO)*

A. Kirkland<sup>1</sup>

Green Stormwater Operations Unit, Philadelphia Water Department<sup>1</sup>

*Expecting the Unexpected; Anticipation, Preparation, Response and Oversight of GSI in an Urban Environment*

J. Bluebaugh<sup>1</sup>

Green Stormwater Operations Unit, Philadelphia Water Department<sup>1</sup>

*Building Operational Resilience for a Stormwater Maintenance Grounds Program*

M. Rozanski<sup>1</sup>

Green Stormwater Operations Unit, Philadelphia Water Department<sup>1</sup>

*Construction Phase Performance Testing of Lined GSI*

W. Nichols<sup>1</sup>

Office of Watersheds, Philadelphia Water Department<sup>1</sup>

**10:40 AM – Focus on the Floodplain**

**The Cinema**

*Partnership for Wissahickon Floodplain Reconnection*

B. Long<sup>1</sup>

Biohabitats Inc.<sup>1</sup>

*French Creek West: Remediation and Redevelopment along a FEMA AE Floodplain*

Z. H. Ranstead<sup>1</sup>

T&M Associates<sup>1</sup>

*Aquatic Resource Mitigation at Bensalem Township High School – PennDOT District 6-0*

A. W. Donaldson<sup>1</sup>

A. M. Birmingham<sup>1</sup>, T. Charles<sup>1</sup>, & D. Fischer<sup>2</sup>

Johnson, Mirmiran & Thompson, Inc.<sup>1</sup>, PennDOT District 6-0, Environmental Unit<sup>2</sup>

*Watershed-wide Flooding and Wet Weather Assessment and Mitigation Study in Fishing Creek Watershed, Columbia County, PA*

M.J. Vanaskie<sup>1</sup>

HRG<sup>1</sup>

**1:15 PM VUSP—Research Findings from an Integrated Approach to GSI Analysis**

**The Villanova Room**

*Villanova researchers will be presenting findings and recommendations from the water resources, geotechnical, and robotics perspectives on the monitoring and analysis of several PennDOT SMP's constructed as part of the I-95 GIR Project*

G. Clayton<sup>1</sup>, A. Hess<sup>1</sup>, K. Sample-Lord<sup>1</sup>, V. Smith<sup>1</sup>, R. Traver<sup>1</sup>, B. Wadzuk<sup>1</sup>, & G. Zaremba<sup>1</sup>



Villanova Urban Stormwater Partnership, Villanova University<sup>1</sup>

**1:15 PM – Permeable Pavement**  
**The Radnor-St. David Room**

*Permeability Restoration of Permeable Interlocking Concrete Pavements*

B. Horr (Presenter)<sup>1</sup>, R. Smith<sup>1</sup>

J. Drake<sup>2</sup>

Interlocking Concrete Pavement Institute Foundation for Education & Research<sup>1</sup>, College of Civil & Mineral Eng., University of Toronto<sup>2</sup>

*Permeable Pavement Case Study at Ursinus College*

K. Earley<sup>1</sup>

S. Gehringer<sup>2</sup>

Oldcastle<sup>1</sup>, Facilities Department, Ursinus College<sup>2</sup>

*Comparison of Winter Deicing Operations for Permeable Interlocking Concrete Pavements (PICP) Compared to Asphalt*

B. Horr (Presenter)<sup>1</sup>, R. Smith<sup>1</sup>

J. Drake<sup>2</sup>

Interlocking Concrete Pavement Institute Foundation for Education & Research<sup>1</sup>, College of Civil & Mineral Eng., University of Toronto<sup>2</sup>

**1:15 PM – SCM Master Planning II**  
**The Cinema**

*Next Generation Stormwater Master Planning to Address Evolving Needs*

A. Anderson<sup>1</sup>

M. Jones<sup>1</sup>, R. O'Banion<sup>1</sup>, & T. Smith<sup>1</sup>

Hazen and Sawyer<sup>1</sup>

*Stormwater Management and Engineering Solutions in Refugee Camps at the US/Mexico Border*

S. Merrill<sup>1</sup>

Solidarity Engineering<sup>1</sup>

*Finding Green and Gray Infrastructure Opportunities in Chicago, IL*

R. Connolly<sup>1</sup>

B. Callahan<sup>1</sup>, M. DuPont<sup>1</sup>, L. Gillespie<sup>1</sup>, T. Novotny<sup>1</sup>, & B. Wawczak<sup>2</sup>

Stantec Consulting Services Inc.<sup>1</sup>, Metropolitan Water Reclamation District of Greater Chicago<sup>2</sup>

**2:35 PM – Equity and Triple Bottom Line**  
**The Villanova Room**

*Stormwater Stories: Communicating Triple Bottom Line Benefits of Green Infrastructure*

M. M. Schmidt<sup>1</sup>

Engineering & Land Planning Associates<sup>1</sup>

*GSI: A Tool for Equitable Economic Recovery and Growth in Pennsylvania*

A. Shipp<sup>1</sup> & A. Cupo<sup>1</sup>



R. Overmoyer<sup>2</sup>, J. Peytas<sup>2</sup>, & C. Worley<sup>2</sup>  
Sustainable Business Network of Greater Philadelphia<sup>1</sup>, Fourth Economy<sup>2</sup>

*Reshaping the Regulatory Framework: An Avant Garde Classic Equitable Fully Distributed Integrated Approach for Optimal Green Infrastructure Selection*

J. Seersma<sup>1</sup>

S. Saksena<sup>2</sup>, S. Sharvelle<sup>1</sup>, & V. Merwade<sup>3</sup>

Dept. of Civil and Env. Eng., Colorado State University<sup>1</sup>, Dept. of Civil and Env. Eng., Virginia Tech<sup>2</sup>, Lyles School of Civil Eng., Purdue University<sup>3</sup>

## **2:35 PM – Addressing Water Quality**

[The Radnor-St. David Room](#)

*Digging into the Biogeochemistry of Internal Water Storage: Implications for Greenhouse Gas Emissions and Nitrogen Treatment*

L. E. McPhillips<sup>1,2</sup>

T. Tarannum<sup>1</sup> & B. Adhikari<sup>1</sup>

Dept. of Civil and Env. Eng., Penn State University<sup>1</sup>, Dept. of Agri. and Biological Eng., Penn State University<sup>2</sup>

*Tredyffrin Township Pollutant Reduction Plan (PRP) Strategy*

S. Burgo<sup>1</sup>

M. Chase<sup>2</sup> & C. Finneran<sup>2</sup>

Tredyffrin Township Engineering Department<sup>1</sup>, Jacobs Engineering Group<sup>2</sup>

*Hydrologic Evaluation of a Vegetated Compost Blanket (VCB) Amending a Vegetated Filter Strip (VFS) on a Highway Median*

E. R. Forgione<sup>1</sup>

A. P. Davis<sup>1</sup>, A. Aydilek<sup>1</sup>, & G. Felton<sup>1</sup>

Dept. Civil and Env. Eng., University of Maryland<sup>1</sup>

## **2:35 PM – Resilience**

[The Cinema](#)

*Increasing Stormwater Resiliency Through Innovative Codes & Ordinances*

C. Paone<sup>1</sup>

K. Flynn<sup>1</sup>

AKRF Inc.<sup>1</sup>

*Touring America's NPDES Construction Stormwater Regulations by Rail*

A. Wawiernia<sup>1</sup>

J. Fine<sup>1</sup>

Michael Baker International, Inc.<sup>1</sup>

*I Don't Remember it Raining like this Before; Stormwater Design and Regulatory Context*

C. Emerson<sup>1</sup>

Princeton Hydro<sup>1</sup>

