



## STORMWATER SYMPOSIUM | 2022

Infrastructure. Resilience. Equity.

### ABSTRACT TITLE GUIDE WEDNESDAY, OCTOBER 12

#### 9:50 AM – Infiltration Performance

[The Villanova Room](#)

*Shifting Sands: Evaluating Crushed Glass as a Novel Component of GSI Soil Media*

R. Popowsky<sup>1</sup>

J. S. Caplan<sup>2</sup>, T. Craul<sup>3</sup>, S. W. Eisenman<sup>2</sup>, D. Giménez<sup>4</sup>, E. R. McKenzie<sup>5</sup>, N. Pleshko<sup>6</sup>, R. Roark<sup>1</sup>, C. Polidore<sup>2</sup>, & W. Querido<sup>6</sup>

OLIN Studio<sup>1</sup>, Dept. of Arch. and Env. Design, Temple University<sup>2</sup>, Craul Land Scientists<sup>3</sup>, Department of Environmental Sciences, Rutgers University<sup>4</sup>, Department of Civil and Environmental Engineering, Temple University<sup>5</sup>, Department of Bioengineering, Temple University<sup>6</sup>

*How to Improve Bioretention Success by Improving Soil Testing Knowledge*

K. L. Simon<sup>1</sup>

Luck Ecosystems<sup>1</sup>

*Hold the Phone: Homing in on a More Accurate ET Estimate for Vegetated GSI*

J. S. Caplan<sup>1</sup>

M. Bouda<sup>3</sup>, M. Alonso<sup>2</sup>, A. Salisbury<sup>1</sup>, & S. W. Eisenman<sup>1</sup>

Dept. of Arch. & Env. Design, Temple University<sup>1</sup>, Dept. of Env. Science, American University<sup>2</sup>, Institute of Botany, Czech Academy of Sciences<sup>3</sup>

#### 9:50 AM – Stormwater Case Studies

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

*Case Study: CSO Mitigation and Green Infrastructure Implementation at the PWD Northeast Water Pollution Control Plant*

B. Friedlich<sup>1</sup>

Kleinfelder<sup>1</sup>

*Building Resiliency in NJ and Beyond: Lessons Learned from the Rebuild by Design Meadowlands Program*  
C. Cavanagh<sup>1</sup>  
AECOM<sup>1</sup>

*The 2021 GSI Designer Survey – The Data, the Results and Take Home Message*  
R. Woodman<sup>1</sup>  
Ferguson Waterworks<sup>1</sup>

**9:50 AM – Construction Challenges**  
**The Cinema**

*Green Stormwater Infrastructure at Wissinoming Park, Part 2: Construction Considerations and Lessons Learned*  
T. Charles<sup>1</sup>  
A. Birmingham<sup>1</sup>  
Johnson, Mirmiran & Thompson, Inc.<sup>1</sup>

*Lessons Learned: Stormwater BMP Construction Challenges & Issues*  
G. Mayer<sup>1</sup>  
T. Mueller<sup>1</sup>  
AECOM<sup>1</sup>

*Opportunities for Improvement when Severe Weather Complicates Construction*  
C. Ellenberg<sup>1</sup>  
M. Farnsworth<sup>1</sup>  
AECOM<sup>1</sup>

**11:05 AM – VUSP—Villanova Campus Sites: Findings Update**  
**The Villanova Room**

*There are six sites on Villanova’s campus that were monitored with funding by the EPA & PADEP over recent time. This panel will summarize key findings from multiple rain gardens, infiltration trenches, and a constructed stormwater wetland.*

B. Wadzuk<sup>1</sup>  
A. Amur<sup>1</sup>, J. Komlos<sup>1</sup>, M. McGauley<sup>1</sup>, M. Rahman<sup>1</sup>, K. Sample-Lord<sup>1</sup>, & V. Smith<sup>1</sup>  
Villanova Urban Stormwater Partnership, Villanova University<sup>1</sup>

**11:05 AM – VUSP—Delaware River Watershed Initiative: Monitoring and Assessment Research in Suburban Watersheds**  
**The Cinema**

*This session explores monitoring and assessment research related to the Delaware River Watershed Initiative (DRWI), which is funded by the William Penn Foundation. Topics include stormwater performance monitoring, implementing low-cost real-time stormwater controls, and exploring the effect of COVID-19 restrictions on stream water quality.*

K. Good<sup>1</sup>, S. Baghalian<sup>1</sup>, M. Burns<sup>1</sup>, M. S. Khosravi<sup>1</sup>, & L. A. M. Jerez<sup>1</sup>  
Villanova Urban Stormwater Partnership, Villanova University<sup>1</sup>



## 1:15 PM – Infiltration Challenges

### The Villanova Room

#### *Impact of Soil Compaction and Restrictive Layer Depth on Total Infiltration Volume and Flooding*

S. Clark<sup>1</sup>

T. Peters<sup>2</sup>, J. Fischer<sup>1</sup>, & Z. Mijic<sup>1</sup>

Dept. of Civil, Construction, and Env. Eng., Penn State Harrisburg<sup>1</sup>, Dept. of Chem. Eng., Penn State University<sup>2</sup>

#### *Amending Bioswale Soil Media with Biochar Mitigates the Negative Effects of Compaction on Hydraulic Conductivity*

M. Raabe<sup>1</sup>

J. S. Caplan<sup>2</sup>, S. K. Mohanty<sup>3</sup>, L. Toran<sup>1</sup>, & S. Ravi<sup>1</sup>

Dept. of Earth and Env. Science, Temple University<sup>1</sup>, Dept. of Arch. and Env. Design, Temple University<sup>2</sup>, Dept. of Civil and Env. Eng., University of California, Los Angeles<sup>3</sup>

#### *Stormwater Drainage Wells as a Post-Construction Stormwater Management Best Management Practice in Pennsylvania*

C. Vinciguerra<sup>1</sup>

R. Albert<sup>1</sup> & D. Rocco<sup>1</sup>

Pennsylvania Department Environmental Protection, Regional Permit Coordination Office<sup>1</sup>

## 1:15 PM – SCM Master Planning I

### The Radnor-St. David Room

#### *Determination of Suitable Locations for Implementation of Green Stormwater Infrastructures in Lancaster City, PA*

R. Y., Bajehbaj<sup>1</sup>

L. E. McPhillips<sup>1</sup>, D. Brent<sup>2</sup>, A. K. Chaudhary<sup>2</sup>, S. Clark<sup>3</sup>, J. Duncan<sup>4</sup>, C. Raj<sup>5</sup>, M. Royer<sup>6</sup>, H. Wu<sup>7</sup>, & C. Grady<sup>1</sup>

Dept. of Civil and Env. Eng., Penn State University<sup>1</sup>, Dept. of Agri. Economics, Sociology & Education, Penn State University<sup>2</sup>, Dept. of Env. Eng., Penn State University, Harrisburg<sup>3</sup>, Dept. of Ecosystem Science & Mgmt., Penn State University<sup>4</sup>, Dept. of Agri. and Biological Eng., Penn State University<sup>5</sup>, PSU Agri. & Env. Center, Penn State University<sup>6</sup>, Dept. of Landscape Arch., Penn State University<sup>7</sup>

#### *PennDOT Stormwater Control Maintenance Program Collaboration and Training Rollout Statewide*

S. Giannantonio<sup>1</sup>

P. Brubaker<sup>1</sup>

NTM Engineering, Inc.<sup>1</sup>

#### *Stormwater Control Measure Design Sizing Under Different Storm Sizes and Periods of Record – A Study of Runoff Capture and Water Quality Sensitivity and/or Success*

T.H. Epps<sup>1</sup>

Craftwater Engineering<sup>1</sup>



**1:15 PM – Smart Systems**

**The Cinema**

*Smart Stormwater Management – An Intelligent Stormwater Infrastructure Solution*

R. G. Bathurst<sup>1</sup>

Century Engineering, LLC. A Kleinfelder Company<sup>1</sup>

*Using Smart Stormwater Controls to Meet Stormwater Requirements and Preserve the Aesthetic Character of Two Historic Ponds in Harrisburg, PA*

S. Beck<sup>1</sup>

C. Maulhardt<sup>2</sup>, A. Braga<sup>1</sup>, & A. Potts<sup>1</sup>

Jacobs Engineering Group<sup>1</sup>, Capital Region Water<sup>2</sup>

*Blue-Green Stormwater Infrastructure: Overview and Emerging Trends*

A. Potts<sup>1</sup>

D. Wible<sup>1</sup>

Jacobs Engineering Group<sup>1</sup>

