

WATER ENVIRONMENT FEDERATION | 2019

Stormwater and Green Infrastructure Symposium

A teal banner with a gear icon on the right side. The gear has a leaf shape cut out of its center. The text 'WATER ENVIRONMENT FEDERATION | 2019' is at the top left, and 'Stormwater and Green Infrastructure Symposium' is in large white font across the center.

Stormwater and Green Infrastructure Draft Technical Program

(Updated April 15, 2019)

May 8 - 10, 2019

**Greater Fort Lauderdale-Broward County
Convention Center**

Fort Lauderdale, Florida

Pre- Conference Special Seminar
Tuesday, May 7, 1:30 PM – 5:00 PM

Advancing Green Infrastructure Practice through Life Cycle Cost and Co-Benefits Analysis

- 1:30 PM** **Overview of Stormwater Life Cycle Analysis and Green Infrastructure Co-Benefits Projects**
Harry Zhang, The Water Research Foundation (WRF)
- 1:40 PM** **An Overview of Life Cycle Cost Framework for Stormwater Infrastructure**
Jennifer Egan & Jennifer Cotting, University of Maryland
- 2:00 PM** **Cost Equations and Collection of Life Cycle Cost Data**
Christine Pomeroy, University of Utah
- 2:15 PM** **Framework and Tool for Quantifying Green Infrastructure Co-Benefits**
Janet Clements, Corona Environmental Consulting
- 2:45 PM** **Community Engagement and Summary of User Stories**
Michele Pugh, Wichita State University
- 3:00 PM** **BREAK**
- 3:30 PM** **CLASIC Tool Features, User Interface and Demo**
Sybil Sharvelle and Tyler Dell, Colorado State University
- 4:25 PM** **Users Feedback on Tool Application with Case Studies**
Sybil Sharvelle & Tyler Dell, Colorado State University (in association with Barry Liner, WEF)
- 4:55 PM** **Summary and Closing Remarks**
Harry Zhang, WRF
- 5:00 PM** **Session Adjourns**

Pre-Conference Workshops

(Additional fees apply)

Wednesday, May 8, 8:30 AM – 5:00 PM

WORKSHOP A Watershed Management Optimization Support Tool (WMOST): Cost-Effective Integrated Water Management 8:30 AM – 5:00 PM

The purpose of the workshop is to introduce participants to the concept of integrated water resource management (IWRM) and to train federal, state, tribal, municipal/utility, nongovernmental organizations, and consultants in the use and applications of EPA's Watershed Management Optimization Support Tool (WMOST) version 3. WMOST was designed to facilitate the application of IWRM at the community and small watershed scales to find the most cost-effective suite of management practices (stormwater, wastewater, drinking water, land conservation) to meet water quantity and water quality goals.

Naomi Detenbeck, US EPA Atlantic Ecology Division; Amy Piscopo, Ryan Sullivan, US EPA

WORKSHOP B Redrawing Grey Cities to Climate Resilient Sponge Cities 8:30 AM – 12:00 PM

This workshop presents how to use GSI/LID to retrofit ultra-dense neighborhoods and develop GSI plans for new development. In the presentation, some of most controversial issues such as grey solutions vs green solutions; landscape aesthetic view vs functional view and capability of GSI/LID in extreme weather conditions will be discussed.

Nian She, Shenzhen University

WORKSHOP C The Water Quality Workforce: Building Real-World Pathways into Sustainable Infrastructure Careers 1:30 PM – 5:00 PM

National leaders at the forefront of infrastructure-related workforce development strategies are gathering to share their learnings and insights. This a unique opportunity to meet experts whose real-world career pathway programs address the documented shortfall of water, utility and infrastructure workers. During back-to-back presentations and facilitated discussions, you'll hear how government, NGO, and community-based organizations are creating opportunities for members of underrepresented communities to enter/succeed in the sustainable environmental workforce. Whether its soft skills, navigating civil service, or getting industry-specific licenses/certifications, through interactive exercises learn how they approach tough recruitment, curriculum and funding questions. Come, participate, and join this substantive discussion about filling mission-critical jobs in utilities and sustainable environmental infrastructure.

Patrick Barnes, Limitless Vistas, Inc.; Andrada Butler, Atlanta Dept. of Watershed Management; Adriana Caldarelli, Water Environment Federation; Steven Currie, BAYWORK; Colleen Murphy Dunning, Yale Hixon Urban Center for Urban Ecology; Diana Francoise, Jacobs Engineering; Kimberly Grove, Baltimore City Department of Public Works; Joe Kane, Brookings Institute; Drew Lehman, Environment and Education; Trinh Nguyen, Boston Mayor's Office of Workforce Development; Ifetayo Venner, Arcadis

Opening General Session
Thursday, May 9, 8:30 AM – 10:00 AM

- 8:30 AM** **Welcome to the 2019 Conference!**
Leigh Padgitt, *Arizona Department of Environmental Quality, 2019 Co-Chair*
Mike DeVuono, *Arcadis, 2019 Co-Chair*
- 8:40 AM** **WEF Welcome**
Joan Hawley, *WEF Board of Trustees, President Superior Engineering*
- 8:45 AM** **Florida Water Environment Association Welcome**
Representative TBC
- 8:50 AM** **A Resilient Fort Lauderdale: Present and Future Flood Management**
Nancy Gassman, *City of Fort Lauderdale*
- 9:15 AM** **An Update from EPA**
Jeaneanne Gettle, *Environmental Protection Agency*
- 9:40 AM** **WEF Stormwater Institute Update**
Sandra K. Ralston, *SWI Advisory Committee Chair, Consensus LLC.*
- 10:00 AM** **Session Adjourns for Networking Break in Exhibit Area**

Session 01: National Green Infrastructure Certification Program: Raising the Bar in the Green Infrastructure Construction and Maintenance Industry
Thursday, May 9, 10:45 AM – 12:15 PM

- 10:45 AM** **The Need for National Green Infrastructure Training and Certification**
Seth Brown, WEF
- 11:10 AM** **The Value of the NGICP Program**
Adrianna Caldarelli, WEF
- 11:35 AM** **The NGICP Certification Process and Beyond**
J. Douglas Fritz, GKY & Associates, Inc.
- 12:00 PM** **Roundtable Questions and Answers**
- 12:15 PM** **Session Adjourns for Lunch**

Session 02: Market-Based Delivery, Funding, and Finance Options
Thursday, May 9, 10:45 AM - 12:15 PM

Moderators: Sanjiv Sinha, Environmental Consulting & Technology, Inc.; Thierry Boveri, Public Resources Management Group, Inc.

10:45 AM **The Clean Water Partnership: Delivering on the Promise of Community-Based Partnerships that Integrate Performance-Based Public Objectives with Private Investment and Accountability**
Troy Hunt, Sean Agid, Corvias

11:15 AM **Carrots and Sticks: Motivating Private Investment in Meeting NYC Stormwater Goals**
Melissa Enoch, NYC Environmental Protection; Pinar Balci, NYC DEP; Margot Walker

11:45 AM **A Fresh Look at Infrastructure Investments: Green Infrastructure and the ALCOSAN GROW Program**
Timothy Prevost, Julia Spicher, Alcosan

12:15 PM **Session Adjourns for Luncheon in Exhibit Area**

Alternate: **The Evolution of Stormwater Utilities in Pennsylvania**
Anthony Dill, Fernando Pasquel, Arcadis

Session 03: Stormwater Treatment Technologies
Thursday, May 9, 10:45 AM - 12:15 PM

Moderators: Fernando Pasquel, Arcadis; Leigh Padgitt, Arizona Department of Environmental Quality

- 10:45 AM** **Nutrient Absorbing Pellets for Treating Nutrients in Stormwater Runoff and Treated Wastewater Effluent**
Rakesh Govind, Water Warriors, Inc.; Panos Athanasiou, University of Cincinnati; Mallikarjuna Nadagouda, U.S. Environmental Protection Agency
- 11:15 AM** **Efficacy of Biochar Amended Bioretention for E. coli and Nitrogen Removal from Urban Runoff**
Md Yeasir Rahman, Sarina Ergas, Mahmood Nachabe, University of South Florida
- 11:45 AM** **Development of an Improved Bioretention Soil Media for Use in Washington State**
John Lenth, Herrera Environmental Consultants; Douglas Howie, Washington Dept of Ecology; Curtis Hinman, Herrera Environmental Consultants
- 12:15 PM** **Session Adjourns for Luncheon in Exhibit Area**

Session 04: Construction, Inspection and Maintenance Cautions and Tips
Thursday, May 9, 1:30 PM - 5:15 PM

Moderators: Brenda Macke, Burns & McDonnell; Cynthia Baumann, CDM Smith

- 1:30 PM** **The Challenge of Constructing Urban Green Infrastructure**
Patrick DiNicola, RK&K; Seth Charde, DC Water
- 2:00 PM** **Stormwater Asset Management in the Heartland - Implementing Asset Renewal into a Successful Flood Reduction Program**
Matthew Scott, CDM Smith; Sarah Smith, Johnson County
- 2:30 PM** **Eastgate Park - Unseen Stormwater Management in an Active Park**
Mark Bassingthwaite, Resilient Consulting; Vivek Sharma, ADS Canada
- 3:00 PM** **Networking Break in Exhibit Area**
- 3:45 PM** **Planning and Prioritization for Effective Flood Control Channel Management in Urban Los Angeles County**
Jonathan Abelson, Stantec; Josh Svensson, La County of Public Work; Venu Kolli, Brown and Caldwell; Rita Newman, Timothy Rink, Stantec
- 4:15 PM** **It's All In The Cards: Communicating The Maintenance History and Goals of Enhanced Extended Detention (EED) Facilities**
John Burke, Fairfax County Stormwater Management; J. Douglas Fritz, GKY & Associates, Inc.; Ryan O'Banion, Hazen and Sawyer
- 4:45 PM** **A Holistic Approach to Green Stormwater Infrastructure Maintenance**
Regan Brotherton, Taliaferro and Browne; Brenda Macke, Burns & McDonnell; Lisa Treese, City of Kansas City Missouri Water; Lauren Grubbs, Andrew Sauer, Burns & McDonnell
- 5:15 PM** **Session Adjourns for Networking Reception in Exhibit Area**

Session 05: Innovative Funding Ideas for Stormwater Infrastructure
Thursday, May 9, 1:30 PM - 5:15 PM

- 1:30 PM** **Welcome** [Steve Dye](#), WEF
- 1:35 PM** **Camden's Use of SRF Funding to Create Jobs, Build Green Infrastructure, Fix CSOs, and Become More Resilient**, [Andy Kricun](#), Camden County Municipal Utilities Authority
- 1:50 PM** **Stormwater Financing Update from the US EPA**, [Sonia Brubaker](#), US Environmental Protection Agency
- 2:05 PM** **Baltimore Funds Stormwater Management Through Traditional and Innovative Financing Tools**, [Kimberly Grove](#), Baltimore City Public Works
- 2:20 PM** **Ways Environmental Impact Bonds Are Being Used to Address Local Stormwater Funding Challenges** [Eric Letsinger](#), Quantified Ventures
- 2:40 PM** Facilitated Discussion and Q&A
- 3:00 PM** **Networking Break in Exhibit Hall**
- 3:45 PM** [Seth Brown](#), Storm & Stream Solutions
- 3:55 PM** [Fernando Pasquel](#), Arcadis
- 4:10 PM** [Janet Clement](#), Corona Environmental Consulting
- 4:30 PM** [Elle Hempen](#), The Atlas
- 4:45 PM** **Facilitated Q&A**
- 5:15 PM** **Session Adjourns for Networking Reception in Exhibit Hall**

Session 06: Advancing the Science of Green Infrastructure
Thursday, May 9, 1:30 PM - 5:15 PM

Moderators: Kyle Logue, Brown and Caldwell; Swarna Muthukrishnan, Clean Ocean Action

- 1:30 PM** **Innovating Infrastructure for Management of Nitrogen Found in Stormwater: Long-Term Field Performance of a Full-Scale Modified Bioretention System**
Emma Lopez-Ponnada, Sarina Ergas, Mahmood Nachabe, University of South Florida; Karl Payne; James Mihelcic, University of South Florida
- 2:00 PM** **Demonstrating BMP Effectiveness With Microbial Source Tracking & Host Fecal Score**
James Herrin, Daron Stein, Source Molecular Corporation; Yiping Cao
- 2:30 PM** **Assessment of Microbial Community Composition and Activity in Green Infrastructure Sites**
John McLaughlin, New York City Department of Environmental Protection; Jerry Kleyman, Arcadis; Franco Montalto, eDesign Dynamics; Theodore Muth, CUNY Brooklyn College; Miki Urisaka, NYC DEP
- 3:00 PM** **Networking Break in Exhibit Area**
- 3:45 PM** **Removal of f2 Coliphage in a Vertically Configured Subsurface Flow (SSF) Constructed Wetland**
Yawei Wang, Research Center for Eco-Environmental Sciences, Chinese Academy of Science; Xiang Zheng, Renmin University; Yuansong Wei, Research Center for Eco-Environmental Sciences, Chinese Academy of Science
- 4:15 PM** **Utilizing In-Situ Ultraviolet-Visual Spectroscopy to Measure Nutrients and Sediment Concentrations in Stormwater Runoff**
James Houle, Tom Ballester, Daniel Macadam, UNH Stormwater Center
- 4:45 PM** **Environmental Impact Bonds: How a “Pay for Success” Model Has the Potential to be the Future of Water Infrastructure Financing**
Carolyn duPont, Eric Letsinger, Quantified Ventures LLC
- 5:15 PM** **Session Adjourns for Networking Reception in Exhibit Area**

Session 07: Sustainability, Regional Collaboration and Getting the Most Out of your System. All Roads Lead to Resiliency
Friday, May 10, 8:30 AM - 12:00 PM

Moderators: Henry Manguerra, Atkins; David Bedoya, Stantec

- 8:30 AM** **Resilient Cities and Stormwater Utilities Are Shifting from Reactive Solutions to Cost Effective and Equitable Prevention via Future-Proofing: Thrive Indianapolis Case Study**
Keren Bolter, Arcadis; Katie (Lineweaver) Robinson, Indianapolis Office of Sustainability; Andrew Ohrt, Ajani Stewart, Arcadis
- 9:00 AM** **Water Knows No Political Boundaries: Living with the Bay Resiliency Program**
Michael Bomar, Jake Oldenburger, Tetra Tech
- 9:30 AM** **Keeping Pace with Mother Nature with Real-time Stormwater Management**
Tommy Strowd, Lake Worth Drainage District; Glen Hill, Smartcover Systems; Greg Quist, Smartcover Systems
- 10:00 AM** **Networking Break**
- 10:30 AM** **Community Adaptation: Integrating GI at Multiple Scales for Climate Adaptation**
Dana Brown, Dana Brown & Associates, Inc.
- 11:00 AM** **Regional Green Infrastructure (GI) Stormwater BMPs**
Larry Tortuya, GHD; Dave Sorem, Mike Bubalo Construction Inc.
- 11:30 AM** **Assessment of Multiple Benefits of Green Infrastructure Opportunity Mapping: Case Studies from the UK**
Neil Breton, Zorica Todorovic, Henry Manguerra, Atkins Ltd.
- 12:00 PM** **Session Adjourns for Luncheon**
- Alternate:** **Maximization of Added Value for Living Shorelines**
Trine Stausgaard Munk, Christian Nyerup Nielsen Ramboll; Phetmano Phannavong, DOEE

Session 08: Municipal Program Management from Coast to Coast
Friday, May 10, 8:30 AM - 12:00 PM

Moderators: Nancy Ellwood, CDM Smith; Douglas Howie, Washington Department of Ecology

- 8:30 AM** **Framework for a Performance-Based Green Roof Incentive in New York City**
Melissa Enoch, NYC Environmental Protection; Tyler Carson; Franco Montalto, eDesign Dynamics
- 9:00 AM** **Richmond, Virginia's RVAH2O Clean Water Plan - Integrating Permitting and Program Implementation**
Heather Bourne, Limnotech; Grace LeRose, City of Richmond DPU
- 9:30 AM** **Tacoma's Statistically Proven Approach to Stormwater Management, Tacoma, Washington**
Dana de Leon, Mary Henley, Jessica Knickerbocker, City of Tacoma
- 10:00 AM** **Networking Break**
- 10:30 AM** **The Next Step in Watershed Planning - Evaluation of Natural Green Infrastructure in the City of Atlanta**
Amanda Medori Hallauer, City of Atlanta Department of Watershed Management; Lori Visone, Brown and Caldwell; Julie Owens
- 11:00 AM** **Pollinating Green Stormwater Infrastructure in Detroit, Michigan**
Palencia Mobley, Syed Ali, Detroit Water and Sewerage Department; Patrick Droze, OHM Advisors; Lisa Wallick, Detroit Wastewater
- 11:30 AM** **NYC Green Infrastructure Program: Implementation Status and Adaptive Management**
Melissa Enoch, NYC Environmental Protection; Pinar Balci, NYC DEP; Margot Walker
- 12:00 PM** **Session Adjourns for Luncheon**

**Session 09: Green Infrastructure for CSO Management, and other Post-Construction Control Measures
Friday, May 10, 8:30 AM - 12:00 PM**

Moderators: Jeffrey Wright, Atkins; Leigh Padgitt, Arizona Department of Environmental Quality

- 8:30 AM** **Post-Construction Monitoring to Confirm Green Infrastructure Performance in Philadelphia**
Dwayne Myers, CDM Smith; Christopher Bergerson, Taylor Heffernan, Stephen White,
Philadelphia Water Department
- 9:00 AM** **Developing a Stormwater Control Measure Sizing Credit for the Infiltration Improvements
Attributable to Plants**
Scott B Dierks, GEI Consultants, Inc.
- 9:30 AM** **Atlanta's Green Infrastructure Standards for Single Family Infill and Commercial
Development**
Cory Rayburn, City of Atlanta Department of Watershed Management
- 10:00 AM** **Networking Break**
- 10:30 AM** **Keeping Louisville Green: Louisville MSD and Churchill Downs' Green Infrastructure
Partnership**
Jordan Basham, Louisville & Jefferson County MSD; David Mulloy, Louisville MSD
- 11:00 AM** **Stormwater Enhancements to Northwood Lake and the Surrounding Watershed**
Tyler Johnson, Stantec
- 11:30 AM** **Institutionalizing Stormwater Management and Green Stormwater Infrastructure in Detroit,
MI**
Dan Christian, Tetra Tech; Palencia Mobley; Lisa Wallick, Detroit Water & Sewerage Department;
Christy Williams
- 12:00 PM** **Session Adjourns for Luncheon**
- Alternate:** **Stormwater Conveyance to Green Infrastructure Installations by Curb Cut Inlets**
John McLaughlin, New York City Department of Environmental Protection; Kimberly Digiovanni;
Franco Montalto, eDesign Dynamics; Heather Smith, Arcadis; Miki Urisaka, NYC DEP
- Alternate:** **Implementing Prioritized Projects from a Watershed Based Plan on Picadome Golf Course**
Stephanie Blain, Palmer Engineering Company; Demetria Mehlhorn, Lexington-Fayette Urban
County Government
- Alternate:** **The Mason-Dixon Differential: Regional Wetland Policies Create Obstacles and
Opportunities for Stormwater Retrofitting**
Zach Henderson, Woodard & Curran; Bradley Hayes

**Session 10: Advancing Climate Resilient and Equitable Water Systems through Partnership and Practice
Friday, May 10, 1:00 PM - 2:30 PM**

Jalonne L. White-Newsome, The Kresge Foundation; Nicole Chavas, GreenPrint Partners; Harriet Festing, Anthropocene Alliance; Monique Harden, Deep South Center for Environmental Justice; Hardeep Anand, Miami-Dade Water & Sewage Department; Paula Connolly, Green Infrastructure Exchange

1:00 PM Introduction to the Session

1:10 PM Flash Talks by Speakers

- Financing GSI
- Climate Resiliency and the Decision-making process
- Community Engagement
- Water Utility Practice

1:40 PM Fishbowl

Five to eight people are seated in a circle, having a conversation in full view of a larger group of listeners. One or more chairs are open to members of the audience who want to ask questions or make comments. The facilitator will provide questions to ignite the conversation or the conversation will be stimulated organically from the 'flash talks'.

2:10 PM Summary of Fishbowl

2:15 PM Closing Thoughts and Questions

2:30 PM Session Adjourns for Networking Break

Session 11: Program Management Technologies
Friday, May 10, 1:00 PM - 2:30 PM

Moderators: Bob Backman, AbTech Industries; Carol Hufnagel, Tetra Tech

1:00 PM **Framework and Tool for Quantifying and Monetizing the Co-Benefits of Green Infrastructure and Linking with Triple Bottom Line Analysis**
Janet Clements, Jim Henderson, Bob Raucher, Corona Environmental Consulting; Harry Zhang, The Water Research Foundation

1:30 PM **Kansas City, Missouri Green Stormwater Infrastructure Manual - Building the Tools**
Lauren Grubbs, Brenda Macke, Andrew Sauer, Burns & McDonnell

2:00 PM **A Model-Based Watershed Implementation Planning Tool for TMDL and Municipal Stormwater Permit Compliance in Orange County, California**
Jian Peng, OC Environmental Resources; Tony Howze, PACE Water; Steven Wolosoff, Andrea Zimmer, CDM Smith

2:30 PM **Session Adjourns for Networking Break**

Alternate: **A GIS-based Prioritization and Planning Tool Helps the City of Houston Recover from Hurricane Harvey**
Philip Bullock, Jeanette Kelson, Carollo

Alternate: **National Green Infrastructure Challenge - 100 Resilient Cities Rockefeller Foundation - New Orleans Mirabeau Water Gardens Triple Bottom Line Cost Benefit Analysis**
Eric Bill, Impact Infrastructure (makers of Autocase)

Session 12: Integrative Strategies and Practical Applications
Friday, May 10, 1:00 PM - 2:30 PM

Moderators: Jason Garder, Burns & McDonnell; Kamran Zendehtdel, University of DC

- 1:00 PM** **Two Converging Paths Lead to Greener Infrastructure in the Unified Government of Wyandotte County and Kansas City, Kansas**
Brenda Macke, Burns & McDonnell; Madison Gibler; Lauren Grubbs, Burns & McDonnell; Sarah White, Unified Government of Wyandotte Co/Kck
- 1:30 PM** **Clinton River Habitat Restoration**
Prasad Gullapalli, Hubbell, Roth & Clark
- 2:00 PM** **The Spatial Approach: Enhancing Green Infrastructure and Stormwater Strategies through Use of Spatial Analysis**
Ryan Brotchie, Katherine Williams, GHD Pty. Ltd.
- 2:30 PM** **Session Adjourns for Networking Break**

Session 13: Innovation/Technology – Planning Thru Implementation
Friday, May 10, 3:00 PM - 4:30 PM

Moderators: Bob Backman, AbTech Industries; Leigh Padgitt, Arizona Department of Environmental Quality

- 3:00 PM** **Simulating Green Infrastructure in Hydrologic and Hydraulic Models**
Yuan Fang, Greeley and Hansen; Michael Hope; Jean Malafronte, Greeley and Hansen
- 3:30 PM** **Where'd all that Stormwater go? Using Real Time Controls to Reduce CSOs**
Jason Garder, Burns & McDonnell; Viktor Hlas, Optirtc Inc; Andrew Sauer, Burns & McDonnell
- 4:00 PM** **Real-Time Control of Brooklyn Botanic Garden's Water Features for Combined Sewer Overflow Mitigation and Water Conservation**
Dayton Marchese, Opti; Matthew Bird, Michael Van Valkenburgh Associates, Inc.; Scott Simpson, Opti
- 4:30 PM** **Symposium Adjourns**
- Alternate:** **A GIS Approach and an Automated Tool for Planning Large Green Infrastructure Projects**
Khaled Abdo, Mark Van Auken, Arcadis

**Session 14: Implementing Green Infrastructure for Results: Using Data to Plan, Evaluate, and Build
Friday, May 10, 3:00 PM - 4:30 PM**

Moderators: Carol Hufnagel, Tetra Tech; Jeffrey Wright, Atkins

- 3:00 PM** **Making the Grade: A Proven Approach to Meet MS4 TMDL Requirements**
Karen Nichols, Ronald Geiger, HDR
- 3:30 PM** **Monitoring Storm Sewers for Flow and Water Quality in Areas of Urban Redevelopment**
Kyle Gustafson, Colorado School of Mines; Ryan Gilliom; John McCray, Jessica McGovern,
Kimberly Slinski, Colorado School of Mines
- 4:00 PM** **Putting Stormwater into Context in the Merrimack River Watershed: Modeling of Bacteria
Standards Attainment in the Future with CSO Reductions and Potential Basin Scale
Stormwater BMP Implementation**
Zachary Eichenwald, Constantine Karos, Gary, Mercer, Steven, Wolosoff, Lauren, Klonsky, CDM
Smith; Kristina Ekholm, Barbara Blumeris, United States Army Corps of Engineers
- 4:30 PM** **Symposium Adjourns**
- Alternate:** **WEF's Stormwater Institute National MS4 Needs Assessment Survey Results**
Rebecca Arvin-Colon, WEF; Janet Clements, Corona Environmental Consulting
- Alternate:** **Moving from Design Storms to Historical Storms**
Tiantian Xiang, Arcadis; Hazem Gheith

Session 15: Tools for Community Engagement and Implementation
Friday, May 10, 3:00 PM - 4:30 PM

Moderators: Swarna Muthukrishnan, Clean Ocean Action; Harris Trobman, University of DC

- 3:00 PM** **DC Water's Mobile Data Collection Program for Downspout Disconnection**
Amanda Zander, Delon Hampton & Associates; Steven Skripnik, Limnotech; Seth Charde, DC Water
- 3:30 PM** **Online Framework for Evaluating the Multiple Benefits of GSI projects**
Serda Ozbenian, Kevin Brady, National Recreation and Park Association
- 4:00 PM** **Using Community Engagement and Partnerships to Cultivate Strong Roots for Green Stormwater Infrastructure (GSI) in Detroit, MI**
Kellie DuBay, Tetra Tech; Palencia Mobley; Lisa Wallick, Bryan Peckinpaugh, Detroit Water & Sewerage Department; Marianne Gutknecht, Tetra Tech
- 4:30 PM** **Symposium Adjourns**