Stormwater Symposium 2012

July 18 – 20, 2012
Sheraton Baltimore City Center
Baltimore, Maryland, USA

This conference is held by the Water Environment Federation in cooperation with Chesapeake Water Environment Association and Water Environment Research Foundation.

WORKSHOP A

Workshop A: Methods to Meet New Construction Site Stormwater Quality Requirements

Wednesday, July 18
8:00am – 5:00pm

There is increasing pressure on construction site managers to reduce the off-site impacts of storm water runoff on streams, lakes, and estuaries adjacent to their projects. Traditional erosion and sediment control measures, even when properly installed and maintained, will often release highly turbid water to the environment. Recent changes in local, state, and federal rules, such as the Effluent Limit Guideline (ELG) rule released by EPA, are requiring turbidity controls which essentially require chemical treatment. This workshop focuses on the basics of turbidity control, particularly Passive Treatment Systems (PTS), so that participants can design and maintain systems fit to each construction project.

WORKSHOP B

Workshop B: Design of Pervious Concrete Stormwater Management Systems

Wednesday, July 18
8:00am – 12:00pm

This workshop covers general mix design, specification, installation, and maintenance of pervious concrete pavement; Core technical program presents rational site-specific methodology for (a) hydrologic design, determining minimum subgrade thickness and the placement, size and number of drains (if needed) for hydrologic and freeze-thaw performance criteria; and (b) structural pavement design for load-based reliability, using ACPA Pervious Pave software. Roundtable discussion project experiences balances engineering, contractor and owner perspectives.

Workshop B Part 2: National Ready Mic Concrete Association Pervious Concrete Certification Review and Exam

Wednesday, July 18
1:00pm – 4:30pm

Following the morning workshop, particpants may regiter for a separate registration fee, for an afternoon review course and onsite exam to qualify for the National Mix Concrete Association Certification as a Pervious Concrete Technician.

WORKSHOP C

Workshop C: Making Green Infrastructure More Sustainable with Envision, the Sustainable Infrastructure Rating System

Wednesday, July 18
1:30pm – 5:00pm

The workshop will be a series of PowerPoint presentations introducing participants to ISI and the new sustainable infrastructure rating system. The presentations will cover case studies of applications of the rating system as an interactive tutorial and also discuss the lessons learned from utilities that have used the tool. The focus of the workshop will be to discuss and determine the applicability of the tool in stormwater infrastructure management.

TOUR

Tour: Behind the Scenes at The Baltimore National Aquarium

Wednesday, July 18
4:00pm – 6:30pm

The start of the tour will include a technical lecture by Andy Aiken, an environment engineer specializing in design and operation of aquatic life support systems in zoos and public aquaria. Mr. Aiken will lecture on how aquatic life support systems differ from industrial, municipal and domestic water treatment systems. He and his staff will then lead a tour of the aquarium's life support systems which process more than 24 million gallons a day. Processes utilized include sand filtration for particulate removal and nitrification, foam fractionation for DOC reduction and disinfection, autotrophic sulfur-based denitrification, ozone contact for disinfection & TOC reduction, gas exchange for CO2 removal, reverse osmosis and CO2 injection for alkalinity and pH reduction, among others.

OPENING GENERAL SESSION

Thursday, July 19
8:00am - 9:30am

The Stormwater Symposium 2012 Opening General Session will take place on the morning of Thursday, July 19, 2012 at 8:00am. Further details will be provided in the coming weeks!

TECHNICAL PROGRAM

Session 1: Stormwater Design: What's Current?

Thursday, July 19
9:45am - 11:15am

01A 9:45am **The State of the Practice in Stormwater Design: A Guide to the 2012 WEF/ASCE Manual of Practice for Design of Urban Stormwater Controls**
Daniel Medina, *Atkins*

01B 10:15am **Costs and Benefits of Green Infrastructure Handbook**
Daniel Christian, *Tetra Tech*

01C 10:45am **Optimizing Bioretention Media to Treat Emerging Contaminants**
Shirley Clark, *Penn State Harrisburg*

Alternate **Incorporating Nutrient and Sediment Trading into Stormwater Programs in the Chesapeake Bay Watershed**
Cy Jones, *World Resources Institute*

TECHNICAL PROGRAM

Session 2: Green Urban Case Studies

Thursday, July 19
9:45am - 11:15am

02A	**9:45am**	**Not So Strange Bedfellows: The Role of Stormwater in the Franklin, TN Integrated Water Resources Plan** David Mason, *CDM*
02B	**10:15am**	**Core Elements of Green Infrastructure Programs for CSO Control** Scott Struck, *Tetra Tech*
02C	**10:45am**	**Cost Effective LID Design and Construction for a Large Scale Commercial Development in Greenland, New Hampshire** Brian Potvin, *Tetra Tech*

TECHNICAL PROGRAM

Session 3: Stormwater Controls

Thursday, July 19
9:45am - 11:15am

03A 9:45am **Urban Stormwater BMP Performance and Cost-Effectiveness**
Melissa Baker, *Capitol Region Watershed District*

03B 10:15am **New Bioretention Filter Media Modified With Metal-Silica Hybrid Materials for Enhanced Remediation of Stormwater Runoff Pollutants**
Hanbae Yang, *ABS Materials, Inc.*

03C 10:45am **Monitoring Performance of Green Infrastructure Source Controls in New York City**
Matthew Jones, *Hazen and Sawyer, PC*

Alternate **Metals Removal Performance by Three Proprietary Technologies for Stormwater from Boatyard Maintenance Facilities**
William Taylor, *TEC Inc.*

TECHNICAL PROGRAM

Session 4: Stormwater Regulations and Restoration of the Chesapeake Bay: Walk a Mile in my Shoes

Thursday, July 19
11:30am - 12:15pm

Stormwater retrofits are a major component of the latest stormwater regulations in urbanized areas of the Chesapeake Bay. Regulators tout the new regulations as indispensable to meet the Bay TMDLs. Facing staggering price tags in the billions of dollars, the regulated community seeks cost-effective approaches and assurances that they will help restore the Bay. In this session, panelists from regulated municipalities and regulatory agencies switch sides and share new insights on how to get the job done.

This panel discussion brings together regulators and regulated municipalities in a lively discussion of shared problem-solving. Each side will take a walk in the other side's shoes. Regulators will provide their insights into how, if they were a county agency, they might comply with TMDL rules. Directors from regulated municipalities will provide their approach, if they were a regulator, on how they might manage TMDLs in stormwater discharges to improve water quality. Florida-based panelists will discuss the lessons learned from arguably the most successful state program for TMDL implementation, the science behind nutrient removal, challenges in implementing projects, creative synergies among water sector agencies, and how to measure improvements.

Panelist Include:

Thomas Singleton, *Atkins*

Jay Sakai, *Maryland Dept. of the Environment*

David Johnson, *Virginia Dept of Conservation and Recreation*

Ron Bowen, *Public Works, Anne Arundel County*

Randy Bartlett, *Public Works, Fairfax County*

Dan Medina, *Atkins*

Charles Padera, *Atkins*

TECHNICAL PROGRAM

Session 5: Road to Clean Water

Thursday, July 19
11:30am - 12:15pm

05A 11:30am **District of Columbia Department of Public Works Street Sweeping Program Evaluation**
Erika Janifer, *Malcolm Pirnie/Arcadis*

05B 11:50am **Removal of Heavy Metals using Pervious Concrete Material**
Arthur Kney, *Lafayette College*

Alternate **Restoring Clean Flowing Urban Streams by Engaging the Community in Strategic Planning: The Boardman Creek Basin Initiative**
Elizabeth Barg, *Barney & Worth, Inc.*

TECHNICAL PROGRAM

Session 6: Cutting-Edge Research

Thursday, July 19
1:45pm - 3:15pm

06A 1:45pm **Assessing the Long-Term Impact of Storm Water Infiltration on Groundwater Quality – Los Angeles Basin Water Augmentation Study**
Martin Spongberg, *AMEC*

06B 2:15pm **Nutrient Removal Performance of Advanced Bioretention Systems: Results from Four Years of Mesocosm Studies**
William Lucas, *Griffith University*

06C 2:45pm **Soil Moisture Balance in Bioretention Systems**
Bridget Wadzuk, *Villanova University*

Alternate **A Preliminary Investigation of Using Rain Gardens to Reduce Pollutants in Car Wash Runoff**
Michele Bakacs, *Rutgers Cooperative Extension*

TECHNICAL PROGRAM

Session 7: Stormwater Data

Thursday, July 19
1:45pm - 3:15pm

07A 1:45pm **Evapotranspiration Data Availability for Stormwater Beneficial Use Calculations**
Ryan Bean, *The University of Alabama*

07B 2:15pm **The Importance of Accurate Data: Why Solids Stratification in Urban Stormwater May be Costing You Too Much.**
Bill Selbig, *USGS - Wisconsin Water Science Center*

07C 2:45pm **Ultra-Urban Baseflow and Stormflow Concentrations and Fluxes in a Watershed Undergoing Restoration (WS263)**
Kenneth Belt, *USDA Forest Service*

Alternate **Laboratory and Field Studies of Soil Characteristics of Proposed Stormwater Bioinfiltration Sites**
Redahegn Sileshi, *The University of Alabama*

TECHNICAL PROGRAM

Session 8: Area Low Impact Development (LED)

Thursday, July 19
1:45pm - 3:15pm

08A 1:45pm **Birch Bay Watershed Action Plan: Linking Low Impact Development with Improved Critical Areas Management**
Dustin Atchison, *CH2M HILL*

08B 2:15pm **Integrated Watershed Restoration to Achieve Local and Chesapeake Bay Wasteload Allocations**
Ted Brown, *Biohabitats*

08C 2:45pm **Advanced 2-D Modeling for Flood Reduction Studies and Storm Drain Master Planning**
Carlos Diaz, *GHD*

Alternate **Onondaga County's Green CSO Program: Successfully Implementing 50 Green Infrastructure Projects ("Project50") in 2011**
Andrew Potts, *CH2M HILL*

TECHNICAL PROGRAM

Session 9: Public Outreach

Thursday, July 19
3:30pm - 5:00pm

09A	**3:30pm**	**Green Up DC – DC's Web Site for Stormwater, Energy and Solar Evaluations by Property Owners** Laurens Van Der Tak, *CH2M HILL*
09B	**4:00pm**	**Right-sizing LID rebate program for a small jurisdiction** Heather Gewandter, *City of Rockville*
09C	**4:30pm**	**Synergy in Public Communication or How Stray Dogs, Invasive Species and 8th Graders can Improve your Outreach Efforts** Gay Stokes, *City of Richmond*

TECHNICAL PROGRAM

Session 10: Storm Statistics

Thursday, July 19
3:30pm - 5:00pm

10A 3:30pm **Stormwater Control Measure Implementation Guidance and Tracking Tool**
Matthew Jones, *Hazen and Sawyer*

10B 4:00pm **Detecting Illicit Connections to Stormwater: A Primer on Statistics and Fecal Indicators**
Daniel Markowitz, *Malcolm Pirnie the Water Division of ARCADIS US*

10C 4:30pm **Using Gauge Adjusted Rainfall information from Baltimore County for Real-time Forecast of Hurricane Rainfall**
Guy Jacquet, *KISTERS GROUP*

Alternate **Integrating Stormwater Runoff Quantity and Quality Requirements in a Coastal County**
Richard Wagner, *CDM*

TECHNICAL PROGRAM

Session 11: MS4 Permitting and Codes

Thursday, July 19
3:30pm - 5:00pm

11A	**3:30pm**	**Learning to Speak Zoning: How Local Codes & Ordinances Affect Stormwater Management and What to Do about It** Juli Beth Hinds, *Tetra Tech, Inc.*
11B	**4:00pm**	**Major Developments In MS4 Permitting: The Chesapeake Bay Watershed Experience** Christopher Pomeroy, *AquaLaw PLC*
11C	**4:30pm**	**The MS4 Permitting Program: Lessons Learned from Examining Current Program Trends** John Kosco, *Tetra Tech*

TECHNICAL PROGRAM

Session 12: MS4 - No Rubber Stamps Here

Friday, July 20
8:00am - 9:30am

12A 8:00am **Making Green Infrastructure Greener: Sustainability Rating for the Design and Construction of Stormwater Infrastructure**
Denise Nelson, *Greeley and Hansen*

12B 8:30am **Numeric Action Levels: The New Driver for Stormwater Programs in California**
Karen Ashby, *Larry Walker Associates, Inc.*

12C 9:00am **The Challenge of Documenting the Effectiveness of MS4 Programs**
Holly Galavotti, *Environmental Protection Agency*

Alternate **The Next Generation Permit**
Christine Sotelo, *State Water Resources Control Board, CA*

TECHNICAL PROGRAM

Session 13: Get the Public Involved

Friday, July 20
8:00am - 9:30am

13A	**8:00am**	**Using Customized GIS Tools to Support a Diverse Stakeholder Group in Regional Watershed Improvement Planning** Suzanne Ciavola, *AECOM*
13B	**8:30am**	**Maintenance Matters - How Montgomery County is Improving Stormwater Facility Maintenance through Public Outreach** Melissa Hess, *URS*
13C	**9:00am**	**Stop the Rain Drain: Community Outreach Techniques to Promote downspout Redirection in Urban Neighborhoods** Elizabeth Beckman, *Capitol Region Watershed District*

TECHNICAL PROGRAM

Session 14: Funding Issues

Friday, July 20
8:00am - 9:30am

14A 8:00am **Jackson, Michigan Stormwater Utility: Addressing Michigan's Stormwater Utility User Fee Requirements**
Vic Cooperwasser, *Tetra Tech*

14B 8:30am **Why Would Anyone Try to Create a Stormwater Utility in the Midst of a Recession? A Case Study in Salem, Oregon**
Robert Chandler, *City of Salem, Oregon*

14C 9:00am **Building the Basis for Sustainable Stormwater Financing: A User Fee Discussion Prequel**
Mary McCrann, *Woodard & Curran*

Alternate **Stormwater Utility Districts: A Case Study from Western New York**
Scott Rybarczyk, *Wendel*

TECHNICAL PROGRAM

Session 15: More Cutting-Edge Research

Friday, July 20
9:45am - 11:15am

15A	**9:45am**	**Identifying Stormwater Heavy Metal Sources at U.S. Naval Facilities Using WinSLAMM** Ryan Bean, *The University of Alabama*
15B	**10:15am**	**Deicing Salts' Effects on Engineered Bioretention Soils** Shirley Clark, *Pennsylvania State University*
15C	**10:45am**	**Stormwater Beneficial Use Opportunities and Effects on Urban Infrastructure** Leila Talebi, *The University of Alabama*

TECHNICAL PROGRAM

Session 16: Examining the Cost of Green

Friday, July 20
9:45am - 11:15am

16A 9:45am **A Detailed Look at Costs Associated with Green Stormwater Controls**
Nancy Ellwood, *CDM Smith*

16B 10:15am **Accounting for Uncertainty in Determining the Economic Value Green Infrastructure Investments**
Christopher Behr, *HDR*

16C 10:45am **Developing Sustainable Stormwater Programs Using Sustaibable Financing Options**
Marlou Gregory, *AMEC*

Alternate **Grey vs. Green Infrastructure Evaluation: What is the Most Cost Effective Solution?**
Aaron Hutton, *Arcadis-U.S., Inc.*

TECHNICAL PROGRAM

Session 17: Remediation Stories

Friday, July 20
9:45am - 11:15am

17A 9:45am **Western Michigan University MS4 Compliance Planning for a Phosphorus TMDL**
Mark Kieser, *Kieser & Associates, LLC*

17B 10:15am **Step Pool Storm Conveyance Systems: Manhattan Beach, MD Outfall Retrofit Case Study**
Ryan O'Banion, *LimnoTech*

17C 10:45am **Case Study: Meeting Numeric Stormwater Criteria at a Foundry Site Through Model Application.**
James Bachhuber, *AECOM*

Alternate **A Bioretention and Rainwater Harvesting Demonstration Project at Gwinnett County Department of Water Resources' Central Facility, Lawrenceville, Georgia**
Chuck Graham, *Brown and Caldwell/Gwinnett County*

TECHNICAL PROGRAM

Session 18: The New Stormwater Paradigm

Friday, July 20
11:30am - 12:15pm

Regulatory, Municipal and consulting leaders discuss the background and the potential impacts of the proposed stormwater rule.

TECHNICAL PROGRAM

Session 19: The Urban Forest is Broken: Rethinking Street Trees as Urban Infrastructure

Friday, July 20
11:30am - 12:15pm

Mature trees, one of the oldest yet effective and economical stormwater management techniques in existence, can contribute significantly to urban stormwater management and also provide many other benefits, such as cleaner air and water, and reducing the heat island effect.

These benefits increase greatly with increasing tree size. These benefits are especially needed in large cities, which is also where it is often most difficult to provide trees with the growing conditions they need to grow to their mature size.

This session will explain the difference process by which trees provide stormwater management, as well as the magnitude of stormwater benefits possible with trees, compared to herbaceous vegetation, supported by the latest research and case studies. Common concerns about using trees for stormwater, including studies of the causes of tree roots intruding into pipes, methods to avoid root intrusion into pipes, and how to eliminate pavement heaving caused by tree roots will be discussed.

Speakers Include:
Peter MacDonagh, *Kestrel Design Group*
Thomas Smiley, *Bartlett Lab and Clemson University*
Dave Bloniarz, *USDA Forest Service Urban Natural Resource Institute*

Alternate **Regenerative Stormwater Conveyance Provides Needed Treatment for Runoff Volume, Peak Discharge, and Quality Control for New Development or Retrofitting Underserved Watersheds**
Joe Berg, *Biohabitats, Inc.*

TECHNICAL PROGRAM

Session 20: Urban Case Studies in Green Infrastructure

Friday, July 20
1:45pm - 3:15pm

20A 1:45pm **Los Angeles' Innovative Clean and Green Approach**
Wing Tam, *City of Los Angeles Bureau of Sanitation*

20B 2:15pm **Lessons Learned on the Hartford, CT Green Capitols Project**
Virginia Roach, *CDM Smith*

20C 2:45pm **Green Infrastructure Planning and Implementation in the City of Camden, New Jersey**
Jeremiah Bergstrom, *Rutgers Cooperative Extension Water Resources Program*

Alternate **An Integrated Green Infrastructure Plan to Address Combined Sewer Overflow, Stormwater and Nutrient Reductions in Lancaster City, PA**
Brian Marengo, *CH2M HILL*

TECHNICAL PROGRAM

Session 21: Stormwater Innovation

Friday, July 20
1:45pm - 3:15pm

21A 1:45pm **The City of Auburn, Alabama's Outfall Reconnaissance Inventory Program – A Low Cost and Effective MS4 Best Management Practice**
Daniel Ballard, *City of Auburn*

21B 2:15pm **Streets or Basements? Where Do You Prefer Your Storm Water?**
Stephen Sticklen, *Donohue & Associates*

21C 2:45pm **Prioritizing Localized Stormwater Capture for Water Supply and Water Quality Benefits**
Mark Hanna, *GeoSyntec Consultants*

Alternate **Total Phosphorus Treatment in Urban Runoff using Adsorptive Filtration Media**
Jack Ma, *CONTECH*

TECHNICAL PROGRAM

Session 22: Making Parks More Green

Friday, July 20
1:45pm - 3:15pm

22A 1:45pm **Everyone Wins: A Stormwater Retrofit in a Public Park**
Lise Soukup, *City of Rockville*

22B 2:15pm **The Peck Park Canyon Enhancement Project: Managing Stormwater Runoff in an Urban Park Setting**
Kendrick Okuda, *City of Los Angeles*

22C 2:45pm **A Case Study of Green Infrastructure: Pilot Projects and Opportunities**
Christopher Ranck, *RW Armstrong*

Alternate **The U.S. Botanic Garden – Sustainability through Stormwater Capture and Reuse**
Paul Debarry, *NTM Engineering, Inc.*

TECHNICAL PROGRAM

Session 23: Silt Stories

Friday, July 20
3:30pm - 5:00pm

23A	**3:30pm**	**Overview of EPA's New Construction General Permit** Erika Farris, *USEPA*
23B	**4:00pm**	**Mitigating Stormwater Impacts to Lake Tahoe: Lessons Learned from the Big Blue Basin** Stefan Schuster, *CDM Smith*
23C	**4:30pm**	**Erosion and Sediment Control Planning: Using E&S Inspections, Evaluations, and BMP Design to Plan Facility Nonpoint Source Pollution Reductions** Donald Seward, *AECOM*

TECHNICAL PROGRAM

Session 24: Keep it out of the Sewer

Friday, July 20
3:30pm - 5:00pm

24A	**3:30pm**	**The Effects of Stormwater Infiltration on the Treatability of Emerging Contaminants in Conventional Wastewater Treatment Systems** Kenya Goodson, *University of Alabama*
24B	**4:00pm**	**Reducing Pollutant Loads from Philadelphia's Combined Sewer System with Green Stormwater Infrastructure** Matthew Vanaskie, *CDM*
24C	**4:30pm**	**Case Study of an Integrated Blue and Green Roof System on a 100-Year Old Structure** Jennifer Cass, *Hazen and Sawyer*

TECHNICAL PROGRAM

Session 25: Vigilance in Monitoring and Maintenance

Friday, July 20
3:30pm - 5:00pm

25A 3:30pm **Continuous Monitoring of Total Phosphorus in the Reedy River**

James Riddle, *Woolpert Inc.*

25B 4:00pm **Key Steps to Planning a Sustainable Preventative Maintenance Program for Local Governments' Public and Private Stormwater Management Facilities**
Heather Gewandter, *City of Rockville*

25C 4:30pm **A Regionally-calibrated Approach to 'Channel Protection Controls'—How Meeting New Stormwater Regulations Can Improve Stream Stability and Protect Urban Infrastructure**
Robert Hawley, *Sustainable Streams, LLC*