FINAL PROGRAM

SATURDAY, MARCH 8, 2014

9:30 AM – 10:00 AM  Registration for Dam Owner Training Session
10:00 AM – 4:00 PM  Dam Owner Training Session (DoubleTree by Hilton Richmond-Midlothian, James River Ballroom Parlor G)

SUNDAY, MARCH 9, 2014

1:30 – 5:00 PM  Exhibitors’ Display Set Up (Exhibitors’ Area)
2:00 – 5:00 PM  Registration (Conference Reception Desk)
4:00 – 5:00 PM  Meeting of VLWA Board of Directors
5:30 – 7:00 PM  Exhibitor and Early Registrants’ Reception (James River Ballroom Parlor H)

MONDAY MORNING, MARCH 10, 2014

7:00 – 8:00 AM  Registration and Check-In (Conference Reception Desk)
7:30 AM  Coffee and Pastries
7:45 – 9:00 AM  Welcome to the Conference, Stuart Stein, Conference Chair

Keynote Address – The September 2013 Flooding in Colorado: Causes and Consequences, Chris Holdren, Manager of the Environmental Applications and Research Group with the Bureau of Reclamation in Denver, CO

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<th>Track A–Parlor A</th>
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9:15 – 10:30 AM  First Concurrent Sessions

Session 1A • Stormwater Programming 1 • Moderator – Catherine Eichel, Brown and Caldwell

Virginia Stormwater Management Program Panel Discussion – Strategies and Challenges
(1) Jonét Prévost-White, City of Richmond Department of Public Utilities
(2) J. Michael Flagg, Hanover County
(3) Joan Salvati, Virginia DEQ
(4) Catherine Eichel, Brown and Caldwell

Session 1B • Dam Safety 1 • Moderator – Michael J. Barbachem, PE, BCEE, URS Corporation

(1) Town of Clifton Forge Smith Creek LOMR Request: A Story of History, Improvements, and Conflicts, Carolyn A. Howard, PE, CFM, Draper Aden Associates; Matthew B. James, PE, Draper Aden Associates
(2) A Dam Failure Analysis Utilizing Un-Steady Flow Methodology – Wyndham Lake Dam, David P. Wilmoth, PE, CFM, PH, Timmons Group.; Michael L. Claud, PE, CFM, Timmons Group; Alex C. Lucado, EIT, Timmons Group
(3) An Exploration of Extreme Rainfall Trends in Virginia, Michael J. Barbachem, PE, BCEE, URS Corporation

Session 1C • Stormwater Management • Moderator – Deva Borah, Ph.D., PE, Old Dominion University and Borah Hydro-Environmental Modeling LLC

(1) Runoff Reduction Analysis Made Easy; SWMSofT: A BMP Design Software for Water Quality and Quantity Control, Partha Sarathi, PE, ENSOFTEC; Gamal Hassan, PE, HWR
(2) The Use of 1D and 2D Modeling to Develop Solutions for Flooding in the Glenwood Neighborhood of Norfolk, Virginia, Steve Godfrey, PE, CFM, Woolpert; Jim Ewing, PE, Woolpert; Reynaldo Hernandez, Jr., PE, City of Norfolk
(3) Stormwater Inventory, Basin Delineation and Condition Assessment to Build a GIS-based Asset Management System, City of Fairfax, Virginia, Jim Ewing, PE, Woolpert; Christina Alexander, Woolpert; Travis Davis, Woolpert

Session 1D • TMDLs and Water Quality Modeling 1 • Moderator – Clifton F. Bell, PE, PG, Brown and Caldwell
(1) Setting the Stage for TMDL Action Planning in Petersburg, Virginia, Aislinn T. Creel, PE, LEED AP, Timmons Group; Tennille Wade, City of Petersburg; Darryl Walker, City of Petersburg
(3) Implementing GIS and ArcHydro in Water Quality and Conservation Programs, James T. Martin, MS, GISP, WorldView Solutions
(4) Local Watershed Improvement Planning Methods: The Chevy, Cadillac, and Lamborghini, Clifton F. Bell, PE, PG, Brown and Caldwell

Session 1E • Floodplain Management 1 • Moderator – M. Tariq Makhdoom, Ph.D., CFM, Dewberry
(1) Mitigation Funding for Your Projects – Not Just Your Grandfather’s Lift: Successful Uses of FEMA HMA Funds in Virginia, Michael Paul Dodson, CFM, Community Planning Partners, Inc.
(2) Using Stormwater Master Planning to Build Community Resiliency, James Latchaw, PE, CFM, Dewberry Engineers, Inc.
(3) DMA 2000 Hazard Mitigation Plan Updates, Stuart Wallace, CFM, Stuart Wallace, LLC
(4) Building More Resilient Coastal Communities: Insurance Claims in Pre- and Post-LiMWA Mississippi, Sara M. DeGroot, PE, CFM, Michael Baker Jr., Inc.

10:30 – 10:45 AM Coffee Break

10:45 AM – 12:00 PM Second Concurrent Sessions

(1) The MS4 Program Plan Makeover, Joni M. Calmbacher, PE, CFM, Michael Baker Jr., Inc.; Dialis Figueroa Arriaga, NAVFAC Mid-Atlantic; Phillip Winslow, NAVFAC Mid-Atlantic
(3) Stormwater Infrastructure Data Development and Uses – An Overview for Municipalities, Brent Reeves, KCI Technologies, Inc., Resource Management Group, Geospatial Solutions Practice

Session 2B • Dam Safety 2 • Moderator – Amanda S. Pennington, PE, DCR Division of Dam Safety and Floodplain Management
(1) Assessing Landscape Capacity to Regulate Floods in Selected Watersheds Across North Carolina and Virginia, Beatriz Mogollón, MS Candidate, Department of Fish and Wildlife Conservation, Virginia Tech; Paul Angermeier, Ph.D., U.S. Geological Survey, Virginia Cooperative Fish and Wildlife Research Unit, Virginia Tech
(2) Dam Restoration vs. Removal Considerations – Lower Melzingah Dam, N. Johan Anestad, PE, O’Brien & Gere; Robert R. Bowers, PE, O’Brien & Gere
Session 2C • Drainage and Tidal Flooding • Moderator – Seshadri Iyer, Ph.D., PE, URS Corporation

- Stormwater Planning and Design in Lusaka, Zambia, Tim Hare, PE, CH2M Hill
- Drainage Master Planning in Rockingham County, VA, Gregor Patsch, PE, Timmons Group
- Tides Up: A Case Study of Tidal and Rainfall Flooding Solutions in a Developed Beach Community, Taylor A. Jones, EIT, Parsons Brinckerhoff; Beth Arnold, PE, LEED AP, ENV SP, Parsons Brinckerhoff
- Importance and Implementation of a Tide Gauge Network in Coastal Plains, Seshadri Iyer, Ph.D., PE, URS Corporation; Jeffrey Waller, PE, City of Virginia Beach Public Works/Engineering

Session 2D • TMDLs and Water Quality Modeling 2 • Moderator – Deva Borah, Ph.D., PE, Borah Hydro-Environmental Modeling LLC

- Estuary Number, η and Modeling Dispersion of Chlorophyll-a in the Upper James River, Ben Chester, Old Dominion University; John McKenney, Old Dominion University; Jaewan Yoon, Ph.D., Old Dominion University
- Effects of Estuarine Point Source and Nonpoint Source Total Nitrogen Loadings on the James River, Jon DeArmond, Old Dominion University; Johnnie Godwin, Old Dominion University; Jaewan Yoon, Ph.D., Old Dominion University
- Assessment of Phosphorus Concentration in Robeson Creek of Haw River, NC, Arash Niroomandi, Old Dominion University; Baljit Kaur, Old Dominion University; Jaewan Yoon, Ph.D., Old Dominion University

Session 2E • Floodplain Management 2 • Moderator – David Preusch, WEST Consultants

- Developing Stationary Floodplains in the Vicinity of Stream Gages Using FEMA Hydraulic Models, Krista Rand, EIT, CFM, Dewberry; M. Giovanni Prieto, CFM, Dewberry
- Updating FEMA Maps Using Two-Dimensional Models, Cheryl B. Hannan, PE, CFM, LEED AP, Dewberry
- Representing Flooding Accurately & Effectively, John Paine, PE, PH, CFM, URS Corporation
- Fairfax County’s Advanced Flood Warning System – Lessons Learned and Shared, Donald R. Demetrius, Ph.D., Fairfax County, VA, Stormwater Planning Division; Camylyn Lewis, Aqua-Assets, LLC

12:15 – 1:15 PM Luncheon

Keynote Address – Stronger Together: Finding Common Ground to Improve the Waters of Our Commonwealth, Ralph S. Northam, Lieutenant Governor, Commonwealth of Virginia
MONDAY AFTERNOON, MARCH 10, 2014

1:30 – 2:45 PM Third Concurrent Sessions

Session 3A • Stormwater Programming 3 • Moderator – Seth Brown, PE, Water Environment Federation

(2) Big, Bad Stormwater: How the Commonwealth Compares in Region III, Ginny Snead, PE, Louis Berger Group
(3) Exploring the Need for a National Stormwater BMP Testing and Verification Stormwater Program, Chris French, Filtegra Bioretention Systems
(4) What to Expect When You’re Expecting an MS4 Audit, Maxwell Kuker, GKY & Associates, Inc.

Session 3B • Dam Safety 3 • Moderator – David Gunn, PE, CFM, Henrico County, VA, Department of Public Works

(1) Timberlake – A Case Study (Construction – Failure – Rebuild – Regulation Changes – Future), Mike Wilson, PE, Hurt and Proffitt, Inc.
(2) How Retrofitting Affects Flood Insurance and Sustainability, David Sonner, CFM, Smart Vent Products, Inc.
(3) Frequently Misunderstood Requirements for Levee Accreditation, M. Tariq Makhdoom, Ph.D., CFM, Dewberry
(4) Changing FEMA Floodplains – A Review of LOMC Processes and Recent Changes, David Gunn, PE, CFM, Henrico County, VA, Department of Public Works

Session 3C • Stormwater and CSO Design Challenges • Moderator – Amelia Wehunt, PE, Timmons Group

(1) Alternative to Gravity Drainage in Coastal Plains – Stormwater Pumping, Craig Pearson, EIT, CNMP, URS Corporation; Seshadri Iyer, Ph.D., PE, URS Corporation; Mike Bumbaco, PE, City of Virginia Beach Public Works/Engineering; Jeff Waller, PE, City of Virginia Beach Public Works/Engineering
(4) Design and Construction Challenges with Combined Sewer Relocation, Drew Gould, PE, Timmons Group; Amelia Wehunt, PE, Timmons Group

Session 3D • Watershed Management • Moderator – Melissa J. Pritchard, PE, Parsons Brinckerhoff

(1) Stormwater Master Planning: Harmonizing Asset Renewal with Water Quality Compliance, Allen Townsend, EIT, Brown and Caldwell
(2) Watershed-Scale Water Quality Improvement Projects in Coastal Plains, Daniel Rickmond, PE, URS Corporation; Craig Pearson, EIT, CNMP, URS Corporation; Seshadri Iyer, Ph.D., PE, URS Corporation; Steve McLaughlin, PE, City of Virginia Beach Public Works/Engineering
(3) Watershed Action Plans: Identifying Opportunities to Reduce Flooding and Restore Water Quality in a Watershed, Melissa J. Pritchard, PE, Parsons Brinckerhoff
(4) Adopting Higher Standards: Helping Localities Incorporate CRS Activities into Ordinance Language and Community Practice, Mary-Carson S. Stiff, Virginia Coastal Policy Clinic at William & Mary Law School
### Session 3E • Floodplain Management 3 • Moderator – Jeff Smith, PE, PMP, CSM, CSPO, CFM, Accenture Federal Services

1. **FEMA Region III Coastal Hazard Study Impacts & Rollout in Virginia**, Christine Worley, PE, CFM, RAMPP; Robin Danforth, PE, CFM, FEMA Region III; David Bollinger, FEMA Region III
2. **Limit of Moderate Wave Action Mapping Based on Latest FEMA Guidance**, Nader Mahmoudpour, PE, CFM, CDM Smith
3. **Preparing for the Next Big One… What Floodplain Managers Can Do Before, During, and After a Flood Event**, Mari W. Radford, CFM, FEMA Region III; Charley Banks, CFM, Virginia Department of Conservation & Recreation – Division of Water and Soil
4. **What is Critical Infrastructure and Why Is It Important?**, Mark Slauter, CFM, Virginia Department of Emergency Management

#### 2:45 – 3:15 PM  Coffee Break

#### 3:15 – 4:30 PM  Fourth Concurrent Sessions

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<tr>
<th>Session 4A • Green Infrastructure 1 • Moderator – Charlene Harper, PE, LEED AP, Geosyntec Consultants, Inc.</th>
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<tr>
<td>1. <strong>Green Up DC – DC’s Web Site for Stormwater Evaluations by Property Owners</strong>, Jennifer Hatchett, PE, CH2M HILL; Laurens van der Tak, PE, CH2M HILL; Bruce Taylor, Critigen</td>
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<td>2. <strong>Finding the Balance of Green and Grey Infrastructure to Meet Multiple Stormwater Objectives</strong>, Cherl L. Salas, PE, CH2M HILL, Inc.; Kate Marney, CH2M HILL, Inc.; Laurens van der Tak, PE, CH2M HILL, Inc.; Andrew Potts, PE, CH2M HILL, Inc.; Brian Rahal, PE, City of Alexandria, VA</td>
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<td>3. <strong>Green Infrastructure Assessment, Prioritization, and Design</strong>, Scott C. Blossom, PE, CFM, Williamsburg Environmental Group; Alex Forasté, PE, Williamsburg Environmental Group</td>
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<th>Session 4B • Dam Safety 4 • Moderator – Bradford Cooley, PE, Watershed Geosynthetics LLC</th>
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<td>1. <strong>Trash Rack Rail System Rehabilitation Using an Asymmetrical Cofferdam</strong>, David B. Mrowiec, PE, Crofton Industries; Kurt Feairheller, Crofton Industries; Todd M. Rudolph, PE, Ayres Associates</td>
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<td>2. <strong>Diver Safety for: Dam Rehabilitation, Trash Rack Replacement, Underwater Construction and ADCI Member Companies Use in Inland Waterways</strong>, John Davis, Crofton Diving Inc.</td>
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<td>3. <strong>St. Mary's River State Park Dam Safety Repairs and Rehabilitation Callaway, St. Mary's County, Maryland</strong>, Kofi A. Acheampong, Ph.D., PE, KCI Technologies, Inc.</td>
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<th>Session 4C • BMP Design • Moderator – Virginia Long, EIT, URS Corporation</th>
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<td>2. <strong>Riverland Road SWM Basin Retrofit</strong>, Michael Hogan, PE, RK&amp;K</td>
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<td>3. <strong>Challenges of LID BMP Design in Clayey Soils</strong>, Virginia Long, EIT, URS Corporation; Seshadri Iyer, Ph.D., PE, URS Corporation; Jeffrey Waller, PE, City of Virginia Beach Public Works/Engineering</td>
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<th>Session 4D • Spill Prevention, Industrial, and MS4 Compliance • Moderator – Elizabeth Krousel, PE, Michael Baker Jr., Inc.</th>
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<tr>
<td>1. <strong>SPCC Planning to Prevent Oil Spills to U.S. Waterways</strong>, Michael Hare, PE, URS Corporation</td>
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<td>2. <strong>Understanding the Movement of a Pollutant in Water Using a 3-D Model - Case Study: Oil Slick Movement in Lake Pontchartrain</strong>, Gabriel Retana, PE, Ph.D., Brown and Caldwell, Inc.; Joao Pereira, Ph.D., The Water Institute of the Gulf; J. Alex McCorquodale, PE, Ph.D., University of New Orleans; Ezra Boyd, Ph.D. DisasterMap.Net, LLC</td>
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Session 4E • Floodplain Management 4 • Moderator – John Paine, PE, PH, CFM, URS Corporation

(1) The ASFPM Foundation, Grant Smith, PE, PMP, CFM, Dewberry
(2) The Biggert-Waters Flood Insurance Reform Act of 2012 – Overview and Implementation Update, Richard J. Sobota, CFM, CPCU, FEMA Region III
(3) Model Agreements for Intergovernmental Cooperation on NFIP Programs, Melissa Hall, Virginia Department of Conservation & Recreation – Division of Water and Soil
(4) Reframing BW-12 Conversations with Communities and Property Owners to Offer Options, Bill Malyszka, Accenture

MONDAY EVENING, MARCH 10, 2014

4:45 – 6:00 PM Reception (James River Ballroom Parlor H)
6:00 – 6:30 PM Virginia Lakes and Watersheds Association Business Meeting

TUESDAY MORNING, MARCH 11, 2014

7:15 – 8:15 AM Virginia Floodplain Management Association Meeting, Parlor E

8:30 – 9:45 AM Fifth Concurrent Sessions

Session 5A • Green Infrastructure 2 • Moderator – Don Rissmeyer, PE, CFM, A. Morton Thomas and Associates, Inc.

(1) Use of Compost Based Best Management Practices (BMP) Utilization in Green Infrastructure, Jeffrey Opel, Filtrexx International; Dr. Britt Faucette, Ph.D., Filtrexx International
(2) Using Green Infrastructure in Your Watershed Assessments to Reduce Stormwater Runoff and Improve Water Quality, Melissa Bernardo Hess, PE, CFM, URS Corporation
(3) Using Green Infrastructure to Mitigate Combined Sewer Overflows: Modeling Insights for Design and Management Consideration, John Riverson, Tetra Tech; Khalid Alvi, PE, Tetra Tech; Jenny Zhen, Ph.D., PE, Tetra Tech; Ryan Murphy, Tetra Tech
(4) Expanding a Green Parking Lot Into a Green Street Solution, Don Rissmeyer, PE, CFM, A. Morton Thomas and Associates, Inc.

Session 5B • Lake Oxygenation • Moderator – Mark H. Mobley, PE, Mobley Engineering, Inc.

(1) Hypolimnetic Oxygenation Systems in Five Virginia Water Supply Reservoirs, Mark H. Mobley, PE, Mobley Engineering, Inc.; Cayelan C. Carey, Ph.D., Department of Biological Sciences, Virginia Tech; Paul A. Gantzer, Ph.D., PE, Gantzer Water Resources Engineering, LLC; Alexandra B. Gerling, Department of Biological Sciences, Virginia Tech; Thomas J. Grizzard, PE, Ph.D., Virginia Tech College of Engineering; Jamie Morris, Western Virginia Water Authority; Gregory J. Prelewicz, PE, Fairfax Water; Niffy Saji, Fairfax Water
(2) Oxygenation Design; Developing a Strategy to Accommodate the Uncertainty from Induced Oxygen Demand, Paul A. Gantzer, Ph.D., PE, Gantzer Water Resources Engineering, LLC; John Little, Ph.D., PE, University of Sydney; Bob Benninger, PE, Western Virginia Water Authority; Mark Mobley, PE, Mobley Engineering, Inc.; Niffy Saji, Fairfax Water; Alexandra B. Gerling, Virginia Tech; Cayelan C. Carey, Ph.D., Virginia Tech
(3) Aeration, Oxygenation, or Both? A Demonstration of How These Dual Strategies are Being Integrated to Improve Water Quality, Cayelan C. Carey, Ph.D., Virginia Tech; Paul A. Gantzer, Ph.D., PE, Gantzer Water Resources Engineering, LLC; Mark Mobley, PE, Mobley Engineering, Inc.; Alexandra B. Gerling, Virginia Tech; Jamie Morris, Western Virginia Water Authority; Chris Edwards, Spotsylvania County Utility Dept.
The Viability of Hypolimnetic Oxygenation and Its Effects on Nutrient Cycling in a Shallow, Eutrophic Drinking Water Reservoir, Alexandra B. Gerling, Virginia Tech; Richard G. Browne, M.S., Virginia Tech; Paul A. Gantzer, Ph.D., PE, Gantzer Water Resources Engineering, LLC; Mark H. Mobley, PE, Mobley Engineering, Inc.; John C. Little, Ph.D., PE, Virginia Tech; Cayelan C. Carey, Ph.D., Virginia Tech

Session 5C • University Research • Moderator – Martin Firth, Lake Services

(1) Phytoplankton Consumption and Microcystin Assimilation by Fishes of the Tidal Fresh James River, Joe Wood, Ph.D. Candidate, Virginia Commonwealth University; Paul Bukaveckas, Ph.D., Virginia Commonwealth University; Rima Franklin, Ph.D., Virginia Commonwealth University; Gregory Garman, Ph.D., Virginia Commonwealth University; Stephen McNinch, Ph.D., Virginia Commonwealth University; Aaron Porter, M.S., Virginia Commonwealth University

(2) Commercial Harvest of Snapping Turtles (Chelydra Serpentina) in the Mid-Atlantic: International Export, Harvest Pressure, and Regulatory Strategies, Benjamin C. Colteaux, Integrative Life Sciences, Virginia Commonwealth University; Derek M. Johnson, Department of Biology, Virginia Commonwealth University

(3) Research Activities at Virginia Commonwealth University’s Rice Rivers Center, Greg C. Garman, Ph.D., Virginia Commonwealth University Center for Environmental Studies

Session 5D • Environmental Restoration 1 • Moderator – Carey Burch, AICP, Program Manager, HDR Engineering

(1) "Hoehns Lake Stream Restoration”; County of Henrico, Virginia, Michael L. Claud, PE, CFM, Timmons Group; Rebecca Napier, PE, Timmons Group

(2) Mixing Natural Channel Design with Traditional Drainage Design for Stabilization: Willow Oaks Neighborhood Drainage Improvements, Amelia C. Wehunt, PE, Timmons Group

(3) Stream Restoration Nutrient and Sediment Reduction Calculations - Mill Dam Creek, A Case Study, City of Virginia Beach, Patrick Shearer, EIT, Kerr Environmental Services Corp.

(4) Restoration of Lake Kittamaqundi and Isthmus Protection, Carey Burch, AICP, Program Manager, HDR Engineering; Pieter Dahmen, PE, Project Manager, HDR Engineering


(1) Use of Satellite and Radar Data for Real Time and Forecast Modeling: Applications in Flood Warning, Flood Emergency Response and Reservoir Operation, Mathini Sreetharan, Ph.D., PE, CFM, Dewberry; Prabha Madduri, PE, CFM, Dewberry

(2) Dynamic Radar Rainfall-Based Design Storms and Implications for Infrastructure Design, David C. Curtis, Ph.D., WEST Consultants, Inc.

(3) Techniques for Modeling Climate Change Impacts on Floodplain Mapping, Shane Parson, Ph.D., PE, CFM, URS Corporation

(4) Case Study – Kingdom of Jordan, Preparing Flood Risk Information in a Data Poor Environment, David Preusch, PE, PH, CFM, WEST Consultants, Inc.; Varut (Dua) Guvanasen, Ph.D., PE, HydroGeologic, Inc.; Suresh R. Kikkeri, PE, PMP, US Army Corps of Engineers

9:45 – 10:15 AM Coffee Break
### Session 6A • Innovative Stormwater Treatment • Moderator – William E. Nell, PE, Thirsty Duck

2. Design Considerations, Pollutant Removal Performance, and Hydrologic Mitigation Evaluations of Permeable Interlocking Concrete Paver System and Bioretention Retrofits, Jodi Mills, PE, CPSWQ, M. ASCE, Filterra Bioretention Systems
4. Maximize Water Quality Volumes with Innovative Flow Control, William E. Nell, PE, Thirsty Duck

### Session 6B • Virginia Beach Issues • Moderator – Steve McLaughlin, PE Virginia Beach Public Works/Engineering

1. Owls Creek Boat Pump-Out Facility in the City of Virginia Beach – Function, Use and Expectations, Greg Johnson, PE, Virginia Beach Public Works/Engineering; Tom Langley, PE, LS., Langley and McDonalld
2. Adoption of the New Stormwater Regulations for VSMP/CGP Compliance, William J. Johnston, PE, City of Virginia Beach, VA
3. City of Virginia Beach Rain Gauge Network Project, Jeffrey S. Waller, PE, City of Virginia Beach Public Works/Engineering
4. Nutrient and Sediment Fraction Content of a Dredged, Coastal-Plain, Urban Lake's Sediment, Steve McLaughlin, PE Virginia Beach Public Works/Engineering

### Session 6C • Soil, Water, and Groundwater Quality • Moderator – Kenneth A. Dierks, Kimley-Horn and Associates, Inc.

1. Denitrification in the Hyporheic Zone: Natural Attenuation of Contaminant Sources from Upstream Watersheds and Deeper Groundwater, Erich T. Hester, Ph.D., PE, Civil and Environmental Engineering, Virginia Tech; Katie I. Young, M.S., EIT, Civil and Environmental Engineering, Virginia Tech; Mark A. Widdowson, Ph.D., PE, Civil and Environmental Engineering, Virginia Tech
2. Evaluating Leachability of Residual Solids from Hydraulic Fracturing, Stephanie Countess, NETL-RUA Virginia Tech; Greg Boardman, Ph.D., NETL-RUA Virginia Tech; Richard Hammack, NETL; Alexandra Hakala, Ph.D., NETL
3. The First Flush: Studying Soil Nutrient Dynamics in Restored Floodplain, Dylan M Cooper, Department of Biological Systems Engineering at Virginia Tech
4. Preparing for Contaminated Groundwater During Construction; How a Pre-Positioned Plan can Save Time and Money, Michelle Wharton, Kimley-Horn and Associates, Inc.

### Session 6D • Environmental Restoration 2 • Moderator – Eliana Rios, RK&K

2. Drivers of Woody Species Recruitment and Distribution Patterns Following Dam Removal in a Tidal Freshwater Wetland of the Mid-Atlantic Coastal Plain, Richard E. Ward, Virginia Commonwealth University; Edward Crawford, Ph.D., Virginia Commonwealth University
4. Four Mile Run, Determining Water Quality Benefits to Meet TMDL Requirements for a Wetland Restoration, Eliana Rios, RK&K
Session 6E  ●  Floodplain Management 6  ●  Moderator – Mark Slauter, CFM, Virginia Department of Emergency Management

Recurrent Flooding and Adaptation Strategies – A Panel Discussion
(1) Kenneth M. Somerset, City of Poquoson, VA
(2) Jim Redick, City of Norfolk, VA, Emergency Preparedness and Response
(3) Molly Mitchell (Roggero), Center for Coastal Resources Management – Virginia Institute of Marine Science
(4) Charley Banks, CFM, Virginia Department of Conservation & Recreation – Division of Water and Soil

11:45 – 1:00 PM  Luncheon

VLWA Dam Safety Committee Dam Awards:

Best Maintained Dam, Privately Owned – Lake Serene Dam in Frederick County owned by Lake Serene, Inc.
Best Maintained Dam, Publicly Owned – Falling Creek Reservoir Dam in Chesterfield County owned by Chesterfield County Utilities Department
Best Maintained Dam, Publicly Owned – South River Dam #25 in Augusta County owned by Headwaters SWCD
Best Major Construction or Rehabilitation Projects – Lake Holiday Dam Major Construction in Frederick County owned by Lake Holiday Country Club, Inc.
Most Improved Dam – Lake Barton Dam in Fairfax County owned by Fairfax County

Dave Pearson Watershed Excellence Award

Aeration, Oxygenation, or Both? A Demonstration of How These Dual Strategies are Being Integrated to Improve Water Quality, by Cayelan C. Carey, Virginia Tech; Paul A. Gantzer, Gantzer Water Resources Engineering, LLC; Mark H. Mobley, Mobley Engineering, Inc.; Alexandra B. Gerling, Virginia Tech; Jamie Morris, Western Virginia Water Authority; Chris Edwards, Spotsylvania County Utility Department

Keynote Address: Recurrent Flooding and Adaptation Strategies, Jim Redick, Director, Emergency Preparedness and Response, City of Norfolk