



# 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

Track A–Parlor A

Track B–Parlor B

Track C–Parlor F

Track D–Parlor G

Track E–Parlor E

### 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

(2) **Model Calibration of Multiple Reservoirs in an Aqueduct System**, Benjamin R. Martin, PE, Flow Science Incorporated; Kristen B. Kavanagh, Flow Science Incorporated; Al Preston, Ph.D., PE, Flow Science Incorporated; E. John List, Ph.D., PE, Flow Science Incorporated

(3) **Implementing GIS and ArchHydro 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**

**Session 2A • Stormwater Programming 2 • Moderator – J. Douglas Fritz, CPESC, GKY & Associates, Inc.**

(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

(2) **Coping with Change: Strategies for a GIS-based MS4 Permit Management System**, Pam Cowher, GISP, Kimley-Horn & Associates, Inc.

(3) **Stormwater Infrastructure Data Development and Uses – An Overview for Municipalities**, Brent Reeves, KCI Technologies, Inc., Resource Management Group, Geospatial Solutions Practice

(4) **Coordinating Stormwater Management Requirements with Comprehensive Municipal Planning**, J. Douglas Fritz, CPESC, GKY & Associates, Inc.; Douglas H. Moseley III, AICP CFM, GKY & Associates, Inc.

**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

(3) **Dam Safety Project Experiences and Lessons Learned**, Kateri S. Shreve, PE, VCCO, Virginia Department of Game and Inland Fisheries

(4) **Emergency Action Planning, Table Top Exercises – Will You Be Ready?**, Amanda S. Pennington, PE, DCR Division of Dam Safety and Floodplain Management

**Session 2C • Drainage and Tidal Flooding • Moderator – Seshadri Iyer, Ph.D., PE, URS Corporation**

(1) **Stormwater Planning and Design in Lusaka, Zambia**, Tim Hare, PE, CH2M Hill

(2) **Drainage Master Planning in Rockingham County, VA**, Gregor Patsch, PE, Timmons Group

(3) **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

(4) **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**

(1) **Estuary Number,  $\eta$  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

(2) **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

(3) **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

(4) **Total Maximum Daily Load Analysis Methods: State-of-the-Art Reviews**, Bill Frost, PE, D.WRE, KCI Technologies, Inc., Deva Borah, Ph.D., PE, Borah Hydro-Environmental Modeling LLC

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

(1) **Developing Stationary Floodplains in the Vicinity of Stream Gages Using FEMA Hydraulic Models**, Krista Rand, EIT, CFM, Dewberry; M. Giovanni Prieto, CFM, Dewberry

(2) **Updating FEMA Maps Using Two-Dimensional Models**, Cheryl B. Hannan, PE, CFM, LEED AP, Dewberry

(3) **Representing Flooding Accurately & Effectively**, John Paine, PE, PH, CFM, URS Corporation

(4) **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

- (1) **Policies, Financing Innovations and Tipping Points in Stormwater**, 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, Filterra 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
- (2) **City of Falls Church – Challenges of Stormwater Infrastructure Retrofits in an Urban Environment (Part 1)**, Aaron S. George, PE, GKY & Associates, Inc.; Brett L. Martin, PE, GKY & Associates, Inc.; Brice R. Kutch, PE, LEED BD+C, GKY & Associates, Inc.; Stuart M. Stein, PE, D.WRE, GKY & Associates, Inc.; Jason Widstrom, PE, City of Falls Church
- (3) **City of Falls Church – Challenges of Stormwater Infrastructure Retrofits in an Urban Environment (Part 2)**, Brice R. Kutch, PE, LEED BD+C, GKY & Associates, Inc.; Aaron S. George, PE, GKY & Associates, Inc.; Stuart M. Stein, PE, D.WRE, GKY & Associates, Inc.; Brett L. Martin, PE, GKY & Associates, Inc.; Jason Widstrom, PE, City of Falls Church
- (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, Ph.D., 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**

**Session 4A • Green Infrastructure 1 • Moderator – Charlene Harper, PE, LEED AP, Geosyntec Consultants, Inc.**

- (1) **Green Up DC – DC's Web Site for Stormwater Evaluations by Property Owners**, Jennifer Hatchett, PE, CH2M HILL; Laurens van der Tak, PE, CH2M HILL; Bruce Taylor, Critigen
- (2) **Finding the Balance of Green and Grey Infrastructure to Meet Multiple Stormwater Objectives**, Cheri 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
- (3) **Green Infrastructure Assessment, Prioritization, and Design**, Scott C. Blossom, PE, CFM, Williamsburg Environmental Group; Alex Forasté, PE, Williamsburg Environmental Group
- (4) **High Performance Green Infrastructure: Distributed Real-Time Monitoring and Control**, Charlene Harper, PE, LEED AP, Geosyntec Consultants, Inc.; Marcus Quigley, PE, D.WRE, CPESC, Geosyntec Consultants, Inc.

**Session 4B • Dam Safety 4 • Moderator – Bradford Cooley, PE, Watershed Geosynthetics LLC**

- (1) **Trash Rack Rail System Rehabilitation Using an Asymmetrical Cofferdam**, David B. Mrowiec, PE, Crofton Industries; Kurt Fearheller, Crofton Industries; Todd M. Rudolph, PE, Ayres Associates
- (2) **Diver Safety for: Dam Rehabilitation, Trash Rack Replacement, Underwater Construction and ADCI Member Companies Use in Inland Waterways**, John Davis, Crofton Diving Inc.
- (3) **St. Mary's River State Park Dam Safety Repairs and Rehabilitation Callaway, St. Mary's County, Maryland**, Kofi B. Acheampong, Ph.D., PE, KCI Technologies, Inc.
- (4) **Concrete-Enhanced Synthetic Turf Revetment Systems – An Innovative Technology for Dam and Levee Overtopping Protection**, Bradford Cooley, PE, Watershed Geosynthetics LLC; Jim Nadeau, ACF Environmental

**Session 4C • BMP Design • Moderator – Virginia Long, EIT, URS Corporation**

- (1) **Innovative Stormwater Design for Transportation Projects**, Megan A. McCollough, PE, CFM, Williamsburg Environmental Group, Inc.; Glenn Muckley, PE, Williamsburg Environmental Group, Inc.
- (2) **Riverland Road SWM Basin Retrofit**, Michael Hogan, PE, RK&K
- (3) **Challenges of LID BMP Design in Clayey Soils**, Virginia Long, EIT, URS Corporation; Seshadri Iyer, Ph.D., PE, URS Corporation; Jeffrey Waller, PE, City of Virginia Beach Public Works/Engineering

**Session 4D • Spill Prevention, Industrial, and MS4 Compliance • Moderator – Elizabeth Krousel, PE, Michael Baker Jr., Inc.**

- (1) **SPCC Planning to Prevent Oil Spills to U.S. Waterways**, Michael Hare, PE, URS Corporation
- (2) **Understanding the Movement of a Pollutant in Water Using a 3-D Model - Case Study: Oil Slick Movement in Lake Pontchartrain**, 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

(3) **Solutions and Synergies of the Navy's Phase 1 Industrial, Phase 2 Municipal, and Chesapeake Bay (EO 13508) Stormwater Programs**, Elizabeth Krousel, PE, Michael Baker Jr., Inc.; David Cotnoir, PE, NAVFAC Mid-Atlantic

**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.

(4) **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 McInInch, 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

**Session 5E • Floodplain Management 5 • Moderator – Douglas H. Moseley III, AICP CFM, GKY & Associates, Inc.**

(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**

## 10:15 – 11:30 AM Sixth Concurrent Sessions

### Session 6A • Innovative Stormwater Treatment • Moderator – William E. Nell, PE, Thirsty Duck

- (1) **Performance Monitoring of a High Flow Bioretention System in Washington State for Basic and Phosphorus Treatment Under the Technology Assessment Protocol – Ecology**, Mindy Hills, Filterra Bioretention Systems
- (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
- (3) **Paving the Way to Stormwater Management**, Steve Sunderman, Registered Architect, LEED AP BD+C, BPI Analyst, Noesis Energy Advisor, Terrazia PC
- (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 McDonald
- (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

- (1) **Nutrient Reductions from Individual Stream Restoration Projects Using the Chesapeake Bay Protocols**, J. Alex Forasté, PE, Williamsburg Environmental Group, Inc.; Doug Beisch, PE, Williamsburg Environmental Group, Inc.
- (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
- (3) **Managing Water Quality in Huntsman Lake (Virginia, USA) – Development and Implementation of Restoration Strategies**, David A. Tomasko, Ph.D., Atkins; Emily Keenan, Atkins; Shannon Curtis, Fairfax County, VA, Stormwater Planning Division – Watershed Planning & Assessment Branch
- (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, Publically Owned – Falling Creek Reservoir Dam** in Chesterfield County owned by Chesterfield County Utilities Department

**Best Maintained Dam, Publically 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