

# FINAL PROGRAM



## SATURDAY, MARCH 3, 2012

9:00 am – 4:00 pm Dam Owner Training Session, Holiday Inn Select Koger Conference Ctr)

## SUNDAY, MARCH 4, 2012

1:00 – 4:00 pm Dam Engineers Forum (Parlor H, Holiday Inn Select Koger Conference Ctr)  
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 Registrant's Reception

## MONDAY, MARCH 5, 2012

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

**Keynote Address** - Anthony Moore, Deputy Secretary of Natural Resources for the Chesapeake Bay Restoration – The Chesapeake Bay TMDL

Track A–Parlor A

Track B–Parlor B

Track C–New River

Track D–Chesterfield

Track E–Parlor E

### 9:15 – 10:30 First Concurrent Sessions

#### Session 1A • Stormwater Funding • Moderator – Lisa Jeffrey, PE, Brown and Caldwell

- (1) **Stormwater Program Funding in Fairfax County**, Randy Bartlett, Fairfax County DPW
- (2) **Options for Establishing a Stormwater Utility**, Bob Steidel, Michelle Virts, PE, LEEP AP, City of Richmond DPU
- (3) **Considerations for Developing a Local Stormwater Utility**, Keith White, Henrico Co. DPW, Fernando Pasquel, Michael Baker Jr., Inc.
- (4) **Stormwater Billing Account Reconciliation in Hampton, VA Using VA Base Mapping Program Derived Land Cover Data**, Karl Mertig, PWD, CPESC, Kimley-Horn and Associates, Inc.

#### Session 1B • Coastal Issues • Moderator – Charlene Harper, PE, LEED AP

- (1) **Tide Control Options for Stormwater Outfalls in the Lower Coastal Plain**, Michael Bumbaco, PE, City of Virginia Beach DPW, Cynthia Linkenhoker, Parsons Brinckerhoff
- (2) **Impacts of Sea Level Rise on Coastal Infrastructure**, Charlene Harper, PE, LEED AP, Timmons Group
- (3) **Stormwater Design in Tidally Impacted Areas**, Lewis R. White, Parsons Brinckerhoff

#### Session 1C • TMDLs 1 • Moderator – Deva Borah, PE, Woolpert, Inc.

- (1) **Water Quality Issues in Virginia from the Federal to Neighborhood Levels**, David Powell, Ph.D., PE, Woolpert, Inc.
- (2) **Water Quality Assessment and Improvement Approaches**, Deva Borah, Ph.D., PE, Woolpert, Inc.
- (3) **Breaking Down TMDLs - Are We Really the Problem? Continuous Monitoring to Total Phosphorus in the Reedy River**, James Riddle, PE, Woolpert, Inc.
- (4) **Evaluation of a Process-Based BMP Design Tool for Meeting Post Construction S/W Quality Standards**, Don Alexander, PE, Woolpert, Inc.

**Session 1D • Lake and Shoreline • Moderator – Rebecca Francese, Waterway Surveys & Engineering, Ltd.**

- (1) **Shoreline Stabilization - A Cost-Effective Nutrient Reduction Measure**, Daniel Proctor, PE, Williamsburg Environmental Group, Inc.
- (2) **A Lake Dredging Project: Lake Barton, Burke, VA**, Martin Firth, Lake Services, Inc.
- (3) **Tidal Shoreline Improvements-Breakwater Installation-Buckroe Beach, Hampton, Virginia**, Rebecca Francese, Waterway Surveys & Engineering, Ltd.

**Session 1E • Floodplain Management 1 • Moderator – Tariq Makhdoom, Dewberry**

- (1) **Modeling Man-Made Canals-Developing Floodplains for Navigable Canals**, Cheryl Hanna, PE, CFM, Dewberry
- (2) **Developing FIS Flood Hazard Parameters from Non-Traditional Models**, M. Giovanni Prieto, CFM, Mathini Sreetharan, Ph.D., PE, CFM, Dewberry
- (3) **Evaluating Cost Effectiveness of 2D Modeling for Watershed-Based Studies**, Dinakar Nimmala, CFM, Mathini Sreetharan, Ph.D., PE, CFM, Dewberry
- (4) **Floodplain Managers and 2D Models**, Colby Manwaring, PE, Michael Crenshaw, PE, CFM, XP Software

**10:30 – 10:45 Coffee Break**

**10:45 – 12:00 Second Concurrent Sessions**

**Session 2A • Stormwater Management 1 • Moderator – Lynne Mowery, PE, AMEC**

**Panel Discussion: MS4 Program Audits - What to Expect**

- (1) Lynne Mowery, PE, CFM, AMEC
- (2) Doug Fritz, DCR
- (3) Doug Moseley, AICP, CFM, GKY&A
- (4) Steve Hubble, Stafford County DPW

**Session 2B • Dam Safety 1 • Moderator – Jennifer Solakian, PE, URS Corp.**

- (1) **Do Yesterday's Designs Meet Today's Standards?** Paul Schweiger, PE, Robert Kline, PE, Gannett Fleming, Inc.
- (2) **Incremental Damage Analysis for Dams-Spillway Reduction vs. Hazard Classification**, Amanda Pennington, PE, DCR Div. Dam Safety and Floodplain Management
- (3) **Underwater Removal of a Gated Concrete Dam**, Tillman Marshall, PE, Schnabel Engineering
- (4) **Simplified Dam Breach Inundation Mapping and Semi-Automated Emergency Action Plan Development**, Jennifer Solakian, PE, Edward Beadenkopf, PE, CFM, URS Corp.

**Session 2C • TMDLs 2 • Moderator – Steve McLaughlin, PE, City of Virginia Beach DPW**

- (1) **Scale and Size Do Matter: A Look at the Chesapeake Bay Implementation Planning Efforts for the City of Portsmouth**, Timothy Hare, PE, CH2M HILL
- (2) **Retrofits for Water Quality Requirements for the Chesapeake Bay TMDL**, William Johnston, PE, City of Virginia Beach DPW
- (3) **How Do Wastewater Treatment Plant Upgrades Aimed at Reducing Chesapeake Bay Nutrients Impact Local Water Quality?**, Spencer Davis, Arthur Berberich, Robert Brent, Ph.D., James Madison University
- (4) **Use of Oyster Reefs as a Chesapeake Bay TMDL Best Management Practice by the City of Virginia Beach, VA**, Steve McLaughlin, PE, City of Virginia Beach DPW

**Session 2D • Wetlands • Moderator – Kerby Dobbs, Old Dominion University**

- (1) **Effective Floating Treatment Wetland Application to Improve Urban S/W Quality: A Case Study of an Urban Retention Pond Retrofit Project**, Chih-Yu Wang, David Sample, Virginia Tech
- (2) **Dyke Marsh-The Restoration of a Freshwater Marsh: Two Dimensional Hydraulic Modeling**, Brian Finerfrock, PE, Rummel, Klepper & Kahl, LLP, Robin Armetta, USACE, Baltimore District
- (3) **Relationships Between Stratigraphy and Groundwater in Piedmont, Virginia Toe-slope/Valley bottom Wetlands**, Kerby Dobbs, Old Dominion University

**Session 2E • Floodplain Management 2 • Moderator – Jeff Smith, Accenture**

- (1) **FEMA Region III Coastal Risk Study-Storm Surge Modeling**, Jeff Hanson, Ph.D., Mike Forte, USACE, Robin Danforth, PE, CFM, FEMA Region III
- (2) **FEMA Region III Coastal Risk Study-Overland Wave Modeling**, Long Xu, PE, CFM, Jeff Gangai, CFM, Dewberry, Robin Danforth, PE, CFM, FEMA Region III
- (3) **FEMA Region III Coastal Risk Study-Coastal Hazard Mapping**, Jeff Gangai, CFM, Long Xu, PE, CFM, Dewberry, Robin Danforth, PE, CFM, FEMA Region III
- (4) **FEMA Region III Coastal Risk Study-Outreach**, Robin Danforth, PE, CFM, FEMA Region III, David Bollinger, FEMA Region III, Christine Worley, PE, CFM, URS

**12:15 – 1:15 Luncheon**

**Keynote Address** – David Johnson, Director of the Virginia Department of Conservation and Recreation

**MONDAY AFTERNOON, MARCH 5, 2012**

**1:30 – 2:45 PM Third Concurrent Sessions**

**Session 3A • Stormwater Management 2 • Moderator – Charles Karpowicz, PE, Water Resources Management**

- (1) **The New Stormwater Management Regulations: Where are we now?**, Bob Kerr, Kerr Environmental Services
- (2) **Stormwater Projects: A Program Perspective on Scopes, Costs and Lessons Learned for 5 years**, Chad Crawford, PE, Fred Wilkins, EIT, Erin Abrahams, Fairfax County
- (3) **Protecting the Investment of Public Funds from Stormwater Regulatory Changes-Hampton Roads Center-North Campus, A Case Study**, Daniel Girouard, City of Hampton Industrial Development Authority, Karl Mertig, PWD, CPESC, Kimley-Horn and Associates, Inc.
- (4) **Sustainability of Historic Water Resources Projects Affecting the National Park System**, Charles Karpowicz, PE, Water Resources Management

**Session 3B • Dam Safety 2 • Moderator – Robert Bennett, PE, DCR Div. of Dam Safety & Floodplain Management**

- (1) **Innovative Option for Achieving State Impounding Structure Regulation Compliance-Alteration Design for Newman Lake Dam**, Michael Claud, PE, Timmons Group
- (2) **Recent Dam Failures and Effectiveness of Owners Responses**, Steve Snell, PE, DCR, Div. of Dam Safety & Floodplain Management
- (3) **Setting Up a Watershed Improvement District (WID) to Fund Dam Repairs**, Shannon Cotulla, PE, Hurt & Proffitt, Inc.
- (4) **Benefits to Dam Owners from Changes in Regulations**, Robert Bennett, PE, RA, CFM, DCR Div. of Dam Safety & Floodplain Management

**Session 3C • TMDLs 3 • Moderator – Greta Hawkins, Kimley-Horn and Associates, Inc.**

- (1) **Land Cover Classification for Use in Pollutant Estimation in the Chesapeake Bay Watershed**, Pam Cowher, GISP, Kimley-Horn and Associates, Inc.
- (2) **Sensitivity of TMDL Implementation Costs to Land Use and Local Strategies**, Clifton Bell, PE, PG, Malcolm Pirnie ARCADIS, Charles England, Hanover County DPW
- (3) **Comprehensive Watershed Planning for TMDL Compliance in the Northeast Creek Watershed, Durham, NC**, Mike Fowler, PE, Brown and Caldwell, Sandi Wilbur, PE, Paul Wiebke, PE, City of Durham Stormwater Services Division
- (4) **Using Land Cover Data to Estimate Pollutant Loadings**, Greta Hawkins, PG, Kimley-Horn and Associates, Inc.

**Session 3D • Streams • Moderator – Curtis Hickman, Kerr Environmental Services**

- (1) **The View Below: Using Creek Snorkeling to Connect People with Rivers**, Keith Williams, Creek Snorkeling Adventures
- (2) **Stream Restoration and Water Quality, a Case Study**, Lauren Williamson, Anna Allie, ECS Mid-Atlantic, LLC
- (3) **Riparian Buffers for Stream Compensation on Catawba Creek**, Curtis Hickman, Kerr Environmental Services

**Session 3E • Floodplain Management 3 • Moderator – Rishi Baral, Stafford County**

**Panel Discussion: Three Communities' Experiences with the Community Rating System**

- (1) Mari Radford, CFM, FEMA Region III, Amanda Gowans, CFM, ISO,
- (2) Paul Koll, Building Official, CRS Cord., County of Gloucester, CBO, MCP, CFM
- (3) Gayle Hicks PE, CRS Cord, City of Hampton
- (4) Jason Widstrom, PE, Civil Eng. CRS Cord., CFM, City of Falls Church

**2:45 – 3:15      Coffee Break**

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

**Session 4A • Stormwater Management 3 • Moderator – Scott Blossom, PE, WEG**

- (1) **Storm Water Pumping Station in Coastal VA Community**, Jeff Waller, PE, City of Virginia Beach DPW
- (2) **SWM and BMP Retrofits at Lake Braddock Secondary School**, Edward Umbrell, PE, GKY&A
- (3) **Alternatives to Stormwater Retrofits in Watershed Restoration**, Bill Frost, PE, KCI Technologies, Dani Johnson, Vanasse Hangen Brustlin, Inc.
- (4) **Windsor Great Park Flood Conveyance Project: Part II (Post Construction)**, Scott Blossom, PE, CFM, Williamsburg Environmental Group, Inc.

**Session 4B • Dam Safety 3 • Moderator – Fares Abdo, PE, Morgan Corp.**

- (1) **Addressing a Moving Outlet Conduit in an Embankment Dam**, Joseph Bell, EIT, Gannett Fleming, Inc.
- (2) **Grass-lined Auxiliary Spillways-Developing Correct Discharge Rating Curves**, Adrienne Shaner, EIT, Gannett Fleming, Inc.
- (3) **Baffled Chute Spillways-Design and Construction Arise**, Alexander Robinson, Froehling and Robertson, Inc.
- (4) **Stony Creek Dam - RCC Overtopping Protection and Spillway Upgrades**, Fares Abdo, PE, Morgan Corp.

**Session 4C • Low Impact Development 1 • Moderator – Jeffrey Herr, PE, Brown & Caldwell**

- (1) **Designing a Zero Discharge Site: Kellam High School, Virginia Beach, VA**, Philippe Fenouil, Billy Almond, Walter Weeks, WPL, Kimley-Horn and Associates, Inc.
- (2) **Measuring the Cost-Effectiveness of LID and Conventional Stormwater Mgmt Plans Using Life Cycle Costs and Performance Metrics**, Alex Forasté, PE, Williamsburg Environmental Group
- (3) **Rainwater Harvesting for Stormwater Management: What You Need to Know**, Derek Berg, CONTECH Construction Products
- (4) **Retrofit of the Gwinnett County DWR Facility Using Low Impact Development Practices**, Jeffrey Herr, PE, DWRE, Brown and Caldwell

**Session 4D • Water Quality • Moderator – Harvey Harper, Environmental Research & Design**

- (1) **Opportunities and Limitations Associated with Nutrient Management Planning**, Gretchen Gonzales, East Virginia Company
- (2) **Evaluation of Stormwater Runoff and Its Impacts to Lake James**, Stephanie Long, Stephanie Kunze, Jaewan Yoon, Ph.D., Old Dominion University
- (3) **Simulate Wetland Conservation-Restoration Effects on Water Quantity and Water Quality Under Changing Climate at Watershed Scale Using the “HEW” Concept**, Xixi Wang, Ph.D., PE, Old Dominion University
- (4) **Can Sediment Inactivation Be Successful in Shallow Lakes? A New Look at an Old Paradigm**, Harvey Harper, Environmental Research and Design

**Session 4E • Floodplain Management 4 • Moderator – Mark Slauter, VDEM**

- (1) **Hazard Mitigation Plans in Virginia**, Robbie Coates, CFM, Dept. of Emergency Management, Matthew McCullough, FEMA Region III
- (2) **Real Solutions for Flood Mitigation with Funding**, Michael Dodson, CFM, Community Planning Partners, Inc.
- (3) **Building Local Flood Awareness and Action Using NFIP's FloodSmart Tools**, Meg Bartow, Ogilvy PR, Alix Shutello, LeapFrog Solutions,
- (4) **Virginia Silver Jackets**, Michelle Hamor, CFM, USACE, Norfolk District

**MONDAY EVENING, MARCH 5, 2012**

**4:45 – 6:00 PM Reception**

**6:00 – 6:30 PM Virginia Lakes and Watersheds Association Business Meeting**

**TUESDAY MORNING, MARCH 6, 2012**

**7:00 – 8:00 AM Virginia Floodplain Management Association Meeting**

**8:30 – 9:45 AM Fifth Concurrent Sessions**

**Session 5A • Stormwater Management 4 • Moderator – Liz Scheessele, PE, Timmons Group**

- (1) **District of Columbia Department of Public Works Street Sweeping Program Evaluation**, Hallie Clemm, Erika Janifer, Malcolm Pirnie/ARCADIS
- (2) **City of Richmond: Planning for Compliance with VSMP Construction Permit Requirements**, Laurie Coffman, PE, Andrew Gould, PE, Timmons Group
- (3) **Construction Dewatering of Contaminated Groundwater**, Michelle Wharton, Kimley-Horn and Associates, Inc.
- (4) **StormCollect-Stormwater Asset Inventory for MS4 Permit Compliance and Modeling**, Liz Scheessele, PE, CFM, Timmons Group

**Session 5B • Dam Safety 4 • Moderator – Tom Roberts, PE, DCR Div. of Dam Safety and Floodplain Management**

- (1) **Inspect Your Own Riser and Outlet Conduit**, Jon Phillippe, PE, LS
- (2) **Maintenance Contracts for Dams**, Scott Cahill, Watershed Services
- (3) **Dam Removal Options and Cost Saving Opportunities**, Kathy Hoverman, PE, KCI Technologies, Inc.
- (4) **Construction & Maintenance of Small Non-Regulated Dams in VA**, Tom Roberts, PE, CFM, DCR-Div. Dam Safety and Floodplain Management

**Session 5C • Low Impact Development 2 • Moderator – Lisa Jeffrey, Brown and Caldwell**

- (1) **Using Low Impact Development to Improve Water Quality and Reduce Combined Sewer Overflows at the Science Museum of Virginia**, Todd Janeski, Virginia Commonwealth University, David Sample, Ph.D., Virginia Tech, David Powers, Williamsburg Environmental Group
- (2) **LID Calculations Case Study: Site Design Implications of Four Methods**, Howard Lusk, PE, LEED, CH2M HILL
- (3) **Incorporating LID in Regional Stormwater Improvement Plans for Federal Facilities**, Lisa Jeffrey, Brown and Caldwell
- (4) **The Use of Permeable Pavement in Parking Lots**, Donald Rissmeyer, PE, CFM, A. Morton Thomas & Associates, Inc.

**Session 5D • Flooding Issues 1 • Moderator – Don Rissmeyer, A Morton Thomas & Assoc., Inc.**

- (1) **Harvesting Nutrients & Sediment from Flood Control BMPs**, John Paine, PE, PH, CFM, URS Corporation
- (2) **Mapping BMPs to Their Impaired Water Bodies**, Stephanie Hood, PE, URS Corporation
- (3) **THE ASFPM FOUNDATION – and the Free FloodManager Simulation/Game**, Grant Smith, PE, PMP, CFM, ASFPM Foundation
- (4) **Update on Non-Regulatory FEMA Risk MAP Flood Risk Products**, Shane Parson, Ph.D., PE, CFM, URS Corporation

**Session 5E • Floodplain Management 5 • Moderator – John Paine, URS Corp.**

- (1) **Determine Your Flood Stage**, Mark Slauter, CFM, Dept. of Emergency Management
- (2) **USGS Flood Inundation Mapping Initiative**, Shaun Wicklein, USGS
- (3) **Real-Time and Forecast Models for Flood Emergency Management and Reservoir Operation**, Tamrat Bedane, PE, CFM, Sreetharan Mathini, Ph.D., PE, CFM, Ted Cassidy, PE, PH, CFM, Dewberry
- (4) **The USGS Mobile Storm-Surge Sensor Network**, Russ Lotspeich, USGS

**9:45 – 10:15      Coffee Break**

**10:15 – 11:30      Sixth Concurrent Sessions**

**Session 6A • Stormwater Management 5 • Moderator – Elizabeth Krousel, PE, Michael Baker Jr.**

- (1) **Project Prioritization for Stormwater Infrastructure**, Jack Wall, PE, Vernon De Guzman, Brown and Caldwell
- (2) **City of Richmond Stormwater Master Plan**, Aislinn Creel, PE, Amelia Wehunt, PE, Timmons Group
- (3) **Measuring Sustainable Stormwater Management Practices for Infrastructure Projects**, Beth Arnold, PE, LEED AP BD&C, LEED AP ND, Parsons Brinckerhoff
- (4) **Sustainable Stormwater Management at Navy Installations for Compliance with EO 13508: Chesapeake Bay Protection and Restoration; Improvements and Lessons Learned at Craney Island and Southgate Annex**, Elizabeth Krousel, PE, Michael Baker Jr., Inc., Dialis B. Figueroa Arriaga, Phillip Winslow, NAVFAC Mid-Atlantic

**Session 6B • Dam Safety 5 • Moderator – Benjamin Israel-Devadason, PE, Gannett Fleming, Inc.**

- (1) **Spillway Design Flood Development - Probable Maximum Flood**, Steve Snider, PE, O'Brien & Gere Engineers Inc.
- (2) **Is Calculating Time of Concentration for a Watershed Different under Extreme Rainfall Events?**, Seshadri Iyer, Ph.D., PE, CFM, URS Corporation
- (3) **Using GIS for Hydrologic & Hydraulic Analysis**, Ashley Mengle, CFM, Gannett Fleming, Inc.
- (4) **Reassessing Dam Hazard Classification Using 2D Computer Modeling**, Benjamin Israel-Devadason, PE, CFM, Gannett Fleming, Inc.

**Session 6C • Stormwater Treatment • Moderator – David Tomasko, PhD., Atkins**

- (1) **Proposed VTAP Protocol Field Test Performance Monitoring Results for a Jellyfish® Stormwater Filter**, Edward Kay, Imbrium Systems Corporation
- (2) **Evaluation of Solar Powered Circulators to Reduce Fecal Coliform Bacteria Levels and Increase Dissolved Oxygen in an Urban Stormwater Lake**, Lisa Bass, ME EIT, Parsons Brinckerhoff
- (3) **Advancing Bioretention Media to Enhance Heavy Metals Removal from Stormwater Runoff**, Mindy Ruby, Filterra
- (4) **Managing Water Quality-Some Cautions Related to Load Reductions and Water Quality**, David Tomasko, Ph.D., Atkins

**Session 6D • Flooding Issues 2 • Moderator – Andrew Gould, PE, Timmons Group**

- (1) **Understanding Foundation Flood Vents and FEMA's TB-1**, David Sonner, Smart Vent
- (2) **Frequency Analysis for Rainfall Events and Inter-Event Time of Virginia**, Jia Liu and David Sample, Ph.D., Virginia Tech
- (3) **Solving the Mystery of the Thoroughgood Subdivision Flooding-Case Study**, Esther Dornin, PE, Virginia Beach DPW, Ashley Orellana, EIT, Parsons Brinckerhoff
- (4) **Reedy Creek Flood Study**, Andrew Gould, PE, Michael Claud, PE, Timmons Group

**Session 6E • Floodplain Management 6 • Moderator – Shane Parson, URS Corp.**

- (1) **Correlation of Effective and Measured Discharges: A Case Study for Hurricane Irene**, Joshua Hunn, CFM, Michael Baker Jr., Inc.
- (2) **Impact of Sub-Basin Size on Rainfall-Runoff Model Results**, Laura Chap, PE, CFM, Atkins
- (3) **Updated Flood Frequency Analysis in Northern Virginia**, Wilbert Thomas, Jr., PH, Michael Baker Jr., Inc.
- (4) **The Levee Accreditation Review Process and Often Misunderstood Freeboard Requirements**, Tariq Makhdoom, Ph.D., CFM, Dewberry, Benjamin Kaiser, PE, CFM, URS Corporation

**11:45 – 1:00 PM Luncheon**

**Keynote Address:** John Kay Dorman, Asst. Emergency Management Director for Geospatial and Technology Management, Division of Emergency Management, NC Dept. of Crime Control & Public Safety, Raleigh, NC – *“The Pursuit of Risk: Advancing Flood Risk Management”*