

# FINAL PROGRAM



**SATURDAY, MARCH 5, 2011**

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

**SUNDAY, MARCH 6, 2011**

1:00 – 5:00 pm 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 7, 2011**

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** Douglas W. Domenech, Secretary of Natural Resources, Commonwealth of Virginia

**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 • Moderator – Seshadri Iyer, URS Corp.**

(1) *Urban Flood Mapping: Application of 2-Dimensional Surface Flow Model to Support Flood Management in Urban Settings* – **Eric Harold, PE, Malcolm Pirnie, Inc.**

(2) *Rain Gauge Network in a Coastal Virginia Community* – **Jeff Waller, PE, City of VA Beach, Dept. of Public Works**

(3) *Technology Revitalizes Historic Base* – **Jamie Weist, PE, Kimley-Horn and Associates, Inc.**

(4) *Non-Importance of Inflow Hydrographs Under Controlled Outflow* – **Seshadri Iyer, PhD, PE, CFM, URS Corp.**

### **Session 1B • Dam Safety 1 • Moderator – Robert Bennett, DCR**

(1) *An Owner Reflects on Compliance with the 2008 Amended Dam Safety Regulations* – **Steve Shenk, PE, City of Lynchburg, Utilities Dept.**

(2) *Impact of Virginia Dam Safety Regulations on the City of Norfolk's In Town Reservoirs* – **Adrienne Shaner, EIT, Gannett Fleming, Inc.**

(3) *Lessons and Observations from DCR Dam Safety Inventory in Pittsylvania Co, VA* – **Joe Rogers, PE, DCR, Office of Dam Safety**

(4) *Update on Virginia Dam Safety Program, Impoundment Structure Regulations & Guidance Documents* – **Robert Bennett, PE, RA, DCR, Dam Safety & Floodplain Management**

### **Session 1C • TMDLs 1 • Moderator – Deva Borah, Woolpert**

(1) *Stormwater Quality Devices for Removing Sediments, Nutrients, and Hydrocarbons* – **Edward Seagle, PE, Woolpert, Inc.**

(2) *Evaluation of a Nutrient TMDL in an Upper Piedmont River in South Carolina* – **Debabrata Sahoo, PhD, EIT, Woolpert, Inc.**

(3) *Dynamic Watershed Simulation Model with Bank Erosion for Developing Sediment TMDL* – **Deva Borah, PhD, PE, Woolpert, Inc.**

(4) *The Chesapeake Bay TMDL and Watershed Implementation Plans: Education Virginia's Stakeholders* – **Brian Benham, VA Tech, Dept. of Biological Systems Engineering**

**Session 1D • Watershed Management 1 • Moderator – Fred Wilkins, Fairfax Co. SWPD**

- (1) *Stormwater Improvement Study for the Putnam County MS4 Coordination Committee* – **Richard Franzetti, PE, BCEE, LEED AP, Malcolm Pirnie, Inc.**
- (2) *James City County: Comprehensive Watershed Management and Stream Restoration for Nutrient Reduction* – **Barry Moses, PE, James City Co., Daniel Proctor, PE, Williamsburg Environmental Group, Inc.**
- (3) *A Sub-watershed Partnership Approach: Rhetoric or Reality?* – **Fred Wilkins, EIT, Chad Crawford, PE, Fairfax County Stormwater Planning Division**

**Session 1E • Floodplain Management 1 • Moderator – Shane Parson, URS Corp.**

- (1) *Bridge Scour Using GIS Integrated Storm Surge Hydrodynamic Modeling, Lesner Bridge Replacement Project, VA Beach, VA, Bridge Scour, New Software and Emerging Science Application (Part 1)* – **Gamal Hassan, HWR, David Bradshaw, Khalid Hussein, Clark Nexsen Architecture & Engineers**
- (2) *Bridge Scour Using GIS Integrated Storm Surge Hydrodynamic Modeling, Lesner Bridge Replacement Project, VA Beach, VA, Bridge Scour, New Software and Emerging Science Application (Part 2)* – **David Bradshaw, Khalid Hussein, Clark Nexsen Architecture & Engineers, Gamal Hassan, HWR**
- (3) *Developing Velocity Distribution for Overbank Areas* – **Marcel Giovanni Prieto, CFM, Venkata Nimmala, EIT, CFM, Mathini Sreetharan, PhD, PE, CFM, Dewberry**
- (4) *Flood Models and the Chesapeake Bay TMDL* – **John Paine, PE, PH, CFM, URS Corporation**

**10:30 – 10:45 Coffee Break**

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

**Session 2A • Stormwater BMPs 1 • Moderator – Mindy Ruby, Filterra**

- (1) *Selecting Structural Stormwater BMPs for the Cost Effective Removal of Specific Non-Point Source Pollutants* – **Tim MacVittie, Jeff Herr, PE, D.WRE, Brown and Caldwell**
- (2) *Arlington County Ballston Pond Retrofit Project* – **William Springer, PE, Rummel, Klepper & Kahl, LLP**
- (3) *Filterra® Bioretention Systems: Advancing Conventional Stormwater Treatment with High Flow Rate Bioretention Design* – **Mindy Ruby, Filterra Bioretention Systems**

**Session 2B • Dam Safety 2 • Moderator – Greg Paxson, Schnabel Engineering**

- (1) *A Comparison Regarding the Use of Downstream Lateral In-flows in Performing a Dam Failure Analysis* – **Michael Claud, PE, Timmons Group**
- (2) *Dam Breach Analysis, Hazard Classification, and Inundation One Mapping: What Your Consultant is Doing to Earn Their Fees* – **Shannon Cotulla, PE, Hurt & Proffitt, Inc.**
- (3) *When Does a Culvert Crossing Become a State Regulated Impounding Structure (The SU0005 Conundrum)?* – **Sajan Pokharel, PE, Fairfax County DPW&ES, Brett Martin, PE, GKY & Associates, Inc.**
- (4) *Reduced Design Floods for Dams – What are the Savings?* – **Greg Paxson, PE, Schnabel Engineering**

**Session 2C • TMDLs 2 • Moderator – Douglas Moseley, GKY & Associates, Inc.**

- (1) *Engaging in TMDL Development and Implementation* – **Jennifer Tribo, Hampton Roads Planning District Commission**
- (2) *Chesapeake Bay TMDL: A Roadmap for Documenting Reasonable Assurance in Virginia* – **Tom Singleton, Chad Smith, Dave Tomasko, PhD, PBS&J**
- (3) *Chesapeake Bay TMDL – Where Do We Go From Here Stormwater Enters its Next Regulatory Chapter in Virginia?* – **Douglas Moseley, III, AICP CFM, GKY & Associates, Inc.**

**Session 2D • Watershed Management 2 • Moderator – Courtney Reijo, Virginia Tech**

- (1) *Cost-Effectiveness of Pollutant Removal Strategies for Fairfax County, VA – Case Study: Pohick Creek* – **Kate Bennett, Fairfax County Dept. of Public Works and Environmental Services, Dan Medina, PhD, PE, D.WRE, PBS&J**
- (2) *Indirect and Cumulative Impacts Analysis (Watershed Study)* – **Daren Pait, PE, CFM, Kimley-Horn and Associates, Inc.**
- (3) *A Geographical Information System (GIS)-Based Assessment of Riparian Buffer Topography in the Chesapeake Bay Water: Implications for Nitrogen Removal*, **Courtney Reijo, Virginia Tech**

**Session 2E • Floodplain Management 2 • Moderator – John Paine, URS Corp.**

(1) *Flood Hazard Evaluation- Stream Perspective vs. Watershed Perspective* – **Zhida Song-James, Michael Baker Jr., Inc.**

(2) *Overview of FEMA Risk MAP Non-Regulatory Datasets and Products* – **Shane Parson, PE, CFM, URS Corp.**

(3) *Dam Failure Impact Classes of Virginia Dams* – **Kaveh Zomorodi, PhD, PE, CFM, Dewberry**

(4) *The NFIP in Virginia and the Chesapeake Bay Preservation Act, an Unintentional Cooperative Effort*, **Charley Banks, CFM, DCR, Division of Dam Safety and Floodplain Management**

**12:15 – 1:15 Luncheon**

**Keynote Address - David A. Johnson, Director of the Department of Conservation and Recreation**

**MONDAY AFTERNOON, MARCH 7, 2011**

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

**Session 3A • Stormwater BMPs 2 • Moderator – Rod Frederick, Michael Baker Jr., Inc.**

(1) *Chemical Treatment of Stormwater-20 Years of Advancements* – **Jeff Herr, PE, D.WRE, Brown and Caldwell**

(2) *Construction of BMPs on City Owned Property*, **Esther Dornin, City of Virginia Beach**

(3) *EISA Section 438 Stormwater Guidance Overview*, **Charlene Harper, PE, LEED AP, Timmons Group**

(4) *Protection Urban Lakes from Urban Pollution*, **Rod Frederick, PE, D.WRE, F.ASCE, Michael Baker Jr., Inc.**

**Session 3B • Dam Safety 3 • Moderator – Lisa Cahill, Watershed Services, Inc.**

(1) *Dams, Monitoring Flows in Emergency Spillways* – **Amanda Pennington, VA DCR, Division of Dam Safety & Floodplain Management**

(2) *Removal of Bluebird Dam at the U.S. Dept. of the Interior, National Park Services Rocky Mountain National Park, CO* – **Charles Karpowicz, PE, Water Resources Management (ret)**

(3) *Renovating an 100-Year Old Dam to Serve Another Century* – **Jamie Morris, Western VA Water Authority, David Henderson, AECOM Technical Services, Inc.**

(4) *The Low Bid Process: A False Economy for Dam Repairs: A Case Study of Valve Replacements at Douthat and Hungry Mother State Parks* – **Lisa Cahill, Watershed Services, Inc.**

**Session 3C • Ecological Restoration • Moderator – Curtis Hickman, Kerr Environmental Svcs**

(1) *Ecological Effects of Flood Control Dams in Virginia's Ridge and Valley Ecoregion* – **Justin Reiske, Emily Robinson, Robert N. Brent, PhD, James Madison University**

(2) *Regenerative Conveyance Systems-Applying Coastal Plain Outfalls in the Piedmont Region* – **Ron Tuttle, Catherine Torgersen, Fairfax Co.**

(3) *Four Decades of Stream Restoration: Where Were We-Where Are We-Where Are We Going?* – **Larry Mohn, VA Dept. of Games & Inland Fisheries**

(4) *Stream Impact Compensation Through Dam Removal-A Review of the Regulatory Framework and Ashland Mill Dam Case Study* – **Curtis Hickman, Kerr Environmental Services Corp.**

**Session 3D • Watershed Management 3 • Moderator – Ketchem, NRCS**

(1) *Comprehensive Watershed Planning for Nutrient Reduction in Ellerbe Creek-City of Durham, NC* – **Sandi Wilbur, PE, City of Durham Stormwater Services Division, Mike Fowler, PE, Brown and Caldwell**

(2) *Evaluating Site Selection, Monitoring Guidelines and Alternative Substrates for Oyster Reef Restoration* – **Stephanie Long, Erika Seelenbinder, Jae Yoon, Civil and Environmental Engineering, Old Dominion University**

(3) *The Use of Rapid Watershed Assessments to Evaluate the Resource Conditions in the Shenandoah River Basin* – **Alica Ketchem, PE, USDA Natural Resources Conservation Service**

**Session 3E • Floodplain Management 3 • Moderator – Jeff Smith, Accenture**

(1) *The ASFPM Foundation* – **Grant Smith, Dewberry**

(2) *Rethinking the NFIP* – **Richard Sobota, FEMA Region III**

(3) *The Perfect Storm: Story of Survival and Triumph* – **Gayle Hicks, City of Hampton, Leigh Morgan Chapman, Salter's Creek Consulting, Inc.**

(4) *Virginia Silver Jackets* – Michelle Hamor, US Army Corps of Engineers, Norfolk District, Mark Slauter, Virginia Dept. of Emergency Management

**2:45 – 3:15 Coffee Break**

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

**Session 4A • Stormwater BMPs 3 • Moderator – Shelly Frie, CH2M HILL**

(1) *Putting Stimulus Dollars to Work – A Public Private Partnership Using Green Infrastructure to Eliminate CSOs in Lynchburg, VA* – G. Keith Thompson, Jr., PE, LEED AP, Wiley /Wilson, Jeff Scarano, PE, City of Lynchburg

(2) *Utilizing Sorptive Media to Enhance Green Infrastructure Practices* – Bob Gallucci, Imbrium Systems

(3) *Low Impact Development and Rainwater Harvesting Strategies for the Urban Environment* – Derek Berg, CONTECH Construction Products

(4) *LID Retrofit Nutrient Reduction Accounting Using the Runoff Reduction Method* – Shelly Frie, Howard Lusk, CH2M HILL

**Session 4B • Dam Safety 4 • Moderator – Thomas Roberts, DCR**

(1) *Alternatives for Increasing a Dam's Conveyance Capacity* – Robert Kline, Jr., PE, Gannett Fleming, Inc.

(2) *A 3-D Model is Worth a Thousand Cross Sections – Some Examples of Visualization for Analysis and Reporting* – Laura Shearin, PE, Schnabel Engineering

(3) *Landscaping Solutions for Embankment Dams* – Bryan Layman, PE, CPSS, AOSE, LEED AP, Joseph Meiburger, PE, CPG, LEED AP, ECS Mid-Atlantic, LLC

(4) *Dam Safety – Sources of Free, Public Domain, & Pertinent Information on Current Practices for Dam Design Criteria, Rehabilitation, Maintenance, and Inspection* – Thomas Roberts, PE, CFM, VA DCR, Division of Dam Safety & Floodplain Management

**Session 4C • Water Quality 1 • Moderator – Steve McLaughlin, City of VA Beach**

(1) *The Costs and Benefits of Cattle Exclusion Fencing: A Modeling Approach* – Thomas Jenkins, Washington and Lee University

(2) *Effectiveness of Adaptive Streambank Fencing at Reducing In-Stream E coli Loads* – Peter O'Donnell, Washington and Lee University

(3) *Virginia Beach Use of a Rural/Agricultural BMP – Horse Manure and Shavings Composting Facility* – Steve McLaughlin, City of VA Beach, Dept. of Public Works

(4) *Realization of a New Vessel Sewage Pumpout Facility in Coastal Virginia* – Bill Johnston, PE, City of VA Beach, Dept. of Public Works

**Session 4D • Lake Maintenance 1 • Moderator – Nicki Bellezza, Reston Association**

(1) *Repairing Leaks in Earthen Dams for Engineers and Sophisticated Dam Owners* – Scott Cahill, Watershed Services, Inc.

(2) *Use of Siphons for Pond Drains* – Alex Robinson, EIT, Froehling & Robertson, Inc.

(3) *Design Matrix to Guide Shoreline Stabilization Measures for Lakes in Northern Virginia* – Edward Beadenkopf, PE, CFM, URS Corporation

(4) *Lake Shoreline Protection in Reston, VA* – Nicki Bellezza, Reston Association

**Session 4E • Floodplain Management 4 • Moderator – David Preusch, Michael Baker Jr., Inc.**

(1) *Establishing Statewide Flood Observation & Warning Capability* – Mark Slauter, CFM, VA Dept. of Emergency Management

(2) *Mitigation Plan Update: An Opportunity to Mitigate Repetitive Loss Properties – Union County, PA Case Study* – Jen Sparenberg, CFM, Shubha Shrivastava, AICP, CFM, URS Corporation

(3) *Rapid Development of a Flood Acquisition Project – Decisions and Opportunities* – Drew Whitehair, Nocolle Maccherone, Michael Baker Jr., Inc.

(4) *Use of HAZUS Standard Data for Mitigation Planning, Implications under Risk MAP and for Communities* – Carver Struve, Drew Whitehair, Michael Baker Jr., Inc.

**MONDAY EVENING, MARCH 7, 2011**

**4:45 – 6:00 PM Reception**

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

**TUESDAY MORNING, MARCH 8, 2011**

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

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

**Session 5A • Stormwater in Tidewater • Moderator – Lewis White, Parsons Brinckerhoff**

*(1)Wrath of a Nor'easter: Remedies for Lynnhaven Inlet Neighborhood Flooding – Melissa Pritchard, EIT, LEED AP, Parsons Brinckerhoff*

*(2)Cleaning the Pipes and Clearing the Air: A Study to Determine if a Storm Sewer System is a Significant Source of Fecal Indicator Bacteria in a Coastal Suburban Neighborhood – Lisa Bass, Parsons Brinckerhoff*

*(3)Innovative Methods for Nutrient and Sediment Removal – Lewis White, Lisa Bass, Parsons Brinckerhoff*

**Session 5B • Dam Safety 5 • Moderator – Steve Snell, DCR**

*(1)Low Level Drain Options for Existing Dams – Austen Bander, Cameron Smith, Bander Smith, LLC*

*(2)Hazards and Public Safety at Low-head Dams – Dr. Bruce Tschantz, PE, University of Tennessee, Knoxville*

*(3)Solutions for Improving Fish Passage and Public Safety at Low Head Dams – Paul Schweiger, PE, Gannett Fleming, Inc.*

*(4)HOA Tax Districts for Dam Safety Repairs – Steve Snell, PE, VA DCR, Dam Safety & Floodplain Management*

**Session 5C • Water Quality 2 • Moderator – Carolyn Thomas, Ferrum College**

*(1)Numerical Dispersive Flux Modeling Study for RO Brine Waste Discharge under Tidal Currents – Alireza Shahvari, Ruby Damalie, Jae Yoon, Civil and Environmental Engineering, Old Dominion University*

*(2)Predicting Effect of a Dam Raise Project on Water Quality – Ben Martin, Dr. Li Ding, Flow Science, Inc.*

*(3)The Aging (eutrophication) of Reservoirs: A Comparison of Smith Mountain Lake and Claytor Lake Water Quality? – Carolyn Thomas, Delia Heck, Ferrum College*

**Session 5D • Lake Maintenance 2 • Moderator – Paul Farrell, EnviroSolutions, Inc.**

*(1)From Unusual and Unique Problems Come Simply But Extraordinary Solutions – Mark O'Sullivan, Godwin Pumps*

*(2)Barton Dam Lake Dredging Project – Jennifer Solakian, PE, URS, Matthew Meyers, PE, Fairfax County Dept. of Public Works and Environmental Services*

*(3)Composting Potential of Lake Dredge Material – Paul Farrell, PE, EnviroSolutions, Inc.*

**Session 5E • Floodplain Management 5 • Moderator – Mark Slauter, VDEM**

*(1)Basic Concepts and Review Steps for Reviewing Advanced Interconnected Channel and Pond Routing (ICPR) model for LOMR Process – Ekta Amar, CFM, EIT, Leonard Jackson Associates, Mathini Sreetharan, PhD, PE, CFM, Dewberry*

*(2)Flood Hazard Mapping for Levee Impacted Areas – M. Tariq Makhdoom, PhD., CFM, Mark Hoskins, PE, CFM, Dewberry*

*(3)Floodplain Analyses – Selection of Appropriate Reach Routing Method for Watershed Models – Tamrat Bedane, CFM, Srikanth Koka, CFM, Dewberry*

*(4)Inter-basin Flow – Developing Flood Elevations and Floodways for an Urban Floodplain – Cheryl Hannan, PE, CFM, Dewberry, Ekta Amar, DFM, Leonard Jackson Associates*

**9:45 – 10:15 Coffee Break**

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

**Session 6A • Stormwater Infrastructure • Moderator – Amelia Wehunt, Timmons Group**

- (1)*The GIS Database Development & Inventory of Existing Stormwater Infrastructure in Three Flood Prone Watersheds* – **David Wilmoth, PE, Aislinn Creel, PE, LEED AP, Michael Claud, PE, Timmons Group**
- (2)*Use of Watershed Modeling to Identify and Enhance Urban Retrofit Opportunities* – **Aislinn Creel, PE, LEED AP, Andrew Gould, PE, Timmons Group**
- (3)*The City of Richmond Green Alley Program* – **Amelia Wehunt, EIT, Charlene Harper, PE, LEED AP, Timmons Group**

**Session 6B • Dam Safety 6 • Moderator – Jonathan Pittman, Schnabel Engineering**

- (1)*Alkali-Silica Reactivity at Roanoke Rapids Dam; Investigation, Design and Remedial Construction Challenges* – **John Cima, PE, Dominion Resources Services, Inc.**
- (2)*Analysis of Articulated Concrete Block (ACB) Systems for Dam Overtopping Protection* – **Jay Lewis, PE, LS, Wiley/Wilson**
- (3)*New Factor of Safety Methodology for Articulated Concrete Block Design* – **Jim Nadeau, ACF Environmental**
- (4)*The Use of Cement Modified Soil at Lake Townsend Dam* – **Jonathan Pittman, PE, Schnabel Engineering**

**Session 6C • Water Quality 3 • Moderator – Shannon Junior, SOLitude Lake Management**

- (1)*Modeling Nutrients and Algae in Virginia Streams* – **Clifton Bell, PE, PG, Malcolm Pirnie, Inc.**
- (2)*Assessment of the Mummichog (*Fundulus Heteroclitus*) as an Indicator of Environmental Contamination* – **Justin Turner, Kelvin Coles, Jae Yoon, Civil and Environmental Engineering, Old Dominion University**
- (3)*New Regulations for Aquatic Systems: Virginia Pollutant Discharge Elimination System (VPDES) Permits for Discharges Resulting from the Application of Pesticides to Surface Waters* – **Shannon Junior, Kevin Tucker, SOLitude Lake Management**

**Session 6D • Water Supply • Moderator – Harvey Harper, Environmental Research & Design, Inc.**

- (1)*Reclaimed Water to Reclaim the Aquifer: A Case Study on Reducing Groundwater Withdrawals along the Coast* – **Erica Carter, PE, Kimley-Horn and Associates, Inc.**
- (2)*Modern Rainwater Collection Supplements Potable Water in a Poor Virginia Community* – **Douglas Phillips, Jr., PE, Southeast Rural Community Assistance Project, Inc.**
- (3)*Irrigation with Recycled Wastewater – Good Intentions Gone Awry?* – **Harvey Harper, III, PhD, PE, Environmental Research & Design, Inc.**

**Session 6E • Floodplain Management 6 • Moderator – Tariq Makhdoom, Dewberry**

- (1)*FEMA's Preferred Risk Policy (PRP) Eligibility Extension* – **Mari Radford, FEMA Region III**
- (2)*Flood Hazard Ordinance Review, Compliance, and Adoption (ORCA) System* – **Katie Lipiecki, RAMPP, Nicole Lick, FEMA Region III, Jeff Smith, Andrew Freese, Accenture**
- (3)*How to make the Community Rating System Work for Your Community* – **Amanda Gowans, ISO Inc., Mari Radford, FEMA Region III**
- (4)*The Current Higher Regulatory Standards to the NFIP in Virginia* – **Alison Meehan, CFM, VA DCR, Division of Dam Safety and Floodplain Management**

**11:45 – 1:00 PM Luncheon**

**Keynote Address:** Mark Crowell, FEMA – *“Impact of Climate Change on the NFIP”*

This study was recommended by a 2007 Government Accountability Office report titled “Climate Change - Financial Risks to Federal and Private Insurers in Coming Decades are Potentially Significant.” The report recommends that FEMA analyze the potential long-term implications of climate change on the NFIP and report the findings to Congress.