



FINAL PROGRAM

SUNDAY, MARCH 13, 2016

- 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 (2nd Floor York Room)
- 5:30 – 7:00 PM Exhibitor and Early Registrants' Reception (James River Ballroom, Parlor H)

MONDAY MORNING, MARCH 14, 2016

- 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 – Restoration of Virginia's Chesapeake Bay and Tidal Rivers: Progress and Challenges After 30 Years of Implementation, Mr. Rich Batiuk, Associate Director for Science, Analysis, and Implementation, U.S. EPA, Chesapeake Bay Program Office

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 1 • Moderator – Sabu Paul, PE, Michael Baker International

- (1) **Stormwater Permit Compliance Tools: Selecting the Right One for the Job**, Shelly Frie, PE, CH2M HILL
- (2) **Nutrient Management and MS4 Compliance at the Northern Virginia Community College System Campuses**, Doug Fraser, PG, EEE Consulting, Inc.; Chris Schrinel, EEE Consulting, Inc.; Stacey Moulds, CNMP, Obsidian; Sara Rilveria, LA, EEE Consulting, Inc.
- (3) **The Creation of a Water Quality Compliance Tracking Tool for VSMP and EISA 438 Regulations**, David Duncan, EIT, Timmons Group; Liz Scheessele, PE, CFM, Timmons Group; E. Scott Conley, Thomas Jefferson National Accelerator Facility
- (4) **Press the Easy Button for MS4 Compliance**, Sabu Paul, PE, Michael Baker International; James Kelly, PE, Michael Baker International; David Cotnoir, PE, Naval Facilities Engineering Command, Mid-Atlantic; Elizabeth Krousel, PE, Michael Baker International

Session 1B • Erosion and Dredging • Moderator – Michael L. Vanlandingham, Virginia Department of Conservation and Recreation

- (1) **Dredged Material Disposal and Water Quality – Long Term Monitoring and Management of the Whitehurst Dredged Material Management Area (DMMA) in Virginia Beach, Virginia**, Rebecca S. Francese, Waterway Surveys & Engineering, Ltd.; Thomas J. Gay, PE, Department of Public Works, City of Virginia Beach
- (2) **Virginia Beach Efforts to Break the Erode and Dredge Cycle**, Francis X. Janes, Virginia Beach Public Works Operations; W. Allen McClain, Virginia Beach Public Works Operations
- (3) **Lake Cotting Dredge and Disposal Project at the Fairfax Rod & Gun Club**, Brice Kutch, PE, GKY & Associates, Inc.; Howard Finkel, Fairfax Rod & Gun Club
- (4) **The Virginia DCR Shoreline Erosion Advisory Service (SEAS)**, Michael L. Vanlandingham, Virginia Department of Conservation and Recreation

Session 1C • Water Quality 1 • Moderator – Jonathan P. Doubek, MS, Virginia Tech

- (1) **Understand the Plan: Developing Methods to Report Bacteria TMDL Credit**, Mira Micin, EIT, Brown and Caldwell, Inc.; Stephanie Hanses, PE, LEED AP, Brown and Caldwell, Inc.

- (2) **Deriving Site-Specific Nutrient Goals in Streams**, Clifton F. Bell, PE, PG, Brown and Caldwell, Inc.
- (3) **Reservoirs as Part of the Water Treatment System: A 20-Year Retrospect of Norfolk, VA Aeration Systems**, William E. Cumbie, Pancopia, Inc.; Gary Schafran, Old Dominion University; David S. Rosenthal, City of Norfolk, Department of Utilities; Edwin Snyder, III, CH2M HILL
- (4) **Hypoxia-Induced Trade-Offs on Zooplankton Vertical Distribution and Community Structure in Virginia Reservoirs**, Jonathan P. Doubek, MS, Virginia Tech; Kevin A. Bierlin, Ph.D., Virginia Tech; Alexandra B. Gerling, MS, Virginia Tech; Kathleen D. Hamre, Virginia Tech; Ryan P. McClure, Virginia Tech; Zackary W. Munger, MS, Virginia Tech; Renato J. Figueiredo, Ph.D., University of Florida; Paul C. Hanson, Ph.D., University of Wisconsin-Madison; Cayelan C. Carey, Ph.D., Virginia Tech

Session 1D • Stormwater Asset Planning • Moderator – Matthew Jones, Ph.D., PE, Hazen and Sawyer

- (1) **GIS Applications in Stormwater Engineering & Consulting**, Chip Wyatt, EIT, Timmons Group
- (2) **A Comprehensive Approach to Stormwater Asset Management Planning**, Troy McPherson, PE, Hazen and Sawyer; Alan Davis, PE, Hazen and Sawyer
- (3) **Envision Certification Process**, Howard Lusk, PE, LEED AP, ENV SP, CH2M HILL
- (4) **Accounting for the Costs and Co-Benefits of Stormwater Controls**, Matthew Jones, Ph.D., PE, Hazen and Sawyer; Alysondria Eason, Hazen and Sawyer

Session 1E • Floodplain Management 1 • Moderator – M. Tariq Makhdoom, Ph.D., CFM, Atkins

- (1) **Stream Restoration: Sediment Transport Modeling Meets Real World Events**, M. Troy Biggs, PE, PH, D.WRE, Amec Foster Wheeler
- (2) **The Relationship of Stream Restoration and Floodplain Management**, Scott C. Blossom, PE, CFM, LEED AP, Stantec Consulting, Inc.
- (3) **Applications of New Features Found in HEC-RAS 5.0 (Beta) and RAS Mapper, Including 2D, Levee, and Dam Breach Modeling and Mapping**, David R. Markwood, PE, AECOM; Tyler R. Longberry, PE, CFM, AECOM
- (4) **Application of Two-Dimensional Analyses in Modeling Flat Terrains – A Case Study in Harney County, Oregon Using FLO-2D**, Brett Laplante, PE, Stantec Consulting, Inc.; Prabharanjani Madduri, PE, CFM, Stantec Consulting, Inc.

10:30 – 10:45 AM Coffee Break

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

Session 2A • Stormwater 2 • Moderator – Mindy Hills, Contech Engineered Solutions

- (1) **Runoff Reduction Method & Energy Balance: The Good, the Bad, and the Ugly**, Laurie Coffman, PE, Timmons Group; Chris Nelson, EIT, Timmons Group; Amelia Wehunt, PE, Timmons Group
- (2) **Richmond Permeable Alleys for Site and Water Quality Improvement**, Travis Crissman, PE, Hazen and Sawyer; Chris Tabor, PE, Hazen and Sawyer
- (3) **Water Quality LID BMPs - Site Constraints and Cost Implications**, Jeffrey Waller, PE, City of Virginia Beach; Seshadri Iyer, Ph.D., PE, CFM, AECOM
- (4) **Ensuring Bioretention System Performance Success: Guidance for Verification of Bioretention Media via Quality Assurance and Control Testing**, Mindy Hills, Contech Engineered Solutions; Alex Macleod, PE, Contech Engineered Solutions; James Lenhart, PE, D.WRE, Contech Engineered Solutions

Session 2B • Dam Safety 1 • Moderator – David A. Krisnitski, PE, CFM, Froehling &Robertson, Inc.

- (1) **The Probable Maximum Precipitation Study for Virginia: Overview, Adoption, and Implementation Updates**, David C. Dowling, Virginia Department of Conservation and Recreation
- (2) **An Exploration of How Virginia's 2015 PMP Study Values Affect Simplified Mapping Dam Failure Studies Throughout Virginia**, David P. Wilmoth, PE, CFM, PH, Virginia Department of Conservation and Recreation

(3) **The Implications of an Evolving PMP: A Case Study of 2 NRCS-Type Water Supply Dams in Virginia**, Vinoth K. Muthia, EIT, O'Brien & Gere Engineers, Inc.

(4) **Dam Safety – VA PMP vs. HMR 51 Construction Costs**, David A. Krisnitski, PE, CFM, Froehling & Robertson, Inc.

Session 2C • Water Quality 2 • Moderator – Jaewan Yoon, Old Dominion University

(1) **Dynamic Responses of Greenhouse Gases to Water Quality Management in a Eutrophic Reservoir**, Ryan P. McClure, Virginia Tech; Kathleen D. Hamre, Virginia Tech; Bobbie R. Neiderlehner, MS, Virginia Tech; Zackary W. Munger, MS, Virginia Tech; Cayelan C. Carey, Ph.D., Virginia Tech

(2) **Modeling Phosphorous Concentration in Five Shallow Wet Retention Ponds in Montgomery County, Virginia**, Stephanie C. Houston, Virginia Polytechnic Institute and State University; W. Cully Hession, Ph.D., PE, Virginia Polytechnic Institute and State University; Zachary Easton, Ph.D., Virginia Polytechnic Institute and State University; Matthew Eick, Ph.D., Virginia Polytechnic Institute and State University

(3) **Longitudinal Tidal Dispersion Coefficient Estimation and Modeling of TSS Effluent Mixing and Transport in the James River**, Beatriz Patino, Old Dominion University; Jaewan Yoon, Old Dominion University

Session 2D • Stormwater Modeling • Moderator – Partha Sarathi, PE, ENSOFTEC

(1) **Continuous Modeling with SWMM and Its Use in Long Term Water Quantity and Quality Planning**, Daniel J. Robinson, Virginia Tech; David J. Sample, Virginia Tech; Rachael D. Johnson, Virginia Tech; Nasrin Alamdari, Virginia Tech; Greg Johnson, City of Virginia Beach

(2) **Selecting the Right Tool for the Job: Hydrologic and Hydraulic Model Software Options for Stormwater Master Planning**, Michael C. Morgan, PE, CDM Smith; Thomas E. Nye, Ph.D., PE, CDM Smith

(3) **SWMSofVA for Comprehensive Stormwater Modeling**, Partha Sarathi, PE, ENSOFTEC

Session 2E • Floodplain Management 2 • Moderator – John Paine, PE, PH, CFM, GKY & Associates, Inc.

(1) **Peak Flow Modification Due to Climate Change – Development of Calculation Tool, Results and Conclusions for Virginia**, Kaveh Zomorodi, Ph.D., PE, CFM, Dewberry

(2) **Incorporating Climate Change into Future Conditions Floodplain Modeling for Tidal and Riverine Conditions: A Pilot**, Jeff Smith, PE, PMP, CFM, AECOM; Shane Parson, Ph.D., PE, CFM, AECOM

(3) **Near-Real-Time Modeling and Mapping of Inundation Scenarios for Emergency Management**, John Sun, Stream Methods, Inc.; Janghwoan Choi, Ph.D., PE, CFM, Stream Methods, Inc.

(4) **Letter of Map Changes – An Overview of the Procedures**, M. Tariq Makhdoom, Ph.D., CFM, Atkins

12:15 – 1:15 PM Luncheon

Keynote Address – The Flint, MI Water Crisis: Hold Paramount the Safety, Health, and Well-Being of the Public, Mr. William Rhoads, Graduate Research Assistant, Virginia Polytechnic Institute and State University

MONDAY AFTERNOON, MARCH 14, 2016

1:30 – 2:45 PM Third Concurrent Sessions

Session 3A • Stormwater 3 • Moderator – Amanda S. Pennington, PE, Virginia Department of Conservation and Recreation

- (1) **Permeable Pavement and Stream Restoration: A BMP Match for Success**, Aislinn T. Creel, PE, LEED AP, Timmons Group; Ingrid Stenbjorn, PE, Town of Ashland
- (2) **Subsurface Characterization Using MASW Geophysics to Support Utility Design and Construction**, Joel C. Daniel, CPG, Schnabel Engineering, Inc.; James W. Whitt, Schnabel Engineering, Inc.
- (3) **Livestock and Wildlife...Experiences Developing Three Bacteria TMDL Action Plans**, Julia Fine, PE, Michael Baker International; James Kelly, PE, Michael Baker International; Michael Trapp, Ph.D., Michael Baker International; Elizabeth Krousel, PE, Michael Baker International
- (4) **DCR's Engineering Program – A Year Later**, Amanda S. Pennington, PE, Virginia Department of Conservation and Recreation

Session 3B • Dam Safety 2 • Moderator – Susan M. McGhee, PE, Gannett-Fleming, Inc.

- (1) **A Dam Failure Analysis Utilizing HEC GeoRas and Unsteady Flow Methodology, City of Petersburg, Virginia**, Alex C. Lucado, EIT, Timmons Group
- (2) **State-of-the-Art Two-Dimensional Modeling Tools to Perform Cost-Effective Hazard Assessments**, Benjamin Israel-Devadason, PE, CFM, Gannett-Fleming, Inc.; Paul G. Schweiger, PE, CFM, Gannett-Fleming, Inc.; Amanda J. Hess, PE, CFM, Gannett-Fleming, Inc.; Kate Aulenbach, EIT, CFM, Gannett-Fleming, Inc.; Yan Wang, PE, CFM, Gannett-Fleming, Inc.
- (3) **Two-Dimensional H&H vs. the SCS Unit Hydrograph**, David Hostetler, PE, CFM, Kimley-Horn
- (4) **Options to Increase Spillway Capacity**, Susan M. McGhee, PE, Gannett-Fleming, Inc.

Session 3C • Roadway Water Quality • Moderator – Don Rissmeyer, PE, CFM, A. Morton Thomas and Associates, Inc.

- (1) **The Green Mile (of Water Quality Swales)**, Michael Hogan, PE, RK&K; Alice Ortman, PE, RK&K; Bert White, EIT, RK&K
- (2) **Stormwater BMP Standards and Specifications for Transportation Applications**, J. Alex Forasté, PE, Stantec; Doug Beisch, PE, Stantec; Ashley Hall, PE, EEE Consulting, Inc.; Doug Fraser, PG, EEE Consulting, Inc.
- (3) **Greening DC Streets: Incorporating Runoff Reduction to the Maximum Extent Practicable within Urban Roadways**, Laura M. Mehiel, PE, A. Morton Thomas and Associates, Inc.
- (4) **Greening DC Streets: Developing Standards for Green Infrastructure within the Public Right of Way**, Don Rissmeyer, PE, CFM, A. Morton Thomas and Associates, Inc.

Session 3D • Water Quality Banking and Trading • Moderator – Curtis Hickman, Kerr Environmental Services Corp.

- (1) **Non-Point Source Water Quality Credit Trading and the Nutrient Credit Marketplace**, Casey J. Jensen, Chesapeake Bay Nutrient Land Trust (CBNLT)
- (2) **Banking for the Future**, Sheila S. Reeves, PE, CFM, Timmons Group
- (3) **Pleasure House Point Tidal Wetland Mitigation Bank, City of Virginia Beach Public Works, Virginia Beach, Virginia**, Curtis Hickman, Kerr Environmental Services Corp.; Thomas Gay, PE, City of Virginia Beach; Robert Kerr, Kerr Environmental Services Corp.

Session 3E • Floodplain Management 3 • Moderator – Jeff Smith, AECOM

- (1) **NFIP Legislation Implementation Update**, Richard Sobota, CPCU, FEMA Region III
- (2) **A Community's Floodplain Ordinance and Higher Standards – "Yesterday's High Tide is Today's Flood"**, Charley Banks, CFM, Virginia Department of Conservation & Recreation
- (3) **The Community Rating System Program and Virginia – Updates and Resources**, Christina Groves, CFM, Insurance Services Office; Charles Kline, CFM, Virginia Department of Conservation and Recreation
- (4) **The Community Rating System: Bridging Adaptation Gaps**, Mary-Carson Stiff, JD, CFM, Wetlands Watch

2:45 – 3:15 PM Coffee Break

3:15 – 4:30 PM Fourth Concurrent Sessions

Session 4A • Stormwater 4 • Moderator – Sean Simonpietri, EXACT Stormwater Management, LLC

- (1) **Loudoun's Evolving Approach to Identifying and Eliminating Illicit Discharges**, Max Kuker, GKY & Associates, Inc.; Jason W. George, CFM, GKY & Associates, Inc.; Chris Stone, CFM, PG, Loudoun County Department of General Services
- (2) **Adaptive Control Retrofits – Meeting Today's Regulations with Yesterday's BMPs**, Viktor Hlas, MSc, MBA, OptiRTC, Inc.
- (3) **Fairfax County's Post-Construction Facility Maintenance Implementation, Policy, & Process**, Karlee H. Copeland, Fairfax County Department of Public Works & Environmental Services; Douglas H. Moseley, III, AICP, CFM, GKY & Associates, Inc.
- (4) **Manufactured Treatment Devices for Retrofit Credit**, Sean Simonpietri, EXACT Stormwater Management, LLC; Liz Scheessele, PE, CFM, Timmons Group

Session 4B • Dam Safety 3 • Moderator – Jim Nadeau, ACF Environmental

- (1) **Help! My Roller Compacted Concrete (RCC) Dam is Falling Apart**, Aaron Collins, Schnabel Engineering, Inc.; Tillman Marshall, PE, Schnabel Engineering, Inc.
- (2) **Unique Opportunities and Solutions for the Upper North River 10, Todd Lake Dam Rehabilitation Project**, Mathew J. Lyons, PE, United States Department of Agriculture Natural Resources Conservation Service; Matthew J. Pyle, PE, United States Department of Agriculture Natural Resources Conservation Service
- (3) **A New Method for Determining the Factor of Safety (FOS) of ACB Revetment Systems for Dam Overtopping Applications**, Jim Nadeau, ACF Environmental

Session 4C • TMDLs • Moderator – Deva K. Borah, Ph.D., PE, F.ASCE, City of Chesapeake Department of Public Works

- (1) **Roanoke County Stream Assessments for Identifying Pollutant Sources in Impaired Watersheds**, Susanna G. Orndorff, GKY & Associates, Inc.; J. Douglas Fritz, CPESC, GKY & Associates, Inc.; David M. Henderson, PE, Roanoke County
- (2) **Lake Tahoe TMDL – Case Study of TMDL Implementation Involving Seven Urban Jurisdictions**, Karin Peternel, CFM, Kimley-Horn and Associates, Inc.
- (3) **Restoring Incised Stream Channels to Promote Higher Ecological Uplift and Maximize TMDL Credits for Sediment and Nutrients**, Drew A. Altland, PE, Rummel Klepper & Kahl, LLP
- (4) **TMDL Model Selections: Simple Analytical to Complex Hydrodynamic and Water Quality Models**, Deva K. Borah, Ph.D., PE, F.ASCE, City of Chesapeake Department of Public Works; James L. Martin, Ph.D., PE, F.ASCE, Mississippi State University; G. Padmanabhan, Ph.D., PE, F.ASCE, North Dakota State University

Session 4D • Stormwater Public-Private Partnerships • Moderator – Seth P. Brown, PE, Storm and Stream Solutions, LLC

Panel Discussion on the Community-Based Public-Private Partnership Approach for Green Stormwater Infrastructure in Virginia

- (1) Seth P. Brown, PE, Storm and Stream Solutions, LLC
- (2) Dan Sweet, City of Charlottesville
- (3) Melissa Cutter, Corvias Solutions
- (4) John C. Germain, Spruce Peak Advisors, LLC

Session 4E • Floodplain Management 4 • Moderator – Don Rissmeyer, A. Morton Thomas & Associates

- (1) **Will You Have Your Tedium Rare or Medium? – Asking the Right Questions in Consulting**, John Paine, PE, PH, CFM, GKY & Associates, Inc.
- (2) **Using Flood History, Surveys, and Frequency Studies to Determine Flood Risk**, Jason C. Elliott, National Weather Service Weather Forecast Office Baltimore/Washington
- (3) **Flood Risk Data for Community Officials – A Deeper Look at FEMA's Risk Map Data**, Nabil Ghalayini, PE, PMP, D.WRE, CFM, Virginia Department of Conservation and Recreation
- (4) **New Flood Risk Products for Flood Forecasting and Warning Systems**, Shane Parson, Ph.D., PE, CFM, AECOM

MONDAY EVENING, MARCH 14, 2016

4:45 – 6:00 PM Reception (James River Ballroom Parlor H)

6:00 – 6:30 PM Virginia Lakes and Watersheds Association Business, Meeting Parlor F

TUESDAY MORNING, MARCH 15, 2016

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

8:30 – 9:45 AM Fifth Concurrent Sessions

Session 5A • Stormwater 5 • Moderator – Tara W. Gallagher, PE, Virginia Beach Public Works Operations

- (1) **Stormwater Monitoring in the City of Chesapeake as Part of Hampton Roads Regional Program**, Barbara Brumbaugh, City of Chesapeake; Deva K. Borah, City of Chesapeake
- (2) **Municipal Separate Storm Sewer System (MS4) Construction Site Inspections for Naval Hampton Roads Installations**, Mónica M. Quiñones, EIT, CH2M HILL; Alisa Sposato, CH2M HILL; Lindsey Carr, CH2M HILL
- (3) **Salem Lakes Stormwater Facility Improvements, Virginia Beach, Virginia**, Tara W. Gallagher, PE, Virginia Beach Public Works Operations; Tracy G. Quast, PE, Waterway Surveys & Engineering, Ltd.; Rebecca S. Francese, Waterway Surveys & Engineering, Ltd.
- (4) **Locating Best Management Practices in Coastal Virginia Using a GIS-Based Tool**, Rachael D. Johnson, Virginia Tech; David J. Sample, Virginia Tech; Greg Johnson, City of Virginia Beach

Session 5B • Dam Safety 4 • Moderator – Bruce A. Tschantz, Ph.D., PE, F.ASCE, University of Tennessee and Consultant

- (1) **Non-Invasive Methods of Estimating Reservoir Sediment Thickness**, James W. Whitt, Schnabel Engineering, Inc.; Joel C. Daniel, CPG, Schnabel Engineering, Inc.
- (2) **Farmers Earth Dam & Impoundment Design and Construction, Saint Thomas, Barbados, West Indies**, Kwabena Ofori-Awuah, PE, ENV SP, MASCE, MDFI, M.ASDSO, KCI Technologies, Inc.; Kofi B. Acheampong, Ph.D., PE, ENV SP, MASCE, MDFI, M.ASDSO, KCI Technologies, Inc.; Charbel Khoury, Ph.D., PE, MASCE, MDFI, M.ASDSO, KCI Technologies, Inc.

(3) **Dam Safety and Floodplain Matching Grant Funding for 2016**, Robert J. VanLier, PE, Virginia Department of Conservation and Recreation

(4) **Low Head Dam Hazards and Owner Responsibilities for Public Safety**, Bruce A. Tschantz, Ph.D., PE, F.ASCE, University of Tennessee and Consultant

Session 5C • Environmental Restoration • Moderator – Robert Kerr, RWP, Kerr Environmental Services Corp.

(1) **Reedy Creek Stream Restoration Case Study**, Amelia Wehunt, PE, Timmons Group; Rebecca Napier, PE, Timmons Group; Michael Aust, Timmons Group

(2) **Uncommon Stream Restoration Techniques - Successes and Failures**, Kathy L. Hoverman, PE, KCI Technologies, Inc.

(3) **A Comparison Between Conventional and Ecological Stream Restoration using Soil Nutrient Flushing Techniques**, Dylan Cooper, EIT, AED, Virginia Tech; W. Cully Hession, Ph.D., PE, CED, Virginia Tech; John Galbraith, Ph.D., Virginia Tech; Durelle Scott, Ph.D., Virginia Tech

(4) **Mill Dam Creek Stream Restoration, City of Virginia Beach, Virginia Beach, Virginia**, Robert Kerr, RWP, Kerr Environmental Services Corp.; Michael Mundy, PE, City of Virginia Beach; Curtis Hickman, Kerr Environmental Services Corp.

Session 5D • Coastal Flooding • Moderator – Michael McMahon, HDR Engineering

(1) **The Full Picture: Assessing Existing and Future Flood Vulnerability Through Combined Coastal and Stormwater Flood Modeling**, Siva Sangameswaran, PE, Ph.D., Dewberry; Michael C. Morgan, PE, CDM Smith; Gregory Johnson, PE, City of Virginia Beach; Shanda Davenport, PE, AICP, CFM, City of Virginia Beach; Brian K. Batten, Ph.D., CFM, Dewberry

(2) **Design Tailwater Elevations for City of Virginia Beach Considering Tide Rainstorm Coincidence**, Trevor Cone, CFM, Dewberry; Gregory Johnson, PE, City of Virginia Beach; Seth Lawler, Dewberry; Mathew Shultz, PE, CFM, Dewberry; Brian Batten, Ph.D., CFM, Dewberry; Dmitry, Smirnov, Ph.D., Dewberry; Kevin Slover, CFM, Dewberry

(3) **Planning Ahead of the Curve – An Overview of the City of Virginia Beach's Comprehensive Sea Level Rise/Recurrent Flood Study**, Brian K. Batten, Ph.D., CFM, Dewberry; Gregory Johnson, PE, City of Virginia Beach; Shanda Davenport, AICP, CFM, City of Virginia Beach; Jane Frantz, AICP, CFM, Dewberry; Deborah Mills, CFM, Dewberry

(4) **Port Centre Parkway Joint Event Tidal Rainfall Flooding Study – City of Portsmouth, Virginia**, Michael McMahon, HDR Engineering; Pieter Dahmen, HDR Engineering

Session 5E • Floodplain Management 5 • Moderator – Mark Slauter, Virginia Department of Emergency Management

(1) **Estimating First Floor Elevations to Achieve a Structure-Centric Flood Risk Management Program**, Jerry Sparks, PE, CFM, Dewberry; Michael Buckley, Dewberry

(2) **A Technology Framework for Community Flood Risk Management at a Property Structure Level**, Mohan Rajasekar, Syndeste; Zack Roehr, Syndeste

(3) **Flood Risk Analysis Using HEC-RAS 5.0 Beta for Two-Dimensional Modeling vs. One-Dimensional Approach**, Kevin Waters, Ph.D, Amec Foster Wheeler; Sravan Krovdi, PE, Amec Foster Wheeler

(4) **Virginia's Whole of Community Approach to Resilience**, Shawn Talmadge, Virginia Office of Public Safety and Homeland Security

9:45 – 10:15 AM Coffee Break

10:15 – 11:30 AM Sixth Concurrent Sessions

Session 6A • Stormwater 6 • Moderator – Gayle E. Hicks, PE, CFM, City of Hampton Public Works

- (1) **BMP Retrofit of Wetlands Bench at Yadkin Road Outfall in Chesapeake, VA**, Kelly O. Mills, PE, City of Chesapeake
- (2) **Stafford County Municipal Site BMP Retrofit Assessments, Stafford County, Virginia**, Jon D'Alessandro, PE, Timmons Group; Casey Kight, LA, Timmons Group; Paul Santay, Stafford County
- (3) **Burbank Elementary Water Quality Retrofits**, Robert A. Gourley, PE, City of Hampton Public Works; Daren Pait, PE, CFM, Kimley-Horn
- (4) **Coliseum Lake Water Quality Retrofit**, Gayle E. Hicks, PE, CFM, City of Hampton Public Works; Daren Pait, PE, CFM, Kimley-Horn

Session 6B • Dam Safety 5 • Moderator – Steve Snell, PE, Virginia Department of Conservation and Recreation

- (1) **Lessons Learned from October 2015 Dam Failures in South Carolina**, Thomas I. Roberts, PE, CFM, Virginia Department of Conservation and Recreation
- (2) **Uncovering a History of Significant Incidents After a Routine Dam Safety Inspection**, Robert A. Kline, Jr., PE, Gannett-Fleming, Inc.; Steven Davidheiser, PE, Gannett-Fleming, Inc.; Amanda Lothes, EIT, Newport News Waterworks
- (3) **A Modern Method for Mapping Leaks Through, Under, or Around Dams**, Val S. Gardner, Willowstick Technologies; Andy K. Hughes, Ph.D., Atkins Global
- (4) **Dam Maintenance and Failure Prevention**, Steve Snell, PE, Virginia Department of Conservation and Recreation

Session 6C • Water Supply and Wastewater • Moderator – Benjamin R. Martin, PE, Flow Science Incorporated

- (1) **Residential Water Metering Infrastructure: Quantification of Mechanical Meters Inaccuracies**, Carlos F. Mantilla-Pena, Virginia Tech; Mark A. Widdowson, Ph.D., PE, Virginia Tech; Gregory D. Boardman, Ph.D., PE, DEE, F.ASCE, D.WRE, Virginia Tech
- (2) **Optimizing the Water Resources of Spotsylvania County and the City of Fredericksburg**, Chris Edwards, PE, Spotsylvania County; James McCarthy, PE, Hazen and Sawyer; Reed Palmer, PE, Hazen and Sawyer
- (3) **Pressure Surge Analysis of Pump Station and Force Main Alternatives**, Benjamin R. Martin, PE, Flow Science Incorporated; Kristen B. Kavanagh, PE, Flow Science Incorporated; E. John List, Ph.D., PE, Flow Science Incorporated

Session 6D • Flooding and Drainage • Moderator – Samantha Davidson, EIT, AECOM

- (1) **See How the Wagner's Lowered Their Flood Insurance and Saved Their Home**, Author: Tom Little, CFM, Division of Smart Vent Products, Inc.; Presenter: Owen Gechter, Sales Representative, Smart Vent Products, Inc.
- (2) **Green Infrastructure Flood Reduction Computations**, Stephen R. Sands, PE, CFM, Hazen and Sawyer
- (3) **When a Historic Rainfall Event Happens During a Stormwater Capital Improvement Project**, Steve Godfrey, PE, CFM, Woolpert; Mike Jasper, City of Columbia
- (4) **Facing the Challenges of a Coastal Neighborhood Drainage Assessment**, Samantha Davidson, EIT, AECOM; Seshadri Iyer, Ph.D., PE, CFM, AECOM; Jeff Waller, PE, City of Virginia Beach

Session 6E • Floodplain Management 6 • Moderator – Shawn Talmadge, Virginia Office of Public Safety and Homeland Security

Resiliency Panel – A Panel Discussion

- (1) Paul Olsen, PE, Old Dominion University
- (2) Matthew Wall, Virginia Department of Emergency Management
- (3) John Malueg, Stantec Consulting, Inc.
- (4) Kenneth Somerset, CBO, CZA, CFM, City of Poquoson

11:45 – 1:00 PM Luncheon

VLWA Dam Safety Committee Dam Awards:

Best Maintained Dam, Privately Owned – Fawn Lake Dam in Spotsylvania County owned by Fawn Lake Community Association

Best Rehabilitation Project – Newman Lake Dam in the City of Harrisonburg owned by James Madison University

Most Improved Dam, Publically Owned – Lake Merriweather Dam near Goshen owned by National Capital Area BSA

Most Improved Dam, Publically Owned – Pohick Creek Dam #8 in Fairfax County owned by Fairfax County

Dave Pearson Watershed Excellence Award

Mill Dam Creek Stream Restoration, City of Virginia Beach, Virginia Beach, Virginia, by Robert Kerr, Kerr Environmental Services Corp.; Michael Mundy, City of Virginia Beach; Curtis Hickman, Kerr Environmental Services Corp.

Keynote Address – Virginia’s Road to Resiliency, Colonel (Retired) Paul B. Olsen, President, Honor Builders, LLC