



# DRAFT PROGRAM

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## SATURDAY, MARCH 2, 2019

- 8:00 AM – 9:00 AM Registration/Check-In for Dam Owner Training Workshop  
9:00 AM – 5:00 PM Dam Owner Training Workshop (2<sup>nd</sup> Floor Parlor D)

## SUNDAY, MARCH 3, 2019

- 1:00 – 4:00 PM Dam Engineer’s Forum (1st Floor Bon Air Suite)  
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 (2<sup>nd</sup> Floor York Room)  
5:30 – 7:00 PM Exhibitor and Early Registrants’ Reception (James River Ballroom, Parlor H)

## MONDAY MORNING, MARCH 4, 2019

- 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 – Recollection of Early VLWA Activities**, Dr. Ken Young, PE, Kenneth Young, LLC, Past President VLWA

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 – Stephanie MacDurmon, Brown and Caldwell

- (1) **A New Tool for Stormwater BMP Selection**, Shelly Frie, PE, ENV SP, Jacobs
- (2) **GIS Solutions for MS4 Compliance**, Matthew S. Webb, PE, Timmons Group
- (3) **WEF Stormwater Institute Update – The National MS4 Needs Assessment Survey**, Rebecca Arvin-Colon, Water Environment Federation
- (4) **MS4 E-Reporting to the BMP Warehouse: What You Should Know**, Stephanie MacDurmon, Brown and Caldwell

#### Session 1B • Stormwater Education and Outreach • Moderator – Zhongyan Xu, PE, PhD, CFM, George Mason University

- (1) **Taking Schools by Storm**, Meredith Dash, Alliance for the Chesapeake Bay
- (2) **Learning About Stormwater Education: A School Site Implementation Plan for Urban Bioretention**, Eric Loescher, PE, Timmons Group; Liz Scheessele, PE, CFM, ENV SP, Timmons Group; Stephen W. Smith, Newport News Public Schools
- (3) **What’s in Your Water? Experiential Education and Well Water Testing for High School Students and Their Families**, Erin Ling, MS, Virginia Tech and Virginia Cooperative Extension; Rachelle Rasco, MEd, Carroll County High School
- (4) **MS4 Outreach Program at George Mason University: A Unique Approach at Higher Education Institution**, Zhongyan Xu, PE, PhD, CFM, George Mason University; Brenda Claudio, CFM, George Mason University; Margaret Lo, George Mason University

**Session 1C • Dam Safety 1 • Moderator – Amanda S. Pennington, PE, Department of Conservation and Recreation-Division of Soil and Water Conservation**

- (1) **A Potential Flood: Virginia’s 2018 Constitutional Amendment Addressing Flood Mitigation**, Douglas H. Moseley III, AICP, CFM, GKY & Associates, Inc.
- (2) **VDEM Application Process for High Hazard Dam Breach Flood Damage Reduction Project**, Bruce W. Schwenneker, PhD, CFM, Whitman Requardt and Associates, LLP; Ronald E. Harris, PG, City of Newport News, VA
- (3) **Virginia Dam Safety, Flood Prevention and Protection Assistance Fund Grant Program – Dam Safety Projects**, Wendy Howard-Cooper, Virginia Department of Conservation and Recreation
- (4) **Virginia DCR Dam Rehabilitation Study and Report – Plans for the Rehabilitation of Aging Flood Control Dams, 2019 Update**, Amanda S. Pennington, PE, Department of Conservation and Recreation-Division of Soil and Water Conservation; David Warriner, PE, Department of Conservation and Recreation-Division of Soil and Water Conservation

**Session 1D • Hydraulic Modeling 1 • Moderator – John Paine, PE, PH, CFM, GKY & Associates, Inc.**

- (1) **Neighbors to Disaster – Advanced Modeling Informs Flood Response Planning**, Adrienne Shaner, PE, ENV SP, Gannett Fleming, Inc.; Don Demetrius, Ph.D., PE, CFM, Gannett Fleming, Inc.; (Retired) Fairfax County Department of Public Works & Environmental Services; Eric Neast, PE, Gannett Fleming, Inc.; Fairfax County Department of Public Works & Environmental Services
- (2) **SWMM Modeling: Assumptions and Accuracy**, Michael Sabon, EIT, AECOM; Kerstin Guillen Geba, PE, AECOM; Deva Borah, Ph.D., PE, F.ASCE, City of Chesapeake
- (3) **City of Virginia Beach Stormwater Modeling Program**, Amanda L. Medley, EIT, City of Virginia Beach Public Works/Stormwater Engineering Center; Michael C. Morgan, PE, CDM Smith
- (4) **Modeling Floodplains and Flooding: Tools, Trials, and Practical Issues**, John Paine, PE, PH, CFM, GKY & Associates, Inc.

**Session 1E • Floodplain Management 1 • Moderator – Don Rissmeyer, PE, CFM, A. Morton Thomas & Associates, Inc.**

- (1) **Virginia Dam Safety, Flood Prevention, and Protection Assistance Fund Grant Program – Floodplain Projects**, Kristin Owen, AICP, CFM, Virginia Department of Conservation and Recreation; Wendy Howard-Cooper, Virginia Department of Conservation and Recreation; Gina DiCicco, AICP, CFM, Virginia Department of Conservation and Recreation
- (2) **What’s the Buzz About Silver Jackets?** Michelle Hamor, CFM, U.S. Army Corps of Engineers, Norfolk District; Kristin Owen, AICP, CFM, Virginia Department of Conservation and Recreation
- (3) **Status of FEMA Flood Study Updates in Virginia**, Gina DiCicco, AICP, CFM, Virginia Department of Conservation and Recreation; Lee Brancheau, FEMA Region III
- (4) **Overview and Status of FEMA Flood Risk Products in Virginia**, Lee Brancheau, FEMA Region III; Jeff Smith, PE, PMP, CFM, AECOM

**10:30 – 10:45 AM      Coffee Break**

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

**Session 2A • Stormwater 2 • Moderator – Ben Chester, PE, ENV SP, DCR Soil and Water Conservation**

- (1) **Implementing the City of Alexandria’s New Stormwater Utility Fee**, Rachael Moxley, PE, LEED AP BD+C, City of Alexandria, Virginia; Jesse E. Maines, MPA, City of Alexandria, Virginia; Danilo L. Nunez, PE, City of Alexandria, Virginia; Douglas H. Moseley III, AICP CFM, GKY & Associates, Inc.
- (2) **The Potential of Phycoremediation to Reduce Metal and Nutrient Concentrations in Stormwater Ponds**, Elizabeth G. Malcolm, Ph.D., Virginia Wesleyan University; Maury E. Howard, Ph.D., Virginia Wesleyan University; Warren Canady, Virginia Wesleyan University; Arika Marosi, Virginia Wesleyan University; Margaret Reese, Ph.D., Virginia Wesleyan University; Xixi Wang, Ph.D., Old Dominion University; Katrina Henry, Ph.D., Virginia Wesleyan University

(3) **Agricultural Best Management Practices to Improve Water Quality**, Susan Liszeski, CEP, EEE Consulting, Inc.; Kathleen Cabe, PE, EEE Consulting, Inc.

(4) **If a Cow Poops in the River and Nobody Sees it, does it Count in the Chesbay Model? How Animal Waste Structures Improve Water Quality**, Ben Chester, PE, ENV SP, DCR Soil and Water Conservation

**Session 2B • Green Infrastructure 1 • Moderator – Ray Hyland, PE, LEED AP, ENV SP, Brown and Caldwell**

(1) **National Green Infrastructure Certification Program (NGICP) Training: Current Program & Future Developments**, Hannah Somers, GKY & Associates, Inc.; Douglas Fritz, GKY & Associates, Inc.; Stuart Stein, PE, D.WRE, GKY & Associates, Inc.; Adriana Caldarelli, Water Environment Federation

(2) **Adapting Green Infrastructure Tracking, Design & Evaluation Methods for a Variety of Program Goals**, Alysondria Eason, PE, Hazen and Sawyer

(3) **Green Stormwater Infrastructure for CSO Control**, Bernadette M. Callahan, PE, Stantec Consulting Services, Inc.

(4) **Green Infrastructure Maintenance Case Studies**, Ray Hyland, PE, LEED AP, ENV SP, Brown and Caldwell

**Session 2C • Dam Safety 2 • Moderator – Rebecca Evans, United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS)**

(1) **Do Yesterday's Earth-Cut Spillway Designs Meet Today's Standards? The ins and outs of Earth Spillway Design and Integrity Analysis**, Wesley Hollenbach, PE, CFM, AECOM; Paul Schweiger, PE, CFM, Gannett Fleming, Inc.; Kent R. Finemore, PE, NHDES – Dam Bureau; Andy Deichert, PE, West Virginia NRCS; Tim Ridley, PE, West Virginia NRCS; Jeff McClure, West Virginia NRCS

(2) **What Lies Behind the Decommission of a Dam**, Maridee Romero-Graves, PE, Schnabel Engineering, LLC

(3) **Reservoir Sediment Removal and Sustainable Management of Dams**, Paul G. Schweiger, PE, CFM, Gannett Fleming, Inc.; Eric C. Neast, PE, Gannett Fleming, Inc.; William L. Kingston III, PE, CFM, Gannett Fleming, Inc.

(4) **Sediment Survey Methods – Lessons Learned Through Dam Rehabilitation**, Rebecca Evans, United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS)

**Session 2D • Hydraulic Modeling 2 • Moderator – Kaveh Zomorodi, Ph.D., PE, CFM, Dewberry**

(1) **Using Harchydro Tools in ARCGIS to Delineate Batch Watershed and Stream Network**, Zixu Zhao, AECOM; Ralph Coronel, AECOM; Seshadri Iyer, AECOM.

(2) **SWMM Modeling of High-Intensity Rainfall Events in Urban Areas**, Andrew P. Sarcinello, EIT, GKY & Associates, Inc.

(3) **High Water – SWMM at Your Own Risk: Dealing with Flood Conditions in SWMM Models**, Rachael D. Johnson, EIT, WSP

(4) **Design Coincident Flows at Stream Confluences Using NCHRP 15-36**, Kaveh Zomorodi, Ph.D., PE, CFM, Dewberry

**Session 2E • Floodplain Management 2 • Moderator – Gina DiCicco, AICP, CFM, DCR/Dam Safety & Floodplain Management**

(1) **Using a Tide Gate to Mitigate Floodplain Impacts on the I-64 High Rise Bridge Project**, Andrew B. Scott, PE, Virginia Department of Transportation

(2) **Stormwater Storage & Mitigation Challenges in the Lakes and Princess Anne Plaza**, Michael S. Bumbaco, PE, Department of Public Works, Stormwater Engineering; Dennis Dunham, PE, Michael Baker International

(3) **FEMA/ASCE 24-14 Foundation Flood Opening Guidance**, Kurt Luecke, CFM, Floodproofing.com

(4) **Drakes Branch: A History of Flooding**, Don Rissmeyer, PE, CFM, A. Morton Thomas and Associates

**12:15 – 1:15 PM Luncheon**

**Keynote Address – Changing Lives, Having Fun, and Making Dreams Come True, Mr. Walter Hughes, Jr., Rotary Club of Rocky Mount, Virginia in District 7570**

**MONDAY AFTERNOON, MARCH 4, 2019**

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

**Session 3A • Stormwater 3 • Moderator – Ari Daniels, Center for Watershed Protection, Inc.**

**Panel Discussion – Leveraging and Upgrading Private BMPs for Mutual Public/Private Benefit**

- (1) Stavros Calos, County of Albemarle, Virginia
- (2) David Hirschman, Hirschman Water & Environment, LLC
- (3) Kip Mumaw, PE, Ecosystem Services, LLC
- (4) Ari Daniels, Center for Watershed Protection, Inc.

**Session 3B • Green Infrastructure 2 • Moderator – Aislinn Creel, PE, Timmons Group**

- (1) **Stripping Down the Design of Vegetated Filter Strips**, Kendall Effler, Stantec Consulting Services, Inc.
- (2) **Smarter Than the Average Swale: Optimizing Stormwater Retrofits**, Melissa J. Simpson, PE, PMP, LEED AP, ENV SP, WSP
- (3) **Fulfilling Multiple Needs with One Deed: A Wet Swale Story**, Amity B. Dewey, PE, WSP, Inc.; James E. Wright, Jr., PE, City of Portsmouth
- (4) **Transcending Silos to Achieve Measurable Results**, Aislinn Creel, PE, Timmons Group

**Session 3C • Dam Safety 3 • Moderator – Geoffrey L. Cowan, PE, Dewberry Engineers, Inc.**

- (1) **Little Creek Dam Seepage and Internal Erosion Assessments**, James City County, Virginia, James R. Swindler Jr., PE, Stantec Consulting Services, Inc.
- (2) **Inspection of Nottoway Reservoir Dam**, Chris Kuhn, Stantec Consulting Services, Inc.
- (3) **Hydroturf Overtopping Protection for Lake Arrowhead Dam**, Jesse L. McWilliams, EIT, Timmons Group; Brad H. Cooley, PE, Watershed Geosynthetics
- (4) **Horsepen Dam Alteration & the Route 606 Widening Design-Build Project**, Geoffrey L. Cowan, PE, Dewberry Engineers, Inc.; Nick Shimer, Dewberry Engineers, Inc.

**Session 3D • Hydraulic Modeling 3 • Moderator – David P. Wilmoth, PE, CFM, PH, Dam Safety and Floodplain Management Division, Virginia Department of Conservation and Recreation (DCR)**

- (1) **Rapid Response Modeling and Mapping for North Carolina at-Risk Dams**, Katie Hermann, CFM, GISP, ESP Associates, Inc.; Scott Gentry, PE, CFM, North Carolina Floodplain Mapping Program (NCFMP), Division of North Carolina Emergency Management
- (2) **CFD Modeling to Evaluate and Improve Public Safety Around Dams**, Benjamin Israel-Devadason, PE, CFM, Gannett Fleming, Inc.; Paul G. Schweiger, PE, CFM, Gannett Fleming, Inc.
- (3) **A Look at Several 2D Modeling Software Packages and a Case Study on How Their Results Can Vary**, Steve Godfrey, PE, CFM, Woolpert, Inc.
- (4) **DCR Dam Safety Modeling Update: Virginia Temporal Distribution Curves**, David P. Wilmoth, PE, CFM, PH, Dam Safety and Floodplain Management Division, Virginia Department of Conservation and Recreation (DCR)

**Session 3E • Floodplain Management 3 • Moderator – Kristin Owen, AICP, CFM, DCR/Dam Safety & Floodplain Management**

- (1) **Designing for Urban Coastal Resiliency**, Margaret Hopkins, PE, AKRF, Inc.
- (2) **Stop the Tide, Save the Storage: Solutions for Flooding in Windsor Woods and Beyond**, Nicole Dane, PE, Michael Baker International; Michael Mundy, PE, Virginia Beach Department of Public Works; Ian Kaliakin, EIT, ENV SP, Michael Baker International

(3) **Little Westham Creek Floodplain Study**, Christy Hill, PE, Blossom Consulting and Engineering, Inc.; Nick Laurretta, PE, Blossom Consulting and Engineering, Inc.

(4) **Post Hurricane Site Improvements Seek to Improve Resiliency**, Scott C. Blossom, PE, CFM, LEED AP, Blossom Consulting and Engineering, Inc.

## 2:45 – 3:15 PM Coffee Break

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

### Session 4A • Stormwater 4 • Moderator – John N. Burke, Fairfax County Stormwater

(1) **The Stormwater Infrastructure Management Cycle – Cad to Cattails**, Michele Seib, PE, Loudoun County Department of General Services; Chris Stone, Loudoun County Department of General Services

(2) **Using ARCGIS Online for Stormwater Inspections and Reporting**, Suzanne Angelo, PE, GKY & Associates, Inc.

(3) **Transitioning Stormwater Facility Maintenance from Reactive to Proactive: An Experiment in Risk Assessment and Predictive Analytics**, Eric Caldwell, Fairfax County Stormwater Management

(4) **A Guide for Often Overlooked Stormwater Issues at Maintenance Facilities**, John N. Burke, Fairfax County Stormwater

### Session 4B • Green Infrastructure 3 • Moderator – Kateri S. Shreve, PE, LEED AP, VCCO, Luck Ecosystems

(1) **Evaluating the Effectiveness and Cost Efficiency of Green Infrastructure in Reducing Stormwater Runoff in Developing Countries: A Case Study of Havana, Cuba**, Sherwin Zahirieh, George Mason University

(2) **Trees & Water Sensitive Urban Design**, Jeremy Bailey, GreenBlue Urban (Presented by Matthew Werle, GreenBlue Urban)

(3) **Land Cover Change, an Innovative Stormwater Solution?** Laurie Coffman, PE Timmons Group

(4) **Characteristics of Bioretention Soil Media Utilizing Crushed Stone Sand**, Kateri S. Shreve, PE, LEED AP, VCCO, Luck Ecosystems; Catherine Hughes, Luck Ecosystems

### Session 4C • Dam Safety 4 • Moderator – Michael McIntyre, PE, AECOM

(1) **Damage Sustained by Virginia Soil and Water Conservation District Dams from Hurricane Michael (We Survived Florence, How Bad Could Michael Be?)**, Charles T. Wilson, PE, Virginia Department of Conservation and Recreation, Division of Soil and Water Conservation

(2) **Virginia Dam Safety Region 3: A Tour Across the Region**, Scott J. Thomas, PE, Virginia Department of Conservation and Recreation, Division of Dam Safety and Floodplain Management

(3) **Dams of the Grand Tours**, N. Johan Anestad, PE, O'Brien & Gere Engineers, Inc.

(4) **Mosul Dam: Challenges in Foundation Stabilization & Dam Rehabilitation**, Michael McIntyre, PE, AECOM; David Sawitzki, PE, AECOM

### Session 4D • Flood Resilience 1 • Moderator – Meredith Upchurch, PE, ASLA, RK&K

(1) **City of Virginia Beach – Ashville Park Stormwater**, Charles J. (C.J.) Bodnar, PE; City of Virginia Beach; Michael (Mike) W. Mundy, PE, City of Virginia Beach; Bradley (Brad) W. Vanderwarker, PE, City of Virginia Beach

(2) **Injecting Energy and Focus in Local Planning Efforts; The Hampton Roads Area Planning Implementation and Project Development**, Mari Radford, Federal Emergency Management Agency Region 3; Jake Schmierer, Federal Emergency Management Agency Region 3; Robbie Coates, Virginia Department of Emergency Management

(3) **NC FIMAN: Hurricane Florence Success Stories and Future Vision**, Scott Gentry, PE, CFM, North Carolina Division of Emergency Management, North Carolina Floodplain Mapping Program (NCFMP); Matt Dudley, PE, CFM, ESP Associates, Inc.

(4) **DC DOT Flood Emergency Response Plan: Preparing a City Agency for Severe Events**, Meredith Upchurch, PE, ASLA, RK&K; Brian Finerfrock, PE, RK&K; With Support from Siva Sangameswaran, PhD, PE, D.WRE, CFM, Dewberry Consultants LLC; Aileen Craig, PE, RK&K

**Session 4E • Floodplain Management 4 • Moderator – Ken Somerset, CBO, CFM, City of Poquoson**

- (1) **The National Flood Insurance Program 2019 – Overview and Updates**, Richard J. Sobota, CPCU, Federal Emergency Management Agency (FEMA)
- (2) **An Introduction to NOAA’s National Water Model**, Jennifer McGee, PE, CFM, GISP, Wood E&IS
- (3) **An Introduction to FEMA Coastal Floodplain Mapping: Designing a National, Interactive Tutorial**, Bradley Dean, CFM, CE, Michael Baker International
- (4) **Coastal Virginia Resilience: Data Needs, CRS Program Recommendations, & Regional CRS Support Positions**, Mary-Carson Stiff, CFM, JD, Wetlands Watch

**MONDAY EVENING, MARCH 4, 2019**

**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 5, 2019**

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

**7:30 AM Coffee and Pastries**

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

**Session 5A • Stormwater 5 • Moderator – Michael Hogan, PE, RK&K; Bert White, PE, RK&K**

- (1) **Evaluating Opportunities for Public/Private Partnerships with Non-Profit Organization Property Owners to Increase Stormwater Management in a Fully Developed Municipality**, J. Douglas Fritz, CPESC, GKY & Associates, Inc.
- (2) **Stormwater Pond Improvements – Adding Water Quality and Public Safety in a Neighborhood Setting**, David Duncan, PE, Timmons Group; Liz Scheessele, PE, CFM, ENV SP, Timmons Group; Rey Hernandez Jr., PE, City of Norfolk
- (3) **Arlington National Cemetery: Protecting Our Waterways and Honoring Those Who Protect Us**, Jim Novak PE, WSP; Rachael D. Johnson, WSP; Melissa Simpson PE, WSP
- (4) **Jacked but Never Bored on the Turnpike Road Railroad**, Michael Hogan, PE, RK&K; Bert White, PE, RK&K

**Session 5B • Water Quality Modeling • Moderator – Deva K. Borah, Ph.D., PE, F.ASCE, City of Chesapeake**

- (1) **A New Process and Tool for Screening Nutrient Responses in Streams**, Clifton Bell, PE, PG, Brown and Caldwell; Mira Micin, Brown and Caldwell
- (2) **Simulation of Watershed-Scale Practices for Mitigating Thermal Pollution Due to Urbanization**, Mehdi Ketabchy, MASC, ENV SP, EIT, A.M.ASCE, Gannett Fleming, Inc.; David J. Sample, Ph.D., PE, Virginia Polytechnic Institute and State University; Theresa Wynn-Thompson, Ph.D., Virginia Polytechnic Institute and State University
- (3) **Nonparametric Techniques in Model Calibration and Performance Evaluation**, Jaewan Yoon, Ph.D., Old Dominion University
- (4) **Total Maximum Daily Load Analysis and Modeling: An ASCE Manual of Practice Being Written**, Deva K. Borah, Ph.D., PE, F.ASCE, City of Chesapeake

**Session 5C • Emerging Issues • Moderator – Cory Anderson, Stantec Consulting Services, Inc.**

- (1) **Design and Implementation of a Decision Support System to Enable Standardized Environmental Compliance Procedures for Virginia's Nutrient Credit Exchange**, Linnea Saby, University of Virginia; Michelle E. Fults, GISP, Virginia Department of Transportation; Jon Goodall, University of Virginia
- (2) **Reclaiming the "Rainbow Reedy": A New Phosphorus Standard for Development**, John E. Schooler, Jr., PE, SWM CA, Woolpert, Inc.
- (3) **Where Do We Flow from Here? A Legal Perspective on Interstate Groundwater Management**, Amber Leasure-Earnhardt, J.D. Candidate, William and Mary Law School, MELP, Vermont Law School
- (4) **The Elephant in the Stream: Case for Hydraulic Standards for Stream Restoration**, Cory Anderson, Stantec Consulting Services, Inc.

**Session 5D • Stream Stability and Restoration 1 • Moderator – Raleigh Coleman, Department of Conservation and Recreation, Division of Soil and Water Conservation**

- (1) **Triassic Lowlands, a Unique Region of the Piedmont: Implications for Regulators, Local Governments and Practitioners**, LeAnne E. Astin, Fairfax County Dept. of Public Works & Environmental Services (DPWES)
- (2) **Transitions from Velocity Based Channel Lining Designs to Shear Stress in Accordance with the 2016 VDOT Road and Bridge Specifications**, Kathleen Cabe, PE, EEE Consulting, Inc.

- (3) **The Self-Recovery of Stream Channel Stability in Urban Watersheds Due to BMP Implementation, Carroll County, MD**, Neely L. Law, PhD, Center for Watershed Protection, Inc.; Bill Stack, PE, Center for Watershed Protection; Lisa Fraley-McNeal, Center for Watershed Protection; Gale Engles, Carroll County Bureau of Resource Management; Byron Madigan, Carroll County Bureau of Resource Management; M. Covington, PE CFM, DWRE., Carroll County Bureau of Resource Management; Reid Christianson, PhD, PE, University of Illinois Urbana-Champaign College of Agricultural, Consumer & Environmental Sciences
- (4) **Engineering Grade Stabilization Structures to Stabilize Extreme Gully Erosion and Protect Water Quality**, Raleigh Coleman, Department of Conservation and Recreation, Division of Soil and Water Conservation

**Session 5E • Floodplain Management 5 • Moderator – David Waggoner, Waggoner & Ball Architecture/Environment**

- (1) **Langley Air Force Base Sea Level Rise Mitigation Efforts**, LesLee S. Roderick, Major, USAF, PE, 633d Civil Engineer Squadron
- (2) **Modeling Impacts of Climate Change on Riverine Floodplains**, Shane Parson, PE, CFM, AECOM
- (3) **Flood Resiliency in Princeville, North Carolina**, Ryan Smith, PE, Moffatt & Nichol (Presented by Allison Bryan, Moffatt & Nichol)
- (4) **Applying Layered Resiliency Strategies to Reduce Flooding Risks While Enhancing the Natural, Built, and Human Environments**, Christopher Frye, VHB; Kimberly Blossom, VHB

**9:45 – 10:15 AM Coffee Break**

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

**Session 6A • Flood Resilience 2 • Moderator – Tonia P. Alger, PE, City of Virginia Beach**

**PANEL DISCUSSION: Pivoting to the Future: Planning for Flood Resilience in Virginia Beach**, Jessica Fleck, Dewberry; Sue Kriebel, PE, City of Virginia Beach Public Works Engineering; Brian K. Batten, PhD, Dewberry; Rahul Parab, PE, CFM, D.WRE, Dewberry; Robert Acker, PE, Dewberry; Tonia Alger, PE, City of Virginia Beach Public Works Engineering; Xiaohai Liu, PhD, PE, Dewberry; Tarig Omer, PE, City of Virginia Beach Public Works Engineering; Siva Sangameswaran, PhD, PE, D.WRE, CFM, Dewberry; Andrew Shillingsford, PE, Dewberry; Steven Poe, PE, City of Virginia Beach Public Works Engineering; Kevin Slover, CFM, Dewberry

- (1) **Establishing a Policy Response to Instill Flood Resilience Across City Governance**, Sue E. Kriebel, PE, City of Virginia Beach, Public Works Engineering; Jessica Fleck, Dewberry
- (2) **Conceptual Structural Alternatives for City-wide Flood Risk Reduction**, Brian Batten, PhD, Dewberry
- (3) **Assessing Performance of Structural Strategies with an Integrated Coastal Rainfall-Runoff Model**, Steven J. Poe, PE, City of Virginia Beach, Public Works Engineering; Xiaohai Liu, PhD, PE, Dewberry
- (4) **Understanding Comprehensive Watershed Vulnerability in the Southern Rivers Watershed of Virginia Beach**, Tarig Omer, PE, City of Virginia Beach, Public Works Engineering; Siva Sangameswaran, PhD, PE, D.WRE, Dewberry

**Session 6B • Lake Water Quality • Moderator – Mary Lofton, Virginia Tech**

- (1) **Analysis of Historical Monitoring Data to Forecast Future Phytoplankton Blooms in a Small Drinking Water Reservoir**, Whitney M. Woelmer, Virginia Tech; Mary E. Lofton, Virginia Tech; Ryan P. McClure, Virginia Tech; Bethany J. Bookout, Virginia Tech; R. Quinn Thomas, Ph.D., Assistant Professor, Virginia Tech; Cayelan C. Carey, Ph.D., Assistant Professor, Virginia Tech
- (2) **Simulation of Phytoplankton, Rooted Plants, and Sediment Fluxes in a Shallow Eutrophic Lake**, Sen Bai, Ph.D, PE, Tetra Tech, Inc.; Ping Wu, P. Eng, Alberta Environment and Parks



(3) **Advances in Field-Deployable Particle Image Velocimetry**, Brandon Dillon, Virginia Tech; Kyle Strom, Ph.D., Virginia Tech

(4) **Real-Time Ecological Forecasting Enables Adaptive Water Quality Management in a Drinking Water Reservoir**, Cayelan Carey, Virginia Tech; R. Quinn Thomas, Virginia Tech; Renato Figueiredo, University of Florida; Mary Lofton, Virginia Tech; Bethany Bookout, Virginia Tech; Vahid Daneshmand, University of Florida; Dexter Howard, Virginia Tech; Ryan McClure, Virginia Tech; Whitney Woelmer, Virginia Tech (Presented by Mary Lofton, Virginia Tech)

**Session 6C • Shoreline Protection • Moderator – Andrew Tiefenback, EIT, Stantec Consulting Services, Inc.**

(1) **Post-Construction Review of Living Shoreline Projects**, Ben Nash, PLA, Brown and Caldwell

(2) **Sand Filled Mattresses; New Technology for a Living Shoreline**, Tom Stephens, TenCate Geosynthetics

(3) **Alternative Shoreline Stabilization at Brunswick Town/Fort Anderson**, Phillip C. Todd, Atlantic ReefMaker

(4) **Living Shoreline Siting and Nutrient Crediting Estimates: Avoiding Deceptive Data**, Andrew Tiefenback, EIT, Stantec Consulting Services, Inc.

**Session 6D • Stream Stability and Restoration 2 • Moderator – Joni M. Calmbacher, PE, CFM, City of Alexandria**

(1) **Suitland Regency Outfall Stabilization/Stream Restoration Project for Chesapeake Bay TMDL Credit**, David W. Black, PE, Rummel, Klepper & Kahl, LLP

(2) **Navigating the Obstacles of Urban Stream Restoration**, Alex C. Lucado, PE, CFM, Timmons Group; Katie E. Atkinson, EIT, Timmons Group

(3) **Expanding Asset Protection to Include Stream Restoration**, Joel McSwain, Hazen and Sawyer

(4) **Eenie, Meenie, Miny, Moe – Alexandria’s Stream Restoration and Outfall Stabilization Project Selection Methodology**, Joni M. Calmbacher, PE, CFM, City of Alexandria; Troy Biggs, PE, PH, D.WRE, Wood Environment & Infrastructure Solutions

**Session 6E • Floodplain Management 6 • Moderator – Mark Slauter, CFM, Slauter Industries, LLC**

(1) **Comparing Streamline Generation Tools for Large-Scale Applications**, Kristine Mosuela, EIT, Wood Environmental & Infrastructure Solutions; John Paul Miller, HIT, Wood Environmental & Infrastructure Solutions

(2) **Flood Hazard Mapping Behind Non-Accredited Levees**, M. Tariq Makhdoom, Ph.D., CFM, Atkins (SNC-Lavalin)

(3) **Three is a Magic Number: 3-D Hydrodynamic and Water Quality Modeling of Storm Surge Barriers on Three Estuaries for a USACE 3X3X3**, Brian Joyner, PE, Moffatt & Nichol

(4) **Technological Advances in 2D: What is Probabilistic Modeling**, Christine Estes, PE, CFM, AECOM; David Rubenstein, AECOM

**11:45 – 1:00 PM Luncheon**

**VLWA Dam Safety Committee Dam Awards**

**Dave Pearson Watershed Excellence Award**

**TBD**

**Honorable Mentions**

**TBD**

**Keynote Address – Living with Water**, Mr. David Waggoner, Waggoner & Ball Architecture/Environment