



# **Collection Systems 2014**

## ***Collection on the Chesapeake***

March 11 – 14, 2014  
Baltimore Convention Center  
Baltimore, Maryland



This conference is held by the Water Environment Federation with the Support of the WEF Collection Systems Committee and in cooperation with Chesapeake Water Environment Association and the National Association of Sewer Service Companies (NASSCO).

**OPENING GENERAL SESSION**

**Wednesday, March 12, 2014**  
**8:30am – 12:00pm**

**2.25 PDHs**

# TECHNICAL PROGRAM

## Session 1: Force Main

Wednesday, March 12, 2014

1:30pm - 4:45pm

2.5 PDHs

- 1A 1:30pm Design and Construction of a Prototype In-line Sewage Pumping and Off-Line Storage Facility to Reduce Force Main Pressures During Significant Wet Weather Events**  
Mike Gaffney, RK&K; Bill Salley, HRSD; Ryan Delo, RK&K
- 1B 2:00pm Low Velocities in Force Mains: Impacts and Solutions**  
Bo Copeland, Sean O'Rourke, Hazen and Sawyer
- 1C 2:30pm Continuous Pump Station Performance Evaluation Using Established Flow Monitoring Equipment**  
Craig Ziesemer, City of Suffolk, Virginia; Zac Candy, John Bergin, Dan Holloway, Eric Nice, Ed Snyder, CH2M HILL
- 3:00pm Networking Break**
- 1D 3:45pm What's In The Numbers? A Review and Analysis of More Than 400 Miles of Force Main Inspection and Condition Assessment Data.**  
Travis B. Wagner, Jennifer Steffens, Jason Consultants
- 1E 4:15pm Two Sides of A Coin: Large Diameter Industrial Park Force Main, Anderson, Indiana**  
Jeff Dieterlen, DLZ Indiana, LLC
- Alternate 1 Pressure Pipe Inspection and Condition Assessment - A Status Report**  
Henry R. Derr, Brown & Caldwell

## TECHNICAL PROGRAM

### Session 2: Planning

Wednesday, March 12, 2014

1:30pm - 4:45pm

2.5 PDHs

- 2A 1:30pm GIS-Neural Network Hybrid Approach for Capacity Analysis of Metro Vancouver Sewer System**  
Taban Sowlati, Yao-Hung Lan, Metro Vancouver
- 2B 2:00pm It's Been Five Years...How Is It Going?**  
Sean W. FitzGerald, Hazen & Sawyer; Rich McGillis, Sanitation District No. 1 of Northern Kentucky
- 2C 2:30pm Asset Management - You're Already Doing It**  
Felix R. Belanger, Tetra Tech Inc; Robert Shelton, Tulsa Metropolitan Utility Authority
- 3:00pm Networking Break**
- 2D 3:45pm Kill Two Birds with One Stone: Optimizing Your Business Practices While Estimating Future Staffing Needs**  
Ricardo Campos, Brown and Caldwell; Rob Clark, City of Virginia Beach; Janeane Giarrusso, Brown and Caldwell
- 2E 4:15pm Water Quality Enhanced by Sustainable Watershed Evaluation and Planning Process at Metropolitan Sewer District of Greater Cincinnati**  
Susan E. Moisiso, CH2M Hill; Cheri Bush, Metropolitan Sewer District
- Alternate 1 Citizens Water's Updated Method for Determining Sewer Service for New Developments**  
William Grout, Citizens Energy Group; Derek Urban, American Structurepoint, Inc.
- Alternate 2 Managing Smarter Moves Tuscaloosa Water and Sewer Department Towards Sustainable SSO Reduction Accomplishments**  
Jarrod Milligan, City of Tuscaloosa, Alabama; Scott Cummings, Russ Barton, Reggie L. Rowe, CH2M HILL

## TECHNICAL PROGRAM

### Session 3: Operation and Maintenance (O&M)

Wednesday, March 12, 2014

1:30pm - 4:45pm

2.5 PDHs

- 3A 1:30pm Cleaning and Repairing New Bedford's Main Interceptor: Overcoming Challenges Associated with Removing PCB Contaminated Grit**  
Shawn T. Syde, Kevin Schott, CDM Smith; Ronald H. Labelle, James Ricci, City of New Bedford
- 3B 2:00pm O&M Practices Modifications Reduce Ssos - An 30 Year Evaluation of Practices and Results, and the Steps Required to Achieve 21St Century Service Expectations**  
James W. Shelton, ARCADIS; Robert Roff, New Castle County
- 3C 2:30pm "Turning on the Lights": The Use of a Real Time Decision Support System to Optimize Evansville, IN's West Collection System**  
Timothy Ruggaber, Emnet LLC; Michael Labitzke, Harry Lawson, Evansville Water and Sewer Utility
- 3:00pm Networking Break**
- 3D 3:45pm FOGISEW: Modeling FOG Deposit Formation in Sewer Collection System**  
Roya Yousefelahiyeh, Christopher Cyril Sandeep Dominic, Joel Ducoste, North Carolina State University
- 3E 4:15pm The War of FOG**  
Wayne H. Ludwig, Washington Suburban Sanitary Commission
- Alternate 1 Sewer Siphons and Odor Control: A Practical Approach**  
Rebecca Musk, David Bennett, Freese and Nichols, Inc
- Alternate 2 Tractive Force Analysis for Grit**  
Kevin Enfinger, ADS Environmental Services; L. B. Curry, Johnson, Mirmiran & Thompson

## TECHNICAL PROGRAM

### Session 4: Lessons Learned

Thursday, March 13, 2014

8:30 am - 10:00am

1.5 PDHs

- 4A**      **8:30am**      **Lessons Learned from Construction Challenges Associated with Installing Sewers in Bedrock - Case Study for Rockland County Sewer District No. 1**  
Robert Butterworth, Mark E. Choroser, GHD Consulting Services Inc.
- 4B**      **9:00am**      **Repurposing Abandoned Infrastructure: (Nearly) Trenchless Parallel Force Main Design and Construction**  
Justin Peterson, Steve Walters, NV5, Inc.; Barry Hogue, Town of Corte Madera
- 4C**      **9:30am**      **Hoboken Wood Sewer Rehabilitation**  
Kevin P. Wynn, Hatch Mott MacDonald
- Alternate 1**      **Design, Specification, Implementation and Operation of a 128 MGD Bypass Piping System for Large Pipeline Replacement**  
Ben Asavakarín, Paul C. Deardorff, Johnson Mirmiran & Thompson; Wazir Qadri, Tonorah Houston-Burgee, City of Baltimore

## TECHNICAL PROGRAM

### Session 5: Potpourri

Thursday, March 13, 2014

8:30 am - 11:45am

2.5 PDHs

- 5A 8:30am Technology Demonstration: Acoustic Condition**  
Daniel J. Murray, US Environmental Protection Agency; Gary Skipper, Brown and Caldwell; Jerry Weimer, Metropolitan Sewer District of Greater Cincinnati
- 5B 9:00am Effect Of Source And Environmental Factors on Properties and Kinetics of Fog Deposits in Sewer Collection Systems**  
Most. Mahbuba Iasmin, Joel Ducoste, North Carolina State University
- 5C 9:30am When the Arrow Doesn't Miss the Artery: Repairing a 100-Year-Old Interceptor with a Steel Pile Driven Through It**  
Derek L. Morin, Johnson, Mirmiran and Thompson, Inc.; George Mwangi, City of Baltimore
- 10:00sm Networking Break**
- 5D 10:45am A Comprehensive Approach to Improving Interceptor Sewers within the City of Baltimore's Herring Run Sewershed**  
Nathan Atkinson, URS Corporation; Wazir Qadri, George Mwangi, City of Baltimore
- 5E 11:15am Bloomingdale and LeDroit Park Neighborhood Flooding: Providing A Fast-tracked, Multi-pronged Response for Short-term Flood Mitigation**  
Jennifer M. Howells, ARCADIS; Jodye Russell, DC Water
- Alternate 1 Danger Southerly Wastewater Treatment Center! An Early Warning System may Save The Plant**  
Scott E. Belz, URS Corporation; Denis Zaharija, Karen Sokolow, Northeast Ohio Regional Sewer District; Juan Stein, Sigma Associates, Inc.; Costas Kontos, URS Corporation
- Alternate 2 Off to the Races! Don't Let the Daunting Task of Modeling a Collection System during a \$4.7 Billion Water Quality Initiative Make You Crabby!**  
Angela G. Martin, Jennifer C. Welsch, Metropolitan St. Louis Sewer District

## TECHNICAL PROGRAM

### Session 6: Wet Weather

Thursday, March 13, 2014

8:30 am - 11:45am

2.5 PDHs

**6A 8:30am Development of Regional Design Storms that are Representative of the Historical Climate and Projected Climate Change**  
Baxter E. Vieux, Jean E. Vieux, Vieux & Associates

**6B 9:00am Pilot Testing of BIOACTIFLOTM for Wet Weather Treatment at the Akron, Ohio Water Pollution Control Station**  
Gregory Heath, AECOM; Patrick Gsellman, Genny Hanna, City of Akron; Daniel Starkey, AECOM

**6C 9:30am The Scope of I/I in Tennessee - Quantifying the Problem Using Public Records**  
George E. Kurz, Consulting Engineer; Robert O'Dette, Tennessee Dept. of Environment & Conservation

**10:00am Networking Break**

**6D 10:45am CSO Post-Construction Monitoring: The Theory and Practice of Achieving Performance Criteria**  
Christopher J. Ranck, ARCADIS; Mark Jacob, Ann McIver, Jamie Dillard, Mark Vogler, Citizens Energy Group; Sarah Rutkowski, ARCADIS; Stephen M. Rowe, RW Armstrong

**6E 11:15am Alleviating SSO/CSOs - Real Solutions for Real Problems**  
James Crow, Burt Curry, JMT; Pat Coxon, City of Bremerton; John Holloway, Little Rock Wastewater

**Alternate 1 The Art of Formulating Wet Weather Solutions: A Screening Tool Companion to the Calibrated Hampton Roads Regional Hydraulic Model**  
Phillip L. Hubbard, Hampton Roads Sanit Dist.; Michael C. Morgan, Charles I. Moore, CDM Smith; Robert J. Martz, Hampton Roads Sanit. Dist.; Matthias Wittenberg, CDM Smith

**Alternate 2 One Size Storm Does Not Fit All: Development of a Wet Weather SSO Elimination Plan for the City of Baltimore using Continuous Model Simulation**  
Jeffrey S. Pelletier, MWH; Wazir Qadri, City of Baltimore



## TECHNICAL PROGRAM

### Session 7: Lateral Rehab

Thursday, March 13, 2014

10:45 am - 11:45am

1.0 PDHs

- 7A**      **10:45am**      **Private Service Lateral Rehabilitation Design Challenges: Johnson County Wastewater Nelson Pilot I/I Project**  
Waldo A. Margheim, George Downs, George Butler Associates; Dan Ott, Johnson County Wastewater
- 7B**      **11:15am**      **Pilot Uncharted Territory: Exploring Methods for Detecting Inflow and Infiltration From Private Sewer Laterals**  
Daniel P. Maas, Mike Hess, Brown and Caldwell; Phil Hubbard, Hampton Roads Sanitation District
- Alternate 1**      **The Lateral Inspection Program: Getting the Knowledge and Responsibility Flowing in the Right Direction**  
Marci Davis, Jacobs Engineering; Jeff Boss, Gwinnett County Department of Water Resources
- Alternate 2**      **Voluntary Private Sector I/I Removal: A Successful Public Communication Program**  
Waldo Margheim, George Butler Associates; Wayne Miller, CH2M Hill; Ron Thomann, TREKK Design Group; Dan Ott, Johnson County Wastewater

## TECHNICAL PROGRAM

### Session 8: Regulatory

Thursday, March 13, 2014

1:30pm - 3:00pm

1.5 PDHs

- 8A 1:30pm Eight Circuit Vacates EPA's Illegal Rules Prohibiting Blending and Bacteria Mixing Zones**  
John C. Hall, Gary B. Cohen, Philip D. Rosenman,  
Keisha M. Sedlacek, Hall & Associates
- 8B 2:00pm Saving Peach Lake: A Fast Tracked Solution That Convinced Hundreds of Residents, two Municipalities, New York City and New York State Regulators**  
Sarah Cwikla, GHD Inc
- 8C 2:30pm A Statewide Assessment of Infiltration and Inflow in Municipal Collection Systems in Maryland**  
Duane A. Wilding, Ellen Frketic, Luke Page, Tracy Jackson, Maryland Environmental Service
- Alternate 1 Is Bigger Always Better? Studying the Impacts of Wastewater System Regionalization**  
Christopher D. Wilson, Brown and Caldwell; Phil Hubbard, Hampton Roads Sanitation District
- Alternate 2 The Role of NPDES Permits in EPA's Integrated Planning Effort**  
Kevin J. Weiss, US Environmental Protection Agency

## TECHNICAL PROGRAM

### Session 9: Design and Construction

Thursday, March 13, 2014

1:30pm - 3:00pm

1.5 PDHs

- 9A**      **1:30pm**      **CSO 041 Siphon: Proper Planning Eliminates Constructability Issues and Reduces Construction Costs**  
Jeremy Schmitt, Karen Saavedra, American Structurepoint, Inc.
- 9B**      **2:00pm**      **Unique Solution: Bending Weir Solves Overflow and Basement Flooding Problem**  
Elizabeth Ehret, MS Consultants Inc; Hazem Gheith, ARCADIS
- 9C**      **2:30pm**      **Small Bore Sewer System in Developing Countries: Challenges Solved**  
Hatem A. Fadel, Misr Higher Institute for Engineering and Technology
- Alternate 1**      **Integrated CSO/Wastewater Planning and Engineer/Constructor Partnering Provides Best Value for St. Joseph Effluent Force Main**  
Matt Schultze, Black & Veatch
- Alternate 2**      **New Stormwater Management Strategies**  
James S. Talian, City of Lynchburg, VA

## TECHNICAL PROGRAM

### Session 10: The Integrated Planning Framework

Thursday, March 13, 2014

1:30pm - 3:00pm

1.5 PDHs

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|--------------------|---------------|---|
| <b>10A</b>         | <b>1:30pm</b> | <b>The US EPA's Integrated Planning Framework</b><br>Mark Pollins, US Environmental Protection Agency                               |
| <b>10B</b>         | <b>2:00pm</b> | <b>An Introduction to Baltimore's IPF Approach</b><br>Rudy Chow, Art Shapiro, City of Baltimore                                     |
| <b>10C</b>         | <b>2:30pm</b> | <b>Blueprint Columbus: Leveraging Consent Order Commitments to Enhance Neighborhoods</b><br>Susan E. Ashbrook, City of Columbus     |
| <b>Alternate 1</b> |               | <b>City of Seattle, Seattle Public Utilities Integrated Plan</b><br>Kevin Buckley, City of Seattle; Michael Milne, Brown & Caldwell |

## TECHNICAL PROGRAM

### Session 11: Rough Currents of the Chesapeake: A Wave of Solutions

Friday, March 14, 2014

8:30am - 11:45am

2.5 PDHs

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|-----|---------|---|
| 11A | 8:30am  | <b>Regionalization</b><br>Phil Hubbard, Hampton Roads Sanitation District   |
| 11B | 9:00am  | <b>O&amp;M: Recovery after the Event</b><br>Steve Motley, City of Virginia Beach  |
| 11C | 9:30am  | <b>Asset Management</b><br>Calvin Farr, Washington Suburban Sanitary Commission   |
|     | 10:00am | <b>Networking Break</b>   |
| 11D | 10:15am | <b>After the Consent Decree – The Burgeoning Private Asset Dilemma</b><br>Tracy Surles, New Castle County   |
| 11E | 10:45am | <b>The Use of Tunnels in meeting CWA requirements</b><br>Carlton Ray, DC Water  |
| 11F | 11:15   | <b>The Water Resources Utility of the Future How it will Affect the Collection System Managers of the 21st Century</b><br>Matt Ries, Water Environment Federation |

## TECHNICAL PROGRAM

### Session 12: Affordability and Capital Planning

Friday, March 14, 2014

8:30am - 10:00am

1.5 PDHs

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| 12A         | 8:30am | <b>Maximizing your Budget Impact - Optimized Staging</b><br>Jeff Frey, Joel Wilson, Optimatics; Patrick Henthorn, Gary Gilot, South Bend Public Works  |
| 12B         | 9:00am | <b>An Optimization Planning Framework for Cost-Effective Wet-Weather Planning</b><br>Mason Throneburg, Paul Amico, CH2M HILL; Mike Labitzke, Evansville Water and Sewer Utility  |
| 12C         | 9:30am | <b>An Innovative I/I Reduction Framework: Using "Archetypes" To Establish Sewer Rehabilitation Works and Estimate I/I Reduction.</b><br>Andrew Boyland, Kerr Wood Leidal Associates Ltd.; Malcolm Cowley, James McAloon, Capital Regional District |
| Alternate 1 |        | <b>Effective uses of Flow Monitoring and Hydraulic Model for Sewer Improvement Planning and Effectiveness Verification</b><br>Masatsugu Takamatsu, Thomas Newman, HDR/HydroQual Inc  |
| Alternate 2 |        | <b>No Taxation without Rehabilitation - Minimizing Costs while Avoiding SSOs</b><br>Dan Ruby, Chris Wilson, Carlos Toro, Richard Stahr, Andy Lukas, Brown and Caldwell; Phil Hubbard, Hampton Roads Sanitation District                            |

## TECHNICAL PROGRAM

### Session 13: Condition Assessment

Friday, March 14, 2014

8:30am - 11:45am

2.5 PDHs

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|-------------|---------|---|
| 13A         | 8:30am  | <b>Sewer Rehabilitation Project Results in</b><br>Charles Starling, ARCADIS; Stacy Hayden, Emerald Coast Utilities Authority; Eric Harold, Larry Greathouse, Justin Midgett, ARCADIS  |
| 13B         | 9:00am  | <b>Waterford, Michigan's Trenchless Rehabilitation Program: An Ounce of Maintenance is Worth a Pound of Restoration</b><br>William Fritz, Waterford Township  |
| 13C         | 9:30am  | <b>Non Destructive Evaluation Integrity Testing of 30-inch Prestressed Concrete Cylinder Pipe Force Main</b><br>Dan Keck, Jason Garz, Hatch Mott MacDonald  |
|             | 10:00am | <b>Networking Break</b>   |
| 13D         | 10:15am | <b>Problem-based Prioritization for Effective I/I Management Knowing When to Say 'go' on Rehab</b><br>Kristen Buell, ARCADIS; Roger Hanas, Citizens Energy Group; Chris Ranck, Tina Wolff, ARCADIS                                |
| 13E         | 10:45am | <b>Using a Hydrogen Sulfide Monitoring Program to Assess Corrosion Risk in Interceptor Sewer System Assets</b><br>Gina Serge, Mark Feltner, Hampton Roads Sanit Dist.; Erin Culbertson, Dan Porter, Brown and Caldwell            |
| 13F         | 11:15am | <b>Using Acoustic Inspections to Prioritize Sewer Cleaning: Test Results from Baltimore County's Pilot Study</b><br>Thomas Kiefer, Baltimore County DPW; Paul Sayan, Louis Berger Water Services; George Selembo, InfoSense, Inc. |
| Alternate 1 |         | <b>You Can Get The Flow Out: A Case Study That</b><br>Ned Mitrovich, Timothy D. Brett, Lennon, Smith, Souleret Engineering, Inc.  |

## TECHNICAL PROGRAM

### Session 14: Flow Data Assessment

Friday, March 14, 2014

10:15am - 11:45am

1.5 PDHs

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| 14A         | 10:15am | <b>Implementing An Effective Remote Manhole Level Monitoring Network</b><br>Justin Waples, Central Contra Costa Sanitary District   |
| 14B         | 10:45am | <b>Should the Meters Stay or Should They Go? How Important is Capturing the Big Storm to I/I Analysis Results?</b><br>Julie M. Trick, Johnson, Mirmiran and Thompson, Inc.; David Bayer, Baltimore County; David A. Berry, Johnson, Mirmiran and Thompson, Inc. |
| 14C         | 11:15am | <b>Do You Have Difficulty Calibrating Dry Days in Your Model? Could be Dirty Deeds Done by Dead Dogs</b><br>Patrick L. Stevens, ADS Environmental Services  |
| Alternate 1 |         | <b>Know Your Flows - Using Flow Monitoring Data for CSO Reduction and Management</b><br>Ranya Sherif, Louis Julien, City of Ottawa  |
| Alternate 2 |         | <b>Calibration and Validation of a Large Sewer System Model for Continuous Simulation</b><br>Li Zhang, CDM Smith; Fang Cheng, Gregory R. Barden, Robert C. Herr, City of Columbus; Edward H. Burgess, CDM Smith   |