2017 Annual Meeting, New York City, New York | February 6–8, 2017, Marriott Marquis

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<tr>
<td>8:30 am</td>
<td>Welcome – Joseph L. Fiegl, NYWEA President</td>
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<tr>
<td>8:45 am</td>
<td>Keynote Address – Author Elizabeth Royte</td>
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<td>9:00 am</td>
<td>Elizabeth Royte is an American science/nature writer. She is more familiar with what happens at a water resource recovery utility than most people, and has an interesting perspective on it that we can all learn from. She is best known for her books Garbage Land (a New York Times Notable Book of the Year 2005), and Bottlemania: How Water Went on Sale and Why We Bought It (a Top 10 book of 2008 in Entertainment Weekly, Seed, and Plenty magazines).</td>
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<tr>
<td>9:30 am</td>
<td>NYWEA's Messaging Document Video Roll Out to Help Shape the Future of Water Resource Recovery Khris Dodson, Chair, Public Outreach Committee</td>
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**Session 1: Protecting and Enhancing Modern Society**

Contact Hours: 1.5 Wastewater (PDH and Water Hours Pending)

**Moderators**
Mike Manning, O’Brien & Gere; Adam Cummings, Barton & Loguidice

**1:30 pm** A Vision for Longterm Resiliency in Upstate New York: The Margaretville Gateway Project Russ Dudley, Cynthia Addonizio-Bianco, John Mizerak, Tetra Tech Following widespread devastation caused by Hurricanes Lee and Irene, the Village of Margaretville in upstate New York utilized federal CDBG-DR funds as part of the NY Rising Community Reconstruction Program to create a resilience plan. A two-dimensional hydraulic model was developed to represent flood conditions through the downtown area which was used to evaluate potential mitigation projects. This analysis was coupled with economic, transportation, and livability considerations to develop a long term vision for the Village.

**2:00 pm** A Vision for Integrated Water Management in New York City Wendy Broley, Lynn Stephens, Brown and Caldwell; Vlada Kenniff, NYC DEP; John Albert, Water Research Foundation College campuses can integrate dairy farm waste and food waste to utilize anaerobic digestion as an effective waste management and energy production strategy. Co-digesting high strength food waste and dairy manure can promote unique partnerships between universities, farms and food production facilities. The design of a stand-alone high strength waste anaerobic digester presents unique challenges. This presentation documents the feasibility and preliminary design of a high strength waste anaerobic digester facility at two universities.

**2:30 pm** Coffee Break in Exhibit Hall

**3:30 pm** Asset Management Program for New York City Department of Environmental Protection Joanne Guerriero, Celine Hyer, Greg Osthues, ARCADIS; Jason Galea, NYC DEP The Ithaca Area Wastewater Treatment Plant (WWTP) has a goal of energy neutrality and has completed a series of projects in the last five years aimed at maximizing biogas production and utilization. Biogas production has exceeded 5.0 million cubic feet in several months, and electrical generation is consistently above 150,000 kWh per month. In one recent month the WWTP produced more electrical energy than it consumed, which is the long-term goal of the plant.
With the global population expected to reach 10 billion by 2050, the need to provide fresh water, power and food to sustain this population becomes increasingly urgent, and the key to sustain this population is grounded in water resource reclamation facilities. Historically we have focused solely on improving water quality, however today, we must reclaim water, produce Class A biosolids, generate power and recover nutrients. This work is critical to the survival of the planet.

**Monday, February 6, 2017**

**Session 2**

**Nutrients I**

**Contact Hours:** 2.0 Wastewater  (PDH and Water Hours Pending)

**Moderators**

Rob Ganley, O’Brien & Gere; Lisa Derrigan, GHD

**1:30 pm**

Reducing N & P discharges from a Unique Fixed Film Plant with Ingenuity and Careful Operations

Paul Dombrowski, Cory Knick, Woodard & Curran; Roger Ignazio, Jr., Town of Canton, Connecticut

The Canton WPCF consists of a myriad of unit processes designed to provide advanced secondary treatment, but not to achieve nutrient removal. Through a series of modest upgrades, mostly completed by WPCF staff, and systematic process control, the plant has been able to reduce effluent phosphorus below permit limits and nitrogen discharges by more than 50 percent, resulting in a 64 percent reduction of projected nitrogen credit purchase costs for CY2015.

**2:00 pm**

Function and Performance of Nitrogen Removing Biofilters

Harold Walker, Christopher Gobler, Jennifer Garvey, Roy Price, Stony Brook University

This presentation will provide an overview of the history, form and function of Nitrogen Removing Biofilters (NRBs) and recent efforts by the Center for Clean Water Technology to further develop this technology. The presentation will focus on new results elucidating the microbial ecology of NRBs and the diversity of microbial function. We will also discuss the performance of these systems in terms of both traditional water quality parameters and contaminants of emerging concern.

**2:30 pm**

Coffee Break in Exhibit Hall

**3:30 pm**

Fix It with Fixed Film: The Details of IFAS/MBBR Design and Construction

Kristin Waller, Bill Meinert, Ned Talbot, Mike Manning, O’Brien & Gere

This presentation will review the typical details and recommendations for the design and construction of Integrated Fixed Film Activated Sludge (IFAS) and Moving Bed Biofilm Reactor (MBBR) systems. The presentation will include the overview and comparison of three different projects at three different municipalities (ADFs: 3 MGD, 4 MGD [Olean, NY], 17 MGD), each with their own distinct objectives and challenges.

**4:00 pm**

Satisfying Performance Goals and Beyond – Suffolk County Sewer District No. 21 Treatment Plant

Lars Augustin, Stephen Hadjiyane, Gannett Fleming Engineers PC

SCDPW completed the Sewer District No. 21 WWTP upgrades at SUNY Stony Brook Campus. Process modeling was completed to determine the nitrogen removal achievable to meet the new permit limits with bio-reactor modifications (oxidation ditch) and addition of denitrification. The nitrogen removal performance exceeded the modeling simulations. The overall system has exceeded performance expectations. The process has achieved nitrogen reduction below limits of technology with low methanol consumption resulting in a cost efficient process.
Monday, February 6, 2017

Session 3

BioGas Applications and Public-Private-Partnerships for Resource Recovery

Contact Hours: 2.0 Wastewater (PDH and Water Hours Pending)

Moderators
Wendi Richards, Siewert Equipment; Donna Hager, Macan Deve Engineers, DPC

1:30 pm
Biogas – Efficiency through New Technologies
Eric Wilgenbusch, Unison Solutions
Biogas is no longer considered waste, but a valued commodity. Emerging technologies are bringing more cost effective solutions to traditional gas conditioning equipment, including H2S and CO2 removal systems. Case studies will be presented how sites have capitalized on these technologies to see savings on the operation and maintenance of the equipment.

2:00 pm
Digestion Biogas Use in Combined Heat and Power and/or Biogas Purification: How to Choose?
Todd Williams, CH2M
This presentation will provide examples of North American case studies where co-digestion systems were installed with CHP and where BPU systems were installed to augment CHP systems to provide flexibility to the utility to choose which system is operated depending on changing local market conditions.

2:30 pm
Coffee Break in Exhibit Hall

3:30 pm
A Public-Private Plant for Energy Neutrality
Jay Lovelass, Greeley and Hansen LLC; Andy Kricun, Camden County Municipal Utility Authority (CCMUA)
This presentation will discuss the progress towards the goal of energy neutrality by a 80 MGD wastewater treatment plant by conceiving and implementing a design, build, own, operate and maintain program for developing an anaerobic sludge digestion plant with combined heat and power through a public-private plan. The viability, lessons learned and the benefits of this new operational facility will be discussed.

4:00 pm
Myth Busted: Resource Recovery Can Happen at Small Wastewater Plants!
George Bevington, Gerhardt, LLC; Robert Wimmer, Energy Systems Group
The Mythbusters® take nothing for granted and assume that nothing is true unless it has been tested. For many years the myth in the Resource Recovery Field has been that RRFs with a flow of less than 5 MGD cannot become net energy neutral and are not even capable of generating any power due to their size and the costs of capital investment. An ongoing project at the Niskayuna WWTP (3 MGD average design flow) and at a second facility (1 MGD average design flow) have proven that this is a myth that is busted.

Monday, February 6, 2017

Session 4

Collection Systems and Distribution

Contact Hours: 2.0 Wastewater (PDH and Water Hours Pending)

Moderators
Jeff Butler, D&B Engineers & Architects; David Railsback, Schnabel Engineering

1:30 pm
Finding Inflow – A Public-Private Success Story
Justin deMello, Woodard & Curran
This presentation will explain how the City of Lawrence investigated, negotiated and abated two inflow sources contributing more than 8 MGD of dry-weather sanitary flow while navigating complicated, politically charged discussions with multiple private stakeholders. The City overcame a 40 year old design flaw and initiated discussions to revisit a 40 year old agreement that had the poorest community in Massachusetts on track for skyrocketing sewer fees.
2:00 pm  Tunneling Applications in the Water and Wastewater Industry  
David Chapman, George Teetes, Matt Koziol, Schnabel Engineering
This presentation is an overview of tunneling methods and terminology, specific to water and wastewater applications. We will review relevant technology for small and large diameter tunnels, including trenchless methods such as microtunneling, bore and jack, and horizontal directional drilling (HDD). We will also highlight geotechnical considerations that impact the selection of a tunneling method and tunnel lining type. Specific project references will be discussed, including the DC Clean Rivers Project in Washington, D.C.

2:30 pm  Coffee Break in Exhibit Hall

3:00 pm  An Economical, Low-Impact Wastewater Collection System  
Julie Barown, Orenco Systems, Inc.
Residents and government officials near Vero Beach, Florida (population approximately 15,750), were concerned that nutrient runoff into the Indian River Lagoon was connected to a loss of sea grass habitat and the unexplained deaths of marine life in the lagoon. Approximately 1,500 homes in the area had septic systems, many of which were antiquated and failing. Experts believed these systems were contributing to the environmental degradation of the lagoon and its wildlife habitat.

4:00 pm  Happy Pumps and Self-Cleaning Wetwells: Nashville's Whites Creek Pumping Station Makes a Difference  
Doug Yarosz, Brown and Caldwell; Phil Regen, Nashville Metro Water Services
Nashville's 50 MGD Whites Creek Pumping Station (WCPS) has eliminated sewer overflows to Whites Creek since it replaced the existing undersized station nearly three years ago. Key features include self-cleaning trench-type wetwells and dry-pit submersible pumps with separate duty and wet weather pumping systems to accommodate widely varying influent flows. This is one of those rare projects with tangible and celebrated community and environmental benefits. It’s a reminder of why we do what we do.

Monday, February 6, 2017

Session 5  Regulatory Developments on Water Quality
Contact Hours: 1.0 Wastewater (PDH and Water Hours Pending)

Moderators  
Doug Daley, SUNY-ESF; Drew Smith, Monroe County

1:30 pm  Water-Related Court Decisions and Other Water Related Legislative and Regulatory Developments  
Libby Ford, Nixon Peabody LLP
One of the greatest challenges facing wastewater dischargers and design professionals is staying abreast of the new/emerging compliance requirements and integrating them into their wastewater/stormwater management operations and their longer term compliance and construction planning efforts. Increasingly, courts are making decisions which can change a discharger’s responsibilities. This talk will provide an update on new/pending court decisions that may have a significant impact on wastewater and stormwater system design, construction and system management.

2:00 pm  The Lead Copper Rule Primer  
Charles C. Martorana, Barclay Damon, LLP
In the wake of the crisis in public water systems, this presentation will provide an overview of the USEPA's Lead Copper Rule and the Reduction of Lead in Drinking Water Act, and compliance requirements for community water systems in New York State. In addition, the presentation will discuss the newly enacted New York State Potable Water Testing and Standards in Schools Act, and financial resources available for public entities to improve water quality and infrastructure.

2:30 pm  Coffee Break in Exhibit Hall
New Rules for Superfund Remediation Sites Treating Contaminated Groundwater, Sediment, and Soil
Phyllis Diosey, Hazen and Sawyer
The USEPA has proposed new regulations for remediation sites with contaminated groundwater, sediment, and soil under NESHAPS 40 CFR 63 Subpart GGGGG (National Emissions Standards for Hazardous Air Pollutants: Site Remediation), including removing the previous exemption for Superfund remediation sites from the applicability. The potential implications and impacts of these proposed changes in federal requirements for site remediation activities under the new rules will be discussed.

USEPA’s Pursuit of New Ambient Water Quality Criteria for Bacteriophage: What it means to you and your WRRF
Brian Hilts, CDM Smith
The USEPA is developing new ambient water quality criteria based upon viral indicators (bacteriophage) rather than bacterial indicators (E. coli or enterococci). Bacteriophage have different dose responses to disinfectants than bacterial indicators, which may require municipalities to reevaluate their WRRF disinfection processes. This presentation will discuss the current and proposed AWQC, the timeline for the USEPA’s development of the new AWQC, laboratory impacts, potential effluent permit impacts, and how common disinfection technologies perform on bacteriophages.

Monday, February 6, 2017
Session 6 Residuals and Biosolids
Contact Hours: 2.0 Wastewater (PDH and Water Hours Pending)

Moderators Camie Jarrell, GHD; Pete Radosta, Koester Associates

1:30 pm The Newtown Creek Gravity Belt Thickener Pilot: Capturing Solids & Savings
Bryan Atieh, Paul Saurer, Hazen and Sawyer; Shanna Palmer, Yuklong Ma, NYC DEP
Centrifuges are used for biosolids thickening at the NYC DEP’s Newtown Creek WWTP. However, the centrifuge operation does not provide consistent process performance, is energy intensive, and has relatively high operation and maintenance requirements. A study determined that Gravity Belt Thickeners (GBTs) could offer O&M and economic benefits compared to the centrifuges. A GBT is currently being pilot tested alongside the existing centrifuges. The results will be used for enhancing system sustainability through NYC DEP’s capital program.

2:00 pm Impact of Codigestion on Treatment Plant Operations – Experience at Five WRRFs in New York, Texas, and California
Mark Greene, O’Brien & Gere; Ron Appleton, Carollo Engineers
Operation, performance data and maintenance experience were investigated at five municipal codigestion plants with a range of capacities between 10 and 88 mgd. The types of HSW accepted included fats, oils and grease; acid whey from Greek yogurt manufacturing; cheese whey; food processing waste; and animal blood. Some of the plants had nitrogen and phosphorus discharge limits. Different trucked waste receiving facilities are described along with different digester configurations, biogas storage and biogas conditioning processes.

2:30 pm Coffee Break in Exhibit Hall

Kyriacos Pierides, Amay Associates
Enhanced anaerobic digestion is now the process to improve biogas production, with the sludge thermal hydrolysis process (THP) being the most effective pre-treatment. Thermal conditioning is more than 50 years old, and only recently the process has been used effectively. This presentation will review lessons learned from the past (Porteous and Zimpro), improvements made at present (Cambi™, and Rapid Thermal Conditioning) and greater improvements expected in the future (Exelys™) on THP.
4:00 pm  
Polymer Chemistry and Strategies for Optimizing Activation  
Anthony Karalis, ProMinent Fluid Controls, Inc.  
Focus on polymer chemistry and activation as relates to optimizing performance in clarification and sludge dewatering. Factors that influence activation will be considered, including polymer physical characteristics, polymer storage and handling, dilution water quality, and mixing technologies.

**Tuesday, February 7, 2017**

**Session 7**

**Manufacturers Forum 1**

**Contact Hours:** 2.0 Wastewater (PDH and Water Hours Pending)

**Moderators**  
Peter Pastore, GA Fleet Associates; Stephen Rozewski, Bendlin Incorporated

**9:00 am**  
Life Cycle Costs (LCC) of Wastewater Pumping Systems  
Kristel Zaman, Johanna Johanson, Xylem, Inc.  
When investing in a pumping system, there is tendency to focus on the initial capital investment at the expense of other factors that could dramatically reduce running costs and improve performance. One way to get more accurate picture of the “true cost” over time is using Life Cycle Cost calculation, considering aspects specific to wastewater pumping. Utilize LCC model proven by Hydraulic Institute, clear view of energy consumption and indirectly CO2 emissions reduction.

**9:30 am**  
Best Practices for BNR Mixing  
James Fischer, Xylem Water Solutions  
Mixing practices for biological nutrient removal have advanced to new levels. Demands for energy-savings and flexibility have driven new developments enabling successful mixing with less energy and more flexibility than ever before. The five main goals of mixing in BNR 1) Preventing settling, 2) Preventing short-circuiting of inflows, 3) Forcing strong contact between microbes and wastewater, 4) Minimizing energy consumption, and 5) Maximizing process flexibility. This talk will cover established and new best-practices to achieve all of these goals.

**10:00 am**  
Coffee Break in Exhibit Hall

**11:00 am**  
Mobile Pump Station Control Solutions  
Rick Grambo, Pritchard Brown, LLC  
This presentation will cover the FEMA-recommended practice of locating wastewater pump controls and standby power equipment in a custom, transportable enclosure, thus allowing the station operator to safely move critical and expensive equipment prior to flooding in a weather event. After the event, the system is safely moved back into place, saving both time and money for the operators. Several case studies will be presented, as well as information on relative cost, aesthetics and scalability.

**11:30 am**  
FOG and Odor Control in Collection and Wastewater Treatment Systems Using Bioaugmentation  
Jay Hill, Bioscience, Inc  
Bioaugmentation can be effectively utilized to control and reduce fat, oil and grease (FOG) as well as odors (H2S) in wastewater conveyance and treatment systems. FOG control can be achieved with bioaugmentation using specialized microbial formulations and delivery systems. Odor (H2S) reduction is accomplished using specific microbial strains in wastewater collection systems and in solids processing at wastewater treatment plants. Data will be presented with the results of field applications and case studies using bioaugmentation.
Tuesday, February 7, 2017

Session 8
Combined Sewer Overflows, Water Quality and Public Education: Connecting the Drops
(Developed by the Public Education Committee)

Contact Hours: 1.5 Wastewater§ (PDH and Water Hours Pending)

Moderators
Khris Dodson, Environmental Finance Center; Mark Supplee, CH2M

9:00 am Encouraging the Public to Wait: A Pilot Program to Improve Water Quality in New York City§
Erin Morey, Vlada Kenniff, NYC DEP

The New York City Department of Environmental Protection launched “Wait…” in May 2016, a technology and data-based water quality improvement pilot program that encourages voluntary reduction of discretionary water uses in residential buildings during combined sewer overflow (CSO) events. The goals are to increase capacity in the city’s combined sewer system during large storm events, reduce the concentration of wastewater in CSOs, and to broadly engage and educate the New York City community.

9:30 am Onondaga County Connect the Drops: Floatable Control through Source Control and Public Outreach
Madison Quinn, Onondaga County Dept. of Water Environment Protection

“Connect the Drops” is a robust educational campaign to familiarize people with the connection between littering, stormwater, and local water quality in Onondaga Lake and its tributaries. “Drops” speaks to both raindrops and the act of dropping litter in public – and the connection between those drops and water quality. Complementing Onondaga County’s efforts to controls litter at the source, Connect the Drops encourages positive change among citizens whose daily choices can impact water quality.

10:00 am Coffee Break in Exhibit Hall

11:00 am A Web Application for Real Time Public Notification of CSOs in New Jersey§
Thomas Newman, Chenchen Li, Eric Ivanovich, HDR; Bridget McKenna, PVSC

Starting on July 1, 2016, a web application has been in place to provide the public with real-time notification regarding where CSOs may be occurring from 15 permitted collection systems in northern New Jersey. This presentation will provide a guided tour of the web application's features and functionality, a look into the novel approach used to develop predictive rule curves based on the existing collection system models, and lessons learned, potential improvements, and alternative approaches.

11:30 am Sewage Right to Know Law and Low Cost Overflow Monitoring§
John LaGorga, GHD

Municipalities with permitted combined sewer overflows (CSOs) are now required to report CSOs within two hours. The NYS DEC acknowledges CSO Activation Detection Devices as a method to monitor CSOs. Such a device is a motion detection system that can be installed on top of a CSO weir. The device can record the occurrence of a CSO event that can be reported to the NYS DEC. The cost of the equipment and software was approximately $300 (2016).
Session 9
Tuesday, February 7, 2017
Asset Management
Contact Hours: 2.0 Wastewater (PDH and Water Hours Pending)

Moderators
Nancy Struzenski, Alpha Analytical, Inc.; Michael Paterno, VRX, Inc.

9:00 am
Optimizing Capital Investment in Infrastructure through Assessment
Jeffrey Zdrojewski, David Smith, Pure Technologies U.S. Inc.
Condition assessment is a critical step in the asset management process. It is the point at which problems and challenges are understood and crystallize into definite plans, both operational and financial. If a condition assessment program is properly approached it will reduce a utility’s risk and optimize capital expenditures.

9:30 am
A Pilot Approach to Developing an Asset Management Program for Westchester County
Suman Bopaiah, ARCADIS; Michael Coley, Anthony Della Valle, Westchester County Department of Environmental Facilities; Mert Muftugil, GHD Consulting Services, Inc.
The Westchester County Department of Environmental Facilities oversees the operations of water, wastewater, and solid waste services to approximately 972,000 customers in Westchester County, NY. The County is developing a pilot Asset Management Program at the Port Chester and Blind Brook Water Resource Recovery Facilities (WRRF) intending to expand the program to the remaining Department facilities. The goal is to develop a long-term, cost-effective asset replacement planning and prioritization program.

10:00 am
Coffee Break in Exhibit Hall

11:00 am
Performing a Facility Wide Asset Replacement Evaluation at Your Desk – A Simplified Approach to Capital Planning
Jean Malafronte, Greeley and Hansen; Steven Pugsley, Philadelphia Water
In the late 1970s/early 1980s, many utilities upgraded their wastewater treatment facilities to include secondary treatment. Now, much of the equipment and facilities are still in operation and approaching the end of their service life. At a certain point, major equipment rehabilitations are no longer possible and replacement must be considered. To understand the major capital expense of replacing facility components plus system improvements, a simplified desktop analysis was performed for Philadelphia Water’s wastewater facilities.

Session 10
Tuesday, February 7, 2017
Operators Forum / Ethics
Contact Hours: 1.0 Wastewater (PDH and Water Hours Pending)

Moderators
Bob Frost, Bob Albright, Hazen and Sawyer

9:00 am
Recycle Rate: Too Much of a Good Thing?
Sean Scuras, Ron Schuyler, Tetra Tech
The rate of return activated sludge recycle (RAS) and internal nitrate recycle (NRCY) are two controls available to the operator of an activated sludge or biological nutrient removal (BNR) process. This presentation provides an understanding of the downside of high recycle rates and the related impacts on the treatment system as well as an explanation on the results of increasing the RAS.
Variable Frequency Motor Control – 30 Years of Lessons Learned
Jeff M Miller, Schneider Electric

What are the best ways to lower pump lifecycle costs? When do I need a bypass starter? When or what harmonic mitigation is needed? What process applications can benefit the most? The misapplication of drive technologies can have significant impacts. This presentation will discuss how to achieve the lowest life cycle costs using current drive technologies while avoiding the consequences of misapplications still commonly being applied today. Information will be of interest to maintenance, engineering and management.

Coffee Break in Exhibit Hall

Engineering Ethics
John Krol, Welby, Brady & Greenblatt, LLP

This lecture provides an analysis of the Code of Ethics of both the National Society of Professional Engineers and the American Society of Civil Engineers with applicable fact patterns based on actual case studies.

Tuesday, February 7, 2017

Session 11 Water Reclamation: Pumping, Grit and Reuse
Contact Hours: 2.0 Wastewater (PDH and Water Hours Pending)

Moderators: Randy Ott, GP Jager Inc.; Bill Nylic, CDM Smith

Replacing the Niagara Falls WRRF Flood – Damaged Main Pumping System
Casey Cowan, GHD; Richard R. Roll, Niagara Falls Water Board (NFWB)

Intense rainfall created surcharging and flooding at the Niagara Falls Water Board's WRRF in July 2013. Vital areas of the plant were damaged, including the main pumping station. Contractors were retained under emergency for repairs, including temporary influent pumps and interim repairs to four 250 HP pumps while a replacement system was planned and installed. The replacement system encountered numerous performance issues during start-up. After several attempts to address the problems, the new magnetic coupling variable speed system was rejected, and was replaced with VFDs to control the main pump speed.

Riverhead Reuse – How to Save an Estuary
Christopher Weiss, Timothy M. Nordberg, Frank M. Russo, H2M architects + engineers

The Town of Riverhead Advanced Wastewater Treatment Facility (AWTF) embraces innovative and environmentally solutions for the overall benefit of the region. Situated on a sole source potable water aquifer and vital ecological estuary, the Town of Riverhead teamed with Suffolk County Parks to be the first on Long Island to develop a wastewater reuse system that belayed fears and concerns, starting the regional movement past the stigma of wastewater reuse.

Grit Facility Improvements – Lessons Learned
Nancy Vigneault, Nancy Vigneault, CDM Smith; Dan Jean, Onondaga County Department of Water Environment Protection

Improvements to the screening and grit facilities at the Metropolitan Syracuse WWTP have been constructed. New influent screens, new grit classifiers, and upgrades to the influent channel to the aerated grit chambers have been constructed and operational for about a year. This presentation will discuss the project’s impacts to operations, maintenance, and safety as well as lessons learned through the design and construction phases.
11:30 am  Importance of Electrical Power Requirements for Critical Main Sewage Pump Systems, Implementation of the New NYC DEP Design Guideline
Brian Goldman, Greeley and Hansen; Li Quan Chen, Anthony Maracic, New York City Department of Environmental Protection
The concerns, reliable plant operations include critical pumping electrical reliability, 24/7 operation and MOPO. The New York City Department of Environmental Protection and Greeley and Hansen collaborated in developing the new Design Guideline for Main Sewage Pump Systems. Issues included the absence of design standards, inconsistency of designs, reliability of the systems, and complex control strategies. The objectives were to implement a design guideline; standardize electrical designs; improved system reliability, and simplify control strategies.

Tuesday, February 7, 2016

Session 12  Young Professionals
Contact Hours:  (Hours Pending)
Moderators  Tucker Cox, CDM Smith; Sarah Hathaway, H2M
9:00 am-11:30 am  Program forthcoming

Tuesday, February 7, 2017

Session 13  Manufacturers Forum 2
Contact Hours:  2.0 Wastewater  (PDH and Water Hours Pending)
Moderators  Will Stradling, Siewert Equipment; Brian Skidmore, Barton & Loguidice
New Solution for Domestic Primary Wastewater Treatment
John Dyson, Mark Hughes, Aqua Aerobic Systems, Inc.
After extensive use in tertiary applications for over two decades, cloth media filtration has now been adapted for primary domestic wastewater treatment. This new solution has emerged as a promising technology due to its proven performance and operational advantages compared to existing treatment processes. Primary filtration offers a small footprint and is capable of treating extremely high solids while providing high quality effluent without the use of chemicals

2:00 pm  Turbo-charged Nutrient Removal and Recovery – Waste Activated Sludge Stripping to Recover Internal Phosphorus (WASSTRIP®)
Michael Ditton, Nate Turner, Ahren Britton, Ostara
As effluent phosphorus limits are becoming more common, plants are considering biological phosphorus removal and phosphorus recovery systems. The WASSTRIP paper discusses the improved impact on digested sludge dewaterability, reduction in dry solids production, and reduction in biosolids phosphorus content. This presentation will help industry professionals understand how WASSTRIP can be the missing link to alleviating EBPR process concerns.

2:30 pm  Coffee Break in Exhibit Hall

3:30 pm  Energy Saving Aeration Control for Nutrient Removal
Sean Scuras, Tetra Tech
The conversion from conventional activated sludge to nutrient removal processes can result in a significant increase in energy consumption. However, our experience shows that if done right, nutrient removal can actually be achieved with energy savings in many cases. This paper highlights the efficiencies gained and energy savings realized through the benefits of denitrification using the Modified Ludzak Ettinger (MLE) process and a unique combination of aeration control strategies.
Eliminate Flaring to Generate Green Energy at Wastewater Treatment Plants
John Fox, Paul Hughes, ElectraTherm
Waste heat to power technology can convert flares to electric power with an attractive payback, while reducing emissions for Wastewater Treatment Plants. ElectraTherm’s Paul Hughes, a 20 year expert in Wastewater Treatment Plant equipment solutions, will speak to ORC technology: how it works, how it fits in wastewater treatment, and how the economics represent a valuable green energy solution for the industry.

Tuesday, February 7, 2017
Session 14
Wet Weather 1
Contact Hours: 2.0 Wastewater (PDH and Water Hours Pending)
Moderators
Elliot Sachs, Boswell Engineering; Tim Wales, Saratoga Springs
1:30 pm
Selection of a Sanitary Sewer Overflow (SSO) Design Condition with Credibility
James Brescol, Tetra Tech
The City of Toledo, OH, has implemented sanitary sewer overflow (SSO) control storage facilities in areas of the system impacted by high quantities of rainfall dependent inflow and infiltration (RDII). These facilities were designed to control SSOs up to a 10-year recurrence interval event. This presentation will review the approach taken for sizing of the two SSO control facilities, the regulatory considerations and post-construction performance results for each facility.

2:00 pm
Implementing In-System Storage in Buffalo, NY: Results and Lessons Learned
Timothy Ruggaber, EmNet, LLC; Oluwale McFoy, Buffalo Sewer Authority; Michael Quinn, GHD
The Buffalo Sewer Authority has completed the construction and startup of its first two inline structure facilities in March 2016. These facilities employ an innovative, triple redundant failsafe design to store and release water in its under-utilized trunklines. The Bird real time control (RTC) site prevented 64 percent of potential overflow volume and 74 percent of overflow events. The Lang RTC site prevented 48 percent of potential overflow volume and 44 percent of overflow events.

2:30 pm
Coffee Break in Exhibit Hall

3:30 pm
A Comparison of Approaches to Develop CSO Pathogen Loading Estimates
Richard Isleib, Jason Cassara, HDR, Inc.; Keith Mahoney, NYC DEP
This presentation will compare several approaches to assigning concentrations to CSO flow, and discuss the relative strengths and weaknesses of each approach. The approaches will include event mean concentration, a mass balance methodology, a Monte Carlo approach, and a hybrid approach. Comparisons will include the ability to reproduce observed CSO concentration data, the magnitude of the pathogen loading, the impact on calibrating to receiving water data, and the effect on compliance with water quality criteria.

4:00 pm
Treating CSOs Naturally with Engineered Wetlands in Onondaga County:
Harbor Brook CSO 018 Constructed Wetland Treatment Facility (A Save the Rain Project)
Zachary Monge, Jim Bays, CH2M; Tom Rhoads, Adam Woodburn, Onondaga County Department of Water Environment Protection
In operation since April 2015, the facility provides significant reduction in total suspended solids, biochemical oxygen demand, ammonia-nitrogen, total phosphorus, and fecal coliform bacteria. The 1.9-acre system is configured as a sequence of three types of wetlands: a pond with floating wetland islands, a vertical downflow subsurface flow media bed, followed by a free water surface wetland. The construction of the system will be described, as will challenges to construction and their successful resolution. Operating scenarios and pilot monitoring results will be described, as will overall facility performance. The pilot monitoring period will end in April 2017, at which time performance optimization recommendations will be made for the long-term use of the facility for CSO treatment.
Tuesday, February 7, 2017

Session 15
Disinfection / Sustainability

Contact Hours: (Hours Pending)

Moderators
Vin Rubino, CH2M; Gerry Mosinski, Rensselaer County Sewer District

1:30 pm
Greener PAAstures: A New Disinfectant That Offers New Opportunities?
Laura Grieco, NYC DEP; Mary Anne Taylor, CDM Smith

New York City Department of Environmental Protection continues to work to achieve State Pollutant Discharge Elimination System permit discharge limits established for their wastewater treatment plants for both fecal coliform and Total Residual Chlorine. For a two-month period, NYC DEP evaluated the ability of a relatively new wastewater disinfectant, peracetic acid (PAA), to achieve existing and anticipated future permit limits for the pathogen indicators fecal coliform and enterococcus at their existing Hunts Point Disinfection pilot facility.

2:00 pm
Developments and Trends in UV Technology for Wastewater Treatment and Reuse
Jamal Awad, GHD

Significant reliability enhancements have been made in UV disinfection technology over the last decade, resulting from better reactor designs and regulatory compliance. Significant advances are in the areas of lamp technology, reactor hydraulics, and multi organism bioassay testing; all of which have improved reactor design and performance.

2:30 pm
Coffee Break in Exhibit Hall

3:30 pm
ENVISIONing the LCA of a Wastewater Treatment Plant
Anjana Kadava, Steve Tarallo, Andrew Shaw, Black & Veatch; Sudhir Murthy, DC Water

The Institute for Sustainable Infrastructure developed Envision rating system that provides a holistic approach to evaluate how “green” a project is. Life cycle assessment (LCA) is another tool that is gaining industry wide acceptance for assessing potential environmental impacts. Together, these two tools were used to show how Blue Plains Advanced Wastewater Treatment Facility acquired enough points to receive the equivalent of a “Bronze award” from Envision in the points assessed using LCA approach.

4:00 pm
Verification of Green Infrastructure Project Sustainability in the Bluebelt Using Envision
Ifetayo Venner, ARCADIS; Sofia Zuberbuhler, NYCCDC

NYCCDC and NYC DEP are making improvements to the Sweetbrook watershed to alleviate flooding during storm events and remove residents from septic systems, improving Staten Island’s resiliency to flooding, ecosystem health, and the quality of life of residents. NYCCDC engaged ARCADIS to use the Institute for Sustainable Infrastructure’s Envision rating system to evaluate the project sustainability. This presentation will describe the project, its sustainability features and the Envision process.

Tuesday, February 7, 2017

Session 16
Resource Recovery

Contact Hours: 2.0 Wastewater (PDH and Water Hours Pending)

Moderators
Mark Greene, O’Brien & Gere Engineers; Lindsay Ostrander, Delaware Engineering

1:30 pm
Closing the Circle: From Food Waste to a Plate near You
Arie Kremen, Cornerstone Environmental Group, LLC

Pigs are omnivores and are not picky eaters, creating opportunities for food waste recycling. In the U.S., the FDA enacted rules for processing hog feed to ensure animal health, food safety, and to be protective of consumers. Creating opportunities for farmers to benefit from the low cost animal feed sourcing. Certain large scale generators produce sufficient quantities of food waste that justify locating hog farms in relative proximity, among them resorts, military installations, correctional institutions, and health care facilities. Additional savings can be realized by utilizing waste heat in processing of the food waste.
2:00 pm  | Balancing Energy and Resource Neutrality in the Transition to Water Resource Recovery
Dimitri Katehis, Shayla Allen, Arcadis; Allen Deur, Mauro Orpianesi, NYC DEP
With GHG emissions associated with electricity generation anticipated to continue to drop, in lieu of energy neutrality, resource neutrality may be a more sustainable goal for water resource recovery facilities to consider. As an example, the economics and sustainability metrics of food waste co-digestion for energy production, is compared with the metrics of fermentation of food scraps for supplemental carbon production and struvite control in New York City’s WWTPs performing Biological Nitrogen Removal.

2:30 pm  | Coffee Break in Exhibit Hall

3:30 pm  | Meeting Stringent Phosphorus Limits and Recovery Goals
Jim Fitzpatrick, Black & Veatch
Conventional treatment processes with filtration can typically be expected to remove phosphorus down to about 0.1 mg/L to 0.2 mg/L. Most tertiary processes rely on aluminum or iron-based chemistry that conflicts with recovery processes; however, a new regenerable media technology has demonstrated both ultralow TP limits and phosphorus recovery. Furthermore, the latest advances in sidestream enhanced biological phosphorus removal (S2EBPR) and struvite recovery make nutrient recovery more viable for more WRRFs than historically thought.

4:00 pm  | Enhanced Dewatering with Struvite Recovery: Pilot Testing of AirPrex® Technology
Mohammad Abu-Orf, Hazen and Sawyer; Terry Goss, AECOM; Manny Moncholi, Acting Assistant Director of Wastewater
This presentation will show results from full scale demonstration and piloting of the AirPrex technology for removal and recovery of struvite for the South District WWTP of Miami. The technology treated a sidestream from the digested biosolids prior to centrifuge dewatering. The technology removed more than 90 percent of orthophosphate, which resulted in an increase in the cake dryness by about three points with the same polymer dose as compared to the dewaterability without the technology. This increase in solids with struvite recovery has significant economic benefits to the plant operations.

Tuesday, February 7, 2017

Session 17  | Utility Management
Contact Hours: 1.5 Wastewater (PDH and Water Hours Pending)

Moderators  | Joe Brilling, Washington County Sewer District; Stephen Hadjiyane, Gannett Flemming

1:30 pm  | A Risk Based Approach to Change Management
Claire Baldwin, CDM Smith
The key challenges of utility leadership during change is understanding not just what the change process will be, but also understanding with implementing new processes, you need to manage the business risk that change brings to your utility. This presentation will present a risk based approach to understanding the capacity of your workforce to undergo a change, be it major change such as a new automation system or a minor one such as using to computer notebooks by field staff.

2:00 pm  | Implementation of Risk Management Best Practices for the Water for the Future Program
James Canale, NYC DEP; Swagata Biswas, CH2M
Risk Management is a process by which areas of concern and uncertainties are identified, assessed, and prioritized. Once risks are identified, coordination of resources are utilized to monitor, mitigate, avoid and control the probability and/or impact of unfortunate events or to maximize the realization of opportunities. The Water for the Future program applied risk management from a basic level, to a program-wide level which has provided cost savings, schedule savings and appropriate transfer of risks.

2:30 pm  | Coffee Break in Exhibit Hall
3:30 pm  The Benefits of Pre-Procuring Equipment Before a Municipal Bid
Jason Davenport, John LaGorga, GHD Consulting Services Inc.
Procuring major pieces of equipment before the general bidding process has many benefits. GHD has worked with three municipalities within the past few years that have pre-procured equipment. The presentation would showcase these municipalities as case studies, including the benefits/trade-offs, and the legal approach to pre-procuring equipment with respect to municipal bidding.

4:00 pm  Simply Power – Simplifying the Bowery Bay WWTP Power Distribution System
Brian Goldman, Greeley and Hansen; Ken Moriarty, Matthew Osit, Eric Klee, NYC DEP
The New York City Department of Environment Protection recognized the need for a reliable, redundant, safe, and simplified power distribution system at the Bowery Bay Wastewater Treatment Plant. With an aging infrastructure, obsolete equipment, Greeley and Hansen was retained for the performance of Contract BB-215 Power Distribution System Improvements to design the plant-wide consolidation, conversion, replacement, or elimination of vintage 208V electrical distribution to improve the reliability, redundancy, safety, and simplify the power distribution system.

Tuesday, February 7, 2017
Session 18  University Forum
Contact Hours:  (Hours Pending)
Moderators  Stefan Grimberg, Clarkson University; Krish Ramalingam, City College
Program forthcoming

University Forum Poster Session
Poster presenters will be at their poster from 2:40 pm–3:20 pm. Posters will be set up by 1:00 pm and removed by 5:00 pm.

Wednesday, February 8, 2017
Session 19  Residuals and Biosolids 2
Contact Hours:  2.0 Wastewater  (PDH and Water Hours Pending)
Moderators  Gregg Palmer, Koester Associates; Jeff LeBlanc, WeCare Organics, LLC

9:00 am  A Trigger-Based Approach to Near- and Long-term Planning for County Wide Residuals Management
Paul Knowles, Vera Gouchev, Emanuel Psaltakis, Hazen and Sawyer;
Thomas J. Lauro, Westchester County Department of Environmental Facilities
Westchester County Department of Environmental Facilities looks at consolidated 5- and 20-year residual handling plans for their seven Water Resource Recovery Facilities. The 5-year plan focuses on optimizing existing facilities while the 20-year plan evaluates state-of-the-art processes for residuals management. A decision making tool was developed to allow the County to plan for several change triggers, including: Class A Biosolids, Alternate Disposal Options, Sustainability and Nutrient Reduction.

9:30 am  Biosolids Utilization for Coal Mine Reclamation and Hybrid Poplar Tree Production
Michael Nicholson, Jeffrey J. LeBlanc, WeCare Organics, LLC
This presentation is on the development and results of five years of a hybrid poplar tree program as a biomass production facility. Biosolids have demonstrated the capability of producing very significant annual growth rates in the poplar trees, and estimates of biomass production will be described during the presentation. To date 36,000 trees have been planted on 61 acres. It is estimated that the life cycle for the trees will be six to eight years before harvesting.

10:00 am  Coffee Break
Implementation of a Medium Temperature Belt Dryer
Jon McGraw, Dieter Weinert, Huber Technology, Inc.; Barry McKinnon, The Town of Mooresville, NC
Medium temperature belt dryers can be operated in combination with different indirect heat sources utilizing circulating heated water and high efficiency heat exchangers. Even waste heat can be utilized – which reduces or even eliminates the usage of primary energy sources like natural gas. Drying sludge is difficult, expensive and hazardous. Previous technologies such as high temperature drum dryers required continuous monitoring for dust amounts, temperature fluctuations and particle size consistency.

Feasibility of Thermal Hydrolysis Pretreatment, When It Makes Cents
Terry Goss, AECOM
Thermal hydrolysis pretreatment (THP) prior to anaerobic digestion (AD) is gaining interest of North American Utilities. This presentation will present the drivers for THP, evaluation process and results from three feasibility studies in North America in the past five years where the feasibility of THP was evaluated for both greenfield facilities and as part of a digester upgrade.

Wednesday, February 8, 2017
Session 20 Green Infrastructure
Contact Hours: 2.0 Wastewater (PDH and Water Hours Pending)

Moderators
Kara Pho, CH2M; Richard R Isleib, HDR

9:00 am
A Bioswale Grows in Brooklyn: Construction Overview of RH-034 and OH-007
Elaine Labate, Dahlia Thompson, Hazen and Sawyer; Adriana Kocovic, NYC DEP
This presentation will provide an overview of right-of-way green infrastructure construction in the RH-034 and OH-007 sewersheds in Brooklyn, and will highlight challenges and lessons learned in the field, as well as the strategies and solutions implemented to ensure success.

9:30 am
New York City’s Green Infrastructure Research and Development Project – Monitoring Strategy and Protocols
John McLaughlin, Miki Urisaka, NYC DEP; Franco Montalto, Drexel University, eDesign Dynamics; Fernando Pasquel, ARCADIS
This presentation will describe the monitoring strategy and protocols developed as part of NYC DEP’s Green Infrastructure–Research and Development Project to support New York City’s strategy to reduce stormwater runoff generated from separately-sewered portions of the City. One of the primary efforts of the project is to conduct monitoring on a series of parameters that have yet to be fully understood to assess green infrastructure performance over time.

10:00 am
Coffee Break

10:30 am
Refinement of GI Models in New York City Based on Post-Construction Monitoring Data to Estimate GI Performance Citywide
Pinar Balci, Margot Walker, NYC DEP; Jerry Kleyman, ARCADIS; Sri Rangarajan, Boomi Environmental
The New York City Department of Environmental Protection (DEP) is in the midst of constructing several thousand green infrastructure (GI) assets to reduce CSO volume discharged into various waterbodies in New York Harbor. This presentation will describe model refinements and validation that allowed for the estimation of GI performance and CSO volume reductions achieved on a citywide basis for the 1.5 percent GI implementation citywide. In addition, equivalency rates and performance metrics associated with the GI implementation will be discussed.
Forging a Path for New York City’s Green Infrastructure
Brigid Keating, Brian Larsen, Jennifer Cass, Daniel Fletcher,
New York City Economic Development Corporation

As part of NYC DEP’s Green Infrastructure Program, the New York City Economic Development Corporation (NYCEDC) has lead the way, managing the design and construction of 2,000 of the first Right-of-Way Bioswales and Greenstreets in New York City in two years. NYCEDC in conjunction with DEP has helped to reduce CSOs through an innovative green infrastructure program with multiple consultant and contractor teams in an aging ultra-urban environment, while beautifying acres of neighborhoods in the outer-borough.

Wednesday, February 8, 2017

Session 21
Wet Weather 2

Contact Hours: 1.5 Wastewater (PDH and Water Hours Pending)

Moderators
Jennifer Franco, AKRF, Inc.; Vatche Minassian, ARCADIS

9:00 am
Risk Management on CSO Tunnel Projects
George Teetes, Matt Koziol, Schnabel Engineering, LLC;
Moussa Wone, District of Columbia Water and Sewer Authority

District of Columbia Water has embarked on a $2.7 Billion “mega-project” to reduce CSO discharges into the Potomac and Anacostia Rivers by 96 percent. Currently eight years into its 25 year schedule, the project involves a large network of tunnels, structures and utilities. Risk Management was identified early-on as a necessity to meet goals for schedule, budget, public opinion, safety, and overall effectiveness. This presentation outlines the Risk Management process and identifies key decisions made to date.

9:30 am
Evaluating CSO Treatment Facility Options for Albany Pool’s Big C
Brian Hilts, CDM Smith; Mike Miller, Clough Harbour & Associates; Rob Ostapczuk, ARCADIS

In an effort to improve water quality in the Hudson River, the DEC approved a regional LTCP that required a disinfection and floatables control facility be constructed for the largest CSO (Big C) in the Albany Pool area. This presentation will provide a background on the project, discuss the disinfection and screening technologies evaluation performed, present the two facility locations that were considered, and discuss the status of the project.

10:00 am
Coffee Break

10:30 am
CFD Evaluation of Flushing Tunnel Pumping System to Reduce Foaming in Gowanus Canal
Masa Takamatsu, Thomas Newman, Stephen Ertman, HDR Engineering, Inc.;
Kevin Clarke, NYC DEP

To mitigate excessive foam associated with the upgraded Gowanus Canal Flushing Tunnel, structural alternatives to the discharge chamber were proposed to reduce turbulence and air entrainment. Computational fluid dynamics (CFD) modeling was applied to evaluate the relative efficacy of each alternative relative to the existing condition. This presentation covers the results and recommendations from this analysis.

11:00 am
Navigating the Regulatory Challenges of the Gowanus Canal Superfund Site
Geoffrey Grant, Donald Cohen, Brown and Caldwell; Kevin Clarke, Lindsay Degueldre, NYC DEP

Siting, sizing, and costing a CSO storage tank for the Gowanus Canal in response to a United States EPA Superfund Record of Decision and Unilateral Administrative Order.
**Wednesday, February 8, 2017**

**Session 22**

**Information Technology & Automation**

Contact Hours: 2.0 Wastewater (PDH and Water Hours Pending)

**Moderators**

John Petito, NYC DEP; Joe Corrado, ARCADIS

**9:00 am**

**Wastewater Pumping System with Breakthrough Integrated Intelligence**

Lisa Riles, Xylem

Small wastewater pumps can be given a new level of functionality and intelligence by integrating advanced software functions and state-of-the-art hardware into a conventional submersible design. Sensing the operating conditions and the environment, these pumps can adapt the pumping performance in real time, making smart decisions and providing feedback to the operator. Case stories will present customer benefits including significant OpEx and CapEx savings that can be achieved with this breakthrough technology.

**9:30 am**

**Securing “The Internet of Things”**

Bob George, Tetra Tech

The big buzz in the industry is “The Internet of Things,” but with all this new connections security becomes more and more in need.

**10:00 am**

**Coffee Break**

**10:30 am**

**Neural Networks to More Precisely Control BNR Plants**

John Bratby, Josh Goldman, CDM Smith

An ANN model was developed and applied to a BNR plant to maintain SVI between desired limits, while maintaining stringent nutrient limits. The results obtained are very encouraging. This presentation will demonstrate the potential to control parameters to not only meet effluent discharge requirements, but also to control SVIs within desirable limits. Results obtained using the model to predict SVIs under varying plant operational parameters applied by operations will be presented.

**11:00 am**

**Building a Smart Utility: Big Data to Relevant Analytics**

Stephen Wortendyke, Pam Kenel, Black & Veatch

Data is abundant and growing exponentially. The challenge of many utilities is not only data overload, but the challenge of setting a roadmap and how using data can create actionable intelligence. Case studies will be presented as examples of what other utilities are doing to become smarter including data master planning, project prioritization using user-defined metrics – in this case resiliency, and using integrated data sources to manage and optimize energy and chemical costs.

**Wednesday, February 8, 2017**

**Session 23**

**Water Reclamation: Primary and Secondary Processes**

Contact Hours: 2.0 Wastewater (PDH and Water Hours Pending)

**Moderators**

Joe Polomene, Sherwood Logan & Associates; Serdar Umur, GA Fleet

**9:00 am**

**Final Settling Tanks (FSTs): The Nexus of Geometry, Solids Properties and Hydraulic Loading on Performance**

Krish Ramalingam, S. Xanthos, A. Alleyne, J. Fillos, Department of Civil Engineering, The City College of New York; A. Deur, M. Orpianesi, NYC DEP; K. Temel, Brown & Caldwell

The FST is a critical link in the determination of the overall capacity of a water resource recovery facility (WRRF). This presentation will show the development of a comprehensive 3-Dimensional Computational Fluid dynamics (CFD) FST platform focused on the identification of the relationship of: (a) solids properties, (b) hydraulic loading and (c) clarifier geometry, as they relate to overall performance.
The Wards Island Treatment Plant is a secondary treatment plant that is owned and operated by the New York City Department of Environmental Protection (NYC DEP) for more than 75 years. Contract No. WI-281-DES, Design Services for the Wards Island Settling System Replacement, involves the complete upgrade of the Plant’s existing Final Settling System. This presentation will review the comprehensive concrete investigation undertaken for each tank, the methods used to conduct non-destructive condition assessments and the results of the investigation. In addition, a program was implemented to provide service life predictions of the concrete using STADIUM® software. The presentation will also discuss the computation fluid dynamics (CFD) modeling performed for two types of final setting tanks.

This case study will focus on the hydraulics, process enhancements and lessons learned from the design and upgrades to the NYC DEP 26th Ward WWTP Preliminary Settling Tanks. It will discuss the design considerations to improve flow and grit distribution as well as the process modifications using CFD modeling and analysis to improve the overall performance of the tanks during peak wet weather flow conditions and making them more reliable, flexible and sustainable to operate.

New state-of-the-art wastewater treatment plant design faces a space constraint issue. The solution? Introducing new technology for primary treatment in the form of high rate filters capable of providing equal if not better primary clarification at a fraction of the footprint. O’Brien & Gere was able to provide the United States Military Academy with 5MGD of treatment capacity inside 1,500 square feet.

The separate centrate deammonification (SCAD) process is a viable option for performing sidestream deammonification at NYC WWTPs. Biomass can be rapidly enriched from local WAS and ammonia removal efficiencies up to 75 percent can be achieved at total nitrogen loading rates of 0.20 kg N/m^3-day. Nitrous oxide production is a small fraction of the total amount of ammonia removed in the system (approximately 3 percent).

Bioconversion of methane, the main component of digester gas, to methanol using nitrifying activated sludge offers an alternative and sustainable carbon source for biological nitrogen removal (BNR). Here we demonstrated the acclimation of nitrifying consortium to methane and the potential of simultaneous nitrification and methanol production, which can be advantageous for the application of biomethanol production in BNR processes.
3:00 pm  | A Novel Approach to Optimizing Carbon Addition and Maximizing Nitrogen Removal at the 26th Ward WWTP  
Vera Gouchev, Sarah Galst, Robert Sharp, Hazen and Sawyer; Sal Scapelito, NYC DEP  
A unique approach to nitrogen removal optimization with carbon addition was tested full-scale at a New York City DEP’s 26th Ward WWTP. A ‘test’ (receiving carbon) and ‘control’ (receiving no carbon) tank approach was approved to better understand, and ultimately optimize, supplemental carbon addition. The testing will result in an operational guide for carbon dosing and addition locations.

3:30 pm  | Batch and Bench Scale Experiments to Identify Process Triggers That Will Work to Establish Mainstream Nitrification at the Hunts Point WRRF  
Mahsa Mehrdad, Shakti Gurung, Nazanin Ghanbari, Dimitri Katehis, Krish Ramalingam, John Fillos, Mauro Orpianesi, Allen Deu, The City College of New York  
The objective of this study is to evaluate steps required to induce mainstream nitrification at the Hunts Point Water Resource Recovery Facility (WRRF). A combination of batch experiments and bench scale demonstration is being attempted to assess selective pressures in order to establish mainstream nitrification. As a first step, inhibition effect of elevated FNA concentrations on mainstream biomass was evaluated.

**Wednesday, February 8, 2017**

**Session 25**  
**Energy Management and Green House Gas Reduction**

**Contact Hours:**  
2.0 Wastewater (PDH and Water Hours Pending)

**Moderators**  
Fred Kincheloe, Savin Engineers, PC; Amy Geo, H2M

1:30 pm  | WWTP Energy Audits Provide System-Wide View to Reducing Energy and Optimizing Processes  
Jane Atkinson, Robert Pape, AECOM; Anthony Fiore, NYC DEP  
In view of ambitious citywide green house gas (GHG) and energy reduction goals, NYC DEP has enacted a strategy that simultaneously reduces energy demand and increases supply-side renewable energy generation. ASHRAE Level II energy audits were conducted at all WWTPs and a comprehensive Energy Master Plan was developed for each facility, including a detailed end use analysis, AWWA benchmarking, numerous ECMs covering both process and building-side improvements, a detailed GHG emissions profile, and life cycle cost analyses for all measures.

2:00 pm  | Measuring New York City’s Water-Energy Nexus  
John Brock, Alan Cohn, NYC DEP; Elaine Lebate, Paul Knowles, Hazen and Sawyer  
The New York City Department of Environmental Protection (DEP) has been proactive in tracking and reducing green house gas (GHG) emissions in an effort to meet citywide climate change objectives. This presentation will provide a live demonstration of an Excel-based tool, developed to quantify GHG emissions and indirect energy co-benefits related to DEP water sustainability initiatives, as well as provide an explanation of the tool’s interface and the methodology behind it.

2:30 pm  | Coffee Break

3:00 pm  | Water Utilities Energy Cost Management, a Discretion or a Necessity: Managing Energy Cost Utilizing the Energy Decision Cash Flow Model  
Stephen Tarallo, David Archard, Black & Veatch  
Operational and capital spending are being heavily scrutinized by utility leaders and stakeholders. As such, sound energy management planning for water utilities cannot be considered in discretionary manner, but as a necessity of the highest order. This presentation will highlight an approach and a tool to quantitatively build a sound energy management business case through utility-specific planning criteria, risk analysis, and individual and portfolio based project analysis.
3:30 pm  From Sludge to Exhaust – Dynamic Energy Tools Lay the Foundation for Net Energy Neutrality
Eric Auerbach, Dimitri Katehis, ARCADIS; Allen Deur, Mauro Orpianesi, NYC DEP
Using a comparative case study of a 56 MGD WRRF in the western United States with New York City’s
Wards Island WWTP, the application of an Energy Flow Model is demonstrated on two very different plants
with the intent of driving prioritization of new facilities, including identification of promising technologies
to focus R&D efforts for future integration into the process. Optimal solutions ranged from Post-Aerobic
Digestion for the smaller plant to deammonification (nitritation/anammox) for the WI WWTP.

Wednesday, February 18, 2017

Session 26  Resiliency

Contact Hours: 0.5 Wastewater (PDH and Water Hours Pending)

Moderators  Janine Witko, ARUP; David Stahl, HDR

1:30 pm  Risk Based Water System Planning for Resilience
Ahmet Ozman, Pam Kenel, Black & Veatch
This presentation will provide an overview of a resilience study completed for the Metropolitan Washington
Area. Black & Veatch developed a risk based framework to evaluate the existing water system and alternatives
for enhancing resilience against disruptive events. The study followed a methodology considering failure
scenarios and probability and consequence of occurrence, combined with Monte Carlo assessment of cost/benefit of potential infrastructure improvements and developed prioritized set of improvements for the region.

2:00 pm  Advanced 2D Hydraulic Modeling and LIDAR Integration for Coastal Resiliency Planning
Caitlin Fedio, Charles Wilson, Hazen and Sawyer; Jim Garin, NYC DEP
Extreme storm events present significant challenges to coastal areas, including sewer infrastructure, which
will become more pronounced as a result of climate change. Advances in 2-dimensional hydraulic modeling
with LIDAR integration offer opportunities to aid in urban coastal resiliency planning. This presentation
provides a case study of the capabilities of 2D modeling for identifying drainage management solutions for
varied storm conditions for New York City’s East Side Coastal Resiliency Project.

2:30 pm  Coffee Break

3:00 pm  Mitigating Flood Risks, Present and Future
Ricky Torres-Cooban, Christopher Benosky, AECOM
Many communities and public agencies throughout the country are struggling with how to incorporate the
reality of a changing climate into infrastructure design. The Rebuild By Design Meadowlands project is
focused on the design and construction of infrastructure to reduce flood risks and enhance resiliency in the
boroughs of Little Ferry, Moonachie, Carlstadt, Teterboro, and South Hackensack, NJ, while taking into
account future climate conditions.

3:30 pm  Levee Certification for the Village of Nichols, New York
David Moore, Steven Riedy, Tetra Tech, Inc.
The Village of Nichols received New York Rising funding from the Governor’s Office of Storm Recovery to
procure professional engineering services to evaluate FEMA Certification of the Village’s flood protection
system. Tetra Tech was selected to perform the study and improvements. We will present the FEMA
Certification elements as well as the coordination with multiple stakeholders including NYS DEC, NYS DOT,
U.S. Army Corps of Engineers Baltimore and Buffalo Districts, and FEMA Region II.
Hotel Information (Make your reservations early to get the Group Rate!)

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Register today and receive the Early Bird Special of $239/night.

To make your hotel reservation, simply call the toll free number, and state that you are with the New York Water Environment Association. The meeting dates are February 6–February 8, 2017.

The following will apply:
Reservations will not be held unless accompanied by a deposit (check) or an accepted credit card.

For Room Service Hospitality, please call (212) 704-8823.

Confirmation Number for your records: ________________________________

Deadline for hotel reservations is January 20, 2017.
**EXHIBIT DATES:** February 6–8, 2017

**PLACE:** New York City Marriott Marquis

**SET-UP:**
- Sunday, February 5, after 4:00 pm
- Monday, February 6, 7:00 am–10:00 am

**HOURS:**
- Monday, February 6, 10:30 am – 4:30 pm
- Monday, Reception in Exhibit Hall, 4:00 pm – 6:00 pm
- Tuesday, February 7, 8:30 am – 4:00 pm

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Contact Darlene Ciuffetelli at Darlene.ciuffetelli@arcadis-us.com. Or visit the NYWEA website at [nywea.org](http://nywea.org) or call (315) 422-7811.

Orders paid by credit card are $50 higher to cover credit card fees.

Exhibit registrations received by October 19, 2016 will be listed on the website and in the preliminary program.

Sponsorship opportunities also available – for more information go to the NYWEA website, nywea.org
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**NYC Marriott Marquis, February 6–8, 2017**

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(Advertisers received by January 13, 2017 will receive special recognition during meeting.)

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<tr>
<td><strong>COLOR ADS</strong></td>
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<tr>
<td>* Full Page</td>
<td>$800</td>
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<tr>
<td>* Half Page</td>
<td>$470</td>
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<tr>
<td>* Back Cover</td>
<td>$950</td>
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<tr>
<td>* Inside Front Cover</td>
<td>$910</td>
</tr>
<tr>
<td>* Inside Front, Right Page</td>
<td></td>
</tr>
<tr>
<td>* Inside Front, Left Page (opposite Table of Contents)</td>
<td>$900</td>
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<tr>
<td>* Inside Back Cover</td>
<td>$860</td>
</tr>
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<td>* Inside Back, Left Page</td>
<td>$840</td>
</tr>
<tr>
<td><strong>CENTER COLOR AD SECTION (4 pages):</strong></td>
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</tr>
<tr>
<td>*Center-1, Right Page</td>
<td>$850</td>
</tr>
<tr>
<td>*Center-2, Left (in Center Spread)</td>
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<tr>
<td>*Center-3, Right (in Center Spread)</td>
<td>$850</td>
</tr>
<tr>
<td>*Center-4, Left Page</td>
<td>$850</td>
</tr>
</tbody>
</table>

**To submit on line go to**
http://tinyurl.com/AM-Advertise17

**If you would like to sponsor go to**
http://tinyurl.com/AM-Sponsor17

Please attach your advertisement and return by mail, email (mgk@nywea.org) or fax (315-422-3851) no later than 1/13/2017. Please submit both ad copy and electronic file.

Contact Maureen Kozol at 315-422-7811, x3 or mgk@nywea.org with any questions.

**Media:** E-mail

**File Formats:** Mac preferred – Tiff (300 dpi resolution), PDF (saved at PDF/X-1a:2001 resolution setting), or InDesign file. All screen and printer fonts must be provided, images at 300 dpi at final size.

**Hard Copy:** Laser prints, business cards

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**PLEASE FILL OUT THE INFORMATION THAT APPLIES:**

The undersigned hereby agrees to take ________________ (specify size) Page Ad and pay the sum of $ ________________ (payment due with advertising copy).

**Payment Options**

- [ ] Check # ____________
- [ ] Credit Card
- [ ] MC
- [ ] VISA
- [ ] AMEX

Card Number ________________ Exp. Date __________ V-Code __________

Signature ____________________________________________________________________

Company ______________________________________________________________________

Contact Person __________________________________________________________________

Address ________________________________________________________________________

E-Mail ________________________________________________________________________

City __________________________ State ______ Zip ______ Telephone ______________________

Date __________________________ Authorized Signature __________________________

---

*Please make checks payable to: NYWEA, Inc.*, mail to NYWEA, Inc., 525 Plum Street, Suite 102, Syracuse, New York 13204
New York Water Environment Association, Inc.
89th ANNUAL WINTER MEETING
FEBRUARY 6-8, 2017
MARRIOTT MARQUIS, NEW YORK CITY

FAST TRACK PRE-REGISTRATION FORM FOR NYWEA MEMBERS ONLY

Registration available on-line for Members & Non-Members at http://tinyurl.com/AM-REG17

INSTRUCTIONS:
Please fill in your name, title, company, telephone number, email address and type of registration.

REGISTRANT
Please type or print the following information AS IT IS TO APPEAR ON YOUR NAME Badge

LAST NAME __________________________ FIRST NAME __________________________ M.I. _________
TELEPHONE _____________________ TITLE _________________________ COMPANY NAME _______________________________
ADDRESS _____________________________________________________________________________________________________
CITY/STATE/ZIP _________________________ EMAIL _____________________________________________

NYWEA MEMBER
Pre-registration □ *Full Week: $485 One Day: $300 (please specify day) □ Mon □ Tues □ *Wed
OPERATORS
Member One Day: $85 (please specify day(s)) □ Mon □ Tue □ Wed
To qualify for Operator Registration you must be a PWO member, and work on a day to day basis in the operation or maintenance of a wastewater collection or treatment facility.

YOUNG PROFESSIONAL (includes Monday reception & Tuesday night YP reception and lunches) Must be 35 yrs or younger, copy of drivers license required.
Member One Day: $175 (please check day(s)) □ Mon □ Tues □ *Wed -- Two Days: $350 (please check day(s)) □ Mon □ Tues □ *Wed

SPEAKERS (Day of Presentation Only, Please Specify Day)
$235 □ Mon □ Tues □ Wed □ *Full Week: $275

What's Included with Your Registration?

<table>
<thead>
<tr>
<th>What's Included</th>
<th>Monday Luncheon</th>
<th>Tuesday Luncheon</th>
<th>Wednesday Awards Luncheon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Week</td>
<td>Yes</td>
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<tr>
<td>One-day Monday</td>
<td>Yes</td>
<td>No</td>
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<tr>
<td>One-day Tuesday</td>
<td>No</td>
<td>Yes</td>
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</tr>
<tr>
<td>One-day Wednesday</td>
<td>No</td>
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<td>Yes</td>
</tr>
<tr>
<td>Student</td>
<td>No</td>
<td>Student Lunch</td>
<td>No</td>
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<tr>
<td>Operator Monday</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Operator Tuesday</td>
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</tr>
<tr>
<td>Operator Wednesday</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Young Professional</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Retired</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Speaker</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

Payment Method

**Includes President's Reception, Lifestyle Program on Monday, Reception Monday Evening, (Does not include Wednesday Awards Luncheon).

**Important: Please check if you will be attending Awards Luncheon on Wednesday.

REGISTRATION POLICIES

Only individuals registered and badded may attend convention events. Registrations received after January 15, 2017 will be charged the site-registration fee. CANCELLATIONS: Cancellations must be submitted in writing by January 15, 2017. A $25 service fee will apply to all cancellations received before January 15; no refunds will be made on registration fees or special events after January 15th. (Due to NYWEA agreements and required

This form is not valid for site registration. Pre-registration by 1/15/17, otherwise site registration fees apply which are an additional $35, except for operator and student registration which remains the same.

Registrant please return this form to: NYWEA
525 Plum Street, Suite 102, Syracuse, NY 13204, or
fax it to: 315-422-3851 or mail@nywea.org and retain a photocopy for your records.

Please make checks payable to the NYWEA.

PAYMENT

□ CASH □ CHECK NO._________ □ VOUCHER
□ VISA □ MASTER CARD □ AMEX CARD NO._________________ EXP.________ V-Code_______

DATE: ___________ REC'D BY ___________________________
Join Us at the 89th Annual Meeting!
(as of November 22, 2017)

EXHIBITORS

ADS Environmental Services
Allied Locke Industries
Applied Analytics, Inc.
Asahi/America, Inc.
Atlantic Fluid Technology Inc.
Brentwood Industries
Brunel Corporation
Casella Organics
Clear Flo Technologies, Inc.
ClearBrook Tully Environmental Inc.
CUES
Earth Repair, LLC
Emerson Process Management: EIM
ENECON Northeast APS, Inc.
Envirosolutions LLC
Environmental Operating Solutions, Inc.
Excelsior Blower Systems, Inc.
FSRC Tanks Inc.
GEA/Inovair/Koester Associates
GP Jager Inc./Aquarius Technologies
GP Jager Inc./Boerger
GP Jager Inc./Evoqua Water Technologies
GP Jager Inc./Fluid Dynamics/ Premier Tech Aqua
GP Jager Inc./Haarslev
GP Jager Inc./Hidrostal Pumps
GP Jager Inc./Parkson/
L&J Technologies
GP Jager Inc./Watson Marlow
GP Jager Inc./SUEZ
Hach Company
Harper Control Solutions, Inc.
Harper Haines Fluid Control, Inc.
Hayes Pump Inc.
Hayward Flow Control
HOBAS Pipe USA
Kane-Davey Associates
Kemira Water Solutions, Inc.
Kennedy Valve – Plant & Industrial Group
KG Power Systems
Limiterque
Marine & Industrial Hydraulics, Inc.
D.W. Martine Associates, LLC
Metrofab
Momar, Inc.
North East Technical Sales
NSI NEAL SYSTEMS
Onyx Valve Company
Poly Processing
Pritchard Brown, LLC
Process Equipment Sales and Service, Inc.
PSI Process & Equipment
Pure Technologies U.S. Inc.
quasar energy group
Rain for Rent
Rapid Pump & Meter Service Co., Inc.
Raritan Group Inc./ AUMA Actuators
Reiner Pump Systems, Inc.
Rotork Controls, Inc.
Schnabel Engineering
Schulz Electric, A Timken Brand
SNF Polydyne
Spectraserv Inc.
Synagro
TC Tech LLC
Tek-Sales, Inc.
Tetra Tech
Troup Environmental Alternatives LLC
Ultraflote/Duperon/Koester Associates
Valley Tech Inc.
Verder, Inc./Koester Associates
Viatran
Vicatualic Company

Interested in exhibiting at 89th Annual Meeting? Contact Darlene Ciuffetelli at (914) 641-2478 or darlene.ciuffetelli@arcadis.us.com. Interested in advertising or sponsorship? Contact Maureen at mgk@nywea.org or 315-422-7811 for more information.

For Sponsorship Form: Go online to http://tinyurl.com/AM-Sponsor17
For Advertising Form: http://tinyurl.com/AM-Advertise17