



Chicago Chapter EWRI Technical Workshop Series

Smart City, Smart Water, Smart Investment?

Smart grid, Big Data, artificial intelligence (AI), machine learning (ML), infrastructure resilience, and sustainability - we hear these words and phrases often. But what do they mean for the water resources field? Practitioners across many fields have opined on a diversity of meanings, along with associated directions that we should follow, while others are perhaps more skeptical. Do we actually know how to bring these often multi-objective projects to fruition?

This lunch-time workshop series will encompass a full range of presenters with experience in these initiatives, including municipalities, community leaders, consultants, and government organizations. These presenters will speak about a range of issues connected to the “smart” or “digital water” topic, including key drivers and incentives, project analyses and justifications, available field technology, data management platforms and digital twins, project management strategies, outreach, and more.

First Session: January 20th, 12:00 - 1:30pm CST

[*Click here to register for this session*](#)

12:00 - 12:10pm **SMART WATER BASICS**

Presented by Michael Mulcare (Mott MacDonald)

12:10 - 12:30pm **PRESENTATION 1**

Predict and Optimize Chemical Dosage for Odor and Corrosion Control in the Headworks of a Water Resource Recovery Facility: A Machine Learning Approach

Presented By Matthew Jurjovec and Fenghua Yang (MWRDGC)

12:30 - 12:50pm **PRESENTATION 2**

Lead Service Line Inventory Development via Predictive Analytics

Presented by Justin Keller (MPC) and Anna Wolf (CNT)

12:50 - 1:10pm **PRESENTATION 3**

Using Advanced Analytics to Improve Water Loss Control Operations

Presented by Jonathan Keck (Aquify)

1:10 - 1:25pm **PANEL DISCUSSION**

1:25 - 1:30pm **CLOSING & INFORMATION ON NEXT SESSION**





Chicago Chapter EWRI Technical Workshop Series

About the Speakers

SMART WATER BASICS

Michael Mulcare (Mott MacDonald)

Mike is Mott MacDonald's Smart Infrastructure Leader based in Arlington, VA and a former resident of Manteno, IL. He has extensive experience with enterprise asset management systems, instrumentation, and remote sensing, communications technology, condition monitoring, and leading of multifaceted engineering and IT projects. Michael completed his undergraduate at Georgia Tech in electrical engineering. He served in the U.S. Navy as a submarine officer. He received a Master of Arts in Finance from Harvard and an MBA from MIT. He has over twenty-five years of experience in process engineering, technical operations, instrumentation & controls, maintenance, and program management.

PREDICT AND OPTIMIZE CHEMICAL DOSAGE FOR ODOR AND CORROSION CONTROL IN THE HEADWORKS OF A WATER RESOURCE RECOVERY FACILITY: A MACHINE LEARNING APPROACH

Matthew Jurjovec, PE (Metropolitan Water Reclamation District of Greater Chicago)

Matt Jurjovec specializes in treatment operations, plant automation and optimization, collection systems management, process control and instrumentation. For the past few years, Matt has played the role as Operations Manager at the Kirie WRP where he managed a team of operators for compliance with NPDES regulation and oversees maintenance needs at the facility. Matt has over 13 years of experience with the MWRDGC where he has engaged in various roles related to wastewater treatment, stormwater collection, project development and regulations.

Fenghua Yang, PE, BCEE (Metropolitan Water Reclamation District of Greater Chicago)

Fenghua Yang is a licensed PE in the state of IL. She also holds BCEE (board certified environmental Engineer) license. Fenghua is currently working as senior environmental research scientist in the Metropolitan Water Reclamation District of Greater Chicago. Prior to this, she worked as senior project manager for the Milwaukee Metropolitan Sewerage District. Additionally, she has one year of experience working in the Iowa Department of Natural Resources, and 10 years' experience in the consulting business as a process engineer, project manager and lead engineer. Fenghua's current work focuses on the evaluation of new and innovative technologies to improve wastewater treatment and resource recovery. She is interested in applying artificial intelligence to improve wastewater process, operation optimization, and decision support.

LEAD SERVICE LINE INVENTORY DEVELOPMENT VIA PREDICTIVE ANALYTICS

Justin Keller (Metropolitan Planning Council)

Justin joined MPC as a member of the Water Resources program in 2018. He manages various aspects of MPC's water supply and stormwater work, including the Drinking Water 1-2-3 Academy and Technical Assistance program, and the Calumet Stormwater Collaborative. He is an urban planner with a degree from the College of Urban Planning and Public Affairs at the University of Illinois at Chicago.

Anna Wolf (Center for Neighborhood Technology)

Anna joined CNT in 2015 and works on a variety of projects across the organization's Urban Resilience department. She manages new projects, research, and municipal outreach for CNT's Great Lakes Water Infrastructure Program, leads the organization's Climate and Cultural Resilience Initiative, and facilitates the organization's work on water infrastructure financing. Anna has a Master of Urban Planning and Policy from University of Illinois at Chicago.

