

Cybersecurity Assessment Training for Public Water Systems Webinar

Sponsored by U.S. Environmental Protection Agency

The U.S. Environmental Protection Agency (EPA) will be hosting a two-part webinar series for Public Water Systems (PWS) on how to begin building a resilient cybersecurity program by providing systems with information and resources on how to conduct cybersecurity assessments and address vulnerabilities. PWS staff are encouraged to attend both Part 1 and Part 2 of the series.

PWS staff will receive a detailed walkthrough including but not limited to:

- How to conduct a cybersecurity self-assessment;
- How to identify vulnerabilities;
- How to develop risk mitigation plans to prioritize, address, and mitigate the vulnerabilities found during the assessment;
- Resources EPA has developed to assist PWSs in assessing cybersecurity practices; and
- Additional public and private-sector resources available to assist in assessing cybersecurity practices.

Cybersecurity subject matter experts will be on hand to address questions at the conclusion of each presentation.

Continuing Education Units:

Applications for all 50 states will be submitted for all water operators to receive continuing education units (CEUs) for participating in the training.

Questions:

Webinar registration related questions can be directed by email to:
Natasha Rae, Horsley Witten Group (EPA Contractor) at: EPA@horsleywitten.com.

Cybersecurity assessment related questions can be directed by email to:
Cole Dutton, Cybersecurity Specialist, U.S. EPA, Water Infrastructure and Cyber Resilience
Division at: Dutton.Cole@epa.gov.

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Workshop Registration Links:

Tuesday, February 7th, 2023
(12:00-3:00 pm ET)

&

Thursday, February 9th, 2023
(12:00-3:00 pm ET)

Registration Link:

<https://bit.ly/CyberAssessA>



Tuesday, February 21, 2023
(12:00-3:00 pm ET)

&

Thursday, February 23, 2023
(12:00-3:00 pm ET)

Registration Link:

<https://bit.ly/CyberAssessB>



Cybersecurity Assessment Training for Public Water Systems Webinar

Agenda

Zoom Virtual Platform

Part 1: Tuesday, February 7th, 2023, Part 2: Thursday, February 9th, 2023

Part 1: Tuesday, February 21st, 2023, Part 2: Thursday, February 23rd, 2023

Part Two:

Time (Eastern)	Activity	Facilitators
11:30 a.m. - 12:00 p.m.	Participant Check-in to the Virtual Platform	<ul style="list-style-type: none"> Gemma Kite/Tom Noble, Horsley Witten (HW)
12:00 p.m. - 12:10 p.m.	Welcome, Introduction and Webinar Logistics	<ul style="list-style-type: none"> Gemma Kite/Tom Noble, HW
12:10 p.m. - 1:10 p.m.	Conducting a Cybersecurity Self-Assessment using EPA Resources <ul style="list-style-type: none"> Go through the steps of conducting a cybersecurity self-assessment <ul style="list-style-type: none"> Best Practices Additional Resources 	<ul style="list-style-type: none"> Gemma Kite/Tom Noble, HW Cole Dutton, Cybersecurity Specialist, EPA Kyle Miller/Jesse Stewart/Rob Fairfax, Cybersecurity, Booz Allen Hamilton
1:10 p.m. – 1:40 p.m.	Analyzing the Results of the Cybersecurity Self-Assessment <ul style="list-style-type: none"> How to identify cybersecurity gaps and vulnerabilities Building a Risk Mitigation Plan using EPA Resources	<ul style="list-style-type: none"> Gemma Kite/Tom Noble, HW Cole Dutton, Cybersecurity Specialist, EPA Kyle Miller/Jesse Stewart/Rob Fairfax, Cybersecurity, Booz Allen Hamilton
1:40 p.m. - 1:55 p.m.	Break	
1:55 p.m. - 2:25 p.m.	Addressing Vulnerabilities Found During the Assessment	<ul style="list-style-type: none"> Cole Dutton, Cybersecurity Specialist, EPA
2:25 p.m. – 2:45 p.m.	Review	<ul style="list-style-type: none"> Gemma Kite/Tom Noble, HW Cole Dutton, Cybersecurity Specialist, EPA Kyle Miller/Jesse Stewart/Rob Fairfax, Cybersecurity, Booz Allen Hamilton
2:45 p.m. – 3:00 p.m.	Question and Answer Session, Closing Remarks, End of Webinar Logistics	<ul style="list-style-type: none"> Gemma Kite/Tom Noble, HW Cole Dutton, Cybersecurity Specialist, EPA Kyle Miller/Jesse Stewart/Rob Fairfax, Cybersecurity, Booz Allen Hamilton
3:00 p.m.	Closing	<ul style="list-style-type: none"> Gemma Kite/Tom Noble, HW

Time	Duration (Hrs.)	Agenda Item
11:30 a.m. - 12:00 p.m.	-	Check-In/Registration
12:00 p.m. - 1:40 p.m.	1.7	Presentations
1:40 p.m. – 1:55 p.m.	-	Break
1:55 p.m. – 3:00 p.m.	1.05	Presentations/Q&A
3:00 p.m. – 3:00 p.m.	-	Extra Time/ Event Adjourns
Event Total	2.75 Hours	

Course Description

Title: Cybersecurity Assessment Training for Public Water Systems Webinar

Audience: Public Water Systems

Speaker: US EPA Water Infrastructure and Cyber Resilience Division (WICRD)

When: *Part 1: Tuesday, February 7th, 2023, Part 2: Thursday, February 9th, 2023, 12:00pm – 3:00pm ET*

Part 1: Tuesday, February 21st, 2023, Part 2: Thursday, February 23rd, 2023, 12:00pm – 3:00pm ET

EPA will be hosting a two-part webinar series for Public Water Systems on how to begin building a resilient cybersecurity program by providing systems with information and resources on how to conduct cybersecurity assessments and address vulnerabilities. PWS staff are encouraged to attend both Part 1 and Part 2 of the series.

PWS staff will receive a detailed walkthrough on how to conduct a cybersecurity self-assessment, how to identify vulnerabilities, and how to develop risk mitigation plans to prioritize, address, and mitigate the vulnerabilities found during the assessment. EPA will share the resources the agency has developed to assist Public Water Systems in assessing their cybersecurity practices, as well as additional recommended public and private-sector resources available to assess cybersecurity. Cybersecurity subject matter experts will be available to address questions at the conclusion of each presentation.



Gemma Kite has more than 13 years of professional experience as an environmental engineer specializing in state guidance development, hydrogeologic investigations and modeling, emergency preparedness training, and watershed planning and assessment. As an environmental engineer with the Horsley Witten Group, Ms. Kite works on a variety of projects including stormwater management assessment and design, assisting states and EPA with developing program guidance, developing and presenting material for water security trainings for the water sector, conducting environmental site assessments, water quality sampling and data analyses, and hydrogeologic and hydraulic investigations and modeling. Prior to HW, Gemma worked in Sierra Leone and Mali as a Water and Sanitation Program Manager for a French non-governmental organization, specializing in water security issues.

Gemma Kite, P.E.

Senior Environmental Engineer
gkite@horsleywitten.com

Areas of Expertise

Environmental Engineering
Watershed Planning & Assessment
Ecological Restoration
Data Management
Water Security
Emergency Preparedness & Response
State Guidance

Professional Registrations & Affiliations

Professional Engineer, MA
Member, New England Water
Environment Association (NEWEA)
Member, Water Environment Federation
Member, Engineers without Borders

Academic Background

Masters of Engineering,
Biological and Environmental
Engineering, Cornell University
Bachelor of Science, Environmental
Engineering, Lehigh University

Professional Experience

Horsley Witten Group, Inc.,
Senior Environmental Engineer,
October 2013 to Present
Inter Aide,
Water and Sanitation Program Manager,
2011 to July 2013
Langan Engineering, Engineering Intern,
2008

Publications

Kite, Gemma, Summer 2011.
ClearWaters. New York Water
Environment Association, Inc. "Water
Politics in a Rural Malian Village."

KEY PROJECTS

Stormwater Retrofit Design and Construction to Improve Minister/Schoolhouse Pond Water Quality, Eastham, MA, 2020: Gemma assisted the Town with identifying locations for stormwater retrofits in the Minister/Schoolhouse Pond Watershed. Gemma designed and permitted a wet swale stormwater retrofit that is expected to be construction in the fall 2021. Gemma designed two other stormwater retrofits (to the 25% design level) to help manage and treat runoff from Route 6. Gemma worked with the Town to engage the public in this project as public education of water quality improvements to the Pond have been important to the Town's success in implementing other water quality improvement projects.

Stormwater Program Technical Assistance for Mystic River Watershed Municipalities, EPA Region 1, 2020: Provided technical assistance to communities to identify assistance needs and fill those needs in improving stormwater management programs for MS4 compliance, reducing pollutants to the Mystic River system, and facilitating green infrastructure practices. HW was a subcontractor to ERG for EPA Region 1 for this work. Products included a code review of multiple watershed communities, guidance document for an O&M self-certification program to improve long-term practice performance, and a package of small-site stormwater BMP educational cut-sheets.

Mystic River Watershed Alternative TMDL Development, MA, 2019: Gemma assisted in the development and calibration of a Bathtub model for critical segments of the Mystic River system and evaluated annual phosphorus reductions required to attain MA water quality standards by conducting various model runs. Summarized results in a final report completed in January 2020. Managed the review of existing codes for six communities to support the 2018 Municipal Separate Storm Sewer System (MS4) Permit requirements. Assisted in developing checklists, presentations and memorandums for the communities summarizing gap analyses and recommendations to encourage stormwater practices to address phosphorus loads.

Wastewater Operation, Maintenance and Management Training for Rural Communities – EPA Office of Wastewater Management, 2016-Present: Assisted EPA in facilitating a 2-day training session for small and rural communities across the country on wastewater system operations and maintenance and effective techniques to operate a sustainable utility. Gemma presented on several topics related to utility operation and maintenance and facilitated small group discussions.



Cybersecurity Technical Assistance to the Water Sector, 2020-Present: Gemma is working with the EPA to conduct cybersecurity technical assistance to water and wastewater utilities across the country. Gemma serves as the project manager and as one of the technical assistance providers. Utilities participating in this project are assessed by the technical service provider and then receive a customized cyber action plan. The participating utility then implements recommended actions from the cyber action plan to reduce their cyber risk. Gemma developed the assessment and training materials to be used by the technical assistance providers. Gemma trained individuals across the country to be able to conduct the technical assistance with utilities. To date, the project has worked with over 100 utilities.

Streamlining Approvals for Innovative Septic Technologies, EPA Regions 1 and 2, 2016: On behalf of EPA, Gemma is assisting in the facilitation of the Southeast New England Coastal Watershed States and Suffolk County, NY workgroup to improve the states' technology approval process and timeline for advanced onsite treatment technologies. Gemma is helping to facilitate a group of state onsite managers develop data collection protocols in order to promote data sharing through a consensus-building approach. In addition, Gemma will help to identify current and potential opportunities to apply nitrogen reducing onsite technologies in the coastal waters and watershed lands spanning from Westerly, RI to Pleasant Bay, MA that will aid in identifying potential market areas for new nitrogen reducing technologies. Lastly, Gemma will help identify coastal resiliency and vulnerability issues with onsite systems and facilitate discussions on local and state concerns and potential paths forward.

Water Sector Cybersecurity Introduction Workshops, 2015-2020: To further increase utility resiliency, Gemma assisted EPA to develop and conduct free, one-day Cybersecurity workshops and response exercise throughout the United States. The workshops are intended to teach water and wastewater utilities more about the cyber threat, ways to manage the threat, and tools available to help utilities. In addition, current results from Virginia waterworks cyber assessments are presented to share lessons learned. A facilitated response exercise is conducted presenting a realistic cyber threat scenario, allowing all participants to discuss the actions they would take in response to the threat. The goal of the exercises is to identify general planning or procedural actions that enhance cybersecurity and mitigate risk. Gemma developed multiple training presentations designed to instruct utilities on the cybersecurity threat overview, regulatory guidance and standards, and available tools, resources and methods to achieve enhanced resiliency. Gemma assisted in the facilitation of these training workshops.

Cole Dutton

Cybersecurity Specialist, US Environmental Protection Agency

dutton.cole@epa.gov

Education

James Madison University, 2021

Master of Science (MS)

Degree: Computer Science, Information Security

Radford University, 2015

Bachelor of Science (BS)

Degree: Interdisciplinary Studies, Education

Virginia Highlands Community College, 2013

Associates of Arts and Science (AAS)

Degree: General Education, Teacher Preparation Program

PROFESSIONAL EXPERIENCE

U.S Environmental Protection Agency, November 2021 – Present

Cybersecurity Specialist

Office of Water, Water Infrastructure and Cyber Resilience Division (WICRD)

- Assists in EPA's SRMA responsibilities, which includes engaging appropriate stakeholders, EPA Regions, and other federal agencies when EPA learns of a cyber incident within the water sector
- Developed a Standard Operating Procedure (SOP) for WICRD to better understand, and take appropriate actions, when receiving cybersecurity alerts and advisories from public and private-sector organizations
- Manages cybersecurity projects designed to improve cybersecurity awareness and capabilities throughout the water sector
- Promotes cybersecurity best practices and resources to the water sector through webinars, in-person presentations, and hybrid events
- Develops and delivers training materials for water utilities and state primacy agencies
- Develops and facilitates cybersecurity tabletop exercises (TTXs) for water and wastewater utilities
- Engages stakeholders and promotes cooperation on cybersecurity-related projects
- Participates in interagency workgroups by serving as a cybersecurity subject-matter expert and builds partnerships throughout public and private sector cybersecurity communities

Chesterfield County Public Schools, September 2021 – November 2021

Cybersecurity Analyst

- Planned, designed, and delivered the division's first cybersecurity awareness training program which educated staff members on basic cyber hygiene and information security principles
- Assisted in improving the cybersecurity education modules used during the staff onboarding process
- Developed a Data Privacy Plan which included policies regarding asset management, business continuity, disaster recovery, and breach response
- Created and managed a cybersecurity email which allowed staff members to submit cybersecurity concerns and receive guidance from a subject-matter expert
- Managed the division's SIEM software and monitored for suspicious activity occurring on the district's network

Henrico County Public Schools, September 2021 – November 2021

Educator, English Language Arts

- Experience in curriculum design and development
- Designed and delivered instruction via a variety of platforms including in-person, virtual, and hybrid
- Differentiated instruction to accommodate the individual learning needs of all students
- Monitored student progress and reinforced topics as needed
- Member of the school's leadership team tasked with overseeing the day-to-day operations of the school's bus transportation program
- Provided additional support to students when necessary

Henrico County Public Schools, September 2021 – November 2021

Educator, English Language Arts

- Experience in curriculum design and development
- Differentiated instruction to accommodate the individual learning needs of all students
- Assisted in the development and served as the lead teacher for the division's first after-school program
- Tracked student data to ensure mastery of topics were achieved
- Provided additional support to students when necessary

PROFFESIONAL CERTIFICATIONS

- CompTIA Security+
- (ISC)² Certified in Cybersecurity
- Postgraduate Professional Teaching License



James Cady

Environmental Scientist
jcady@horsleywitten.com

Areas of Expertise

Cyber Security
Security
Auditing
Training

Academic Background

Bachelors of Science in Environmental
Science, University of Maryland

Professional Experience

Horsley Witten Group, Inc., Scientist,
January 2022 to Present

NAESOC, Industrial Security
Representative, October 2020 – 2021

Global Solutions, Counter Intelligence
Analyst, December 2019 – 2020

United States Navy, Intelligence Analyst,
February 2011 – 2017

Horsley Witten Group
Sustainable Environmental Solutions



James Cady has over 8 years of professional experience in national security. He served seven years in the Navy as an Intelligence Specialist where he constantly reviewed and analyzed adversarial information to develop more defined situational awareness for leadership. While in the Navy, Jimmy also helped conduct anti-piracy efforts in the Gulf of Aden by tracking a total of 47,000 vessels to enhance the Navy's overall security. He also worked with pilots at Top Gun to aid in creating, managing, and disseminating classified security documents for temporarily assigned duty personnel and Top Gun classes.

Jimmy went on to work at Health and Human Services (HHS) to help establish a counterintelligence team to support the National Institutes of Health to prevent theft of intellectual property. Jimmy also worked as an industrial security representative for Defense Counterintelligence and Security Agency. In this role, he audited other contracting companies to ensure they were practicing correct safety measures in accordance with National Industrial Security Program Operating Manual (NISPOM).

KEY PROJECTS

Cybersecurity Technical Assistance to the Water Sector: Jimmy is supporting the U.S. Environmental Protection Agency (EPA) to conduct cybersecurity technical assistance to water and wastewater utilities across the country. Jimmy serves as a technical assistance provider, working one-on-one with participating utilities to develop a cyber action plan. Participating utilities implement recommended actions from the cyber action plan to reduce their cyber risk. The technical assistance provider is available to the utility for support throughout the implementation process.

Cybersecurity Guidance and Training Support to EPA for Public Water System Sanitary Surveys: Jimmy is assisting the EPA in providing cybersecurity technical support as EPA considers the inclusion of cybersecurity into the Public Water System Sanitary Survey program. Jimmy is supporting the EPA by facilitating and supporting a workgroup of state representatives, including the Association of State Drinking Water Agencies, to discuss how cybersecurity can be included in sanitary surveys. Jimmy is providing administrative support by recording detailed notes of task force meetings.

National Support for the Water and Wastewater Agency Response Network Program: Jimmy assists the development and delivery of Water/Wastewater Agency Response Network (WARN) workshops and tabletop exercises (TTXs) in numerous states. The overarching goal of the training events is to develop a better understanding of the roles, responsibilities, and capabilities of the water sector utilities, partner agencies/organizations from the local, county, state, and federal levels that would respond to an incident involving the water sector. These training events are followed by improvement planning conference calls at regularly scheduled intervals during which Jimmy supports the WARNs in achieving their identified improvement objectives.

Key Projects prior to joining Horsley Witten Group, Inc.

Defense Counterintelligence and Security Agency (DCSA), Washington, DC: As a member of the auditing staff, Jimmy audited 1000+ government contracting companies to ensure they were within NISPOM guidelines and confirmed their security profiles were up to date. To conduct this work, Jimmy became familiar with the NISPOM guidance. Jimmy worked with companies to

complete an audit and to fix issues regarding national security. Jimmy also assisted the program's help desk with questions to help ease their burden and streamline their process. Jimmy queried business and critical information systems to identify risks for cleared industry contractor facilities.

Health and Human Services, Washington, DC: Jimmy aided in the development of a counterintelligence team to support the National Institutes of Health. The goal of the team was to reduce the likelihood of intellectual property being stolen by foreign adversaries. Jimmy created a vetting system for potential students along with a cyber action plan for the team to use. As the head of the Non-Traditional Collection (NTC) department, Jimmy ensured senior leadership was briefed on current threats. Jimmy served as the lead analyst for intelligence requirements due to his excellent research and analysis skills, where Jimmy identified critical intelligence gaps, specified collection requirements to fill those gaps, and suggested new methodologies and collection techniques to eliminate gaps.



Thomas Noble

Associate Principal
tnoble@horsleywitten.com

Areas of Expertise

Emergency Preparedness & Response
Water Sector Infrastructure Protection
Education, Facilitation & Training
Integrated Water Resources Management
Environmental Permitting & Compliance
Site Assessment & Remediation

Professional Registrations &

Affiliations

RAM-W for Small/Medium Water Systems
FEMA Certifications:
ICS-100/200/300/400
ICS Train-the-Trainer
IS-26 Points of Distribution
IS-139 Exercise Design
IS-275 EOC Role
IS-630 Public Assistance
IS-700 NIMS
IS-706 NIMS Intrastate Mutual Aid
IS-800B NRF
L960 DIV Supervisor
American Water Works Association
(AWWA)
New England Water Works Association
(NEWWA)

Academic Background

Master of Science, Hydrology, University
of New Hampshire
Bachelor of Science, Geology, The
College of William and Mary in Virginia

Professional Experience

Horsley Witten Group, Inc., Senior Project
Manager and Associate Principal,
2000 to Present
Town of Essex, Massachusetts,
Wastewater Program Coordinator,
1996 to 2000
Installation Restoration Program, Otis Air
National Guard Base, Massachusetts,
Hydrologist, 1991 to 1994

Horsley Witten Group

Sustainable Environmental Solutions



Tom Noble, since 1991, assists both government agencies and private clients with Safe Drinking Water Act, Clean Water Act, America's Water Infrastructure Act, Bioterrorism Act, and federal, state, and local environmental regulations compliance. Tom also serves as the Horsley Witten Group's water sector infrastructure preparedness and protection lead, helping the U.S. EPA Water Security Division, states, and local governments to better prepare for, respond to, and recover from all-hazards disasters. He also advises drinking water and wastewater systems on risk and resilience, to include the expected impacts from climate change, and both the adaptation and mitigation strategies that can be employed to offset identified risks. Tom has a long track record of aiding governments, organizations, and communities to develop and implement engagement strategies that strengthen their emergency plans. Tom is a veteran of the armed services.

KEY PROJECTS

Risk and Resilience Assessments for Drinking Water Utilities: Tom uses the American Water Works Association J-100 method to assess drinking water utilities for risk exposure and resilience to natural (e.g., climate change), man-made (e.g., terrorism) and cybersecurity threats and hazards. With this method, he guides the utilities through a facilitated process to identify critical assets, threats, potential consequences, vulnerabilities, and threat likelihoods which helps utilities to select appropriate mitigation measures as they develop a risk management program.

Drinking Water Utility Emergency Response Plan (ERP) Template: With U.S. EPA, Tom developed a template to assist water utilities with developing an ERP in accordance with America's Water Infrastructure Act of 2018 Section 2013(b). The template describes strategies, resources, plans, and procedures utilities can use to prepare for and respond to an incident, natural or man-made, that threatens life, property, or the environment.

Black Sky Planning: With U.S. EPA, Tom works with water and electric utilities in several regions of the country to better prepare for power outages that may last 30 days or longer. This effort includes conducting workshops and exercises where utilities and their response partners can work through scenarios to help identify and implement preparedness actions.

Public Safety Power Shutoff (PSPS) Standard Operating Procedure (SOP): With U.S. EPA and California water and electric utilities, Tom helped develop this SOP to assist water utilities to prepare, respond and recover from intentional power shutoffs by electrical utilities to reduce wildfire risks.

Emergency Drinking Water Supply (EDWS) Plan Template: Tom and the U.S. EPA developed this template as an important tool for state drinking water primacy agencies that allows for optimal coordination with the state emergency management agency and other stakeholders. This resource helps state primacy agencies develop an EDWS plan and comply with 40 CFR 142, Subpart B.

Cybersecurity Assessments and Technical Assistance: With the U.S. EPA, Tom provides both broad oversight for and conducts confidential cybersecurity assessments for water and wastewater utilities around the country. Based on the assessment, a utility receives a customized cyber action plan and subsequent assistance that helps them to implement the plan's identified cybersecurity best practices.

Tribal Circuit Rider Services: Tom serves as Program Manager on this U.S. EPA Region 9 project which supports tribes in Arizona, California, and Nevada by providing technical assistance and training on how to operate and maintain both drinking water and wastewater systems.



Freshwater Pond Phosphorus Regulation: Tom drafted a Board of Health regulation for the Town of Brewster, Massachusetts designed to protect approximately 80 freshwater ponds from water quality degradation due to anthropogenic phosphorus inputs. In a first of its kind regulation for the Town, it is currently being reviewed by the Board in preparation for public hearing and comment and eventual adoption.

Water Sector Cybersecurity Workshops: Principal in Charge of this U.S. EPA funded project to develop and conduct one-day cybersecurity workshops and cyber incident response exercises throughout the United States. Tom oversaw the development of the multiple training presentations used to support this workshop and exercise series.

Innovative Preparedness and Response Practices to Support Water System Resilience: Project Manager for this Water Research Foundation project designed to identify water sector innovative preparedness and response practices. Tom oversaw the development of a guide, designed in a user-friendly, clickable PDF format allowing users to quickly identify implementable and actionable emergency management techniques that will enhance their ability to respond and to recover more quickly from a disaster.

Regional Hazard Mitigation Planning in Florida's Panhandle: As Principal in Charge developed flood mitigation planning in the Florida Panhandle. Tom ensured that communities' water and wastewater utilities coordinated with their hazard mitigation planners to incorporate utility projects into hazard mitigation plans for FEMA funding eligibility.

Route to Resilience (RtoR) Tool: Tom and his team designed the RtoR Tool that integrates web resources into a comprehensive, coherent, and compelling message to utilities on specific steps to take in becoming resilient to all-hazards events that they may face.

EPA Water and Energy Nexus in Disasters Workshops: Lead Facilitator for this workshop that increases water utilities' understanding of the capabilities and limitations of energy utilities and gives information on options for back-up power and resiliency. The workshop also aims to increase the energy sector's prioritization of water utility power restoration.

EPA Extreme Events Resiliency Planning Workshop for Communities and Utilities: Project Manager and developer for this Climate Ready Water Utilities program national workshop series designed to support efforts by communities and their drinking water and wastewater utilities to integrate climate change and extreme event planning into existing plans.

EPA Preparing for Extreme Weather Events - Workshop Planner for the Water Sector: As Project Manager developed this HTML-based tool which helps drinking water, wastewater and stormwater utilities prepare for extreme events by providing materials needed to plan, facilitate, and conduct an extreme weather adaptation planning workshop.

Update and Development of an Emergency Operations Plan for the Rhode Island Office of Drinking Water Quality: Led this project to update the Rhode Island Department of Health Office of Drinking Water Quality's Emergency Operations Plan. He also developed and conducted both a seminar and a tabletop exercise to familiarize staff with the new plan.

EPA Water Sector Incident Command System (ICS) and National Incident Management System (NIMS) Training: Tom served as a Lead Instructor and developer for this training presented across the United States. Through presentations and group learning activities, he ensures that thousands of water sector professionals will receive their ICS and NIMS certifications.

Evaluation of Impacts to Underground Sources of Drinking Water (USDWs) by Hydraulic Fracturing of Coalbed Methane Reservoirs: Examined whether coalbed methane hydraulic fracturing processes could potentially affect Underground Sources of Drinking Water throughout the United States. After an extensive research, he wrote summary reports for approximately 1/3 of the major US coal basins.

Satisfactory Course Completion Requirements – Webinars and Virtual Workshops

Due to COVID-19, all participants will be participating remotely from their home or normal place of work utilizing the Zoom Meeting virtual platform. Horsley Witten will verify participant participation through the following methods:

- The webinar software that will be used allows participants to view and hear the presentations and provide feedback through a Q&A function and polling.
- The webinar software will provide the facilitators with a report of who was logged into the webinar and the time spent viewing the webinar to track attendance.
- Participants will be encouraged participate individually from their own computer, but the event facilitators will provide a sign-in sheet in situations where multiple participants are viewing the virtual event (e.g., social distancing in a utility conference room).
- The event facilitators will provide a link to an online feedback form for participants to provide their feedback after the event concludes.
- Once the attendance report is reviewed and confirms the time that the participant was logged into the webinar software, each participant will receive a certificate as proof of participation.