

New Federal Requirement Added to America's Water Infrastructure Act

Recent legislation includes assessing malicious acts and natural hazards to water systems

Clean, safe, and reliable water supplies are fundamental for public health and safety. The protection of water systems and infrastructure from source to tap is essential to meet this necessity.

In order to ensure the ongoing protection of our nation's water supplies, a new federal legislative requirement to **America's Water Infrastructure Act of 2018** was signed into law on 10/23/18, called the **Community Water System Risk and Resilience Act**. This new act is more broad than other assessments related to risks and resilience, and specifically calls out the risks of "natural hazards" that have not been assessed by all utilities in the past under previously required vulnerability assessments.

Under this new requirement, each community water system serving a population of more than 3,300 must perform the following:

1. Risk and resilience assessments.

- Conduct an assessment of the risks to and resilience of its system, including the:
 - Risk to the system from malicious acts and natural hazards;
 - Resilience of the pipes and constructed conveyances, physical barriers, source water, water collection and intake, pretreatment, treatment, storage and distribution facilities, electronic, computer, or other automated systems (including the security of such systems) that are used by the system;
 - Monitoring practices of the system;
 - Stabilization of account management, invoicing, payroll, etc.;
 - Use, storage, or handling of various chemicals by the system;
 - Operation and maintenance of the system.

2. Evaluate capital and operational needs for risk and resilience management for the system.

3. Prepare or revise an Emergency Response Plan (ERP) that incorporates findings of the risk and resilience assessment.

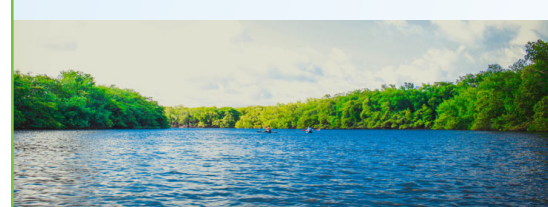


Creating Resiliency by Evaluating Risks to Water and Infrastructure

The Metropolitan North Georgia Water Planning District commissioned a study to determine future natural hazards due to climate change, specifically what water infrastructure is most vulnerable to uncertainty and how can North Georgia mitigate these risks. CDM Smith assessed the potential climate impacts on water resources and infrastructure within a 15-county region. This process is similar to what is required by the risk and resilience assessment.

"CDM Smith did an outstanding job helping the Metropolitan North Georgia Water Planning District understand the impacts of climate variability on water demands, water supplies and water quality. They also provided excellent examples of adaptation measures for increased resiliency against future climate uncertainty, lending a real-world aspect to the work."

Katherine Zitsch, PE, BCEE
Natural Resources Division Manager
Metropolitan North Georgia Water Planning District



Assessing the Vulnerability of Water Authority of Great Neck North, NY

CDM Smith prepared a vulnerability assessment using the New York Rural Water Association methodology, which outlines the process for determining vulnerability of critical assets and operations for water utilities and developing corrective actions. The final report was accepted by the New York State Department of Health.

The deadlines for complying with this **mandatory legislation** are:

- **March 31, 2020** for systems serving a population of 100,000 or more;
- **December 31, 2020** for systems serving a population of 50,000 or more, but less than 100,000;
- **June 30, 2021** for systems serving a population of 3,300 or more, but less than 50,000.

The risk and resilience assessment is critical to identifying malicious acts on the water system (e.g., physical and information technology terrorism) and natural hazards that are defined in the Act as earthquakes, tornados, flood, hurricane, wildfire, and hydrologic changes. The emergency response plan addresses the vulnerabilities found in the assessment to ensure your utility is prepared to act against threats and hazards.

Within these categories, the following potential threats and risks and vulnerabilities may be considered: grid-wide power outages; riverine and tidal floods and surge; dam failures; mud slides; droughts and extreme heat; fires; blizzards, extreme cold, and ice storms; winds from hurricanes, tropical storms, and tornados; volcanic and seismic events and tsunamis. The EPA is expected to provide guidance in August, 2019 and AWWA is updating the J-100 guidance.

Our Experts Will Guide You to Success

For more information on how CDM Smith can assess your water system's risks and vulnerabilities, please contact one of our experts near you:

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The Seven-Step RAMCAP Process

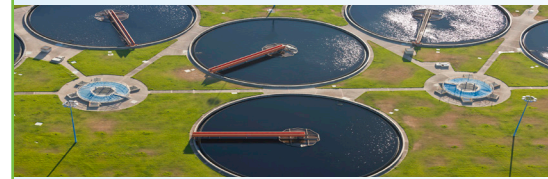
- 1. ASSET CHARACTERIZATION** → WHAT ASSETS DO I HAVE AND WHICH ARE CRITICAL?
- 2. THREAT CHARACTERIZATION** → WHAT THREATS AND HAZARDS SHOULD I CONSIDER?
- 3. CONSEQUENCE ANALYSIS** → WHAT HAPPENS TO MY ASSET IF A THREAT OR HAZARD HAPPENS? HOW MUCH MONEY LOST, HOW MANY LIVES LOST, HOW MANY INJURED?
- 4. VULNERABILITY ANALYSIS** → WHAT ARE MY VULNERABILITIES THAT WOULD ALLOW A THREAT OR HAZARD TO CAUSE THESE CONSEQUENCES?
- 5. THREAT ANALYSIS** → WHAT IS THE LIKELIHOOD THAT A TERRORIST, NATURAL HAZARD, OR DEPENDENCY/PROXIMITY HAZARD WILL STRIKE MY FACILITY?
- 6. RISK/RESILIENCE ANALYSIS** → WHAT IS MY RISK AND RESILIENCE? **RISK = CONSEQUENCES X VULNERABILITY X THREAT LIKELIHOOD.**
RESILIENCE = SERVICE OUTAGE DURATION X VULNERABILITY X THREAT LIKELIHOOD.
- 7. RISK/RESILIENCE MANAGEMENT** → WHAT OPTIONS DO I HAVE TO REDUCE RISKS AND INCREASE RESILIENCE? HOW MUCH WILL EACH BENEFIT IN REDUCED RISKS AND INCREASED RESILIENCY? HOW MUCH WILL IT COST? WHAT IS THE BENEFIT-COST RATIO OF MY OPTIONS?



Our Breadth of Experience

CDM Smith has been providing water treatment, source water protection, and water infrastructure planning, design, permitting, construction, and operations support since 1947. We have designed more than 400 water treatment facilities providing clean, reliable water supplies to more than 350 communities across the country.

We can build upon our extensive experience in source water, water treatment, and delivery systems to identify a list of potential risks and vulnerabilities to your water system through planning, design upgrades, operation plans, and contingency plans for power, emergency access, and continuous operations while saving you money.



Priorities are based on the potential consequences of the impacts to the system.

We have experience using the guidelines of the seven-step Risk Analysis and Management for Critical Asset Protection (RAMCAP - see **figure 1** on the bottom left of this page) developed by AWWA, ASME-ITI and ANSI in the J100 guidance. This is a process that follows the same principles as the Community Water System Risk and Resilience Act for risk and resilience processes for clients across the country.

