CalMutuals

The Voice of Small Water Systems

# The American Water Infrastructure Act

*October 4, 2019*

# Ready, set…be prepared (and forewarned)

**Stay tuned for updates!**

# America's Water Infrastructure Act of 2018: Risk Assessments and Emergency Response Plans

On October 23, 2018, America's Water Infrastructure Act (AWIA) was signed into law. The law requires community (drinking) water systems serving more than 3,300 people to develop or update risk assessments and emergency response plans (ERPs). The law includes components that the risk assessments and ERPs must address, and establishes deadlines by which water systems must certify to EPA completion of the risk assessment and ERP.

EPA's Water Security Division is currently working to develop the tools, resources and procedures that water systems need to comply with Section 1433 of the AWIA. This site will be updated with new information as that work progresses.

https://www.epa.gov/waterresilience/americas-water-infrastructure-act-2018-risk-assessments-and-emergency-response-plans

# America's Water Infrastructure Act

- On October 23, 2018, America's Water Infrastructure Act (AWIA) was signed into law.
- AWIA Section 2013 requires community (drinking) water systems serving more than 3,300 people to develop or update risk assessments and emergency response plans (ERPs).
- The law specifies **1)** the components that the risk assessments and ERPs must address, and, **2)** establishes deadlines by which water systems must certify to EPA completion of the risk assessment and ERP.

# Certification Deadlines

| Population Served | Risk Assessment | Emergency Response Plan* |
|---|---|---|
| ≥ 100,000 | March 31, 2020 | September 30, 2020 |
| 50,000-99,999 | December 31, 2020 | June 30, 2021 |
| 3,301-49,999 | June 30, 2021 | December 30, 2021 |

**Certification Deadlines**

**Emergency response plan certifications are due six months from the date of the risk assessment certification. The dates shown above are certification dates based on a utility submitting a risk assessment on the final due date.*

# AWIA: Background—*USEPA*

Vulnerability Assessments—2003

- Following the terrorist attacks of Sep 11, 2001, the water sector was the first sector to receive a congressional mandate to conduct assessments to identify vulnerabilities to terrorist threats for community public water supplies serving more than 3,300 persons (see section 1433 of the Safe Drinking Water Act).
- Section 1433 further required each of these community water systems to prepare an **emergency response plan** incorporating the results of the vulnerability assessment. EPA was directed to provide guidance to smaller systems on how to conduct vulnerability assessments, prepare emergency response plans, and address threats.
- Section 1433(e) authorized the appropriation of $160 million for FY2002

American Water Works Association

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# AWWA's J100 Assessment

- Over the last seventeen years, assessments in the water and wastewater sector have evolved from terrorism vulnerability assessments **to all hazard vulnerability assessments including malevolent and naturally occurring hazards**.
- There was a methodology developed that is the ANSI/AWWA standard for our sector. This standard, Risk Analysis and Management for Critical Asset Protection Standard (RAMCAP) for Risk and Resilience Management of Water and Wastewater Systems, commonly called the J100 Risk Assessment is a customized assessment for the water sector and is based on RAMCAP methodology.
- The RAMCAP approach is intended to be a broadly applicable framework for all critical infrastructure sectors. Sector-specific features and examples can be added to fine-tune the approach for a specific sector.

# Use of Previous Risk Assessment and ERP

- A CWS may use a risk assessment (the 2003 VA's) or ERP developed prior to enactment of the AWIA
- To meet certification requirements, a previous risk assessment or ERP must:
  - ✓ ***Include all assessment or response components listed in the law; and***
  - ✓ ***Reflect the current condition of the CWS.***
- If required assessment or response components have been omitted, <u>the CWS may add those components</u>
- If the CWS has undergone modifications, the CWS may update the risk assessment or ERP where needed

# Use of Standards and Tools

- EPA does **not** require the use any standards or tools to develop a risk assessments or ERP under AWIA.
  - *CWS are only required to follow the law*
- The use of standards (e.g., AWWA methods) and tools from EPA and others is recommended.
  - *Methods and tools can facilitate the development of sound risk assessments and ERPs*
- No method or tool “guarantees” compliance with AWIA.
  - *The CWS must ensure it complies with all AWIA requirements*
  - *Alternate methods cannot be used in place of AWIA requirements*

# Hey, Mike!

I’m already confused with this AWIA, RAMCAP, vulnerability assessment stuff???

# Overview: AWIA

Key Section of the new law: AWIA Section 2013 (a) – (f):

- Replaces SDWA Section 1433 (from 2002 Bioterrorism Act)
- Applies to all community water systems serving more than 3,300 people
- **Conduct Risk and Resilience Assessments and update Emergency Response Plans**
- Submit **certifications to EPA** by specified deadlines
- Review risk assessments and ERPs every five years
- Coordinate with local emergency planning committees
- Maintain records

AMERICA'S WATER INFRASTRUCTURE ACT

# AWIA—*What's the intent?*


*"Kindly fill out this application for the reduction of bureaucracy."*

# Sec 2013: Risk and Resilience Assessment

<u>The intent</u>

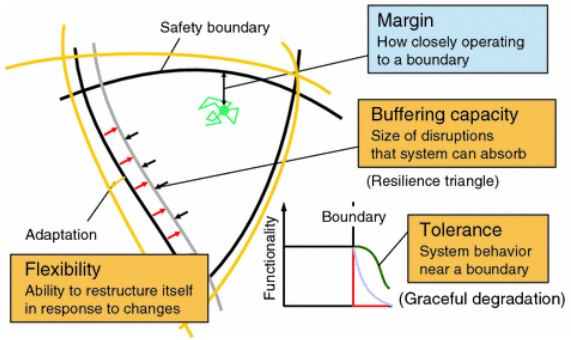
- **Analyzing** risks associated with adversary attacks
- **Identifying** and developing countermeasures and consequence-mitigation strategies to reduce risks.
- **Evaluating** countermeasures and consequence-mitigation strategies using benefit-cost and other methods to inform resource allocation decisions.

Risk and Resilience

Guns
Guards
Gates

All Hazards
Approach

Response
Recovery
Resilience

# Sec 2013: Specific Risk and Resilience Assessments

- Consider risks from malevolent act and natural hazards
- You should include:
  - ✓ *Pipes/conveyances, source water, water collection/intake, pretreatment, treatment, storage and distribution, electronic, computer, or other automated systems (including security);*
  - ✓ *Monitoring practices;*
  - ✓ *Financial infrastructure;*
  - ✓ *Use, storage or handling of chemicals;*
  - ✓ *Operation and maintenance; and*
  - ✓ *May include capital and operational needs for risk management*

Risk and Resilience


1) Asset Characterization
2) Threat Characterization
3) Consequence Analysis
4) Vulnerability Analysis
5) Threat Analysis
6) Risk/Resilience Analysis
7) Risk/Resilience Management

Risk and resilience apply to many aspects of water systems, such as infrastructure, distribution and cybersecurity.

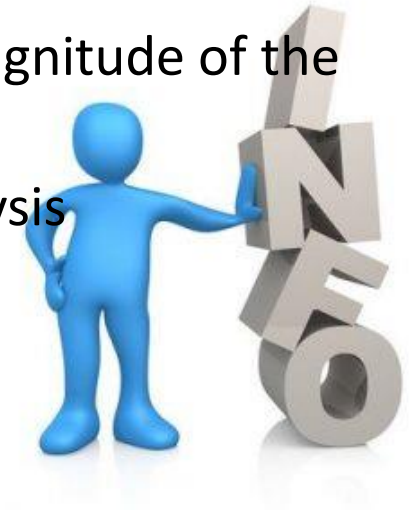
# What information do you need to provide?

1. <u>Characterize Your Assets</u>
   - Document mission-critical functions of the Utility
   - Determine which assets are most critical, meaning to identify the assets that, if compromised, could result in widespread service interruption, injuries or significant economic loss
   - Document existing protective countermeasures on critical assets
   - Conduct an initial ranking or screening of assets based on consequences to identify the highest priority asset

# What information are they seeking? (continued)

## 2. Characterize Threats

- Identify malevolent threats, such as active assailants, workplace violence, terrorism, cyberattack, bomb threat, contamination of the water system, unauthorized entry, etc.
- Identify natural hazards, such as tornadoes, hurricanes, flooding, fire, ice storms, earthquakes, etc.
- Identify dependency and proximity hazards, such as chemical release, power outage, loss of key suppliers, source water contamination, inability/unwillingness of key employees to come to work, etc.
- Evaluate and rank various threat-asset pairs according the judged magnitude of the resulting consequences
- Select critical threat-asset pairs to be included in more detailed analysis



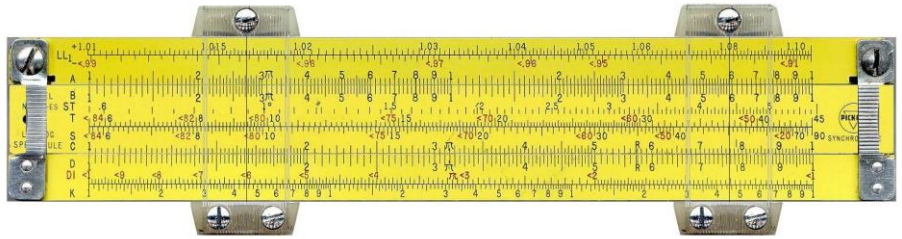
# What information are they seeking? (continued)

3. <u>Consequence Analysis</u> **(C)**
   Level of damage expected if the hazardous event occurs

4. <u>Vulnerability Analysis</u> **(V)**
   Likelihood of damage occurring if the hazardous event occurs

5. <u>Threat analysis</u> **(T)**
   Likelihood of the hazardous event occurring

6. <u>Risk and Resilience Analysis</u> (R=C*V*T)
   Calculate risk for each threat-asset pair



# What information are they seeking? (continued)

7. **Manage Risk and Resilience**
   - Define acceptable levels of risk scores
   - Identify countermeasures or mitigation options
   - Develop cost$ projection$
   - Calculate benefit/cost ratio of mitigation options
   - Select, prioritize, and implement mitigation options through CIPs, operational improvements, and other approaches

# What if I want to do the R&R myself?

**Conduct a Drinking Water or Wastewater Utility Risk Assessment**
**Vulnerability Self-Assessment Tool - Web Enabled (VSAT Web) 2.0**

- VSAT Web 2.0 is a user-friendly tool that can help drinking water and wastewater utilities of all sizes to conduct a risk and resilience assessment.


- With VSAT Web, a utility can:
  - ✓ Identify the highest risks to mission-critical operations and
  - ✓ Find the most cost-effective measures to reduce those risks

VSAT Web

Vulnerability Self Assessment Tool

# Risk and Resilience (summary)

- **Identifies**, deters, detects, and prepares for these threats.
- **Reduces** vulnerabilities of critical assets.
- **Mitigates** the potential consequences of incidents that do occur—and maybe lawsuits???

# Section 2013: Emergency Response Plans


Prepare or revise an ERP

**that incorporates**

**findings from the risk assessment**

# Section 2013: Emergency Response Plans

The Act requires community water systems serving populations greater than 3,300 to develop or update an ERP that incorporates findings of their risk and resilience assessment.

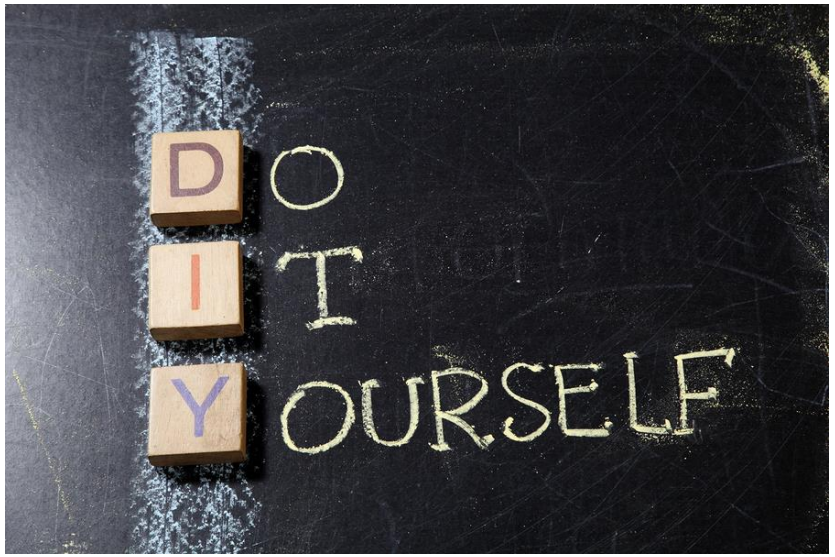
1. *Strategies and resources to improve* the resilience of the system, including the physical security and cybersecurity of the system;
2. *Plans and procedures* that can be implemented, and identification of equipment that can be utilized, in the event of a malevolent act or natural hazard that threatens the ability of the community water system to deliver safe drinking water;
3. *Actions, procedures and equipment* which can obviate or significantly lessen the impact of a malevolent act or natural hazard on the public health and the safety and supply of drinking water provided to communities and individuals, including the development of alternative source water options, relocation of water intakes and construction of flood protection barriers; and
4. *Strategies* that can be used to aid in the detection of malevolent acts or natural hazards that threaten the security or resilience of the system.

# What if I want to do the ERP myself?

The USEPA has an ERP Template and Instructions in a PDF document that features an *** *embedded blank ERP template in Word format* *** that can be **easily accessed and modified** by utility personnel to meet their own water system needs.

**Community Water System Emergency Response Plan Template and Instructions**

https://www.epa.gov/sites/production/files/2019-07/documents/190712-awia_erp_template_instructions_kab_508c_v6.pdf



# Coordination

- Coordinate with the *Local Emergency Planning Committees* (LEPC) when preparing or revising the risk assessment **and** ERP*
  - ✓ *EPA recommends coordination with federal, state, local, and private sector partners*

# Record Maintenance

- Maintain the risk assessment and ERP for 5 years after the due date for certification

* *The California State Emergency Response Commission (SERC) established Six Emergency Planning Districts having the same boundaries as the six Mutual Aid Regions. The SERC appointed a* ***Local Emergency Planning Committee*** *(LEPC) for each planning district and supervises and coordinates their activities.*

# One more thing…

*Consumer Confidence Reports*: The legislation requires any water system serving populations of 10,000 people or more to provide consumer confidence reports (CCRs) **biannually** to identify violations and exceedances for which corrective action was required

# Certification


Each CWS must certify to the EPA that the CWS completed the risk assessment and ERP:

- ✓ *No need to send the actual risk assessment or ERP!*
- ✓ *Include only the CWS name, date of completion, and statement of completion*
- ✓ *EPA will provide an optional certification template for the risk assessment and ERP*

# A 5-Year Review and Revision

- Each CWS must review and, if necessary, revise the risk assessment every five years after the certification deadline.
  - ✓ *Submit a certification to EPA that the CWS has reviewed and, if applicable, revised the risk assessment*
- Each CWS must review and, if necessary, **revise** the ERP every five years following a review of the risk assessment.
  - ✓ *Incorporate any revisions to the risk assessment into the ERP*
  - ✓ *Submit a certification to EPA that the CWS has reviewed and, if necessary, revised the ERP not later than 6 months after the CWS has reviewed the risk assessment*

# How much???


Summary And
Conclusion

# Use of Standards and Tools

- EPA does **not** require the use any standards or tools to develop a risk assessments or ERP under AWIA.
  - <u>CWS are only required to follow the law</u>
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- If the CWS has undergone modifications, the CWS may update the risk assessment or ERP where needed

# AWIA—Overview

- Applies to all community water systems serving more than 3,300 people
- Must conduct Risk and Resilience Assessments and update / revise your Emergency Response Plans
- The EPA does not require water systems to use designated standards or methods to conduct the assessments and plans.
- Submit certifications to EPA by specified deadlines
- Review risk assessments and ERPs every five years
- Coordinate with local emergency planning committees
- Maintain records
- *Consumer Confidence Reports*: System serving populations of 10,000 people or more to provide consumer confidence reports (CCRs) biannually.

AMERICA'S WATER INFRASTRUCTURE ACT

# What Else??

# Certification Due Dates

## Risk Assessment

| Population served ≥100,000 | Population Served 50,000-99,999 | Population Served 3,301-49,999 |
|---|---|---|
| March 31, 2020 DUE | December 31, 2020 DUE | June 30, 2021 DUE |

## Your ERP

Certify your ERP no later than six months after completion of the risk assessment


LET'S GO
Dodgers™
LA

# THANK YOU

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