

# Measures of Progress for Securing our Utilities

## NARUC Committee on Critical Infrastructure

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# Discussion Points

- Brief discussion of NIPP and SSP
- Sector and Government Coordinating Councils
- CIPAC Metrics Workgroup
  - Revised features of an active and effective protective (security) program
  - Metrics development for the water sector
- Lessons learned

# National Infrastructure Protection Plan (NIPP)

- “The NIPP sets national priorities, goals, and requirements ... which will help ensure that our government, economy, and public services continue in the event of a terrorist attack or other disaster.”
- The plan is based on the following:
  - Strong public-private partnerships within and across CI/KR sectors.
  - Robust multi-directional information sharing
  - Risk management framework establishing processes for combining consequence, vulnerability, and threat information.

# NIPP



# SSP

- **National Infrastructure Protection Plan (NIPP)**
  - All hazards
  - Unified approach
  - Assessment
  - Structure
- **Measure security effectiveness**
- **Final in June 2006**

- **Sector Specific Plan (SSP)**
  - One for each of 17 (CI/KR) sectors
  - Developed in partnership with Sector Specific Agency (SSA)
    - EPA is the SSA for water sector
  - Metrics from each sector will feed into NIPP
- **Represents a Strategic roadmap for the sector**
  - EPA & utilities
  - Final May 21, 2007

# The Water Sector Vision



## Water

Critical Infrastructure and Key Resources  
Sector-Specific Plan as input to the  
National Infrastructure Protection Plan

May 2007



- *A secure and resilient drinking water and wastewater infrastructure that provides clean and safe water as an integral part of daily life. This Vision assures the economic vitality of and public confidence in the nation's drinking water and wastewater through a layered defense of effective preparedness and security practices in the sector.*

# SSP Goals

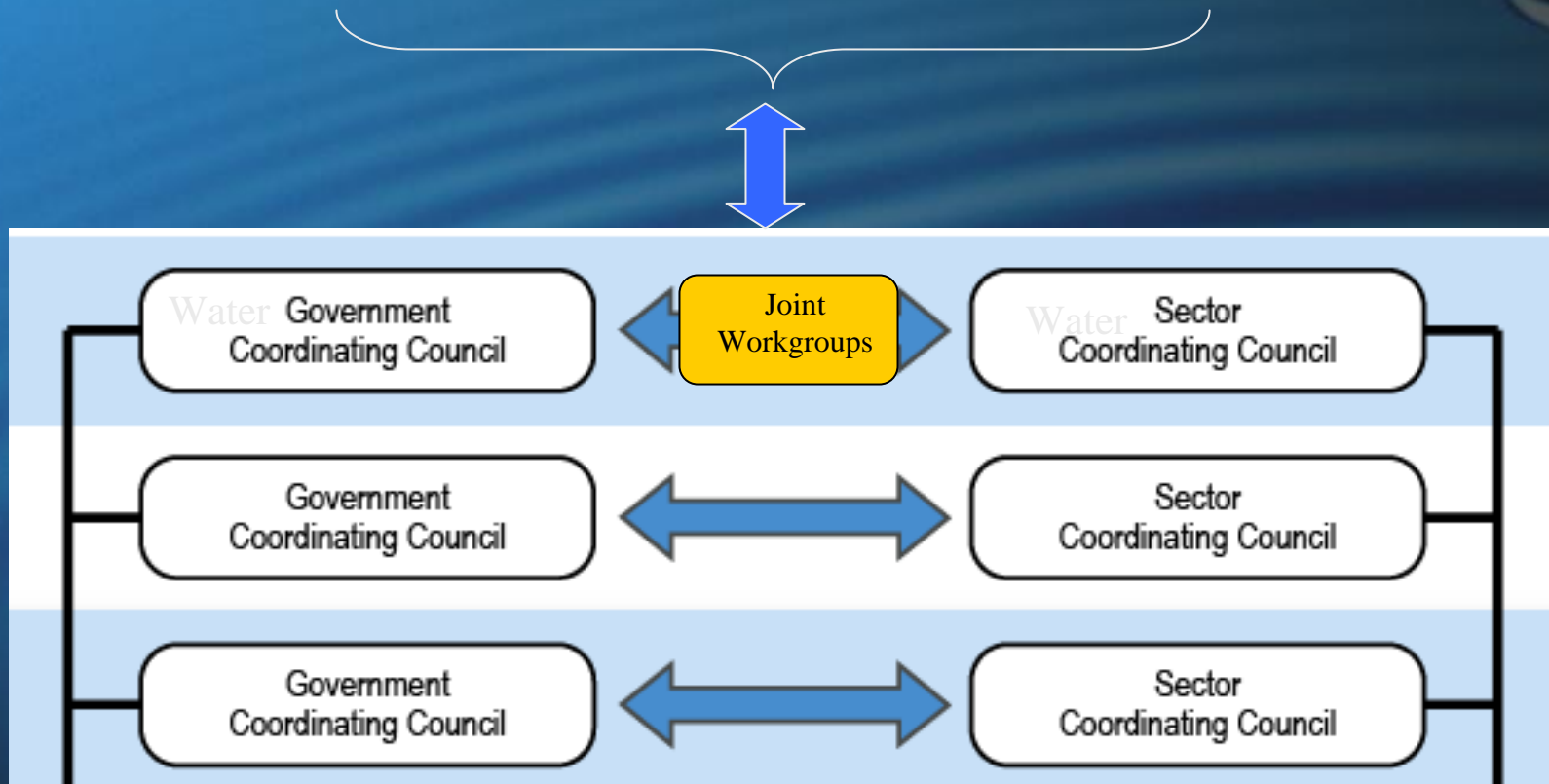
- Goal 1: Sustain protection of the public health and environment
- Goal 2: Recognize and reduce risks in the Water Sector



- Goal 3: Maintain a resilient infrastructure
- Goal 4: Increase communication, outreach, and public confidence

# NIPP Partnership Model & CIPAC

Critical Infrastructure Partnership  
Advisory Council (CIPAC) Framework



# Water GCC and SCC

- **Water GCC members represent:**
  - **Federal, state, and local governments, e.g.,:**
    - USACE, USDA, DOD, HHS, DHS, DOI, and DOS
  - **Associations that support federal, state, and local governments:**
    - Association of State Drinking Water Administrators (ASDWA)
    - Association of State and Interstate Water Pollution Control Administrators (ASWIPCA)
    - Environmental Council of the States (ECOS)
    - National Association of Regulatory Utility Commissioners (NARUC)
  
- **Water SCC members represent:**
  - **Drinking water and waste water utility owners and operators**
  - **Associations representing water utilities, including:**
    - National Association of Water Companies
    - American Water Works Association
    - Association of Metropolitan Water Agencies
    - National Rural Water Association
    - Water Environment Federation
    - National Association of Clean Water Agencies



# Critical Infrastructure Partnership Advisory Council (CIPAC) Process

- SCC and GCC meet and collaborate under the CIPAC process
- Purpose is to discuss major policy issues and hear from senior officials
- Water CIPAC can/has formed joint working groups:
  - Co-chaired by SCC and GCC
  - Members identified by SCC and GCC
  - Association staff can be full members
  - Charged with providing water security policy advice to the full SCC and GCC for approval

# CIPAC Metrics Workgroup

Two Objectives:

1. Finalize a National Performance Measurement System
  - Develop measures that align and support goals and objectives of Water SSP
  - Determine:
    - o How to track measures
    - o How to structure reporting
    - o Who will collect and retain information and how it will be protected
2. Update the “14 Features” of an Active and Effective Security Program
  - Adequately address concepts of *all hazards* and *resiliency*
  - Align features with Water SSP goals and objectives
  - Streamline or combine existing features



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Features Update

### 2. Update the “14 Features” of an Active and Effective Security Program

- Adequately address concepts of *all hazards* and *resiliency*
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# Revised Features

- **NIPP/SSP terminology (e.g. protective program)**
- **Simplified / cleaned-up text**
- **Explicit mention of business continuity and mutual aid**
- **10 features instead of 14**
- **Aligned with the SSP Goal and Objectives**

# CIPAC Metrics Workgroup

## Two Objectives:

Primary  
Focus of  
Workgroup

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# Measures Timeline

- 2003 – National Drinking Water Advisory Council (NDWAC), Water Security Working Group formed (WSWG)
- 2005 – WSWG presents findings on components of an “active and effective security program”
- 2006 – EPA forms the Measures Testing Group (MTG), a Workgroup of utilities and states provided implementation options for the recommended measures
- 2006 – SSP finalized for the water sector
- 2007 – CIPAC Metrics workgroup forms and deliberates using previous findings and the SSP
- 2008 – measurement system will be implemented



# CIPAC Metrics Workgroup – Outcomes

- A voluntary survey that can be completed by utilities and other actors to provide progress information on measures aligned and supported by the SSP
- Broad Audience
  - Utilities
  - Regulators
  - Legislators
  - Public
- Provide for anonymous reporting
- Encourage participation among all water utility sizes



# Final Water Sector Metrics

- A full suite of Metrics has been developed and approved by the Coordinating Councils
  - 16 Utility Activity Metrics
  - 15 Risk Reduction Metrics
  - 3 Hazardous Chemical Metrics
  - 17 “Other Actor” measures have been developed
    - Federal Agencies
    - State Agencies
    - Water Utility Associations
- Combination of “output” and “outcome” measures



# Example Utility Activity Metrics

- **Goal 2: Recognize and reduce risks in the Water Sector**
  - **Measure: Percentage of utilities that annually review and periodically update vulnerability assessments**
  - **Question: Do you review your VA annually (Y/N)?**
- **Goal 3: Maintain a resilient infrastructure**
  - **Measure: Number and percentage of utilities that have a written business continuity plan**
  - **Question: Do you have a written business continuity plan (Y/N)?**



# Utility Hazardous Chemical Measures

- 3 Measures for Hazardous chemicals
- Recognition of increasing pressure to include water sector in federal chemical security regulations
- Need to recognize extensive efforts by sector in protecting hazardous chemicals
- Three Measures dealing with:
  - Physical or procedural controls to safeguard hazardous chemicals
  - If gaseous chlorine used?
  - Evaluation of disinfection methods

# Risk Reduction Metrics

- Outcome based
- 15 RR metrics
  - 3 for National data aggregation
  - 12 for self assessment
- National Data Aggregation
  - Percent of critical assets with enhanced intruder detection capability
  - Back-up power for critical operations
  - Production resiliency

# Example “Other Actor” Metrics

- Applicable to EPA, DHS, States, Public Utility Commissions and Utility Associations
- Number and percentage of Public Utility Commissions (PUCs) that have designated personnel or a method in place to discuss security costs and issues with drinking water and wastewater utilities.
- Does the Commission include security costs and issues in its rate making for drinking water and wastewater utilities?
- Number of state drinking water and/or wastewater programs that have provided or sponsored (including as a partner with one or more other sponsoring agencies) one or more emergency response exercises for water and/or wastewater utilities.

# Reporting Approach

- A simple Turbo-Tax approach
- Voluntary participation for utilities of all sizes
- 3<sup>rd</sup> Party
  - Collection system in place and ready to use in 2008 for the utility measures
  - July 24, 2007 WSCC recommendation designating WaterISAC as the third party data collector for utility data
- Anonymous Reporting
  - PIN Code for QA/QC
  - Non-disclosure agreement
  - Ability to opt out of being contacted
- Size and State Data Will Be Collected
  - Aggregate reports will be generated following strict data management rules so individual utilities cannot be identified.
- EPA will receive aggregated data



# Reporting Baseline & Frequency

- **Baseline for core set of measures will be the first reporting cycle**
- **Frequency**
  - **Annual, in the same month each year**
  - **Reassess if future DHS guidance recommends different reporting frequency**

# Lessons Learned

1. Develop metrics for all “actors” - e.g. owners and operators as well as governments and understand “actors” needs as early as possible in the process
2. Use facilitators who know the players and can keep discussion on track
3. Metrics need to flow from your Strategic Plan Goals and Objectives
4. Think carefully about how decisions will be made (consensus vs. voting) and have a clear charter
5. Document agreements and be sure all members agree!

# Lessons Learned (Continued)

6. Metrics can be perceived as default industry standards
7. If you form a workgroup, choose members wisely
8. Be willing to use innovative approaches to collect metrics data
9. Have strong, involved, and committed workgroup leadership (chairs)
10. Working directly with practitioners tends to be most effective

# Lessons Learned (Continued)

11. Focus on "on the ground changes"
12. In a voluntary system, it's all about the sale
13. The simpler the better
14. Develop measures that give people a chance to communicate incremental progress
15. Pilot measures with a small group
16. Don't hold out for the perfect, strive for what will be supported by the workgroup, and by extension, their constituencies.

# Summary

- 14 features revised to 10 and aligned with the SSP
  - Provides guidance to utilities on protective program components
- Water sector metrics that will measure progress against the goals of the SSP
- Metrics deliverable will be a tool used by a broad audience
  - Utility benchmarking
  - Inform the public regarding sector progress
  - Measure sector progress year after year
  - Identify forward looking priorities



## **Water Sector Specific Plan Goals and Objectives**

### **1. Sustain protection of public health and the environment**

- 1.1. Encourage the integration of security concepts into daily business operations at water sector utilities to foster a security culture.
- 1.2. Evaluate and develop security-related surveillance, monitoring, warning, and response capabilities to recognize risks introduced into water sector systems that affect public health and economic viability.
- 1.3. Develop a nationwide laboratory network for water quality security that integrates federal and state laboratory resources.

### **2. Recognize and reduce risks in the water sector**

- 2.1. Improve the identification of vulnerabilities on the basis of knowledge and best available information, with the intent of increasing the sector's overall security posture.
- 2.2. Improve the identification of potential threats through water sector partners knowledge base and communications.
- 2.3. Identify and refine public health and economic impact consequences of manmade or natural incidents to improve utility risk assessments.

### **3. Maintain a resilient infrastructure**

- 3.1. Emphasize continuity of drinking water and wastewater services as they pertain to water sector utility emergency preparedness, response, and recovery planning.
- 3.2. Explore and expand the implementation of mutual-aid agreements in the water sector.
- 3.3. Identify and implement key response and recovery strategies.
- 3.4. Increase the understanding of how the water sector is interdependent with other critical infrastructure sectors.

### **4. Increase communications, outreach, and public confidence**

- 4.1. Communicate with the public about the level of security and resilience in the water sector and provide outreach to ensure the public's ability to be prepared for and response to a natural disaster or manmade incident.
- 4.2. Enhance communication and coordination among utilities and federal, state, and local officials and agencies to provide information about threats and other hazards.
- 4.3. Improve relationships among all water sector security partners through strong public-private partnerships characterized by trusted relationships.

# FEATURES OF AN ACTIVE AND EFFECTIVE PROTECTIVE PROGRAM FOR WATER AND WASTEWATER UTILITIES

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## Introduction

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The water sector has developed the Features of an Active and Effective Protective Program to assist owners and operators of drinking water and wastewater utilities (water sector) in preventing, detecting, responding to, and recovering from all-hazards, including terrorist attacks or natural disasters. The features are based on the National Drinking Water Advisory Council's recommendation: *14 Features of an Active and Effective Security Program*. The features contained in this version update the original 14 to:

- Capture the water sector's post Hurricane Katrina emphasis on "all hazards" preparedness; and
- Establish explicit alignment with the Water Sector-Specific Plan for Critical Infrastructure Protection (Water Sector SSP) prepared under the framework of the National Infrastructure Protection Plan (NIPP).

The features describe the basic elements for establishing a "protective program" for owners/operators of utilities to consider as they develop utility-specific approaches.

**Note:** Throughout this document, the terms "protective program," "protection," or "protective" are used to describe activities that enhance resiliency and promote continuity of service regardless of the hazard a utility might experience. These activities address the physical, cyber, and human elements of prevention, detection, response, and recovery.

## The Features of an Active and Effective Protective Program

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- 1. Encourage awareness and integration of a comprehensive protective posture into daily business operations to foster a protective culture throughout the organization and ensure continuity of utility services. (Most strongly aligned with SSP Goal 1, Objective 1.)**
  - Senior leadership makes an explicit, easily communicated commitment to a program that incorporates the full spectrum of protection activities.
  - Incorporate protection concepts into organizational culture.

- Foster attentiveness to protection among front line workers and encourage them to bring potential issues and concerns to the attention of others; establish a process for employees to make suggestions for protection improvements.
- Identify employees responsible for implementation of protection priorities and establish expectations in job descriptions and annual performance reviews.
- Designate a single manager (even if it is not a full time duty) responsible for protective programs. Establish this responsibility at a level to ensure protection is given management attention and made a priority for line supervisors and staff.
- Keep current on improvements and good protective practices adopted by other utilities.
- Monitor incidents and available threat-level information; escalate procedures in response to relevant threats and incidents.

**2. Annually identify protective program priorities and resources needed; support priorities with utility-specific measures and self-assess using these measures to understand and document program progress. (Most strongly aligned with Goal 1, Objective 1.)**

- Annually identify and dedicate resources to protective programs in capital, operations, and maintenance budgets; and/or staff resource plans.
- Tailor protective approaches and tactics to utility-specific circumstances and operating conditions; balance resource allocations and other organizational priorities.
- Annually review protection commitments and improvement priorities with top executives.
- Develop measures appropriate to utility-specific circumstances and operating conditions.
- Self-assess against the measures developed to understand and document program progress.

**3. Employ protocols for detection of contamination while recognizing limitations in current contaminant detection, monitoring, and public health surveillance methods. (Most strongly aligned with Goal 1, Objectives 2 and 3.)**

- Recognize that water quality monitoring, consumer complaint surveillance, sampling and analysis, enhanced security monitoring, and public health syndromic surveillance are different, but related, elements of an overall contamination warning system. The effectiveness of these components may vary from system to system.
- Establish sampling and testing protocols for events (and suspected events) and understand availability of, and be prepared to access, specialized laboratory capabilities that can handle both typical and atypical contaminants.

- Track, characterize, and consider customer complaints to identify potential contamination events.
- Use security monitoring methods (e.g., intrusion detection devices such as alarms or closed circuit television) to aid in determining whether a suspected contamination event is the result of an intentional act. (Also see feature 5)
- Establish working relationship with local, state, and public health communities to detect public health anomalies and evaluate them for contamination implications.

**4. Assess risks and periodically review (and update) vulnerability assessments to reflect changes in potential threats, vulnerabilities, and consequences. (Most strongly aligned with Goal 2, Objectives 1 – 3, although is a critical contributor to Goal 1, Objective 1.)**

- Maintain current understanding and assessment of threats, vulnerabilities, and consequences.
- Utilities will need to adjust continually to respond to changes in threats, vulnerabilities, and consequences.
- Establish and implement a schedule for review of threats, vulnerabilities, and consequences and their impact on the vulnerability assessment at least every three to five years to account for factors such as, but not limited to, facility expansion/upgrades, community growth, etc..
- Reassess threats, vulnerabilities, and consequences after incidents and incorporate lessons into protective practices.
- Individuals who are knowledgeable about utility operations should conduct the reviews. Include an executive in the review process to provide an ongoing conduit of information to/from management.
- Use a methodology that best suits utility-specific circumstances and operating conditions; however, ensure the selected method supports the criteria outlined in the National Infrastructure Protection Plan (NIPP).

**5. Establish physical and procedural controls to restrict access only to authorized individuals and to detect unauthorized physical and cyber intrusions. (Most strongly aligned with Goal 2, All Objectives.)**

- Identify critical facilities, operations, components, and cyber systems (such as SCADA).
- Develop and implement physical and cyber intrusion detection and access control tactics that enable timely and effective detection and response.
- Utilize both physical and procedural means to restrict access to sensitive facilities, operations, and components; including treatment facilities and supply/distribution/collection networks.

- Define, identify, and restrict access to security-sensitive information (both electronic and hard copy) on utility operations and technical details.
- Establish means to readily identify all employees (e.g. ID badges).
- Verify identity of all employees, contractors and temporary workers, with access to facilities, through background checks as appropriate per local/state law and/or labor contract and other agreements.
- Test physical and procedural access controls to ensure performance.

**6. Incorporate protective program considerations into procurement, repair, maintenance, and replacement of physical infrastructure decisions. (Most strongly aligned with Goal 2, All Objectives)**

- Bring forward protective program considerations early in the design, planning, and budgeting processes to mitigate vulnerability and/or potential consequences and improve resiliency over time.
- Design and construction specifications should address both physical hardening of sensitive infrastructure; and adoption of inherently lower risk technologies and approaches where feasible.
- Design choices should consider ability to rapidly recover and continue services following an incident.

**7. Prepare emergency response, recovery, and business continuity plan(s); test and review plan(s) regularly, update plan(s) as necessary to ensure NIMS compliance and to reflect changes in potential threats, vulnerabilities, consequences, physical infrastructure, utility operations, critical interdependencies, and response protocols in partner organizations. (Most strongly aligned with Goal 3, Objectives 1 and 3.)**

- Understand the National Incident Management System (NIMS) guidelines established by DHS (as well as community and state response plans and FEMA Public Assistance procedures); and incident command systems (ICS). At a minimum, utility response and recovery planning should be NIMS compliant.
- Coordinate emergency plan(s) with community emergency management partners:
  - Establish interoperable communications systems where feasible to maintain contact with police, fire, and other first responder entities.
  - Establish internal protocols to maintain communications with employees to ensure safety and to coordinate response activities.
- Implement backup plans and strategies for critical operations, including water supply and treatment (to mitigate the potential public health, environmental, and economic consequences of events), power, and other key components.

- Maintain plan(s) that are exercised at least annually, identify circumstances that prompt implementation, and identify individuals responsible for implementation.
  - Provide employees with appropriate security and preparedness training and education opportunities.
  - At least annually review plan(s) and conduct exercises that address the full range of threats relevant to the utility.
  - Update plan(s), as necessary, to incorporate lessons from training, exercises, and incident responses.
- Ensure plan(s) identify critical and time sensitive applications, vital records, processes, and functions that need to be maintained; and the personnel and procedures necessary to do so until utility has recovered. At a minimum, plan(s) should include a business impact analysis and address need for power, communication (internal and external), logistics support, facilities, information technology, and finance and administration-related functions; including necessary redundancy and/or timely access to backup systems and cash reserves.

**8. Forge reliable and collaborative partnerships with first responders, managers of critical interdependent infrastructure, other utilities, and response organizations to maintain a resilient infrastructure. (Most strongly aligned with Goal 3, Objectives 2 and 4.)**

- Partnerships should be forged in advance of an emergency, ensuring utilities and key partners are better prepared to work together if an emergency should occur.
- Partnerships with other local utilities, peers, and associations should emphasize formation of, and participation in, mutual aid and assistance agreements such as a Water and Wastewater Agency Response Network (WARNs).
- Maintain awareness of industry best practices and available protective program-related tools and training.
- Establish relationship with critical customers (hospitals, manufacturing, etc.) to identify interdependency issues that may impact business continuity.
- Participate in joint exercises with identified partners as appropriate.

**9. Develop and implement strategies for regular, ongoing communication about protective programs with employees, customers, and the general public to increase overall awareness and preparedness for response to an incident. (Most strongly aligned with Goal 4, Objective 1, although is critically supportive of Goal 1, Objectives 1 and 2.)**

- Establish public communications protocol, including pre-prepared public announcement templates, to share critical information; and implement mechanisms for receiving community feedback.
- Public communication strategies should:

- Identify means to reach customers and the general public with incident information;
- Provide a mechanism for customers and the public to communicate with appropriate personnel about unusual or suspicious events;
- Inform customers about appropriate actions to enhance their preparedness for potential incidents that may impact services; and
- Internal communication strategies should:
  - Increase and/or maintain employee awareness of protective program;
  - Motivate staff to support protective program strategies and goals;
  - Provide ways for staff to notify appropriate personnel about unusual or suspicious activities;
  - Ensure employees understand nature of, and restrictions on, access to security sensitive information and/or facilities; and
  - Ensure employee safety during an event or incident and enable effective employee participation during response and recovery efforts.
- Evaluate effectiveness of communication mechanisms over time.

**10. Monitor incidents and available threat-level information; escalate procedures in response to relevant threats and incidents. (Most strongly aligned with Goal 4, Objective 2, although a critical contributor to Goal 1, Objective 1 and Goal 3, Objective 3.)**

- Develop standard operating procedures to identify and report incidents in a timely way and establish incident reporting expectations.
  - In the specific context of intentional threats and acts, ensure staff can distinguish between normal and unusual activity (both on/off site) and know how to notify management of suspicious activity.
- Develop systems to access threat information, identify threat levels, and determine the specific responses to take.
  - Investigate available information sources locally, and at the state or regional level (e.g., FBI Infraguard and Water ISAC).
  - Where barriers to accessing information exist, make attempts to align with those who can, and will, provide effective information to the utility.
- Make monitoring threat information a regular part of the protective program designee's job and share utility-, facility- and region-specific threat levels and information with key staff and those responsible for protection.

# Water Sector-Specific Measures

## Utility Measures

### Core Utility Measures

*Measures aligned with Water Sector Specific Plan (SSP) Goal 1: Sustain Protection of Public Health and the Environment*

1. Number and percentage of utilities that have integrated security and preparedness into budgeting, training, and manpower responsibilities.
2. Number and percentage of utilities that incorporate security into planning and design protocols applying to all assets and facilities.
3. Number and percentage of utilities that routinely conduct supplemental monitoring or more in-depth analysis beyond what is required to identify abnormal water quality conditions.
4. Number and percentage of utilities that have established relationships with public health networks to interpret public health anomalies for the purposes of identifying waterborne public health impacts.
5. Number and percentage of utilities that monitor and evaluate customer complaints for possible indications of water quality or other security threats.
6. Number and percentage of utilities that have established protocols (e.g., consequence management plans) for interpreting and responding to indications of water quality anomalies.

*Measures aligned with SSP Goal 2: Recognize and Reduce Risks in the Water Sector*

7. Number and percentage of utilities that annually review and periodically update vulnerability assessments (VAs).
8. Number and percentage of utilities that receive screened, validated, and timely (e.g., in time to inform decisions or take action) threat information from one or more trusted sources such as WaterISAC, the FBI, local police, or DHS.
9. Number and percentage of utilities that have a plan in place to increase utility security in response to a threat.

*Measures aligned with SSP Goal 3: Maintain a Resilient Infrastructure*

10. Number and percentage of utilities that have a written business continuity plan.
11. Number and percentage of utilities that:
  - Have an emergency response plan (ERP)
  - Conduct training on their ERP
  - Carry out exercises on their ERP
  - Review and update their ERP on a periodic basis
12. Number and percentage of utilities that have adopted the National Incident Management System (NIMS).
13. Number and percentage of utilities that are signatories, or are in the process of becoming signatories, to written agreements for requesting aid or assistance, such as a mutual aid or assistance agreement or a Water/Wastewater Agency Response Network (WARN) membership.

14. Number and percentage of utilities that have responded to an emergency request to provide mutual aid and assistance.

*Measures aligned with SSP Goal 4: Increase Communications, Outreach, and Public Confidence*

15. Number and percentage of utilities that have plans to handle communications during a crisis.
16. Number and percentage of utilities that engage in networking activities regarding emergency preparedness and collaborative response in the event of an incident.

### **Hazardous Chemicals Security Measures**

1. Number and percent of utilities with physical and/or procedural controls in place to safeguard hazardous chemicals. Utilities will answer yes or no to having the following controls:
  - Restrict Area Perimeter
  - Screen and Control Access
  - Shipping, Receipt, and Storage
  - Elevated Threats
  - Other physical or procedural controls
2. Number and percentage of utilities that include gaseous chlorine in their hazardous chemicals use.
3. Number and percentage of utilities that have evaluated their disinfection methods considering water quality, public health, and security issues.

### **Risk Reduction Outcome Measures**

1. Measure for Intruder Detection Capability: Percent of critical assets with enhanced capability to detect intruders
2. Measure for Power Resiliency: Percent of utilities that have backup power for critical operations
3. Measure for Production Resiliency: Percent of utilities that can meet minimum daily demand with their primary production/treatment plant non-functional

## **Other Actor Measures**

### **States**

#### *SSP Goal 1*

1. Number of state drinking water and/or wastewater programs that have included security assistance as part of routine activities that help water and/or wastewater utilities to prepare security programs and response plans.

#### *SSP Goal 2*

2. Number of state drinking water and/or wastewater programs that have provided or supported outreach or training on design, implementation or updates to vulnerability assessments.

#### *SSP Goal 3*

3. Number of state drinking water and/or wastewater programs with staff that have the

credentials (NIMS/ICS training) necessary to participate in an incident command structure, if such participation becomes necessary.

4. Number of state drinking water and/or wastewater programs that have provided or supported outreach or training on business continuity planning.
5. Number of state drinking water and/or wastewater programs that have provided or supported outreach or training on emergency response planning.
6. Number of state drinking water and/or wastewater programs that participate in and/or support development of a state-wide WARN or mutual aid network.
7. Number of state drinking water and/or wastewater programs that participated in one or more Federal or state level emergency response exercises in which the water sector was a focus.
8. Number of state drinking water and/or wastewater programs that have provided or sponsored (including as a partner with one or more other sponsoring agencies) one or more emergency response exercises for water and/or wastewater utilities.

### **Public Utility Commissions**

#### *SSP Goal 1*

1. Number and percentage of Public Utility Commissions (PUCs) that have designated personnel or a method in place to discuss security costs and issues with drinking water and wastewater utilities.
2. Does the Commission include security costs and issues in its rate making for drinking water and wastewater utilities.

### **Utility Associations**

#### *SSP Goal 3*

3. Priority and type of mutual aid and assistance enabling activities conducted by other actors.
4. Priority and type of crises communication activities conducted by other actors.

### **EPA**

#### *SSP Goal 1*

1. Whether or not EPA has developed an evaluation system for contaminant warning systems.
2. Number of contaminants of concern listed in the Water Contaminant Information Tool (EPA product) that have updated analytical protocols and contaminant-specific treatment information (response and recovery protocols) listed.
3. Number of functional exercises conducted to test the implementation of the Regional Drinking Water Laboratory Response Plans; number of training efforts conducted to enhance capabilities of environmental laboratories and the water utility sector; and number of chemical and biological methods developed and/or modified for use by laboratories when analyzing water security event samples.

#### *SSP Goal 3*

4. Priority and type of mutual aid and assistance enabling activities conducted by other actors.
5. Priority and type of crises communication activities conducted by other actors.

### **DHS**

#### *SSP Goal 2*

1. DHS efforts to develop sector-specific CI/KR threat assessments needed to support comprehensive risk assessments, including providing guidance on metrics for annual reporting and national cross-sector comparative analysis.
2. Number and geographic coverage of regional “fusion” centers that aid individual utilities with timely access to actionable threat characterization and validation services.
3. Elapsed time (e.g., average hours) and quality of response when utilities call to check threat information.

#### *SSP Goal 3*

4. Priority and type of mutual aid and assistance enabling activities conducted by other actors.
5. Priority and type of crises communication activities conducted by other actors.

### Optional Utility Self-Assessment Questions

1. Physical Security Capability: Percent of critical assets with physical access controls in place.
  - **Questions:** What percent of your critical assets are currently protected by physical access controls? What percent of your critical assets were protected by physical access controls on date X?
2. Intruder Detection Capability: Percent of critical assets with enhanced capability to detect intruders.
  - **Question:** What percent of your critical assets are protected by enhanced detection capability?
3. Water Contamination Decision Making Capability: Percent of utilities that have protocols in place to complete site characterizations and make credibility determinations eight hours or less after becoming aware of a potential water contamination event (eight hour time frame based on Response Protocol Toolbox recommendation).
  - **Questions:** What is your current capability to make a water contamination threat credibility determination? (within 20 – 30 hours, 8 – 20 hours; in 8 hours or less)? What was it on date X?
4. Information Protection Capability: Percent of utilities that have a process in place for reviewing requests for and restricting access to critical infrastructure information.
  - **Questions:** Do you have a process in place for reviewing requests for and restricting access to critical infrastructure information? (Yes established process in place; No process being developed; Informal/ad hoc review) How would you have answered on date X?
5. SCADA Protection Capability: Percent of SCADA data transmission networks that are segregated from telephony or Internet networks.
  - **Questions:** What percent of your SCADA data transmission network is segregated from public telephony or Internet networks? What was the percentage on date X?
6. Employee Security Investment: Percentage of time permanent employees dedicate to security tasks.
  - **Questions:** What is your current annual FTE commitment to security tasks? What was it on date X?
7. Raw Water Source Supply Resiliency: Percent of utilities that can meet 100% of minimum daily demand with their primary raw water source unavailable.

- **Questions:** What improvements have you seen in your ability to meet 100% of minimum daily water demand with your primary raw water source unavailable? Not counting in process or finished water storage, can you meet 100% of minimum daily demand with the primary raw water source unavailable for 24 hours (Y/N), for 48 hours (Y/N), for 7 days (Y/N), or other (please specify)? How does this compare with date X – e.g., previously could meet 100% of minimum daily demand for 24 hours, or 7 days, or never?
8. Finished Water Storage Resiliency: Average amount of time a utility can meet 100% of minimum daily demand with stored finished water.
- **Questions:** How long can you currently meet 100% of minimum daily demand with stored finish water? How does this compare with date X – how long could you have met 100% of minimum daily demand with stored finish water on date X?
9. Power Resiliency: Percent of utilities that have backup power for critical operations.
- **Question:** Does your utility have backup power for critical operations for:
    - a. • 24 hours?
    - b. • 48 hours?
    - c. • 96 hours?
10. Production Resiliency: Percent of utilities that can meet minimum daily demand with their primary production/treatment plant non-functional.
- **Question:** What percent of minimum daily demand can your utility meet with your primary production/treatment plant non-functional for:
    - a. • 24 hours?
    - b. • 48 hours?
    - c. • 96 hours?
11. Equipment Resiliency: For critical parts/equipment, the longest lead time for repair/replacement.
- **Questions:** For critical parts/equipment (as defined in your Vulnerability Assessment) what is your current longest lead-time for repair or replacement? How does this compare with date X (e.g., what was longest lead-time for repair or replacement)?
12. Personnel Resiliency: Average number of excess (backup) response-capable people available for critical operation and maintenance positions.
- **Questions:** What is your current average number of response capable backup people for critical operation and maintenance positions? What was it on date X?
13. Treatment Resiliency: Where chemicals are necessary to meet the Safe Drinking Water Act standards for acute contaminants (i.e., E.coli, fecal coliform, nitrate, nitrite, total nitrate and nitrite, chlorine dioxide, turbidity - as referenced in the list of situations requiring a Tier 1 Public Notification under 40 CFR 141.202), the average number of days that utilities can deliver 100% of minimum daily demand treated to meet this subset of SDWA standards without any additional chemical deliveries.
- **Questions:** Where chemicals are necessary to meet Safe Drinking Water Act standards for acute contaminants (i.e., E.coli, fecal coliform, nitrate, nitrite, total nitrate and nitrite, chlorine dioxide, turbidity - as referenced in the list of situations requiring a Tier 1 Public Notification under 40 CFR 141.202), what is the current number of days you can deliver 100% of the minimum daily demand treated to meet

this subset of SDWA standards without any additional chemical deliveries? What was it on date X?

14. Overall Response and Recovery Capability: Percent of utilities with increased capability to respond to real events and exercises consistent with their emergency response, business continuity, or other appropriate response plans.
  - **Questions:** How confident are you in your ability to respond to real events and exercises consistent with your emergency response, business continuity, or other response plans? (Measurement would be on a scale from very low to very high with an “I don’t know” option.)
15. Reduced Service Event Capability: Number/percent of utilities that have a protocol and necessary equipment and infrastructure in place to ensure continued water availability to critical customers during a reduced-service event.
  - **Questions:** To what extent have you set priorities and planned for a reduced service event? (established protocol; equipment and infrastructure in place; plan in place, protocol, equipment and infrastructure being developed; no formal plan) How has this changed since date X?