DRINKING WATER VULNERABILITY ASSESSMENT AND RESILIENCE PLAN
A PLAN FOR COMMUNITY WATER SYSTEMS AND PRIVATE WELLS

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AGENDA

- What Are We Talking About?
- Overview of Plan Contents
- Top Ten Plan Themes
- Plan Recommendations
- Linkage to Other State and Local Plans
- How Can the Plan Be Used?
WHAT ARE WE TALKING ABOUT?

Resiliency = Prepare, Withstand, Recover, Adapt

Elevating buildings protects them from storm surges

State of Infrastructure

Event! Recovery

State of Infrastructure

Event! Improved Recovery Initial Recovery

Less Damage

Greatest Loss

Prepare Adapt

WHAT ARE WE TALKING ABOUT?
OVERVIEW OF PLAN CONTENTS

1. Executive Summary
2. Introduction
3. Community Water System Vulnerability and Risk Assessment
4. Private Well Vulnerability and Risk Assessment
5. Findings
6. Recommendations
TOP TEN PLAN THEMES

1. Lessons Learned from Past Events
2. Flood Risk to Community Water System Infrastructure & Critical Facilities
3. Water Quality and Quantity Vulnerabilities
4. Climate Change Impacts
5. Community Water System Vulnerabilities and Emergency Preparedness
6. Drought Planning and Resilience
7. Interconnections and Infrastructure Upgrades
8. Drinking Water Section Emergency Preparedness
9. State and Local Laws Affecting Drinking Water
10. Addressing Private Well Vulnerabilities
1. Lessons Learned from Past Events
   A. Standby power and generators
   B. Priority electricity service restoration
   C. Small system assistance
   D. Water use restrictions and droughts
   E. Drought communication and messaging
2. Flood Risk to Community Water System Infrastructure & Critical Facilities

A. Wells in flood risk zones
B. Dam-related risks
C. Pumping stations and treatment plants
D. Adequate storage
E. GIS of critical facilities served by water systems and critical facilities that *are* water systems
F. Address sections of water systems that serve critical facilities
G. Changing status of critical facilities
3. Water Quality and Quantity Vulnerabilities

A. Testing frequencies
B. Incorporating resiliency into sanitary surveys
C. Incorporating resiliency into capacity assessment tools
D. Water quality and violation baseline
E. Source water protection as resiliency
F. Algal blooms
G. Maximum contaminant level violations in small non-community systems
4. Climate Change Impacts
   A. Incorporate changing flood risks into plans and operations
   B. Incorporate changing drought risks into plans and operations
   C. Tracking algal blooms
5. Community Water System Vulnerabilities and Emergency Preparedness

A. Incorporate climate change risks into emergency contingency plans in the water supply plan

B. Water supply plan emergency contingency plans should list all critical facilities as priority water service facilities
6. Drought Planning and Resilience

A. Evaluate and re-set triggers for response now

B. Evaluate and re-set triggers for response every ten years

C. Drought forecast modeling

D. Multiple sources and interconnections

E. Water conservation, communication, messaging
7. Interconnections and Infrastructure Upgrades

A. Pursue interconnections between large systems
B. Pursue interconnections between small systems, or small to large
C. Water chemistry/compatibility
D. Infrastructure redundancies within small systems
E. Use of Drinking Water State Revolving Funds
PLAN RECOMMENDATIONS

8. Drinking Water Section Emergency Preparedness

A. Update the Public Health Emergency Response Plan

B. WebEOC

C. Drinking Water Section Emergency Response Plan template

D. Drinking Water Workgroup

E. Drinking Water Section staff redundancies

F. Culture of preparedness
9. State and Local Laws Affecting Drinking Water

A. Coordinated Water System Plan updates to include resiliency
B. Water Planning Council role
C. Local flood regulations
10. Addressing Private Well Vulnerabilities

A. Outreach to towns and health districts

B. Funding to remedy issues

C. Specific private well risk reduction options
   - Siting
   - Drainage and flood control
   - Acquisitions
   - Water main extensions
   - New water systems
   - Well protection
   - Well relocation

D. Water haulers

E. Private well regulations

F. Private well database
LINKAGE TO OTHER STATE AND LOCAL PLANS

- State Emergency Operations Plan
- State Water Plan
- State Hazard Mitigation Plan
- State Drought Preparedness and Response Plan
- Coordinated Water System Plan
- Local Hazard Mitigation Plans

DWVARP

UCONN
CIRCA
DPH
MILONE & MACBROOM
LINKAGE TO OTHER STATE AND LOCAL PLANS

Relationship between Coordinated Water System Planning (WUCC), State Water Plan, and Drinking Water Vulnerability Assessment/Resiliency Plan

State Water Plan

Phase I  Phase II  Follow-up  Review and EO

Coordinated Water System Plan

PWSA  FWSA  ESA Document  Integrated Report

Assessments  Resilience Plan  Drinking Water Vulnerability Assessment and Resiliency Plan

Data

Recommendations and Policy

Data & Recommendations

Data

Recommendations and Policy

Data

Recommendations and Policy

Data & Recommendations

State Water Plan Authority
• Public Act 14-163 (CGS Section 22a-352)

Where is Resiliency Addressed?
• Climate Change Assessment
• Policy Recommendations
• “Pathway Forward” Recommendations
• “Top Ten Consensus-Based Policy Priorities”
Top 10 Consensus-Based Policy Recommendations:

1. Water management should follow scientific examples.
2. As possible, remove obsolete water registrations.
3. Encourage innovation in agricultural water practices.
4. Water data (or access to it) should be centralized in a single database and/or portal to other sources.
5. Consider Class B Water for individual non-potable uses if environmentally prudent and cost-effective, using guidelines to be developed by the WPC for review of Class B water for non-potable uses using the Triple Bottom Line philosophy (environmental, social, and economic metrics).
6. Develop an education and outreach strategy focusing on water conservation topics.
7. The WPC should provide ongoing review of other Connecticut state plans in order to identify and address inconsistencies.
8. Encourage regional water solutions where they are practical and beneficial.
9. Reaffirm support for the protection of Class I and II land contributing to water supply. Expand protections to other watershed lands and land that feeds aquifers used for public water supply or by private wells.
10. Create a data-based water education program aimed at the general public and municipal officials.
Authority for the Water Utility Coordinating Committees (WUCCs)

• Public Act 85-535, CGS Section 25-33c-h and RCSA Section 25-33h-1

Where is Resiliency Addressed?

• Water Supply Assessment: “Issues, Needs, Deficiencies”
• Integrated Report: “Climate Change and Resiliency”
• Integrated Report: “Potential Interconnections Recommended to Increase Resiliency”
• Executive Summary and Table of Recommendations
As envisioned in CGS Section 25-33c, "an adequate supply of potable water for domestic, commercial and industrial use is vital to the health and well-being of the people of the state." This vision statement guided the CWSP process and requires constant vigilance by state agencies and public water systems to ensure adequate water quality and quantity is maintained. Each regional CWSP includes more than 60 specific recommendations in the Integrated Report for responsible planning, drought management, source protection, water conservation, resiliency, and funding to be pursued through 2030. These recommendations are reflected in the following top ten needs for public water systems statewide, each of which is discussed further on the following pages.

1. Regionalization and Interconnections
   Ensure redundant and environmentally responsible supplies.

2. Water Conservation and Water Efficiency
   Reduce future demands and unnecessary water use.

3. Reduction in Clustering of Small Water Systems
   Encourage system consolidations and ensure responsible planning to prevent proliferation of adjacent (but independent) small systems.

4. Assistance to Small Public Water Systems
   Ensure proper technical, managerial, and financial capacity of small public water systems.

5. Investment in Infrastructure
   Replace aging infrastructure, including century-old pipes.

6. Funding
   Provide grants and loans for planning, projects, and small systems in line with the above needs.

7. Drought Management and Resilience
   Increase awareness of drought impacts and standardize responses to the extent practicable.

8. Resiliency to Storms and Climate Change
   Reduce recovery time and adapt to future conditions.

9. Protection of Watersheds and Supplies
   Continue to ensure adequate water supplies with high water quality.

10. Improvements to Water Demand and Water Quality Planning
    Avoid the development of unnecessary new sources and ensure proper consideration of regulated and unregulated contaminants.
LINKAGE TO OTHER STATE AND LOCAL PLANS

Authority for State Hazard Mitigation Plan
- Stafford Act; Updated every five years

Example Mitigation Actions in 2019
- Review model ordinances and samples of higher standards language that communities can adopt into existing floodplain ordinances
- Encourage municipalities to adopt local water use restriction ordinances to ensure that proper water conservation measures are implemented during periods of severe to extreme drought and other water emergencies, in line with the Connecticut Drought Preparedness and Response Plan. Expand the local focus on drinking water vulnerability, with emphasis on private wells.
LINKAGE TO OTHER STATE AND LOCAL PLANS

Authority for Local Hazard Mitigation Plans

- Stafford Act; Updated every five years

Example Mitigation Actions

- Provide lists of critical facilities to water utilities to coordinate water system emergency planning
- Extend water mains to areas without fire protection
- Incorporate freeboard to local flood regulations (i.e. build higher)
LINKAGE TO OTHER STATE AND LOCAL PLANS

Authority for Connecticut Drought Preparedness and Response Plan

• Interagency Drought Workgroup is responsible for administering the Connecticut Drought Preparedness and Response Plan as part of the State Response Framework

Preparedness and Planning Strategies

• Designate a water coordinator in each municipality
• Promote industry and public awareness of appropriate conservation activities
• Expect all water withdrawers to prepare water supply contingency plans
• Ensure clear understanding of authority for mitigating drought conditions and enforcing water use restrictions; each municipality to adopt a water use restriction ordinance in order to establish such authority
HOW CAN THE PLAN BE USED?

- By Water Utilities
  - For updating the Emergency Contingency Plans in the Water Supply Plans
- For the Risk and Resiliency Assessment (RRA) associated with America’s Water Infrastructure Act (AWIA)
- For planning!
HOW CAN THE PLAN BE USED?

• By the State and Local Municipalities
  • Updates to State and Local hazard mitigation plans
  • Solving complex problems

• By Local Health Districts
  • Looking for ways to reduce risks to private wells or small system wells
HOW CAN THE PLAN BE USED?

- By CIRCA
  - For resiliency planning underway at the present time