
Literature Review: Emergency Response Plans and Security Tools for Very Small-, Small- and Medium-sized Community Water

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Table of Contents

I. SITUATION	3
II. PROJECT PURPOSE	3
III. AUDIENCE	4
IV. REVIEW OF EMERGENCY RESPONSE PLANNING RESOURCES	
METHODS	6
U.S. ENVIRONMENTAL PROTECTION AGENCY	7
ASSOCIATION OF STATE DRINKING WATER ADMINISTRATORS	14
RURAL COMMUNITY ASSISTANCE PARTNERSHIP	16
CONNECTICUT DEPARTMENT OF PUBLIC HEALTH	18
MAINE DEPARTMENT OF HEALTH AND HUMAN SERVICES	22
MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION	24
NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES	26
VERMONT RURAL WATER ASSOCIATION	30
NEW YORK STATE DEPARTMENT OF HEALTH	32
New York Rural Water Association	36
Kentucky Department of Environmental Protection	38
NATIONAL ENVIRONMENTAL SERVICES CENTER	40
V. SUMMARY	42
VI. RECOMMENDATIONS / NEXT STEPS	43
VII. APPENDIX A	
SUMMARIES FROM PHONE CONVERSATIONS	44

SITUATION

Nationwide, there is increased concern about community drinking water facilities' emergency preparedness and security. The Public Health Security and Bioterrorism Preparedness and Response Act of 2002 (PL 107-188, referred to as the Bioterrorism Act) requires community water systems (CWS) serving populations greater than 3,300 to either prepare or revise an emergency response plan (ERP) that incorporates the results of its Vulnerability Assessment (VA). The ERP must include "plans, procedures, and identification of equipment that can be implemented or utilized in the event of a terrorist or other intentional attack" on the CWS. The ERP must include "actions, procedures, and identification of equipment which can obviate or significantly lessen the impact of terrorist attacks or other intentional actions on the public health and the safety and supply of drinking water provided to communities and individuals." Since 2002, state drinking water primacy agencies have passed legislation and developed regulations requiring community water systems of varying sizes to develop an emergency response plan that encompasses a wide range of potential emergencies, e.g. severe weather events, system malfunction and/or chemical release, and vandalism (42 U.S.C. 300g-2(a)(5)). In Rhode Island, there are 488 community water supply systems. One hundred and fifty one (151) of these are small community and non-transient, non-community systems that serve 10,000 customers or less. Financial limitations among these systems results in little or no budget to prepare or respond to disasters such as power outages or extreme weather events like flood or drought.

An Emergency Response Plan (ERP) is a written, well-thought-out series of planned actions that help water suppliers respond to all types of emergencies. The ERP contains clear and logical steps to take in response to possible emergencies, designates persons responsible for specific actions, provides for training and planned practice exercises, and ensures effective coordination with first responders, law enforcement, health officials, and the public. An emergency could generate tremendous and immediate pressures on system operators, emergency response professionals, law enforcement, local health officials, and the public. A water system that has an ERP and has practiced organized emergency response exercises will have a much better chance of minimizing the effects of emergencies. Preparing an ERP can take some effort. Ideally, there is an internal team of water system operators, board members, and owners to develop the ERP. To be useful, ERPs need to be complete, up-to-date, organized to find important information quickly, and readily available when needed.

PROJECT PURPOSE

The project's purpose is to assist Rhode Island's small drinking water systems by providing professional training and tools for the development and implementation of emergency preparedness plans and communication and public notifications strategies. The initial priority target audience is small community water systems serving 3,300 customers or less.

The first objective in this project is to conduct a literature review of existing small community water system emergency response and security tools, materials and programs, including:

1. Existing guide manuals for ERP preparation
2. Written and on-line tools for developing security and emergency response plans
3. Workshop agendas, presentations, handouts and other supporting materials
4. Communication and public notification strategies

This review summarizes the methods and findings of the literature review for the Rhode Island Department of Health (HEALTH). This review will be presented to HEALTH, at which time we will work collaboratively to outline next steps for material development and training for RI's small water systems.

AUDIENCE

The Rhode Island Department of Health (HEALTH) provided us with a spreadsheet of 60 community water systems to focus on as the initial target audience for this project. The U.S. Environmental Protection Agency (EPA) classifies water systems according to the number of people they serve:

- Very Small water systems serve 25-500 people
- Small water systems serve 501-3,300 people

Based on EPA's classification, 49 of the systems in the spreadsheet provided by RI HEALTH service less than 500 people and are classified as very small systems and 11 systems are classified as small water systems (Table 1). EPA requires that systems serving 3,301 or more customers (classified as at least a medium-sized system) develop an Emergency Response Plan (ERP).

Table 1: Number of community water systems in Rhode Island with groundwater (GW), groundwater purchased (GWP), surface water (SW), and surface water purchased (SWP) drinking water sources.

Number of Water Systems	Source				
	GW	GWP	SW	SWP	Total
Serving Less Than 100 People	16	0	0	4	20
Serving 100 - 499 People	28	0	0	1	29
Serving 500 - 3,300 People	4	1	3	3	11
Total	48	1	3	8	60

These 60 community water systems serve a variety of customers. Some systems service a specific client. For example, the Herbert Nursing Home in Smithfield, RI serves staff and residents of the home, whereas the Jamestown Water Department serves a variety of customers including residential, municipal and commercial properties. Table 2 is an attempt to generalize the populations served by the water systems targeted for this effort.

Table 2: Generalized populations served by target audience and the number of community water systems (CWS) that serve the population.

Description of Water System	Number of CWS
Business District	1
Elderly Housing/Nursing Home	9
Government/Hospital/School	3
Mobile Home Park	10
Recreation	1
Residential/Housing Complex	14
Town/Fire District/Water District	18
Other	4
Total	60

The target audience is distributed throughout the state. Table 3 summarizes the number of community water systems (CWS) on the target audience list by Rhode Island municipality.

Table 3: Distribution of (60) community water systems (CWS) by town.

Town	# of CWS
Burrillville	5
Charlestown	8
Coventry	3
Exeter	3
Foster	3
Glocester	4
Hopkinton	4
Jamestown	1
Johnston	4
Middletown	2
Narragansett	1
Newport	1
North Smithfield	1
Portsmouth	1
Providence	1
Richmond	1
Scituate	2
Smithfield	1
South Kingstown	5
Tiverton	5
Warren	1
Warwick	2
West Greenwich	1
Total	60

REVIEW OF EMERGENCY RESPONSE PLANNING RESOURCES

Methods

We focused our review on resources and programs available from 1.) several national agencies/organizations, including: EPA, the Association of State Drinking Water Administrators, and the Rural Community Assistance Partnership; 2.) state drinking water agencies in New England and New York; and, 3.) other organizations within the New England/New York area when applicable (e.g. New York Rural Water).

We reviewed the security response planning websites for these agencies and organization. We have summarized the websites and provided a list and description of materials and tools available that address the topic. The resources for each agency are organized and listed as they are on the website – providing a catalog of available resources and a look at how others are organizing materials for the audience.

In addition to a web-based resource review, we contacted agencies and organizations to discuss their programs and get their perspective and suggestions. We had phone conversations with program contacts in Connecticut, Massachusetts, Maine, and New Hampshire. Appendix A contains summaries of these calls and their insights helped to inform our recommendations.

U.S. Environmental Protection Agency

With the passage of the Public Health Security and Bioterrorism Preparedness and Response Act of 2002, community water systems serving more than 3,300 persons are required to conduct vulnerability assessments and submit certified emergency response plans to the U.S. Environmental Protection Agency (EPA). To assist water systems in this effort, the EPA developed guidance for water systems on how to conduct a vulnerability assessment (VA) and an Emergency Response Plan (ERP). We reviewed two EPA websites for materials and found one particularly useful for the target audience.

EPA's [Water Security](#) website provides guidance and planning documents, tools and technical assistance and resources on all aspects of security preparedness. Most of the information is geared towards large community water suppliers as well as state primacy agencies.

EPA's [Water Security Resources for Small Systems](#) website provides guidance to small and medium-sized community drinking water systems on developing or revising their Vulnerability Assessment (VA) or Emergency Response Plan (ERP). The website provides links to a number of security tools and technical assistance, training opportunities, and additional resource links.

Two guidance manuals developed by EPA serve as reference tools for water suppliers developing their ERP. We also found that the other agencies and organizations we looked at incorporated this guidance into their state-specific resources and templates. These materials address the specific audience for our work in Rhode Island, including both small and medium systems (serving 3,301 – 99,999 customers) and very small systems (serving 3,300 customers or less). Below is a summary of each of the 2 guidance documents.

1. [*Emergency Response Plan Guidance for Small and Medium Community Water Systems to Comply with the Public Health Security and Bioterrorism Preparedness and Response Act of 2002*](#)

Office of Water (4601M)
EPA 816-R-04-002
April 2004, 45pp

This document provides guidance on developing (or revising) Emergency Response Plans (ERPs) for small- and medium-sized community drinking water systems. The document is intended to assist community water systems serving 3,301 – 99,999 customers.

There are 5 steps for systems to follow to develop (or revise) their ERP. These steps and sections within the document include:

1. Before Developing or Revising the ERP: This section describes 2 steps to complete before developing or revising the ERP, including:
 - i. Complete (or update) the system's Vulnerability Assessment (required for systems serving 3,301 or more customers)

- ii. Identify and coordinate with first responders and ERP partners. Partner examples in Figure 1 below.

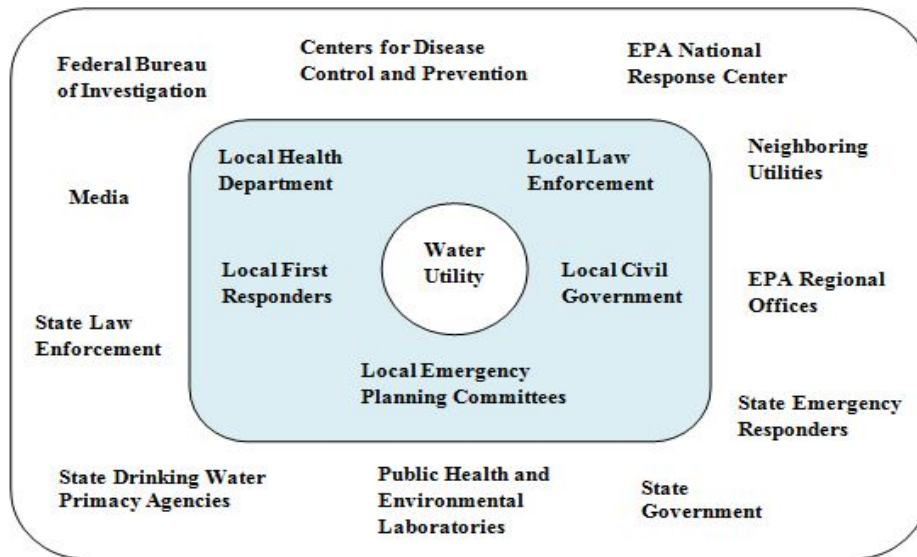


Figure 1. Overview of ERP Partners.

2. Emergency Response Plan—Eight Core Elements: This section describes the 8 core elements that are suggested for any ERP. This section serves as a general template to ERP development. The core ERP elements are outlined and summarized below.

3. Putting Your ERP Together and ERP Activation: This section describes steps and issues to address once the 8 core elements are addressed and how to put these elements together into a single comprehensive plan.

4. Action Plans: This section describes how Action Plans are developed and used to tailor emergency response actions to specific incidents or events. The Action Plan identifies the steps to take to address specific emergencies and respond to a given incident.

5. Next Steps: This section describes steps to take after completing an ERP, for example, submitting a certification to EPA, conducting training, and updating the plan.

In addition, in this document EPA provides guidance on public communication strategies during an emergency and includes an example of a Boil Water Notice; a Do Not Drink Notice; and Do Not Use Notice.

The 8 Core Elements

In this guidance, the EPA proposed 8 core elements to address in the ERP. These core elements provide the framework for an ERP. Many of the guides and templates developed by state agencies and other organizations incorporate all or some of these 8 core elements. These elements are summarized below.

Core Element 1: System Specific Information – EPA notes that not all information may need to be required and that the level of detail and documentation will depend on the actual complexity of the community water supply. Information to include:

1. Public Water System (PWS) ID, Owner, Administrative Contact Person, Alternate Administrative Contact Person
2. Population Served and Service Connections
3. Distribution Map
4. Pressure Boundary Map
5. Overall Process Flow Diagrams
6. Site Plans and Facility “As-Built” Engineering Drawings: a) Pumping and Storage Facilities; b) Reservoirs and Retention Facilities; c) Water Treatment Facilities; d) Booster Pump Stations; e) Pressure-Regulating Valve (PRV) Sites; f) Distribution System Process and Instrumentation Diagrams (P&ID); g) Equipment and Operations Specifications; h) Emergency Power and Light Generation; i) Maintenance Supplies
7. Operating Procedures and System Descriptions including back-up systems and interconnections with other systems
8. Supervisory Control and Data Acquisition (SCADA) System/Process Control Systems Operations
9. Communications System Operation
10. Site Staffing Rosters and Employees’ Duties and Responsibilities
11. Chemical Handling and/or Storage Facilities and Release Impact Analyses (i.e., chemical releases into air or water)

Core Element 2: Roles and Responsibilities – This section identifies the Emergency Response Leader and his/her Alternate. EPA suggests that at a minimum the following information should be identified in this section:

Name of Emergency Response Leader		Name of Alternate ER Leader	
Work Phone		Work Phone	
Home Phone		Home Phone	
Cell Phone		Cell Phone	
Pager number		Pager number	
Radio Call number		Radio Call number	
Email address		Email address	

Core Element 3: Communications – This section includes who to contact and their contact information in the case of an emergency, including: internal and external notification lists and the public/media. It is important that these lists are updated frequently.

1. Internal Contacts include the Emergency Response Leader and his/her alternate identified above.
2. External Contacts include agencies and organizations that are considered first responders:

Local

- Local 911
- Police
- Fire
- Local Emergency Planning Committee (LEPC)
- Elected Officials
- Power Utility
- Hazardous Materials (HAZMAT) personnel

State

- Drinking Water Primacy Agency
- Department of Health
- State 24-hr Emergency Communications Center Telephone
- State Office of Homeland Security
- HAZMAT
- State Police

Federal

- FBI
- EPA Headquarters and Regional Office
- Department of Homeland Security (DHS)
- Department of Health and Human Services (HHS)

3. Public and Media Notification

Core Element 4: Personnel Safety – This element includes:

- Evacuation Planning: Develop a CWS evacuation policy and procedures.
- Evacuation Routes and Exits: Designate primary and secondary evacuation routes.
- Assembly Areas and Accountability: Designate assembly areas where personnel should gather after an evacuation and specify procedures for taking a head count and identifying personnel.
- Shelter: In some major events, the best means of protection is to take shelter either within the CWS or away from the CWS in another building.
- Training and Information: Train staff and personnel in evacuation, shelter, and other safety procedures.
- Emergency Equipment: Consider developing written procedures for using and maintaining emergency response equipment. This should apply to any emergency equipment relevant to a response involving a toxic chemical, including all detection and monitoring equipment, alarms and communications systems, and Personal Protective Equipment (PPE) not used as part of normal operations.

- First Aid: Discuss proper first aid and emergency medical treatment for employees and others who are onsite at the CWS. This should include standard safety precautions for victims as well as more detailed information for medical professionals. Indicate also who is likely to be responsible for providing the appropriate treatment (i.e., an employee with specialized training or a medical professional).

Core Element 5: Alternative Water Supply – Identifying an alternative water supply for short-term (hours or days) and long-term (weeks or months) emergencies. EPA lists short-term and long-term options for supplies to identify in the EPR.

Possible short-term alternate water supply options include (but are not limited to) the following:

- Bottled water provided by outside sources;
- Bottled water provided by local retailers;
- Bulk water provided by certified water haulers;
- Bulk water transported or provided by military assets (i.e., National Guard or U.S. Army Corps of Engineers (USACE));
- Bulk water provided by neighboring water utilities by truck or via pipeline;
- Bulk water from hospitals, universities, and local industry that maintain backup water supplies for consumption;
- Interconnections with nearby community water systems;
- Water treated by plant and hauled to distribution centers (i.e., in the case of water distribution system contamination);
- Water pumped from surface water sources, treated at the plant or nearby plants, and hauled to distribution centers;
- Water for firefighting from Federal agencies such as the USACE and FEMA; and
- Water from unaffected wells owned by local citizens and businesses.

The following are examples of possible long-term water supply options:

- Connection of the water distribution system to an existing municipal or private water supply (assumes existing water treatment plant and distribution system is intact and useable);
- Connection of the water distribution system with a new uncontaminated groundwater or surface water source (assumes existing water treatment plant and distribution system is intact and useable);
- Development of new water distribution system (assumes existing water treatment plant and source water is uncontaminated and useable); and
- Development of oversized community storage facilities to compensate for loss of existing system capacity.

Core Element 6: Replacement Equipment and Chemical Supplies – This element addresses what equipment and chemical supplies need to be identified in the ERP that can minimize the impact of an emergency on the consumer and protect the safety of the supply. EPA encourages that systems maintain an updated inventory of:

- Equipment (e.g. pumps)
- Repair parts

- Chemical supplies for normal maintenance and operation
- Information on mutual aid agreements

Core Element 7: Property Protection – This section of the ERP identifies procedures for securing and protecting the water supply during a major event, including: “Lock down” procedures

- Access control procedures
- Establishing a security perimeter following a major event
- Evidence protection measures for law enforcement (should the major event also be declared a crime scene)
- Securing buildings against forced entry
- Other property protection procedures and measures.

Core Element 8: Water Sampling and Monitoring – The ERP needs to identify and address special water sampling and monitoring issues that may arise during and after a major event. Some water sampling and monitoring issues to address include:

- Identifying proper sampling procedures for different types of contaminants;
- Obtaining sample containers;
- Determining the quantity of required samples;
- Identifying who is responsible for taking samples;
- Identifying who is responsible for transporting samples (in time sensitive situations);
- Confirming laboratory capabilities and certifications; and
- Interpreting monitoring or laboratory results.

2. [Drinking Water Security for Small Systems Serving 3,300 or Fewer Persons: One of the Simple Tools for Effect Performance \(STEP\) Guide Series](#)

Office of Water (4601M)
EPA 817-R-05-001
www.epa.gov/safewater
September 2005, 43 pp.

EPA prepared this booklet as water security guidance for very small community drinking water systems, serving 3,300 customers or less. Water systems of this size are not required to develop an ERP, however, it is encouraged. This guide presents information and steps for very small systems to improve security and emergency preparedness. It reviews why security improvements are important, discusses Vulnerability Assessments (VAs) and Emergency Response Plans (ERPs). In addition, it describes the steps involved in developing a VA and ERP. The same 5 steps to develop an ERP for small and medium sized systems are repeated in this guidance document.

1. ERP Preparation
2. The 8 Core Elements of the ERP
3. Putting the ERP together

4. Action Plans – Responding to Different Types of Emergencies
5. Next Steps

There is also a section in this document on communicating effectively with customers.

Association of State Drinking Water Administrators

Contact:

1401 Wilson Blvd.

Suite 1225

Arlington, VA 22209

Phone: (703) 812-9505

Fax: (703) 812-9506

Email: info@asdwa.org

The Association of State Drinking Water Administrators (ASDWA) is the professional Association serving state drinking water programs. ASDWA was formed in 1984 to address a growing need for state administrators to have national representation. ASDWA has become a respected voice for state primacy agents with Congress, the United States Environmental Protection Agency (EPA), and other professional organizations.

A section of ASDWA's website titled [Small System Security](#) contains the following resources:

[EPA Emergency Response Plan Guidance for Small and Medium Systems 04/04](#)

EPA developed this document for community water systems serving a population between 3,301 and 99,999 as they develop or revise Emergency Response Plans (ERPs). This document was reviewed in the EPA section above.

The following resources focus on the security needs of community drinking water systems serving 3,300 or fewer persons and illustrate how states can use existing tools and programs under the Safe Drinking Water Act to help systems address security concerns. Both Documents provide ideas to help states enhance the security and emergency response capabilities of community drinking water systems.

[Find your Local Emergency Planning Committee \(LEPC\)](#) - 5/03- This is EPA's online national database for drinking water systems to coordinate their ERPs with their LEPC to meet the requirements of the Bioterrorism Act. (Link broken.)

[Security Vulnerability Self-Assessment Guide \[PDF Version\]](#)

[Security Vulnerability Self-Assessment Guide](#) [Word Version]

Association of State Drinking Water Administrators & National Rural Water Association

May 30, 2002

27 pp.

This guide is for Very Small Systems serving <3,300 customers. It is designed to help these systems assess their critical components and identify security measures that should be implemented. The Guide is intended for states and trainers to use, distribute, copy, add specific contact names, and customize for each system as appropriate. The document includes a fill-in system identification and information system, fill-in emergency contact list and a phone threat identification checklist. States should consider attaching their model emergency response plans as well.

[Cover Letter \[PDF\]](#) to accompany above resource: Security Vulnerability Self-Assessment Guide for Small Drinking Water Systems

[A Utility Guide for Security Decision Making \[PDF\]](#)

A flow diagram and recommendations developed by ASDWA and the National Rural Water Association to assist drinking water systems of all sizes to prepare, evaluate, and respond to security-related incidents.

Rural Community Assistance Partnership (RCAP)

Contact:

1701 K St. NW, Suite 700
Washington, DC 20006
(202) 408-1273
info@rcap.org

The Rural Community Assistance Partnership's (RCAP) [Security and Emergency Response Planning Toolbox for Small Water and Wastewater Systems](#) website was published in 2006. There are 5 core modules available on the site that address emergency response planning, including:

- A vulnerability assessment guide for small drinking water and/or wastewater systems;
- Emergency-response planning instructions for small drinking water systems;
- An emergency-response planning template for small drinking water systems;
- Emergency-response planning instructions for small wastewater systems; and
- An emergency-response planning template for small wastewater systems.

Below is a summary of VA and ERP resources and templates for drinking water systems that are on the site:

[Security Vulnerability Self-Assessment Guide for Water Systems](#)

August 2005

24 pp.

This publication contains a multiple page VA inventory followed by a prioritization sheet for identifying actions needed to be taken to address the VA inventory. There is also a threat identification checklist and certificate of completion form.

[Emergency Response Planning Guide for Public Drinking Water Systems](#)

August 2005

27 pp.

The planning guide contains instructions for small drinking water systems on how to conduct the procedures in the template.

[Emergency Response Planning Template for Public Drinking Water Systems](#)

August 2005

21 pp.

The emergency response planning template for small drinking water systems contains blank forms identical to the instruction guide listed above that can be printed and completed by hand or saved on your computer and filled-out electronically.

In addition, there are appendices in the toolbox that serve as resources, including:

[Security Resources](#)

An annotated bibliography of resource and tools available to small systems. It includes web sites, publications, and workshops with hyperlinks to many of the resources available to assist small water and wastewater systems.

[Emergency Notification and Contact List](#)

The emergency notification and contact list can be printed or photocopied from the manual and completed by hand, or saved on your computer. Copies should be posted prominently. The list should be updated as needed.

The toolbox also has 5 powerpoint presentations to serve as training templates. They are summarized below.

[Security and Emergency Preparedness for Small Water and Wastewater Systems](#)

This PowerPoint training presentation with notes can be used as a template, and modified to suit needs of a specific training session. It presents information on security and emergency preparedness. Questions can be solicited from the audience.

[Walkerton Case Study](#)

This powerpoint presentation with notes details the events before and after a contamination outbreak. There are opportunities for participant feedback.

[Backflow Case Study](#)

This powerpoint presentation is an animated demonstration of a backflow incident.

[Developing a Security Program](#)

This powerpoint presentation with notes outlines how to develop a security program that incorporates setting policies and procedures, exercising the plan, and continual review of the plan.

[VA and ERP Tools and Resources](#)

This presentation provides a brief description of the resources and tools available to small systems. These resources can help systems meet the USDA Rural Development conditional requirements to have a completed VA/ERP in order to obtain funding.

Connecticut Department of Public Health Drinking Water Section

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The Regulations of Connecticut State Agencies Section 25-32(d)-3(d), requires each water company supplying water to 1,000 or more persons or 250 or more consumers, to have a water supply emergency contingency plan as part of a water supply plan. The regulation requires that the plan identify critical system components and establish procedures for sabotage prevention and response. The Connecticut Department of Public Health's [Drinking Water Security and Emergency Response](#) website contains water security and emergency response resources. The resources and links provided enable Connecticut's community drinking water system staff to access model emergency response plans, security experts, and other security tools. Content's of the webpage include:

[Connecticut Water and Wastewater Agency Response Network \(CtWARN\)](#)
(Links to CtWARN website.)

DWS Security/Emergency Information

[Public Water System Guide for Reporting a Water Security Incident](#)

A 1 page flowchart guide customized for Connecticut for reporting a water security incident.

[Public Drinking Water Security & Emergency Response Guide](#) (pdf)

Fall 2009, 74 pp.

This guide includes background and guidance information, references and resources that water systems can use in conjunction with their existing emergency response plan to quickly and effectively respond to contamination incidents. The first 38 pages of the guide provide background information and resources for developing an ERP. Then, a "Quick Reference Guide" follows that serves as a template for water suppliers to complete with contact information for communicating both internally and externally during an emergency. This "Quick Reference Guide" serves to address EPA's Core Elements 2 (Community Water System Roles and Responsibilities) and 3 (Communication Procedures – internal and external) discussed in the

EPA resource above. This “Quick Reference” section is for smaller supplies to use as a template for completing their ERP.

[Emergency Response Guide for Small to Medium Community Public Water Systems](#) – This is EPA’s guidance on developing or revising Emergency Response Plans (ERPs) for small- and medium-sized community drinking water systems that was reviewed in the EPA resource section above.

[An Introduction to Emergency Preparedness](#) – A tri-fold brochure that serves as a “Security Checklist” of What to Do and Who to Call customized for Connecticut’s community water systems.

[Water Sector-Specific Plan](#) (Water SSP)

The Water SSP was released by the Department of Homeland Security in collaboration with the US Environmental Protection Agency on May 29, 2007. The Water SSP outlines four goals and supporting objectives for the Water Sector: sustain protection of public health and the environment; recognize and reduce risks; maintain a resilient infrastructure; and increase communication, outreach, and public confidence.

[NIMS/ ICS Training](#) – This links to the National Incident Management System (NIMS)/ Incident Command System (ICS) Training Courses through the U.S. Federal Emergency Management Agency’s Emergency Management Institute Independent Study Program.

Requirement for a Water Supply Emergency Contingency Plan

[Emergency Response Planning Guide for Public Drinking Water Systems](#)

March 2004, 64 pp.

This guidance document was developed for water suppliers to help meet the regulation requirement for developing a water supply emergency contingency plan. The document has two main parts with identical structure. Part 1 discusses important emergency response planning elements and provides instructions and examples to help complete Part 2, which is a template the water system can use to develop their plan. Part 1 can also be used as an educational tool to help system staff understand the key components needed for a well thought-out plan.

This document is now reserved primarily for the larger community water suppliers. Through experience, the Department has come to the conclusion that there is too much information in it to be useful to the very small systems.

Security Links and Resources

[Physician Preparedness for Acts of Water Terrorism](#) - The primary purpose of this Physician Readiness for Acts of Water Terrorism guide is to address this critical need and provide healthcare practitioners with streamlined access to resources that will help guide them through

the recognition, management and prevention of water-related disease resulting from intentional acts of water terrorism.

[U.S Homeland Security](#) - The U.S. Department of Homeland Security Homepage

[Ready.gov from The U.S. Department of Homeland Security](#) - Ready.gov is a common sense framework designed to launch a process of learning about citizen preparedness. One of the primary mandates of the U.S. Department of Homeland Security is to educate the public, on a continuing basis, about how to be prepared in case of a national emergency - including a possible terrorist attack.

[Water Information Sharing and Analysis Center \(WaterISAC\)](#) - The most comprehensive and up-to-the-minute online resource of security information for America's drinking and wastewater utilities. It provides a link between the water sector and federal environmental, homeland security, law enforcement, intelligence and public health agencies.

[Federal Emergency Management Agency \(FEMA\)](#) - The U.S. Federal Emergency Management Agency Homepage.

Pandemic Influenza (Flu) Planning

The Water Sector has been designated as a Critical Infrastructure by Homeland Security Presidential Directive 7. This means that clean drinking water is an essential function of the United States society and economy. As such it is extremely important that you develop specific plans to protect your employees and maintain operations during a pandemic. As a critical infrastructure, community water systems have a special responsibility to plan for continued operations in a crisis.

The following resources were compiled for community water systems to evaluate critical functions and how those would be covered in a disaster or pandemic situation.

- www.Pandemicflu.gov
- [Connecticut Water and Wastewater Agency Response Network \(CtWARN\)](#)
- [Ready.gov: Plan to Stay In Business](#)
- [Sample Emergency Plan](#) (pdf)
- [Pandemic Influenza: CIKR Planning and Preparedness Workshop for the Water/Wastewater Sector](#) (pdf)
- [Pandemic Influenza: Preparedness, Response, and Recovery- Guide for Critical Infrastructure and Key Resources](#) (pdf)

- [Pandemic Influenza: Preparedness, Response, and Recovery- Guide for Critical Infrastructure and Key Resources. Annex: Water and Wastewater Sector Pandemic Guideline](#) (pdf)
- [Top Ten List: Preparing Your Public Water System for Natural Disasters or Pandemic](#) (pdf)
- [Emergency Contingency Plan- RCOSA Section 25-32d-3\(d\)](#) (pdf)

Maine Department of Health and Human Services, Maine Center for Disease Control and Prevention, Division of Environmental Health

Contact:

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The Department's [Resources for Emergency Response Planning](#) website contains resources for emergency response planning for water systems serving less than 3,300 customers. It contains:

- Plan of Action template for systems serving less than 500 customers. Available as a word document.
- Plan of Action template for systems serving less than 3,300 customers. Available as a word document.
- Boil Water Order Policy, fact sheet, and posting templates. Available in pdf format.
- How Public Water Systems Can Prepare for Fall Hurricane Season in Maine. Two-page factsheet in pdf format.

There are also resources on this page related to security and supply protection efforts including: source water protection; vulnerability assessment; asset management; well head protection; Incident Command System Trainings; Maine WARN; and, a list of Maine television and radio stations.

Templates available for download on the site are:

[Action Plan for Systems Serving <3,300](#) (doc)
[Action Plan for Systems Serving <500](#) (doc)
[Boil Water Order Policy](#) (pdf)
[Boil Water Order Fact Sheet](#) (pdf)
[Boil Water Order Posting Template](#) (pdf)
[Do Not Drink Order Posting Template](#) (pdf)
[Do Not Use Order Posting Template](#) (pdf)
[Public Water Systems Can Prepare for Fall Hurricane Season in Maine](#) (pdf)

Below is a summary of the two Action Plan templates.

1. *Emergency Response Plan of Action*

For PWS Serving less than 3,300

Maine Center for Disease Control and Prevention

Revision Number: DWP0094 – B

2013, 39 pages

Retrieved as a word document from program website.

This document is for systems serving less 500 - 3,300 customers. Systems can access the word document and complete the template. The template includes sections that address EPA's 8 core elements and several additional sections customized for Maine. Sections and topics addressed in this publication include:

- A. System Specific Information
- B. Internal Chain of Command
- C. External Communication
- D. Events that cause Emergencies
- E. Public Health Advisories
- F. Personnel Safety
- G. Alternate Water Sources or Supplies
- H. Property Protection
- I. Water Sampling and Monitoring
- J. Plan Revisions, Evaluation and Exercises
- K. Plan Appendix Documents
 - a. List of Bulk Water Providers and their contact information
 - b. Information on Maine WARN System

2. *Emergency Response Plan of Action*

For PWS Serving less than 500

Maine Center for Disease Control and Prevention

Revision Number: DWP0095 – A

2012, 14 pages

Retrieved as a word document from program website.

This document is for systems serving less than 500 customers and is an abbreviated version of the *Emergency Response Plan of Action* template for systems serving less than 3,330 customers. The template contains the following sections:

1. Emergency External Contact List
2. Drinking Water Source, Pumping, Treatment – including drinking water source location, equipment inventory and service providers for equipment maintenance and repair and their contact information.
3. Public Water System Emergencies – basic steps to follow in case of an emergency. Unlike the *Plan of Action* template for systems serving less than 3,300, which provides a page for different types of common emergencies, this template simplifies the response into 5 steps regardless of the type of emergency.
4. Alternate Water Sources
5. Appendix Documents
 - Well Disinfection – Shock Chlorination procedures
 - Bulk Water Haulers and their contact information

Massachusetts Department of Environmental Protection, Drinking Water Program

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Department of Environmental Protection
Drinking Water Program
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Every Massachusetts water supplier must prepare and keep in an easily accessible place an Emergency Response Plan (ERP) prepared in accordance with 310 CMR 22.04(13) and the Massachusetts Drinking Water Guidelines and Policies for Public Water Systems, Chapter 12 - Emergency Response Planning Requirements Guidance including Appendix O - Handbook for Water Supply Emergencies. In addition, 310 CMR 22.04(13)(b)10 requires that the ERP include a "plan for annually training staff and local partners in emergency response procedures to ensure that they are familiar with all emergency procedures, equipment, and systems". ERPs are inspected by MassDEP staff during sanitary surveys.

The Department's [Emergency Planning and Preparedness Tips for WWTP and WTP Operators](#) site provides a checklist for operators and key staff members with information and advice on critical items that should be considered and checked to help the system gauge its emergency preparedness status.

The Department's [Emergency Response Plan Training Guidance](#) site was prepared to assist public water suppliers in establishing an acceptable annual training program. MassDEP recommends that its community water systems participate in a minimum of 10 hours of emergency response training on an annual basis. The site lists acceptable training topics.

[Guidelines and Policies for Public Water Systems, Appendix O – Handbook for Water Supply Emergencies](#)

The Commonwealth of Massachusetts
Department of Environmental Protection
Drinking Water Program
Originally Printed: December 1990
Updated: September 2001
Revisions: August 2002, March 2007
38 pp.

This handbook serves as the guide for water suppliers developing their Emergency Response Plan. The Handbook includes an Attachments section that serve as a template for systems to use

to complete its ERP. In some cases, the Department has completed the information, e.g. the section on Procedures for Contacting MassDEP. The Attachments include:

- A. LOCAL AUTHORITIES AND DEPARTMENTS - EMERGENCY TELEPHONE NUMBERS
- B. LIST OF STATE AND FEDERAL AGENCIES TELEPHONE NUMBERS
- C. PROCEDURES FOR CONTACTING MassDEP
- D. PROCEDURES INVOLVING OUTSIDE AGENCIES AND PERSONNEL
- E. EMERGENCY RESPONSE CHECKLIST
- F. GUIDELINES FOR PREPARING A NEWS RELEASE
- G. VIOLATION DETERMINATION FOR THE TOTAL COLIFORM RULE
- H. COLIFORM VIOLATION EVALUATION SURVEY
- I. GUIDELINES FOR PREPARING AN EMERGENCY RESPONSE PLAN
- J. COUNTERTERRORISM PLANNING

New Hampshire Department of Environmental Services, Drinking Water and Groundwater Bureau

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The New Hampshire Department of Environmental Services (DES) requires all community systems to have and maintain an ERP. The first plan was required to be submitted to DES by March 15, 2003. Plans are required to be updated and re-submitted to DES every six years. The Department requires that the system review the plan and update as needed. The Department checks these items during routine sanitary surveys.

To aid systems in preparing an effective plan, DES has developed an Emergency Planning Guide that is intended to help water suppliers understand and meet the basic standards for an emergency plan. The Department maintains 3 websites with information and resources to address this topic, including: an Emergency Planning site; a Water System Emergency Planning/Security site; and a Public Notice Forms site. Each site is summarized below.

1. The Department's [Water System Emergency Planning/Security](#) website provides water system staff with resources for emergency response planning. Topics include planning for community systems, preparing for alternate water supplies, as well as resources on federal and state regulations.

“Hot Topics” on for water system emergency planning and security are listed as:

- [Bulk Water for Public Water Systems](#)
- [DES Emergency Numbers](#)
- [Emergency Planning](#)
- [Mutual Aid](#)
- [Security](#)
- [Vulnerability Assessments](#)

Publications

[Public Water Systems Notification Card – Emergency Procedures](#)

The DES Notification Card lists contact information of the state agency, water analysis lab, and chemical spill & technical failure responders. This card is also incorporated into the *Community Public Water System Emergency Plan Guide*.

[Emergency Bulk Water for Public Water Systems](#)

This fact sheet focuses on acquiring alternate water sources (e.g. bulk water) during an emergency. Discussed in this document are alternate water source procedures, sanitation, and water delivery. Also, there is information pertaining to alternate water supplies and Emergency Response Plans. The fact sheet concludes with contact list for drinking water hauler suppliers. This document was created in 2013.

[Emergency Water Supply Wells for Public Water Systems](#)

This resource highlights the suggested guidelines for alternate water supplies for well water systems. The factsheet was created in 2012.

[FAQs on Water and Wastewater Mutual Aid and Assistance](#)

This resource is a list of Frequently Asked Questions (FAQs) on the recovery of utilities from manmade and natural disasters and the possible need for mutual aid and assistance during recovery processes.

Rules/Regulatory – lists 2 resources requiring ERP. One is local New Hampshire law, [Administrative Rule Env-Ws 360.15](#).

The other links to a 2011 Presidential Directive from the U.S. Department of Homeland Security page, [Homeland Security Presidential Directive/HSPD-8](#)

Technical Assistance

[Additional Assistance](#)

Contact information for two organizations: (1) Granite State Rural Water Association and (2) RCAP Solution, Inc.

Training

[Training](#)

This webpage has links to other organizations that provide emergency planning or security training, including:

- [American Water Works Association](#)
- [Centers for Disease Control and Prevention \(CDC\)](#)
- [Federal Emergency Management Agency \(FEMA\)](#)
- [Granite State Rural Water Association](#)
- [New England Water Works Association](#)
- [New Hampshire Water Works Association](#)
- [US Environmental Protection Agency \(EPA\)](#)

Grants/Loans

[Funding Assistance](#)

This webpage has links to two funding assistance sources: (1) Drinking Water State Revolving Loan Fund and (2) Local Water Protection Grants.

Resources/Links ([Complete List](#))

[Homeland Security](#)

Links to the New Hampshire Department of Safety's Homeland Security and Emergency Management website. The Emergency Management department is responsible for coordinating the State's response to major disasters. The site lists news and events.

2. The Department's [Emergency Planning](#) website contains documents and tools to assist systems in developing their ERP. Many of these resources were highlighted on the Water System Emergency Planning/Security webpage, therefore the following documents and tools were solely found on the Emergency Planning webpage:

Documents and Tools

[DES Generator Information Form](#)

This form regards existing generator resources, specifically if a water system owns or will need to rent/borrow. Water system operators should include information on standard startup and shutdown procedures. Once completed, the form is included in the water system's Emergency Response Plan. This form is similar to the [Water System Generator Information Form](#) (see below); however, this document includes space for diagrams and photos.

[Emergency Plan Guide](#)

The purpose of the *Community Public Water System Emergency Plan Guide* is to assist water system operators with their Emergency Response Plan preparation. This document is broken into two parts: (1) a blank template with instructions for every sections and (2) examples of Emergency Response Plan sections. This document distinguishes by including sections for alternate water and power supplies as well as the DES' notification card and public notification resources (e.g. Do Not Drink, Boil Order).

[Emergency Planning for Public Water Systems](#)

This factsheet is a supplemental resource for the *Community Public Water System Emergency Plan Guide*. The document briefly describes the preparedness process.

[Emergency Water Supply Wells for Public Water Systems](#)

See Water System Emergency Planning/Security website section above.

[Emergency Response Tabletop Exercises for Water & Wastewater Systems](#)

This document was created by the U.S. EPA and its description is included within the EPA's section.

[EPA Emergency Response Plan Guidance for Small/Medium Community Water Systems](#)

This document was created by the U.S. EPA and its description is included within the EPA's section.

[EPA Generator Guide for Water and Wastewater Systems-What You Need to Know About Generators](#)

This 6-pg document was created by the U.S. EPA in 2009. The first four pages describe generators and available options. The two final pages are for an emergency generator information form.

[Rehearsing an Emergency Plan](#)

This 3 page factsheet describes the methods and process for rehearsing emergency response plan procedures. Topics discussed in this document includes: reasons for practice, types of exercises (e.g. seminar, tabletop exercise, and drills), rehearsal situation options, and exercise evaluation. Even though practice isn't required under Env-Ws360.15, however, DES recommends rehearsals.

[EPA Emergency Plan Toolbox](#)

This link directs you to the DES's overview of the [Emergency Response Plan Toolbox: Planning for and Responding to Contamination](#) created by the U.S. EPA in 2004. The Toolbox was designed to help water systems "effectively and appropriately" respond to intentional contamination threats and incidents.

[Water Contaminant Information Tool](#)

WCIT is a secure, on-line database that lists chemical, biological, and radiological contaminants of concern for drinking water and wastewater utilities. This link brings water system operators to a fact sheet about the U.S. EPA's WCIT.

[Water System Generator Information Form](#)

This form provides information regarding existing generator resources, specifically if own is owned or will need to be rented/borrowed. Water system operators should include information on standard startup and shutdown procedures. Once completed, the form is included in the water system's Emergency Response Plan.

3. The Departments [Public Notice Forms](#) website provides water systems with templates of commonly used public notification messages. Each document is formatted within Microsoft Word for the purpose of altering content by rural and small water systems to meet their needs. Included within each document are instructions on effective communication (e.g. mandatory terms and concepts). Public Notification directions and templates are focused on the following topics:

- Bacteria
- Boil Orders
- Chemical
- Disinfection Byproduct (DBP)
- Lead and Copper
- Surface Water Treatment Rule
- Sanitary Survey

Vermont Rural Water Association (VRWA)

Contact:

Shaun Fielder, Executive Director
VRWA Administrative Offices
20 Susie Wilson Rd., Suite B
Essex Jct., VT 05452-2827
802-660-4988

The Association provides technical assistance, training and tools to help systems develop an ERP and complete a Vulnerability Assessment. The Association provides water systems servicing less than 3,300 persons, which aren't required to submit Emergency Response Plan certifications to the U.S. EPA under the Public Health Security and Bioterrorism Preparedness and Response Act of 2002, with resource to ensure preparedness for unexpected situations. Vermont Rural Water Association created the *Small Water and Wastewater System Emergency Response Plan* template for operators to utilize.

The [Security](#) section of their website provides Vermont water utilities and water systems with state resources, such as a plan template and a decision-making factsheet along with the federal guidebooks. In addition, there are resources and contact information for training and onsite technical assistance. The website contains the following resources for water suppliers developing a VA and ERP:

[Emergency Response Plan Guidance for Small and Medium Community Water Systems to Comply with the Public Health Security and Bioterrorism Preparedness and Response Act of 2002](#) – EPA resource reviewed in EPA section.

[Summary of How to Comply with the Bioterrorism Act](#) (applies to systems serving a population of 3,300 and up.)

A one-page outlining what systems need to do to comply with the Act.

[Vulnerability Assessment Template for Systems Serving Under 3,300](#) ASDWA resource template reviewed above.

[Emergency Response Plan Template](#)

Vermont Rural Water Association
37 pp.

This resource prepares rural and small water systems for natural and manmade emergencies. The document has two sections: (1) instructions for creating a plan and (2) the ERP template for water systems to complete.

[Guide to Security Decision-Making](#)

Vermont Rural Water Association

2 pp.

This two page document provides guidelines to assist utilities in determining the level of security concern if a break-in or threat occurs at the water system and to assist the utility in appropriate decision making and response actions.

New York State Department of Health, Bureau of Water Supply Protection

Contact:

John Helmeset

NYS Department of Health Bureau of Water Supply Protection

jah20@health.state.ny.us

Mailing Address:

New York State Department of Health

Corning Tower, Empire State Plaza

Albany, NY 12237

In New York State all community water systems that serve more than 3,300 people are required by State Public Health Law (sec. 1125) to prepare and submit a water supply emergency plan (ERP). Although not required, smaller community water systems are encouraged to prepare an ERP. These plans are submitted to the County Health Department or State Health Department District Health Office that regulates the utility. Some counties have additional ERP requirements that water systems must meet.

There are 2 sections to the Department's website that address emergency response planning. The sites content are reviewed below:

[Preparing Emergency Response Plans](#) website contains:

Emergency Response Plan Guidance and Format Information

[Letter to Community Water Systems Serving 3,301 People or More](#)

This letter was written by the Director of the Bureau of Water Supply Protection. It informs water systems of the need to develop an ERP and VA. Within the letter, the Director references resources that will assist water systems in preparing these documents.

[Water Supply Emergency Response Plans – Communications and Predefined Response Actions](#)

This webpage has a bulleted list of some communication information and response actions that should be incorporated into an emergency response plan.

[Vulnerability Assessment and Emergency Response Plan Updates Community Water Systems Serving Populations Greater Than 3,300 – Frequently Asked Questions](#)

A list of 19 Frequently Asked Questions (FAQs) with answers about emergency response planning for water systems serving more than 3,300 people.

[Protecting Vulnerability Assessment and Emergency Response Plans from Unauthorized Disclosure](#)

This webpage discusses Part 5-1.33(h) of the New York State Sanitary Code, which states that sensitive security information is exempt from 10 NYCRR Part 5-1.33(d) ruling of requiring water system ERPs made available for public review.

Additional Resources

[Emergency response plan and vulnerability assessment templates](#) (in both word and pdf formats) Links to templates available from New York Rural Water Association for small to medium size water systems serving up to 10,000 people. Available templates are for VAs and ERPs. These resources are summarized in the section review for the New York Rural Water Association.

[Boil Water Notices: Fact Sheet and Templates for Public Drinking Water Suppliers](#)

This webpage is a factsheet containing information on protecting and preparing customers for emergencies, consulting with the local Health Department. A list of Frequently Asked Questions with answers is included. The webpage also includes a link another page with downloadable Boil Water Notice templates (located in the bulleted list at the top of the page).

2. [Drinking Water System Emergency Preparedness and Response Resources](#) website contains:

Mutual Aid

To take advantage of mutual aid, utilities should prepare a mutual aid agreement in advance. The New York Water and Waste Water Agency Response Network was created by New York utilities for New York utilities to do just that.

[The New York Water and Waste Water Agency Response Network](#) (NYWARN)

Links to NYWARN website.

[Fact Sheet - Water Sector Mutual Aid and Assistance: Utilities Helping Utilities](#)

The U.S. EPA created this 2-pg factsheet. This document discusses the mission and purpose of the Water/Wastewater (WARN). *Links to EPA website housing this factsheet.*

[About Water and Wastewater Agency Response Networks](#) – American Water Works Association (All links to AWWA are broken.)

- [Utilities Helping Utilities Fact Sheet](#)
- [Economic Benefits of Forming and Participating in a WARN](#)
- [Resource Typing Manual](#)

Emergency Equipment Stockpile

[Emergency Equipment Stockpile](#)

The State Office of Emergency Management (formerly SEMO) maintains a stockpile of emergency equipment that includes items that can be loaned free-of-charge to municipal officials for water supply emergencies. Information on how to acquire the loaned equipment

Technical Assistance for Drinking Water Systems

For finding contact information of any local Health Department within New York State, the Dept. of Health provides these links:

- [County or district health offices](#)
- [Contact Information for Drinking Water Program Offices](#)

[Technical Assistance](#) – New York Rural Water Association (NYRWA)

This link redirects visitors to the NYRWA's website. On this webpage, the organization describes no cost, on-site technical assistance for water systems, wastewater systems, and solid waste management.

[State Circuit Riders](#) – New York Rural Water Association

This link redirects visitors to the NYRWA's website. State Circuit Riders provide the on-site assistance and training to water systems. NYS Dept. of Health funds the NYRWA Circuit Riders. New York has two Circuit Riders: Morris Coolidge (Coolidge@nyruralwater.org) and Michael Batz (Batz@nyruralwater.org).

Emergency Laboratory Assistance for Drinking Water Systems

Procedures contacts for emergency lab assistance, including the [county or district environmental health protection offices](#), [NYWARN](#) mutual aid office, and other organizations specific to NY.

Incident Command System and National Incident Management System

In New York State, state and local governments use the ICS and NIMS in their emergency response structure.

[ICS and NIMS information and training](#) – State Office of Emergency Management

[Water Sector NIMS Implementation Objectives](#) – EPA

[Emergency Management Institute Independent Study Program](#) – U. S. Federal Emergency Management Agency

- [IS-100.b, Introduction to Incident Command System, ICS-100](#)
- [IS-200.b, ICS for Single Resources and Initial Action Incidents](#)
- [IS-701.a, NIMS Multiagency Coordination System \(MACS\) Course](#)

Emergency Planning and Incident Response

[Emergency / Incident Planning](#)

This link redirects the visitor to the U.S. EPA's Emergency/Incident Planning, Response, and Recovery webpage. This webpage lists the various guidance documents and other informative resources to support drinking water and wastewater utility preparedness, response and recovery.

[Response Protocol Toolbox](#)

This link redirects the visitor to the U.S. EPA's [Emergency Response Plan Toolbox: Planning for and Responding to Contamination](#) document. The Toolbox was designed to help water systems "effectively and appropriately" respond to intentional contamination threats and incidents.

[General Information on Emergency Generators](#) – EPA

This 6-pg document was created by the U.S. EPA in 2009. The first four pages describe generators and available options. The two final pages are for an emergency generator information form.

[Emergency Power Facility Assessment Tool \(EPFAT\)](#)

This one-page factsheet was created by the U.S. Army Corps of Engineers to describe the Emergency Power Facility Assessment Tool (EPFAT), which is a secure web-based tool used by critical public facility owners/operators, or emergency response agencies, to input, store, update and/or view temporary emergency power assessment data.

References for Obtaining Alternative Potable Water

[New York State Certified Bulk Water Facilities](#)

This webpage contains contact information for the Certified Bulk Water Facilities in the State of New York.

[New York State Certified Water Bottling Facilities](#)

This webpage contains contact information for the Certified Water Bottling Facilities in the State of New York.

New York Rural Water Association

Contact:

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Mailing Address:

NYRWA

PO Box 487

Claverack, NY 12513

Phone: 518-828-3155

The New York Rural Water Association (NYRWA) [website](#) contains templates in word and pdf format for conducting a Vulnerability Assessment and developing an Emergency Response Plan.

The new templates, revised in 2012, are a combination of templates that were previously developed by New York Rural Water Association (NYRWA), National Rural Water Association, and the Association of Safe Drinking Water Administrators, and modified by the New York State Department of Health to fulfill the state-mandated requirements. These templates are intended for small and medium water systems serving populations up to 10,000.

[Water Supply Emergency Response Plan template](#)

(Available as a [Word Template](#) or [PDF Template](#))

Revised 2012

31 pp

Blank templates serve as a guide to complete an ERP. It contains the following sections:

Section 1: Introduction to template

Section 2: Description of System

- Source Information – Well water, surface water, or ground water.
- System Information – Infrastructure, equipment, and system connections & distribution.
- Treatment Information

Section 3: Emergency Response Actions

- Description of Emergency Response Actions by type of emergency. The template lists 17 potential emergencies. For each type, there are blank sections to complete for: immediate actions; contact numbers; tools and equipment needed; and, follow-up actions/notifications.
- Emergency contacts information for responders, notifications, suppliers, and media.

Section 4: Emergency Water Use Restrictions

- Assists system to prepare for water use restrictions during particular emergencies, e.g. drought, leaks, failure, etc.

Section 5: Communications

- Provides space to list available emergency communications equipment

Section 6: Spare Parts and Equipment

- Provides space to list spare parts and equipment available on site. This includes portable power supply and vehicles.

[Vulnerability Assessment Template](#)

(Available as a [Word Template](#) or [PDF Template](#).)

Revised 2012

25 pp

Blank templates serve as a guide to complete a VA. It contains the following sections:

Section I: Introduction

Section II – Water System Mission

- Mission Identification
 - Determining the flow, distribution, and storage of water. This section has a table to designate specific situations as either system mission or critical mission.

Section III – Water System Assets

- Source, Treatment, and Storage Assets
 - To describe the number, size, and location of water sour types, e.g. ground water, surface water, etc, as well as the treatment and storage of the water supply. Also within this section, water systems describe the water sources and determine if they are a critical asset and if a point failure existed.
- Power, Distribution, Offices, and Communication Assets
 - For the description of the components and structures of these assets.

Section IV – Water System Emergencies

- Probability of Emergencies
 - A chart of 17 possible emergencies and the probability of occurrence (low – medium – high).

Section V – Critical Assets Assessment

- Impacts to Critical Assets
 - Describes the two types of impacts: severe and immediate based on the 17 possible emergencies.
- Corrective Actions for Critical Asset Vulnerabilities
 - Water systems determine the priority level of the vulnerabilities from the last subsection and create anticipated corrective actions.

Section VI – Security and Operations

- Security & Operational Vulnerabilities
 - A checklist of questions on the existing security and operational vulnerabilities.
- Corrective Actions for Security and Operational Vulnerabilities
 - Another table for creating anticipated corrective actions with priority levels of the security and operational vulnerabilities.

Kentucky Department of Environmental Protection (Division of Water)

Contact:

Anne G. Powell
Capacity Development Program Manager
Kentucky Division of Water
anne.powell@ky.gov
(502) 564-3410

[Drinking Water Incident Response – Standard Operating Guideline](#)

The purpose of this guidebook is to identify agencies that could respond to emergencies effecting public water systems. This resource lists state agencies that can assist with recovery actions as well as their roles and responsibilities. And, the guidebook describes the coordinated command and management response to emergencies.

Even though this document contains three figures that clearly depict the flow of actions and roles of personnel during emergencies, this guidebook does not include useful information for generating an Emergency Response Plan. However, the content is valuable for knowing which agency/agencies a water system should contact if a situation does arise.

[Emergency Response Plan Template](#)

This template was generated for the use by public drinking water systems. Of the eight Core Elements suggested by the U.S. EPA, this template contains three: (1) roles and responsibilities (2) communications and (3) system specific information.

Content-wise, what distinguishes this template from templates made from New England state agencies is the information described in the response actions to emergencies. Instead of listing response actions, notifications, and required equipment, the DEP wants water systems to describe preparation, impact, and recovery actions. DES describes those actions within the template and they are summarized as follows:

- *Preparation:* Ways to avoid emergencies. This includes a general list of equipment and the staff needed to maintain operations.
- *Impact:* Description of parts of the water system that would be affected by the emergencies. And, any possible suggestions for avoiding or minimizing damage.
- *Recovery:* A list of tasks and actions to return the system to its normal operations.

As for the format of the document, this is the first template published in a workable .pdf file. Other agencies either provide a writeable Word document or a .pdf file that must be printed out to complete. This document format allows for easy completion as well as the ability to have two documents (one printed and one kept secure on the computer).

Emergency Response Plan: A Template for Public Drinking Water Systems

This PowerPoint was created for the purpose to inform water systems on the components of an Emergency Response Plan. This presentation highlights the following U.S. EPA Eight Core Elements:

- Chain of Command (Roles and Responsibilities)
- Emergency Notifications (Communications)
- System Specific Information

The template also includes a section on emergency response actions. In this section, water system operators describe emergency preparation, impact, and recovery efforts. Another important aspect of the template highlighted in this presentation is personnel training and exercises. The PowerPoint concludes with advice of reviewing and updating ERPs on an annual basis.

National Environmental Services Center (NESC)

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***Due Diligence*: Small Water System Security**

Module 11

Sandra Fallon

The National Environmental Training Center for Small Communities

September 2004, 50 pp.

This publication is a self-study short course for local officials on preparing an ERP and protecting small water systems. It will serve as a useful resource for developing Rhode Island training materials. The course objectives are to:

- Explain the importance of protecting water resources and the water system from potential threats, and the local officials' role in system security, emergency preparedness and response.
- Identify potential consequences to the water system, public health, and the environment as a result of threats, security breaches, natural disasters, and other emergencies.
- Identify and explain the regulations that address security and emergency response planning.
- Explain the purpose and importance of assessing a water system's vulnerabilities, developing emergency response plans, and securing the water system.
- Identify key tools, guidance documents, and administrative policies and procedures that will help the system achieve its security and preparedness goals.

Table 4: Comparison of content contained guidebooks and templates reviewed in reference to the U.S. EPA’s Eight Core Elements outlined in [Emergency Response Plan Guidance for Small and Medium Community Water Systems to Comply with the Public Health Security and Bioterrorism Preparedness and Response Act of 2002](#) and reviewed in the EPA section of this document.

EPA’s 8 Core Elements provide the structural framework for developing an ERP

	Element 1: System Specific Information	Element 2: Roles and Responsibilities	Element 3: Communications	Element 4: Personnel Safety	Element 5: Alternative Water Supply	Element 6: Replacement Equipment and Chemical Supplies	Element 7: Property Protection	Element 8: Water Sampling and Monitoring
Public Drinking Water Security & Emergency Response Guide (CT DPH)		√	√					√
Handbook for Water Supply Emergencies (MassDEP)	√	√	√					
Emergency Response Guide (NH DES)	√	√	√		√			
Emergency Response Planning Template for Public Drinking Water Systems (RCAP)	√	√	√		√			
<i>Plan of Action</i> <500 customers (Maine DHHS)	√		√		√			
<i>Plan of Action</i> <3,300 customers (Maine DHHS)	√	√	√	√	√		√	√
NYRWA Emergency Response Plan Template	√		√			√		
VRWA Emergency Response Plan Template			√					
Emergency Response Template (KY Div. of Water)	√	√	√		√			

SUMMARY

1. Overall, there are a lot of Emergency Response Planning (ERP) resources available for community water systems. We found that Federal and state agencies and partnering organizations have websites dedicated to ERP that contain their resources and links to other agencies and organizations (e.g. EPA). Available resources include a variety of materials ranging from background information and guidance documents, templates for completing an ERP, and contact links for additional assistance.
2. Massachusetts and New Hampshire require all community water systems to develop an ERP. Connecticut has proposed regulations to require all systems to develop an ERP.
3. EPA provides guidance for developing an ERP. The guidance is tailored for water systems of various sizes, based on the classification below:
 - Very Small water systems serve 25-500 people
 - Small water systems serve 501-3,300 people
 - Medium water systems serve 3,301-10,000 people

Based on the project's target audience, the focus is on resources that target those classifications listed above. With the guidance, EPA identifies "8 core elements" for system's to address. Essentially, these core elements provide the framework for developing an ERP. These core elements are summarized in the Literature Review and are listed below.

Core Element 1: System Specific Information

Core Element 2: Roles and Responsibilities

Core Element 3: Communications

Core Element 4: Personnel Safety

Core Element 5: Alternative Water Supply

Core Element 6: Replacement Equipment and Chemical Supplies

Core Element 7: Property Protection

Core Element 8: Water Sampling and Monitoring

4. State programs reviewed, followed EPA's guidance and incorporated portions of the 8 core elements in their ERP templates. As a result, there are similarities among state programs in the content of their ERP templates. Although there are similarities in structure and content, each state has customized many of their materials.
5. Most of the state program coordinators we spoke with advised that materials need to be straightforward and easy in order for the target audience to complete. One state noted that they would like to get their ERP template to a few pages, making it quick and easy for suppliers to complete. This advice should also apply to the program website and the trainings that will be held. Some programs had their emergency/security resources in different places and these sites

were not clearly linked to each other. The result being that it may be difficult and confusing for audience to access information. Simple, clear and uncluttered web navigation will assist the audience in developing and updating their ERP as well as knowing who to contact for assistance.

6. Maine developed two ERP templates. One template is for systems serving 500 – 3,300 customers; and, the other is an abbreviated version for systems serving less than 500 customers. Connecticut would like to revise their template to fit on a few pages.

7. State ERP templates are available on the website in either *word* and/or *pdf* formats. Some states make templates available in both formats on their webpage.

8. Training materials (powerpoint presentations, agendas) are scarce. Most state programs rely on training from other organizations like the state rural water association or the American Water Works Association. In some cases, state program staff will participate in a training sponsored by a partnering organization and provide an update to system owners and operators. In other cases, staff work with training groups to influence what is covered during the training.

9. We found that state programs are not conducting program evaluations and formally collecting audience feedback to determine if program components are useful for the audience.

RECOMMENDATIONS / NEXT STEPS

1. Using templates from Maine as a starting point, outline two ERPs. One for water systems serving less than 500 customers and one for systems serving 500 – 3,300 customers. Templates will address EPA's core elements 1, 2, 3, and 5.
2. Develop and addendum in the ERP template to address treatment for systems that do treat to complete. This would be a modification of EPA's core element 6.
3. Develop single sheets that address what to do in case of a particular emergency. Focus these on most common emergencies, including power outages, floods and loss of pressure. These sheets will include specific instructions on what to do and who to call and provide space for the system to fill in particulars that they need to address.
4. Develop drafts of materials and have project steering committee review and provide input.

**Appendix A:
Summary of phone calls with colleagues in New England and New York responsible for
emergency response planning for community water systems in their state.**

Connecticut

Mike Hage, Section Supervisor
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1. Briefly review our project for perspective.

2. What we would like to know from you:

- a. What's your role?
Section supervisor
- b. Are you the sole contact in the agency or is there someone else we should also talk to?
David Cooley.
- c. Are small systems required to do an ERP?
Not required. Regulations have been drafted to require ERPs.
- d. Do you offer training for systems? If so, details, resources (ppt, agendas, etc) Are the trainings effective? Do you evaluate the trainings?
Don't offer trainings at this time. Are currently trying to work with Atlantic States Rural Water to develop a shortened template and training program for the small systems. Wants to get ERP template to a few pages for these systems – short, easy to complete, simple. There is a need for frequent emphasis on this topic and updates as there is turnover of responsible people – presidents change, etc.

Noted that small systems are “ill prepared” to deal with emergencies.

- e. We're at your website – are all your resources there?
Yes

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David.cooley@ct.gov

1. Briefly review our project for perspective.

2. What we would like to know from you:

a. What's your role?

Security contact for about 10 years – he's been consistent person

b. Are you the sole contact in the agency or is there someone else we should also talk to?

Also spoke with David's supervisor Michael Hage.

c. Are small systems required to do an ERP?

The dept. has proposed regs to require these systems do have an ERP and have the capability of back-up generator in cases of emergency.

d. Do you offer training for systems? If so, details, resources (ppt, agendas, etc) Are the trainings effective? Do you evaluate the trainings?

Have done trainings with larger systems. Suggested offering CEUs for operators during training and consider bringing in 1st responders to trainings – noted it helps systems get a sense of chain of command for local first responders and to let 1st responders know these systems exist and need assistance. Noted small systems don't have awareness of emergency procedures and chain of command.

e. We're at your website – are all your resources there? Yes

Also noted:

- Make ERP as easy as possible for this audience – short, clear and straight-forward.
- Understand the audience – part-time, other interests/concerns
- Most important thing is that they have contact info and know where it is during an emergency

Maine

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1. Briefly review our project for perspective.

2. What we would like to know from you:

- a. What's your role? Oversees water program. Has staff that works on the topic below.
- b. Are you the sole contact in the agency or is there someone else we should also talk to?

Terry Trott (not currently, but has the history)

Jennifer Donell: created action plans currently on the web.

Sara Flannigan: also works on project

- c. Are small systems required to do an ERP?

Encouraged, not mandated. Linked with protection plans – can have reduced sampling and Phase II & V waivers to reduce sampling costs. Program can offer some technical assistance in developing the plan. How do they know they have an ERP? During Sanitary Surveys and if system requests waiver, they ask for it. Then, the incentive can kick in.

- d. Do you offer training for systems? If so, details, resources (ppt, agendas, etc) Are the trainings effective? Do you evaluate the trainings?

Did workshops 4 or 5 years ago. Partnered with RCAP and Rural Water. The “orange book” was their tool then. Current tools were modified from the orange book. NO evaluation.

Offered operator CEUs for attending training. In past, did personalized outreach to systems.

- e. We're at your website – are all your current resources there? Yes

Other Comments:

Target different messages as incentive for audience:

Message for operator – provide CEUs, this audience tends to be interested in Technical Details.

Message for owner: Smooth, running system with less expenses, more profit.

Massachusetts

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DW Website: <http://www.mass.gov/dep/water/drinking.htm>
Board Website: <http://www.mass.gov/ocabr/licensee/dpl-boards/dw>

1. **Briefly review our project for perspective.**
2. **What we would like to know from you:**
 - a. What's your role? Coordinator in Boston for program and developed program with passage of 2002 Bioterrorism Act requiring these plans to be done for systems serving 3,300 or more customers.
 - b. Are you the sole contact in the agency or is there someone else we should also talk to?

He's the contact.
 - c. Are small systems required to do an ERP?
All community systems required to do. Check on them during sanitary surveys.
 - d. Do you offer training for systems? If so, details, resources (ppt, agendas, etc) Are the trainings effective? Do you evaluate the trainings?

No, at times they've partnered with Mass Coalition for Small Systems Assistance (no longer in operation due to budget cuts: (<http://www.masmallwatersystem.org/>)

New England Water Works, MA Water Works to offer trainings – these groups train too.
 - e. We're at your website – are all your resources there? Yes

Also noted:

Contract operator required for very small systems.

Important to identify system specifics in plan – for example, type of chemicals stored/used in case of a spill, in need of restocking, etc.

No incentives offered for having an ERP – just the fact that the system won't be in violation.

New Hampshire

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1. **Briefly review our project for perspective.**
2. **What we would like to know from you:**
 - a. What's your role? Emergency Response contact at NHDES
Coordinates program, develops materials.
 - b. Are you the sole contact in the agency or is there someone else we should also talk to?
She is the point person. Engineers in the agency deal with actual emergencies.
 - c. Are small systems required to do an ERP?

All community systems are required to have an ERP since 2003. They submit updated copy every 6 years. They are checked during sanitary surveys, too.

- d. Do you offer training for systems? If so, details, resources (ppt, agendas, etc) Are the trainings effective? Do you evaluate the trainings?

Don't evaluate. Will send a training ppt. Provide technical assistance as part of broader trainings offered by Rural Water Association on ERP. Also will provide workshops close to update deadline.

Provide Operator CEUs for incentive.

- e. We're at your website – are all your resources there?

Resources for systems are at website – training materials are not at website

Others: NH Guide is basic. She's thinking of creating sections that will address emergency type – Power outages, contamination, vandalism, etc. No audience feedback about whether this will be useful or not.

New York

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1. Briefly review our project for perspective.
2. What we would like to know from you:
 - a. What's your role? Oversees program
 - b. Are you the sole contact in the agency or is there someone else we should also talk to? Others involved on regional and local level – he's contact with dept.
 - c. Are small systems required to do an ERP?
Systems serving greater than 3,300 are required to develop an ERP.
 - d. Do you offer training for systems? If so, details, resources (ppt, agendas, etc)
Are the trainings effective? Do you evaluate the trainings? Partner with other agencies and organizations who do training and provide certifications credits

Ways the Dept. supports training:

- i. Operator certification credits
- ii. Trainings with Rural Water and AWWA – they influence topics for trainings. Also partner with EPA and Texas A&M Emergency Services Training Institute
- iii. Enforcement
- iv. Financial support when available
- e. We're at your website – are all your resources there?

Will send additional resource links – he did