



# State Emergency Drinking Water Supply Guidance

# State Emergency Drinking Water Supply Plan Guidance

## Introduction

During an incident that disrupts the availability of drinking water on a large-scale or regional basis, clarity in the roles and responsibilities of those involved with locating, securing, and delivering an Emergency Drinking Water Supply (EDWS) will be critical. An EDWS is alternate drinking water provided to residents when a community's drinking water utility can no longer treat and/or distribute water. This can include packaged or bottled water, bulk/hailed drinking water, emergency interconnections with neighboring systems, and other options (e.g., treatment of available source water).

An EDWS Plan is an important tool for a state drinking water primacy agency that will allow for optimum coordination with the state Emergency Management Agency (EMA) and other stakeholders. This will ensure not only safe drinking water for citizens but also compliance with federal regulations under [40 CFR 142, Subpart B](#).

An EDWS Plan maps out emergency water supply needs and other logistics to be coordinated during drinking water incidents. It details how a state will locate, secure, and deliver an EDWS, specifically outlining the roles and responsibilities of local, state, tribal, and federal agencies as well as other stakeholders. The intent is to meet drinking water needs during an incident quickly and safely, while minimizing duplication of effort.

The EDWS Plan Guidance is targeted at:

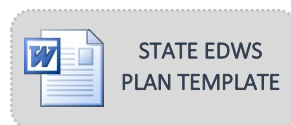
- Drinking water primacy agencies
- State and tribal EMAs
- Regional and local government entities that may assist the state in providing an EDWS

In addition to the above, it may be helpful to include others in the planning and development process depending on the needs of your state. These may include non-governmental organizations such as the American Red Cross or private sector entities such as water and beverage distributors.

Section 1413 of the Safe Drinking Water Act provides for a state to have primary enforcement responsibility for public water systems if EPA determines that the state has satisfied five basic conditions specified in Section 1413. One of those conditions for primacy is that the state has adopted and can implement an adequate plan for the provision of drinking water under emergency circumstances.

## How to Use This Guidance

The U.S. Environmental Protection Agency (EPA) prepared this guidance to provide drinking water primacy agencies a starting point in the development of a state-wide EDWS Plan. It was developed based on the California *Emergency Drinking Water Procurement & Distribution Planning Guidance* (May 2014) and two EDWS state workshops sponsored by EPA in Colorado and Rhode Island. The instructions that follow mirror the editable template, which can be accessed [here](#), and offer states general guidance as they develop their individual plans. Not all template elements may be applicable, so states should modify the template content to better meet their needs and circumstances.



# Creating a State Emergency Drinking Water Supply Plan

There are no federal requirements for what an EDWS Plan should contain; however, the following steps can help a state begin planning for locating, securing, and delivering an EDWS when needed. One way to accomplish these steps is to convene an EDWS planning workshop or series of workshops with the appropriate stakeholders.

## Step 1: Bring Together Knowledgeable Stakeholders

Developing an EDWS Plan should bring together the experience and knowledge of different local, state, tribal, and federal agencies along with non-governmental organizations and private industries and institutions. Many of these response stakeholders (see Table 1 in Section 3) have experience with emergency planning and can bring knowledge and resources to aid the development of an EDWS Plan.

Some response agencies may have plans or protocols that outline existing coordination procedures for providing drinking water during incidents. It will be important to review these documents to determine if the process to locate, secure, and deliver an EDWS is discussed.

The State Emergency Operations Plan (SEOP) is an important document to review as it provides general guidelines on how a state carries out its response and recovery responsibilities to address an emergency or disaster event, including those requiring an EDWS. Others might include:

- Water Utility Emergency Response Plans (ERP)
- County Emergency Operations Plans
- Regional Plans

## Step 2: Understand Roles, Responsibilities, and Resources

EDWS planning requires a clear understanding of each stakeholder's role, responsibilities, and available resources (technical and financial) to locate, secure, and deliver an EDWS.

During an EDWS planning workshop, existing emergency plans and protocols should be reviewed to understand these aspects, as well as to identify limitations in accessing an EDWS and relevant federal, tribal, or state programs.

## Step 3: Understand Legal, Regulatory, Financial, and Coordination Processes

Some entities and stakeholders must follow specific legal and regulatory requirements to locate, secure, and deliver an EDWS. For example, a state's drinking water regulations might require public water systems (PWSs) to maintain some EDWS capabilities. Or the state may need to approve a bulk water hauler in advance of an EDWS delivery. States may also have procedures that must be followed to purchase, acquire, or otherwise gain access to an EDWS. During an EDWS planning workshop, all local, state, tribal, and federal requirements, statutory authorities, and protocols regarding EDWSs should be discussed and understood prior to developing the plan.

## Step 4: Identify Duplication of Effort, Vulnerabilities and Gaps

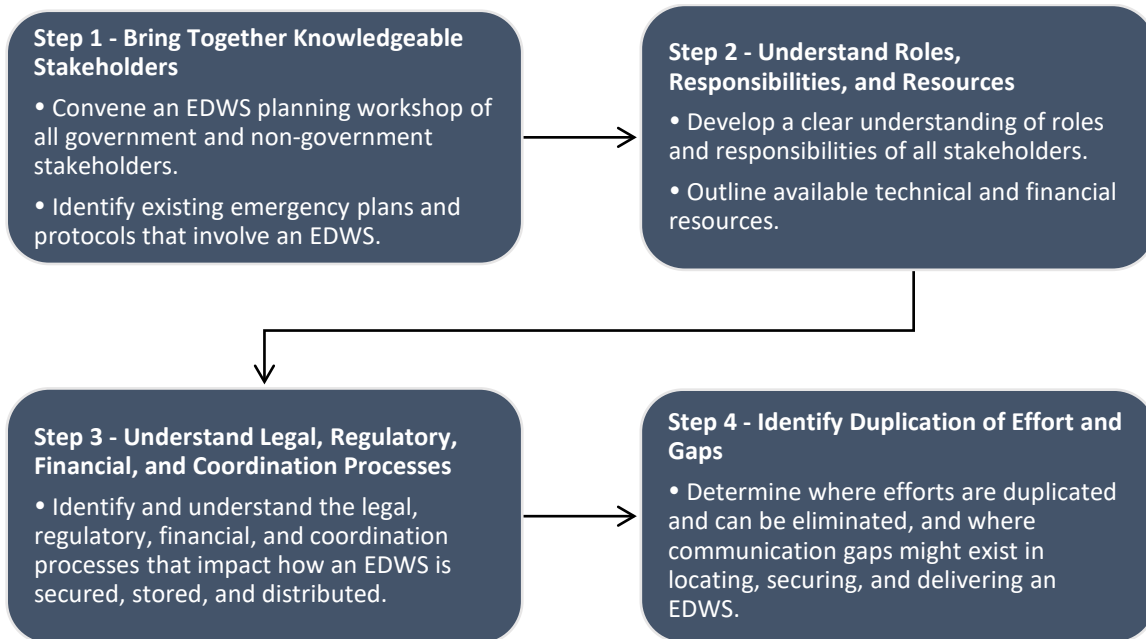
Bringing together key stakeholders will reveal where entities may be performing the same EDWS task during incidents or where vulnerabilities and gaps might exist. For example, a water utility might think the local EMA is responsible for providing emergency drinking water, but the local EMA might think the

An [ERP](#) describes strategies, resources, plans, and procedures utilities can use to prepare for and respond to an incident, natural or man-made, that threatens life, property, or the environment. Incidents can range from small main breaks or localized flooding to large scale hurricanes, earthquakes, or system contamination, among other examples.

water utility is responsible. Reviewing the SEOP and other protocols and plans at an EDWS planning workshop can be very helpful.

Figure 1 below depicts this four-step process. You may also consider developing a process chart to help visually present your EDWS plan both during development and once completed.

*Figure 1. Process for Creating an Emergency Drinking Water Supply Plan*



## Updating Your Emergency Drinking Water Supply Plan

Your EDWS Plan is a dynamic document and should be revisited regularly to update protocols or procedures and validate information, including roles and responsibilities, names, and contact information (Section 3). A regular review schedule and training (e.g., twice a year) will help to ensure that all plan information is current, and that staff are familiar with the contents and any recent changes to the plan. In addition, you should exercise your EDWS Plan at least annually. Exercises allow you to test and practice the procedures in your plan with response partners prior to an EDWS incident. Additional information on developing a training and exercise plan can be found [here](#).

# State Emergency Drinking Water Supply Plan Guidance

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# 1 Introduction

Briefly describe how the EDWS Plan was developed, listing participating agencies, committees, and other partners and stakeholders as appropriate. Identify the agency that is responsible for maintaining and implementing the plan, along with any agency, committee, or task force that will assist this agency.

## Purpose

Describe the purpose of the EDWS Plan. Some examples from the [California Emergency Water Procurement & Distribution Planning Guidance](#) are:

- Provide a state response concept of EDWS operations including roles and responsibilities, resource management, and the descriptions of any state and local task forces and committees focused on EDWS.
- Enable development of an EDWS Plan that:
  - Identifies who owns, deploys, and operates EDWS assets.
  - Overcomes unexpected obstacles during an incident, such as political pressure.
  - Ensures the availability of local and state EDWS resources.
- Provide EDWS planning for the state.
- Identify state level programs and resources related to EDWS.

# 2 State Emergency Operations Plan

SEOPs can be acquired from your state’s Emergency Management Agency. If it is not posted on the agency’s website or otherwise publicly available, you will have to make a formal request for a copy.

## 2.1 SEOP Overview

Provide an overview of the SEOP, including the following aspects:

- Current process and procedures for emergency management and/or responding to statewide incidents. Highlight how the coordination to locate, secure, and deliver an EDWS is incorporated into these procedures. Even if this information is available, it may be necessary to clarify the roles and responsibilities of the stakeholders involved.
- The Emergency Support Function (ESF) under which drinking water is managed. Describe how this ESF is coordinated with local and regional EDWS plans/procedures/entities (as applicable).
- Where the SEOP can be accessed (provide links if available).

**Best Practice: Ohio**

Ohio’s [Emergency Operations Plan](#) recognizes that reaching a community’s vulnerable populations requires coordination with others to identify social service providers (e.g., United Way 211, WIC clinics) that can help target distribution of commodities such as an EDWS.

Learn more about this best practice in the [Addendum](#).

Include a list of the jurisdictional levels in your state. Examples include PWSs, local government (municipal, county, and special districts), regional government (as applicable), and state government. Provide a brief description of how they broadly plan for EDWS incidents and how these plans dovetail with the SEOP (as applicable).

## 2.2 SEOP Priorities, Goals, and Strategies

Provide brief statements about the operational priorities, goals, and strategies listed in the SEOP. Examples include property protection, environmental protection and restoration of essential utilities and program functions. Highlight those that focus on an EDWS (as applicable).

### 2.3 SEOP Direction, Control, and Coordination

Describe who is responsible for emergency response based on statutory authority. The SEOP will most likely list all state entities and their responsibilities for various kinds of emergency incidents. Highlight those entities that assist efforts associated with an EDWS, as applicable.

### 2.4 Intelligence Gathering and Situation Reporting

Describe how information is managed, shared, and reported both during and after the incident. Briefly describe the process outlined in the SEOP, including anything that might be specific to EDWS, if discussed.

### 2.5 Public Information

Describe how information about an incident will be communicated with the public, including coordination with other responders, focusing on EDWS incidents if discussed.

## 3 Roles and Responsibilities

During an incident that disrupts the availability of drinking water on a large-scale or regional basis, your EDWS plan should provide clear direction on the roles and responsibilities of stakeholders. List all response stakeholders at all jurisdictional levels in your state and detail the functions they would perform during an EDWS-related response. Highlight available emergency response resources (e.g., labor, technical, material, financial) and the appropriate contact person(s). Contact information and available resources should be updated periodically to ensure the plan is current. This list of response stakeholders should be reflective of those participating in the development of the EDWS Plan.

There is no standard way to present this information in an EDWS Plan, but roles and responsibilities should be clear and concise.

Some of this information can be found in the

emergency plans of others, such as your SEOP and other state agency-specific plans. Overarching federal roles and responsibilities are outlined in the [National Response Framework](#). Table 1 on the next page and the table in the EDWS Plan Template provide examples of how this information can be organized and displayed in an EDWS Plan.

#### EDWS and the Federal Role

The US Army Corps of Engineers (USACE), under [33 CFR Part 203](#), may provide emergency supplies of clean water to any locality confronted with a source of contaminated water causing, or likely to cause, a substantial threat to the public health and welfare of the inhabitants of the locality. USACE assistance may also be provided to drought-distressed areas (as declared by the Secretary of the Army or his delegated nominee) to provide water for human consumption. Any other federal assistance for an EDWS is typically provided by Federal Emergency Management Agency's (FEMA) Logistics Management Directorate, which delivers critical commodities (such as water) following a national emergency declaration (e.g., Stafford Act).

Table 1. Response Stakeholders

Local Level	State/Tribal Level	Federal Level
<ul style="list-style-type: none"> <li>• Public Water Systems (PWSs)</li> <li>• Municipal or County Government</li> <li>• Local Law Enforcement</li> <li>• Local Health Department</li> <li>• Local Emergency Management Agency</li> <li>• Local Emergency Planning Committee</li> </ul>	<ul style="list-style-type: none"> <li>• State Primacy Agency for Drinking Water</li> <li>• State Emergency Management Agency</li> <li>• State Public Health Department</li> <li>• State Environmental or Engineering Agency</li> <li>• State National Guard</li> <li>• State Department of Transportation</li> <li>• State Law Enforcement</li> <li>• State Emergency Response Commission</li> <li>• Governor’s Office</li> <li>• Tribal Primacy Agency for Drinking Water</li> <li>• Tribal Council</li> <li>• Tribal Emergency Management Agency</li> </ul>	<ul style="list-style-type: none"> <li>• U.S. Environmental Protection Agency</li> <li>• Federal Emergency Management Agency</li> <li>• U.S. Army Corps of Engineers</li> </ul>
State and Local Social Service Agencies and Programs	Mutual Aid and Assistance/ Nongovernmental Organizations	Private Sector
<ul style="list-style-type: none"> <li>• Supplemental Nutrition Assistance Program (SNAP)</li> <li>• Special Supplemental Nutrient Program for Women, Infants, and Children (WIC) clinics</li> <li>• Meals on Wheels</li> <li>• Food Pantries</li> <li>• Senior Centers</li> <li>• Adult Daycare Facilities</li> <li>• Church/Community Groups</li> <li>• Veterans Services</li> </ul>	<ul style="list-style-type: none"> <li>• Water and Wastewater Agency Response Network (WARN)</li> <li>• National Rural Water Association (NRWA), American Water Works Association (AWWA), Rural Community Assistance Partnership (RCAP)</li> <li>• Community-based and faith-based organizations, such as the American Red Cross and Salvation Army</li> </ul>	<ul style="list-style-type: none"> <li>• Private Utilities</li> <li>• Industries</li> <li>• Corporations and Businesses</li> <li>• Professional and Trade Associations</li> <li>• Academic Institutions (e.g., universities, colleges)</li> <li>• Hospitals</li> </ul>



### 3.1 Water Sector Specific Position (WSSP)

Coordination of an EDWS during an incident is further helped with the designation of a Water Sector Specific Position (WSSP) at both the state emergency operations center (SEOC) and local EOCs. A WSSP can be a Water Sector Liaison, Drinking Water Coordinator, or Technical Specialist for drinking water issues. WSSPs (and their assistants as needed) can serve as the primary contact and coordinator during drinking water incidents. Your EDWS Plan should outline the role of this individual and any support staff. In some states, a member of the state Water and Wastewater Agency Response Network (WARN) may already serve in this role at the SEOC. You should also encourage water utilities to work with their local emergency managers to establish this position in local EOCs. Figure 2 above provides an example of some of the roles and responsibilities of a WSSP.



Figure 2. Water Sector Specific Position

### 3.2 Emergency Response Stakeholders

Describe the roles and responsibilities of stakeholders involved in the response to an emergency event that requires an EDWS. Include both the resources that the stakeholder can provide and contact information.

#### NIMS and ICS

All domestic incidents in the United States are managed under the National Incident Management System (NIMS). NIMS guides all levels of government, NGOs, and the private sector to work together to prevent, protect against, mitigate, respond to, and recover from the effects of incidents. Under NIMS, local on-scene incident management is accomplished through the Incident Command System (ICS). If you are not familiar with NIMS and ICS, the Federal Emergency Management Agency (FEMA) offers free on-line training [here](#). EPA also offers training that can be found [here](#).

## 4 Emergency Drinking Water Supply Source and Distribution Considerations

Planning for an EDWS source and distribution requires the state drinking water primacy agency to consider many factors, including legal, regulatory, logistical, and environmental justice (EJ) aspects. For example, if bulk hauling of water in tanker trucks is an option, what is the approved source of that water? Does the route to the distribution location accommodate tanker trucks or are there rural bridges with weight limits? Once the tanker is on-site, is water quality testing required prior to distribution and does that testing have to be conducted by a certified operator? Will waivers from any of the Federal Motor Carrier Safety Regulations be needed to ensure water haulers can stay on the road despite hours-of-service limitations? Do the more vulnerable populations in the affected area have easy access to EDWS information and transportation to the distribution site? Funding is another important planning consideration. You should have a conversation with your state EMA regarding funding, as they may already have an EDWS funding strategy in place.

### Reimbursement

During a Presidentially declared disaster, reimbursement for EDWS by local or state agencies is permitted under FEMA's Public Assistance program. Page 117 of FEMA's [Public Assistance Guidance](#) describes this reimbursement for supplies and commodities further. This reimbursement eligibility for EDWS may influence how your state and the local agencies within your state prepare for EDWS procurement and distribution.

Additionally, consider the volume of EDWS that will be needed. FEMA and the Centers for Disease Control and Prevention (CDC) recommend one gallon of drinking water per person per day as a minimum planning requirement. Additional water is recommended for pets, cooking, and bathing. Critical customers including health care facilities (e.g., hospitals, skilled nursing facilities) require larger amounts of water to maintain operations within the community and should be considered separately when determining volume allocations. You should encourage local water utilities in your state to contact their critical customers to determine what EDWS plans they may already have in place. Additionally, be aware of what plans drinking water utilities in your state may already have to provide an EDWS. Some may have implemented EPA's [guidance](#) for providing EDWS during large-scale disasters.

Each state and incident are different, and your EDWS Plan should outline any source and distribution considerations to ensure that all options and their associated conditions are understood by agency decision makers.

### 4.1 Emergency Drinking Water Supply Sources

The EDWS options available as well as the planning considerations for securing each option should be identified. List as many available options in your EDWS Plan as necessary, adding details as needed for implementation, including references to state or local protocols. Examples include:

- Treatment of available source water
- Packaged or bottled water
- Bulk/hailed drinking water
- Emergency interconnections with neighboring systems

- Other options (e.g., EDWS contracts held by your state contracting agency, interstate sources obtained through the [Emergency Management Assistance Compact](#))

As appropriate, provide reference links or attach documents to the EDWS Plan as appendices. Figure 3 describes EDWS sources that may be considered as you complete this section of the template.

*Figure 3. Potential EDWS Sources*

Treatment of Available Source Water	If the PWS treatment system is down, alternate treatment of the source water may be an option. Planning considerations could include PWS consultation with the state drinking water primacy agency for prior approval of options such as <a href="#">Point-of-Use (POU) treatment</a> (e.g., boil water, water filters) or using a commercially available mobile treatment unit.
Packaged or Bottled Water	Planning for packaged or bottled water should consider available partners to help with purchasing and/or storing water. Your state emergency management agency may already have plans for this.
Bulk/Hauled Drinking Water	Consideration for bulk water haulers must include state regulations, policies, and best management practices in addition to federal rules governing commercial driving licenses. Understand what the water source is, if it is chemically compatible with the receiving system, and how it will be transported to needed areas. Determine if your state could negotiate a master agreement with a local distributor.
Emergency Interconnections with Neighboring Systems	Interconnections with neighboring PWSs may require approval by the state drinking water primacy agency. Interconnections should be established as early as possible in EDWS planning, particularly if capital investments are required. There may be opportunities for temporary interconnections above or below ground under emergency conditions, which can be facilitated with cooperative agreements and joint logistical protocols between neighboring systems.
Other Options	Other options for an EDWS might include hydrant tapping (sourcing water from local hydrants), which would require coordination between the PWS and state. Drilling new wells or developing other alternate sources might also be considered, which requires more long-term planning and development.

## 4.2 Emergency Drinking Water Supply Distribution

Determine the factors that will impact the distribution of an EDWS and how you will plan for these considerations. There are two situations that will impact how you plan for the distribution of an EDWS, and they are when:

1. A water distribution system can be used to distribute an EDWS.
2. A water distribution system cannot be used to distribute an EDWS.

In either situation, the logistics of distributing an EDWS (e.g., bottled or bulk water, [Point-of-Use \[POU\] device](#), interconnections with neighboring systems, installation of an alternate treatment system) to affected populations may pose significant challenges. Critical customers (e.g., hospitals, schools, daycares) and industrial operations with high water usage needed to sustain community or economic resiliency require specific coordination and arrangements prior to an incident to ensure that these facilities will be able to continue operation in the event water is not available. These users typically have their own contingency plans and protocols in place, but this should be checked by the PWS. Distribution

logistics for apartment complexes, prisons, homeless shelters, or other multi-person/family facilities also need to be considered. Finally, vulnerable populations, such as those with mobility or other physical challenges and economically distressed communities where access to internet or transportation may be limited, will require a concerted EDWS outreach effort.

Federal guidance, such as those developed by [FEMA](#) and [EPA](#), help states and other stakeholders understand logistical needs to disseminate emergency resources efficiently and effectively. These guidance documents offer checklists and best practices that are applicable to the distribution of an EDWS. It is important that you refer to these when developing your distribution management procedures as part of your EDWS Plan.

The following provides some planning considerations for situations where the distribution system can and cannot be used to distribute an EDWS.

#### [Water Distribution System Can Distribute an EDWS](#)

There could be situations where a distribution system is operational, but the drinking water source is unavailable or contaminated. Examples include the following:

- There is a lack of sufficient source water caused by drought.
- Water source is contaminated due to chemicals from a spill, algae bloom, saltwater intrusion, or other pollutant and the intake or well is shutdown.
- Treatment system is not operational due to mechanical, power, or other failures.
- Contaminated water has entered the distribution system (e.g., pressure loss) but can be treated by end user (e.g., boil water, water filters).

If the treatment system is not operational and boiling water is inappropriate, [POU devices](#) may be distributed so that most drinking water users can treat water at the tap. If POU devices are to be used for lead, consumers can increase their level of confidence by purchasing filters that have been tested by an accredited third-party certification body or bodies for lead reduction and particulate reduction capabilities against both NSF/ANSI Standards 42 and 53.

If the decision is made to introduce an EDWS into an existing distribution system, there are some options that could be available. Existing interconnections with an adjacent system may be a first option since these are developed by agreement and are designed to ensure water chemistry compatibility between the two systems. This assumes that the interconnected system is not experiencing the same impacts as the receiving utility.

A system may also consider introducing bulk water into the distribution system. Another option may be using a [mobile treatment unit](#) (MTU) drawing from a local water source. Both options can be

#### **Case Study: Winter Storm Uri, Texas**

Delays in the EDWS distribution supply chain occurred because receiving sites lacked adequate equipment (e.g., forklifts) to receive palletized water.

Learn more about this case study in the [Addendum](#).

#### **Case Study: Benton Harbor, Michigan**

When lead action levels were exceeded in Benton Harbor, a lead service line replacement program was started. To help residents waiting for their line to be replaced, the county health department began distributing POU faucet filters to residents. The county also produced an instructional video to help ensure proper installation of the filters. Learn more about this case study in the [Addendum](#).

accomplished by filling storage tanks with either the bulk or locally treated water. Critical to introducing bulk water or using MTUs is understanding the source of the EDWS and ensuring it is compatible with the receiving utility’s water chemistry. For example, see the Colorado City/Pueblo Water case study in the [Addendum](#).

The state needs to clearly identify all requirements for emergency interconnections, bulk water hauling, and temporary source treatment (if allowable) in the EDWS plan to facilitate any reviews and approvals that need to be conducted during an incident.

[Distribution System Cannot Distribute EDWS](#)

In some situations, it is not feasible to use a distribution system for EDWS distribution. Examples include the following:

- Multiple line breaks after an earthquake.
- A main break on a large diameter line.
- Limited distribution system availability due to multiple power outages.

Under these conditions, Points of Distribution or “PODs” are the standard way critical resources, such as bottled or bulk water, are delivered to a community during an incident. There are significant logistics to establish and manage PODs to distribute an EDWS. Some considerations are provided in Table 2 and in guidance documents developed by [FEMA](#) and [EPA](#).

*Table 2. POD Considerations*

POD Location	<ul style="list-style-type: none"> <li>• Needed agreements and permissions for site set-up</li> <li>• Identify competing uses at the site and jurisdictional conflicts</li> <li>• Proximity to emergency shelters</li> <li>• Locate along public transportation routes (for those that do not own transportation) and assume that individuals still may need transportation to EDWS distribution centers</li> <li>• Central to affected area(s)</li> <li>• Can accommodate needed equipment and infrastructure</li> <li>• Adequate number of locations (particularly in underserved neighborhoods)</li> <li>• Along transport route with roads and bridges that can accommodate heavy loads</li> <li>• Consider paying distribution site hosts, such as faith-based organizations or local health centers, for organizational management efforts, including coordinating volunteers and water distribution</li> </ul>
POD Layout	<ul style="list-style-type: none"> <li>• Accessible for people with disabilities</li> <li>• Traffic control</li> </ul>
POD Staffing	<ul style="list-style-type: none"> <li>• Adequate staff and/or volunteers</li> <li>• Leadership roles</li> <li>• Staff and leadership training</li> <li>• Interpreters (e.g., hearing impaired, multiple languages) and translated and accessible (e.g., large print) signage materials</li> <li>• Consider paying volunteers for long-term EDWS distribution assistance to ensure sustainable and reliable help for the community</li> </ul>

## POD Management

- Open days and evenings as well as on weekends
- Determine addresses that are eligible for bottled water distribution
- Ensure safety and security of location
- Estimate and manage supply for the anticipated duration of the incident
- Manage contracts with vendors and alternate vendors if needed
- Identify alternative distribution strategies with vendors or organizations that can provide the necessary equipment and other capabilities to meet EDWS delivery demands (e.g., forklifts and trained forklift operators)
- Identify sustainable methods of EDWS distribution to reduce or eliminate reliance on single-use plastic which is often inefficient for multi-family households and housing complexes
- Coordinate with the distribution of other commodities (e.g., food), as appropriate
- Plan for transportation limitations and certifications if hauling bulk water
- Establish protocols for collecting, documenting, and reporting distribution activities and data to be shared with the state

While the location and availability of PODs should make an EDWS broadly accessible to an affected population, they may not reach all customers. States need to consider their most vulnerable residents, such as shut-ins, the elderly, non-English speaking residents, and people with disabilities who might not feel comfortable or able to access a government-sponsored POD. Coordination with local social service agencies and EMAs can help identify these individuals and develop innovative approaches to serve them. Door-to-door delivery may be done with volunteers (e.g., Community Emergency Response Teams) or the National Guard, depending on the socioeconomic characteristics of the population served, number of people impacted, and the duration of the incident. Coordinating delivery of EDWS with existing services and programs (e.g., Meals on Wheels, Supplemental Nutrition Assistance Program (SNAP), Special Supplemental Nutrient Program for Women, Infants, and Children (WIC) clinics, food pantries, senior centers) is an effective way to make direct contact with a community's more vulnerable residents.

### 4.3 Public Outreach and Communications

During an incident, public outreach protocols should be established as early as possible and communicating with customers should be done at every step in the response process. Affected populations will want to hear at the outset that there is a plan in place, and something is being done. Therefore, public communication is another critical aspect to distributing an EDWS to ensure the affected population understands where an EDWS is available and when. This should be integrated into the overall public outreach and communications plan for the incident, to help ensure that all EDWS information is accessible and consistent. Here are some important factors to consider in outreach and communications:

- Assess which outreach methods are available (e.g., does a power outage impact public communication?). Consider online sources (website and social media), traditional media (TV and radio), alert services, paper communications (flyers and pamphlets), and door-to-door visits.
- Develop messages using appropriate languages for non-English speaking customers.

#### Joint Information Center

The Joint Information Center (JIC) organizes, coordinates, and integrates incident communication efforts among different agencies and organizations. It is part of the Joint Information System (JIS) and helps to ensure consistent messaging and can assist with communicating EDWS information.

- Ensure outreach and communications is accessible for people with disabilities, including those with hearing and vision impairments. Work with trusted members of the EJ community to help educate and communicate with residents about EDWS and other services and resources available to them.
- Partner with local social service agencies and community groups to identify and reach vulnerable and at-risk residents.

Local utilities and communities conducting public outreach during an incident should be encouraged to document all communications to customers, media, and others. Collecting all public facing materials and communications can help with evaluating lessons learned and highlighting best practices post incident.

#### **Case Study: Flint, Michigan**

To meet the EDWS needs of a large city like Flint, the National Guard helped with distributing bottled water, POU lead filters, and lead testing kits door-to-door. However, uniformed state troopers and guardsmen in convoys with flashing lights frightened many non-English speaking residents and they did not open their doors to accept these supplies.

Learn more about this case study in the [Addendum](#).

Additionally, community partners and key stakeholders, such as neighborhood groups, local businesses, local government entities, and others, will be critical to ensuring successful implementation of a public outreach and communication strategy. Many of these groups and individuals overlap with the response partners identified in Table 1. For example, local health departments, primacy agency staff, and state and local emergency management agencies have valuable knowledge and experience in communicating with residents and can help identify and quickly vet strong community partners and outreach avenues.

## 5 Appendices

The following appendices are examples to consider including in an EDWS Plan. Your plan can include as many appendices as appropriate to provide quick access to needed information during a drinking water emergency.

### APPENDIX A: References

Include important local, regional, and state planning documents, regulations, or other protocols that affect EDWS and links to where they can be found online. Your SEOP should be listed here.

### APPENDIX B: Sample Local EDWS Plan

If available, include a local EDWS plan that can serve as a model for your agency to share with PWSs and local jurisdictions as needed.

### APPENDIX C: State Bulk Water Contract and List of Approved Bulk Water Haulers

If available, include your state's bulk water contract and list of approved bulk water haulers. Include any regulations, policies and industry-related best practices that apply to bulk water haulers.

### APPENDIX D: State Bottled Water Contracts

If available, include your state's bottled/package water contract(s) here. This may be maintained by your state Emergency Management Agency.

### APPENDIX E: Public Notification, Outreach, and Messaging Templates

Include any public notification templates your state may have regarding "Do Not Drink" and "Do Not Use" notices here. Additionally, include any templates your state may have related to outreach and messaging during an EDWS incident. These may also include examples of informational flyers or handouts used during past EDWS incidents.

### APPENDIX F: Acronyms

Include a list of acronyms for commonly used terms in the EDWS plan. A starter list is provided.

### APPENDIX G: Glossary

Include a list of terms and phrases used throughout the EDWS plan and their definitions. A starter glossary is provided.



## APPENDIX H: Emergency Assistance Agreements

Include here copies of any available local, regional, state, tribal, and federal assistance agreements, or documents (e.g., Memoranda of Understanding) that support your state during a drinking water emergency. Examples are provided in the template. Terminology may be different in your state.

## ADDENDUM: State Distribution Plans and EDWS Case Studies

The main objective of distributing an EDWS is ensuring that safe drinking water gets to all customers. By reviewing example distribution plans and case studies, states can learn from others and develop an EDWS Plan with an understanding of the different needs and scenarios they may encounter.

### *Example Distribution Plans*

In addition to the [California Emergency Water Procurement & Distribution Planning Guidance](#) referenced earlier in this guidance, many other states and local governments have commodities/supplies distribution management plans. While these plans cover more than just potable water, the examples below highlight how some states have approached planning for an EDWS, including outreach, partnerships, and POD organization.

#### State of Ohio Emergency Operations Plan

Ohio's [Emergency Operations Plan](#) recognizes that reaching vulnerable community populations starts in the first phase of incident response. When assisting local jurisdictions and water utilities, the Ohio Emergency Management Agency (EMA) coordinates with the Ohio Department of Health (ODH) and the local EMA to identify social service providers (e.g., United Way 211, WIC clinics) that can help target distribution of commodities such as an EDWS. During this process, a mechanism for how residents are referred to EDWS providers is identified.

In addition, the state has cached bottled water supplies to assist in responding to small-scale shortfalls of the local potable water supply and delivery to populations that for functional and/or socioeconomic reasons cannot be typically serviced. The plan notes under these circumstances, ODH and the Ohio Department of Aging will help identify local populations in need and coordinate with local social support programs.

#### State of Montana Disaster and Emergency Services Division Distribution Management Plan

The Montana Disaster and Emergency Services (MDES) [Distribution Management Plan](#) outlines the process the state will use to order, receive, and distribute commodities to local jurisdictions during an emergency or disaster when supply chains for commodities (e.g., food, water) are not available to an impacted area. Local jurisdictions are responsible for establishing and staffing PODs, identifying local resources to fill commodity needs, and requesting resources, including EDWS, from MDES. The plan provides tools to help jurisdictions calculate the number of needed meals and water volume based on the size of the affected population. Like [FEMA's](#) Distribution Management Plan guidance, the MDES plan covers resource ordering, transportation and distribution methods, inventory management, staging, and demobilization. The plan is reviewed annually, a best practice to ensure that it remains current, accurate, and reflective of lessons learned from previous incidents.

#### New Hampshire Local Distribution Management Plan Guidance

The State of New Hampshire's [Local Distribution Management Plan Guidance](#) is intended to help local jurisdictions plan for fuel, food, water, and other commodities during an emergency. The development of a local distribution plan will ensure essential supplies are identified and procedures are in place to

acquire commodities when supply chains are disrupted. The guidance is organized around five questions:

- What is needed?
- How much of it is needed?
- Where is it needed?
- When and how should it be transported?
- Who is responsible for custody and distribution?

Each question has a list of factors that can help communities plan for these situations, including local documents (e.g., existing supplier contracts), potential partners, POD guidance checklist, and roles and responsibilities, among other considerations. The organization of the guidance is straightforward for jurisdictions of all sizes, creating an accessible planning tool.

### *Case Studies*

Over the past several years, several local water utilities and communities have found themselves acquiring and distributing an EDWS. During these EDWS incidents, protocols and procedures were tested, gaps and shortfalls were revealed, and lessons were learned. By presenting some of these experiences, states can gain a better understanding of distribution challenges and find opportunities where state resources can better support local efforts to distribute an EDWS.

#### Winter Storm Uri, City of Austin and Travis County, Texas

In early February 2021, Winter Storm Uri impacted much of the United States, Northern Mexico, and parts of Canada. In Texas, there was unprecedented and significant snow and ice accumulation causing blackouts for most of the state from February 14<sup>th</sup> to the 20<sup>th</sup>. A [survey](#) conducted by the University of Houston (UH) Hobby School of Public Affairs found that more than 69% of Texans lost power during this time, and about 49% had disruptions in water service.

There were many lessons learned by the City of Austin and Travis County from Winter Storm Uri. Two examples in the [Winter Storm Uri After-Action Report \(AAR\) and Improvement Plan Technical Report](#) are related to the management of PODs. First, the EOC Logistics Section experienced delays in their water distribution supply chain because the receiving locations lacked adequate equipment to receive palletized water. The time spent negotiating and coordinating with receiving locations resulted in inefficiencies and a strain on resources. The AAR recommended that identifying alternative distribution strategies with vendors or organizations that also provide the necessary equipment and other capabilities to meet EDWS service delivery demands (e.g., forklifts and trained forklift operators) is needed.

In the second example, the EDWS was primarily distributed through single-use plastic bottles, which was not the most efficient method for distribution to multi-family households or housing complexes. When the city and county then attempted to transport bulk water, the shortage of bulk water carrying devices such as water drums and the inability to sanitize and fill large containers prevented effective implementation during the response. The AAR recommended that sustainable methods of EDWS distribution be identified to reduce or eliminate reliance on single-use plastic.

### Lead Contamination, Benton Harbor, Michigan

On October 6, 2021, based on exceedances of the federal drinking water action level for lead, the Michigan Department of Environment, Great Lakes, and Energy proactively worked with the city of Benton Harbor to begin lead service line (LSL) replacements on a vastly expedited timeline of 100% replacement over 18 months (by March 2023). This timeline is more than 10 times faster than required by law to replace LSLs. The December 2021 sample results, which were based on the regular six-month compliance sampling period, show decreased levels of lead, putting the city just at the federal action level.

While the LSLs were being replaced, the Berrien County Health Department (BCHD) advised residents to use bottled water for specific tasks (e.g., cooking, drinking, brushing teeth, rinsing foods, mixing powered infant formula), flush their faucets prior to use and began distributing [POU lead filters](#). EPA conducted a filter efficacy study to ensure the POU filters were working as intended. The Michigan Department of Health and Human Services (MDHHS) provided support to the BCHD and community stakeholders and began paying volunteers to help distribute both POU filters and bottled water to residents. It utilized several methods of distribution throughout the response: 1) drive through PODs; 2) self-service such as at the local health department and other pick-up points; 3) homebound delivery (door hanger reminders were left if no one was at home); and 4) drop-shipping POU filters after a request was made on-line or over the phone.

Consumer education was important to ensure POU filters were being used and maintained correctly. For example, MDHHS developed both hand-out materials and a YouTube video that demonstrated proper POU filter installation. Residents could also schedule in-home assistance with installation. Refrigerator magnets were passed out to help remind people of when to change the POU devices' filter (each filter came with three replacements), and MDHHS developed an opt-in POU filter database that could email, text, call, or mail residents with filter change reminders.

MDHHS also appointed a local distribution coordinator to oversee the EDWS distribution process in the field. By doing so, the department created a sustainable, long-term solution to providing an EDWS.

### Colorado City/Pueblo Water

A combination of events led to Colorado City, Colorado (pop. 2,200) almost running out of water in July 2021. Source water quality impacts caused by a flood combined with a partial treatment plant outage created dangerously low levels of storage throughout the system. To avert a crisis, Colorado City relied on its neighbor, Pueblo (pop. 111,900), to directly fill the system's clearwell with hauled potable water until full production could be brought back online. Colorado Springs provided Pueblo with two, 7,500-gallon tanker trucks for this purpose.

While Colorado City had solved its immediate water quantity challenge, it was still facing a water quality issue, as an algal bloom also occurred in the source water. Colorado City uses free chlorine for disinfection, and Pueblo uses chloramines. As the water from Pueblo was delivered into Colorado City's clearwell, the chloramines reacted with the free chlorine and reduced the chlorine residual in the city's distribution system. This led to color, taste, and odor complaints as the reduced chlorine residual could not completely overcome the effects of the source water algal bloom.

While all parties involved knew in advance that the hauled water from Pueblo would chemically react with the water in Colorado City's distribution system, the lack of potable water and the need to provide water to customers immediately was considered paramount. This case study underscores the importance of providing clear and effective communication to promote situational awareness of potential water supply impacts and to ensure customers understand, where appropriate, that the water still meets drinking water standards.

#### Lead Contamination, Flint, Michigan

In 2015, public drinking water in Flint, Michigan, became contaminated with lead when water was drawn into the city's water distribution system from a highly corrosive water source introduced without the use of corrosion control. Delays in reconnecting the water system to a safer source prolonged the exposure of residents to lead. As highlighted in the [Flint Water Advisory Task Force Final Report](#), Flint is characterized as an EJ community and is one of the most impoverished metropolitan areas in the United States. Its residents have historically been disproportionately impacted by environmental and public health hazards.

A key lesson learned from the Flint water crisis was that EDWS distribution success depends on understanding who lives in an impacted area. To meet the EDWS needs of a large city like Flint, Michigan's Governor enlisted the state's National Guard to help with the distribution of bottled water, [POU lead filters](#), and lead testing kits door-to-door. However, as documented in the Task Force Final Report, in specific areas of the city, the sight of uniformed state troopers and National Guardsmen entering neighborhoods in convoys with flashing lights frightened many non-English speaking residents and they did not open their doors to accept these supplies. The report concluded that it was essential that trusted members of the EJ community assist with the effort to help educate and inform residents about EDWS and other services and resources available to them.

#### Elk River Chemical Spill, West Virginia

On January 9, 2014, an aboveground chemical storage tank leaked an estimated 10,000 gallons of the chemicals 4-Methylcyclohexanemethanol ("MCHM") and propylene glycol phenyl ether ("PPH") into the Elk River in Kanawha County, West Virginia. The location of the leak was approximately 1.5 miles upstream of West Virginia American Water Company's Elk River water intake, treatment, and distribution plant. MCHM and PPH infiltrated the plant, contaminating water that was distributed throughout the City of Charleston and to some communities in nine separate counties. Approximately 300,000 West Virginia residents and businesses did not have access to potable tap water for up to nine days.

According to the [CDC](#), despite sharing information about EDWS distribution sites, some households were without drinking water for one or more days because they either could not locate distribution sites or the distribution site was out of water. The CDC recommended additional methods of providing EDWS, such as leveraging community centers, employers, volunteer agencies, and schools. Specific lessons learned associated with the EDWS distribution in the [After Action](#) Report included the following:

- Distribution of water to the elderly and shut-ins should have been more closely monitored.
- Have water distribution in the evening hours as well as during the day to serve those who work day shifts.
- Be aware that individuals may need transportation to water distribution centers.
- Place distribution centers on public transit routes.

### Prolonged Drought in Spicewood Beach, Texas

Corix Utilities in the small community of [Spicewood Beach](#) (pop. 1,100) used two alluvial wells along the shore of Lake Travis for its water supply. During the fall of 2011, central Texas was in a severe drought. Within a one-month period, production in the utility's two wells plummeted from 130 gallons per minute (gpm) to 15 gpm. Corix had a drought contingency plan, but it could not overcome the rapid and unprecedented loss of both production wells.

While the utility developed a long-term solution to its water supply, it needed to identify a reliable emergency source of water in the interim. In order to bring in the emergency water, the utility had to go through many actions and approvals that were not anticipated, including the following:

- Establishing a contract with a neighboring utility 15 miles away for the EDWS source.
- Building an intake at the EDWS well and a fill point at Corix.
- Finding and securing a contract for a potable water tanker.
- Having the tanker inspected (including certificate) to demonstrate to the state that the tanker was safe for transporting potable water.
- Coordinating with the county to make sure that hauling water did not violate any bridge weight limitations.
- Conducting public meetings.

Specific lessons learned associated with this incident were to review and test specific parts of contingency plans regularly and involve all stakeholders (e.g., neighboring communities as well as county and state government entities). Additionally, consider different EDWS scenarios that may occur and walk through the details of implementing any EDWS solution.