Community Water System

Emergency Response Plan

Template and Instructions

Introduction

This template, developed by the U.S. Environmental Protection Agency (EPA), assists water utilities with developing an Emergency Response Plan (ERP) in accordance with America's Water Infrastructure Act of 2018 (AWIA) Section 2013. The Act requires community water systems serving populations greater than 3,300 to develop or update an ERP that incorporates findings of their risk assessment.

An ERP describes your utility's strategies, resources, plans, and procedures 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.

When an incident occurs that requires response, you will need to activate the procedures and protocols described in your ERP. This can include implementing personnel emergency roles and responsibilities, standing up your utility's Incident Command System (ICS) structure, recalling personnel on vacations, and notifying external agencies such as your local emergency management agency, police, fire department, and state regulatory agency.

As you respond to an incident, you should immediately begin documenting your decisions, actions, and expenditures. This step is important for justifying incident costs and potentially seeking reimbursement once the incident is resolved. Good incident documentation involves creating a paper trail for receipts, records, photographs, and personnel timesheets. Access both the Federal Emergency Management Agency (FEMA) Public Assistance Program and EPA's Fed FUNDS websites for guidance on documenting incident costs.

How to Use this Template

Use this template as a starting point in building an ERP that meets AWIA requirements. Since each water utility has unique challenges in managing and operating its incident response, you may want to include additional sections with information tailored to your utility's needs. You may also use a completely different format, such as a state regulatory agency or water association template. Irrespective of what format you use, **you must ensure that your ERP addresses all of the ERP criteria as outlined in AWIA Section 2013:**

AWIA ERP TEMPLATE

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

Before beginning your ERP, save the ERP template to your computer, delete the EPA cover page from the template, and follow the steps below to gather the key information you'll need to develop or update your ERP:

1. **Conduct a risk and resilience assessment (RA):** the findings and countermeasures identified in your RA, which is required under AWIA for community water systems serving greater than 3,300 persons, will enhance the effectiveness of your ERP and must be incorporated. For example, your RA may identify hurricanes as a significant risk for your utility and outline cost-effective countermeasures to lower your risk. Your ERP, grounded in the results of the RA, then describes the processes and procedures that can be implemented to mitigate hurricane impacts (e.g., flooding) to your utility. See EPA's online Vulnerability Self-Assessment Tool for more information on conducting a RA.

2. **Identify state regulatory requirements**: many states have specific regulatory requirements for ERP content and provide their own ERP templates. However, your utility is responsible for checking with your state to be sure that any state-provided templates also meet the AWIA ERP requirements, as outlined in this template.

3. **Identify and integrate local plans:** your ERP should dovetail with other emergency plans in your community as much as possible. These may include county emergency operations plans, hazardous materials (Hazmat) response plans, or local hazard mitigation plans.

4. **Coordinate with LEPCs and response partners:** AWIA Section 2013(a)(c) requires that community water systems, to the extent possible, coordinate with their existing Local Emergency Planning Committee (LEPC) when preparing or revising their ERP. EPA's Local Emergency Planning Committees website can help you identify your LEPC. Partnering with stakeholders like LEPCs allows all parties to understand response processes and procedures used during a drinking water incident.

5. **Plan for resources:** the resources (i.e., personnel, equipment, supplies, and facilities) your utility owns or has access to will influence how you develop your ERP procedures. Resource Typing, defined as categorizing by capability the resources requested, deployed, and used in incidents, is a key activity in identifying resource gaps. You will need to partner with your local emergency management agency and regional mutual aid partners to develop strategies to obtain needed equipment and resources that you do not own, or that are not readily available. See the American Water Works Association (AWWA) Water Sector Resource Typing document for more information.

To meet AWIA certification requirements, you must maintain a copy of your ERP for five years after the certification date. Since your ERP may contain sensitive information, it should be stored safely and securely. Consider storing one copy on site and one copy off site in case you are unable to access your offices or facilities during an incident. You may also store an electronic copy on a shared drive or other digital platform (protected by a firewall) easily accessible by your utility personnel. Similarly, up-to-date plans and schematics of your treatment and distribution systems, as well as current operations manuals, could be maintained and kept in at least two secure locations.

Your ERP should be viewed as a living and evolving document with established maintenance guidelines for routine and non-routine updates, the circumstances under which the updates will occur, and the personnel or departments responsible for the updates. *AWIA requires that utilities serving a population of 3,300 persons or more review and, if necessary, update their ERP at least once every five years, within six months of the utility reviewing and, if necessary, updating its RA*. Utilities must submit new certification statements to EPA after each required ERP update.

Lastly, once your ERP is complete, consider training your utility personnel and response partners on its contents and their individual roles and responsibilities. Conducting periodic trainings for both senior and new personnel helps ensure that your ERP procedures will be effectively implemented during actual response. Tabletop exercises are an effective means to practice and test your response procedures – access EPA's Tabletop Exercise Tool website to learn how.

How to Certify your AWIA-Compliant ERP

Community water systems serving populations greater than 3,300 must certify to U.S. EPA that they have completed an ERP that incorporates findings of the RA conducted under AWIA Section 2013(a) and meets the criteria outlined under AWIA Section 2013(b). U.S. EPA strongly recommends you electronically submit your community water system's ERP certification statement by clicking here. Alternate certification statement submittal options are accessible by clicking here.

AWIA requires you to submit only a certification of completion of an RA and an ERP; therefore, do not submit the RA and ERP documents to U.S. EPA.

TABLE OF CONTENTS

UTILITY INFORMATION

During an incident, you need to have system information about your water utility readily available for your personnel, first responders, repair contractors/vendors, the media, and other response partner agencies.

i Utility Overview

Provide basic information about your utility in the table in this section. The information required here should be readily available.

You may also choose to provide additional detailed information about your utility, such as distribution system maps, plan drawings, site plans, source water locations, and operations manuals. This information, although not required by AWIA, may serve as orientation materials for response partners and others who may not be familiar with your utility. You can use the checklist in this portion of the ERP template to ensure that applicable and relevant documents, as appropriate, are included as a part of your ERP.

ii Personnel Information

It is important to have a personnel roster available during an incident to quickly contact your employees. Attach your staff roster or fill out the table provided in this section.

iii Primary Utility Components

In the tables provided, list as appropriate all the components necessary to maintain effective operation of your utility. This includes information on wells, intakes, treatment plants, storage/distribution systems (e.g., tanks, primary mains, pumping stations), and treatment chemical storage, as appropriate. If you use an asset management system, you may simply generate a list of your primary components and insert that list into this section. See EPA's Asset Management website for more information.

iv Industry Chemical Handling and Storage Facilities

Industry surrounding your utility can also be impacted by incidents such as accidental releases, hurricanes or earthquakes. It is important that you understand what chemicals may be released in your area during an incident and how they may impact your utility operations. AWIA Section 2018 amended the Emergency Planning and Community Right to Know Act (EPCRA) to require state agencies to notify affected community water systems of spills that may impact utility source water intakes, and to allow community water system access to EPCRA Tier II chemical storage information; see EPA's website for the AWIA Section 2018 Fact Sheet for more information.

As you complete the tables in this section, you should consult your LEPC, which will know the locations of Tier II chemical handling and storage facilities in your area. You may also refer to your source water protection plan and online planning tools, such as EPA's Drinking Water Mapping Application to Protect Source Waters (DWMAPS) website, to help you locate potential sources of contamination upstream from your facility.

v Safety

Having easy access to safety materials and important safety information and procedures will help protect utility personnel during an incident. You can use the tables in this section of the ERP template to record that information, or, if your utility has a Health and Safety Plan, you can simply reference that in this section.

vi Response Resources

Having an accurate inventory of available resources (e.g., equipment, supplies) either maintained onsite or readily available offsite (e.g., neighboring water system) allows utility responders to know what resources are immediately

available during an incident. Resource typing defines and categorizes resources by capability and classifies resources by "kind" and "type". For example, a generator is a "kind" of resource, and a 50Kw generator is a "type" of generator. Resource typing is performed to ensure that a uniform system exists when requesting or providing resources. Resources that you can inventory and type include both personnel (e.g., special skills, licenses) and equipment. You can learn more about resource typing by accessing the FEMA [Resource Typing](#) website or the AWWA Water Sector Resource Typing document.

Insert an existing inventory sheet or fill out the table provided in this section. Insert copies of any equipment manuals or instruction sheets, as applicable, at the back of your ERP.

vii Key Local Services

In the table provided note the closest locations of key logistical and medical services that you or mutual aid and assistance providers may need during an incident. These include hospitals, gas stations, and other facilities like drugstores or ATM machines. Include a map or maps if available.

1 RESILIENCE STRATEGIES

This section of your ERP should contain strategies and resources to improve the resilience of your system, including the physical security and cybersecurity of your system. Resilience strategies incorporate how you will assign roles and responsibilities, how you will work with response partners, and how you intend to communicate during an incident. Further information regarding both physical security and cybersecurity can be found in Section 2.1 below.

1.1 Emergency Response Roles

An effective ERP involves active participation of a variety of both utility and external response partner agency personnel, each having well-defined roles and responsibilities. Your ERP should identify the roles and responsibilities in a manner that works well for your utility and your response partner agencies. The roles and responsibilities outlined in your ERP should cover your utility response actions as well as what response actions are expected from local, state and federal supporting agencies during an incident.

It is important to first establish an Emergency Response Lead (ER Lead) and Alternate ER Lead at your utility. The ER Lead should be the main point of contact during an incident and may also have a role in developing and updating the ERP, as well as forming partnerships with external stakeholders. Both the ER Lead and the alternate may need to be accessible 24 hours a day, seven days a week.

Your utility should also consider forming an ER team that uses a well-defined command structure. Within the ER team, identify personnel who will notify others (e.g., regulatory agency, fire department, downstream water users), who will speak to the public on topics such as water use advisories and who will answer the phones during incidents. Some of these tasks may be performed by the ER Lead or alternate, but during a large-scale incident with high public interest, even simple tasks like answering the phones can become overwhelming. Coordinate with your response partners for additional assistance if you feel your utility does not have the resources to effectively manage a large-scale incident.

In this section, use the table to describe the roles and responsibilities for key water utility and external response partner agency personnel (e.g., law enforcement, public health), and describe their roles and responsibilities.

At the local level, the use of memoranda of understanding, mutual aid and assistance agreements, and other agreements can be invaluable for water utilities in time of need. These documents contain legal language that is mutually agreed upon by the parties to the agreements and generally define worker's compensation, indemnification, and other response related considerations. For mutual aid and assistance, utilities can participate in Water and Wastewater Agency Response Networks (WARNs), or other local water utility response networks. A WARN is a group of "utilities helping utilities" within a

state to respond to and recover from emergencies by sharing resources with one another. Learn more by accessing EPA's WARN website.

1.2 Incident Command System (ICS) Roles

Your utility should consider integrating a standardized incident management structure, such as the Incident Command System, into your response procedures. ICS is used to organize both near-term and long-term field-level operations for a broad spectrum of emergencies from small to complex incidents, both natural and manmade. ICS is used by all levels of government - federal, state, local, and tribal - as well as by many private-sector and nongovernmental organizations. ICS is also applicable across disciplines (e.g., fire, police, public works), allowing your local, state and federal response partners to more easily integrate into your utility response structure, or vice versa.

You can learn more about ICS at the FEMA ICS Resource Center website, which provides ready-to-use forms such as the ICS Form 207, Incident Organization Chart. This chart can be completed for your utility and inserted into your ERP.

1.3 Communication

Communication during an incident is critical to relay information to employees, government agencies, the public, the media, and others about potential risks to health, infrastructure, and the environment. This information should be presented in a timely and accurate manner to enhance understanding of an incident, build trust and credibility, encourage constructive dialogue, and provide guidance on appropriate protective actions following the incident. Good communication procedures outlined in your ERP will guide your utility personnel on when and how to communicate (e.g., who is responsible for notifying the utility emergency response team and outside agencies, and what information should be relayed), how to work with response partners and the media, how to compose messages, and how to deliver messages (e.g., website, television, social media). You should also consider contingency measures for loss of communications (e.g., a switch to 2-way radios, meet at a certain location).

1.3.1 Internal Communication

Internal communications should address what, when, and how a message will be provided to utility personnel who are directly and indirectly involved in an incident. Internal communications and notification lists should outline the personnel responsible for activating communications, the order in which notification occurs, and the members of the emergency response team (as defined in the ICS structure). In addition, your strategy should provide information on the specific communication method(s) that could be used (e.g., telephone, radio, e-mail, face-to-face). Use the table in this section to list all utility emergency response team members, their response role, title, and contact information.

1.3.2 External Response Partner Communication

Your external response partner notification list should ensure that all appropriate partners are notified. Procedures should also be established as to who should be notified, when they should be notified, and who is responsible to make the notifications from your utility. It is recommended that local response partners be engaged first, followed by county, state, and federal agencies as appropriate. Also, keep in mind any specific state regulatory notification requirements. In some instances, these agencies may require that they be notified within a specified time from when your utility first experiences or notices an incident that may significantly impact operations. Sending a utility representative to your local emergency operations center (EOC) helps with external partner communication during a longer duration incident. At your local EOC, you can have face-to-face conversations with representatives from multiple response partner agencies. The table in this section of the ERP template can be used to list all your utility's response partners as well as contact information.

After initially notifying your partners of an incident, the next step is to regularly share incident information as it becomes available. Many localities use web-based information management systems (e.g., WebEOC) that provide a single access point for the collection and dissemination of emergency or incident-related information. Group e-mails could also be used,

or you could leverage an agency such as your local Emergency Management Agency (EMA) to help keep your partners informed.

1.3.3 Communication with Critical Customers

A list of critical customers should be maintained as a part of your ERP. Some of these customers may be given priority notification due to their reliance on the water supply either for medical reasons (e.g., hospitals, dialysis clinics), based on usage (e.g., fire department, industry, manufacturing), public health mission, or because they serve customers considered to be sensitive sub-populations (e.g., those who may be more sensitive than the general population to the harmful effects of contaminants in drinking water). The table in this section of the ERP template can be used to list all your critical customers and their contact information.

1.3.4 Communication Equipment Inventory

You should inventory and track all your utility's communication equipment to help ensure maintenance is scheduled as appropriate and that equipment replacement can be planned. Service plans and contracts should also be tracked to make sure they are current. Use the table to inventory your communications equipment (e.g., mobile phones, two-way radios).

1.4 Media Outreach and Risk Communication

List contact information in the table provided for all media outlets that your utility may coordinate with during notification efforts. This may include newspapers, social media sites, television, and radio stations, etc.

Risk communication is a tool that helps water utilities deal with public messaging during emergencies to enhance knowledge and understanding of an incident, build trust and credibility, encourage constructive dialogue, and provide guidance on appropriate protective actions. EPA provides guidance on its website for Risk Communication Plans that may be incorporated into your ERP to guide utility personnel on when and how to communicate, how to compose messages, how to work with response partners and the media, and how to develop a delivery system for messages.

1.5 Public Notification Templates

Insert your templates for public notifications in this portion of the ERP template, or reference where they may be found. Be sure that your templates are consistent with the regulatory requirements for public notification contained in the Public Notification Rule (see 40 CFR 141, Subpart Q) and all relevant state regulations. Refer to EPA's Public Notification Rule Compliance Help for Water System Owners and Operators website for regulatory guidelines, additional information, and public notification templates. Check with your regulatory agency for any state-specific requirements.

2 EMERGENCY PLANS AND PROCEDURES

This section of your ERP should contain plans, procedures, and equipment that can be used in the event of a malevolent act or natural hazard that threatens your utility's ability to deliver safe drinking water. Two types of emergency response plans and procedures should be considered as part of your ERP: Core and Incident-specific. Both types are listed in this section.

2.1 Core Response Procedures

Core procedures are the "building blocks" for incident specific response procedures, since they apply across a broad variety of incidents (e.g., hurricane, earthquake, flood). List all your core procedures here.

Access - A significant challenge your utility may face after a major incident is gaining access to critical facilities and other locations to assess damage and implement repairs. Access to sites may be hampered by debris, road and bridge damage, downed power lines, snow and ice, and roadblocks established by law enforcement agencies for public protection. Use the table in this section to identify access related challenges in your area and identify ways to mitigate

those challenges.

DHS's Crisis Event Response and Recovery Access (CERRA) Framework website informs local officials and emergency planners of key components and best practices to consider when planning for access and re-entry operations. The CERRA Framework specifically identifies water utility personnel as first responders that require access to water utility assets during and after disasters. You may wish to find out if your jurisdiction is applying the principles and concepts of this framework.

Physical Security - Protecting utility facilities, equipment, and vital records is essential to restoring operations once an incident has occurred. Your ERP should identify measures aimed at securing and protecting your utility. Use the table in this section to describe physical security measures for your utility assets. You can learn more about physical security measures under the Detection Strategies section of the template.

Cybersecurity – Cyber-attacks on electronic information technology (IT) and operation technology (OT) are increasingly common. These attacks can result in the loss of critical communications with employees, customers, and process controls; the destruction of records and networks; and the theft of valuable utility and customer data. Impacts from cyber-attacks can have a severe adverse impact on water utility operations and entail high costs for response and recovery. Your utility should consider adopting cybersecurity best practices to reduce vulnerabilities to cyber-attacks and develop, implement, and drill response and recovery procedures for cyber incidents to minimize impacts in the event of a successful attack. Use the provided table to describe the processes and procedures your utility will use during a cyber incident. You can learn more about cybersecurity response by accessing EPA's Cybersecurity Incident Action Checklist.

Power Loss - Your utility should consider preparing for a loss of power and know what to do to respond and recover from such an incident. An extended power loss can have devastating impacts on your utility and the community you serve. Inoperable pumps at a drinking water utility can make firefighting difficult and cause local health care facilities and restaurants to close. Use the table in this section to describe your utility's resources and procedures for the loss of grid power. EPA's Power Resilience Guide website can help you to better prepare and respond to an unexpected power loss.

Emergency Alternate Drinking Water Supplies - Your ERP should consider clearly defining how your utility, along with other external response partners such as emergency management, would supply alternate drinking water to your community during both short-term (hours to days) and long-term (weeks to months) outages. Alternate drinking water sources may include interconnections with neighboring water utilities, bulk water haulers, bottled water supplied locally or regionally (a common federal response), or locally produced water via packaged pre-treated water or mobile treatment units. List your emergency alternate drinking water supplies in the table provided. You can learn more about emergency alternate drinking water by accessing EPA's Planning for Emergency Drinking Water Supplies guidance.

Sampling and Analysis - Water contamination emergencies could result in a surge of water sampling and analysis that can quickly overwhelm resources or require laboratory expertise unavailable to most utilities. To prepare internally for incidents, your utility can complete the tables in this section and include pre-identified sampling sites, procedures for sample collection of both known and unknown contaminants, chain of custody, sample preservation, sample transport, as well as a list and locations of contract analytical laboratories. Also consider consulting with your state drinking water regulatory agency on the issue of water sampling and analysis. You can learn more about resources to help develop sampling procedures and coordinate laboratory support, such as the Water Laboratory Alliance (WLA), by accessing EPA's Water Quality Surveillance and Response System website.

Family and Utility Personnel Well Being - Your personnel are more likely to report for duty or stay on the job during an incident if they know they and their families are safe and cared for. Use the table provided to identify actions that could be taken before, during, and after an incident that are unique to each hazard (e.g., hurricanes, floods, earthquakes). Actions may include alternate work locations, on-site emergency supplies such as cots, and ensuring that staff have developed

family disaster plans. The ready.gov website can assist with preparing individual family disaster plans. Local emergency management agencies can also help identify the hazards in your area and outline the local plans and recommendations for each hazard.

Your utility should also consider how it wants to support personnel who may be working extended shifts during an incident. The All-Hazard Consequence Management Planning for the Water Sector document provides a list of actions you could take to support personnel.

2.2 Incident-Specific Response Procedures

Incident-Specific Response Procedures (ISRPs) are specialized procedures tailored to a particular type of incident. These incidents typically align with those vulnerabilities identified in your RA. ISRPs provide a quick approach for responding to a specific incident and complement actions already initiated under your ERP. You may only need one or two pages to cover specific response information since you have already addressed basic emergency response steps under your core response procedures. An ISRP should be an accessible (i.e., "rip and run") document that can be detached and taken to the field.

Incidents include but are not limited to the following:

- Cyber-Attack
- Drought
- Earthquake
- Extreme Cold and Winter Storms
- Extreme Heat
- Flooding
- Harmful Algal Bloom

- Hurricane
- Tornado
- Tsunami
- Volcanic Activity
- Wildfire
- Source Water Contamination
- Distribution System Contamination

You can insert your utility's existing ISRPs into this section of ERP template. EPA also provides a number of incident action checklists (IACs) that you can use to help develop your own ISRPs. Or, you can use EPA's IACs as your utility's ISRPs by checking the appropriate activities. These customized IACs can then be inserted into your ERP. EPA also published the Prepared for Contamination in Your Distribution System? guidance that can help you develop a distribution system contamination ISRP.

3 MITIGATION ACTIONS

This section of your ERP should include actions, procedures, and equipment which can obviate or significantly lessen the impact of a malevolent act or natural hazard on the public health and the safety and supply of drinking water provided to your community and individuals, including the development of alternative source water options, relocation of water intakes, and construction of flood protection barriers. These mitigation actions, procedures, and equipment help your utility to better withstand and rapidly recover from incidents (e.g., flooding, earthquake), thereby increasing overall resilience. It is more cost-effective to mitigate the risks from natural disasters than it is to repair damage after the disaster. Examples of mitigation projects include:

- Elevation of electrical panels at a lift station to prevent flooding damage
- Replacement of piping with flexible joints to prevent earthquake damage
- Reinforcement of water towers to prevent tornado damage

Mitigation measures require financial investment by the utility; however, mitigation could prevent more costly future damage and improve the reliability of service during a disaster. Learn more about hazard mitigation, including coordinating with your community's local mitigation planners, identifying potential disaster-specific mitigation projects, and

funding proposed mitigation projects by accessing the Hazard Mitigation Guide for Natural Disasters: A Starter Guide for Water and Wastewater Utilities on EPA's website.

3.1 Alternative Source Water Options and Interconnected Utilities

Information on alternative source water options and interconnected utilities helps you to maintain awareness of how these sources and utilities may mitigate impacts during incidents. For example, drilling a backup well to supplement or replace your primary well during an incident is a mitigation action to increase resilience to the loss of your primary well during an incident. Interconnections allow two (or more) utilities to each have a backup source of drinking water by relying on each other. You can list these kinds of mitigating actions in the table provided here.

3.2 Other Mitigation Actions

Mitigation actions should be based on the countermeasures identified from your utility's RA and implemented before an incident occurs. For example, system facilities or controls can be raised and berms constructed ahead of time to protect against flood damage. List your utility's other mitigation actions in the table provided here. To learn more about specific mitigation options for water utilities, see the following online resources from EPA:

Flood Resilience Guide - Helps water utilities know the local flooding threat and identifies practical mitigation options to protect critical assets.

Drought Response and Recovery Guide for Water Utilities - Provides worksheets, best practices, videos and key resources for responding to drought emergencies and building long-term resilience. The guide relays lessons learned from seven small- to medium-sized utilities nationwide that have responded to extreme drought conditions.

Power Resilience Guide for Water and Wastewater Utilities - Helps utilities identify how to increase their resilience to power outages.

Earthquake Resilience Guide for Water and Wastewater Utilities - Helps water and wastewater utilities to be more resilient to earthquakes. It contains best practices from utilities that have used mitigation measures to address the earthquake threat.

Resilient Strategies Guide for Water Utilities - Helps water utilities understand how extreme weather events can impact utility operations and missions and provides examples of different actions utilities can take to prepare for potential impacts.

4 DETECTION STRATEGIES

This section of your ERP should contain strategies that can aid in the detection of malevolent acts or natural hazards that threaten the security or resilience of your utility. These detection strategies can be almost no-cost (e.g., instituting a "See Something, Say Something" campaign at your utility) or require more resources (e.g., installing motion sensors and video cameras to monitor for facility break-ins or tampering) to implement. Effective response to an emergency requires timely detection, which allows your utility to implement its ERP as soon as possible.

The most appropriate method of detecting a possible incident depends on the type of threat. Where possible, multiple detection methods should be used. This increases your utility's ability to receive timely warning of an imminent threat or incident. Examples of effective strategies for detecting common threats are listed below, and you can list your utility's strategies in the table provided in this section.

4.1 Unauthorized Entry into Utility Facilities

Properly installed and maintained intrusion detection systems provide almost instantaneous notification of break-ins and other unauthorized access into your utility facilities, but notifications from local law enforcement officers and community watch groups are also effective.

4.2 Water Contamination

Notification of source water contamination may come from many different agencies and organizations including your primacy agency, 911, LEPC, the National Response Center, a source water protection collaborative, or local watershed groups. Therefore, it is important to build working relationships with these entities and exchange emergency contact information.

Potential contamination in your finished water or distribution system can be detected through systematic tracking of customer complaints, public health surveillance, physical security monitoring at access points to finished water, grab sample analysis, online water quality monitoring, and advanced metering infrastructure that can alert your utility of potential backflow events or meter tampering. These are all components of an integrated Water Quality Surveillance and Response System as described on EPA's Water Quality Surveillance and Response website.

4.3 Cyber Intrusion

Learning about and reporting cyber threats helps all utilities be better prepared to detect and respond to this kind of malevolent act. For example, signing up for alerts on the Department of Homeland Security's cyber alerts website provides timely information about current security issues, vulnerabilities, and exploits. Utilities that rapidly adopt security patches and implement corrections to system vulnerabilities can significantly reduce the risk of a cyber-attack.

4.4 Hazardous Chemical Release

Routine inspection of your hazardous chemical storage facilities will aid in detecting problems that could lead to an unexpected chemical release. Identified problems can be fixed to help prevent emergencies. Air monitors, such as for chlorine gas, can alert you to any leaks in a timely fashion.

4.5 Natural Hazards

Natural hazards such as extreme weather can cause severe damage to your utility. Real-time tools such as EPA's online Water Utility Response On-The-Go Mobile Application can help you track severe weather and access other information for an efficient response.

4.6 Power Outages

Your utility can detect impending power outages more effectively by signing up to receive notifications from your power provider for any planned maintenance activities or brown outs.