TEMPLATE

For the Development of an

**Emergency Response Plan**

**Revised May 2023**

**Nevada Division of Environmental Protection**

**Bureau of Safe Drinking Water**

|  |  |  |
| --- | --- | --- |
| **Acronym/Abbreviation** |  | **Definition** |
| µg/L |  | micrograms per liter  |
| AWWA |  | American Water Works Association |
| BSDW |  | Bureau of Safe Drinking Water |
| BWO |  | Boil Water Order |
| CFR  |  | Code of Federal Regulations |
| CFS |  | Cubic Feet per Second |
| CPWS |  | Community Public Water System |
| E. coli |  | Escherichia coli  |
| EPA |  | United States Environmental Protection Agency |
| ERP |  | Emergency Response Plan |
| GPM |  | Gallons per Minute |
| IOC |  | Inorganic Chemicals |
| IT |  | Information Technology |
| MCL |  | Maximum Contaminant Level |
| mg/L |  | Milligrams per liter  |
| MRDL |  | Maximum Residual Disinfectant Level |
| MGD |  | Million Gallons per Day |
| NAC |  | Nevada Administrative Code |
| NCWS |  | Non-Community Water System |
| NDEP |  | Nevada Division of Environmental Protection |
| NRS  |  | Nevada Revised Statute |
| NTNC |  | Non-transient/non-community |
| O&M  |  | Operations and Maintenance |
| OSHA |  | Occupational Health and Safety Administration |
| OT |  | Operational Technology |
| ppm |  | parts per million |
| PWS |  | Public Water System |
| SCADA  |  | Supervisory Control and Data Acquisition |
| SDWA |  | Safe Drinking Water Act |
| SMCL |  | Secondary Maximum Contaminant Levels |
| SNHD |  | Southern Nevada Health Department |
| SOC |  | Synthetic Organic Chemicals |
| TT |  | Treatment Technique |
| VOC |  | Volatile Organic Chemicals |
| WCHD |  | Washoe County Health Department |

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# Introduction

Preparing an Emergency Response Plan (ERP) is an essential part of managing a water system. When faced with an emergency, customers expect you to restore and resume normal operation as soon as possible. An ERP should be a helpful tool to achieve this. A water system’s ERP is a “living document” modified based on experience and practical application. It should be reviewed and updated annually or when there is a modification to the system’s infrastructure or management.

This “Template for the Development of an Emergency Response Plan” (referred to as ERP Template from hereon) is intended to provide a consistent format which can be used by small to medium sized drinking water systems. A companion document titled, “Guidance and Suggested Format for the Development of an Emergency Response Plan” (referred to as ERP Guidance from hereon) is available to assist in completing the Template.

Both the Guidance and Template (in Microsoft Word) are available from the Nevada Division of Environmental Protection, Bureau of Safe Drinking Water’s website: <https://ndep.nv.gov/water/drinking-water/forms>

You are required to add the ERP as an appendix to your Manual of Operations and Maintenance (Manual of O&M) but it can also be a standalone document. This will allow the ERP to be easily accessible as a 'grab & go' document in both hard copy and digital formats, which can be quickly distributed to key personnel for reference during an emergency.

## ERP Template Format

* It is highly recommended to review the “ERP Guidance” document as it discusses key components for inclusion with examples of how you may present information in your ERP.
* The “ERP Template” is in Microsoft Word providing the opportunity to customize your ERP Plan to be specific for your system – add sections, take them out, as appropriate.
* Having an ERP in a consistent format assists regulatory agencies conduct their reviews for compliance.
* Consistent formatting also aids operators that operate more than one public water system or have experience working elsewhere.
* Since your ERP may contain sensitive information, make sure to keep it stored in a safe and secure location. At a minimum, it is recommended you have one copy stored on-site, one master digital version, and one off-site to ensure the document is available in the event you are unable to access your offices or facilities. Regardless of a water system size, it should be protected against possible sabotage, terrorism, or vandalism.
* There is suggested narrative format and example “Hazard Responses” for various events that may result in an emergency included in Section 6. These are intended to assist in developing your own response protocols for the ERP.

The ERP Template provides format to develop your plan; but you should modify it to be specific to your water system and setting – add sections, take them out, as appropriate. Section 6 – Hazard Responses for Specific Events is to include narratives specific to your system and address potential hazards that could directly impact the components of your water system.

The ERP Template is available for your use to customize and complete in Microsoft Word at the NDEP link: <https://ndep.nv.gov/water/drinking-water/forms>

This ERP Template and the associated ERP Guidance have been prepared and periodically updated under the direction of staff of NDEP BSDW. If you have questions or comments, please call the Facility Manager assigned to your water system. The general number for NDEP BSDW is (775) 687-9521. Feedback is beneficial for future updates of this guidance.

# Requirements for an Emergency Response Plan

**In Nevada, all public water systems are subject to requirements set forth in the Nevada Administrative Code (**[**NAC 445A**](https://www.leg.state.nv.us/nac/NAC-445A.html#NAC445A)**). For revised regulations that have not yet been codified, please see the** [**BSDW website**](https://ndep.nv.gov/water/drinking-water)**.**

[NAC 445A.6588](https://www.leg.state.nv.us/nac/NAC-445A.html#NAC445ASec6588) “Emergency” defined: “Emergency” means a situation in which an unusual calamity, including a flood, fire, storm, earthquake, drought, civil disturbance, accidental spill of a hazardous material or similar occurrence, disrupts the provision of water by a public water system or endangers the quality of water provided by a public water system.

The section specifically pertaining to an Emergency Response Plan states:

[NAC 445A.6665](https://www.leg.state.nv.us/nac/NAC-445A.html#NAC445ASec6665) Plan for restoration of services in emergency. ([NRS 445A.860](https://www.leg.state.nv.us/Division/Legal/LawLibrary/NRS/NRS-445A.html#NRS445ASec860)): A supplier of water shall:

1. Develop an organized plan of predetermined activities for the public water system to restore its services in the contingency that an emergency, including any failure of power, mechanical or electrical failure or natural disaster, reduces the capability of the public water system to supply the water demanded by its customers within its area of service. The plan must include any actions necessary for responding to any breaks in a water main of the public water system.
2. Submit a copy of the plan to the Division or the appropriate District Board of Health not later than 18 months after the public water system begins operation.

So, what does that mean and what does it involve?

An ERP assists personnel respond to a catastrophe, or civil, mechanical or electrical failure. As the preparer, it’s recommended to consult with others familiar with the water system and the area. The ERP should consist of an organized plan of predetermined activities necessary for the system to restore services. Going through the exercise of a Vulnerability Assessment (VA) is helpful to determine emergencies that your water system is more likely to experience. There are a variety of published VAs for utilities. Included in this ERP Guidance is a simplified version that can help prioritize your efforts.

There are numerous websites that can also assist in identifying the potential hazards and response actions. Some that may be helpful:

[National Weather Service](https://www.weather.gov/#:~:text=Enhanced%20Risk%20for%20Severe%20Thunderstorms%20and%20Critical%20Fire,early%20tonight%20from%20northeast%20Kansas%20into%20southwest%20Iowa.)

[United States Geological Survey (USGS) Earthquake information](https://www.usgs.gov/programs/earthquake-hazards)

[Federal Emergency Management Agency (FEMA) Region 9 – Nevada](https://www.fema.gov/locations/nevada)  has information to help prepare for, respond to, and recover from disasters

[Nevada Department of Transportation Road Conditions](https://www.nvroads.com/)

[State of Nevada Division of Water Resources](http://water.nv.gov/ProgramsHomes.aspx) has information regard Floodplain Management, Dams and Dam, Well Drilling as wells as water rights

[State of Nevada Division of Environmental Protection](https://ndep.nv.gov/) has numerous resources pertaining to Air, Water, Land and Environmental Cleanup. NDEP [Bureau of Safe Drinking Water (BSDW)](https://ndep.nv.gov/water/drinking-water) has many templates and resources for drinking water systems.

**Submitting Documents**

After completing your ERP, it must be submitted to the Nevada Division of Environmental Protection, Bureau of Safe Drinking Water or the appropriate District Board of Health for review. Since the ERP and the Cross Connection Control Plan (CCCP) are to be included in the Appendix of your Manual of Operations and Maintenance, it is acceptable to be submitted together.

Submit the following documents:

* Two (2) paper copies of the Application for Approval of a Water Project available at <https://ndep.nv.gov/water/drinking-water/engineering-reviews/applications-forms>
	+ Typically, if submitting just the ERP or Manual of O&M with the ERP and CCCP as attachments, only the first two pages need to completed.
* 1 USB drive with a complete copy of the documents in PDF. If that is not possible, Microsoft Word is sufficient.
* Two (2) paper copies of these documents. Including appendices.

Deliver the above documents to the Bureau of Safe Drinking Water at the following address:

NDEP Bureau of Safe Drinking Water

Attn: Project Coordinator

901 S. Stewart Street, Suite 4001

Carson City, Nevada 89701

**OR** to the appropriate District Board of Health.

**Section 1: System Information**

The System information and mapping should be the same as in the Manual of O&M, but as described earlier, the ERP is intended to be a “grab and go” document when needed.

## 1.1 System and Contact Information

|  |  |
| --- | --- |
| System Number or Reference (SDWIS ID) |  |
| Distribution Classification Required (D1, D2, etc.) |  |
| Treatment Classification Required(T1, T2, etc.) |  |
| System Name and Address |  |
| Location/Town |  |
| Population Served and Service Connections | Population: ConnectionsNo. of Residential Connections:\_\_\_\_ \_\_\_\_\_\_No. of Commercial Connections:\_\_\_\_ \_\_\_\_No. of Other Connections: \_\_\_\_\_\_ |
| System Owner |  |
| Name, Title, and Phone Number of Person Responsible for Maintaining and Implementing the Emergency Response Plan | Name: Title: Phone: Cell: Email:  |
| Seasonal Operation? Operational dates? |  |

## 1.2 Service Area Map or Vicinity Map

Please include or inserta drawing or attachment that shows the relationship of your system to other nearby communities within the general area to locate and orient your system for reference. Larger maps or schematics can be attached as an appendix with the location referenced in this section.

|  |
| --- |
| **Service Area / Vicinity Map** |
|  |

## 1.3 System Overview

Provide a brief narrative overview of the System/Facilities – Describe how the infrastructure components are connected: water sources, treatment, pumps, transmission and distribution system, storage facilities, and other features that would distinguish your system. A consolidated list of primary components and their functions will help to organize system information and allow for timely identification of potential issues.

|  |
| --- |
| **System/Facilities** |
|  |

 Provide a graphic overview of the System/Facilities as previously described. Many systems may have maps or schematics 11”x14” or greater providing a general layout of system components. These can be attached in the appendix with the location referenced in this section of the ERP.

|  |
| --- |
| **Simplified Graphic or Flow Chart of Water System**  |
|  |

**Section 2: Chain of Command**

The first awareness of a potential emergency is likely to be called in by another agency or member of the public. Identify the number that is publicized and provided to agencies. Whoever answers that call, will have the responsibility to document and make the first internal calls to inform the designated responsible person.

**Water System Contact to Report of Emergency**

|  |  |  |
| --- | --- | --- |
| **Phone Business Hours**  | **Phone After Hours** | **Website Contact Email**  |
|  |  |  |

## 2.1 Water System Contacts and Documents

### 2.1.1 Owner/Manager/Director

|  |  |  |  |
| --- | --- | --- | --- |
| **Name, Title** | **Phone** | **After Hours** | **Email** |
|  |  |  |  |

### 2.1.2 System Operators and Certifications

|  |  |  |  |
| --- | --- | --- | --- |
| **Name, Title** | **Distribution Grade** | **Treatment Grade** | **Phone** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

### 2.1.3 Managerial & Administrative Contacts**:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Contact Name** | **Title** | **Phone** | **Email** |
| Staff/On-Call Engineer |  |  |  |  |
| Administrative Contact |  |  |  |  |
| Public Information Officer |  |  |  |  |
| Financial Contact |  |  |  |  |
| Legal Contact |  |  |  |  |
| Other |  |  |  |  |

### 2.1.4 Location of documents needed during an emergency.

|  |  |  |  |
| --- | --- | --- | --- |
| **Document** | **Physical Location** | **Digital Location** | **Duplication** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

**Section 3: Notification**

## 3.1 Local Emergency Response and Mitigation

|  |  |
| --- | --- |
| **Police** | 911 |
| **Police (non-emergency)** |  |
| **Fire** | 911 |
| **Fire (non-emergency)** |  |
| **Hazmat** |  |
| **NDEP Spill Hotline** | (775) 687-9485 |
| **Others?**  |  |

## 3.2 Regulatory Agencies and Contacts

|  |  |  |
| --- | --- | --- |
| **NDEP BSDW**  | **General Phone** | **Website** |
| BSDW Front Desk | (775) 687-9521 | <https://ndep.nv.gov/water/drinking-water> |
| All contacts for BSDW |  | [Bureau of Safe Drinking Water Contacts | NDEP (nv.gov)](https://ndep.nv.gov/contact-us/bureau-of-safe-drinking-water-contacts) |
| **Contact Title** | **Name** | **Email** | **Phone** |
| BSDW Facility Manager |  |  |  |
| Health District Facility Manager (if applicable) |  |  |  |

# **Section 4**: **Effective Communication**

Communication with staff, customers, news media, and public is a critical part of emergency response. It is important to recognize staff and their families may be impacted by the emergency as well. Staff may not be effective or available if their homes or family are at risk of being harmed. Strategies to provide employee coverage or safety may need to be developed.

4.1 Designate a Spokesperson

Designate an individual and an alternate to be responsible for communicating the details of emergency events to customers, priority customers, and media.

|  |  |  |
| --- | --- | --- |
| **Spokesperson****Name** | **Phone** | **Email** |
|  |  |  |
|  |  |  |

## 4.2 Priority Customer Contact List:

|  |  |  |
| --- | --- | --- |
| **Agency/Organization** | **Name and Position** | **Contact Info** |
| **Hospital/Clinic**  |  |  |
| **Schools** |  |  |
| **Convalescent Hospitals or similar** |  |  |
| **Health Compromised Customers** |  |  |

## 4.3 Media Contact List:

|  |  |  |
| --- | --- | --- |
| **Agency/Organization** | **Name and Position** | **Contact Info** |
| **Local Newspaper**  |  |  |
| **Local Radio Station** |  |  |
| **Local TV Station** |  |  |

## 4.4 Notification Types:

When it comes to water quality impacts, there are different types of required minimum notifications depending upon the potential degree of hazard.

**Tier 1 - Notify within 24 hours.** Any time a situation occurs where there is the potential for human health to be immediately impacted, water suppliers have 24 hours to notify people who may drink the water of the situation. Water suppliers must use media outlets such as television, radio, and newspapers, post their notice in public places, or personally deliver a notice to their customers in these situations.

Tier 1 violations are:

* E. coli MCL violations; failure to test for E. coli.
* Nitrate/Nitrite MCL violation; failure to take confirmation.
* Chlorine Dioxide MRDL violation; failure to take repeat.
* Exceedance of maximum turbidity level, where NDEP BSDW determines Tier 1 is required.
* Nitrate exceedances for NCWS allowed to exceed standard.
* Waterborne disease outbreak or another waterborne emergency
* Other situations as determined by the NDEP BSDW

**Tier 2 - Notify as soon as possible, but within 30 days of the violation.** Any time a water system provides water with levels of a contaminant that exceed EPA or state standards or that has not been treated properly, but that does not pose an immediate risk to human health, the water system must notify its customers as soon as possible, but within 30 days of the violation. Notice may be provided via the media, posting, or through the mail.

Tier 2 violations are:

* All other MCL, MRDL, and TT violations that are not Tier 1.
* Monitoring and testing procedure violations, where NDEP BSDW requires a Tier 2 (rather than Tier 3) notice.
* Failure to comply with variance and exemption (V&E) conditions

**Tier 3 - Notify within one year of the violation.** When water systems violate a drinking water standard that does not have a direct impact on human health (for example, failing to take a required sample on time) the water supplier has up to one year to provide notice of this situation to its customers. The extra time gives water suppliers the opportunity to consolidate these notices and send them with annual water quality reports (consumer confidence reports).

Tier 3 violations are:

* All other monitoring or testing procedure violations not already requiring a tier 1 or tier 2 notice.
* Operation under a Variance or Exemption
* Special public notices:
	+ Exceedance of Fluoride SMCL
	+ Announcing the availability of unregulated monitoring results

**Notification Resources:**

Boil Water Orders are available at [Do Not Drink & Boil Water Orders | NDEP (nv.gov)](https://ndep.nv.gov/water/drinking-water/information-for-public-water-systems/do-not-drink-boil-water-orders) and include;

* E. coli Present samples
	+ [Precautionary Boil Water Order Public Notice](https://ndep.nv.gov/uploads/water-drinking-pws-donotdrink-docs/BWO_Unconfirmed_E._coli_%282019%29.doc)
	+ [Official Boil Water Order Public Notice English](https://ndep.nv.gov/uploads/water-drinking-pws-donotdrink-docs/BWO_Confirmed_Ecoli_PN_%282019l%29.doc)
	+ [Official Boil Water Order Public Notice Spanish](https://ndep.nv.gov/uploads/water-drinking-pws-donotdrink-docs/bwo_confirmed_ecoli_pn_official_spanish.doc)
* Other Boil Water Order Events Boil Water Rescind Notice
	+ [Precautionary Boil Water Order Guidance for Public Water Systems](https://ndep.nv.gov/uploads/water-drinking-pws-donotdrink-docs/precautionary_boil_water_guidance.doc)
	+ [Loss of Pressure Boil Water Order Public Notice](https://ndep.nv.gov/uploads/water-drinking-pws-donotdrink-docs/BWO_Precautionary_LOP_%282019%29.doc)
	+ [Boil Water Order Rescind Notice Template](https://ndep.nv.gov/uploads/water-drinking-pws-donotdrink-docs/bwo_sample_rescind_notice_wate_systems.doc)
* Do Not Drink Orders
	+ [Nitrate Public Notice Template](https://ndep.nv.gov/uploads/water-drinking-pws-donotdrink-docs/nitrate_do_not_drink_english_spanish.doc)
	+ [Unknown Water Quality Public Notice Template](https://ndep.nv.gov/uploads/water-drinking-pws-donotdrink-docs/DoNotDrink_PN_Unknown_%282019%29.doc)
	+ [Do Not Drink Notice Rescind Template](https://ndep.nv.gov/uploads/water-drinking-pws-donotdrink-docs/do_not_drink_sample_rescind_notice.doc)

# **Section 5: Events that May Cause Emergencies & Resources**

## 5.1 Event Impacts

Your water system may be more vulnerable to one or the other, due to locale, climate, or geology. For each type of event, there is a potential impact on your water system components.

Consider the potential water system impacts:

Wells

* Ground water contamination
* Pump or power failure
* Vandalism
* Natural disasters; floods, earthquakes
* Declining yield/water levels

Water Treatment

* Surface water impacts from high turbidity or drought
* Power failure
* Natural disasters; floods, earthquakes
* Chemical spill
* Treatment mechanical failure

Storage Tanks

* Natural disasters; earthquakes, deep snow, ice, high winds
* Vandalism

Distribution System

* Water main breaks
* Low pressure
* Water conservation/ rationing programs
* Backflow events
* Pump stations – mechanical or power failures
* Pressure reducing valves – failure causing high pressures.

Other infrastructure

* Pump houses – impacts from natural disasters
* Chlorination system failures
* Offices, warehouses, maintenance buildings
* Computer systems, cyber-attacks
* Access roads impeded by heavy, deep snow or washed out by flooding.

This worksheet lists general events applicable to Nevada that can cause emergencies. Contemplate how these events may impact each component of your water system. For each impact directly affecting a water system component, a Hazard Response must be prepared specific to your system and included in Section 6 of the ERP.  **A suggested format is provided and included in Section 6 – Response Actions to Specific Events.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Event** | **Water Source & Treatment** | **Treatment & Disinfection** | **Pump Stations** | **Storage Tanks** | **Distribution, System PRVs** |
| **Distribution Line Break** | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* |
| **Loss of Power** | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* |
| **Drought**  | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* |
| **Earthquake** | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* |
| **High Winds** | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* |
| **Flood** | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* |
| **Extended Freezing Temperatures** | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* |
| **Deep or Heavy Snow** | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* |
| **Fire / Wildfire** | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* |
| **Epidemic/Pandemic** | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* |
| **Hazardous Materials** | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* |
| **Cyber Attack / Terroristic Threat** | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* |
| **Vandalism/ Security Threat** | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* |
| **Pump Failures** | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* |
| **(other)** | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* | [ ]  *Directly*[ ]  *Indirectly*[ ]  *Not Applicable* |

## 5.2 Service Contact List:

|  |  |  |
| --- | --- | --- |
| **Agency/Organization** | **Name and Position** | **Contact Info** |
| **Engineering Firm** |  |  |
| **Electric Utility**  |  |  |
| **Gas/Propane Supplier** |  |  |
| **Phone Providers** |  |  |
| **Chlorine/ Other Chemical Supplier** |  |  |
| **Rental Equipment. Supplier** |  |  |

## 5.3 Laboratories

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Address** | **Phone** | **Lab Capabilities** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

## 5.4 Suppliers and Vendors

|  |  |  |
| --- | --- | --- |
|  | **Name** | **Phone** |
| Pipe Supply |  |  |
| Chemicals |  |  |
| Pumps / Motors |  |  |
| Safety |  |  |
| Others? |  |  |
|  |  |  |
|  |  |  |

## 5.5 Contractors / Repair Services

|  |  |  |
| --- | --- | --- |
|  | **Name** | **Phone / Emergency Phone** |
| Pipe Repairs |  |  |
| Electrician |  |  |
| Plumber |  |  |
| Well Driller |  |  |
| SCADA. |  |  |
| Tank Divers |  |  |
| Others? |  |  |

## **5.6 Emergency Equipment, Safety Materials, and Spare Parts**

**All utility personnel should know the location of all equipment and safety materials needed during emergencies. Inventory should be recorded and restocked as supplies are depleted. A spare parts inventory must be maintained in your Manual of O&M. Ideally, your utility should maintain a single web based Spare Parts Inventory that could be easily referenced and updated.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Item(s)** | **Location**  | **Amount Available in Stock**  | **Restock Date** |
| **PPE (hard hats, gloves, flashlights, safety glasses, coveralls)** |  |  |  |
| **Flares** |  |  |  |
| **Traffic Cones** |  |  |  |
| **Pagers/ Walkie-Talkies (alternative communication)** |  |  |  |
| **Batteries** |  |  |  |
| **Chlorine** |  |  |  |

## **5.7 Detection and Mitigation Strategies**

**Detection strategies can help prevent, detect, and minimize the severity of line breaks, loss of power, mechanical failures, natural disasters, or malevolent acts. Preventative actions are generally preferable to reactive responses to emergency events because they save time and resources and limit potential exposures to hazards. With time, experience, and events, you may identify additional means to detect and/or mitigate a potential problem. If implemented, the practice should be added to your routine Manual of Operations and Maintenance.**

# **Section 6: Hazard Responses for Specific Events**

## 6.1 Core Response

The core response is required of all systems. These are the events likely to occur at any system and should be updated accordingly. These include water main breaks, power outages, mechanical failures, weather related impacts, accidental or intentional malevolent acts that adversely affects the ability to produce or deliver water that meets requirements.

For any emergency event, there are a series of general steps to take:

* Analyze the type and severity of the emergency
* Take immediate actions to save lives
* Take action to reduce injuries and system damage
* Prepare key messages to notify customers and media
* Make repairs based on priority demand
* Return the system to normal operation
* **Post emergency review – these** have a threefold purpose. They provide an opportunity for everyone involved in an event to: 1) identify areas in the current emergency response plan that need improvement; 2) make recommendations to improve it; and 3) debrief and capture key lessons learned.

The following table is provided as a format for a Hazard Response narrative describing a potential event and actions. **COPY FORMAT AND ADD AS MANY EVENTS AS NECESSARY**

|  |  |
| --- | --- |
| **Nature of the Event/Emergency** |  |
| **Assess the Immediate Emergency** |  |
| **Immediate Actions** |  |
| **Assess the impacts to the entire system (Water source, pumping systems, storage, distribution components)** |  |
| **Notifications**  |  |
| **Mitigations** |  |
| **Follow-up Actions**  |  |

Narratives for the identified hazards, how they may impact your system’s components, and your system’s response must be prepared and included in Section 6 of your ERP. All information should be customized to reflect your system’s needs.

## 6.2 Water Main Break

|  |  |
| --- | --- |
| **Nature of the Event/Emergency** |  |
| **Assess the Immediate Emergency** |  |
| **Assess impacts to the entire system for secondary impacts (Water source, pumping systems, storage, distribution components)** |  |
| **Immediate Actions** |  |
| **Notifications** | Notify NDEP BSDW initially, and during if any conditions change, then when the emergency has been mitigated and ready to return to normal operations.  |
| **Mitigations** |  |
| **Follow-up Actions** |  |

## 6.3 Loss of Power

|  |  |
| --- | --- |
| **Nature of the Event/Emergency** |  |
| **Assess the Immediate Emergency** |  |
| **Immediate Actions** |  |
| **Assess impacts to the entire system for secondary impacts (Water source, pumping systems, storage, distribution components)** |  |
| **Notifications** | Notify NDEP BSDW initially, and during if any conditions change, then when the emergency has been mitigated and ready to return to normal operations.  |
| **Mitigations** |  |
| **Follow-up Actions** |  |

## 6.4 Mechanical Failure

|  |  |
| --- | --- |
| **Nature of the Event/Emergency** |  |
| **Assess the Immediate Emergency** |  |
| **Immediate Actions** |  |
| **Assess impacts to the entire system for secondary impacts (Water source, pumping systems, storage, distribution components)** |  |
| **Notifications** | Notify NDEP BSDW initially, and during if any conditions change, then when the emergency has been mitigated and ready to return to normal operations.  |
| **Mitigations** |  |
| **Follow-up Actions** |  |

## 6.5 Hazards Resulting from Accidental or Malicious Events

When it comes to emergency preparedness for a water system, it's critical to consider the possibility of man-made calamities, such as hazardous material spills, vandalism, cyber-attacks, and other malicious actions. These events can have severe consequences on the safety and reliability of the system, as well as the health and well-being of those who rely on it. Therefore, it's essential to have a robust emergency response plan in place that accounts for these potential scenarios and outlines specific procedures for mitigating their impacts. Your Hazard Response for these emergencies will assist in minimizing damage, protect public health and safety.

#### 6.5.1 Hazardous Materials

|  |  |
| --- | --- |
| **Nature of the Event/Emergency** |  |
| **Assess the Immediate Emergency** |  |
| **Immediate Actions** |  |
| **Assess impacts to the entire system for secondary impacts (Water source, pumping systems, storage, distribution components)** |  |
| **Notifications** | Notify NDEP BSDW initially, and during if any conditions change, then when the emergency has been mitigated and ready to return to normal operations.  |
| **Mitigations** |  |
| **Follow-up Actions** |  |

#### 6.6.2 Vandalism / Security Threat

|  |  |
| --- | --- |
| **Nature of the Event/Emergency** |  |
| **Assess the Immediate Emergency** |  |
| **Immediate Actions** |  |
| **Assess impacts to the entire system for secondary impacts (Water source, pumping systems, storage, distribution components)** |  |
| **Notifications** | Notify NDEP BSDW initially, and during if any conditions change, then when the emergency has been mitigated and ready to return to normal operations.  |
| **Mitigations** |  |
| **Follow-up Actions** |  |

#### 6.6.3 Cyber Security Breach

Cybersecurity is an increasing hazard for utilities. More and more utilities are the target of ransomware or facility disruption. You may think a small water system in rural Nevada would not be at risk. There is always the risk of a disgruntled employee or hacker starting small looking to go big.

|  |  |
| --- | --- |
| **Nature of the Event/Emergency** |  |
| **Assess the Immediate Emergency** |  |
| **Immediate Actions** |  |
| **Assess impacts to the entire system for secondary impacts (Water source, pumping systems, storage, distribution components)** |  |
| **Notifications** | Notify NDEP BSDW initially, and during if any conditions change, then when the emergency has been mitigated and ready to return to normal operations.  [Report the incident](https://www.cisa.gov/forms/report) to the Federal Bureau of Investigations (FBI) or Cybersecurity and Infrastructure Security Agency (CISA) or to the US EPA |
| **Mitigations** |   |
| **Follow-up Actions** |   |

## **6.6 Natural Disasters**

There are many natural disasters that can impact your water system facilities. An event may impact facilities in multiple ways.

#### 6.6.1 Drought

|  |  |
| --- | --- |
| **Nature of the Event/Emergency** |  |
| **Assess the Immediate Emergency** |  |
| **Immediate Actions** |  |
| **Assess impacts to the entire system for secondary impacts (Water source, pumping systems, storage, distribution components)** |  |
| **Notifications** | Notify NDEP BSDW initially, and during if any conditions change, then when the emergency has been mitigated and ready to return to normal operations.  |
| **Mitigations** |  |
| **Follow-up Actions** |  |

#### 6.6.2 Earthquake

Clearly a major earthquake near the epicenter may have significant impacts on the water system. However, earthquakes miles away can have an impact on your system depending upon soils and geology. Check your system for impacts such as: cracks, shifts in foundations, change in water quality or line breaks.

|  |  |
| --- | --- |
| **Nature of the Event/Emergency** |  |
| **Assess the Immediate Emergency** |  |
| **Immediate Actions** |  |
| **Assess impacts to the entire system for secondary impacts (Water source, pumping systems, storage, distribution components)** |  |
| **Notifications** | Notify NDEP BSDW initially, and during if any conditions change, then when the emergency has been mitigated and ready to return to normal operations.  |
| **Mitigations** |  |
| **Follow-up Actions** |  |

#### 6.6.3 High Winds

|  |  |
| --- | --- |
| **Nature of the Event/Emergency** |  |
| **Assess the Immediate Emergency** |  |
| **Immediate Actions** |  |
| **Assess impacts to the entire system for secondary impacts (Water source, pumping systems, storage, distribution components)** |  |
| **Notifications** | Notify NDEP BSDW initially, and during if any conditions change, then when the emergency has been mitigated and ready to return to normal operations.  |
| **Mitigations** |  |
| **Follow-up Actions** |  |

#### 6.5.4 Flood

|  |  |
| --- | --- |
| **Nature of the Event/Emergency** |  |
| **Assess the Immediate Emergency** |  |
| **Immediate Actions** |  |
| **Assess impacts to the entire system for secondary impacts (Water source, pumping systems, storage, distribution components)** |  |
| **Notifications** | Notify NDEP BSDW initially, and during if any conditions change, then when the emergency has been mitigated and ready to return to normal operations.  |
| **Mitigations** |  |
| **Follow-up Actions** |  |

# **Section 7.0 Alternative Water Sources**

Alternative water sources should be identified to ensure a safe and continuous supply of drinking water will be available to customers in the event of an emergency. If another water utility is located nearby an opportunity for interconnection may exist. When no possibility for an intertie exists, arrangements should be made to purchase water from a water hauler or from a bottled water supplier.

|  |  |  |
| --- | --- | --- |
| **Water Source** | **Supplier Name** | **Contact Info** |
| **Inter-connection w/ Partner Utility** |  |  |
| **Approved Water Hauler** |  |  |
| **Bottled Water Supplier** |  |  |

# **Section 8.0 Returning to Normal Operations**

In the conclusion of any emergency event, identify the general and specific steps to take for your system: