


# **EMERGENCY RESPONSE PLAN TEMPLATE**

**For OTM & NN Water Systems**

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**WISCONSIN RURAL  WATER ASSOCIATION**

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# **EMERGENCY RESPONSE PLAN DEVELOPMENT**

## **For**

## **OTM & NN WATER SYSTEMS**

Every public water system, regardless of its size, should have a plan for dealing with emergency situations. Depending on the size of the system, this plan can be as elaborate or simple as necessary. Every plan, however, should contain key elements that are necessary for you, or others if you're not available, to effectively deal with emergency situations. Once your plan is developed, it is important that you make it available to others and that you up-date it as necessary as the information in it changes.

The Wisconsin Administrative Code requires Other-Than-Municipal water systems to have an Emergency Response Plan that includes;

**1. A list of plumbers, electricians or other contractors that would be available to respond in emergency situations.** NR 811.11(8)(b)

**2. Procedures for obtaining a back-up water source.** NR 811.11(8)(b)

### **STEP –1. Contact Information**

Make a listing of the contact information for anyone it may be necessary to contact in an emergency situation. This listing should include;

#### Owner and Employee contact information

Your plan should include during and after-hours contact information for those responsible for the operation of the water system. These should be listed in the order you wish to have people contacted, and it should include as many people as possible. Remember that in an emergency situation, not everyone on the list will be available as they may be dealing with personal situations relating to the emergency as well.

#### Emergency Response contact information

Your plan should include during and after-hours contact information for emergency response agencies that would respond to an emergency situation at your system such as county Emergency Management, local fire departments, your local Public Health Agency, ambulance services, gas, telephone, and electric service providers.

#### Law Enforcement contact information

Your plan should include during and after-hours contact information for local and county law enforcement agencies which would respond to an emergency at your system. While most areas have adopted the 911 emergency phone number, some areas have not and may have other numbers listed for you to contact. You should also include the contact information for your security company if you have a security system in place.

#### Regulatory Agency Contact Information

As the regulatory agency responsible for any situation concerning the quality and quantity of water you're providing to you customers, your plan should include during and after hours contact information for the Department of Natural Resources and the DNR District Engineer responsible for your water system.

#### Equipment and System Maintenance Contact Information

Your plan should include contact information for the suppliers and maintenance contractors for the different components of your water system. Include such information as the make, model number, serial number and size of any equipment and where and when it was purchased. Also include contact information on contractors, plumbers and electricians that you work with to maintain your wells, pumps, treatment systems and mains and the suppliers of any treatment chemicals you use to treat your water. You may also want to talk to these contractors and find out who else you may contact that may be familiar with components such as yours, should they not be available in an emergency situation.

**Owner/Employee Contact Information**

<b>Name</b>	<b>Address</b>	<b>Phone</b>	<b>Cell Phone</b>	<b>After Hours</b>
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				

**Emergency Response Contact Information**

**Fire**

<b>Name</b>	<b>Location</b>	<b>Daytime Phone</b>	<b>After-hours Phone</b>
1.			
2.			

**Ambulance**

<b>Name</b>	<b>Location</b>	<b>Daytime Phone</b>	<b>After-hours Phone</b>
1.			
2.			

**Natural Gas or LP Gas**

<b>Name</b>	<b>Address</b>	<b>Daytime Phone</b>	<b>After-hours Phone</b>
1.			
2.			

**Electric**

Name	Address	Daytime Phone	After-hours Phone
1.			
2.			

**Telephone**

Name	Address	Daytime Phone	After-hours Phone
1.			
2.			

**Law Enforcement Contact Information**

**Law Enforcement**

Name	Location	Daytime Phone	After-hours Phone
1.			
2.			

**Security System**

Name	Address	Daytime Phone	After-hours Phone
1.			
2.			

**Regulatory Agency Contact Information**

Name	Address	Daytime Phone	After-hours Phone
1.			
2.			
3.			
4.			
5.			
6.			

**Water Sampling Contact Information**

Name	Address	Daytime Phone	After-hours Phone
1.			
2.			



**Bulk Water**

In some cases, water delivered by bulk liquid haulers such as milk hauling companies may be the best source of emergency water. This can be piped directly into the system if piping arrangements allow, or it can be provided to customers at centralized locations where portable containers can be filled. If this is one of your options, or your primary means of providing back-up water, arrangements must be made in advance with both the haulers and the providers and these arrangements must be included in your ERP.

**Bottled Water**

Although providing bottled water in emergency situations may not meet all your customer’s water needs (i.e. sanitary uses, showering, clothes washing, fire prevention, etc.) it can be an excellent source of potable water for human consumption. If this is one of your options, or your primary means of providing back-up water, arrangements must be made in advance with bottled water suppliers and those arrangements must be included in your ERP.

**Combinations**

As stated above, in some cases (such as extended power outages) it may be beneficial to utilize multiple means of back-up water sources instead of only one. Although not required, it is advisable that any back-up sources available be identified and listed in your ERP in the event that multiple sources are necessary.

**Backup Water Sources for \_\_\_\_\_ Water System.**

<b>Source</b>	<b>Procedures</b>	<b>Contact Information</b>
1.		
2.		
3.		
4.		
5.		

## **GENERAL PROCEDURES for EMERGENCY DISINFECTION**

These procedures can be used as general guidelines for developing a more specific Emergency Disinfection Plan. Each water system varies and a specific plan pertaining to that system should be developed.

### **EMERGENCY CHLORINATION PROCEDURES**

#### **Chlorine Addition to System**

1. Set up the chlorination feed pump. Refer to pump O&M manual for specifics on particular pump and proper connection.
2. Make sure that chlorine feed pump operates when plugged into the outlet connected to the well pump. The chlorine feed pump should only operate when the well pump is on. Make sure pump is plugged into correct outlet.
3. Set pump to reach the desired chlorine residual based on the chlorine being used and the gallons per minute (GPM) of the well. Turn well pump to manual and let run for a couple of minutes. Check the chlorine residual downstream from chlorine injection point. If necessary, adjustment chlorine pump feed rate to reach the desired residual.
4. Distribute the chlorinated water throughout the system by flushing hydrants or faucets.
5. Continue emergency chlorination until follow up samples come back safe and DNR instructs that chlorination is no longer required.

#### **Chlorine Addition To Well**

1. New wells and wells that are bacteriologically contaminated should be disinfected according to a chlorine solution ratio of 1:100. That is 1 part of chlorine (household bleach) to 100 parts of water.
2. Mixing can be done 25 gallons at a time in a clean plastic container. (Use 1 quart of bleach for every 25 gallons of water.) Always prepare enough solution to meet or exceed the total volume of your well.

#### **Solution needed- Casing Diameter**

#### **Minimum amount of chlorine solution.**

2" -----	2 gallons of solution per 10 feet of well depth.
4" -----	7 gallons of solution per 10 feet of well depth.
6" -----	15 gallons of solution per 10 feet of well depth.
8" -----	26 gallons of solution per 10 feet of well depth.

**Example:** A 6" well that is 100' deep would need 150 gallons of solution (15 gallons of solution for every 10' of well equals 150 gallons). About 1 & 1/2 gallons of bleach would be needed at the minimum.

3. Remove the well cap and pour the required amount of solution into the well.
4. Hook up a hose to the system being disinfected and rinse the well casing for 5-10 minutes. Run enough water to circulate the chlorine solution throughout the water system.
5. Turn on each of your other water taps till the bleach smell is just detected and then turn them off to keep the chlorine solution in the system.
6. Let the chlorine solution remain in the system for at least 24 hours.



7. Pump out all of the chlorine solution where the chlorine will do no damage. Pump until you can no longer smell the chlorine. Flush out your other water taps.
8. Resample for bacteria only after all of the chlorine is flushed from the system.

### **Disinfection of Household Water**

The following procedures will destroy the usual bacteria and other microorganisms that may be present in water obtained from a contaminated public water supply system or from alternate emergency sources.

#### **Heat Disinfection** (boiling)

Boil the water for at least one minute after reaching a rolling boil.

#### **Chemical Disinfection**

1. Strain water through a clean, tightly woven cloth into a clean container to remove any sediment or floating matter.
2. Purify the water with one of the following chemicals (choice of chemical is based on availability)
  - a. Hypochlorite solutions (PUREX, CLOROX or other household bleach)

Read the label to find the percent of available chlorine in the solution and determine the number of drops needed to disinfect each quart of water from the table below:

Available Chlorine	Drops of Bleach to add to each quart of clear water	Drops of Bleach to add to each quart of cloudy water
1%	10	20
4 to 6%	2	4
7 to 10%	1	2
If not known	10	20
<i>Mix thoroughly by stirring or shaking water in container. Let stand for 30 minutes. A slight chlorine odor should be detectable in the water. If not, repeat the dosage and let stand an additional 15 minutes before using.</i>		

- b. Iodine: Use USP tincture of iodine; iodine from the medicine cabinet should be suitable. Add two to three drops to each quart of clear water (or eight to ten drops to each quart of cloudy water). Mix and let water stand for 30 minutes before using.

Purified water should be stored in clean, non-corrosive, tightly covered containers. Containers suitable for water storage include empty vinegar bottles, soft drink jugs and plastic milk containers that have been thoroughly washed and rinsed with purified water. Freezing does not disinfect water; ice cubes must be made from water that is properly disinfected.