

Are You Prepared for a Water Supply Disruption?

“City ravaged by chain explosions ... chemical company razed ... oil refineries explode and burn ... utilities disrupted ... water supply condemned after a fire broke out on a freighter in port.”

“Power outage sparks one of the worst water crises in the city’s history as all four water pumps go down at once.”

“Seven people dead and 2,300 ill after one of the town’s wells becomes contaminated with E. Coli.”

These headlines are not the result of terrorist activities. Accidents, lack of training and expertise and equipment failure brought about these disasters, which highlight the vulnerability of our water systems. If these types of incidents were purposely carried out by terrorists, the loss and destruction could be far worse. Our nation’s water systems can be disrupted and are potential targets for terrorism.

J. Edgar Hoover, in 1941, warned that our water systems were potentially vulnerable targets. Because they are critical to our way of life and the economic viability of our country, Presidential Directive 63 (May 1998) identified our nation’s water systems as one of the eight critical infrastructures subject to attack by terrorists.

Reducing Our Vulnerability

Much has been done to improve security and reduce our vulnerability since the 9/11 terrorist attacks in the United States. We have struck back at terrorism militarily. Congress has passed several landmark pieces of legislation. The Department of Homeland Security was established. Industries, businesses and critical sections of the infrastructure, including water suppliers, have done vulnerability studies and continue to implement strategies to reduce their vulnerability.

Impacts of Hurricane Katrina

Hurricanes Katrina and Rita in 2005 are a perfect example of a major water and wastewater system disruption. Thousands of people were directly impacted for months and many still have not returned to the affected areas.

According to a Congressional Research Service Report for Congress dated October 19, 2005, the EPA estimated that more than 1,220 drinking water systems and more than 200 wastewater treatment facilities in Louisiana, Mississippi and Alabama had been impacted by the hurricane.

The same CRS report notes that two weeks after the hurricane, 30% of the affected drinking water systems and 40% of the affected wastewater facilities were again operational. However, many of the inoperable drinking water and wastewater plants serve the largest number of customers.

Federal, state and local agencies shipped in bottled water and bulk water supplies. For instance, one company (Anheuser-Busch) donated more than two million cans of water per week to the Katrina relief efforts in September 2005.

Citizen Preparedness

However, since we are still vulnerable, how would the citizens of this country react to a prolonged disruption of their water supply? The Hurricane Katrina disaster in New Orleans gives us an idea. Many area water and wastewater systems were disrupted for days, weeks or months. Water and food supplies had to be brought in for months afterward.

The Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA) and Centers for Disease Control (CDC) recommend having at least a three day supply of food and water per person to cope with any emergency. The minimum drinking water suggested supply is 1 gallon per person per day. The US Army Survival Manual uses an absolute minimum of 2 quarts per day per person in a cold climate and much more in a hot climate. Activity level also affects your water intake requirement. In addition, you also need water for food preparation, bathing, brushing teeth and dish washing. Store a 3-5 day supply of water (a minimum of at least 5 gallons for each person).

A clean water supply is also essential for fighting disease and medical emergencies. Any loss of blood increases our water intake requirements substantially.

Bottled water is helpful and easy, but it may not always be available. For example, if both the water infrastructure and transportation system are unusable, deliveries of bottled water and other supplies might be difficult if not impossible. What would you do when your bottled water supply ran out? What if the local stores ran out or the supply was contaminated? This kind of scenario could easily happen in a major hurricane, earthquake or terrorist attack. There are several things that you can do to prepare for this eventuality.

First, become knowledgeable and file the necessary information where it will be readily available in an emergency, such as in your emergency kit. There are plenty of resources available to help you prepare. To start, check the Department of Homeland Security, FEMA and CDC websites for emergency preparation information.

Second, in addition to the recommended three day supply of food and water, consider storing additional water in larger storage tanks or drums in the garage, basement or storage shed. Plastic water storage tanks and drums, which are generally recommended, are relatively inexpensive. An additional 200 gallons of water storage would extend your water supply to 200 days for one person or 50 days for a family of four. Make sure to also have an emergency kit in your car as you might not be at home when an emergency situation occurs.

Third, be sure to include some simple water disinfectant tools available so that you can make use of any available raw water supplies. One such disinfectant is common, unscented, liquid, household bleach. Several simple techniques for disinfecting water are listed below.

Boiling-Boil vigorously for one minute. At altitudes above one mile, boil for three minutes.

Chlorine Bleach-When boiling is not practical, chemical disinfection should be used. The two chemicals commonly used are chlorine and iodine. When the available chlorine in the bleach is known use the following ratios: 1% - 10 drops per quart, 4 to 6% - 2 drops per quart, 7 to 10% - 1 drop per quart, if unknown use 10 drops per quart. If water is cloudy or the water temperature is extremely cold double, the amount of chlorine.

Tincture of Iodine-Common household iodine from the medicine chest or first aid kit may be used to disinfect water. Add five drops of 2 percent United States Pharmacopeia (U.S.P.) Tincture of iodine to each quart of clear water. For cloudy water add ten drops and let the solution stand for at least 30 minutes.

Fourth, there are a variety of small, portable water decontamination units specially made for hikers and backpackers. These units are designed to take raw water from streams or lakes and make it potable. Having one or two of these units per family of four is an excellent option. Plus, including one of these units in your emergency automobile kit is also recommended.

Much of what is being done to protect our water supply can only really be effective if Americans themselves become informed and aware. The American Water Works Association (AWWA) notes, "In many cities and small towns, the public is the first line of defense, serving as an extra set of eyes watching over key utility assets such as tanks, reservoirs and even fire hydrants." This first line of defense also extends to our families and communities by being prepared for a water system disruption.

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