

It's Never Too Late To Stay Up-to-Date

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After the storm subsides, the real work begins. Mud and muck cover almost everything, and environmental emergencies flourish. Recovery workers re-entering the area will need to be prepared for the worst conditions. Water and wastewater treatment systems are typically left in shambles, leaving system operators with little to work with. Cleaning up is a difficult chore when the water does not work.

"You can't do anything without water," says Pat Creduer, executive director of Louisiana Rural Water Association (LRWA), speaking of his experiences after Hurricanes Katrina and Rita. The restore service, engines, pumps, and lift stations had to be dried out and cleaned up. Electrical systems were waterlogged; toxic chemicals and harmful bacteria had entered plants and service lines; system pressure was nonexistent; disinfection units did not work; and bacteria needed to treat wastes were deficient. On top of all of those problems, distribution and collection lines had to be cleaned, repaired, and flushed.

"[After Katrina] it took weeks to get the lines back in the ground, and they had to be chlorinated and super-chlorinated," Creduer continues. "After Rita, it took weeks to even find the lines. Metal detectors didn't even help us find lines, valves, or meters, because there was so much metal from appliances, cars, and whatever else ended up under the mud once the water receded."

Safety First

The rubble that floodwaters leave behind can be as dangerous as the flood. "Emergency workers' first priority should be safety considerations," says Mark Miller, senior health officer for the U.S. Public Health Service.

Miller warns that recovery workers, including system operators, can never be too safe. He says they should consider air quality, such as confined space entry, carbon monoxide, and mold; electrical hazards; physical hazards, like broken glass, and the potential for structural collapse; biological hazards, including pathogenic bacteria and viruses; chemical hazards from spills or leaks of chlorine or

other hazardous materials; and displaced animals. In addition, a plan to stay connected during recovery efforts is critical for the safety of all recovery workers.

"One of the biggest problems after the hurricanes was communication," says Creduer. "We had no way of keeping in touch with each other. We had to climb on top of water storage tanks to try to get cell phone reception, and that didn't always work. Walkie-talkies or two-way radios would have been a Godsend."

Training Keeps Responders Up-to-Date

"Emergencies frequently require environmental health practitioners to be flexible and apply their skills and knowledge across the board," says Miller. "Up-to-date emergency response training illustrates the bigger response picture and how each operation fits within the whole response. Prior understanding of response plans, systems, and processes smoothes progress for assistance for needed repair and recovery and expedites the recovery of systems. First responders should stay up-to-date with the basics of environmental health."

Creduer agrees with Miller's assessment and has been involved in disaster training through LRWA. "We've been conducting trainings about lessons learned during the Katrina/Rita event. We intend to conduct mock hurricane scenarios. We want to find out how long it will take to get equipment and personnel to the devastated area. We will tell system operators to be ready if needed, and then they will get a phone call to bring the equipment that they have. They must be prepared and ready to move things from one place to another."

Work Together

"Prior to an event, system operators and public health practitioners should develop plans collaboratively to address potable water and wastewater disposal needs created by emergency events, such as floods, electrical failures, earthquakes, and terrorism," says Miller. "At this time, it is important to address the compatibility of data and information systems."



Emergency Response Check List

“During an event, responders should share information on affected water and wastewater systems, such as maps and locations of facilities, system components, and wastewater disposal sites,” he explains. “Public health practitioners can report on problem areas, while water/wastewater operators can provide updated status reports of the systems. Both should work jointly to effectively communicate public health protection messages, including developing consistent messages for boil water orders/advisories and distribute them through proper channels to the affected population.

“During and after the event, operators and public health practitioners should work together to ensure proper disposal of wastewater, such as portable toilet septage and temporary systems, and sanitation of bulk water, such as monitor chlorine residuals, proper hauling containers, disinfection procedures, and safe sources, as well as to establish repair/service priorities.

“Emergency response training can also promote the importance of water and wastewater infrastructure to the overall health of the community, while illustrating the importance of partnerships in maintaining this resource,” says Miller.

Creduer notes that Louisiana and LRWA worked to develop the LaWARN system, which relies on partnerships. “What the [Louisiana systems] realized was that it was hard to get other communities and utilities to assist them. This was largely because [other utilities] did not know what they needed in the coastal communities. LaWARN is a county-by-county mutual-aid agreement. It is utilities assisting utilities during a natural or man-made event. It was modeled after the FlaWARN system. The program has the commitment from utilities, vendors, public health officers, and LRWA.”

The foundation of LaWARN is an official agreement that allows an outside utility or utilities to go into a disaster-struck utility and take control of personnel and operations until the situation is stabilized. The agreement has provisions that allow for the aiding utility to be reimbursed for expenses and be covered by liability insurance, it also establishes a volunteer commitment that if a member utility is called to help, it will help.

“Similarly, operators and public health practitioners should develop and maintain a close partnership by planning together and conducting regular exercises together,” says Miller. “Planning and response will be enhanced when all partners understand and rely upon each others’ areas of expertise and knowledge.”

Be Prepared

When preparing to re-enter a site, the most important thing to remember is safety. Forming alliances with environmental health practitioners is one of the best ways to ensure the safety of everyone involved. And continued training of anyone who may be involved as a first responder is more than just a good idea—it’s critical to staying healthy and alive.

For more information about preparing for a disaster, you may contact Miller at zdq8@cdc.gov. You also may call Creduer at (800) 256-2591. To view the LaWARN application and mutual aid agreement form, visit LRWA’s Web site at www.lrwa.org/.

1. When it comes to water and wastewater facilities, what safety considerations should emergency workers have before entering a site that has been flooded?

- air quality (e.g. confined space entry, carbon monoxide, mold),
- electrical hazards,
- physical hazards (e.g. broken glass, potential for structural collapse),
- biological hazards (e.g. pathogenic bacteria and viruses), and
- chemical hazards (e.g. spills or leaks of chlorine or other hazardous materials).

2. Why is it important to keep up-to-date with emergency response training? It helps you to:

- understand response plans/systems/processes allows you to expedite making the facility operational again,
- get the help you need,
- understand the importance of partnerships,
- see the bigger picture and how you fit within the response,
- understand the importance of water and wastewater infrastructure, and
- comply with OSHA, especially for large utilities with labs and those that store large quantities of hazardous materials or generate or store hazardous wastes.

3. How can system operators and public health practitioners work together during and after an emergency?

- Responders should share information on affected water and wastewater systems.
 - Public health practitioners can report on problem areas
 - Water/Wastewater operators can provide status reports of the systems.
 - Communities can develop joint boil water orders/advisories to provide a consistent message.
 - Work jointly to disseminate orders/advisories.
 - Ensure proper disposal of wastewater (portable toilet septage).
 - Ensure sanitation of bulk water (monitor chlorine residuals, proper hauling containers).
 - Effectively communicate public health protection messages.
 - Work together to establish repair/service priorities.

4. How can operators and public health practitioners communicate valuable, but scientific information to the public?

- Develop and maintain a close partnership (plan together, conduct exercises together).
- Rely on each others areas of expertise and knowledge.
- For common events, develop prescribed, joint messages that are clear and consistent.
- Convey proper methods to maintain safe drinking water and proper wastewater disposal in emergency events.
- Develop effective means to communicate messages rapidly to the affected population in emergency events.

Source: Mark Miller, senior health officer for the U.S. Public Health Service.