By Charlie Schwindamann, Wastewater Tech

Being Prepared for Emergencies

In September, several KRWA staff members attended the National Rural Water Association Conference to receive training. I attended several sessions on sustainability and emergency response, where I learned much. I received updates, such as operators, clerks and board/council members do at the various water, wastewater, and other sessions at KRWA training events and will at the KRWA Conference set for March 29-31, 2022.

The sessions I attended caused me to reflect on the extreme cold snap that hit the Midwest last February. The cold spell caused many issues for water and wastewater systems. Most small systems and some larger, are not prepared for emergencies as well as they could be. Just some simple steps could save many hours of researching for materials or equipment.

Emergency Response Plans . . .

One step to being better prepared for an emergency is to have an Emergency Response Plan (ERP). It doesn't have to be complicated. Such plans are required for larger water systems, but not for smaller systems or even wastewater systems as of yet. US EPA has required all public water supply systems (PWS) serving more than 3,300 customers to complete a Risk and Resilience Assessment (RRA) and an ERP. The RRA is a review of what emergencies could happen and their likelihood of occurring. The ERP is an exercise and document on who to call in those emergencies. EPA provides a Community Water System Emergency Response Plan template in a WORD document that KRWA has available and can assist systems with. It can be easily

City of Hiawatha Wastewater Superintendent Dave Grimm breaks Ice off the railing near an air leak in the wastewater treatment facility in February 2021. The air leak caused the water to splash onto the rail and due to the extreme cold temperature caused ice formation.

modified to fit wastewater system data. The ERP is an important document to have available; it should be in an easy-to-find location. Placing the ERP in a folder with other important paperwork, such as standard operating procedures, is vital to the success for systems in the case of an emergency.

There are five main sections to the ERP that is twenty-five pages when printed. They include: 1) Utility Information; 2) Resilience Strategies; 3) Emergency Plans and Procedures; 4) Mitigation Actions; and, 5) Detection Strategies. This is by far the simplest ERP I have seen, and is a "check the boxes and fill in the blank type form". I believe the most challenging part is finding the names and phone numbers for the contact list, which most systems really should have already.
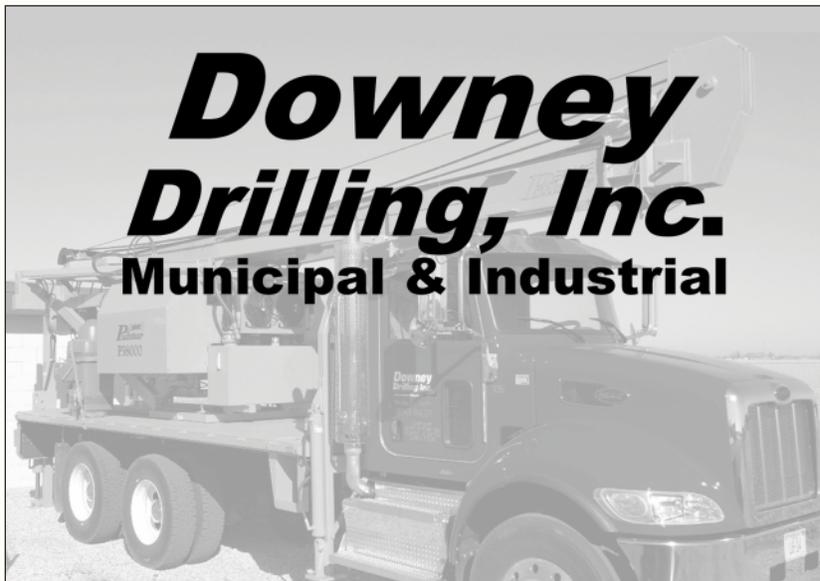
The Utility information includes the PWSID or permit number and contact information such as address and phone number. It also lists the population served, who prepared the document, who reviewed it, and the date it was completed. The completion date is important that the ERP should be reviewed annually. Updates should be noted such as staff or system changes. This document should be shared with all system staff and board or commissions, emergency personnel such as the fire chief, ambulance, county emergency preparedness director, and law enforcement. Word processing makes saving and updating the ERP an easy task. Also, an important part of the utility information is directions to the treatment plant; think of using GIS locations and physical addresses. As a former firefighter and EMT, having the proper physical addresses is crucial for responders in emergencies. Provide addresses to shops, treatment plants, lagoons, lift stations, wells, and storage tanks. The ERP also includes a checklist that includes collection and distribution maps, treatment site plans, equipment specs, emergency power specifications, SCADA, and other communication systems used for operations. The equipment specs should include manufacturer, horsepower, GPM, amps, etc. Information on personnel should include names, titles, and contact information.

Chemical handling and storage facilities are critical for pre-planning. Examples are what testing and personal protective equipment may be needed at each facility. The form also suggests listing response resources inventory such as generators, fuel, pumps, and other equipment. Last on the utility information is key local services, including hospitals, gas stations, pharmacies, grocery stores, motels, etc. Don't forget to add mechanics and tire repair shops. When out at Greensburg responding to the tornado years ago, I noticed many flat tires due to the debris in the streets and alleyways.

The section for resilience strategies is a fancy term for emergency response information. This includes who is in charge of what during an emergency. I recommend all systems attend or train in the Incident Command System (ICS) to understand this. This training provides an understanding of specific parts of the ICS during an emergency, no matter how large or how small. Even a water leak can use ICS such as who is in charge such as the City Superintendent being the incident commander or the foreman in charge of repairing the leak operations. The city clerk would be in charge of financial, pay wages and parts. City manager is the public information officer in charge of letting customers know water may be off and for how long through various media. In larger incidents this may fall to the utility's attorney or hired public information officer. It is a system that works well for any emergency, although the larger the emergency the more people involved, but large or small it follows a set format. Most of

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the basic courses can be taken on line at no charge. The FEMA ICS for IS-100.c., IS-700.b., and IS-800.d. can be found at https://training.fema.gov/is/courseoverview.aspx?code=IS-100.c . Other courses require onsite training for advanced incident training that provides more detail for each part of the incident command system. This section is also where all external response partners are listed. These are the local responders such as county emergency management, police, fire, Hazmat, utilities, county health dept., mutual aid, contractors and vendors. Others listed are state responders such as KDHE, Labs, and KRWA to name a few. Next comes the federal responders such as EPA, FBI, and CDC, FEMA. The above list will be included on a communications list with a point of contact, phone numbers, and emails. Critical customers will also be listed such as hospitals, nursing homes, doctor offices, schools, large water users, factories, etc. You recall in early 2021 where the electric companies shut down factories to reduce usage; doing so was part of an ERP. Some states and systems have noted chemicals for water and wastewater treatment, such as ozone and chlorine become an issue due to supply shortages and may affect water quality to meet treatment limits. I mentioned above the public information officer and notifying customers of issues. Media contacts should be listed to include radio, TV, social media, internet provider with point of contacts. Some small towns have local radio stations but sometimes do not have back up power to operate their stations. A system should list all the main stations that can be reached in their area to provide the best coverage.

The section for emergency plans and procedures details how the facilities are accessed. You will need to clear the roads of debris, have alternate routes; you may want to completely shut access to the system with only one or two access points due to damage. What equipment does your system own to clear the debris to get your system back in operation? A system should also have identification badges for employees to prove who they are and can be allowed access to the system.

Physical security can include key cards or key pads. I recently visited a city that has a security system that allows the card holder entry to specific buildings and logs the time of the entry. Security cameras are also becoming an affordable deterrent to vandalism.

Cybersecurity is an ever-increasing concern. Utilities need to protect their systems. One small way to improve cybersecurity is to program the controls for maximum and minimum setpoints of where chemicals

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This is an ID badge for Charlie Schwindamann; the County Emergency Manager created it. The Bar code lists certifications for fire firefighter, Class I Wastewater Op, Class II Water, IS100, IS300, IS400, IS700, IS800, Class B CDL. This badge is used for entry and accountability during emergencies.

can be changed. Make sure new systems have controls that can be manually over-ridden.

In case of a power loss your system should have standby power in place, owned by the city or RWD, to operate the treatment facility and any lift stations, wells or booster stations. These can be permanently fixed for the treatment and be portable for the wells or lift stations. Every system should exercise these generators and place them on a load to make sure they operate as required. List your power company with contacts in case of emergency.

An alternate emergency drinking water supply may be an interconnect with another water system or bottled water or tanker to provide bulk water for customers.

The sampling and analysis section should include a list of local, state and federal labs. KDHE provides a list of certified labs that can be added to your ERP. You should also provide a list of sampling procedures for different types of contaminants.

Family and utility personnel's well-being should be addressed by listing meeting and evacuation areas and procedures. Supplies to maintain health such as food, water, first aid and sanitary products should be considered. Staff may need to work from a hotel, home or other locations if the system's facilities have been damaged.

> **EPA's website provides a number of incident action checklists to develop your incident specific response procedures.**
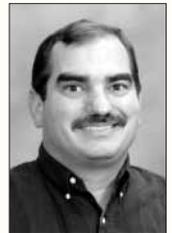
The incident- specific response procedures are for those such as tornados, drought, ice storms, extreme heat and cold, and wildfires. EPA's website provides a number of incident action checklists to develop your incident specific response procedures.

The Mitigation Actions section of the ERP lists where a system may obtain water as an alternate water source such as golf course wells or interconnected utilities from nearby suppliers. This interconnect could flow either way, depending on the circumstance.

The last section of the ERP lists the detection strategies. This is very simple for the most part as you call 911 if your alarm for intrusion is detected, or if there is a chlorine gas detector alarm, you again notify 911 and Hazmat responders. If you have a power failure alarm, you would start up the generator.

Each Emergency Response Plan is system-specific and some systems will be very simple while others will be more complicated.

Charlie Schwindamann has been Wastewater Tech at KRWA since September 1999. Charlie holds Class II Water and Class I Wastewater Operator certification. He has also served as a member of the Marysville, Kansas city council.