SERVICE CONNECTION

The Maine Drinking Water Program Newsletter

Working Together for Safe Drinking Water Fall 2017 ○ Volume 25, Issue 3

Are You Prepared for an Emergency?

Tools are Available to Help Improve Readiness

Sara Flanagan

With Hurricanes Harvey, Irma, and Maria causing catastrophic destruction in the south, and winter fast approaching with potential blizzards and ice storms, it's time to take a minute and think about emergency preparedness and response. Do you know where your water system's Emergency Response Plan is located? Is it sitting on the shelf collecting dust? When was the last time you reviewed and updated it? Is your staff trained on how to use it? Have you exercised your Emergency Response Plan recently? These are all important questions to raise when thinking about how prepared your system is for a potential emergency.

The best time to prepare for an emergency is before it happens. Visit the Maine Drinking Water Program's Security and Emergency Preparedness webpage (www.tinyurl.com/ PWSPreparedness) for Emergency Response Plan templates, fact sheets, and other useful emergency preparedness and response information.

Take the time to exercise your water system's Emergency Response Plan with a tabletop exercise. Participants gather around a table and discuss emergency scenarios in a low-stress environment. A tabletop exercise is designed to examine and resolve problems based on the existing Emergency Response Plan, and identify where the Emergency Response

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Shutting-Down Your Seasonal System

Mike Plaziak

Shorter days and cooler nights remind us that it's that time of year when we begin to plan for the long, cold Maine winter. For those of you who operate a seasonal system, here are some helpful tips to consider when closing your water system for the season. The off-season provides time to correct any problems discovered during your post-season inspection. Following these procedures will help ensure your water system is in good shape and will need fewer repairs when you reopen in the spring.

1. **Inspect your entire system.** Look for problems and damage that need attention or repairs. It is always a good idea to exercise valves to ensure they are working properly; check for leaks; and inspect

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Photo: Bill Davenport

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Maine Center for Disease Control and Prevention

An Office of the Department of Health and Human Services

Paul R. LePage, Governor Ricker Hamilton, Commissioner

DIRECTOR'S *Corner*

Direct Responsible Charge Explained

Roger Crouse, Program Manager

Congress determined that public health would be better protected if public water systems were under the direct supervision of an operator who has demonstrated competence and is properly trained. Consequently, as part of the 1996 amendments to the Safe Drinking Water Act, Congress requires all community and non-transient, non-community water systems be placed under the responsible charge of a licensed operator.

Approximately 800 public water systems in Maine are required to put their water system under the responsible charge of a designated licensed water operator. Maine's Rules Relating to Drinking Water state that "all operating personnel making process control system integrity decisions about water quality or quantity that affect public health shall be licensed."

While most licensed operators are conscientious about their work, many operators, even the most knowledgeable operators, don't have a firm understanding of what it means to be in *responsible charge* or know when they (or someone else) are making a "process control system integrity decision." This can result in risks to public health and unnecessary costs to owners and consumers. Some examples we have seen include, water quality sampling at the wrong time, failure to sample water during the correct time, failure to recognize water quality deviations in a timely manner, failure to properly maintain a treatment process, and a lack of understanding of how changes within a water system may impact water quality.

The Rules Relating to Drinking Water define *responsible charge* this way:

Responsible Charge: *The Operator(s) in Responsible Charge is defined as the person(s) designated by the owner to be the licensed operator(s) who makes decisions regarding the daily operational activities of a public water system, water treatment facility and/or distribution system, that will directly impact the quality and/or quantity of drinking water.*

Too frequently, Drinking Water Program staff discover non-compliance situations related to the requirements for responsible charge. Generally, these issues can be categorized into one or more of the following:

1. The designated licensed operator is an operator for the system in name only. The owner of the water system is seeking to minimize his/her operational costs by minimizing the frequency in which the licensed operator must visit the system or respond to operational or maintenance issues.

2. The designated licensed operator minimizes his/her involvement in the operation of the water system. Generally, these operators allow on-site personnel to make decisions without his/her input.

3. The designated licensed operator does not have sufficient knowledge of the regulations and/or the water system to make good decisions. Although, perhaps well intentioned, these operators lack the competence to make good decisions for the water system.

If you are an owner or operator in one on the situations above, or something similar, you are risking public health, your public water system compliance status, your operator license, and potentially increasing costs to you and your customers.

The principal behind the regulation is improved public health protection. Your customers assume you have their best interest in mind each time they drink the water you supply. Please don't let them down.

Yours for safe drinking water, *Roger*

ATTENTION PUBLIC WATER SYSTEMS
serving 3,000 or fewer consumers:

Are you interested in receiving assistance with developing an Emergency Response Plan or conducting a Vulnerability Assessment?

If so, please email Sara Flanagan at sara.m.flanagan@maine.gov.

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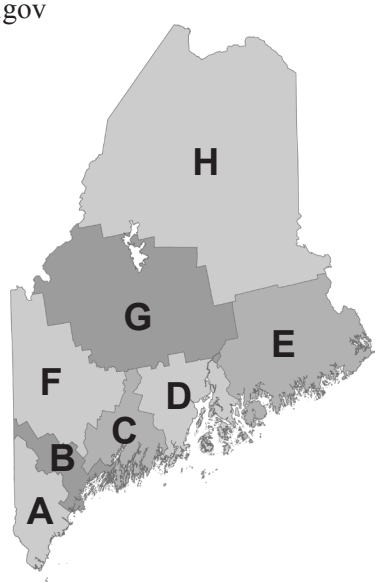

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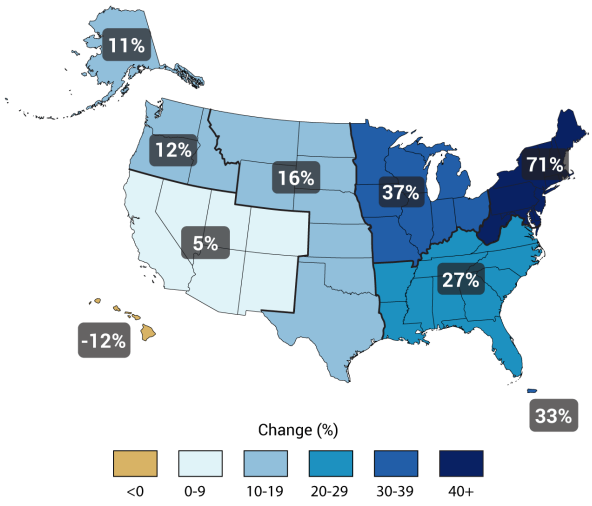
Highlights from the September 2017 Drinking Water Protection Seminar

Sophia Scott

The Maine Water Utilities Association (MWUA) hosted the 11th annual Drinking Water Protection Seminar on September 7, 2017. The event's theme was *Maine's Future Water Landscape*. Attendees heard important updates from the Drinking Water Program and EPA Region 1 regarding potential regulatory changes and the current outlook for the Drinking Water State Revolving Fund.

Talks from experts described how future changes in the climate may impact Maine's drinking water from surface water sources. Notably, all speakers in the climate session shared the same data[1] from the US National Climate Assessment (2014) that describes how the northeast has seen a 71% increase in extreme precipitation events. Speakers went on to elaborate on how this increase in precipitation could possibly impact Maine's drinking water from surface water sources.



Observed changes in very heavy precipitation. Image: U.S. Global Change Research Program

In the final session, speakers drove home the importance of protecting drinking water sources. They touched on the difficulties of developing a new source, the increasing threats from development, and how developing a collaborative relationship with your town or city can help to further water systems' source protection goals.

If you would like learn more about topics covered in the Drinking Water Protection Seminar, you can view the presentations online at: http://mwua.org/event-presentation-archive/.

[1]https://tinyurl.com/heavyprecip

Tabletop Exercises Promote Emergency Preparedness

Sara Flanagan & Peter Bernard

On January 9, 2014, a major chemical spill on the Elk River in West Virginia resulted in about 10,000 gallons of solvent entering a river 1.5 miles upstream from a water utility intake. Crude 4-Methylcyclohexanemethanol leaked from a containment facility into the ground, and from there into the waterway. The accident resulted in a "Do Not Use" water advisory affecting 300,000 consumers in the Charleston, WV area for a two-week period until the spill was under control and the drinking water system flushed. The scope of the event underscores the importance of clear risk communication during incidents that threaten drinking water quality and public health.

With the intent of helping public water systems prepare for and become more adaptable to spills that may impact drinking water supplies, Maine Rural Water Association (MRWA) is facilitating an ongoing series of spill response tabletop exercises (TTX). In these activities, an event scenario such as an oil spill, is presented to participants representing public water systems and state, county, and local responders. All parties simulate how they would deal with such a situation before they are faced with an actual event. Participants collaborate in honing procedures that will enable them to react effectively and efficiently to emergencies caused by environmental impacts.

Earlier this year, MRWA led a TTX in Castine that included individuals from the Castine Water Department, Maine CDC Drinking Water Program (DWP), the Department of Environmental Protection, the Hancock County Emergency Management Agency, local fire and police responders, and other town officials and stakeholders. The TTX simulated an oil spill and water main break, a scenario designed to stress the Water Department's ability to maintain both quality and quantity of drinking water to their customers.

In Farmington, a TTX was held simulating a chemical release into a wellhead protection area at the same time as a flooding event. The flooding impacted the Water Department's primary well source located in the flood plain of the Sandy River. This combination of unexpected

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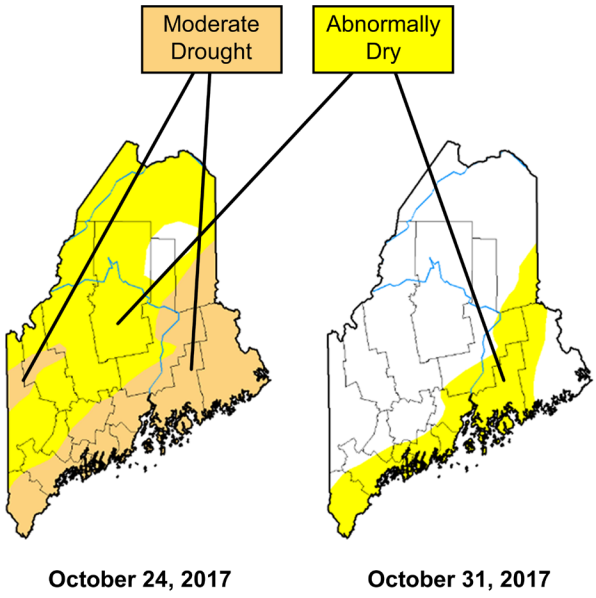
Drought Update

Sophia Scott & Jessie Meeks

This time last year Maine was in a pretty serious drought, with all areas experiencing at least abnormally dry conditions. Southern Maine saw the worst of it, enduring nearly two months under extreme drought conditions.

Parched corn crop in Dayton, Maine
Photo: Kathleen Pierce, Bangor Daily News

A moderate drought lasted through January, 2017, for much of the state, and through March for York County. The wet winter and spring eased the situation, and by May conditions had returned to normal.



The rains of late October, 2017, helped ease dry conditions across the state. Image: National Drought Mitigation Center

This year we had an abundance of hot, sunny summer days with little rainfall – great for beach days and summer vacation, but not so great for our hydrologic conditions. In July, the coast began to experience abnormally dry conditions; by August this region had expanded inland and a moderate drought had again set in east of a figurative line drawn from Casco Bay to Presque Isle (as the crow flies). These conditions held fast throughout the fall. Heavy rains in October did ease the situation; however, the latest long-term outlook for the region is calling for weather that will be warmer than usual. A recent study[1] from the University of Maine noted that in coming years the state will likely experience longer, warmer summers.

[1]https://tinyurl.com/seasonalshift

The Importance of Maintaining Operating Records

Holly Hockertlotz

Monthly Operating Reports (MORs) represent more than a compliance requirement for State and Federal rules and regulations related to drinking water. Operational reports are a record of how each treatment unit has performed over time and can provide insight into water quality or production changes. So why are these records so important to maintain, even for systems that do not have violations or triggered assessments?

Producing safe drinking water is a complex process with many moving pieces, including source water variability, differences in batches of delivered chemicals, and modifications to the distribution system. In the absence of detailed records, it is easy to miss minor changes that can later lead to violations, or worse yet, a public health issue related to drinking water.

Examples of water quality parameters that can affect public health include pH and residual chlorine. Failure to maintain water quality parameters within appropriate ranges may cause issues with lead/copper, inefficiently oxidized inorganic contaminants, or bacteria. In the absence of good records, a violation may occur before an issue can be identified, particularly if the problem can be linked to small, incremental changes over time.

In addition, good recordkeeping demonstrates that the treatment at your water system is operating correctly and consistently, and may help rule-out your source when a water-borne disease outbreak is identified or suspected.

Seasonal System

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your well cap for openings, cracks, looseness, or missing screens that could allow rodents, insects, or other contaminants into the well.

2. **Turn off the power to your water supply pump.**
3. **Drain your tank.** If there is potential for your pressure tank or storage tank to freeze, drain it. If there is no potential for your tanks to freeze, you may choose to leave them full.
4. **Drain all internal plumbing.** If your piping is designed to drain to the lowest point, it may be as simple as opening a water outlet at the highest point in the system and opening a water outlet at the lowest point. If not, it may be necessary to connect a compressed air source to the highest point and release air into the system until all the water is forced out of the lowest point.
5. **Cap it off!** Make sure to cap off or screen any openings into your plumbing system and close all valves after the system is drained. For example, if you have plastic plumbing that runs over ground and supplies different buildings, make sure to cap off or screen all plumbing inlets to the building when you disconnect the plumbing for the winter. This will prevent rodents, insects, and other contaminants from entering.
6. **Close your taps.** Protect your distribution system by closing taps in the off-season.
7. **Remember the details.** Consider draining jet pumps (after discontinuing power), chemical feed pumps, hot water heaters (remember to shut off power before draining the tank), furnaces, dishwashers, toilets, plumbing to refrigerators with ice machines, backflow prevention devices, and water meters. This list is not all-inclusive and you may have additional appliances or devices that need to be drained to protect against freezing. Remember to add environmentally friendly anti-freeze to your toilet bowls and sink- and shower traps to prevent cracking and to keep sewer gases from entering buildings.
8. **Clean up your chemicals.** Properly discard any unused chlorine solutions and stock. For other treatment systems, follow the manufacturers' instructions for equipment, chemicals, or filter media not in use for long periods of time.

While closing your system for the winter may be time-consuming, it will serve to minimize repairs to the system at startup. The time you will need to spend winterizing depends mostly on the size, design, and complexity of your water system. For more information visit our website or call the Drinking Water Program at 287-2070.

Are you a seasonal system that opens in the winter? Visit our website for information on opening your water system for the season, www.medwp.com > Public Water Systems > Seasonal Water Systems > Water System Startup and Shutdown. ■

Water Operator News: License Renewal Now Under Way

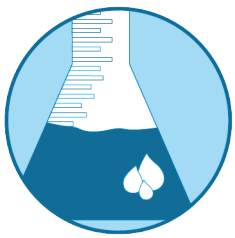
Peter Bernard

The annual Operator license renewal period runs until December 31, 2017, after which there is a 60-day grace period, allowing license renewal through March 1 without penalty. Online renewal is now available (https://tinyurl.com/WOLrenewal); debit and credit cards are accepted.

Remember: additional reinstatement fees may be assessed for operators who do not renew on time. Once the renewal window closes, licenses that have not been renewed will become inactive; public water systems that employ operators with inactive licenses may receive a violation for not having a licensed operator.

Operators who have not accrued sufficient training hours (TCH) for renewal should check the Maine Water Operator Training Calendar for upcoming trainings on the DWP Facebook page or website (https://tinyurl.com/op-training-maine). There are also online learning opportunities. Because the renewal cycle runs from one renewal date to the next, early renewal can be advantageous: Any approved training received after your license renews, but before the end of 2017, may be applied to the 2018 renewal cycle.

Additional information can be found on the Water Operator Licensure section of the DWP website: www.medwp.com > Professionals > Water Operators Board. Please contact Jim Jacobsen with any questions: email james.jacobsen@maine.gov, or phone 287-5695. ■



Cybersecurity: Minimizing the Risk

Sara Flanagan

We have all become more and more dependent on cyberspace to get our work done faster and more efficiently. Water systems are using the internet for critical functions such as Supervisory Control and Data Acquisition (SCADA) to remotely access water treatment plants and process online customer payments. A cybersecurity incident could significantly alter a water system's operations, adversely impact public health and safety, and/or compromise personal customer information.

In response, the Water Information Sharing and Analysis Center (WaterISAC) has developed a "Top Ten" list of cybersecurity recommendations that can be used to minimize your water system's vulnerability to a cyber breach or attack.

1. Implement an employee cybersecurity training program;
2. Maintain an accurate inventory of control system devices and eliminate any exposure of this equipment to external networks;
3. Implement network segmentation and apply firewalls;
4. Use secure remote access methods;
5. Establish role-based access controls and implement system logging;
6. Use only strong passwords, change default passwords, and consider other access controls;
7. Maintain awareness of vulnerabilities and implement necessary patches and updates;
8. Develop and enforce polices on mobile devices;
9. Involve executives in cybersecurity; and
10. Implement measures for detecting compromises and develop a Cybersecurity Incident Response Plan.

More detailed information on these 10 cybersecurity measures can be found online at www.tinyurl.com/CyberTop10.

Emergency Preparedness

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Plan needs to be refined. The U.S. Environmental Protection Agency (EPA) has developed a Tabletop Exercise Tool for Water Systems: Emergency Preparedness, Response, and Climate Resiliency. This tool contains 15 scenarios with fully customizable situation manuals, discussion questions, and PowerPoint presentations. You can modify the material to meet your specific needs. Visit EPA's website for more information and to download the tabletop exercise tool: www.tinyurl.com/TTXtool.

Another great resource is EPA's Water Utility Response On-The-Go mobile website. It allows you to track severe weather, create customized contact lists for response partners, respond to incidents, take notes and record damage, inform incident command, and provides access to additional planning information. Find more information at: https://watersgeo.epa.gov/responseotg/.

Tabletop Exercises

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events created challenges in protecting public safety and maintaining service to water customers.

MRWA is currently developing a spill response TTX for the Orono and Old Town area that will be held in January of 2018. MRWA is also planning a full-scale spill response exercise on the Salmon Falls River for June of 2018. A full-scale exercise is as close to a real event as possible, and will take place on location using the equipment and personnel that would be used in a real event.

These exercises are a result of collaboration between the DWP, MRWA, Maine Emergency Management Agency (MEMA), and the Maine DEP Division of Technical Services and Division of Response Services, in recognition of the importance of clear risk communications during any incident that may threaten drinking water quality and public health.

For more information, please contact Jessica Meeks (email jessica.meeks@maine.gov, phone 287-2647) or Sara Flanagan (email sara.m.flanagan@maine.gov, phone 287-5678).

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The Maine Drinking Water Program Newsletter
Maine CDC/Division of Environmental & Community Health
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SERVICE CONNECTION

The Maine Drinking Water Program Newsletter

Fall 2017 Volume 25, Issue 3

Published by the Maine Drinking Water Program to provide technical and regulatory information on drinking water issues.
Articles may be reprinted with citation.

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