

Community Water System Emergency Plan

It's almost time again for the six year emergency plan (EP) submittal to the DES Drinking Water and Groundwater Bureau (DWGB). This is the first in a series of bulletins to provide EP guidance and important reminders.

1 -THE BASICS

- ◆ **An updated copy of your community system's EP must be submitted by April 6, 2015.** Any EP received between January 1, 2015 and April 6, 2015 will be considered on time. All systems are on the same six-year cycle. *(If you have submitted an EP in 2014 you do not need to resubmit your EP as long as nothing has changed and it addresses all of the required sections. However, you must submit confirmation in writing (e-mail accepted)).*
- ◆ Your EP will need updated signatures from both the primary operator and owner. This helps to ensure that both representatives are aware and agree on the content of the EP.
- ◆ EP's should incorporate an all-hazards approach. Since risks are different for each system, EPs should include procedures for all types of events including vandalism, flooding, power outages, and even cyber events. Consider including specific step-by-step procedures for different types of events.
- ◆ This is a great opportunity to review your EP and make any necessary modifications. This may include staff changes, system changes, and vulnerability changes (i.e. implementing security improvements may have reduced your vulnerabilities).
- ◆ While the DWGB will be reviewing the EPs for completeness, it is more important to have a plan that is useful to the water system. Any water system representative should be able to pick up the EP and know what to do. The DWGB does refer to these plans during emergencies so it is important for the information to be accurate for everyone involved in the response.
- ◆ An EP guide is available on the Water System Emergency Planning/Security website at: <http://des.nh.gov/organization/divisions/water/dwgb/wseps/index.htm>. While you are not required to use the EP guide you should at least refer to it to make sure all the required sections are addressed in your EP. Some sections may not apply to your system. Systems should consider what is relevant for the type, size and complexity of their system. If a section doesn't apply to your system please indicate with a "N/A". Leaving it blank could mean that the section was skipped and leave the reader wondering if there is missing information.
- ◆ If you do use a template or guide be sure to remove any unnecessary guidance language for an easy to read streamlined document. It is also important to include a revision date, title and page numbers on each page.
- ◆ Please check out the Water System Emergency Planning/Security website for more information. **Feel free to contact me at 603-271-7017 or johnna.mckenna@des.nh.gov with any questions or for assistance.**

We appreciate your efforts in maintaining this important document!

We recommend you submit your EP electronically however we will accept paper too. Send EP to:

By E-MAIL: johnna.mckenna@des.nh.gov

OR MAIL: Johnna McKenna

NHDES Drinking Water and Groundwater Bureau, PO Box 95, Concord, NH 03302-0095

-The next bulletin will discuss System Components-



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#2 SYSTEM COMPONENTS

◆ It is essential that a water system have accurate up-to-date information about its facilities, equipment, and design. EPs should include all repair equipment that can be used and what might need to be purchased, borrowed or rented, especially if the person in charge of the equipment is not available during an emergency. During a wide spread emergency deliveries may be effected. Do you have adequate supplies of chemicals needed to treat your water through an emergency? Do you have adequate replacement parts? It's also important to include whether the system has the ability to isolate sections of the distribution system and how much storage capacity is available so that you can determine how many days of water you will have if you can only use what's in the storage tank.

◆ Asset Management (AM) is a systematic process of financing, inventorying, assessing, operating, maintaining, upgrading and replacing of assets cost-effectively while maintaining a sustainable level of service that is acceptable to a water system's customers. Any efforts to establish an AM program will also benefit you in your emergency planning efforts such as:

- Inventory: An asset inventory will provide you with an up to date list of all your system components with part numbers for easier searching of replacement parts. GIS locations can help get you to your assets quicker (especially if landmarks are damaged). An up to date inventory and GIS will also assist with completing damage assessments.
- Prioritize/Criticality: Assets for which there is less redundancy should have a higher priority, because your system will have trouble continuing to operate without them. System "down-time" and the number of emergency repairs will be reduced since you will have prioritized your assets and planned for their replacement and rehabilitation.
- Level of Service: Determining your level of service during normal conditions and emergencies will provide your customers with realistic expectations.

If you would like to learn more about AM check out the DWGB AM webpage at

<http://des.nh.gov/organization/divisions/water/dwgb/asset-managment/index.htm> or contact Luis Adorno for assistance at 603-271-2472 or luis.adorno@des.nh.gov. AM resources are available for both small and large systems.

◆ Documentation of system components is very important. Take photos of all your assets BEFORE and AFTER an emergency. Documentation during the emergency and the repair work needed to return to normal operations is extremely important especially for reimbursement purposes. So remember to Document, Document, Document.

◆ Extreme weather events continue to impact water systems. Consider implementing adaptation strategies to deal with these extreme weather events such as elevating or relocating equipment to higher elevations, installing flood barriers or increasing storage. You may already be doing some of these strategies. Check out the DWGB Climate Resilience for Drinking Water and Wastewater webpage at <http://des.nh.gov/organization/divisions/water/dwgb/climate-resilience.htm> for tools and resources.

- ◆ Even though backup power is only required for large systems, small systems are encouraged to have backup power capabilities or at the very least, install the transfer switch and/or electrical plugs ahead of time so that if you do borrow/rent a generator its ready to be plugged in.
- ◆ If your system does not have backup power it should be stated in your EP. A generator information form is available which can be used to store key information about the required generator size and type ahead of time in case you need to purchase or borrow a generator. The form is available on the DWGB webpage at <http://des.nh.gov/organization/divisions/water/dwgb/wseps/documents/generator-info-form.pdf>
- ◆ If your systems does have a generator(s), consider including step by step instructions on how to start-up and shut down the generator (s).

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-The third bulletin will discuss Alternate Water Sources-



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#3 ALTERNATE SOURCES

- ◆ There may be a time where an emergency event at your system would require customers to need to use an alternate water source. An emergency may necessitate obtaining water from an outside source, or modifying your current treatment capabilities, to meet your basic water needs. If none of these options are feasible you should at least include any future plans to address this issue in your EP.

- ◆ **Bulk Water:** If you simply plan on using a bulk water company it is recommended that you contact the water hauler directly to establish a working knowledge of your bulk water hauler(s) procedure to obtain, transfer, and provide bulk water prior to use of their services. There will be many different scenarios, in regards to bulk water, depending on the system requirements, availability of potable emergency water sources and limitations (regional and seasonal) on the water hauling providers. You don't want to find out that it is not feasible to receive bulk water during an emergency. Preparing written agreements with the bulk water haulers that you contacted and including them in your plan may also be useful.
 - A list of bulk water providers is available on DES fact sheet WD-DWGB-18-2 Emergency Bulk Water for Public Water Systems
<http://des.nh.gov/organization/commissioner/pip/factsheets/dwgb/documents/dwgb-18-2.pdf>
 - This fact sheet contains important information. You should not assume that because a bulk water provider is listed on the DES fact sheet that you are prepared to receive bulk water. The fact sheet lists companies that have requested to be on the list as possible bulk water providers. This list of providers is occasionally updated however ultimately it is your responsibility to have the most current information for these companies.
 - Please note that systems are required to follow requirements for bulk water deliveries per *Env-Dw 304, Emergency Bulk Water for Public Water Systems*. A system can use any bulk water provider even if they are not listed on the fact sheet as long as they comply with Env-Dw 304. If applicable, your plan should include details regarding bulk water deliveries such as contact information for one or two providers, who will be on site during delivery, whether any special equipment is needed, and who fills out and submits the notification form to the DES Drinking Water and Groundwater Bureau which is required to be submitted within 2 business days of a delivery.

- ◆ **Bottled Water:** For larger systems, tank trucks may not be a viable alternate water source option due to high volume needs. Or if you do not have an atmospheric storage tank, bulk water delivery from a tank truck may not be an option. Therefore your EP should include a plan for obtaining and distributing bottled water. Consider quantities needed, who will be responsible for picking it up, plans for distribution, etc.

- ◆ **Interconnections:** If you have another water system nearby is it feasible to connect? If yes, have you discussed the feasibility of connecting to that system? If yes, include date and contact person and be sure to list them on your notification list. Attach a general description of how you would make the connection and include any mutual aid agreements.

◆ **New Source/Reactivation:** A system may need to activate an alternate source of drinking water as rapidly as possible to avoid interrupting service to its customers. Simply turning on a pump in an unused well or connecting a new or inactive well to the water system can potentially threaten public health if measures are not taken to verify that the quality of water served to customers is safe to drink. For this reason, DWGB has developed guidelines for the activation of emergency water supply sources for emergency wells and interim emergency wells which are listed on the DES fact sheet WD-DWGB-18-4 Emergency Water Supply Wells for Public Water Systems.
<http://des.nh.gov/organization/commissioner/pip/factsheets/dwgb/documents/dwgb-18-4.pdf>. **Before any unapproved source is used it needs to be approved by DWGB.**

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-The final bulletins will discuss communications, notifications and general information-



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#4 EMERGENCY COMMUNICATIONS

- ◆ One of the most common issues for any emergency event is communications. So it is important to spend some time reviewing your EP to make sure the correct people are listed, their roles and responsibilities are clearly outlined and their contact information is correct and adequate. Do not designate a person to make decisions if they do not have the proper authorities to do so or if they are not going to be available when needed.

- ◆ Per Env-Dw 503.02 *Notification of Impairment*, systems are required to contact the DWGB within 24 hours after discovery of the following:
 - Actual or suspected tampering, sabotage, security breach, or any suspicious incident at the water system;
 - Damage to or depletion of the source of the supply or water system facilities which impairs the quality or sufficiency of the supply; or
 - Interruption of service of a pressure zone or the entire water system due to an extended power outage, line break, or other cause.
 - Events such as minor planned service activities do not need to be reported. However, any event that may impact a significant group of customers or which may generate media interest should be called into the DWGB. If DWGB receives a call from the media then it helps when we are already aware of the issue.
 - It is important to keep your customers and DWGB updated on emergency response status and when to expect a return to normal operations. If the impairment is anticipated to last more than 48 hours, the system owner is required to notify affected customers of what the impairment is, the corrective actions taken or planned, and the expected timeframe for resolution.

- ◆ Per Env-Dw 503.03 *Designation of Emergency Operator*, the owner of a community water system must designate another person to take charge of the system in the event that an emergency occurs during the owner's absence. For systems serving 1,000 or more people, the designee shall be a certified operator.

- ◆ The State Police number changed back in 2011 so be sure your plan has the updated number: **603-223-4381**. This is the number you would need to call when notifying DWGB after regular business hours of an emergency that cannot wait until the next business day. If you do need to contact DWGB after hours be sure to ask for the "on-call person at DES" when you call the State Police.

- ◆ Remember that all events start locally. Get to know your local emergency management director and local police. They are there to assist you during emergencies. Municipal and large systems should be part of their local emergency operations center.

- ◆ If you are not already a member of the NH Public Works Mutual Aid (NHPWMA) program, consider signing up. For only \$25/year you can have access to resources all over the state when needed. The NHPWMA program is a network of communities that assist each other during emergencies; currently the network has over 160 members statewide. Membership offers an easy and inexpensive way to improve your emergency response

capabilities, provides prompt access to equipment and personnel appropriate for the job, the ability to request aid for small events that are not declared disasters, and FEMA reimbursement aid during declared disasters. Free memberships for 2015 are available for new members until May. Contact me at the number below for information. Links to the NHPWMA program are available at http://des.nh.gov/organization/divisions/water/dwgb/wseps/mutual_aid.htm . If you are already a member, be sure to include that in the Mutual Aid section of your EP and include instructions on how to request and provide aid through any mutual aid agreements you have.

◆ It is important to include details and adequate information on how to implement emergency notifications including a boil order. It takes a lot of resources to conduct the public notice, perform the sampling and troubleshoot and address the issue. Notification of the public leads to numerous inquiries regarding uses that require boiling procedures and corrective action taken by the water supply owner. It is important to clearly identify in your EP the chain-of-command and roles and responsibilities. The operator should be handling the technical issues and not answering phone calls. The attached guidance document was developed to provide the basic steps for implementing acute contaminant notification procedures and should be included for reference in your EP. Updated copies of public notices should also be included in your EP so that you have a paper copy in case you do not have power or access to the internet. Public notices are available at www.des.nh.gov, go to the "A to Z" list and select, "Public Notice (for Public Water Systems)".

- Boil Orders and other water quality advisories may be issued for the following reasons:
 - Detection of *E.coli*.
 - Failure to have sample results analyzed for *E. coli* after testing positive for total coliform.
 - Distribution system failures, such as a main break, cross connection, or other event such as a power outage that causes system pressure to drop significantly for an extended period of time.
 - Detection or suspicion of waterborne pathogens.
 - Flooding or failure of water supply equipment at the pump house or wellhead.
 - Failure of a significant treatment or disinfection process.
 - Violation of a turbidity standard.
 - Nitrate or nitrite exceedances.

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-The final bulletin will provide General Information-

Public Water System Acute Contaminant Notification Procedure/Guidance

NHDES-Drinking Water and Groundwater Bureau (DWGB)

There may be a time when a public water system will need to perform public notice due to a detection in their water sample such as *E.coli* or nitrates. This guidance document can be used to assist systems with the three basic components of an acute contaminant event: Public Notice, Sampling & Alternate Water Source, and Assessment & Correction. **Note: The steps listed below may not include every detailed step. Different steps may be required and are based on system size and source type. Close communication among DWGB staff, the water system and local officials is essential.**

1. Public Notice

- ◆ Receive notice of acute contamination (*E.coli* or nitrate) from your laboratory, operator or DWGB.
- ◆ Notify DWGB within 24 hours at **603-271-2513** (M-F, 8-4) or the NH State Police after hours at **603-223-4381** (ask for the on call person at DES). The DWGB will issue a letter with additional instructions.
- ◆ Designate a lead person for notifications, public information, and communications. Designate a lead person for sampling and correcting the contamination. Staff assigned to "notification" should perform the following duties:
 - Contact the Town Health Officer to notify them of the problem and how it is being addressed.
 - Refer to the following DWGB Fact Sheets to help answer questions: WD-DWGB-4-8 Boil Order Advisories; WD-DWGB-4-12 FAQs about Boil Orders ; WD-DWGB-3-9 Nitrate/Nitrite in Drinking Water.
 - Establish point of contact for all outside requests for information.
 - Print public notice forms from www.des.nh.gov -Go to the "A to Z" list and select, "Public Notice (for Public Water Systems)".
 - Complete and distribute required public notice forms according to DWGB instructions. Use website, email, and/or reverse 911 for quickest communication, followed by required door to door paper notice. Record phone voicemail message for resident calls.
 - Contact critical customers such as health care facilities, schools, daycares, restaurants, as they may need to implement additional precautions.
 - Once public notice is distributed, sign the certification (within 10 days) and return to DWGBinfo@des.nh.gov or fax to 603-271-5171.
 - Provide regular updates to customers, DWGB and Town Health Officer throughout the advisory.
- ◆ **LIFTING THE BOIL ORDER OR DO NOT DRINK NOTICE** - Await DWGB authorization to Lift before distributing notification to all consumers.

2. Sampling & Alternate Water Source

- ◆ Maintain at least 6 spare bacteria sample bottles and 2 nitrate bottles on hand for acute response follow-up. Rotate bottle inventory to prevent container expiration.
- ◆ DWGB technical staff will be in contact to begin troubleshooting, provide instructions for sampling, and to set up a site inspection.
- ◆ For all systems, 3 "repeat" bacteria samples and a "triggered" sample from each active well source are required within **24 hours** of the notice of a positive bacteria, BEFORE chlorinating the system. More samples may be needed to better isolate the problem or for larger service populations. Discuss and agree on the locations for the repeat, triggered samples and additional samples with DWGB staff.
- ◆ Contact your laboratory to confirm they can process your samples and that they can perform enumeration sampling for triggered monitoring. Request at least 6 additional sample bottles (for lifting the boil order notice later). Some laboratories do not accept bacteria samples after noon on Fridays. Request that your Lab call you as soon as results are available as this impacts follow-up actions needed to return to normal operation.
- ◆ Collect the repeat bacteria (or confirmation samples for nitrate if required) samples and deliver to the laboratory by 24 hours. You must use the "repeat" and "triggered" sample forms from your Master Sampling Schedule for bacteria, or the chemical form for nitrate.
- ◆ Consider providing an alternate water source such as bottled water (this is not required by the state but may be helpful to your customers and reduce complaints).
- ◆ *LIFTING THE NOTICE* -
 - BACTERIA: Once the assessment and corrective actions are completed, you must collect 2 sets of 3 samples each at least 24 hours apart, with no chlorine residual (<0.1 mg/L). Lift samples must be submitted on the General System Evaluation sampling forms from your Master Sampling Schedule, and must list the chlorine residual at 0.1 or less on the chain of custody and the lab report.
 - NITRATE: The number of samples to lift a Nitrate Advisory will be determined by DWGB technical staff, and must all be <10 mg/L.
 - BOTH: Contact DWGB when the lift samples have been completed to request Approval to Lift the Notice. All samples must show "Absent" or zero for both total and *E.coli* bacteria or < 10 mg/L in order to lift the Notice.

3. Assessment & Correction

◆ Based on the monitoring results an assessment may be required. In the case of a boil order a DWGB Inspector or designee may complete the assessment with a water system representative. Assessment forms are available at <http://des.nh.gov/organization/divisions/water/dwgb/categories/forms.htm>.

◆ The Assessment report will identify any issues that must be corrected in order to address the contamination. The standard time frame to correct and notify DWGB in writing, with photos, is 30 days. Additional time may be granted if justified and requested and approved in writing by DWGB.

◆ *LIFTING THE NOTICE-*

- All issues identified must be corrected and accepted in writing by DWGB.
- DWGB must receive 2 sets of 3 samples each, with no chlorine residual, collected at least 24 hours apart, showing "Absent" or zero total and *E.coli* bacteria.
- DWGB technical staff will establish the number of nitrate samples <10 mg/L required to lift a Nitrate Advisory.
- DWGB will notify the system in writing when the Notice may be lifted. Follow procedures listed in the Notice until you have received the authorization to Lift.



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#5 GENERAL INFORMATION

- ◆ As you review and update your EP please don't think of it as "just another requirement". We do not require the EPs because we want to create more work. They are required because it's important to have a plan for protecting public health and managing drinking water needs during an emergency. So, do not write your plan for DWGB, write it with your staff/representatives and customers in mind. Each system is very different therefore each plan is unique. Ultimately it is the owner's responsibility for managing an emergency at the water system.

- ◆ Some systems have not looked at their EP since it was last submitted in 2009. The good news is that you haven't had to use it but the bad news is that you haven't been reviewing it to make sure it's accurate. It should be updated at least annually. Take time to make sure your EP is a useful document. Make sure it is easy to read and follow but don't leave out important details. Do not leave required sections blank. Saying "Not Applicable" is better than no answer at all. You do not want someone to assume whether something can or can't be done.

- ◆ We haven't been the Water Supply Engineering Bureau in many years so please make sure to update the Bureau name to Drinking Water and Groundwater Bureau.

- ◆ The first goal for the DWGB is to make sure EPs are submitted on time. Then, we will review the plans and will follow up with systems as necessary if there are any questions or improvements that need to be made.

- ◆ If you are submitting your EP electronically and it does not include signatures you can submit a separate scanned signature page via e-mail or you can mail a paper copy of the signature page. Either option is acceptable.

- ◆ If you don't have an Appendix as part of your EP already you may want to consider including one with important attachments such as:
 - Up to Date Fact Sheets and Public Notices.
 - Material Safety Data Sheet (MSDS): For treatment chemicals so handling and safety information is readily available for water system representatives or first responders.
 - Specific Emergency Event procedures which outline step by step instructions on specific event types such as main breaks, power outages, cyber security event, etc.

- ◆ Whether it's a tabletop discussion of procedures during a board meeting or a full scale exercise, don't forget to practice your EP. Practice helps to identify areas of improvements and keeps staff/water system representatives up to date. New board members and staff need to be trained. Awareness provides for a more effective plan.
- ◆ There are a variety of funding programs available to assist with emergency planning, response, and reducing vulnerabilities. Below is a list of some of the available programs. Check out the websites listed for more information:

Agency	Funding Program	Basic Information	Eligible Systems	Website
NH Homeland Security & Emergency Management	Emergency Management Performance Grants	50% grant	Local Governments (municipal water systems, village districts, etc.)	https://apps.nh.gov/blogs/hsem/
EPA/FEMA	FedFUNDS	Funding tool with tailored information for water & wastewater utilities about applicable federal disaster funding programs	Depends on the program	http://water.epa.gov/infrastructure/watersecurity/funding/fedfunds/index.cfm
NHDES-DWGB	Local Source Water Protection Grants	Up to \$20,000 for source water protection projects including security	Water suppliers, municipalities, and other local organizations	http://des.nh.gov/organization/divisions/water/dwgb/dwspp/lswp_grants.htm
NHDES-DWGB	Asset Management Grant	Up to \$15,000 (50% match) to conduct asset management program activities	Community water systems serving 500 people or more	http://des.nh.gov/organization/divisions/water/dwgb/asset-management/index.htm
NHDES-DWGB	Record Drawings Grant	Up to \$1,500 (50% match) to complete water system record drawings	Community water systems serving 500 people or less	http://des.nh.gov/organization/divisions/water/dwgb/capacity/documents/record-drawing-grant-app.doc

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