

EMERGENCY WATER PLAN GUIDANCE

North Carolina Department of Health and Human
Services, Emergency Preparedness and Outbreak
Coordinator Division of Public Health,
Environmental Health Section

The objective of this emergency water plan is to provide context for retail restaurants, child care centers, and assisted living facilities to ensure safe water use and to mitigate contamination risks during water service disruptions. It outlines procedures to ensure food safety, hygiene, and service quality, while protecting the health of staff and patrons, ensuring preparedness and operational steadiness during emergencies.



NC DEPARTMENT OF
**HEALTH AND
HUMAN SERVICES**
Division of Public Health

Introduction

During incidents that disrupt the availability of drinking water on a large-scale or regional basis, it is crucial to clearly define the roles and responsibilities of those involved in locating, securing, and delivering an Emergency Drinking Water Supply (EDWS). This ensures the safe use of water to protect public health and maintain food safety across retail restaurants, child care centers, and assisted living facilities. This guidance offers step-by-step instructions for owners, managers, and safety officers on best practices for minimizing water contamination risks. With the potential impacts from flooding, power outages, and compromised water systems, adherence to these protocols, including those required under boil water advisories, is essential. Use this document to evaluate existing procedures, identify and address gaps, update site-specific protocols, develop new procedures as necessary, and train staff accordingly.

Understanding Water Status

Water safety alerts – including boil water advisories, do-not-use alerts, and do-not-drink orders – provide essential guidance on when and how to use water safely.

- **Boil water advisories** require boiling water before use to ensure water is safe for consumption.
 - Advisories are generally issued if there has been a break in a water main or the system has lost pressure. An advisory does not mean bacteria have been found in the water. It is a precautionary statement issued before water testing has been completed.
- **Boil water notices** also require boiling water before use to kill harmful bacteria.

Notices are issued when contamination has occurred in the water system, or the water violates the Safe Drinking Water Standards and must be treated or boiled before use. Notices are more serious than boil water advisories, because there is known contamination.
- **Do not use alerts** and **do not drink orders** restrict any use of water for consumption, food preparation, or hygiene.
 - Notifications may be issued in response to bacterial or chemical contaminants in the water supply, indicating that the water is so severely contaminated it should not be consumed. In such cases, boiling or disinfecting the water may not provide sufficient protection.
 - During a Do Not Use alert, water from the affected water system must not be used for drinking or consumption.

Establishments should consistently rely on updates from local health departments, state emergency management, and environmental health agencies to remain informed. As illustrated in **Figure 1** below, a water alert issued for the city of Hendersonville, NC, during Hurricane Helene in 2024 advised residents to practice mindful water usage where feasible. Establishments must maintain regular communication with water utility providers, local health departments, and relevant authorities, such as the North Carolina Department of Health and Human Services (NCDHHS), to receive timely and accurate status updates. This proactive communication is essential for adapting to changing water safety conditions and implementing necessary protective measures effectively.

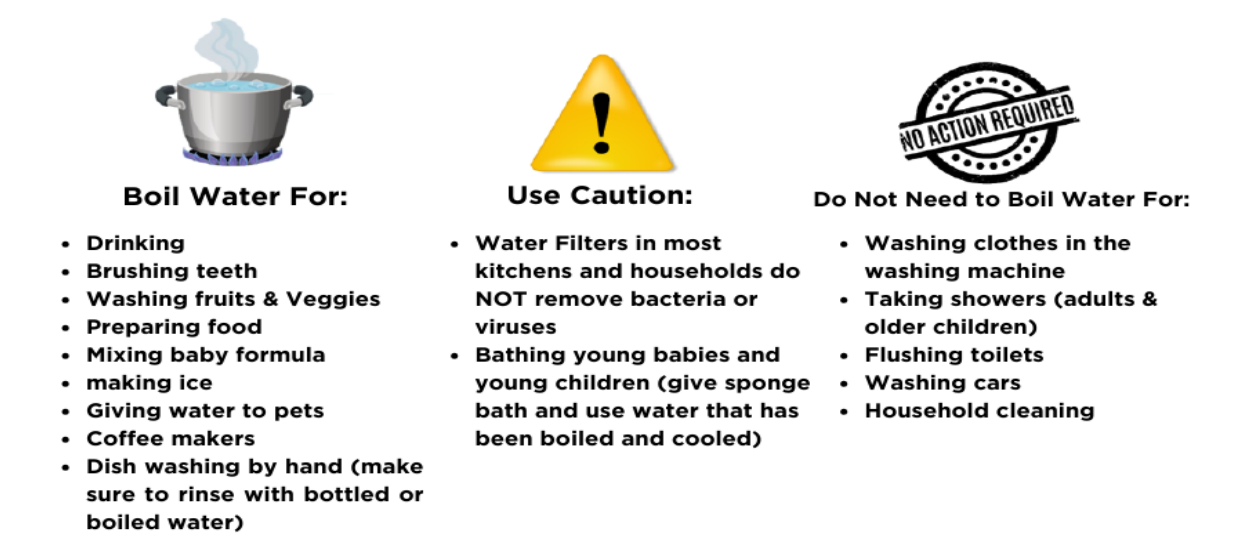


Figure 1. Hendersonville, NC 2024 Water Advisory

During a **Boil Water Notice**, take extra precautions to protect vulnerable populations from potential health risks. Bathing in water that has not been boiled is not recommended, as it can increase the risk of infection. This is especially important for elderly individuals and infants, who may have weaker immune systems and are more susceptible to infections.

Those in child care facilities and assisted living facilities should exercise heightened caution. This includes not only avoiding bathing but also refraining from using contaminated water for any hygienic purposes, such as washing hands or brushing teeth, without boiling it first. Individuals with compromised immune system – such as people infected with HIV/AIDS, cancer patients, transplant recipients taking immunosuppressive drugs, and those born with immune deficiencies – are at an even higher risk. They should be extremely careful and avoid contact with contaminated water whenever possible.

Additionally, care must be taken to prevent contaminated water from encountering open wounds, as this can introduce harmful bacteria and pathogens directly into the body, leading to serious infections. In such situations, it is advisable to use boiled or bottled water for cleaning and dressing wounds to ensure safety.

Alternative Water Sources

When sourcing water during a boil water advisory, it is important to utilize only **APPROVED** vendors or local health department-approved supplies. Consider using portable water tanks or water filtration systems that meet National Sanitation Foundation (NSF) standards to ensure water quality and safety. Be sure to check that any filtration systems are maintained and regularly serviced to guarantee effective operation. For onsite water storage, store water in clean, covered containers clearly labeled as potable to prevent contamination. Ensure that these containers are made of food-grade materials suitable for water storage. Before refilling these containers, properly sanitize them using a solution of bleach and water, following recommended ratios, to eliminate any potential bacteria or contaminants. Regularly inspect stored water for signs of cloudiness or sediment, and rotate supplies to maintain freshness.

Creating a State Emergency Drinking Water Supply Plan

Prior to an emergency, it is helpful to bring together key stakeholders to discuss emergency drinking water procedures and protocols. These stakeholders may include representatives from local and state health departments, emergency management agencies, water utility providers, public health officials, and other relevant parties. By bringing together diverse perspectives and expertise, states can ensure that their EDWS Plans are comprehensive, practical, and capable of addressing potential emergencies efficiently.

The State Emergency Operations Plan (SEOP) is a crucial document to review, as it outlines general guidelines for how a state executes its response and recovery responsibilities during an emergency or disaster event, including situations that require an EDWS. **Figure 2** below illustrates a detailed four-step process for creating an emergency drinking water supply plan.



Figure 2. Creating an Emergency Drinking Water Supply Plan Process

The emergency operations plan (EOP) is essential for protecting consumers and staff during water-related crises, serving as a vital tool for ensuring a swift and effective response to unexpected water emergencies, safeguarding public health, maintaining business continuity, and minimizing service disruptions. Key elements of the plan should include procedures for sourcing and securing an alternative water supply, communication strategies with staff and regulatory agencies, step-by-step instructions for water use restrictions, guidelines for preventing contamination, and staff training protocols.

Ensure that all staff are trained on these protocols and are provided with emergency supplies, such as single-use hand sanitizers, disposable gloves, and pre-packaged foods that require minimal handling. It is the duty of the owner, manager, or person-in-charge (PIC) to perform initial and ongoing assessments to maintain compliance with water safety requirements. Key personnel must be familiar with the plan's location. Retail establishments should approach the submission of their EOP with patience and understanding because the review process is vital to ensuring the plan's effectiveness, safety, and compliance with regulations. Regulatory agencies have the responsibility to thoroughly examine EOPs to confirm that they meet health, safety, and operational standards. This review often involves detailed scrutiny to ensure that emergency response protocols align with best practices, public safety requirements, and local laws.

Emergency Operations Plans Elements

When creating a water-based EOP for retail restaurants, child care centers, and assisted living facilities, it is important to consider the elements in **Figure 3** to ensure safe water use and mitigate contamination risks during water service disruptions. Incorporating these elements creates a comprehensive and practical EOP that enhances safety, operational continuity, and regulatory compliance in any water-related emergency.

Contacts and Communication Plan	Alternative Water Sources	Boil Water Advisory Protocols	Critical Equipment Monitoring	Hygiene and Sanitation Practices
Maintain an updated contact list for key personnel, local health authorities, and water suppliers. Establish clear lines of communication for issuing notifications to staff, families, and residents.	Identify and establish agreements with alternative water suppliers (e.g., bottled water providers) and determine on-site storage capacities for water supplies.	Outline detailed steps to follow during boil water advisories, including guidance for boiling, disinfecting, and using water for food preparation, drinking, and handwashing.	Identify equipment that relies on water (e.g., ice machines, coffee makers) and provide shutdown or sanitation procedures during service disruptions.	Provide guidelines for alternative handwashing methods (e.g., using hand sanitizer) and safe cleaning practices when regular water service is unavailable.
	Water Quality Monitoring		Food Preparation Adjustments	
	Include protocols for testing and verifying the quality of water from alternate sources to ensure safety before use.		Develop menu options using pre-packaged or low-water food preparation methods to reduce water use while maintaining food safety	
Wastewater and Sanitation Management	Staff Training		Plan Review and Updates	
Establish protocols for the safe disposal of wastewater and sanitation practices that mitigate contamination risks.	Train all relevant staff on emergency water procedures, including storage, safe water use, and contamination prevention practices.		Regularly review and update the emergency water operations plan to reflect new regulations, lessons learned, or changes in facility operations.	

Figure 3. EOP Elements

Operational Adjustments

During an unpredictable water emergency, such as a hurricane, establishing clear operational adjustments for managing resources effectively is important. Assign responsible personnel to implement the emergency plan and maintain an up-to-date contact list. Ensure access to alternative water sources, adherence to safe water usage practices, and the identification of critical equipment that requires monitoring. Menu modifications, focusing on pre-packaged or minimally processed foods, can help reduce water usage. **Figure 4** provides additional detail for safeguarding food safety and protecting public health throughout the crisis.

Overall, these operational adjustments offer a structured framework for maintaining safe and effective business operations, while minimizing disruptions and protecting public health. An adjustable and comprehensive emergency water plan not only highlights a business's commitment to customer well-being and regulatory compliance but also plays a pivotal role in supporting trust and fostering resilience within the community during unexpected crises. By meticulously implementing these guidelines, establishments can ensure a swift and organized response to water-related emergencies. The emphasis on continuous evaluation and staff training further enhances preparedness, ensuring that all personnel are equipped to handle unexpected situations with confidence and efficiency. Ultimately, the proactive measures outlined in this plan will help secure the integrity of your operations, protect the health of your customers and staff, and contribute to the overall resilience of your community.

Operational Adjustments				
People	Equipment (water, ice)	Menu Modifications	Sanitation Protocols	Restroom Facilities
• Identify the person(s) responsible for implementing the plan. • Determine critical personnel/positions and outline their tasks. • Maintain an up-to-date list of emergency contacts ◦ Utility companies (water, Power, sewer, gas, etc. ◦ Garbage hauling service ◦ Dry and ice suppliers ◦ Refrigerated trucking companies ◦ Food warehouses ◦ Septic tank pumping services ◦ Local and state health departments ◦ Fire, police, state emergency management agencies ◦ Emergency broadcast frequency numbers	• Develop a plan with vendors to secure a reliable water supply.. ◦ Provide information on the water source • Disconnect equipment with direct plumbing (e.g., ice machines, beverage dispensers) . • Establish a business agreement or procedure for acquiring bottled water if the facility does not regularly stock or provide it. • Post signage at all working sinks and water-using equipment indicating that water from that source must be boiled or not used. • Avoid using contaminated water for cleaning/sanitizing, washing produce, or any food preparation. • Purchase pre-washed or ready-to-eat products • Discard food or beverages prepared with contaminated water.	• Develop an emergency menu, focusing on pre-packaged or pre-cooked items. • Use disposable utensils, plates, and cups • Reduce the drink menu because ice/beverage machines will not be operational Monitoring • Identify the food units, holding cases, equipment to be monitored, and food products to be checked. • Identify the records that need to be kept. ◦ Specify how often • Outline who is responsible for performing the monitoring tasks.	• Pre-plan with your disposal company and arrange for additional waste disposal units to be delivered on-site • Implement alternative hand hygiene methods, such as alcohol-based hand sanitizers. • Use disposable gloves and sanitizing wipes • Block and label handwashing sinks as out of service • Discontinue the use of warewashing machines and automatic dispensers for cleaning agents and sanitizers. • Utilize the three-compartment sink for manual wash, rinse, and sanitize procedures. Follow manufacturer's instructions for manually mixing sanitizers with boiled or other potable water. • Develop a plan for handling waste, including discarded food, during emergencies.	• Plan to either close the establishment or provide alternative facilities, such as portable toilets if restrooms are inoperable, • Implement alternative handwashing methods in all areas where plumbed handwashing sinks are unavailable, including restrooms, kitchen hand sinks, etc. • Use a gravity flow handwashing container with a continuous flow spigot and a catch basin ◦ If equipment permits, water can be allowed to drain into an existing sink. • Empty catch basins into the sanitary sewer using a can wash, toilet, or another operational drain ◦ Plans should include handwashing requirements for employees after emptying catch basins.

Figure 4. Operational Adjustments

Recovery Procedures

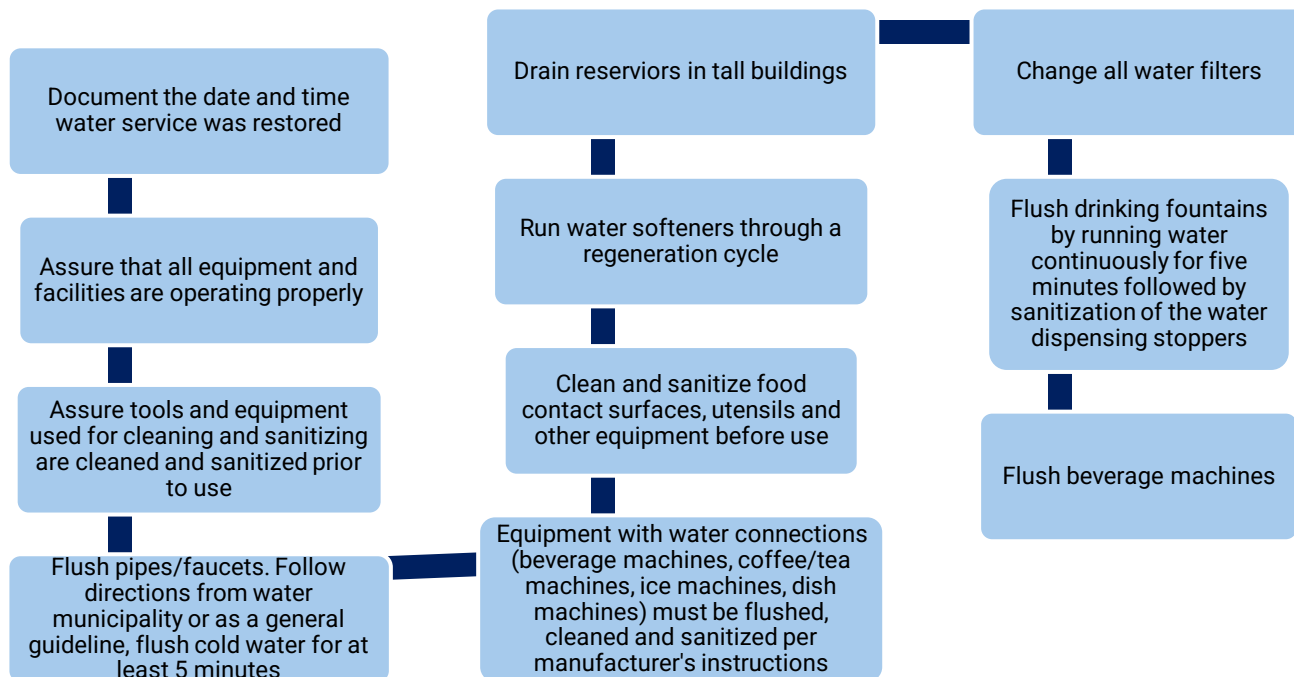


Figure 5. Considerable Key Actions for Returning to Normal Operations

After an interruption of water service, it is vital to follow an organized recovery process to ensure the safe continuation of operations. Begin by flushing all water lines, faucets, and equipment to remove any contaminants that may have entered the system during the outage. Inspect and, if necessary, clean and sanitize all food contact surfaces, utensils, and equipment that were used during the disruption. Verify that the water supply is safe by checking for any boil water advisories or quality notices from local health authorities before using it for food preparation or cleaning. Restock emergency supplies and review the response procedures with staff to identify any areas for improvement. Recovery involves the necessary steps for returning to normal, safe business operations including re-opening if the facility had to close because of the interruption of water service. Regulatory authorities may have to approve returning to regular operations; check local requirements. A food establishment or an area within the facility that was ordered to cease operations due to an impending health hazard may not re-open until authorization has been granted by the Regulatory Authority. Key actions to consider for returning to normal operation are shown in **Figure 5**, above.

Post-Advisory Reopening Procedures

Once water service is restored, it's essential to thoroughly flush all water lines, faucets, and equipment to remove any contaminants. Following a boil water advisory, adhere to specific procedures to ensure a safe reopening for your restaurant. Begin by flushing the pipes for 5–10 minutes to clear out any remaining contaminants. Before resuming operations, test ice makers and other water-connected devices to confirm they are functioning correctly and safely. Next, sanitize all equipment that encounters water, such as sinks and beverage dispensers, and disinfect any surfaces that may have been exposed to potentially contaminated water.

It is important to conduct a comprehensive review of water safety protocols with your staff to reinforce these procedures. Additionally, verify water safety with local health authorities before using it for food preparation or cleaning. Finally, ensure there are no lingering water quality issues before fully reopening, so you can operate safely and confidently for both patrons and staff.

Water System Maintenance and Inspections

It is crucial to conduct thorough inspections of pipes and plumbing for any damages or leaks that may have occurred due to flooding or debris. Identifying and addressing these issues promptly can prevent further complications and ensure safe water use. Additionally, it is essential to check for cross-connections and implement backflow prevention measures to protect against contamination. Following a boil water advisory, be sure to replace filters in all water filtration systems and ice machines, as these can harbor harmful bacteria. Equipment that uses water directly, such as soda fountains and dishwashers, should also be sanitized according to manufacturer guidelines to ensure all surfaces are free from contaminants. By prioritizing these inspections and sanitization procedures, you can help maintain a safe environment for your restaurant and its patrons.

Conclusion

After each incident, it is critical to review the effectiveness of your emergency water plan and make any necessary adjustments. Establishing a regular review and training schedule (e.g., twice a year) ensures that all plan information is up-to-date, and that staff are familiar with the contents and any recent changes. Conduct debriefs with staff to gather feedback and improve future responses. By proactively addressing potential risks, securing alternative water sources, adjusting operations, and coordinating with authorities, establishments can navigate water-related emergencies with minimal disruption. Regular training and updates to the emergency plan ensure that staff are prepared to respond effectively, safeguarding both the business and the health of patrons. Owners, managers, and people in charge hold the primary responsibility for implementing safety protocols and ensuring water safety, taking the lead in monitoring compliance and addressing any issues that arise.

Adhering to these protocols demonstrates a commitment to safety and regulatory compliance, fostering trust among patrons and the broader community. Regular training and updates to emergency plans ensure that staff are well-prepared to handle unexpected situations efficiently, reducing the potential for panic and confusion. Additionally, by coordinating closely with local health departments and other regulatory bodies, establishments can stay informed about water safety status and receive timely guidance and support during emergencies. Implementing a comprehensive emergency water plan not only helps prevent health hazards associated with contaminated water but also ensures that operations can continue smoothly despite disruptions.

Appendices and Resources

List of Key Contacts & Reasons to Contact

Contact	Name	Telephone	Reason to Contact
Water Utility Operator			Find out problem and how long it may take to repair
Local Health Department Environmental Health Specialist			Must be notified of water loss lasting more than 4 hours
Public Water Supply Section Regional Engineer			To approve backup water source, tanker and connections
NC Department of Health and Human Services Licensing Agent			Must be notified if water is unfit for consumption for licensed facilities
Licensed Plumber			To connect backup water supply to building plumbing
Local Emergency Management Coordinator			Coordinates all requests for state or federal emergency aid
Backup Water Supply Source			To gain approval to obtain water and identify watering point

Helpful Links:

- [Boil Water Advisory: Treating Water for Handwashing and Food Preparation](#)
- [Buncombe County boil water advisory](#)
- [CDC Drinking Water Advisories: An Overview](#)
- [Emergency Watershed Protection Program- North Carolina](#)
- [Hendersonville Water Alerts](#)
- [Mecklenburg County Health Department Backup Water Supply Plan Checklist](#) (revised May 2020)
- [NCWaterWARN: What It Is and How to Access This Vital Resource](#)
- [North Carolina Emergency Response Reference Materials](#)
- [Treating Water for Handwashing and Food Preparation](#)
- [Wake County One Water Plan](#)
- [Wilkes County Boil Water Advisory Information](#)