

**BEAUFORT COUNTY
NORTHSIDE**

NORTH CAROLINA

WATER SHORTAGE

RESPONSE PLAN



Revised 2018

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North Carolina

Water Shortage Response Plan

Table of Contents

	<u>Page</u>
1.0 INTRODUCTION.....	1
2.0 BACKGROUND.....	1
3.0 RESPONSIBLE PARTIES.....	2
4.0 ACTIVATION NOTIFICATION METHODS.....	3
5.0 NOTIFICATION OF REQUIRED RESPONSE MEASURES.....	3
6.0 SEVERITY CRITERIA.....	3
7.0 TRIGGER CONDITIONS.....	4
8.0 LEVELS OF RESPONSE.....	5
9.0 ENFORCEMENT.....	7
10.0 USER REVIEW.....	7
11.0 VARIANCES.....	8
12.0 EVALUATION OF EFFECTIVENESS & REVISION.....	8

1.0 INTRODUCTION

Rules governing water use during droughts and water emergencies adopted on March 19, 2007 dictate that water systems which are required to submit a Local Water Supply Plan shall also submit a Water Shortage Response Plan (WSRP) for review by the Division of Water Resources. The requirements are outlined in North Carolina Administrative Code 15A NCAC 02E. 0607. It is the intent of this document to establish a WSRP for the north side of Beaufort County to minimize the adverse effects of drought and water emergencies while satisfying the requirements of the State.

2.0 BACKGROUND

Beaufort County is divided in half by the Pamlico River. These two halves are named Beaufort County Northside and Beaufort County Southside. Water for the Beaufort County Northside customers is purchased by the Beaufort County Northside Water System from the City of Washington and the Beaufort County Southside Water System. Water purchased from the City of Washington comes from eight ground wells that have been installed into the Castle Hayne Aquifer. These wells, located 5 to 10 miles east of Washington, pump raw water to the City of Washington's Water Treatment Plant, which is located near the Douglas Cross Road Area. The water is then treated to remove odor, iron, manganese, and hardness by the City of Washington Public Works Department. It is then pumped by the Beaufort County Northside Water System to nine elevated storage tanks located across the Northside of the County. During the pumping process the Beaufort County Water Department adds ammonia. This ammonia combines with the chlorine, added by the City of Washington, to make up chloramines. Chloramines are a type of disinfectant which prevents bacteria growth. Beaufort County has a contract with the City of Washington which allows the Beaufort County Northside Water System to purchase 1.6475 million gallons of water per

day and a peak day supply of 2.636 million gallons is allotted. The water purchased from the Beaufort County Southside Water System comes from six ground wells that have been installed into the Castle Hayne and Pee Dee Aquifers. These wells are located along Hwy 33 East 3 to 5 miles east of Chocowinity and along Old Sand Hill Road. These wells pump raw water to two water treatment plants, owned and operated by Beaufort County, which are also located along Hwy 33 East and Old Sand Hill Road. At the treatment plants the water is treated to remove odor, iron, manganese, and hardness. Chlorine and Ammonia (Chloramines) are added as disinfections to make sure there is no disease-causing bacteria present in the treated water supply. The treated water is then pumped to the Cherry Run Elevated Storage Tank located in District I of the Northside Water System.

3.0 RESPONSIBLE PARTIES

Three individuals are responsible for implementing the water shortage protocols:

Mr. Brian Alligood
County Manager
(252) 946-0079
brian.alligood@co.beaufort.nc.us

Mrs. Christina Smith
Public Works Director
(252) 975-0720
christina.smith@co.beaufort.nc.us

Mr. Erick Jennings
Water Systems Manager
(252) 975-0720
erick.jennings@co.beaufort.nc.us

If any of these individuals no longer holds their position, then the responsibilities entailed here carry to their successor. In the event that none of the aforementioned individuals can fulfill their duties in implementing the water shortage protocols, the Board of County Commissioners will be responsible for implementing the protocols.

4.0 ACTIVATION NOTIFICATION METHODS

It is vital to the effectiveness of this plan that water users and system employees are immediately informed when water shortage response protocols are activated. Upon activation, employee emails will be sent out and notices at County buildings will be posted to inform system employees of the protocols. Water users will be notified of water shortage response activation by a reverse 911 phone call, a posting to the Beaufort County Government website, a notice in the Washington Daily News, notices in water bills, and a public service announcement on local television stations.

5.0 NOTIFICATION OF REQUIRED RESPONSE MEASURES

Water Shortage Response Plan provisions will be published in the Washington Daily News and will be available on the Beaufort County Government website in the event that the plan is put into effect. In addition, if changes to the Plan are made, notifications will be provided to all current customers.

6.0 SEVERITY CRITERIA

Several parameters may determine the severity of a drinking water shortage. The two primary conditions will be if the static water levels drop in either the City of Washington's or Beaufort County Southside's monitoring wells, and if a reduction of capability of the City of Washington's or Beaufort County

Southside's water treatment facilities occurs. In addition, severity can be affected as deemed appropriate by the County Manager, Public Works Director, or Water Systems Manager by contaminants in the water system and/or mechanical failure of the water distribution system.

7.0 TRIGGER CONDITIONS

There will be three levels of response, triggered by the aforementioned conditions of severity:

- Level 1 will be activated:
 - Whenever it is predicted that the water level in the Castle Hayne Aquifer will decline to the extent that continued availability of water for human consumption, sanitation, health and fire protection and commercial usage is at risk
 - If a 20% reduction in normal well water levels is noted in Beaufort County Southside monitoring wells
 - Or if the County Manager, Public Works Director, or Water Systems Manager deems it appropriate based upon other unanticipated operating conditions.
- Level 2 will be activated:
 - Any time the static water levels drop in any 3 of the City of Washington's 8 monitoring wells to a level that is within 20 feet of the corresponding production wells intake, or current trends indicate levels will reach said level within the next thirty (30) days
 - Any time the City of Washington's water treatment facilities treatment capability is reduced by 25% of its maximum rates capacity
 - If a 40% reduction in normal well water levels is noted in Beaufort County Southside monitoring wells

- If Beaufort County Southside water treatment plant operation is greater than 18 hours per day per plant
- Or if the County Manager, Public Works Director, or Water Systems Manager deems it appropriate based upon other unanticipated operating conditions.
- Level 3 will be activated:
 - Any time the static water levels drop in any 4 of the City of Washington’s 8 monitoring wells to a level that is within 15 feet of the corresponding production wells intake, or current trends indicate levels will reach said level within the next thirty (30) days
 - Any time the City of Washington’s water treatment facilities treatment capability is reduced by 45% of its maximum rates capacity
 - If 60% reduction in normal well water levels is noted in Beaufort County Southside monitoring wells
 - If Beaufort County Southside water treatment plant operation is 24 hours per day per plant
 - Or if the County Manager, Public Works Director, or Water Systems Manager deems it appropriate based upon other unanticipated operating conditions.

8.0 LEVELS OF RESPONSE

Three levels of response have been selected, each corresponding to various conditions set forth above. Each level of response has a unique set of goals and strategies as shown here:

- Level 1—Voluntary Conservation: A 5% reduction goal from the previous month for water consumption is set. Conditions indicate that there is a potential for shortages. Voluntary conservation is encouraged. Education efforts are ramped up to encourage water conservation, and any evidence of

leaks is investigated and corrected as seen fit. Education efforts should suggest limiting irrigation to one inch per week, preventing runoff and watering of impervious services, washing only full loads in the washer or dishwasher, eliminating play with sprinklers and hoses, and repairing any known leaks.

- Level 2—Mandatory Restriction: A 10% reduction goal from the previous month for water consumption is set. Water supplies are measurably lower than the seasonal norm and are diminishing. Encourage continuation of all voluntary reductions. Restrictions on non-essential uses of water are imposed. Irrigation is limited to one half inch per week between 6PM and 9AM. Use of potable water for washing impervious services is banned.
- Level 3—Emergency Response: A 25% reduction goal from the previous month for water consumption is set. The system is experiencing water shortage at this level and drinking water supply is inadequate. More stringent restrictions are imposed. Continue all restrictions from Level 2. No non-essential uses of water are allowed and other uses of water may be restricted if deemed necessary by the County Manager, Public Works Director, or Water Systems Manager. Irrigation is limited strictly to minimum required amount for the survival of necessary plants.

For the purposes of this Plan, non-essential uses of drinking water are as follows:

- Any ornamental use such as fountains, reflecting pools, and artificial water falls
- Watering gardens, lawns, parks, golf courses (except greens), playing fields, and other recreational areas
- Filling and operation of recreational swimming pools which serve fewer than 25 dwellings
- Non-commercial washing of motor vehicles
- Serving water in restaurants, clubs, or eating places except by specific request

- Refilling of air conditioning cooling towers, except for those used by health care facilities or domestic use if it is deemed necessary to sustain standards of hygiene, health, and sanitation

9.0 ENFORCEMENT

An email contact will be set up so that citizens can report violators of the restrictions set after activation of the Plan. In addition, a citation system will be set up to be administered by the County Manager as follows:

- A first offense will warrant a written warning.
- Second offenses will result in a \$100 fine and a warning.
- Third offenses will result in a \$250 fine.
- Fourth offenses will result in an additional \$500 fine.
- Fifth offenses will result in an additional \$500 fine and a five-day service cutoff.

In addition, during activation of Level 3 Emergency Response protocol, the rates for water consumption may be increased up to 50% to further discourage water waste and to compensate for lost revenues of the water system.

10.0 USER REVIEW

Understanding that review by water users is essential to cooperation and understanding, this Plan will be made available for public review prior to approval of any revisions by the Board of County Commissioners. Each time a change is proposed to the Plan it will be published on the Beaufort County Government website at least thirty days before the Board prepares to discuss its acceptance. This will allow the public adequate time to review the change and appear at the Board's meeting to provide input.

11.0 VARIANCES

Variations to the restrictions outlined in this plan may be granted at the discretion of the County Manager, Public Works Director, or the Water Systems Manager based on the impact on water demand, essential use of drinking water, duration of the variance, alternatives to the variance, social and economic importance, prevention of structural damage, and any other factors deemed important.

12.0 EVALUATION OF EFFECTIVENESS & REVISION

Effectiveness of the Water Shortage Response Plan will be reviewed jointly by the Water Systems Manager, the Public Works Director, and the County Manager each time the plan is activated, or at a maximum of a five-year interval. In addition, the plan must be reviewed to adapt to system additions, alterations, or changes in general circumstance. Recommendations will be made as deemed appropriate to the Board of County Commissioners. Effectiveness will be measured based upon several factors but should include frequency of activation, attainment of desired reductions upon activation, and the number of violation citations.