

# **WATER SHORTAGE RESPONSE PLAN**

## **1. PURPOSE**

The purpose of the Water Shortage Response Plan is to provide guidance to Public Utilities staff, County Administration, and the customers of the Brunswick County Public Utilities during periods of drought and other events that result in a shortage of potable water. The Water Shortage Response Plan is intended to provide a framework of steps and activities to be implemented as conditions require.

## **2. RESPONSIBILITY FOR DECLARATION OF A WATER SHORTAGE**

Under the County's current Water Emergency Ordinance, the Director of Public Utilities or his authorized representative is authorized to declare that a water emergency exists. Depending on the severity of the emergency, voluntary (Stage 1) and mandatory (Stage 2 and Stage 3) staged water use restrictions as described in this ordinance shall be imposed upon all water customers. This declaration shall be made after consultation with the Public Utilities staff, County Administration, and County wholesale customers.

## **3. SHORTAGE RESPONSE ACTION LEVELS**

### **STAGE 1 - WATER CONSERVATION ALERT**

A Stage 1 water shortage emergency may be declared in the event of an immediate water shortage, as so declared by state and/or local officials, or when there are three (3) consecutive days when water demand exceeds eighty percent (80%) of the total water plant production capacity. Water production capacity shall be defined as the maximum volume of water that meets or exceeds state and federal standards that the water treatment plant process can produce during a twenty-four (24) hour period. Water production capacity can vary depending on system component reliability and/or raw water conditions or availability.

### **STAGE 2 – WATER SHORTAGE WARNING**

A Stage 2 water shortage emergency may be declared in the event of an immediate water shortage, as so declared by state and/or local officials, or when there are two (2) consecutive days when water demand exceeds ninety percent (90%) of the water production capacity. Water production capacity shall be defined as the maximum volume of water that meets or exceeds state and federal standards that the water treatment process can produce during a twenty-four (24) hour period. Water production capacity can vary depending on system component reliability and/or raw water conditions or availability.

### **STAGE 3 – WATER SHORTAGE DANGER**

A Stage 3 water shortage emergency may be declared in the event of an immediate water shortage, as so declared by state and/or local officials, or when there is one (1) day when water demand exceeds one hundred percent (100%) of the water production capacity. Water production capacity shall be defined as the maximum volume of water that meets or exceeds state and federal standards that the water treatment process can produce during a twenty-four (24) hour period. Water production capacity can vary depending on system component reliability and/or raw water conditions.

#### **4. NOTIFICATION PROCEDURES**

Upon declaration of each stage of water shortage emergency, the following methods may be used to inform the County staff, wholesale customers, County retail customers, and Industrial Customers.

##### **PUBLIC NOTICE**

The Public Utilities Department staff will draft a Public Notice announcing the Water Shortage Stage and the actions that water customers must take to comply with the Water Emergency Ordinance. The Public Notice will be provided by the County's Public Information Officer to all media outlets that serve the Brunswick County area. The Public Notice will include phone numbers that customers may call with questions.

##### **WHOLESALE CUSTOMER NOTIFICATION**

A copy of the Public Notice will be e-mailed or faxed to the Utilities Director for all of the County's Wholesale Customers. The Public Utilities Director or his authorized representative shall call each wholesale customer to confirm the receipt of the Public Notice and to respond to any questions about the notice.

##### **TRAINING COUNTY STAFF**

A copy of the Public Notice will be provided to the staffs of the Utilities Customer Service Division, Northwest Water Treatment Plant, 211 Water Treatment Plant, and Water Distribution Division. Depending on the stage, a list of possible questions with the recommended responses will be provided to the staff likely to receive calls from the public.

##### **DIRECT MAILING TO CUSTOMERS**

Depending on the stage and severity of the event, the County may elect to send a direct mailing to all County water customers. In the event of an immediate need to reduce water consumption, a notice would be sent to all water customers. If the event is an expected event, an insert to the water bill would be the method of communication.

##### **NEWSPAPER ADVERTISEMENT**

Depending on the stage, the County may elect to purchase space in the local newspapers to inform the public. The ad would include the language included in the Public Notice.

#### **5. STAGE CONDITIONS**

The basis for the determination of a water emergency shall be the County's ability to provide potable water to its customers. For a Stage 1 emergency, a declaration will be made when the potable water demand or the anticipated potable water demand will be eighty percent (80%) of the combined treatment capacity of the County's Northwest Water Treatment Plant and the 211 Water Treatment Plant for more than three (3) consecutive days. If the available raw water supply or the treatment capacity is diminished, the eighty percent (80%) level will be determined based upon the amount of raw water available or treatment capacity available.

For a Stage 2 emergency, a declaration will be made when the potable water demand or the anticipated potable water demand will be ninety percent (90%) of the combined treatment capacity of the County's Northwest Water Treatment Plant and the 211 Water Treatment Plant for more than two (2) consecutive days. If the available raw water supply or the treatment capacity is diminished, the ninety percent (90%) level will be determined based upon the amount of raw water available or treatment capacity available.

For a Stage 3 emergency, a declaration will be made when the potable water demand or the anticipated potable water demand will be one hundred percent (100%) of the combined treatment capacity of the County's Northwest Water Treatment Plant and the 211 Water Treatment Plant for more than a twenty-four (24) hour period. If the available raw water supply or the treatment capacity is diminished, the one hundred percent (100%) level will be determined based upon the amount of raw water available or treatment capacity available.

The available raw water supply shall be determined by the capacity of the Lower Cape Fear Water and Sewer Authority to supply raw water to the County from its Kings Bluff Water Pump Station for the Northwest Water Treatment Plant. The raw water flow is measured at the pump station and at the Northwest Water Treatment Plant. The available raw water supply for the 211 Water Treatment Plant shall be determined by the combined capacity of the wells supplying the plant. The flow is measured at each well and at the plant.

## **6. COMPLIANCE WITH THE PROVISIONS OF THE PLAN**

The water plant staff shall monitor potable water levels pumped into the system at the plant and at the booster pump stations to determine the overall demand. By comparing the flow records prior to issuance of the declaration, the staff can determine the level of compliance in each of the pressure zones associated with the booster pump station. The water distribution staff will concentrate its efforts in those areas identified by the plants with the highest levels of apparent non-compliance. The distribution staff will attempt to educate those property owners who are not in compliance with the declaration. After one warning, property owners would be fined for non-compliance.

## **7. PLAN REVIEW AND ADOPTION**

The draft Water Shortage Response Plan was provided to the County Public Utilities staff for review and comment. After those comments had been addressed, copies were provided to the County Manager, Customer Service Manager, Public Information Officer, and Director of Engineering Services for review. After their review and approval copies were provided to our wholesale customers for their review and comments. A draft copy of the plan was provided to the NC DENR staff in the Wilmington Regional Office. A final draft will be sent to the Board of Commissioners for review and approval. Amendments to the plan would follow the same process with Board of Commissioners approval required for all amendments.

## **8. VARIANCES**

All appeals for a variance must be submitted to the Director of Public Utilities in writing. The Director of Public Utilities will review the request and the following criteria will be used to determine if a variance can be granted:

- A. Impact on the overall water conservation goals
- B. Potential property damage
- C. Potential alternative sources of water supply
- D. Volume of water to be consumed
- E. Duration of usage
- F. Number of similarly situated property owners

The Director of Public Utilities must provide a written determination on the request for a variance within three (3) working days of the receipt of the variance. If the request for a variance is denied, the property owner has the right to appeal the determination to the Board of Commissioners. The Board of Commissioners would hear the appeal at the next regularly scheduled meeting provided the appeal request is received at least seven (7) days in advance of the next meeting.

## **9. EVALUATION**

During the declaration of the Water Shortage Event, the County staff will monitor the water usage. A spreadsheet will be developed to track water produced at the plants and water pumped at the various booster pump stations. The pre-declaration usage will be compared to the post-declaration usage to determine an overall percentage reduction in demand. If the desired reduction in demand has not occurred, changes in the plan or enforcement of the plan will be recommended.

After the water shortage event has concluded, a post-event evaluation will be held. Changes in the Water Shortage Response Plan will be recommended to the Board of Commissioners based upon the problems and issues that were discovered during the event.