# Pamlico County Water Department Water Shortage Response Plan March 15, 2023

## Introduction

Pamlico County Water System, subject to G.S. 143-355 (I), is required to develop a Water Shortage Response Plan (WSRP) as part of the County’s Local Water Supply Plan (LWSP). Recently adopted rules governing water use during droughts and water emergencies (15 A NCAC 02E. 0607) stipulate specific issues that must be included in this plan.

The purpose of this plan is to identify the possible causes of drinking water shortages within the Pamlico County Water System and establish a response for each.

## Authorization of Implementation

When conditions exist so as to constitute a water shortage within the Pamlico County Water System as outlined by the trigger conditions in this document, the County Manager and/or the Water Department Field Operations Manager, with support from the Pamlico County Board of Commissioners, is/are authorized to declare a water conservation emergency.

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## Notification of WSRP Activation and Conservation Measures

Staff and all effected water users will be notified when this WSRP has been activated.

County employees will be notified by employee e-mail announcements, notices at municipal buildings, and phone call made to all department heads.

Customers and other effected water users will be notified by one or more of the following methods:

1. Radio
2. Television
3. Newspaper
4. Letters or door hangers posted on customers doors or handed out
5. The Pamlico County Website
6. Reverse 911

Any change in the water shortage situation will be announced through the same media outlets used initially.

## Water Use Classification

During a declared water shortage emergency, the following water use classifications will be used:

Class 1: Essential Water Uses

* Schools and Fire Departments
* Required for health care

Class 2: Socially or Economically Important Uses

* Home water use including kitchen, bathroom, and laundry
* Minimal watering of vegetable gardens and trees
* Outdoor commercial watering using conservation measures
* Commercial car washes
* Restaurants and other commercial establishments
* Churches

Class 3: Non-Essential Uses

* swimming pools
* non commercial washing of motor vehicles
* outdoor watering and impervious surface washing (public/private)

# Response to the Water Shortage Emergency

Once a water shortage emergency has been declared by the authorized staff as outlined in this document and approved by the Pamlico County Board of Commissioners, (or if time constraints do not allow, approved by the Chairman of the Board,) one of the three severity phases shall be implemented as needed:

### Voluntary Phase

The Voluntary Phase of this plan will be implemented when water supply conditions indicate a potential for shortage.

When conditions warrant the Voluntary Phase, the following actions will take place:

* + 1. Issue a water shortage advisory and inform the public of the potential problem.
		2. Request voluntary conservation for all water uses and provide helpful hints on how to conserve water.
		3. Restrict some Class 3 water use if necessary.

### Mandatory Phase

The Mandatory Phase of this plan will be implemented when water supply conditions are significantly lower than normal and water shortage conditions are expected to persist.

When conditions warrant the Mandatory Phase, the following actions will take place:

* + 1. Issue a water shortage alert and inform the public of the potential problem.
		2. Ban all Class 3 water use.
		3. Request voluntary conservation for all other water uses and provide helpful hints on how to conserve water
		4. Restrict or ban some Class 2 water use if necessary.

### Emergency Phase

The Emergency Phase of this plan will be implemented when water supply conditions are substantially diminished and pose an imminent threat to human health or environmental integrity.

When conditions warrant the Emergency Phase, the following actions will take place:

* + 1. Issue a water shortage emergency and inform the public of the potential problem (include any possible health advisories).
		2. Ban all Class 3 water use.
		3. Restrict or ban some Class 2 water use when necessary.
		4. Request voluntary conservation for all water uses.
		5. Request that Class 1 water use in schools be restricted.

**Water Shortage Triggers**

The Pamlico County Water System operates 4 water treatment plants. Each treatment plant is served by 2 groundwater wells in the Castle Hayne Aquifer. Under normal conditions, only one of the two wells is needed to supply the treatment plant with raw water.

Currently, the water levels in these 8 wells are not a concern from a water shortage standpoint. However, Pamlico County Water System is limited by treatment capacity of the treatment plants not meeting demand due to possible man-made or natural causes.

The following triggers are specific indicators of the potential for and severity of a water shortage problem within Pamlico County Water System. These triggers will be used to initiate water use restrictions.

1. Increased pumping times of 12 to 15 hours of all 4 treatment plants for 3 consecutive days without sign of reduction of demand due to drought conditions, very high demands, and/or detected or undetected water leaks.

*Action: Voluntary Phase*

1. Increased pumping times of more than 15 hours of all 4 treatment plants for 3 consecutive days without sign of reduction due to drought conditions, very high demands, and/or detected or undetected water leaks.

*Action: Mandatory Phase*

1. Increased pumping times of 24 hours a day of 2 or more treatment plants for 2 consecutive days without sign of reduction along with not being able to maintain adequate water levels in storage.

*Action: Voluntary Phase*

1. Increased pumping times of 24 hours a day of 2 or more treatment plants for 3 consecutive days without sign of reduction along with not being able to maintain adequate water levels in storage.

*Action: Mandatory Phase*

1. Failure of 1 water treatment plant to operate and increased pumping times of 12 to 15 hours of the remaining 3 treatment plants for 3 consecutive days without sign of reduction of demand due to drought conditions, very high demands, and/or detected or undetected water leaks.

*Action: Voluntary Phase*

1. Failure of 2 water treatment plants to operate when demand would require these treatment plants to operate.
	1. If this problem cannot be corrected within 12 hours

*Action: Voluntary Phase*

* 1. If these problems cause run times of the remaining operating treatment plants to exceed times as described by the triggers above, take the required action.
1. Low Water Storage caused by treatment plant failure, large sudden demands such as fire fighting, broken water mains or transmission lines
	1. Short-term and no danger in loss of system wide pressure

*Action: none*

* 1. Short-term and danger of limited loss of system pressure

*Action: Mandatory Phase in problem areas and Voluntary Phase in other parts of water system*

* 1. Expected long-term and/or danger of limited loss of system pressure

*Action: Mandatory Phase*

* 1. Expected loss of system pressure

*Action: Emergency Phase*

* 1. If it is determined for any reason that ½ or more of system storage is lost and storage will not exceed ½ capacity within
		1. 12 hours *Action: Voluntary Phase*
		2. 24 hours *Action: Mandatory Phase*
	2. If it is determined for any reason that two-thirds or more of system storage is lost

*Action: Emergency Phase*

## As the determining triggers decrease in severity and return to acceptable levels, all bans and restrictions will be lifted. The cancellation process will be in the reverse order of implementation. The public will be notified. A request for Voluntary Conservation for all water uses shall stay in effect for at least 48 hours.

**Enforcement**

The Pamlico County Commissioners has authorized the enforcement of the following penalties in the event the customer violates any of the water use restrictions during a water shortage emergency as outlined in this WSRP. The Pamlico County Manager is responsible for enforcement.

*Voluntary and Mandatory Phase*

1st offense: Warning

2nd offense: Warning and $100 fine 3rd offense: Warning and $500 fine

4th offense: $500 fine and termination of service until restrictions are lifted and all fines are paid.

*Emergency Phase*

1st offense: Warning and $100 fine 2nd offense: Warning and $500 fine

3rd offense: $1000 fine and termination of service until restrictions are lifted and all fines are paid

## Variances

During a water shortage emergency, the Pamlico County Board of Commissioners or County Manager may grant variances in water restrictions based on the severity of the situation. Issues that will be considered in a variance shall be economic and social impact, impact of water demand, and the expected duration of the emergency.

Variances request must be made in writing and delivered to the Pamlico County Managers office. A decision to approve or deny the variance request will be determined within 7 days of submittal.

## Evaluation

The effectiveness of this WSRP will be determined by comparing system wide water consumption during the declared emergency with normal, expected water use during normal operations. Other factors to be considered include frequency of plan activation, any problem periods without activation, and total number of violation citations issued.

If it is determined by the Pamlico County Board of Commissioners and/or the County Manager that water restrictions set forth by this WSRP are not adequate in preventing a system wide pressure loss situation and/or adverse health effect, then the County Manager is authorized to declare an emergency and implement the Emergency Phase of this WSRP and/or take other necessary steps. Such actions may include banning all nonessential uses of water, decrease times and duration of certain water uses, reclassify

additional water uses as nonessential and discontinue service for excessive use.

## Revision

This WSRP will be reviewed and revised as needed to adapt to new circumstances affecting water supply and demand. As required by the provisions of G.S. 143-355 (I), this WSRP will be reviewed and/or revised at a minimum of every five years. This WSRP will also be reviewed after the implementation of each Emergency Phase to determine the effectiveness of the plan.

The Field Operations Manager is responsible for initiating all subsequent revisions.

## Public Comment

A public hearing will be scheduled with the required notice given before adoption by the Pamlico County Board of Commissioners. Customers will have the opportunity to review the WSRP prior to the public hearing and make any written or oral comments. Further, all subsequent revisions to the WSRP will be published at least 30 days prior to an adoption vote by the Pamlico County Board of Commissioners.