

WATER SHORTAGE RESPONSE PLAN
PENDER COUNTY UTILITIES, NORTH CAROLINA

The procedures herein are written to reduce potable water demand and supplement existing drinking water supplies whenever existing water supply sources are inadequate to meet current demands for potable water.

I. AUTHORIZATION

The Pender County Utilities Director shall enact the following water shortage response provisions whenever the trigger conditions outlined in Section IV are met. In his/her absence, an authorized representative will assume this role.

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II. NOTIFICATION

The following notification methods will be used to inform water system employees and customers of a water shortage declaration: employee e-mail announcements, notices at municipal buildings, notices in water bills. Required water shortage response measures will be communicated through *The Pender Post*, the *Topsail Voice*, PSA announcements on local radio and cable stations. Declaration of emergency water restrictions or water rationing will be communicated to all customers by telephone through the County’s Connect – CTY (reverse 911) system.

III. LEVELS OF RESPONSE

Five levels of water shortage response are outlined in the table below. A detailed description of each response level and corresponding water reduction measures are provided below.

Stage	Response	Description
1	Voluntary Reductions	Water users are encouraged to reduce their water use and improve water use efficiency; however, no penalties apply for noncompliance. Water supply conditions indicate a potential for shortage.
2	Mandatory Reductions I	Water users must abide by required water use reduction and efficiency measures; penalties apply for noncompliance. Water supply conditions are significantly lower than the seasonal norm and water shortage conditions are expected to persist.

3	Mandatory Reductions II	Same as in Stage 2, with more aggressive water use restrictions
4	Emergency Reductions	Water supply conditions are substantially diminished and pose an imminent threat to human health or environmental integrity.
5	Water Rationing	Water supply conditions are substantially diminished and remaining supplies must be allocated to preserve human health and environmental integrity.

Stage 1, Voluntary Reductions:

- All water users will be asked to reduce their normal water use by 5%.
- Customer education and outreach programs will encourage water conservation and efficiency measures including:
 - o Irrigating landscapes a maximum of one inch per week.
 - o Preventing water waste, runoff and watering impervious surfaces.
 - o Watering plants deeply to encourage root growth.
 - o Washing only full loads in clothes and dishwashers.
 - o Using spring-loaded nozzles on garden hoses.
 - o Identifying and repairing all water leaks.
 - o Watering shrubbery the minimum amount required.
 - o Limiting vehicle and boat washing to the minimum.
 - o Refraining from washing down outside areas such as sidewalks and patios.
 - o Using showers for bathing rather than baths, and limiting showers to no more than four minutes.
 - o Refraining from leaving faucets running while shaving or while rinsing dishes.
 - o Installing water-flow restrictive devices in showerheads.
 - o Using disposable and biodegradable dishes.
 - o Installing water-saving devices such as plastic bottles or commercial units in toilet tanks to reduce volume.
 - o Ensuring toilet flapper valves are not leaking: This flapper can be checked by adding a food coloring to the toilet tank and visually checking to see if the color appears in the bowl. If it does show color, the toilet is leaking.
 - o Storing drinking water in refrigerator to avoid trying to run it cool from the tap.

Stage 2, Mandatory Reductions I:

- All customers are expected to reduce their water use by 10% in comparison to their previous month’s water bill.
- In addition to continuing to encourage all voluntary reduction actions, the following restrictions apply:
 - o Irrigation is limited to a half inch per week between 8PM and 8AM.
 - o Outdoor use of drinking water for washing impervious surfaces is prohibited.
 - o All testing and training purposes requiring drinking water (e.g. fire protection) will be limited.
 - o The use of water for washing or cleaning of equipment including vehicles, boats and fleet vehicles is prohibited unless water use is deemed essential to maintain the safe operational use or equipment integrity.

- o The use of water for power washing of buildings and other structures is prohibited, except for paint prep only (permit required).
- o The use of water from fire hydrants and hose bibs is prohibited, except for:
 - fighting fire and fire protection purposes
 - testing or training fire fighters if it is necessary to protect public safety
 - jetting piles to facilitate construction
 - construction site hose bibs
- o The filling of family, public or private swimming pools, including hot tubs, spas and whirlpool tubs, is prohibited, except for the minimal amount of make-up water necessary to maintain a pool's structural integrity and filtration system.

Stage 3, Mandatory Reductions II:

- Customers must continue actions from all previous stages and further reduce water use by 20% compared to their previous month's water bill.
- All non-essential uses of drinking water are banned and garden and landscape irrigation must be reduced to the minimum amount necessary for survival.
- No using water outside of structures for any use other than emergencies involving fire.
- No introducing water into swimming pools.
- No use of fire hydrants except for fighting fire.
- All other uses of water will be limited to uses necessary to meet the essential health and safety needs of the people of Pender County.
- No serving water in restaurants except upon request.
- Encourage use of disposable utensils and plates in homes and restaurants.
- Additionally, in Stage 3, a drought surcharge of 1.5 times the normal water rate applies.

Stage 4, Emergency Reductions:

- Customers must continue all actions from previous stages and further reduce their water use by 25% compared to their previous month's water bill.
- A ban on all use of drinking water except to protect public health and safety is implemented and drought surcharges increase to 2 times the normal water rate.

Stage 5, Water Rationing:

The goal of Stage 5, Water Rationing, is to provide drinking water to protect public health (e.g. residences, residential health care facilities and correctional facilities). In Stage 5, all customers are only permitted to use water at the minimum required for public health protection. Firefighting is the only allowable outdoor water use, and pickup locations for distributing potable water will be announced according to PCU's Emergency Response Plan. Drought surcharges increase to 5 times the normal water rate.

- It will be unlawful to fail to act in accordance with this section or use water contrary to this section or attempt to evade or avoid such water rationing restrictions.
- Fire protection will be maintained, but where possible, tank trucks shall use raw water.
- Close all swimming pools.
- No washing of any motor vehicles, including commercial washing.
- All industrial uses of water are prohibited.

- All other uses of water will be limited to those necessary to meet minimum health and safety needs of the customers.

IV. TRIGGERS

Pender County Utilities (PCU) draws raw surface water from the Lower Cape Fear Water and Sewer Authority's intake in the Cape Fear River in Bladen County. The triggers based on the potable water demand percentages below are dependent on this water source. A number of additional triggers are provided for each of the water shortage stages.

Stage 1, Voluntary Reductions:

1. PCU Utilities Director identifies an immediate water shortage or water quality emergency; OR
2. Declaration of D0 drought.

Stage 2, Mandatory Reductions I:

1. PCU Utilities Director identifies an immediate water shortage or water quality emergency; OR
2. PCU Utilities Director determines that Stage 1 conditions have not resulted in sufficient reduction of the average day demand; OR
3. When there are three consecutive days where water demand exceeds 80% of the supply/treatment capacity; OR
4. Finished water storage less than 2.5 million gallons in the distribution system; OR
5. Declaration of a D1 drought.

Stage 3, Mandatory Reductions II:

1. PCU Utilities Director identifies an immediate water shortage or water quality emergency; OR
2. PCU Utilities Director determines that Stage 2 conditions have not resulted in sufficient reduction of the average day demand; OR
3. When there are two consecutive days where water demand exceeds 90% of of supply/treatment capacity; OR
4. Finished water storage less than 1.5 million gallons in the distribution system; OR
5. Declaration of a D2 drought.

Stage 4, Emergency Reductions:

1. PCU Utilities Director identifies an immediate water shortage or water quality emergency; OR
2. PCU Utilities Director determines that Stage 3 conditions have not resulted in sufficient reduction of the average day demand; OR
3. When there is one day where water demand exceeds 100% of supply/treatment capacity; OR
4. Finished water storage less than 1.5 million gallons in the distribution system; OR
5. Declaration of a D3 drought.

Stage 5, Water Rationing:

1. PCU Utilities Director identifies an immediate water shortage or water quality emergency; OR
2. PCU Utilities Director determines that Stage 4 conditions have not resulted in sufficient reduction of the average day demand; OR
3. Finished water storage less than 1.0 million gallons in the distribution system; OR
4. Declaration of a D4 drought.

V. RETURN TO NORMAL

When water shortage conditions have abated and the situation is returning to normal, water conservation measures employed during each phase should be decreased in reverse order of implementation. Permanent measures directed toward long-term monitoring and conservation should be implemented or continued so that the community will be in a better position to prevent shortages and respond to recurring water shortage conditions.

VI. ENFORCEMENT

The provisions of the water shortage response plan will be enforced by Pender County Utilities personnel. Citations are assessed according to the following schedule depending on the number of prior violations and current level of water shortage.

Water Shortage Level	First Violation	Second Violation	Third Violation
Voluntary Reductions	N/A	N/A	N/A
Mandatory Reductions (Stages 2 and 3)	Warning	\$250	Discontinuation of Service
Emergency Reductions	\$250	Discontinuation of Service	Discontinuation of Service
Water Rationing	\$500	Discontinuation of Service	Discontinuation of Service

Drought surcharge rates are effective in Stages 3, 4 and 5.

VII. VARIANCE PROTOCOLS

Applications for water use variance requests are available from the office of Pender County Utilities. All applications must be submitted to Pender County Utilities for review by the Director or his designee. A decision to approve or deny individual variance requests will be determined within two weeks of submittal after careful consideration of the following criteria: impact on water demand, expected duration, alternative source options, social and economic importance, purpose (i.e. necessary use of drinking water) and the prevention of structural damage.

VIII. EFFECTIVENESS

The effectiveness of the Pender County Utilities water shortage response plan will be determined by comparing the stated water conservation goals with observed water use reduction data. Other factors to be considered include frequency of plan activation, any problem periods without activation, total number of violation citations, desired reductions attained and evaluation of demand reductions compared to the previous year's seasonal data.

IX. REVISION

The water shortage response plan will be reviewed and revised as needed to adapt to new circumstances affecting water supply and demand, following implementation of emergency restrictions, and at a minimum of every five years in conjunction with the updating of our Local Water Supply Plan. Further, a water shortage response planning work group will review procedures following each emergency or rationing stage to recommend any necessary improvements of the plan to the Pender County Utilities Board. The Pender County Utilities Director is responsible for initiating all subsequent revisions.