# Water Shortage Response Plan
Town of Chadbourn, North Carolina
March 8, 2018

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.

## 1. Authorization

The Chadbourn Town Manager shall enact the following water shortage response provisions whenever the trigger conditions outlined in Section IV are met. In his/her absence, the Public Works Director 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 Whiteville News Reporter*, PSA announcements on local radio and cable stations. Declaration of emergency water restrictions or water rationing will be communicated to all customers by telephone or door hangers if necessary.

## III. Levels of Response

Five levels of water shortage response are outlined in the table below. The five levels of water shortage response are: voluntary reductions, mandatory reductions I and II, emergency reductions and water rationing. A detailed description of each response level and corresponding water reduction measures follow 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 with 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 |
| 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. |

In 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: irrigating landscapes a maximum of one inch per week; preventing water waste, runoff and watering impervious surfaces; watering plants deeply to encourage root growth; washing only full loads in clothes and dishwashers; using spring-loaded nozzles on garden hoses; and identifying and repairing all water leaks.

In 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: irrigation is limited to a half inch per week between 8PM and 8AM; outdoor use of drinking water for washing impervious surfaces is prohibited; and all testing and training purposes requiring drinking water (e.g. fire protection) will be limited.

In 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.

In 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.

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 Chadbourn's Emergency Response Plan.

IV. Triggers

Chadbourn's water source is groundwater. The following measurements of well pumping times and well levels in relationship to pump intake levels trigger entry into corresponding water restriction stages.

| Stage | Well Operating Conditions |
|---|---|
| 1 | Pumping Time > 10 hrs<br>20% reduction in seasonal normal distance from static water level and pump intake<br>20% increase pumping time for same output |
| 2 | Pumping Time > 12 hrs<br>40% reduction in distance from static water level and pump intake<br>40% increase pumping time for same output |
| 3 | Pumping Time > 14 hrs<br>60% reduction in distance from static water level and pump intake<br>60% increase pumping time for same output |
| 4 | Pumping Time > 20 hrs<br>80% reduction in distance from static water level and pump intake |
| 5 | Water level at pump intake elevation |

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.

V. Enforcement

The provisions of the water shortage response plan will be enforced by Town of Chadbourn personnel and local law enforcement, Violators may be reported to the Town's dedicated water conservation hotline. 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 |

VI. Public Comment

Customers will have multiple opportunities to comment on the provisions of the water shortage response plan. First, a draft plan will be available at Town Hall for customers to view. A notice will be included in customer water bill notifying them of such. All subsequent revisions to the draft plan will be published at least 30 days prior to an adoption vote by Chadbourn's Town Council.

VII. Variance Protocols

Applications for water use variance requests are available from the Town Hall. All applications must be submitted to the Town Hall for review by the Town Manager or his/her 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 Chadbourn 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 state to recommend any necessary improvements to the plan to Chadbourn's Town Council. The Town of Chadbourn Public Works Director is responsible for initiating all subsequent revisions.