

ORDINANCE NO. 2018-008

**Drought Management Plan
For**

**CITY OF
BLUFF CITY**

PWSID: 0000061

Date: August 7 2018

Authority and Status to Plan.

Bluff City is a municipal corporation chartered and organized under the laws of the State of Tennessee. Bluff City owns and operates a water treatment plant and distribution system serving the citizens of Bluff City and the surrounding area. The mayor of Bluff City has the authority to implement a drought management plan the chief water treatment plant operator has been given the responsibility to complete the plan.

System Characteristics and Risks.

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BLUFF CITY has approximately 1,200 water connections. Using the household factor of 2.37 persons per household for Sullivan County this is equivalent to approximately 2,810 persons. The usage is categorized as follows:

Water Use Category	Use in Gallons (Avg)	Percent of Total Usage	Peak Water Use	Percent of Total Usage	Increase in Gallons	Percent Increase (peak over avg)
Residential	4,065,500	47	5,935,630	46	1,870,130	13
Commercial	1,038,000	12	1,162,560	12	124,560	7
Non Metered	3,546,500	41	5,036,030	42	1,489,530	18
Total	8,650,000	100	12,134,220	100	3,484,220	14

The CITY OF

BLUFF CITY Water Treatment Plant is a conventional groundwater plant with a design capacity of approximately 0.325 million gallons per day. Average usage for the system is approximately 280,000 gallons per day. The maximum daily pumpage in recent years, which occurred in July, 2018, was 688,000 gallons. The treatment plant uses the Underwood Spring as its raw water source. The distribution system contains one water storage tank with a capacity of 350,000 gallons.

Purpose of the Drought Management Plan.

Typically drought has not affected the water source in past years. The purpose of this plan is to reduce water demand in the event of a drought where existing water supplies are inadequate to meet current demand for potable water. The significance of taking into account water use on average and during peak water demand (though it may not reflect an extreme or exceptional drought) is that system officials can identify water uses that have the potential to be reduced more easily. The point here is to identify potential discretionary or non-essential water uses. It is evident from the data above that water use by residential users typically increases 13 percent over average water use. The seven percent increase in commercial use indicates that this area may not be easily reduced.

Because water use data reflects a typical peak summer water use but not necessary a moderate, severe or extreme drought, additional water use could be expected by residential customers on the system to water cattle and other livestock, though they usually rely on ponds and small streams which are likely to be depleted in a severe drought.

During the droughts of 2007 and 2008, the water treatment plant was able to meet customer demand with no restrictions implemented. Static water levels in our spring box remained at normal levels. Presently there are two connections with neighboring water systems

Drought Management Plan within the Context of an EOP.

Development of the town's drought management plan and EOP were assigned to the chief water plant operator. CITY OF

BLUFF CITY's EOP addresses line breaks, storms, earthquakes, hazardous material spills and civil disturbances. The EOP is not available for public scrutiny. The drought management plan focuses attention on managing supplies and demand during a declared drought.

The Planning Committee

The CITY OF

BLUFF CITY drought management plan is a separate component of the Emergency Operation Plan (EOP). It was developed by Water Department staff of the town, but included a focus group in its development and review. Unlike the EOP to which the drought plan is an "annex," the drought plan includes a standby rate structure, restricts some water uses and in some cases bans other water uses at times. The drought management plan was adopted by the mayor and town council. The final adoption process was the normal process used by city council to adopt ordinances allowing for public comment.

Goals – Objectives and Priorities.

The initial goal of the drought management plan was to provide water to all priority uses as established by the water system under worsening drought conditions (three levels). The water uses and levels of water availability take into account the maintenance of public health and safety, sustaining economic activity, preserving critical environmental resources and life activities.

General Water Uses in Order of Priority:

- Hospital and medical facilities
- Nursing homes and elderly care facilities
- Human Consumption (Drinking water, domestic cooking, bathing, toilet use)
- Fire protection (structural facilities, and hazardous situations)
- Pets (animal hospitals, kennels) and livestock
- Environment (Erosion, Aquatic Habitat)
- Commercial Uses (Restaurant, Laundry, Office, Retail)
- Industry and Manufacturing (Sanitation, Process, Cooling)
- Recreation (Pools, Athletic Fields)
- Landscape (shrubbery) watering (Home and Commercial)
- Lawn watering, Vehicle Washing (Home and Commercial)

Interconnections, Mutual Aid Agreements and Backup Sources.

As a result of customers with livestock on the system with potentially inadequate streams, the plan calls for the use of fire department tankers to haul water from area streams (having available water) to assist farmers with livestock. A portion of the additional funds needed to support this activity would come from revenues generated by standby rates with the remaining funds from fees for services from farmers.

Ordinances, Policies and Legal Requirements.

The city's drought management plan, rules, ordinances, and policies are available for review. Copies can be examined at city hall

Well Static Water Levels

During periods of drought or impending drought, operators at the CITY OF BLUFF CITY Water Treatment Plant will monitor the static water levels of system wells. US Drought Monitor (<https://www.drought.gov/gdm/current-conditions>) will be monitored to determine severity of drought. In the event that the static water levels begin to approach preset trigger points, the Tennessee Division of Water Resources will be contacted to discuss possible actions.

Phased Management.

The drought response plan is broken into four phases: Drought Alert, Voluntary Water Reductions, Mandatory Water Restrictions and Emergency Water Management. The drought management phases and sets of trigger points along with their associated goals are described below. Failure to achieve a management phases goal within a reasonable time shall call for the next phase to be implemented.

Drought Alert.

In the drought alert phase, no reduction in water use demand is planned. The CITY OF BLUFF CITY will focus on monitoring conditions, prepare for the possible implementation of "Voluntary Reductions," and call its drought task force group together to review the plan and next-step actions.

Voluntary Water Reductions.

Under "Voluntary Reductions" Bluff City has established a water use reduction goal of 10 percent. This figure corresponds to approximately 60,00 gallons per day water use judging by peak usage. Among the trigger points for implementing this phase would be a drop in static water levels of 20% or an increase in the usage to 420,000 gpd for five consecutive days. The public appeal would consist of news releases to the media (weekly newspaper, local radio and regional television stations). Customers will be encouraged to use efficient water practices, e.g., watering lawns between sunset and sunrise, along with the more careful watering of shrubs and other landscape plantings.

Mandatory Water Restrictions.

The goal of activating a "Mandatory Water Restrictions" phase would be to reduce water demand by customers by 35 percent (from estimated peak demand). This would amount to a reduction of approximately 60,000 gpd. Vehicle washing will be restricted. Restrictions to car/vehicle washing will apply to commercial car washes that do not re-cycle water and to the domestic washing of cars, etc. Lawn and landscape watering will be restricted. To assist in reducing usage, the water system will reduce the amount of flushing where possible. Among the trigger points for implementing this phase would be a drop in static water levels of 40% or an increase in the usage to 470,000 gpd for five consecutive days. Restrictions will be provided to the public through the media and posted in public buildings such as libraries, city hall, court house, banks and grocery stores. A \$15.00 surcharge will be assessed to all customers using over 4000 gallons per month. System personnel will be utilized to monitor compliance with restrictions. Customers will also be requested to report violators of the restrictions.

The following will be used to enforce restrictions:

- First offense - A written warning will be issued
- Second Offense - A \$50.00 fine

- Third Offense - Customer's water service will be discontinued for a minimum of 5 days. A reconnection fee will be required to have service restored.

Emergency Water Management. The "Emergency Water Management" phase of the drought plan would be triggered by severe water pressure or other hydraulic issues, the static water level drops 50% or more or the daily usage reaches 500,000 gpd for five consecutive days. The purpose of this phase would be to reduce water use to 25 percent of the peak demand. This would be a reduction of approximately 150,000 gpd. The media will be used to strongly encourage all customers to curtail any nonessential usage. A \$25.00 surcharge will be assessed to all customers using over 4000 gallons per month. System personnel will be utilized to monitor compliance with restrictions. Customers will also be requested to report violators of the restrictions.

The following will be used to enforce restrictions:

- First offense - A written warning will be issued
- Second Offense - A \$50.00 fine
- Third Offense - Customer's water service will be discontinued for a minimum of 15 days. A reconnection fee will be required to have service restored.

Monitor Supply and Demand.

Bluff City established 3 drought management phases in addition to a "Drought Alert" Phase. All four phases are described below. In addition, numerous trigger points were identified signaling the beginning of a phase.

Management Team.

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BLUFF CITY designated the chief water treatment plant operator to be the drought plan implementation Manager. He is ultimately in charge of managing the water system. In addition, the mayor of the town, the chief of the police department and public works supervisor make up the drought management group responsible for overseeing the implementation of the plan. They advise and assist the chief operator in gathering information, assessing the situation and recommend/advise/approve the chief operator's actions. The task group is activated and will meet as necessary once a "Drought Alert" has been initiated. A "Drought Alert" corresponds to the US Drought Monitor's categorization of the water system's service area as being characterized as under "Severe" drought conditions. The task group monitors water system conditions, including water demand, water supply, forecasted conditions, hydraulic conditions, water quality issues, impacted communities, public notification, plan modifications, staffing, trigger points and other issues related to the implementation of the plan. The task group and chief operator must also maintain records of their actions, system conditions at the time of management actions taken, and their effects. Finally, the drought management group and plan implementation manager must also determine and announce the step-down and/or deactivation of the plan.

Review, Evaluation and Up-dating the Management Plan

The drought management plan was adopted on _____ by the town council. The drought manager will review the plan within 6 months after any phase of the plan has been implemented and/or every three years. Refinements to the drought management plan will be

made as necessary. The drought manager is responsible for making the review and presenting that review before the council.

Irene Wells
Irene Wells, Mayor

Attested: Sharon Greene
Sharon Greene, City Recorder

Approved
as to form: J. Paul Frye
J. Paul Frye, City Attorney

Passed on First Reading: 10/2/18
Passed on Second Reading: 11/2/18
Public Hearing: 11/2/18