Drought Management Plan

For

City of Covington Water System

PWSID: 0000144

Date: June 17, 2016

Revised: July 23, 2019

Authority and Status to Plan.

The City of Covington, Tennessee is a municipal corporation chartered and organized under the laws of the State of Tennessee. The City of Covington owns and operates a water treatment plant and distribution system serving the citizens of Covington, Tennessee and the surrounding area. Under the City of Covington Ordinance number 1687, the board of Mayor and alderman of Covington have the authority to adopt and implement a drought management plan the chief water treatment plant operator has been given the responsibility to complete the plan.

System Characteristics and Risks.

The City of Covington Water System has approximately 5,101 water connections. Using the household factor of 2.83 persons per household for Covington this is equivalent to approximately 14,436 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	15,341,141	35.14%	18,952,300	33.16%	3,611,159	23.54%
Commercial	12,278,691	28.12%	15,865,200	28.12%	3,586,509	29.21%
Industrial	16,034,400	36.73%	20,497,400	38.71%	4,463,000	27.83%
Total	43,654,232	100%	55,314,900	100%	11,660,668	26.71%

The City of Covington Water Treatment Plant is an Iron Removal Filtration Plant with a design capacity of 6.7 MGD, or 4648 GPM. The City of Covington Water Treatment Plant utilizes four deep wells to draw water from the Memphis Sands Aquifer at an average of about 525 feet deep. Treatment is accomplished by aeration for iron oxidation and CO2 removal, followed by chlorination, fluoridation, pH adjustment and iron filtration. The City of Covington distribution system consists of approximately 91 miles of water lines. Three separate plains differentiate the water distribution system separated by a pair of Booster Pumps, (South) and Pressure Reducing Valve (North). The average water usage for the system is approximately 1.5 million gallons per day in the winter, and the average water usage for the summer is approximately 2.1 million gallon per day. The maximum daily usage in recent years, which occurred in 2007, was 2.5 million gallons per day. Even at a high summer demand of 2.5 MGD, maintaining all elevated tanks at a minimum of 90% full is not a problem for the City of Covington Water Treatment Plant. The distribution system contains five water storage tanks with a combined capacity of 1,550,000 gallons and a 750,000 gallon ground storage tank on site giving the City of Covington grand total of water storage of 2.3 million gallons.

TANK NAME	SIZE IN GALLON	LOCATION
Ground Storage Tank	**750,000**	**300 S. College St**
Hospital Tank	**100,000**	**HWY 51 South**
South Tank	**300,000**	**Muller Brass Rd.**
Downtown Tank	**400,000**	**Town Square**
Industrial Tank	**250,000**	**Industrial Rd.**
Rialto Tank	**500,000**	**Witherington Dr.**

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.

Drought Management Plan within the Context of an EOP.

Development of the City of Covington drought management plan and EOP were assigned to the chief water plant operator. He organized a team of individuals, including employees and local officials to help organize and frame the plan. City of Covington 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 Covington drought management plan is a separate component of the Emergency Operation Plan (EOP). It was developed by Water Department staff, 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 board of mayor and alderman. The final adoption process was the normal process used by the board of mayor and alderman to adopt ordinances allowing for public comment.

Goals – Objectives and Priorities.
The initial goal of the drought management plan is to provide water to all priority customers as established by the water system under worsening drought conditions (three levels). The water Uses and Well water static levels availability take into account to 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.
The City of Covington maintains close working relationship with adjacent water system including the City of Munford, First Utility District and Poplar Grove Utility District. The City of Covington can receive water from two of the three systems First Utility District and Poplar Grove Utility District through interconnections but only for short periods and in limited volumes. 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. We will consult with the US Department of Agriculture (901-475-3350) to determine farmers in need.

Policies and Legal Requirements.
The City of Covington drought management plan, rules, and policies are available for review. Copies can be examined at the City of Covington Water Treatment Plant, or the website. www.covingtontn.com

Well Static Water Levels
During periods of drought or impending drought, operators at the City of Covington Water Treatment 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 phase goal within a reasonable time shall call for the next phase to be implemented.

Drought Alert.
A Drought Alert will be triggered by a drop in the static water levels of 10% or when the US Drought Monitor indicates that our area is in a severe drought. In the drought alert phase, no reduction in water use demand is planned. The City of Covington Water System 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" The City of Covington Water System has established a water use reduction goal of 10 percent. This figure corresponds to approximately 210,000 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 600,000 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. The Memphis Field Office of the Division of Water Resources will be notified of the restrictions implemented.

Media Contacts

Name	Contact Phone Number
The Covington Leader	901-476-7116
US 51 Country 93.5 FM WKBQ	901-476-7129
KBJ TV Covington	901-476-0426
WMC TV 5 Memphis	901-726-0416

Mandatory Water Restrictions.
The goal of activating a "Mandatory Water Restrictions" phase would be to reduce water demand by customers by 15 percent (from estimated peak demand). This would amount to a reduction of approximately 315,000 gpd. Vehicle washing will be restricted. Restrictions to car/vehicle washing will apply to commercial car washes that do not recycle 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 650,000 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 Memphis Field Office of the Division of Water Resources will be notified of the restrictions implemented.

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 700,000 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 525,000 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 Memphis Field Office of the Division of Water Resources will be notified of the restrictions implemented.

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

Management Team.

The City of Covington under the direction of public works director 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 to, the board of mayor and alderman of the City of Covington, the chief of the fire department and distribution manager 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, and approve the operator in charge 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 board of mayor and alderman, 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 _December 13, 2016_ by the board of Mayor and Alderman. The drought manager will review the plan within 6 months after any phase of the plan has been implemented and/or every 3 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.

ORDINANCE 1687

AN ORDINANCE TO ADOPT THE "DROUGHT MANAGEMENT PLAN FOR THE CITY OF COVINGTON WATER SYSTEM" COVINGTON, TENNESSEE.

WHEREAS, Ordinance 1687 has not been codified as a part of the Covington Municipal Code but is maintained in the office of the Recorder-Treasurer.

NOW, THEREFORE BE IT ENACTED BY THE BOARD OF MAYOR AND ALDERMAN OF THE CITY OF COVINGTON, TENNESSEE THAT:

Section 1. The attached "Drought Management Plan for the City of Covington Water System" in its entirety be adopted.

Section 2. This ordinance shall take effect from and after its passage, the welfare of the corporation demanding it.

November 8, 2016

Passed 1st Reading

Mayor

November 29 2016

Passed 2nd Reading

Recorder-Treasurer

December 13, 2016

Public Hearing

December 13 2016

Passed 3rd Reading