

# Poplar Grove Utility District

## DROUGHT MANAGEMENT PLAN

### TABLE OF CONTENTS

- I. Introduction: Purpose and Authority
  - A. Applicability to Other Emergencies
  - B. Water System Characteristics
  
- II. Drought Management Planning
  - A. Goals
  - B. Regional Planning
  
- III. Existing Plans and Partnerships
  - A. Adjacent Systems
  - B. Legal Authority
  - C. Communication and Enforcement
  
- IV. Regional Stakeholders
  - A. Water Systems in Tipton County
  
- V. Drought Management Plan Phases
  - A. Trigger points
  - B. Public Notices
  - C. Plan Management Phases
    - i. Drought Alert Phase
    - ii. Voluntary Water Reduction Phase
    - iii. Mandatory Water Reduction Phase
    - iv. Emergency Water Management Phase
  
- VI. Drought Management Implementation
  - A. Enforcement
  - B. Rationing
  
- VII. Drought Management Team
  
- VIII. Media Contact Information
  
- IX. Website Link to Drought Management Plan
  
- X. Reviews and Updates

## **I. INTRODUCTION**

Droughts cannot be avoided but their effects on water systems can be mitigated through proper planning and preparedness. This plan is not intended to replace existing emergency planning efforts or to add complex layers of planning, measuring and reporting to current operational procedures but rather this plan is to be incorporated into ongoing activities and exercises of Poplar Grove Utility District.

Three interrelated goals of this drought management plan are:

1. Provide our customers with a clear, concise and fair plan that sets specific trigger points that reduce water consumption to certain levels dependent upon increased demand.
2. Provide adjacent water systems, especially the Towns of Atoka and Brighton with a plan that emulates actions and precautions that should be taking place in those systems.
3. Provide TDEC with a plan that meets the requirement set forth in the guidance documents developed in December 2009.

### **Authority and Applicability to Other Emergencies**

Poplar Grove Utility District is chartered as a public utility district as defined under the Utility District Act of 1937 and operates a public water system in south Tipton County under this Public Act. The District has a three member Board of Commissioner that oversees the operation of the District through the appointment of a General Manager. The General Manger is responsible for the day to day operation of the District and the implementation of this Plan. The Drought Management Planning Committee is headed by the District's General Manager and also consists of the Assistant General Manager and the Chief WTP Operator.

While this Plan is prepared specifically in response to anticipated demand issues that might arise due to prolonged drought, the actions and preparations put in place should be applicable to other emergencies such as ice storms, earthquakes, flooding, etc. In any case, the District's goal is to decrease demand as necessary to maintain domestic service to our customers as fully as possible.

### **Water System Characteristics**

The Poplar Grove Utility District water system serves a population of approximately 18,000 in addition to wholesaling water to the Towns of Atoka and Brighton. Our source for water is the Memphis Sands Aquifer. It is recognized that this aquifer has an abundant supply of water that will sustain our region even during extreme droughts. The District has four wells drawing

from the Memphis Sands with a combined pumping capacity of 9.2 MGD which is more than 3 times the District high summer demand of 3 MGD. The production capacity of the WTP is 4.8 MGD which is 1.6 times the District's high summer demand. Because of this abundant supply source and the WTP's capacity, the District's main focus in this Drought Management Plan is reduction of demand.

The District's Water Treatment Plant processes consist of Aeration, Pre-Chlorination, Up Flow Clarification using an Anionic Polymer, Gravity Filtration and Post-Chlorination. Ground Storage capacity is 1.14 MG in three different Clearwells. The District has a total of eight High Service Pumps ranging in capacity from 500 GPM to 1,000 GPM.

The District's distribution system consists of 2" through 20" water mains with an East side and a West side, Highway 51 being the dividing line. The two sides are interconnected which allows water to be transferred in an emergency situation.

Water usage in the winter averages approximately 1.7 million gallons per day, summer usage can be as high as 3 million gallons per day with a daily average of approximately 2 million gallons per day. Even at the high summer demand of 3 million gallons per day, maintaining all elevated tanks at a minimum of 70% full is not a problem for WTP personnel.

## **LARGE USERS**

The District supplies up to 600,000 gallons of water per day to the Towns of Atoka and Brighton. Because this volume is 30% of the District's average daily pumpage and this Drought Management Plan focuses on reduction of usage, the reduction of usage by these Towns is a key component. This Plan incorporates voluntary reduction request for each Town.

<b>TANK NAME</b>	<b>SIZE IN GALLONS</b>	<b>LOCATION</b>	<b>EAST SIDE/WEST SIDE</b>
Planters Point	100,000	Drummonds & Wilkinsville Rds.	West Side
Campground	300,000	Campground & Appleberry Rds.	West Side
Idaville	300,000	Atoka-Idaville Rd.	East Side
Almyra	500,000	Sadler School Rd.	East Side

## **II. DROUGHT MANAGEMENT PLANNING**

### **Goals**

Poplar Grove Utility District has the goal of maintaining a safe and reliable water supply to its customers even in dry periods during the year. Because the District has made significant investments in water treatment and distribution system infrastructure, it's not specifically a goal of the District to restrict water usage during dry periods but to maintain an adequate supply to all water customers while monitoring elevated tank levels.

The District's Drought Management Plan has four levels of response based on levels in our elevated storage tanks as shown in Section V of this Plan. Water demands are split into Critical and Optional (non-essential) uses. Critical uses are those pertaining to human consumption and Optional uses are those associated with recreation and outdoor watering. The primary goal of this Plan is to limit or eliminate Optional uses during drought situations, allowing Critical uses to continue as normal as possible.

### **Regional Planning**

The District has interconnects with other water providers in Tipton County as described in the District's Emergency Plan. These emergency interconnects allow the District to supplement its water supply to its customers but only for short periods of time with limited volumes.

The District also provides water to the Towns of Atoka and Brighton at five interconnect points. Atoka has another water supply from the City of Munford, however Brighton receives 100% of its water from the District. Efforts are made within this Plan to require assistance from each of these entities during a drought situation.

## **III. EXISTING PLANS AND PARTNERSHIPS**

### **Adjacent Systems**

The District maintains close working relationships with adjacent water systems including the Towns of Atoka and Brighton, the Cities of Munford and Covington and First Utility District. Of these neighboring systems, only the Cities of Munford and Covington along with First Utility District have their own treatment facilities. As previously mentioned, the District can receive water from these three systems through interconnects but only for short periods and in limited volumes.

## **Communication and Enforcement**

The District will make this document available to the public by posting it on our website, PoplarGroveUtilityDistrict.com. During drought phases, communication to the public will be made by a variety of means ranging from posting on our website, phone notification and communication with the news media in Covington and Memphis.

### **IV. AGENCY COORDINATION**

The District will maintain continuing contact with governmental agencies and other water systems in the event that conditions warrant actions concerning a drought situation. Those entities include:

- Other Water Systems
  - >Town of Atoka
  - >Town of Brighton
  - >City of Munford
  - >City of Covington
  - >First Utility District
  
- Governmental Agencies
  - >Tipton County Executive
  - >Tipton County EMA
  - >Tennessee Department of Agriculture
  
- Regulatory Agencies
  - >TDEC-Division of Water Resources

### **V. DROUGHT MANAGEMENT PLAN PHASES**

Following TDEC guidance in developing this Drought Management Plan, there are four distinct phases to drought emergencies:

1. Drought Alert Phase
2. Voluntary Reduction
3. Mandatory Reduction
4. Emergency Management

## **Trigger Points**

The Trigger Points that will initiate Poplar Grove's Drought Management Plan are all based on the District's inability to maintain certain elevated tank levels over certain periods of time.

These Trigger Points focus mainly on the reduction of consumption especially for Optional (Non-Critical) uses such as lawn watering, car washing, recreational uses, etc. As a secondary focus, the District will also request that these same restrictions of water usage be implemented by the Towns of Atoka and Brighton as well as requesting that the Town of Atoka shift more of its demand to the City of Munford if practical.

## **Public Notice**

In each of the tables that follow, there is a specific Trigger Point for demand, a corresponding reduction goal, a customer outreach plan and monitoring activities that are to take place for a given drought Phase.

### **DROUGHT ALERT PHASE**

#### **Lower than normal precipitation and greater than normal customer demand**

Trigger Point: Any elevated tank level staying below 80% full for 3 or more consecutive days

Reduction Goal: None

Customer Communication: -Post a notice on the District's website

-Communicate Daily with the Towns of Atoka and Brighton

Monitoring Activities: -Review customer usage records to determine largest Optional (Non-Critical) users

-Notify TDEC's Memphis Office

### **VOLUNTARY WATER REDUCTION PHASE**

#### **Continued lower than normal precipitation and continued increase in customer demand**

Trigger Point: Any elevated tank staying below 70% full for 5 or more consecutive days

Reduction Goal: Reduce customer usage by at least 10% per day which should allow our elevated tanks to rise to 100% full over a 24 hour period.

Customer Communication: -Post a notice on the District's website

-Notify largest users (including the Towns of Atoka and Brighton) that the District has entered into the Voluntary Reduction Phase of its Drought Management Plan.

-Request that all customers conserve water via the District's phone dialing system

-Communicate daily with the Towns of Atoka and Brighton

Monitoring Activities: -Review customer usage records to determine largest Optional (Non-Critical) users

-Contact the Town of Atoka, requesting that they shift at least 10% of their demand over to the City of Munford

-Contact TDEC's Memphis office

### Example Phone Notification for Voluntary Water Reduction Phase

"Hello, this call is from Poplar Grove Utility District. Poplar Grove has entered into the Voluntary Water Reduction Phase of its Drought Management Plan. At this time, we are asking that all customers reduce their water consumption by limiting the watering their lawns, washing vehicles or any other outdoor uses. If you have any questions, please call our office at 837-0181. Thank you for your cooperation in this matter."

-The notice on Poplar Grove's website should be worded similarly to this phone message.

### **MANDATORY WATER REDUCTION PHASE**

#### Continued lower than normal precipitation and continued increase in customer demand

Trigger Point: Any elevated tank staying below 60% full for 3 or more consecutive days

Reduction Goal: Reduce customer usage by at least 20% per day which should allow our elevated tanks to rise to more manageable levels over a period of two days.

Customer Communication: -Post a notice on the District's website

-Notify local media

-Notify all users that outdoor watering, car washing, recreational uses and all other non-essential uses are to be stopped until further notice using the District's phone dialing system

-Request that the Towns of Atoka and Brighton implement their Mandatory Water Reduction Phase of their Drought Management Plans

- Monitoring Activities:
- Maintain contact with the Towns of Atoka and Brighton
  - Monitor the Towns of Atoka and Brighton’s master meters for daily usages to detect increases/decreases in usage
  - Maintain contact with TDEC’s Memphis office

### Example Phone Notification for Mandatory Water Reduction Phase

“Hello, this call is from Poplar Grove Utility District. Poplar Grove has entered into the Mandatory Water Reduction Phase of its Drought Management Plan. At this time, we are requiring all customers to limit their water consumption to only essential uses. If you have any questions, please call our office at 837-0181. Thank you for your cooperation in this matter.”

-The notice on Poplar Grove’s website and that which is supplied to the local media should be worded similarly to this phone message.

### EMERGENCY WATER MANAGEMENT PHASE

#### Continued lower than normal precipitation and continued increase in customer demand

Trigger Point: Any elevated tank staying below 50% full for 3 or more consecutive days

Reduction Goal: Reduce customer usage by at least 30% which should allow our elevated tanks to rise to more manageable levels over a period of two to three days.

Customer Communication:

- Post a notice on the District’s website
- Notify all users that outdoor watering, car washing, recreational uses and all other non-essential uses are to be stopped until further notice using the District’s phone dialing system and by contacting the news media located in Covington and Memphis.
- Request the Towns of Atoka and Brighton to implement their Emergency Water Management Phase of their Drought Management Plans

Monitoring Activities:

- Maintain contact with the Towns of Atoka and Brighton
- Monitor the Towns of Atoka and Brighton’s master meters for daily usages to detect increases/decreases in usage
- Maintain contact with TDEC’s Memphis office

## Example Phone Notification for Emergency Water Management Phase

“Hello, this call is from Poplar Grove Utility District. Poplar Grove has entered into the Emergency Water Management Phase of its Drought Management Plan. At this time, we are requiring that all water uses except for essential, life sustaining uses be stopped. Poplar Grove employees will be patrolling the system to identify non-essential uses of water and notifying customers that these activities must stop at once. If you have any questions, please call our office at 837-0181. Thank you for your cooperation in this matter.”

The notice on Poplar Grove’s website and that which is supplied to the local media should be worded similarly to this phone message.

### **VI. DROUGHT MANAGEMENT IMPLETATION**

The four drought management phases as discussed in Section V of this Drought Management Plan will be implemented by the General Manager or Assistant Manager in the G.M.’s absence. All WTP personnel shall be familiar with this Plan and report the need to implement the Plan to the General Manager and/or Assistant Manager. All WTP personnel shall monitor:

- Water pressure constantly via the PLC
- Elevated tank levels constantly via the PLC
- Daily pumpages at least once per shift via the PLC

This information will be used in determining the drought phases and making a recommendation to the General Manager and/or Assistant Manager regarding what phase is appropriate. The Trigger Points identified in Section V will be utilized in making such a recommendation.

### **ENFORCEMENT**

During the Mandatory Water Reduction Phase or the Emergency Water Management Phase, District employees will patrol the distribution system for noncompliance with the use restrictions. If necessary, District employees may profile a customer’s automated meter to determine compliance with use restrictions. If it is determined that a customer is not complying, the District shall notify the customer either by phone, letter or in person. Such notification shall be documented by District employees. Failure of the customer to comply after this notice is given may result in the termination of service until the drought has passed.

## **RATIONING**

Because of the District's abundant source and its WTP's capability to produce water, rationing is not anticipated during any Phase. However if rationing is required, it will be done according to the determined need of each household based on the number of occupants in each residence.

### **VII. DROUGHT MANAGEMENT TEAM**

The District designates the General Manager (or Assistant Manager in his absence) as the person in charge of implementation of its Drought Management Plan. The General Manager and/or Assistant Manager shall assign roles to each District employee to implement this Drought Management Plan as the need arises. WTP staff shall monitor the WTP and the distribution system according to Section VI. Office staff shall update the website and initiate customer notification by phone as directed. Field employees shall patrol the distribution system for noncompliance as directed. Functional activation of this Plan will begin once the Trigger Point in the Drought Alert has been issued as set forth in Section V. All records will be maintained at the District's office in Atoka.

Deactivation of the Plan will follow the same rational as activation of the Plan, in reverse order. Communication to the public shall be performed only by the General Manager, Assistant Manager or designee.

### **VIII. MEDIA CONTACT INFORMATION**

When the Mandatory Water Reduction Phase or the Emergency Water Management Phase is implemented according to the Trigger Points of this Drought Management Plan, the local media will be requested to notify the District's customers. Below is a list of local media that should be notified during these Phases.

-WKBL Radio Covington, TN Phone #: 476-7129	-WMC TV 5 Memphis, TN Phone #: 726-0555	-WREG Channel 3 Memphis, TN Phone#: 543-2333
-WHBQ FOX 13 Memphis, TN Phone #: 320-1313	-WATN TV 24 Memphis, TN Phone #: 321-7673	

**IX. POPLAR GROVE’S WEBSITE LINK TO DROUGHT MANAGEMENT PLAN**

<http://poplargroveutilitydistrict.com/Portals/18/PoplarGroveDMP.pdf>

**X. REVIEWS AND UPDATES**

Once a drought event is completed, regardless of which phase is reached, the General Manager will implement a review within 6 months of the event, of all actions leading up to the drought and all actions undertaken during and immediately after the event. This Drought Management Plan shall be updated every 3 years or more often if there is a significant change to the WTP or distribution system.

Adopted this 28<sup>th</sup> day of June, 2016.

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Clifford Wilson

\_\_\_\_\_  
Robert Strong

\_\_\_\_\_  
David McDaniel

Updated: \_\_\_\_\_ By: \_\_\_\_\_

Updated: \_\_\_\_\_ By: \_\_\_\_\_

Updated: \_\_\_\_\_ By: \_\_\_\_\_