



Smiths Water and Sewer Authority

Drought Contingency Plan

September 12, 2016

SYNOPSIS

Smiths Water and Sewer Authority recognizes that there is a public obligation to responsibly manage the available water resources of our community and customers.

SWSA feels the actions proposed in the following plan are a measure of sound resource management.

One of the most widely accepted methods of measuring drought conditions is the Palmer Index (PI). The calculations are based on temperature and precipitation records. The intent of the PI is to measure moisture levels in the soil. Normal weather in a particular zone will have a value of zero. Dry conditions have a negative value while wet conditions have a positive value. The values for a particular region can be obtained from the U.S. Department of Commerce.

Some of the ways that SWSA will manage drought events to its impacted customer base include the following:

- **Monitor Impact of Drought:** During a drought event, SWSA emphasizes additional focus on actual use versus historical use for the same period. This baseline is extremely important as a tool for us to identify periods of low water output. One Way SWSA follows this practice is by tracking daily and monthly water use and rainfall.
- **Monitor Demand Reductions:** Normally, restrictions are set by the EPD with a target reduction goal. SWSA helps educate the public in order to encourage customers to comply.
- **Public Relations:** SWSA uses various media such as door hangers, written notices, bill inserts, and word-of-mouth to get the word out about a drought event.
- **Modify/Adjust Demands of Large Volume Users:** SWSA will work closely with large-volume users during drought events to help them conserve water while minimizing waste. Some of the customers that fall into this category include multi-family structures, institutions, and schools.

Components of the Plan

1. During a drought event, the first response is to implement mandated water restrictions. As drought levels change, additional initiatives within this plan may be imposed as deemed necessary.
2. SWSA may set excess tier rates specifically targeted to high volume users in an effort to assist in enforcing the water use restrictions.
3. During drought events, SWSA personnel will increase awareness of non-conservative water users while operating within their current service routes in order to identify customers that exceed the guidelines set forth in the plan. When a non-conservative water user is observed, the SWSA representative will attempt to make direct contact in order to discuss and educate the customer on the need to follow the guidelines. This visitation will be documented. Consecutive notices to the same customer may result in written warnings that may eventually lead to a penalty.
4. Customers who are found to have service leaks will be encouraged to make repairs as soon as possible, especially during a drought event. Should a service leak remain broken for an extended period of time, service could become interrupted until the repair is made. The other option would be to impose the “excess” rate tier for that customer classification.
5. Encourage and assist local multi-family and high volume users in the development of their own drought response plans.

Smiths Water and Sewer Authority DROUGHT RESONSE PLAN PROCEDURES

Non- Drought



Drought Level 1



Drought Level 2



Drought Level 3



Drought Level 4



Drought Level 5

Non-Drought Response

Outdoor Water Use Schedule During Non-Drought Periods

No outdoor water restrictions

SWSA Optional Requirements:

- (a) Travel assigned routes to look for water leaks

Smiths Water and Sewer Authority Drought Response Checklist

1 Meter readers have traveled assigned routes

2

3

4

5

6

The above drought response items have been implemented for Non-Drought Level

Signed _____

Date _____

Drought Level 1 Response

Outdoor Water Use Schedule During Drought level 1

Outdoor water use other than exempted activities shall occur as follows:

- (a) Odd-numbered addresses: outdoor water use allowed on odd calendar days
- (b) Even-numbered addresses: outdoor water use allowed on even calendar days

SWSA Optional Requirements:

- (b) Travel assigned routes to look for leaks and non-conservation water users

Smiths Water and Sewer Authority Drought Response Checklist

1 Meter readers have traveled assigned routes

2 Customers appear to be in general compliance with outdoor water-use

3

4

5

6

The above drought response items have been implemented for Drought level 1

Signed _____

Date _____

Drought Level 2 Response

Declared Drought Response Level Two

Outdoor water use may occur on the scheduled day within the hours of 12:00 midnight to 10:00 a.m. and 4:00 p.m. to 12:00 midnight

- (a) The scheduled days for odd-numbered addresses are odd calendar days
- (b) The scheduled days for even-numbered addresses are even calendar days
- (c) Use of hydrants for any purpose other than firefighting, public health, safety or flushing is prohibited

SWSA Optional Requirements:

- (a) Travel assigned routes to look for leaks and non-conservation water users

Smiths Water and Sewer Authority Drought Response Checklist

1 Meter readers have traveled assigned routes

2 SWSA personnel visited with commercial outdoor water users to discuss details of restrictions

3 Customers appear to be in general compliance with outdoor water use restrictions

4

5

6

The above drought response items have been implemented as listed for Drought Level 2

Signed _____

Date _____

Drought Level 3 Response

Declared Drought Response Level Three

Outdoor water use may occur on the scheduled day within the hours of 12:00 midnight to 10:00 a.m.

- (a) The scheduled days for odd-numbered addresses are odd calendar days
- (b) The scheduled days for even-numbered addresses even calendar days
- (c) The following uses are prohibited:
 - 1) Using hydrants for any purpose other than firefighting, public health, safety or flushing.
 - 2) Washing hard surfaces such as streets, gutters, sidewalks and driveways except when necessary for public health and safety.

SWSA Optional Requirements:

- (a) Encourage/assist local high volume users in development of their own conservation plans

Smiths Water and Sewer Authority Drought Response Checklist

- | | |
|---|---|
| 1 | Meter readers have traveled assigned routes |
| 2 | SWSA personnel visited with commercial outdoor water users to discuss details of restrictions |
| 3 | Customers appear to be in general compliance with |
| 4 | |
| 5 | |
| 6 | |

The above drought response items have been implemented as listed for Drought Level 3

Signed _____

Date _____

Drought Level 4 Response

Declared Drought Response Level Four

Outdoor water use may occur on the scheduled day within the hours of 12:00 midnight to 10:00 a.m. No outdoor usage on weekends.

- (a) The scheduled day for odd-numbered addresses is odd calendar days.
- (b) The scheduled days for even-numbered addresses is even calendar days.
- (c) The following uses are prohibited:
 - 1) Using hydrants for any purpose other than firefighting, public health, safety or flushing.
 - 2) Washing hard surfaces such as streets, gutters, sidewalks and driveways except when necessary for public health and safety.
 - 3) Filling installed swimming pools except when necessary for health care or structural integrity
 - 4) Washing vehicles, such as cars, boats, trailers, motorbikes, airplanes, golf carts
 - 5) Washing buildings or structures except for immediate fire protection
 - 6) Non-commercial fund-raisers, such as car washes
 - 7) Using water for ornamental purposes, such as fountains, reflecting pools and waterfalls except when necessary to support aquatic life

SWSA Optional Requirements:

- (a) Impose service interruptions for unreasonable/unrepaired leaks
- (b) Monitor elevations at withdrawal intake points

Smiths Water and Sewer Authority Drought Response Checklist

- | | |
|---|---|
| 1 | Meter readers have traveled assigned routes |
| 2 | Customers appear to be in general compliance with restrictions |
| 3 | SWSA personnel visited with commercial outdoor water users to discuss details of restrictions |
| 4 | Intake elevations noted and recorded |
| 5 | |

The above drought response items have been implemented as listed for Drought Level 4

Signed _____

Date _____

Drought Level 5 Response

EPD Requirements

Declared Drought Response Level Five

No outdoor water use is allowed other than for activities exempted in 391-3-30-.05 order.

Smiths Water and Sewer Authority Drought Response Checklist

1 Meter readers have traveled assigned routes

2 Customers appear to be in general compliance with restrictions

3 Service leaks noticed and reported

4 Intake elevations noted and recorded

5 Discuss fire flow procedure plan and limitations with Fire Department

6 Notify customers that service will be interrupted due to unreasonable leaks

The above drought response items have been implemented for Non-Drought Level 5

Signed _____

Date _____

This Water Conservation Plan was developed to update the Emergency Water Conservation Plan of Smiths Water and Sewer Authority, adopted February 18, 2002. The Smiths Water and Sewer Authority Water Treatment Plant uses water from Lake Oliver, a Georgia Power Company impoundment on the Chattahoochee River. Smiths Water and Sewer Authority is committed to water conservation while delivering safe drinking water to its community.

The following serves as an update for each individual section as outlined in the Water Conservation Plan.

- Background Information
- System Management
- Treatment Plant Management
- Rate Making Policies
- Plumbing Ordinances and Codes
- Recycle-Reuse
- Public Education Programs
- Water Use Data
- Long-Range Planning

Background Information

Smiths Water and Sewer Authority currently provides water service to customers in the Smiths Station, Bleeker and Salem area of Lee County, Alabama. Currently SWSA has 9,814 residential and commercial customers, with an estimated 26,105 population served by the system.

Table 2.0 shows the changes in service connections from the last 6 years.

Table 2.0
Estimated Service Connections

Year	Service Connections
2010	9,270
2016	9,814

SWSA currently is permitted to withdraw a maximum daily and average monthly quantity of 8 MGD from the Chattahoochee River on Lake Oliver. Raw water withdrawn at this location is treated at Smiths Water and Sewer Authority’s Treatment Plant and provides the water supply for the service area.

The staff at SWSA is well equipped to handle any challenges that may arrive from the changes in water demand and water quality at the treatment plant and in the distribution system. Service interruptions are a high priority and push the staff to respond quickly and to provide a high level of customer satisfaction.

System Management

Sound system management programs are implemented by SWSA to ensure efficient water use. The following sections describe the Unaccounted for Water and SWSA’s current system management programs for minimizing water loss.

Unaccounted for Water (UAW)

SWSA employees monitor its UAW continuously. A system wide meter change out and our leak detection and repair programs have reduced the UAW. Since the meter change out the UAW average is 10.5%. Figure 2.1 shows the estimated UAW percentage since the meter change out compared to previous years. SWSA is committed to minimizing UAW by continuing to enforce its aggressive system management programs.

Figure 2.1	
January – December UAW	
2012	13.42%
2013	13.75%
2014	15.30%
2015	10.29%
Jan-Aug 16	6%

Leak Detection Program

SWSA's Leak Detection and Repair Programs have been and will continue to be a high priority. SWSA owns leak detection equipment and uses it to investigate the location of the leaks when they are reported. Once a leak is located, a repair plan is determined and implemented promptly.

Meter Maintenance and Replacement Program

SWSA completed a system wide meter change out program in 2014 to reduce leakage and water loss caused by inaccurate meter readings. Based on records a total of 10,044 meters were replaced between 2013 and 2014. This includes 9,746 5/8-inch diameter meters and 298 meters with diameters of one inch and above.

Availability of Accurate Water System Maps

SWSA employee's continuously update the system maps when new water lines or valves are installed. The engineering firm Goodwyn, Mills and Cawood is in the process of building a hydraulic model of the system.

Prevention of Tank Overflows

SWSA's SCADA system monitors tank levels continuously and transmits the data to the Water Treatment Plant. Operators have the capability to control the tank levels at all times. As a result, tank overflows rarely occur.

Reduction in Hydrant Flushing

SWSA utilizes automatic flushers for controlled flushing in the remote portions of the distribution system. Zone or subdivision flushing is performed only as needed. Timed, routine flushing is conducted from these flushers to maintain chlorine residual.

SWSA monitors water usage from the automatic flushers, but water usage from hydrant flushing is typically not monitored. While timers are used for the automatic flushers, hydrant flushing is conducted only on an as-needed basis based on water quality concerns or customer complaints.

Prevention of Unauthorized Water Use/Non-Metered Service Connections

All connections made to the SWSA system are metered. SWSA remains vigilant in identifying illegal connections and or thefts. SWSA has established a tampering fee/ illegal connection fee schedule.

Interconnections with Other Systems

SWSA currently maintains the following emergency connections with other systems:

- Opelika Water Works (one 8-inch)
- Phenix City Utilities (one 8-inch)
- Lee-Chambers (one 6-inch)

The Opelika and Phenix City connections are for purchasing water and the Lee-Chambers connection is for supplying water.

Treatment Plant Management

The following sub-sections describe the current practices to minimize in-plant water use.

Meter Maintenance and Calibration

The raw and finished water meters at the SWSA Water Treatment Plant are calibrated annually by an independent contractor. Meter readings are kept daily and compared to the readings from the plant’s SCADA system.

In-Plant Water Use

In-plant water use at the SWSA remains at low levels. In plant water loss is at a minimum because all backwash water, filter rewash, basin drainage, sludge removal and other process water is recycled through a clarifier and is returned to the raw water main at the head of the plant. The new filters built during the most recent addition in 2011 at the water treatment plant are the air-scour type. The air-scour filters help save water during the backwash process. Water use for the filter backwash process the last 18 months is approximately 2.51%.

Rate Making Policies

SWSA has implemented a water rate program to promote water efficiency and conservation. The current water rate includes a fixed monthly charge and an increasing block rate based on consumption for residential customers. Commercial customers pay a minimum and a slightly lower rate for water consumption over 20,000 gallons. Commercial and residential customers are encouraged to conserve water. Table 2.3 present the current monthly charges and rate structures, respectively.

**Table 2.3
Current Monthly Charge – August 2012**

Gallons	Cost
First 1,000	\$19.75
Next 2,500	\$4.65
Next 5,000	\$4.85

All Over 8,500	\$5.25
Commercial	
First 20,000	\$90.00
All over 20,000	\$4.20

Second Meters

Second meters are available but only at the customer’s request. These meters are billed for water usage only with no sewer fees applied.

Financial Status

SWSA is entirely self-supporting with costs recovered through user charges and fees.

Plumbing Ordinance and/or Code

SWSA supports the implementation of the County’s Plumbing Code, which is enforced through the Lee County Building Inspection Department. SWSA will continue working with County inspectors to aid in educating the public on the installation of low flow and low consumption appurtenances for all new and renovation projects.

Outside Water Use Ordinance

SWSA follows EPD guidelines for outdoor water use restrictions during drought conditions. SWSA has adopted a Drought Response Plan which includes mandated outdoor watering restrictions for both non-drought and drought periods.

Recycle-Reuse

All the water used during the treatment process at the SWSA Water Treatment Plant is sent through the clarifier to recycle basins. The sludge removed from the clarifier is sent to the sewer line. The supernatant water is sent to the recycle basins where it is pumped into the raw water line at the head of the plant.

Public Education Programs

For over 8 years SWSA has partnered with Lee County Water Festival in Lee County Alabama. As Lee County Water Festival’s community partner, SWSA provides resources, support and assistance to educate every fourth grade student in Lee County on water conservation and other water related issues. SWSA utilizes Public Education to emphasize and increase the appreciation of the value of water. This increase in perceived value promotes water conservation. SWSA utilizes its website and bill notes as a tool to communicate with its customers and provides

important information year round. SWSA mails a Consumer Confidence Report to all of its customers in June of every year. The CCR contains information on conservation, water restrictions, and water quality.

Water Use Data

SWSA has made significant progress in many areas promoting and enhancing water conservation practices. These efforts are reflected through the meter change-out program, public education, and responsiveness to leaks. Table 2.5 shows the per capita residential and commercial water demand reduction since the adoption of the initial Water Conservation Plan in 2002.

**Table 2.5
Estimated Per Capita Water Use**

Year	Estimated per Capita Water Consumption (gpcd)	Source of Data
2005	118	2005 Total Finished Water pumped to System
2010	109	2010 Total Finished Water pumped to System
2014	80	2014 Total Finished Water Pumped to System
2015	67	2015 Total Finished Water Pumped to System

Note: The per capita water use represents residential and commercial water consumption only.

Long-Range Planning

Smiths Water and Sewer Authority works closely with their engineering firm,(Goodwyn, Mills and Cawood), in implementing a Long Term Plan. This plan provides the directions and framework for continuous improvement and enhancement of the drinking water system. The most recent addition was to the Water Treatment Plant in 2010-2011. The addition was planned to meet the growing needs of the community.