

Model Drought Management Plan and Response Ordinance

Provided by the South Carolina Department of Natural Resources as required by the South Carolina Drought Response Act of 2000.

Contents

Drought Management Plan	2
Section I: Declaration of Purpose and Intent.....	2
Section II: Definition of Terms	2
Section III: Drought Management Plan	4
A. Introduction.....	4
B. Designation of Water System Drought Response Representative	4
C. Description of Water System Layout, Water Sources, Capacities and Yields	4
D. Identification of Water System Specific Drought or Water Shortage Indicators	4
E. Cooperative Agreements and Alternative Water Supply Sources	6
F. Description of Pre-Drought Planning Efforts	6
G. Description of Capital Planning and Investment for System Reliability and Demand Forecasting	7
Drought Response Ordinance	8
A. Declaration of Policy and Authority	8
B. Moderate Drought Phase	8
C. Severe Drought Phase	10
D. Extreme Drought Phase.....	11
E. Rationing	13
F. Enforcement of Restrictions	13
G. Variances	14
H. Status of the Ordinance	15



Drought Management Plan

***Note to the utility: The specific content of this Ordinance or Resolution should be reviewed with the utility's general legal counsel and bond counsel if the utility has any indebtedness outstanding to insure its enforceability.**

Section I: Declaration of Purpose and Intent

The _____ (water system) understands the fundamental need to make efficient use of the limited and valuable water resource under its stewardship in order to protect the public's health and safety and environmental integrity. The purpose of this document is to establish a plan and procedures for managing water demand and evaluating supply options before and during a drought-related water shortage. The intent is to satisfy the requirements of the Drought Response Act of 2000 (Code of Laws of South Carolina, 1976, Section 49-23-10, et seq., as amended) with the goal of achieving the greatest public benefit from domestic water use, sanitation, and fire protection and to provide water for other purposes in an equitable manner. Therefore, the _____ (water system) has adopted this Drought Management Plan and Drought Response Ordinance that provide the policies and the authority to fulfill this obligation. The Drought Management Plan outlines the framework by which _____ (water system) will internally prepare for water shortages. The Ordinance provides the regulations by which the _____ (water system) will manage and control its customer water usage during various levels of a drought.

Section II: Definition of Terms

For the purposes of this Plan and the accompanying Ordinance, the following definitions will apply:

Aesthetic Water Use: Water use for ornamental or decorative purposes such as fountains, reflecting pools and waterfalls.

Commercial and Industrial Use: Water use integral to the production of goods and/or services by any establishment having profit as its primary aim.

Conservation: Reduction in water use to prevent depletion or waste of the resource.

Customer: Any person, company or organization using finished water owned or supplied by the _____ (water system).

Domestic Water Use: Water use for personal needs or for household purposes such as drinking, bathing, heating, cooking, sanitation or for cleaning a residence, business, industry or institution.

Drought Alert Phases: There are four drought alert phases to be determined by the Drought Response Committee for the State of South Carolina. The four phases are:

- 1) Incipient Drought
- 2) Moderate Drought
- 3) Severe Drought
- 4) Extreme Drought



Drought Response Management Areas: There are four drought management areas corresponding to the major river basins in South Carolina. The four areas are:

- 1) West or Savannah
- 2) Central or Santee
- 3) Northeast or Pee Dee
- 4) Southern or Ashepoo, Combahee, and Edisto.

In order to prevent overly broad response to drought conditions, drought response measures shall be considered within individual drought management areas or within individual counties, as applicable.

Drought Response Committee: A committee composed of State and local representatives created for the purpose of coordinating responses to water supply shortages within Drought Management Areas and making recommendations for action to the South Carolina Department of Natural Resources and/or the Governor. The Committee is composed of State agency representatives from the South Carolina Emergency Management Division of the Office of the Adjutant General, South Carolina Department of Health and Environmental Control, South Carolina Department of Agriculture, South Carolina Forestry Commission, and South Carolina Department of Natural Resources, as well as local committees representing counties, municipalities, public service districts, private water suppliers, agriculture, industry, domestic users, regional councils of government, commissions of public works, power generation facilities, special purpose districts and Soil and Water Conservation Districts.

Essential Water Use: Water used specifically for fire fighting, maintaining in-stream flow requirements and to satisfy Federal, State or local public health and safety requirements.

Finished Water: Water distributed for use after treatment. The terms “water use,” “water user,” and “water customer” refer to finished water use unless otherwise defined.

Institutional Water Use: Water used by government, public and private educational institutions, churches and places of worship, water utilities, and organizations within the public domain.

Irrigation Water Use: Water used to maintain gardens, trees, lawns, shrubs, flowers, athletic fields, rights-of-way and medians.

Non-essential Water Use: Categories of water use other than Essential Water Use. Examples of non-essential water use include landscape irrigation and the washing of buildings, parking lots, automobiles, etc.

Residential Equivalent Unit (REU): An equivalency unit defined to be equal to one single- family residence. _____ 's (*water system*) allocated water capacity equals _____ gallons per day per REU.

SC Dept. of Natural Resources: The State agency with primacy to implement the provisions of the Drought Response Act.

Water Supply Shortage: Lack of adequate, available water caused by drought to meet normal demands.



Section III: Drought Management Plan

A. Introduction

To ensure that _____ (*water system*) adequately manages its water system during drought-related conditions, an organized plan is necessary for system operation and reliability, proper communications, effective coordination and ultimate allocation of water use. Prior planning will compliment the _____ (*water system*) ability to respond to drought conditions and to enforce the related Ordinance.

B. Designation of Water System Drought Response Representative

Administering a Drought Plan requires the skills needed to undertake a comprehensive public information program and the judgement required to deal with equity issues arising from enforcement of a mandatory program. Someone who has these skills will be selected by the water system to manage the water system’s program and serve as the principal contact for the news media as the water system’s Drought Response Representative. The Drought Response Representative for _____ (*water system*) is _____ (*include name of individual, address, phone & e-mail*).

C. Description of Water System Layout, Water Sources, Capacities and Yields

The _____ (*water system*) is located in the _____ Drought Response Management Area of South Carolina.

The system serves: _____ (*include general description of service area and number of active customers*).

Briefly, describe the layout of the water system:

_____ (*include pumping capability, elevated and ground storage capacity, reservoir capacity, aquifer storage and recovery capability, main transmission piping and plant capacity*).

The water supply sources available to the system are: _____ (*e.g. river, reservoir, 2 wells 250 feet deep*).

The SCDHEC total permitted capacity of the water system operated by _____ (*water system*) is _____ gallons per day.

If the system produces drinking water from various sources, provide the SCDHEC permitted capacity for each source: _____.

D. Identification of Water System Specific Drought or Water Shortage Indicators

Operators of every water system must develop historical trends that are valuable indicators of a system’s ability to meet demand when demand begins to outpace supply. The



_____ (water system) has developed triggers for use during drought or demand water shortages that describe when specific phases of the Drought Response Ordinance are implemented. The system triggers are as follows:

Moderate Drought Phase (include the relevant following examples:)

1. Reservoirs _____ full
2. Storage falls below ____ percentage of capacity
3. Stream-flow less than _____ cubic feet per second
4. Aquifer levels less than _____
5. _____ number of days of supply remaining
6. Average daily use greater than ____ mgd for ____ consecutive days
7. Others:

Severe Drought Phase (include the relevant following examples:)

1. Reservoirs _____ full
2. Storage falls below ____ percentage of capacity
3. Stream-flow less than _____ cubic feet per second
4. Aquifer levels less than _____
5. _____ number of days of supply remaining
6. Average daily use greater than ____ mgd for ____ consecutive days
7. Others:

Extreme Drought Phase (include the relevant following examples:)

1. Reservoirs _____ full
2. Storage falls below ____ percentage of capacity
3. Stream-flow less than _____ cubic feet per second
4. Aquifer levels less than _____
5. _____ number of days of supply remaining
6. Average daily use greater than ____ mgd for ____ consecutive days
7. Others:



E. Cooperative Agreements and Alternative Water Supply Sources

Successful drought management requires a comprehensive program by the water utility. In many situations administrative agreements are required with other agencies to fully implement the Plan. Agreements with other water purveyors may be necessary for alternative water supply sources. Other agreements that strengthen conservation efforts by large users may be necessary. The _____ (water system) identifies the following agreements that are in place to facilitate the implementation of this Plan:

_____ (include any limitations associated with putting alternate sources on-line, as well as the quantity of water confirmed in the agreement.)

Agreements that are being negotiated or considered with other entities are:

_____ (include the entity names and type of agreement).

F. Description of Pre-Drought Planning Efforts

Before the occurrence of a water supply shortage and the need to implement the emergency provisions of the Ordinance, it is important that certain pre-response measures be taken with the aim of conserving the system’s source water, as well as the water distributed to the customer. In regards to the conservation measures listed below, the _____ (water system) has taken the following actions:

1. Identification of all major water users of the system (top 10%, include wholesale customers):

2. Identification of those users with whom there are conservation agreements:

3. A vigorous public education program is critical for achieving substantial water use reductions. An effective public outreach program will keep the public informed about the water supply situation, what actions will mitigate drought emergency problems, and how well the public is doing in terms of meeting the program goals. Keeping the public involved, informed, and participating in the decision-making process is key to implementing an effective Drought Management Plan. Provide a description of your utility’s efforts to develop an effective drought-related public education program:



(include how information is conveyed to customers, describe your outreach efforts in the community, describe your incentive/disincentive strategy for water conservation, describe operational changes that you have made to enhance conservation, discuss water conservation audits, your use of water saving fixtures or any other interaction that you have with customers).

G. Description of Capital Planning and Investment for System Reliability and Demand Forecasting

Water utilities routinely find that capital improvements to the system strongly enhance their ability to get through times of drought. It is important that every water utility aggressively plan and build for future needs. The utility must continue to provide for system operation flexibility, improved pumping and storage capacity and new technologies to meet the demands of tomorrow. Describe the utility’s capital improvement program and how past efforts have enhanced your system’s ability to meet demand during drought conditions:

Describe other system improvements the utility should consider to prepare for future droughts and increasing water demands:



Drought Response Ordinance

***Note to the utility: The specific content of this Ordinance or Resolution should be reviewed with the utility's general legal counsel and bond counsel if the utility has any indebtedness outstanding to insure its enforceability.**

A. Declaration of Policy and Authority

The objective of this Drought Response Ordinance is to establish authority, policy and procedure by which the _____ (*water system*) will take the proper actions to manage water demand during a drought-related shortage. The Ordinance satisfies the requirements of the Drought Response Act of 2000 and has the goal of achieving the greatest public benefit from limited supplies of water needed for domestic water use, sanitation, and fire protection and of allocating water for other purposes in an equitable manner.

This Ordinance outlines the actions to be taken for the conservation of water supplied by the _____ (*water system*). These actions are directed both towards an overall reduction in water usage and the optimization of supply.

To satisfy these goals, the _____ (*water system*) hereby adopts the following regulations and restrictions on the delivery and consumption of water. This Ordinance is hereby declared necessary for the protection of public health, safety and welfare and shall take effect upon its adoption by the _____ (*water system*).

If it becomes necessary to conserve water in its service area due to drought, the _____ (*water system*) is authorized to issue a proclamation (a "Proclamation") that existing conditions prevent fulfillment of the usual water-use demands. The Proclamation is an attempt to prevent depleting the water supply to the extent that water-use for human consumption, sanitation, fire protection, and other essential needs becomes endangered.

Immediately upon issuance of such a Proclamation, regulations and restrictions set forth under this Ordinance shall become effective and remain in effect until the water supply shortage has ended and the Proclamation rescinded.

Water uses that are regulated or prohibited under this Ordinance are considered to be non-essential and continuation of such uses during times of water supply shortages is deemed to constitute a waste of water, subjecting the offender(s) to penalties.

The Drought Management Plan as outlined in Section I - III is hereby approved.

B. Moderate Drought Phase

Upon notification by the Drought Response Committee that a Moderate drought condition is present and is expected to persist and/or upon determination by the _____ (*water system*) that a moderate water supply shortage exists based on trigger levels, the _____ (*water system*) will seek voluntary reductions from its customers in the use of water for all purposes and voluntary reductions on using water during certain peak water demand periods. Specifically, the goal during this phase is to achieve a reduction of 20% in



residential water use and 15% in other water uses such as commercial, industrial, institutional and irrigation; and a reduction in overall water use of 15%. To accomplish this, the _____ (*water system*) will take the following actions:

- 1) Issue a Proclamation to be released to local media, _____'s (*water system*) customers and to the South Carolina Department of Natural Resources Drought Information Center that Moderate drought conditions are present.
- 2) Provide written notification to the South Carolina Department of Natural Resources Drought Information Center and routinely publish in a newspaper of general circulation in the service area of the water system the voluntary conservation measures that the customers are requested to follow during Moderate drought conditions, including:
 - a. Reduce residential water use to _____(i.e.6 5) gallons per person per day and a maximum of _____(i.e.250) gallons per household per day;
 - b. Eliminate the washing down of sidewalks, walkways, driveways, parking lots, tennis courts and other hard surfaced areas;
 - c. Eliminate the washing down of buildings for purposes other than immediate fire protection;
 - d. Eliminate the flushing of gutters;
 - e. Eliminate the domestic washing of motorbikes, boats, cars, etc.;
 - f. Eliminate the use of water to maintain fountains, reflection ponds and decorative water bodies for aesthetic or scenic purposes, except where necessary to support aquatic life;
 - g. Reduce watering of lawns, plants, trees, gardens, shrubbery and flora on private or public property to the minimum necessary. Encourage outdoor watering to be done during off-peak hours.
 - h. Reduce the amount of water obtained from fire hydrants for construction purposes, fire drills or for any purpose other than fire-fighting or flushing necessary to maintain water quality; and
 - i. Limit normal water use by commercial and individual customers including, but not limited to, the following:
 - i. Stop serving water in addition to another beverage routinely in restaurants;
 - ii. Stop maintaining water levels in scenic and recreational ponds and lakes, except for the minimum amount required to support aquatic life;
 - iii. Cease water service to customers who have been given a 10-day notice to repair one or more leaks and have failed to do so.
- 3) Intensify maintenance efforts to identify and correct water leaks in the distribution system.
- 4) Cease to install new irrigation taps on the water system.
- 5) Continue to encourage and educate customers to comply with voluntary water conservation.



C. Severe Drought Phase

Upon notification by the Drought Response Committee that a Severe drought condition is present and is expected to persist and/or upon determination by the _____ (*water system*) that a severe water supply shortage exists based on trigger levels, _____ (*water system*) will seek voluntary reduction in the use of water for all purposes and mandatory restrictions on non-essential usage and restrictions on times when certain water usage is allowed. Specifically, the goal during this phase is to achieve a reduction of 25% in residential water use, 20% in all other water use categories, and a reduction in overall water use of 20%. To accomplish these goals, the _____ (*water system*) will take the following actions:

- 1) Issue a Proclamation to be released to the local media, _____'s (*water system*) customers and to the South Carolina Department of Natural Resources Drought Information Center that Severe drought conditions are present.
- 2) Provide written notification to the South Carolina Department of Natural Resources Drought Information Center and routinely publish in a newspaper of general circulation in the service area of the water system the voluntary conservation measures and mandatory restrictions to be placed on the use of water supplied by the utility, including:
 - a. Voluntary reduction of residential water use by the utility's customers to ____ (i.e. 55) gallons per person per day and a maximum of ____ (i.e. 200) gallons per household or REU per day.
 - b. Control landscape irrigation by the utility's customers by staggering watering times.
 - c. Mandatory restrictions on the use of water supplied by the utility for activities including:
 - i. Eliminate the washing down of sidewalks, walkways, driveways, parking lots, tennis courts and other hard surfaced areas;
 - ii. Eliminate the washing down of buildings for purposes other than immediate fire protection;
 - iii. Eliminate the flushing of gutters;
 - iv. Eliminate domestic washing of motorbikes, boats, cars, etc.;
 - v. Eliminate the use of water to maintain fountains, reflection ponds and decorative water bodies for aesthetic or scenic purposes, except where necessary to support aquatic life;
 - vi. Eliminate filling or maintaining public or private swimming pools;
 - vii. Eliminate obtaining water from fire hydrants for construction purposes, fire drills or any purpose other than fire-fighting or flushing necessary to maintain water quality; and
 - d. Limit use of water by commercial and individual customers including, but not limited to, the following:



- i. Stop serving water in addition to another beverage routinely in restaurants;
 - ii. Stop maintaining water levels in scenic and recreational ponds and lakes, except for the minimum amount required to support aquatic life;
 - iii. Limit irrigating golf courses and any portion of its grounds;
 - iv. Cease water service to customers who have been given a 10-day notice to repair one or more leaks and have failed to do so; and
 - v. Limit expanding commercial nursery facilities, placing new irrigated agricultural land in production or planting or landscaping when required by site design review process.
- 3) Intensify maintenance efforts to identify and correct water leaks in the distribution system.
 - 4) Continue to cease installation of new irrigation taps on the water system.
 - 5) Publicize widely the penalties to be imposed for violations of mandatory restrictions and the procedures to be followed if a variance in the restrictions is requested.
 - 6) Expand the use of education and public relations efforts and emphasize the penalties associated with violating the mandatory restrictions.
 - 7) Provide written notification monthly to the South Carolina Department of Natural Resources Drought Information Center regarding the success of the voluntary and mandatory restrictions.

D. Extreme Drought Phase

Upon notification by the Drought Response Committee that an Extreme drought condition is present and is expected to persist and/or upon determination by the _____ (*water system*) that an extreme water supply shortage exists based on the trigger levels, the _____'s (*water system*) will impose mandatory restrictions in the use of water for all purposes and on the times when certain water usage is allowed. Specifically, the goal during this phase is to achieve a reduction of 30% in residential water use, 25% in all other categories of water uses and a reduction in overall water use of 25%. To accomplish these goals, the _____ (*water system*) will take the following actions:

- 1) Issue a Proclamation to be released to the local media, the _____ (*water system*) customers and to the South Carolina Department of Natural Resources Drought Information Center that Extreme drought conditions are present;
- 2) Provide written notification to the South Carolina Department of Natural Resources Drought Information Center and routinely publish in a newspaper of general circulation in the service area of the water system the mandatory restrictions to be placed on the use of water supplied by the utility, including:
 - a. Limiting residential water use to ____ (i.e. 45) gallons per person per day and a maximum of ____ (i.e. 150) gallons per household or REU per day.
 - b. Eliminate landscape irrigation by the utility's customers.



- c. Mandatory restrictions on the use of water supplied by the utility for activities including:
 - i. Eliminate the washing down of sidewalks, walkways, driveways, parking lots, tennis courts and other hard surfaced areas;
 - ii. Eliminate the washing down of buildings for purposes other than immediate fire protection;
 - iii. Eliminate the flushing of gutters;
 - iv. No domestic washing of motorbikes, boats, cars, etc.;
 - v. Eliminate the use of water to maintain fountains, reflection ponds, and decorative water bodies for aesthetic or scenic purposes, except where necessary to support aquatic life.
 - vi. Eliminate filling or maintaining public or private swimming pools;
 - vii. Eliminate obtaining water from fire hydrants for construction purposes, fire drills, or any purpose other than firefighting or flushing necessary to maintain water quality; and
 - d. Limit normal water use by commercial and individual customers including, but not limited to, the following:
 - i. Stop serving water in addition to another beverage routinely in restaurants;
 - ii. Stop maintaining water levels in scenic and recreational ponds and lakes, except for the minimum amount required to support fish and wildlife;
 - iii. Limit irrigating golf courses and any portion of their grounds;
 - iv. Cease water service to customers who have been given a 10-day notice to repair one or more leaks and have failed to do so; and
 - v. Limit expanding commercial nursery facilities, placing new irrigated agricultural land in production, or planting or landscaping when required by site design review process.
- 3) Intensify maintenance efforts to identify and correct water leaks in the distribution system.
 - 4) Continue to cease installation of new irrigation taps on the water system.
 - 5) Outline other conservation measures, examples are:
 - a. Place a moratorium on the issuance of all new water service connections and contracts for all new water main extensions. As part of the public information process, provide notice to developers of the moratorium;
 - b. Encourage all residential water customers to voluntarily reduce overall monthly water usage to 70% of the customer's monthly average. If voluntary reduction of usage is not successful, the _____ (*water system*) may, at its option, implement the following excessive use rate schedule for water:



Tier I	0 - _____ gallons/REU	regular rate
Tier II	_____ - _____ gallons/REU	2 times regular rate
Tier III	Over _____ gallons/REU	3 times regular rate

- c. Impose a drought surcharge per thousand gallons of water that increases with higher usage. The general principle behind the drought surcharge is that the fee is imposed on water use in excess of _____ of normal _____ use. The drought surcharge is a temporary fee imposed during the current water supply shortage and is not a cost-based rate. The drought surcharge is temporary and will be terminated at such time as the _____ (*water system*) determines the water supply is above the trigger levels.
- d. If the conservation measures of the *Ordinance or Plan* prove inadequate to mitigate the effects of the drought conditions or water supply availability, the _____ (*water system*) may take additional actions including, but not limited to:
- i. Decreasing the gallon/REU limits in the different tiers; and
 - ii. Reduction of water system pressure as needed.
- 6) Publicize widely the penalties to be imposed for violations of mandatory restrictions and the procedures to be followed if a variance in the restrictions is requested.
- 7) Expand the use of education and public relations efforts as conducted under the Moderate and Severe drought phase and emphasize the penalties associated with violating the mandatory restrictions.
- 8) Provide written notification monthly to the South Carolina Department of Natural Resources Drought Information Center regarding the success of the mandatory restrictions.

E. Rationing

If a drought threatens the protection of public health and safety, the _____ (*water system*) is hereby authorized to ration water.

F. Enforcement of Restrictions

If any customer of the _____ (*water system*) fails to comply with the mandatory water use restrictions of this Ordinance, the customer shall be given a written notice of such failure to comply, which cites the date of said violation, and shall be assessed surcharges in accordance with the following schedule:

First violation - \$_____ surcharge shall be added to the customer's water bill;

Second violation - an additional \$_____ surcharge shall be added to the customer's water bill;



Third violation - the customer's water service shall be terminated and restored only after payment of a surcharge of \$ _____ in addition to all previously assessed surcharges.

Law enforcement agencies and other authorized agencies or designated employees in the respective jurisdiction which is being supplied water by the _____ (*water system*) shall diligently enforce the provisions of the Drought Response Ordinance.

G. Variances

Customers, who in their belief are unable to comply with the mandatory water use restrictions of this Drought Response Ordinance, may petition for a variance from restrictions by filing a petition with the _____ (*water system*) within ten (10) working days after the issuance of the Proclamation requiring water use restrictions.

All petitions for variance shall contain the following information:

- A. Name and address of the petitioner;
- B. Purpose of water usage;
- C. Special provision from which the petitioner is requesting relief;
- D. Detailed statement as to how the curtailment declaration adversely affects the petitioner;
- E. Description of the relief desired;
- F. Period of time for which the variance is sought;
- G. Economic value of the water use;
- H. Damage or harm to the petitioner or others if petitioner complies with the Ordinance;
- I. Restrictions with which the petitioner is expected to comply and the compliance date;
- J. Steps the petitioner is taking to meet the restrictions from which the variance is sought and the expected date of compliance; and
- K. Other information as needed.

In order for the variance to be granted, the petitioner must demonstrate clearly that compliance with the Ordinance cannot be technically accomplished during the duration of the water supply shortage without having an adverse impact upon the best interests of the community. The _____ (*water system*) is authorized to grant the request for variance.

In addition, the _____ (*water system*) is authorized to grant temporary variances for existing water uses otherwise prohibited under the Ordinance if it is determined that failure to grant such variances could cause an emergency condition adversely affecting health, sanitation and fire protection for the public. No such variance shall be retroactive or otherwise justify any violation of this Ordinance occurring prior to the issuance of the variance. Variances granted by the _____ (*water system*) shall include a timetable for compliance and shall expire when the water supply shortage no longer exists, unless the petitioner has failed to meet specified requirements.



H. Status of the Ordinance

- 1) If any portion of this Ordinance is held to be unconstitutional for any reason, the remaining portions of the Drought Response Ordinance shall not be affected.
- 2) The provisions of this Ordinance shall prevail and control in the event of any inconsistency between this Ordinance and other rules and regulations of the _____
(*water system*).
- 3) Nothing in this Ordinance shall be deemed to invalidate or be interpreted in a manner inconsistent with any covenants now in effect and given as security to holders of bonds secured by revenues of the system.

