



***DROUGHT MANAGEMENT PLAN***

***Easley Combined Utilities  
Easley, South Carolina***

***JULY 2007***

# ***DROUGHT MANAGEMENT PLAN***

## ***SECTION 1 - DECLARATION OF PURPOSE AND INTENT***

Easley Combined Utilities (ECU) 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 as well as 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 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, ECU has adopted this Drought Management Plan through a Drought Response Resolution that provides the policies and authority to fulfill this obligation. The Drought Management Plan outlines the framework by which ECU will internally prepare for water shortages and the regulations by which ECU will manage and control its customer water usage during various levels of a drought.

## ***SECTION 2 - DEFINITION OF TERMS***

For the purposes of this plan and the accompanying resolution, 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 Water 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 ECU.

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 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 Response 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, right-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. ECU allocated water capacity equal to 300 gallons per day per REU.

South Carolina Department 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 3 - DROUGHT MANAGEMENT**

#### **3.1 INTRODUCTION**

To ensure that ECU 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 ECU's ability to respond to drought conditions and to enforce the Drought Response Resolution.

### 3.2 *DESIGNATION OF WATER SYSTEM DROUGHT RESPONSE REPRESENTATIVE*

Administering a Drought Plan requires the skills needed to undertake a comprehensive public information program and the judgment 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 principal contact for the news media as the water system's Drought Response Representative. The Drought Response Representative for Easley Combined Utilities is Mr. Joel Ledbetter. The address is P. O. Box 619, Easley, SC, 29641, and the phone number is (864) 859-4013.

### 3.3 *DESCRIPTION OF WATER SYSTEM LAYOUT, WATER SOURCES, CAPACITIES, AND YIELDS*

ECU is located in the Central or Santee Drought Response Management Area of South Carolina. The system currently serves 13,280 customers, of which 9,074 are located within the City of Easley, and 4,206 are located outside the City. The water system consists of a surface water reservoir on Saluda River, a surface-water treatment plant, a finished water pump station and storage tank with four finished water pumps, three grade level storage tanks, a high service pump station with four high service pumps, and seven elevated storage tanks. The water treatment plant is a 12 MGD conventional surface-water treatment plant, which is currently being expanded to 18 MGD. The raw water intake is comprised of two 48-inch diameter submerged wedge wire intake screens and a 42-inch diameter raw water intake line. The raw water pump station has three raw water pumps, each with a rated capacity of 8,333 gpm (12.0 MGD) at 100 feet of total dynamic head. The raw water source for ECU is Saluda Lake located between Easley and Greenville on the Pickens and Greenville County line. SCDHEC's total permitted capacity of the water system operated by ECU is 12.4 MGD. ECU currently has an approved interbasin transfer permit which allows them to withdraw 26.0 MGD from Saluda Lake.

### 3.4 *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. ECU has developed triggers for use during drought or demand water shortages that describe when specific phases of the Drought Response Resolution are implemented. The system triggers are as follows:

#### **Moderate Drought Phase:**

- 1) The average discharge in Saluda Lake is 99.5 cfs, or
- 2) Average daily use greater than 16.5 MGD for five (5) consecutive days

**Severe Drought Phase:**

- 1) The average discharge in Saluda Lake is 91.9 cfs, or
- 2) Average daily use greater than 17.0 MGD for five (5) consecutive days

**Extreme Drought Phase:**

- 1) The average discharge in Saluda Lake is 80.0 cfs, or
- 2) Average daily use greater than 17.5 MGD for three (3) consecutive days

**3.5 *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. ECU currently has a contract to purchase 3 MGD of water from the Greenville Water System. This alternative water source supplies backup during drought conditions.

**3.6 *DESCRIPTION OF PRE-DROUGHT PLANNING EFFORTS***

Before the occurrence of a water supply shortage and the need to implement the emergency provisions of the Resolution, 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 outlined in Section 4, ECU has taken the following actions:

- 1) Identification of all major water users of the system (top 10%, include wholesale customers): ECU sells wholesale water to five water districts. The five water districts are Powdersville Water Company, Southside Water District, Dacusville-Cedar Rock Water District, Easley-Central Water District, and Bethlehem-Roanoke Water District.
- 2) Identification of those users with whom there are conservation agreements: There are no agreements at this time.

- 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. When drought conditions are approaching, ECU will make an appeal to all water users within the service area to conserve water. This appeal to the water users will be printed on the water bills, in local papers and broadcast on local news stations.

### **3.7 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. ECU operates a surface water reservoir, a surface-water treatment plant, a 5 MG finished water clearwell, a finished pump station, two grade level storage tanks, four high service pumps, and seven elevated storage tanks. The distribution system includes 406 miles of distribution lines serving approximately 40.2 square miles and 10.83 MG storage capacity (4.83 MG elevated, 6.0 MG ground). The water treatment plant (WTP) clearwell is a covered 5.0 MG tank located at the WTP. The two remote clearwells, which are located at the warehouse/maintenance facility, have a capacity of 1.0 MG and 5.0 MG. The total system storage is 15.83 MG.

Construction of Phase 2 to expand the Don L. Moore WTP to 18 MGD began at the end of 2006 and is planned to be completed by sometime in 2008. Backup power supply for the WTP is also included.

ECU is also planning improvements to the transmission and distribution lines within their service area.

## **SECTION 4 - DROUGHT RESPONSE**

### **4.1 BACKGROUND**

The objective of the Drought Management Plan is to establish authority, policy and procedure by which ECU will take the proper actions to manage water demand during a drought-related shortage. The plan and the adoption of the plan by resolution of ECU satisfy the requirements of the South Carolina Drought Response Act of 2000 and have the goal of achieving the greatest public benefit from limited supplies of water needed for domestic use, sanitation, fire protection and allocating water for other purposes in an equitable manner.

#### **4.2** *DROUGHT RESPONSE MEASURES*

This Drought Management Plan outlines specific drought response measures to be taken for the conservation of water supplied by ECU. The objectives of the Plan are directed both towards an overall reduction in water usage and the optimization of supply.

To satisfy these goals, ECU hereby adopts the following regulations and restrictions on the delivery and consumption of water. This Plan, which shall apply to both retail and wholesale customers, is hereby declared necessary for the protection of public health, safety and welfare and shall take effect upon its adoption by Resolution of ECU. For the purposes of the Plan, wholesale customers will be judged in compliance or violation on the basis of Residential Equivalent Units (REU) as defined in the Definitions of Terms section of the Plan based on each wholesale customer's number of retail customers.

If it becomes necessary to conserve water in its service area due to drought, ECU is authorized to issue 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 Plan 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 Resolution 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.

#### **4.3** *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 ECU that a moderate water supply shortage exists based on trigger levels, ECU 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 percent in residential water use and 15 percent in other water uses such as commercial, industrial, institutional and irrigation; and a reduction in overall water use of 15 percent. To accomplish this, the ECU will take the following actions:

1. Issue a Proclamation to be released to local media, ECU 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 70 gallons per person per day with a maximum of 240 gallons per household or REU 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.

#### **4.4 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 ECU that a severe water supply shortage exists based on trigger levels, ECU 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 percent in residential water use, 20 percent in all other water use

categories, and a reduction in overall water use of 20 percent. To accomplish these goals, ECU will take the following actions:

1. Issue a Proclamation to be released to the local media, ECU 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 65 gallons per person per day with a maximum of 225 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; and

- 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.
  - 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.

#### **4.5 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 ECU that an extreme water supply shortage exists based on the trigger levels, ECU 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 percent in residential water use, 25 percent in all other categories of water uses, and a reduction in overall water use of 25 percent. To accomplish these goals, ECU will take the following actions:

1. Issue a Proclamation to be released to the local media, ECU 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 60 gallons per person per day and a maximum of 210 gallons per household or REU per day;
  - b. Eliminate landscape irrigation by the utility's customers; and
  - 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; and
      - 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.
    - 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. A few 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 percent of the customer's monthly average. If

voluntary reduction of usage is not successful, ECU may, at its option, implement the following excessive use rate schedule for water:

Tier I	0 - 210 gallons/REU	regular rate
Tier II	211 - 250 gallons/REU	2 times regular rate
Tier III	Over 250 gallons/REU	3 times regular rate

- c. For commercial, industrial and institutional customers, impose a drought surcharge per thousand gallons of water. A fee of 2.5 times the regular rate is imposed on water use in excess of 226 gallons/REU. The drought surcharge is a temporary fee imposed during the current water supply shortage and is not a cost-based rate. The drought surcharge will be terminated at such time as ECU determines the water supply is above the trigger levels.
  - d. If the conservation measures of the Plan prove inadequate to mitigate the effects of the drought conditions or water supply availability, ECU 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 phases 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.

**4.6 ENFORCEMENT OF RESTRICTIONS**

If any customer of ECU fails to comply with the mandatory water use restrictions of this Plan, 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:** A \$50.00 surcharge shall be added to the customer's water bill.

**Second violation:** An additional \$100.00 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 \$250.00 in addition to all previously assessed surcharges.

For wholesale customers, the above listed surcharges shall be multiplied the number of retail customers served by said wholesale customer.

Law enforcement agencies and other authorized agencies or designated employees in the respective jurisdiction which is being supplied water by ECU shall diligently enforce the provisions of the Drought Response Plan as authorized by Resolution.

#### **4.7 VARIANCES**

Customers, who in their belief are unable to comply with the mandatory water use restrictions of this Drought Response Plan, may petition for a variance from restrictions by filing a petition with ECU 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 Resolution;
- 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 Plan cannot be technically accomplished during the duration of the water supply shortage without having an adverse impact upon the best interests of the community. ECU is authorized to grant the request for variance.

In addition, ECU is authorized to grant temporary variances for existing water uses otherwise prohibited under the Plan 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 Plan occurring prior to the issuance of the variance. Variances granted by ECU 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.