

Brazos Regional Public Utility Agency  
5912 Matlock Rd.  
Granbury, TX 76049  
(817) 326-3484

**Water Conservation and Drought Contingency Plan  
For The  
Surface Water and Treatment System**

PREPARED BY:  
Allen Mullins  
Shellee Hubbard

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## **Purpose**

Regulations promulgated by the Texas Commission on Environmental Quality (TCEQ) require wholesale water suppliers to develop water conservation and drought contingency plans. To date, the Brazos Regional Public Utility Agency (PUA) has operated under the Brazos River Authority Water Conservation and Drought Contingency Plan. The Brazos River Authority previously developed and submitted to TCEQ its system-wide Water Conservation Plan dated February 17, 2005, and its Drought Contingency Plan dated June 5, 2007.

The following Water Conservation and Drought Contingency Plan has been developed specifically for the Surface Water and Treatment System (SWATS). The Brazos Regional PUA will use its best efforts to implement these plans in order to promote the conservation of available water supply, protect the integrity of the water supply facility, and protect and preserve public health. The Brazos Regional PUA adopts the following SWATS Water Conservation Plan and Drought Contingency Plan pursuant to Title 30 of the Texas Administrative Code, Chapter 288, Subchapter (A) and (B).

## **Planning Area**

### **SURFACE WATER AND TREATMENT SYSTEM**

The Brazos Regional PUA owns and operates SWATS and serves water to retail customers in Johnson and Hood Counties. SWATS is classified as a wholesale public water supplier and serves two retail water customers, which includes Johnson County Special Utility District and Acton Municipal Utility District. The two Districts created and own SWATS to obtain treated water. Each retail water supplier has, in-place, their own water conservation plans.

### **SWATS SYSTEM DESCRIPTION**

The Surface Water and Treatment System consists of a raw water intake structure, a conventional treatment plant with 4 million gallons of on-site finished water storage capacity and one independent advanced water treatment technology. The facility produces drinking water through conventional treatment consisting of coagulation, sedimentation, and filtration in conjunction with the advanced secondary treatment for removal of high concentrations of chlorides and sulfates. The advanced treatment technologies include both an Ultrafiltration and Reverse Osmosis (UF/RO) membrane system. Treated water is delivered to the two retail customers. Each point of delivery is equipped with a rate of flow controller.

The permeate produced from the UF/RO process is blended with the conventionally treated water prior to distribution. The proportion of raw water routed to the advanced water treatment train is dependent upon the feed water chloride concentration and the capacity of the UF/RO units. Typically, 60% of the raw water flow enters the advanced treatment train and 40% undergoes conventional treatment prior to blending. The UF/RO treatment plant consist of five treatment racks of UF membranes and five RO treatment racks each having a capacity to treat a feed of 1.8 million gallons per day (MGD) and produce 1.5 MGD of RO permeate for a combined finished water capacity of 7.50 MGD.

Filtered water from the conventional plant (approximately 5.5 MGD capacity) is blended with the water produced by the advanced treatment units for a total combined capacity of approximately 13 MGD to meet customer demand requirements with a maximum raw water chloride concentration of 700 mg/l.

SWATS treated water capacities are allocated to the following customers:

Johnson County Special Utility District	7.19 MGD
Acton Municipal Utility District	<u>5.81 MGD</u>
Total	13.00 MGD

Each customer of the Brazos Regional PUA SWATS serves other municipalities.

SWATS wholesale customer raw water contract amounts with Brazos River Authority are:

Johnson County Special Utility District	9,210 acre-feet
Acton Municipal Utility District	<u>7,000 acre-feet</u>
Total	16,210 acre-feet

**Goal**

Many communities throughout the United States have used conservation measures to successfully deal with various water problems. Some water suppliers have achieved a 25 percent reduction in water usage. The normal range is from 5 to 15 percent. However, the goal of our water conservation plan is to encourage the SWATS wholesale water customers to implement and practice workable water conservation plans.

## **Plan Elements**

### **(1) Public Education and Information**

The Brazos Regional PUA recognizes that water conservation significantly benefits individuals and communities in terms of long-term availability and cost. The most readily available and lowest cost method of promoting water conservation is to inform the retail water customers about ways to conserve water in homes and businesses, in landscaping and lawn uses, and in recreational use. The Brazos Regional PUA will provide water conservation literature to its wholesale customers.

### **(2) Water Conservation Rate Structure**

Each SWATS water customer sets its own retail water rates. Each customer has a progressive water rate structure, which promotes conservation.

### **(3) Metering, Meter Repair and Leak Detection**

Master metering of the retail water customers can provide an accurate accounting of water uses. Metering, meter calibration and meter repair and replacement have been used in conjunction with physical inspection of transmission lines and storage tanks to save significant quantities of water. The Brazos Regional PUA meters wholesale customers at each point of delivery, and conducts an annual water audit. The wholesale customers will be encouraged to compare their water consumption with the Brazos Regional PUA's master meter for unaccountable water loss.

### **(4) Implementation and Enforcement**

The Brazos Regional PUA does not have ordinance power or jurisdiction for enforcement within the service areas of the wholesale water customers. As a regional entity, the Brazos Regional PUA's role will include the administration and promotion of the plan, public education and information, and annual water consumption reporting.

The wholesale water customers shall be responsible for the implementation and enforcement of specific water conserving activities contained within this plan for their service area.

### **(5) Drought Contingency Management Plan**

#### **Section I: Declaration of Policy, Purpose, and Intent**

In order to conserve the available water supply and/or to protect the integrity of water supply facilities, with particular regard for domestic water use, sanitation,

and fire protection, and to protect and preserve public health, welfare, and safety and minimize the adverse impacts of water supply shortage or other water supply emergency conditions, the Brazos Regional PUA adopts the following SWATS Drought Contingency Plan (the Plan).

## **Section II: Public Involvement**

Opportunity for the SWATS wholesale water customers to provide input into the preparation and revision of the Plan will be provided by the Brazos Regional PUA by means of Customer Advisory meetings and personal meetings with each wholesale water customer.

## **Section III: Wholesale Water Customer Education**

The Brazos Regional PUA will periodically provide wholesale water customers with information about the Drought Contingency Plan, including information about the conditions under which each stage of the Plan is to be initiated or terminated and the drought response measures to be implemented in each stage. This information will be provided by means of annual Customer Advisory meetings, personal meetings, mail, and telephone, as appropriate.

## **Section IV: Coordination with Regional Water Planning Groups**

The service area of the Brazos Regional PUA is located within the Regional Water Planning areas G-Brazos G and C-Region C. Brazos Regional PUA will provide a copy of this water conservation plan to the Regional Water Planning Groups Region C and Brazos G.

## **Section V: Authorization**

The Administrator, or his/her designee, is hereby authorized and directed to implement the applicable provisions of this Plan upon determination that such implementation is necessary to protect public health, safety, and welfare. The Administrator, or his/her designee, shall have the authority to initiate or terminate drought or other water supply emergency response measures as described in this Plan. However, the Administrator may declare implementation of a drought stage condition at his/her discretion should he or his/her designee determine conditions warrant such action. In addition the Administrator and his/her designee may also terminate any drought stage condition at his/her discretion.

## **Section VI: Application**

The provisions of this Plan shall apply to all customers utilizing water provided by the Brazos Regional PUA's Surface Water Treatment System. The terms "person" and "customer" as used in the Plan include individuals, corporations, partnerships, associations, and all other legal entities.

## **Section VII: Triggering Criteria for Initiation and Termination of Drought Response Stages**

The Administrator, or his/her designee, shall monitor water supply and/or demand conditions on a monthly basis and shall determine when conditions warrant initiation or termination of each stage of the Plan. Customer notification of the initiation or termination of drought response stages will be made by e-mail, mail, and telephone, as appropriate.

The triggering criteria described below are based on the Surface Water and Treatment System operation data, review of treated water storage tanks capacity profile and system transmission hydraulics.

### **(a) Stage 1 - Mild Water Shortage Conditions**

Requirements for initiation – The Brazos Regional PUA will recognize that a mild water shortage condition exists when:

- 1. The total SWATS daily water demand equals or exceeds 90 percent of the safe operating capacity of 13.00 million gallons per day for 7 consecutive days; and**
- 2. When a customer's allocated amount of water under the SWATS treated water contract reaches 90 percent of capacity for 14 consecutive days.**

Requirements for termination - Stage 1 of the Plan may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of 30 consecutive days. The Brazos Regional PUA will notify its wholesale customers of the termination of Stage 1 in the same manner as the notification of initiation of Stage 1 of the Plan.

### **(b) Stage 2 - Moderate Water Shortage Conditions**

Requirements for initiation – The Brazos Regional PUA will recognize that a moderate water shortage condition exists when:

- 1. The total SWATS daily water demand equals or exceeds 95 percent of the safe operating capacity of 13.00 million gallons per day for 7 consecutive days.**
- 2. When a customer's allocated amount of water under the SWATS treated water contract reaches 95 percent of capacity for 14 consecutive days.**

Requirements for termination - Stage 2 of the Plan may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of 15 consecutive days. Upon termination of Stage 2, Stage 1 becomes operative. The Brazos Regional PUA will notify its wholesale customers of the termination of Stage 2 in the same manner as the notification of initiation of Stage 1 of the Plan.

### **(c) Stage 3 - Severe Water Shortage Conditions**

Requirements for initiation – The Brazos Regional PUA will recognize that a severe water shortage condition exists when:

**The total SWATS daily water demand equals or exceeds 100 percent of the safe operating capacity of 13.00 million gallons per day for 5 consecutive days.**

Requirements for termination - Stage 3 of the Plan may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of 5 consecutive days. Upon termination of Stage 3, Stage 2 becomes operative. The Brazos Regional PUA will notify its wholesale customers of the termination of Stage 2 in the same manner as the notification of initiation of Stage 3 of the Plan.

### **(d) Stage 4 – Emergency Water Shortage Conditions**

Requirements for initiation - The Brazos Regional PUA will recognize that an emergency water shortage condition exists when:

- 1. Major water line breaks, power outage, or pump or system failures occur, which cause extraordinary loss of capability to provide water service; or**
- 2. Natural or man-made contamination of the water supply source(s).**

Requirements for termination - Stage 4 of the Plan may be rescinded when all of the conditions listed as triggering events have ceased to exist. The Brazos Regional PUA will notify its wholesale customers of the termination of Stage 4.

## **Section VIII: Drought Response Stages**

The Administrator, or his/her designee, shall monitor water supply and/or demand conditions and, in accordance with the triggering criteria set forth in Section VII, shall determine that mild, moderate, or severe water shortage conditions exist or that an emergency condition exists and shall implement the following actions:

## **Stage 1 - Mild Water Shortage Conditions**

**Goal:** The Brazos Regional PUA's customers will be notified that the Surface Water and Treatment System reached its 90 percent of safe operating capacity.

### **Supply Management Measures:**

When a customer utilizes 90 percent of the total operating capacity, the Surface Water and Treatment System will initiate an operating strategy to be prepared for moderate drought conditions.

### **Demand Management Measures:**

- (a) The Administrator, or his/her designee(s), will contact wholesale water customers to discuss water supply and/or demand conditions and will request that wholesale water customers initiate voluntary measures to reduce water use.
- (b) The Administrator, or his/her designee(s), will provide a weekly report to wholesale water customers with information regarding current water supply and/or demand conditions, projected water supply and demand conditions if drought conditions persist, and consumer information on water conservation measures and practices.

## **Stage 2 - Moderate Water Shortage Conditions**

**Goal:** Reduce and maintain daily water demand at or below 90 percent of system capacity.

### **Supply Management Measures:**

1. The Brazos Regional PUA will prepare for operational mode changes to maintain all the water storage tanks at or above 90 percent full.
2. The customers will need to take action to prepare for high usage condition.
3. The customers will need to initiate cleaning, disinfecting and filling their storage tanks, service equipment and utilize well systems.



### **Demand Management Measures:**

- (a) The Administrator, or his/her designee(s), will initiate weekly contact with wholesale water customers to discuss water supply and/or demand conditions.
- (b) The Administrator, or his/her designee(s), will request wholesale water customers to initiate mandatory measures to reduce non-essential water use and initiate and implement Stage 2 of their drought contingency plan.
- (c) The Administrator, or his/her designee(s), will initiate preparations for the implementation of controlling rate of flow to each wholesale water customers metering station.
- (d) The Administrator, or his/her designee(s), will provide a weekly report to wholesale water customers with information regarding current water supply and/or demand conditions, projected water supply and demand conditions if drought conditions persist, and consumer information on water conservation measures and practices.

### **Stage 3 - Severe Water Shortage Conditions**

**Goal:** Reduce and maintain daily water demand at or below 90 percent of system capacity.

### **Supply Management Measures:**

1. The Brazos Regional PUA will prepare for operational mode changes to maintain all the water storage tanks at or above 90 percent full.
2. The Customers will need to take action to prepare for high usage condition.
3. The Customers will need to initiate cleaning, disinfecting and filling their storage tanks, service equipment, utilizing well systems.

### **Demand Management Measures:**

- (a) The Administrator, or his/her designee(s), will contact wholesale water customers to discuss water supply and/or demand conditions and will request that wholesale water customers initiate additional mandatory measures to reduce non-essential water use and implement Stage 3 of their drought contingency plan.

- (b) The Administrator, or his/her designee(s), will initiate preparations for the implementation of controlling rate of flow to each wholesale water customers metering station.
- (c) The Administrator, or his/her designee(s), will provide a weekly report to wholesale water customers with information regarding current water supply and/or demand conditions, projected water supply and demand conditions if drought conditions persist, and consumer information on water conservation measures and practices.

#### **Stage 4 – Emergency Water Shortage Conditions**

Whenever emergency water shortage conditions exist as defined in Section VII of the Plan, the Administrator, or his/her designee(s) shall:

1. Assess the severity of the problem and identify the actions needed and time required to solve the problem.
2. Inform the utility director or other responsible official of each wholesale water customer by telephone or in person and suggest actions, as appropriate, to alleviate problems. Each wholesale water customer may be required to issue a notification to the public to reduce water use until service is restored.
3. If appropriate, notify city, county, and/or state emergency response officials for assistance.
4. Undertake necessary actions, including repairs and/or clean-up as needed.
5. Prepare a post-event assessment report on the incident and critique of emergency response procedures and actions.

#### **Section IX: Pro Rata Water Allocation**

The Surface Water and Treatment System will comply with the Brazos Regional PUA Drought Contingency Plan of May 1, 2014. Water distribution shall be divided in accordance with Texas Water Code Section 11.039 as referenced in Appendix "A".

#### **Section X: Enforcement**

The Brazos Regional PUA supplies water to each wholesale water customer through a metering station with a rate of flow controller. During any period of

water shortage conditions and the allocation of available water supplies is in effect, the rate of flow controllers will be set to provide only water to the wholesale water customers based on available water only. Additional water will not be provided through the point of entries meter station.

#### **Section XI: Variances**

The Brazos Regional PUA will provide treated water based on available water allocated to each retail water customer during the water shortage condition. Variances will be considered on a case by case basis and with consultation of the General Managers of the two Districts.

#### **Section XII: Plan Update and Implementation**

The Administrator, or his/her designee, shall review and update this Drought Contingency Plan, as appropriate, at least every five (5) years. Attached as Appendix "B" is a copy of the PUA's Board Resolution approving the PUA's System-wide Drought Contingency Plan.

## Appendix "A"

### **Texas Water Code Section 11.039**

#### **§ 11.039. Distribution of Water During Shortage**

(a) If a shortage of water in a water supply not covered by a water conservation plan prepared in compliance with Texas Natural Resource Conservation Commission or Texas Water Development Board rules results from drought, accident or other cause, the water to be distributed shall be divided among all customers pro rata, according to the amount each may be entitled to, so that preference is given to no one and everyone suffers alike.

(b) If a shortage of water in a water supply covered by a water conservation plan prepared in compliance with Texas Natural Resource Conservation Commission or Texas Water Development Board rules results from drought, accident or other cause, the person, association of persons, or corporation owning or controlling the water shall divide the water to be distributed among all customers pro rata, according to:

- (1) the amount of water to which each customer may be entitled; or
- (2) the amount of water to which each customer may be entitled, less the amount of water the customer would have saved if the customer had operated its water system in compliance with the water conservation plan.

(c) Nothing in Subsection (a) or (b) precludes the person, association of persons, or corporation owning or controlling the water from supplying water to a person who has a prior vested right to the water under the laws of this state.

Amended by Acts 1977, 65th Leg., p. 2207, ch. 870, § 1, eff. Sept. 1, 1977.

Amended by Acts 2001, 77th Leg., ch. 1126, § 1, eff. June 15, 2001.

**Appendix "B"**

**Board Resolution Adopting Drought Contingency Plan**

**RESOLUTION OF THE BOARD OF DIRECTORS OF THE BRAZOS  
REGIONAL PUBLIC UTILITY AGENCY  
APRIL 23, 2014**

**Drought Contingency Plan for the Brazos Regional Public Utility  
Agency and Authorization to Submit Drought Contingency Plan  
to the Texas Commission on Environmental Quality**

WHEREAS, the Board finds affirming the drought contingency plan to be in the best interest of the Agency.

NOW, THEREFORE, BE IT RESOLVED, that this Board after proper vote at a posted public meeting approves the resolution adopting the drought contingency plan prepared in conformance with the requirements of the Texas Commission on Environmental Quality.

BE IT FURTHER RESOLVED by the Board of Directors of the Brazos Regional Public Utility Agency that the Administrator is directed to submit the adopted Drought Contingency Plan to the TCEQ for approval.


PASSED AND APPROVED THIS 23<sup>th</sup> DAY OF APRIL, 2014.

VOTE: YES

AYES: 5

NO: 0

  
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Chairman, Board of Directors  
Brazos Regional Public Utility Agency

  
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Secretary, Board of Directors  
Brazos Regional Public Utility Agency