



**DROUGHT CONTINGENCY PLAN  
FOR  
GUADALUPE-BLANCO RIVER  
AUTHORITY**

**May 18, 2011**

*flowing solutions*

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**DROUGHT CONTINGENCY PLAN  
FOR THE  
GUADALUPE-BLANCO RIVER AUTHORITY (GBRA)  
MAY 18, 2011**

**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 Guadalupe-Blanco River Authority (GBRA) adopts the following revised version of its Drought Contingency Plan (the Plan). This Plan applies to Canyon Reservoir stored water, and GBRA's hydroelectric lakes but not to run-of-river water.

**Section II: Public Involvement**

There is only one (1) substantive amendment to GBRA's 2009 Drought Contingency Plan as amended. This Plan was posted on GBRA's website for the public and wholesale water customers to provide input. The one (1) substantive amendment is to shorten the period when Canyon Reservoir was last full from thirty-six months to twenty-four months as a criteria that must be met simultaneously with other criteria before the GBRA Board of Directors may declare a drought worse than the drought of record.

**Section III: Wholesale Water Customer Education**

GBRA will periodically provide wholesale water customers with information about the 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: 1) A copy of the Plan was distributed to all of GBRA water supply customers for their comment, review, and guidance. If any changes are made to the Plan, a copy of those changes will be mailed to all customers. 2) If any drought stage is initiated, GBRA will notify all customers by written notice indicating the particular stage and the actions it requires. 3) GBRA will continue to forward copies of educational materials, as they become available, to its customers.

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

The water service area of GBRA is located within the South Central Texas Region, (L). GBRA has provided a copy of the Plan to all members of the South Central Texas Region group for their review and comment.

**Section V: Authorization**

The GBRA General Manager, 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 General Manager, 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.

## **Section VI: Application**

The provisions of this Plan shall apply to all customers utilizing water provided by GBRA from storage in Canyon Reservoir and to all persons taking water from GBRA's hydroelectric lakes. The terms "person" and "customer" as used in the Plan include individuals, corporations, partnerships, associations, and all other legal entities.

## **Section VII: Canyon Dam and Reservoir Operation**

Canyon Dam and Reservoir was completed in 1964 as a cooperative project that is jointly managed by GBRA and the U.S. Army Corps of Engineers. GBRA is responsible for reservoir water management and release within the "conservation pool", between 800 feet mean sea level (msl) and the normal operating elevation of 909 msl.

Canyon Reservoir delivers water to customers on a firm yield basis. GBRA has determined, based upon hydrologic and other studies performed by or for GBRA, the amount of stored water from Canyon Reservoir that can be committed and reserved by GBRA on a "firm" basis, meaning the amount that should be considered to be available throughout a drought as severe as the drought that occurred in the 1950's (also referred to as the "Drought of Record"). GBRA will review such studies and perform additional studies from time to time, and it will not commit to supply to its customers at any time a total amount of stored water on a firm basis in excess of the total amount determined by GBRA at that time that should be considered to be firm. However, reasonable conservation requirements under this Plan and other plans may be imposed at any time, including during periods of normal or wet climatic conditions, and curtailments of stored water may be triggered under this Plan during any severe drought, even if that drought is determined to be less severe than the Drought of Record. Curtailments of stored water may also be triggered under this Plan because of some other condition that significantly reduces the available firm water supply.

GBRA staff has developed a simplified "drought monitoring procedure" for identifying a drought worse than the Drought of Record for Canyon Lake watershed. Historical inflow data for the contributing watershed of Canyon Lake was used in the development of this procedure.

Canyon Reservoir supplies stored water to cities, industries, and agricultural users under a permit issued by the Texas Commission on Environmental Quality (TCEQ). To many users Canyon storage is their sole source of water. These customers rely on daily releases of stored water to meet their demands. For others, Canyon Reservoir provides a dependable source of water during drought conditions and low river flows. These customers "call" for the release of stored water on an as-needed basis to meet periodic or drastic low-flow conditions.

With TCEQ's approval, GBRA can contract for stored water that will provide for an average annual use of stored water from Canyon, with a special condition that a greater maximum

quantity of stored water can be used during any one critical year. This way the use of stored water is minimized, and an adequate water supply is available during short-term droughts. This is an example of the benefits of reservoir averaging.

### **Section VIII: Triggering Criteria for Initiation and Termination of Drought Response Stages for Canyon Reservoir**

The General Manager, or his/her designee, shall monitor water supply and/or demand conditions on a weekly 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 mail, fax, or telephone. The news media will also be informed.

The triggering criteria for Canyon Reservoir described below are based on a statistical analysis of the vulnerability of the water source under drought of record conditions.

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

Requirements for initiation - GBRA will recognize that a mild water shortage condition exists when:

Water in storage in Canyon Reservoir is equal to or less than elevation 895 feet mean sea level (msl) (274,800 acre-feet or approximately 72.5% full).

Requirements for termination - Stage I of the Plan may be rescinded when Canyon Reservoir returns to elevation 895 feet msl or greater for a period of 30 consecutive days. GBRA will notify its wholesale customers and the media of the termination of Stage I in the same manner as the notification of initiation of Stage 1 of the Plan.

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

Requirements for initiation - GBRA will recognize that a moderate water shortage condition exists when:

Water in storage in Canyon Reservoir is equal to or less than 890 feet mean sea level (msl) (242,872 acre-feet or approximately 64% full).

Requirements for termination - Stage 2 of the Plan may be rescinded when Canyon Reservoir returns to elevation 890 feet msl or greater for a period of 30 consecutive days. Upon termination of Stage 2, Stage 1 becomes operative. GBRA will notify its wholesale customers and the media of the termination of Stage 2 in the same manner as the notification of initiation of Stage 2 of the Plan.

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

Requirements for initiation - GBRA will recognize that a severe water shortage condition exists when:

Water in storage in Canyon Reservoir is equal to or less than 885 feet mean sea level (msl) (213,386 acre-feet or approximately 56% full).

Requirements for termination - Stage 3 of the Plan may be rescinded when Canyon Reservoir returns to elevation 885 feet msl or greater for a period of 30 consecutive days. Upon termination of Stage 3, Stage 2 becomes operative. GBRA will notify its wholesale customers and the media of the termination of Stage 3 in the same manner as the notification of initiation of Stage 3 of the Plan.

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

Requirements for initiation - GBRA will recognize that an emergency water shortage condition exists when:

1. Mechanical or system failures occur, which cause unprecedented loss of capability to provide water service.
2. Natural or man-made contamination of the water supply source(s) occurs.
3. A drought of greater severity than the Drought of Record occurs. The GBRA Board of Directors will declare a drought worse than the Drought of Record when the following three conditions are simultaneously met: (a) drought at least 24 months (24 months since Canyon Reservoir was last full – 909’ msl); and (b) the cumulative inflow deficit since the beginning of the drought exceeds the envelope curve for cumulative inflow deficits by at least 5% for six consecutive months and (c) the storage of Canyon Reservoir is less than elevation 885’ msl (213,386 acre-feet or approximately 56% full).

Requirements for termination - Except for a drought of greater severity than the Drought of Record, Stage 4 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 GBRA Board of Directors will cancel a declaration of a drought worse than the Drought of Record if any of the following conditions are met: (a) the cumulative inflow deficit since the beginning of the drought is less than the envelope curve for cumulative inflow deficits by at least 5% for six consecutive months; or (b) the storage of Canyon Reservoir is greater than elevation 890’ msl (242,872 acre-feet or approximately 64% full). GBRA will notify its wholesale customers and the media of the termination of Stage 4 of the Plan.

#### **Section IX: Drought Response Stages for Canyon Reservoir**

The General Manager, or his/her designee, shall monitor water supply and/or demand conditions and, in accordance with the triggering criteria for Canyon Reservoir set forth in Section VIII 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**

1. Goal: achieve a voluntary 5 percent reduction based upon the previous six (6) months average use of contracted water from storage.

2. Supply Management Measures:

In order to manage limited water supplies and/or reduce water demand during a mild water shortage condition, the General Manager, or his/her designee(s), will implement one or a combination of the following:

- a. Calibrate and review the operation of all available stream gauges.
- b. Coordinate review of water use with the TCEQ's South Texas Watermaster (STWM). In times of shortage of supply caused by drought or emergency, the STWM will determine when water rights holders must reduce or stop diversions.
- c. Implement water delivery procedures to improve efficiency of the delivery of water from storage.

3. Demand Management Measures:

- a. The General Manager, 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 General Manager, or his/her designee(s), will provide a weekly report to news media 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**

1. Goal: achieve a voluntary 10 percent reduction based upon the previous six (6) months average use of contracted water from storage.

2. Supply Management Measures:

In order to manage limited water supplies and/or reduce water demand during a moderate water shortage condition, the General Manager, or his/her designee(s), will implement one or a combination of the following:

- a. Calibrate and review the operation of all available stream gauges.

- b. Coordinate review of water use with the TCEQ's South Texas Watermaster (STWM). In times of shortage of supply caused by drought or emergency, the STWM will determine when water rights holders must reduce or stop diversions.
  - c. Implement water delivery procedures to improve efficiency of the delivery of water from storage.
3. Demand Management Measures:
- a. The General Manager, or his/her designee(s), will initiate weekly contact with wholesale water customers to discuss water supply and/or demand conditions and the possibility of pro rata curtailment of water diversions and/or deliveries.
  - b. The General Manager or his/her designee(s) will request wholesale water customers to initiate mandatory measures to reduce non-essential water use.
  - c. The General Manager, or his/her designee(s), will initiate preparations for the implementation of pro rata curtailment of water diversions and/or deliveries by preparing a monthly water usage allocation baseline for each wholesale customer according to the procedures specified in Section X of the Plan.
  - d. The General Manager, or his/her designee(s), will provide a weekly report to news media 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**

- 1. Goal: achieve a voluntary 15 percent reduction based upon the previous six (6) months average use of contracted water from storage.
- 2. Supply Management Measures:

In order to manage limited water supplies and/or reduce water demand during a severe water shortage condition, the General Manager, or his/her designee(s), will implement one or a combination of the following:

  - a. Calibrate and review the operation of all available stream gauges.
  - b. Coordinate review of water use with the TCEQ's South Texas Watermaster (STWM). In times of shortage of supply caused by drought or emergency, the STWM will determine when water rights holders must reduce or stop diversions.

- c. Implement water delivery procedures to improve efficiency of the delivery of water from storage.
3. Demand Management Measures:
  - a. The General Manager, 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.
  - b. The General Manager, or his/her designee(s), will initiate pro rata curtailment of water diversions and/or deliveries for each wholesale customer according to the procedures specified in Section X of the Plan.
  - c. The General Manager, or his/her designee(s), will provide a weekly report to news media 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 VIII of the Plan, the General Manager 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.
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 X: Pro Rata Water Allocation for Canyon Reservoir**

In the event that the triggering criteria for Canyon Reservoir specified in Section VIII of the Plan for Stage 4 — Emergency Water Shortage Conditions have been met, the General Manager is hereby authorized to initiate allocation of water supplies on a pro rata basis in accordance with Texas Water Code Section 11.039 and according to the following water allocation policies and procedures:

1. A wholesale customer's allocation for water from storage shall be based on the customer's previous one (1) years use. The percentage will be set by resolution of the Board of Director's of GBRA based on the General Manager's assessment of the severity of the water shortage condition and the need to curtail water diversions and/or deliveries and may be adjusted periodically by resolution of the Board of Director's of GBRA as conditions warrant. Once pro rata allocation is in effect, water diversions by or deliveries to each wholesale customer shall be limited to the allocation established for each month.
2. The General Manager shall provide notice, by certified mail, to each wholesale customer informing them of their water usage allocations and shall notify the news media and the executive director of the Texas Commission on Environmental Quality upon initiation of pro rata water allocation.
3. Upon request of the customer or at the initiative of the General Manager, the allocation may be reduced or increased if, (1) the designated period does not accurately reflect the wholesale customer's previous one (1) years use; (2) the customer with approval from GBRA agrees to transfer part of its allocation to another wholesale customer; or (3) other objective evidence demonstrates that the designated allocation is inaccurate under present conditions. A customer may appeal an allocation established hereunder to the Board of Directors of GBRA.

## **Section XI: Hydroelectric Lakes**

### **CRITICAL PERIOD STAGES**

The following critical period stages apply to any diverter of water other than contracted stored water that diverts and uses water from any of the GBRA Hydroelectric Lakes including:

Lake Dunlap	Comal/Guadalupe County
Lake McQueeney	Guadalupe County
Lake Placid	Guadalupe County
Lake Nolte	Guadalupe County
H4 (Lake Gonzales)	Gonzales County
H5 (Lake Wood)	Gonzales County

When the level of the spring flow rate from the Comal Springs, when measured at the Comal River, reaches the following levels.

#### **Stage I**

Applies on any day following a day when the average twenty-four (24) hour spring flow rate is **at or below 250 cfs, but greater than 200 cfs.**

When Stage I is in effect, the following restrictions apply:

1. No person may waste water, including allowing irrigation tailwater or water from vehicle washing at a residence to escape from that person's property.
2. No person may use water to wash an impervious outdoor ground covering such as a parking lot, driveway, street or sidewalk unless for health or safety reasons.
3. No person may use water for landscape watering between the hours of 9 a.m. and 7 p.m. However, landscape watering by means of a bucket, hand-held or soaker hose, or a properly installed drip irrigation system is permitted at any time. This subsection does not apply to reclaimed, reuse or recycled water.
4. Every person who owns or has possession of a swimming pool must cover the pool with an effective evaporation cover, screen or shield covering at least 25 percent of the surface of the pool when the pool is not in active use. Active use includes necessary maintenance that requires removal of the cover, screen or shields. Active use of public, commercial and apartment pools is whenever the pool is not officially closed.
5. No person may wash a vehicle at other than a commercial vehicle wash facility except on Monday and Friday, before 9 a.m. and after 7 p.m. Such washing must be done on a lawn or other pervious surface using a bucket or hand-held hose with an automatic shutoff nozzle.

## **Stage II**

Applies on any day following a day when the average twenty-four (24) hour spring flow rate is **at or below 200 cfs, but greater than 150 cfs.**

When Stage II is in effect, the following restrictions apply:

1. All of the prohibitions applicable in Stage I apply in Stage II, except to the extent replaced by more restrictive conditions imposed by this stage.
2. Landscape watering is prohibited between 9 a.m. and 7 p.m., and is further restricted such that properties with an odd numbered address may landscape water only on Mondays, Wednesdays and Fridays and properties with an even numbered address may landscape water only on Tuesdays, Thursdays and Saturdays. However, landscape watering by means of a bucket, hand-held or soaker hose, or a properly installed drip irrigation system is permitted at any time. This subsection does not apply to reclaimed, recycled or reuse water.
3. No person may use water for an ornamental outdoor fountain or similar feature, unless the water is recycled and the only additional water used is to compensate for evaporative losses.

4. No person may wash a vehicle at other than a commercial vehicle wash facility except over a pervious surface area, during the above designated watering days and times with a hand-held hose with automatic shutoff nozzle or using a bucket.

The penalty for wasting water or any violation of Stage II restrictions as determined by the GBRA General Manager, or his designee, is \$100 per day per violation.

### **Stage III**

Applies on any day following a day when the average twenty-four (24) hour spring flow rate is **at or below 150 cfs, but greater than 100 cfs.**

When Stage III is in effect, the following restrictions apply:

1. All of the prohibitions applicable in Stages I and II apply in Stage III, except to the extent replaced by more restrictive conditions imposed by this stage.
2. Landscape watering is prohibited between the hours of 9 a.m. and 7 p.m. and is further restricted such that properties with an odd numbered address may landscape water on Mondays and Fridays, and those with an even numbered address may landscape water on Tuesdays and Saturdays. However, landscape watering by means of a bucket, hand-held hose or soaker hose, or a properly-installed drip irrigation system is permitted at any time. This subsection does not apply to reclaimed, recycled or reuse water.
3. No person may use water for an ornamental outdoor fountain or similar feature.
4. No person may wash a vehicle at other than a commercial vehicle wash facility except over a pervious surface area, during the above designated watering days and times with a hand-held hose with automatic shut-off nozzle or using a bucket.

The penalty for wasting water or any violation of Stage III restrictions, as determined by the GBRA General Manager, or his designee, is \$100 - \$200 per day per violation.

### **Stage IV**

Applies on any day following a day when the average twenty-four (24) hour spring flow rate is **at or below 100 cfs, but greater than 50 cfs.**

When Stage IV is in effect, the following restrictions apply:

1. All of the prohibitions applicable in Stages I, II and III apply in Stage IV, except to the extent replaced by more restrictive conditions imposed by this stage.
2. Landscape watering is prohibited between the hours our 9 a.m. and 7 p.m. and is further restricted such that properties with an odd numbered address may landscape water on Mondays while those with an even numbered address may

landscape water on Tuesdays. However, landscape watering by means of a bucket, hand-held hose or soaker hose or a properly installed drip irrigation system is permitted during the hours allotted for watering. This subsection does not apply to reclaimed, recycled or reuse water.

3. Filling of new and existing pools is prohibited unless at least 30 percent of the water is obtained from a source other than the GBRA hydroelectric lakes. Water may be used to replenish swimming pools to maintenance levels. Drainage of swimming pools is permitted only onto a pervious surface, or onto a pool deck where the water is transmitted directly to a pervious surfaced, only if necessary to:
  - a. Remove excess water from the pool due to rain in order to lower the water to the maintenance level;
  - b. Repair, maintain, or replace a pool component which has become hazardous; or
  - c. Repair a pool leak.
4. Washing of vehicles is prohibited at other than a commercial vehicle wash facility.

The penalty for wasting water or any violation of Stage IV restrictions, as determined by the GBRA General Manager, or his designee, is \$100 - \$500 per day per violation.

### **Stage V**

Applies on any day following a day when the average spring flow rate is **at or below 50 cfs.**

When Stage V takes effect an emergency condition exists and the GBRA General Manager shall convene an emergency session of the GBRA Board of Directors to consider emergency rules to further restrict uses or other appropriate action.

### **Use Necessary for Public Health or Safety**

Notwithstanding any provision of this section, water may be used when and to the extent it is necessary to prevent danger to public health, safety or welfare or to the extent required by state or federal law.

### **Termination of Restrictions**

The GBRA General Manager, or his designee, may terminate the restrictions of a Stage when the condition listed as the triggering event for such Stage has ceased to exist for a period of thirty (30) consecutive days. Upon termination of the restrictions of the applicable Stage, the restrictions of the prior Stage become operative.

## **Section XII: Enforcement**

The provisions of this Plan shall apply to all contracts for commitment of water from storage executed after the date of approval of this Plan by the TCEQ and to diversions of water from GBRA's hydroelectric lakes, and shall be enforceable by the General Manager, or his/her designee, with assistance from the South Texas Watermaster.

## **Section XIII: Variances**

The General Manager, or his/her designee, may, in writing, grant a temporary variance to the pro rata water allocation policies provided by this Plan if it is determined that failure to grant such variance would cause an emergency condition adversely affecting the public health, welfare, or safety and if one or more of the following conditions are met:

1. Compliance with this Plan cannot be technically accomplished during the duration of the water supply shortage or other condition for which the Plan is in effect.
2. Alternative methods can be implemented which will achieve the same level of reduction in water use.

Persons requesting an exemption from the provisions of this Plan shall file a petition for variance with the General Manager within 5 days after pro rata allocation has been invoked. All petitions for variances shall be reviewed by the Board of Directors of GBRA, and shall include the following:

1. Name and address of the petitioner(s).
2. Detailed statement with supporting data and information as to how the pro rata allocation of water under the policies and procedures established in the Plan adversely affects the petitioner or what damage or harm will occur to the petitioner or others if petitioner complies with this Ordinance.
3. Description of the relief requested.
4. Period of time for which the variance is sought.
5. Alternative measures the petitioner is taking or proposes to take to meet the intent of this Plan and the compliance date.
6. Other pertinent information.

Variances granted by GBRA's Board of Directors shall be subject to the following conditions, unless waived or modified by the GBRA's Board or its designee:

1. Variances granted shall include a timetable for compliance.

2. Variances granted shall expire when the Plan is no longer in effect, unless the petitioner has failed to meet specified requirements.

No variance shall be retroactive or otherwise justify any violation of this Plan occurring prior to the issuance of the variance.

#### **Section XIV: Severability**

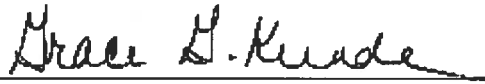
It is hereby declared to be the intention of GBRA's Board of Directors that the sections, paragraphs, sentences, clauses, and phrases of this Plan are severable and, if any phrase, clause, sentence, paragraph, or section of this Plan shall be declared unconstitutional by the valid judgment or decree of any court of competent jurisdiction, such unconstitutionality shall not affect any of the remaining phrases, clauses, sentences, paragraphs, and sections of this Plan, since the same would not have been enacted by GBRA's Board of Directors without the incorporation into this Plan of any such unconstitutional phrase, clause, sentence, paragraph, or section.

**GUADALUPE-BLANCO RIVER AUTHORITY RESOLUTION  
APPROVING AMENDMENTS TO GBRA'S  
DROUGHT CONTINGENCY PLAN**

**BE IT RESOLVED**, that the Board of Directors of the Guadalupe-Blanco River Authority does hereby approve amendments to GBRA's Drought Contingency Plan and directs the General Manager to submit a copy of the Drought Contingency Plan, as amended, to the Texas Commission on Environmental Quality, to make improvements to the Drought Contingency Plan on a regular basis as consistent with sound water conservation management, and to administer and enforce the Drought Contingency Plan as approved and amended.

Adopted this the 18<sup>th</sup> day of May, 2011.

Attest:



Grace G. Kunde  
Chair of the Board of Directors  
Guadalupe-Blanco River Authority



Arlene N. Marshall Secretary-Treasurer  
Board of Directors  
Guadalupe-Blanco River Authority