

2009 Benbrook Water Authority Drought Contingency Plan

This Drought Contingency Plan (the Plan) outlines the triggers and actions associated with each of the respective water management stages. These stages are:

- Stage 1 - Dry Conditions
- Stage 2 - Water Watch
- Stage 3 - Water Warning
- Stage 4 - Emergency Water Use Management

These stages can be triggered by supply, distribution system, or treatment system constraints. They can also be triggered if system demands exceed existing permitted supplies, by the Benbrook Water Authority's (the Authority) wholesale water provider, Tarrant Regional Water District.

Section 1. Public Information and Input

Public input to the Plan will be solicited using the following means:

1. The Authority will provide written notice of the proposed Plan using the Benbrook community newsletter and the Authority website. The Authority will also provide customers with the opportunity to comment on the Plan using the same resources.
2. A copy of the adopted Plan will be available on the Authority website.
3. The Authority will provide a written copy of the plan to anyone who requests it.
4. The Authority will hold a public meeting to introduce and promote the Plan before May 1, 2009.

Section 2. Continuing Public Information and Input

The public will be informed about the Plan after its adoption and will have an opportunity for input using the following means:

1. The Plan will be available at Authority offices at 1121 Mercedes Street, Benbrook.
2. The Plan will be available on-line at the Authority website (www.bwsa.org).
3. The Authority will notify local organizations, schools, and civic groups that staff are available to make presentations about the Plan.
4. The Authority will contact local media regarding the Plan.
5. The Authority may place information in customers' water bills.

Section 3. Monitoring Information for the Plan

System demands are currently monitored on a daily basis by the production staff of the Authority. In addition, temperature and rainfall data are recorded by the National Weather Service. The Authority analyzes this data to determine stage termination.

Section 4. Initiating and Terminating the Plan

The Authority Manager or his/her designee is responsible for initiating and terminating the respective stages of the Plan. The Authority will provide notice that a stage has been initiated or terminated and that appropriate actions are required as follows:

- Public announcement to the news media;
- Publication on the Authority's website; and
- Notification to all relevant state agencies.

Section 5. System Capacity Baseline for Water Management Stage Triggers

System capacity with regards to the defined triggers is the total reliable treatment capacity plus the existing groundwater well capacity. Therefore, the system capacity baseline for triggers is 13.0 million gallons per day (MGD). This includes 12 MGD from the BWA treatment plant and 1.0 MGD from the combined well outputs. This trigger number will be evaluated each year to take into consideration improvements which may have been added to the system.

Section 6. Main Components of the Plan

6.1 Schedule of Watering

The Authority has an established, voluntary schedule of watering guidelines as outlined in Table 1 below. These guidelines become mandatory if Stage 2 or any subsequent stage is initiated. The guidelines for times of watering also follow the same pattern: The 10 a.m. to 6 p.m. guidelines are voluntary until Stage 2 or any subsequent stage is initiated.

Table 1: Schedule of Watering

Last Digit of Address	Permitted Watering Dates
0 and 5	5th, 10th, 15th, 20th, 25th, 30th
1 and 6	1st, 6th, 11th, 16th, 21st, 26th
2 and 7	2nd, 7th, 12th, 17th, 22nd, 27th
3 and 8	3rd, 8th, 13th, 18th, 23rd, 28th
4 and 9	4th, 9th, 14th, 19th, 24th, 29th

No watering is allowed on the 31st. The lowest number will identify apartments, office building complexes, or other properties containing multiple addresses. Where there are no numbers, a number will be assigned by the Authority Manager. These restrictions also apply to government facilities.

6.2 Sectorization

The areas of sectorization discussed in the water conservation stages are being defined and will most likely follow boundaries similar to the existing pressure planes, with the exact boundaries falling on definable roadways and other easily distinguished features.

6.3 Jurisdiction

The restrictions listed below do not apply to those with private wells or those who own their water rights. These restrictions also do not apply for those using treated wastewater effluent, except where noted.

6.4 System Information

The Authority's main source of water is Benbrook Lake. The Authority currently has access to 16,457 acre-feet of this reservoir. This is transferred directly to the Authority's system after being treated at the Benbrook Water Authority Treatment Plant which is owned and operated by the Authority. In addition, the Authority has 14 water wells which it currently uses to augment supply from the main treatment plant.

As of January 2009, the Benbrook Water Authority serves a population of approximately 24,904 people and has 10,828 connections. This is growing by an average of 134 connections per year.

The average water production in 2008 was 4.01 MGD with a peak of 8.38 MGD on August 12th.

6.5 Utilization of Alternate Water Sources

The Authority may also purchase additional water from the Tarrant Regional Water District (TRWD), from its West Fork or East Texas systems. In addition, the Authority has an emergency supply interconnection at two locations which tie into the City of Fort Worth's distribution system.

Section 7. Drought and Emergency Water Management Stages

7.1 Stage 1 - Dry Conditions (City-Wide)

7.1.1 Initiation

This stage is implemented when system demand reaches 85% of system capacity for seven consecutive days.

TRIGGERS
85% of system capacity
for seven consecutive days

7.1.2 Actions by Authority

- The Authority reduces its own water use (e.g., landscape watering).
- The Authority continues its ongoing public education efforts.
- If TRWD initiates Stage 1, the Authority will increase its public awareness programs.

7.1.3 Requested Actions

The Authority requests that residents voluntarily water only once every five days. The Authority also requests that there be no watering between the hours of 10 a.m. and 6 p.m.

7.1.4 Goal

The goal of this stage is to achieve a 5% reduction in water use.

7.1.5 Termination of Stage: September 30

All initiated actions will remain in effect until the conditions that triggered the stage have been eliminated. If the order is initiated because of excessive demands, all initiated conditions will remain in effect through September 30 of the year in which they are triggered or until the Authority Manager determines that conditions exist which allow termination of this stage.

7.2 Stage 2: Water Watch (Sectorized or System-Wide)

7.2.1 Initiation

This stage can be applied to sections of the Authority system (refer to Section 6.2) to reduce impact on the entire system. If more than two sectors are affected, it immediately goes into effect for the entire Authority.

This stage is activated when one or more sectors of the system is at 95% of system capacity for three consecutive days, or when segments of the system drop below 35 psi pressure.

TRIGGERS
95% of system capacity
for three consecutive days, or
Segments of system drop
below 35 psi pressure

7.2.2 Actions by Authority

- When this stage is initiated, the Authority will further reduce its own water use. The Authority will prohibit its own use of water for street washing, vehicle washing, and all other non-essential uses.
- The Authority will increase public information efforts on water conservation.
- Installation of new landscaping will be discouraged.

7.2.3 Prohibited Actions (see Section 7.2.4 Exceptions)

- Watering will be allowed only on the schedule of once every five days, as outlined in Section 6.1 of this Plan.
- Watering is prohibited between the hours of 10 a.m. and 6 p.m.
- Hosing off paved areas, buildings, or windows is prohibited.
- Actions which create water running into the street or otherwise waste water are prohibited.
 - Use of water from hydrants for any purpose other than firefighting-related activities or other activities necessary to maintain public health, safety, and welfare is not allowed.
- Non-commercial vehicle washing that does not occur at a commercial car wash or at a commercial service station which uses a recirculating water system is not permitted.

7.2.4 Exceptions

- Watering using hand-held hose or bucket can be conducted any day.
- Newly planted landscaping (planted in the spring of the current year), commercial plant nurseries, and public gardens may water on any day.
- Use of water from designated fire hydrants for construction purposes may be allowed under a special permit from the Authority.
- All landscape watering exceptions must still abide by the 10 a.m. to 6 p.m. water restrictions.

7.2.5 Requested Actions

The Authority requests that installation of new landscapes be delayed until all watering restrictions are lifted.

7.2.6 Goal

By the end of the first week after initiation of the stage, the Authority anticipates a 10% reduction in system demand.

7.2.7 Termination

All initiated actions will remain in effect until the conditions that triggered the stage have been eliminated. If the order is initiated because of excessive demands, all initiated conditions will remain in effect through September 30 of the year in which they are triggered or until the Authority Manager determines that conditions exist which allow termination of this stage. Upon termination of Stage 2, Stage 1 becomes effective.

7.3 Stage 3: Water Warning (Sectorized or City-wide)

This stage can be applied to sections of the Authority system (refer to Section 6.2) to reduce impact on the entire system. If more than two sectors are affected, it immediately goes into effect for the entire system.

7.3.1 Initiation

This stage is initiated when one or more sectors of the city are at 98% of system capacity for three consecutive days, or when segments of the system drop below 35 psi pressure.

TRIGGERS
98% of system capacity
for three consecutive days, or
Segments of system drop
below 35 psi pressure

7.3.2 Actions by Authority

- When this stage is triggered, the Authority will further reduce its own water use. The Authority will prohibit its own use of water for street washing, vehicle washing, operation of ornamental fountains, and all other non-essential uses.
- The Authority will discontinue its landscape watering except as needed to prevent foundation damage, to preserve new plantings, to save rare plantings, and to keep golf greens and tee boxes alive. The daily watering restrictions will be enforced for these exceptions.
- The Authority will increase public information efforts on the water supply. More information will be available on the Authority website (www.bwsa.org).
- An internal working group will analyze the conditions which triggered the stage and will monitor for subsequent stages.

7.3.3 Prohibited Actions (see Section 7.3.4 Exceptions)

Of the following restrictions, only the scheduling and time-of-day watering limits apply to those using treated effluent.

- All outdoor landscape watering is prohibited.
- Hosing off paved areas, buildings, or windows is prohibited.
- Operation of ornamental fountains is prohibited.
- Draining, filling, refilling, or adding water to swimming pools and/or jacuzzi-type pools is not allowed.
- Foundation watering is allowed only using a hand-held hose or watering cans, using the five-day schedule.

- Use of water from hydrants for any purpose other than firefighting-related activities or other activities necessary to maintain public health, safety, and welfare is not allowed.
- Vehicle washing is prohibited.
- Actions which create water running into the street or otherwise waste water are not allowed.

7.3.4 Exceptions

- Vehicles that need to be washed for health, sanitation, or safety reasons (e.g., food carriers) are exempted. Any vehicle washing must occur at a commercial car wash or commercial service station which uses a recirculating water system.
- Use of water from designated fire hydrants for construction purposes may be allowed under a special permit from the Benbrook Water Authority.

7.3.5 Requested Actions

Installation of new landscapes should be delayed until all watering restrictions are lifted.

7.3.6 Goal

By the end of the first week after initiation of the stage, the City anticipates a 20% reduction in system demand.

7.3.7 Termination

All initiated actions will remain in effect until the conditions that triggered the stage have been eliminated. If the stage is initiated because of excessive demands, all initiated conditions will remain in effect through September 30 of the year in which they are triggered or until the Authority Manager determines that conditions exist which allow termination of the stage. Upon termination of Stage 3, Stage 2 or Stage 1 may become effective. This shall be determined by the Authority Manager.

7.4 Stage 4: Emergency Water Use Management (Sectorized or City-wide)

7.4.1 Initiation

This stage will be initiated in the event of a contamination of the water supply, failure of or damage to major system components, or if demand on the system exceeds delivery capacity.



7.4.2 Actions by City

- When this stage has been triggered, the City will discontinue its landscape watering except as needed to prevent foundation damage and to save rare plantings. Foundation watering must be done by hand-held hose or watering cans.
- The City will increase public information efforts on the water supply. More information will be available on the Water Department website.
- An internal working group will analyze the conditions which triggered the stage and will continue to monitor the situation.

7.4.3 Prohibited Actions (see Section 7.4.4 Exceptions)

- Landscape watering.
- Installation of new landscaping.
- Hosing off paved areas, buildings, or windows.
- Operation of ornamental fountains.
- Draining, filling, refilling or adding water to swimming pools and/or jacuzzi-type pools.
- Foundation watering, except done by hand-held hose or watering cans, using the five-day schedule.
- Actions which create water running into the street or otherwise waste water.
- Washing of vehicles.
- Use of water from hydrants for any purpose other than firefighting-related activities or other activities necessary to maintain public health, safety, and welfare.

7.4.4 Exceptions

- Vehicles that need to be washed for health, sanitation, or safety reasons (e.g., food carriers) are excepted.
- Landscape watering and foundation watering must be done by hand-held hose or hand-held watering cans using a five-day schedule.
- New landscaping (landscaping installed during the spring of the current year) may be watered daily for the first 10 days after establishment, every other day for the next 10 days and then every third day for the next 10 days. Beyond that, it shall follow the schedule defined in Section 6.1.

- Commercial plant nurseries can water plant stock by hand every other day.
- Watering by governments and public gardens is limited to areas of rare vegetation and rare plantings.
- Golf courses can water greens and tee boxes on the five-day schedule. Fairways may not be watered.
- Commercial and public pools may refill water lost to normal daily use, but hosing off walkways is prohibited.
- All landscape watering exceptions must continue to abide by the 10 a.m. to 6 p.m. water restrictions.

7.4.5 Goal

The Authority will reduce system demand enough to address and rectify the emergency situation as soon as possible.

7.4.6 Termination

All initiated actions will remain in effect until the conditions that triggered the stage have been eliminated. If the stage is initiated because of excessive demands, all initiated conditions will remain in effect through September 30 of the year in which they are triggered or until the Authority Manager determines that conditions exist which allow termination of the stage. Upon termination of Stage 4, Stage 3 or Stage 2 may become effective. This shall be determined by the Authority Manager.

7.5 Triggers

Additional measures may be invoked whenever necessary or if the Plan stages listed above do not reduce demand enough to allow proper management of the system.

7.5.1 Tarrant Regional Water District (TRWD) Triggers

The TRWD is a prospective supplier for the Authority if system demand becomes greater than the existing permits from Lake Benbrook allow. If TRWD becomes a significant supplier to the Authority, then the triggers which TRWD uses may directly relate to the Authority. It is also possible that TRWD may trigger drought stages when the Authority is not in a drought stage. When this occurs, the Authority Manager should make a decision about whether to join with the TRWD or to stay with the Authority's existing stage of drought planning. The Authority will have its own jurisdiction for initiating and terminating drought stages but will also take heed of the stages defined by TRWD.

7.5.2 City of Fort Worth Triggers

In an emergency stage, the City of Fort Worth Water Department may be a prospective supplier for the Authority. It is possible that the City of Fort Worth will trigger drought stages when the Authority is not in a drought stage. When this occurs, the Authority Manager should make a decision about whether to join with the City of Fort Worth or stay with the Authority's existing stage of drought planning. The Authority will have its own jurisdiction for initiating and terminating drought stages, but will also take heed of the stages defined by the City of Fort Worth.

7.6 Reasons for Termination

Once these triggers have been met and a stage has begun, the stage will not be lifted until one of the following requirements has been met: The specific situation is addressed (such as in the case of an emergency situation); or the Authority Manager determines that the condition has subsided. It is anticipated that no Plan stage will be terminated before September 30, unless the conditions that triggered the stage have been eliminated or unless the Authority Manager determines that conditions exist which allow termination of the stage.

Section 8. Granting Variances to the Plan

8.1 Grounds for Granting Variances

The Authority Manager may grant temporary variances for water uses otherwise prohibited under this Plan only if all of the following conditions are met:

- Granting the variance would not cause an immediate significant reduction in the Authority's water supply;
- Failure to approve the variance would result in an extreme hardship or need relating to the health, safety, or welfare of the applicant;
- Granting the variance would not adversely affect the health, safety, and welfare of other persons; and
- The applicant signs a compliance agreement on forms provided by the Authority Manager and approved by the Authority's attorney, agreeing to use water only in the amount and manner approved by the variance.

8.2 Information Required for Variance Request

Any application for variances shall be in writing and shall include the following information:

- Name and address of applicant(s);
- Purpose of water use;
- Specific provisions from which relief is requested;
- Detailed statement of the adverse effect of the provision from which relief is requested;
- Description of the relief requested;
- Period of time for which the variance is sought;
- Alternative measures that will be taken to reduce water use;
- Methods of measurement and reporting to confirm water use reductions (if applicable); and
- Other pertinent information.

Direct application to the following address:

General Manager
Benbrook Water Authority
1121 Mercedes Street
Benbrook, Texas 76126

8.3 Revocation of Variances

The Authority Manager may revoke a variance when he or she determines that:

1. The conditions set out in Section 8.1 are not being met or are no longer applicable;
2. The terms of the compliance agreement have been violated; or
3. Revocation is advisable to protect the health, safety, or welfare of the public or any person.

Section 9. Procedures for Enforcing Mandatory Water Use Restrictions

Mandatory water use restrictions will be imposed during the following stages: Water Watch, Water Warning, and Emergency Water Use Management. These water use restrictions will be enforced in the following manner:

First Offense: Written warning.

Second Offense: The Authority may cut off water service to the customer.

Section 10. Coordination with RWPG, TRWD, and Wholesale Customers

Appendix A is a copy of a letter sent to the Chair of Region C Water Planning Group along with this Plan.

Appendix B is a copy of a letter sent to Tarrant Regional Water District along with this Plan.

Section 11. Review and Update of Emergency Water Management Plan

As required by TCEQ rules, the Benbrook Water Authority will review this Plan at least every five years. The plan may be updated as appropriate based on new or updated information. This plan will be updated again by May 1st 2014.