WATER RESOURCE AND EMERGENCY MANAGEMENT PLAN

BLACKLAND
WATER SUPPLY CORPORATION

MAY 2019

FORWARD

This 2019 Model Water Resource and Emergency Management Plan (WREMP) which is an update to the 2014 Drought Contingency and Water Emergency Response Plan was prepared by Freese and Nichols for the North Texas Municipal Water District (NTMWD). It is intended to be used by NTMWD Member Cities and Customers as a guide as they develop their own Water Resource and Emergency Management Plans. This plan was prepared pursuant to Texas Commission on Environmental Quality rules. Some material is based on the existing drought contingency plans listed in Appendix A.

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This Model WREMP plan is based on the Texas Administrative Code in effect on January 18, 2019.

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APPENDICES

1. INTRODUCTION AND OBJECTIVES

This document has been prepared as a Model Water Resource and Emergency Management Plan (WREMP), intended to be available for use by North Texas Municipal Water District (NTMWD) Member Cities and Customer Cities as they develop their own plans. This model plan addresses all of the current TCEQ requirements for a drought contingency plan. [1] This plan will replace the plans dated August 2004, April 2006, March 2008, and April 2014.

The measures included in this Model WREMP are intended to provide short-term water savings during drought or emergency conditions. Water savings associated with ongoing, long-term strategies are discussed in the *Model Water Conservation Plan for North Texas Municipal Water District Member Cities and Customer Cities*. [2]

- The purpose of this Model WREMP plan is as follows:
- To conserve the available water supply in times of drought and emergency
- To maintain supplies for domestic water use, sanitation, and fire protection
- To protect and preserve public health, welfare, and safety
- To minimize the adverse impacts of water supply shortages
- To minimize the adverse impacts of emergency water supply conditions

The NTMWD supplies treated water to its Member Cities and Customer Cities. This model plan was developed by NTMWD in consultation with its Member Cities. In order to adopt this model plan, each NTMWD Member City and Customer City will need to adopt ordinance(s) or regulation(s) implementing the plan, including the determination of fines and enforcement procedures. The model plan calls for Member Cities and Customer Cities to adopt Water Resource Stages initiated by NTMWD during a drought or water supply emergency. Member Cities and Customer Cities may also adopt more stringent drought or water emergency response stages than NTMWD if conditions warrant.

In the absence of drought response measures, water demands tend to increase during drought due to increased outdoor irrigation. The severity of the drought depends on the degree of depletion of supplies and on the relationship of demand to available supplies. NTMWD considers a drought to end when all of the NTMWD's supply reservoirs refill to conservation storage pool levels.

[1] Superscripted numbers match references listed in Appendix A.

2. DEFINITIONS AND ABBREVIATIONS

1. AQUATIC LIFE means a vertebrate organism dependent upon an aquatic environment to sustain its life.

2. ATHLETIC FIELD means a public sports competition field, the essential feature of which is turf grass, used primarily for organized sports practice, competition or exhibition events for schools; professional sports and league play sanctioned by the utility providing retail water supply.

3. COMMERCIAL FACILITY means business or industrial buildings and the associated landscaping, but does not include the fairways, greens, or tees of a golf course.

4. COMMERCIAL VEHICLE WASH FACILITY means a permanently-located business that washes vehicles or other mobile equipment with water or water-based products, including but not limited to self-service car washes, full service car washes, roll-over/in-bay style car washes, and facilities managing vehicle fleets or vehicle inventory.

5. CUSTOMERS include those entities to which NTMWD provides wholesale water that are not Member Cities of NTMWD.

6. DESIGNATED OUTDOOR WATER USE DAY means a day prescribed by rule on which a person is permitted to irrigate outdoors.

7. DRIP IRRIGATION is a type of micro-irrigation system that operates at low pressure and delivers water in slow, small drips to individual plants or groups of plants through a network of plastic conduits and emitters; also called trickle irrigation.

8. DROUGHT, for the purposes of this report, means an extended period of time when an area receives insufficient amounts of rainfall to replenish the water supply, causing water supply sources (in this case reservoirs) to be depleted.

9. EVAPOTRANSPIRATION (ET) represents the amount of water lost from plant material to evaporation and transpiration. The amount of ET can be estimated based on the temperature, wind, and relative humidity.

10. EXECUTIVE DIRECTOR means the Executive Director of the NTMWD and includes a person the Executive Director has designated to administer or perform any task, duty, function, role, or action related to this Plan or on behalf of the Executive Director.

11. FOUNDATION WATERING means an application of water to the soils directly abutting (within 2 feet) the foundation of a building, structure.

12. INTERACTIVE WATER FEATURES means water sprays, dancing water jets, waterfalls, dumping buckets, shooting water cannons, inflatable pools, temporary splash toys or pools, slip-n-slides, or splash pads that are maintained for recreation.

13. IRRIGATION SYSTEM means a permanently installed, custom-made, site-specific system of delivering water generally for landscape irrigation via a system of pipes or other conduits installed below ground.

14. LANDSCAPE means any plant material on a property, including any tree, shrub, vine, herb, flower, succulent, ground cover, grass or turf species, that is growing or has been planted out of doors.

15. MEMBER CITIES include the cities of Allen, Farmersville, Forney, Frisco, Garland, McKinney, Mesquite, Plano, Princeton, Richardson, Rockwall, Royse City, and Wylie, Texas, which are members of NTMWD.

16. NEW LANDSCAPE means: (a) vegetation installed at the time of the construction of a residential or commercial facility; (b) installed as part of a governmental entity's capital improvement project; or (c) installed to stabilize an area disturbed by construction.

17. ORNAMENTAL FOUNTAIN means an artificially created structure (up to a certain diameter) from which a jet, stream, or flow of treated water emanates and is not typically utilized for the preservation of aquatic life.

18. RETAIL CUSTOMERS include those customers to whom the Supplier provides retail water from a water meter.

19. SOAKER HOSE means a perforated or permeable garden-type hose or pipe that is laid above ground that provides irrigation at a slow and constant rate.

20. SPRINKLER means an above-ground water distribution device that may be attached to a garden hose.

21. SUPPLIER means a Member City or Customer that purchases wholesale water from NTMWD and provides water to retail and/or customers.

22. SWIMMING POOL means any structure, basin, chamber, or tank including hot tubs, containing an artificial body of water for swimming, diving, or recreational bathing, and having a depth of two (2) feet or more at any point.

23. WATER RESOURCE MANAGEMENT PLAN means a strategy or combination of strategies for temporary supply management and demand management responses to temporary and potentially recurring water supply shortages and other water supply emergencies required by Texas Administrative Code Title 30, Chapter 288, Subchapter B. This is sometimes called a drought contingency plan.

Abbreviation	Full Nomenclature
ED	NTMWD Executive Director
NTMWD or District	North Texas Municipal Water District
TCEQ	Texas Commission on Environmental Quality
TWDB	Texas Water Development Board
Model WREMP	Model Water Resource and Emergency Management Plan for Member Cities and Customers

3. TEXAS COMMISSION ON ENVIRONMENTAL QUALITY RULES

The TCEQ rules governing development of drought contingency plans for public water suppliers are contained in Title 30, Part 1, Chapter 288, Subchapter B, Rule 288.20 of the Texas Administrative Code, a current copy of which is included in Appendix B. For the purpose of these rules, a drought contingency plan is defined as "a strategy or combination of strategies for temporary supply and demand management responses to temporary and potentially recurring water supply shortages and other water supply emergencies."[1]

Minimum Requirements

TCEQ's minimum requirements for drought contingency plans are addressed in the following subsections of this report:

- 288.20(a)(1)(A) – Provisions to Inform the Public and Provide Opportunity for Public Input – Section 4.1
- 288.20(a)(1)(B) – Provisions for Continuing Public Education and Information – Section 4.2
- 288.20(a)(1)(C) – Coordination with the Regional Water Planning Group – Section 4.7
- 288.20(a)(1)(D) – Criteria for Initiation and Termination of Drought Stages – Section 4.3
- 288.20(a)(1)(E) – Drought and Emergency Response Stages – Section 4.4
- 288.20(a)(1)(F) – Specific, Quantified Targets for Water Use Reductions – Section 3.4
- 288.20(a)(1)(G) – Water Supply and Demand Management Measures for Each Stage – Section 4.4
- 288.20(a)(1)(H) – Procedures for Initiation and Termination of Drought Stages – Section 3.3
- 288.20(a)(1)(I) - Procedures for Granting Variances – Section 4.5
- 288.20(a)(1)(J) - Procedures for Enforcement of Mandatory Restrictions – Section 3.6
- 288.20(a)(3) – Consultation with Wholesale Supplier – Sections 1 and 4.4
- 288.20(b) – Notification of Implementation of Mandatory Measures – Section 4.3
- 288.20(c) – Review and Update of Plan – Section 4.8

4. WATER RESOURCE AND EMERGENCY MANAGEMENT PLAN

4.1 Provisions to Inform the Public and Opportunity for Public Input

Blackland WSC will provide opportunity for public input in the development of this drought contingency and water emergency response plan by the following means:

- Providing written notice of the proposed plan and the opportunity to comment on the plan by posted notice, and notice on the supplier's web site.
- Making the draft plan available on the supplier's web site.
- Providing the draft plan to anyone requesting a copy.
- Holding a public meeting.

4.2 Provisions for Continuing Public Education and Information

Blackland WSC will inform and educate the public about the Water Resource and Emergency Management Plan by the following means:

- Preparing a bulletin describing the plan and making it available at Blackland WSC Office and other appropriate locations.
- Making the plan available to the public through the supplier's web site.
- Including information about the Water Resource and Emergency Management on the supplier's web site.
- Notifying local organizations, schools, and civic groups that staff are available to make presentations on the Water Resource and Emergency Management Plan (usually in conjunction with presentations on water conservation programs).

At any time that the drought contingency and water emergency response plan is activated or the drought stage or water emergency response stage changes, Member Cities and Customer Cities will notify local media of the issues, the drought response stage or water emergency response stage (if applicable), and the specific actions required of the public. The information will also be publicized on the supplier's web site (if available). Billing inserts will also be used as appropriate.

4.3 Initiation and Termination of Water Resource and Emergency Management Stages and Targets for Water use Reductions

Initiation of a Water Resource Management Stage

The General Manager or official designee may order the implementation of a Water Resource and Emergency Management response stage when one or more of the trigger conditions for that stage are met.

- Water Resource and Emergency Management Plan stages imposed by NTMWD action must be initiated by Member Cities and Customers.

- For other trigger conditions internal to a city or water supply entity, the General Manager or official designee may decide not to order the implementation of a Water Resource Management Stage or Water Emergency even though one or more of the trigger criteria for the stage are met. Factors which could influence such a decision include, but are not limited to, the time of the year, weather conditions, the anticipation of replenished water supplies, or the anticipation that additional facilities will become available to meet needs. The reason for this decision should be documented.

The following actions will be taken when a water resource management stage is initiated:

- The public will be notified through local media and the supplier's web site (if available) as described in Section 4.2.
- Wholesale Customers (if any) and the NTMWD will be notified by e-mail with a follow-up letter or fax that provides details of the reasons for initiation of the Water Resource Management Stage.
- If any mandatory provisions of the Water Resource and Emergency Management Plan are activated, Member Cities and Customer Cities will notify the Executive Director of the TCEQ and the Executive Director of the NTMWD within 5 business days.

Termination of Water Management Stage

The General Manager or official designee may order the termination of a Water Resource Management Stage when the conditions for termination are met or at their discretion.

The following actions will be taken when a water resource management stage is terminated:

- The public will be notified through local media and the supplier's web site as described in Section 4.2.
- Wholesale Customers (if any) and the NTMWD will be notified by e-mail with a follow-up letter or fax.
- If any mandatory provisions of the Water Resource and Emergency Management Plan that have been activated are terminated, Member Cities and Customer Cities will notify the Executive Director of the TCEQ and the Executive Director of the NTMWD within 5 business days.

The General Manager or official designee may decide not to order the termination of a Water Resource Management stage even though the conditions for termination of the stage are met. Factors which could influence such a decision include, but are not limited to, the time of year, weather conditions, or the anticipation of potential changed conditions that warrant the continuation of the Water Resource Management Stage. The reason for this decision should be documented.

Water Resource and Emergency Management Plan Stages and Measures

4.3.1 Stage 1

Initiation and Termination Conditions for Stage 1

The NTMWD has initiated Stage 1, which may be initiated due to one or more of the following:

- The NTMWD Executive Director, with the concurrence of the NTMWD Board of Directors, finds that conditions warrant the declaration of Stage 1.
- Water demand is projected to approach the limit of the permitted supply.
- The storage level in Lavon Lake as published by the Texas Water Development Board (TWDB),[3] is less than 70 percent of the total conservation pool capacity during any months or April through October or less than 60 percent of the total conservation pool capacity during any of the months of November through March.
- The Sabine River Authority has indicated that its Upper Basin water supplies used by NTMWD (Lake Tawakoni and/or Lake Fork) are in a Stage 1 drought.
- NTMWD has concern that Lake Texoma, Jim Chapman Lake, the East Fork Water Reuse Project, the Main Stem Pump Station, or some other NTMWD source may be limited in availability in the next six (6) months.
- NTMWD water demand exceeds 95 percent of the amount that can be delivered to customers for three (3) consecutive days.
- Water demand for all or part of NTMWD's delivery system approaches delivery capacity because delivery capacity is inadequate.
- Supply source is interrupted or unavailable due contamination, invasive species, equipment failure or other causes.
- NTMWD's water supply system is unable to deliver water due to the failure or damage of major water system components.
- Part of the system has a shortage in supply or damage to equipment. NTMWD may implement measures for only the portion of the NTMWD system impacted.

Supplier has initiated Stage 1 due to one or more of the following reasons:

- Supplier's water demand exceeds 95 percent of the amount that can be delivered to customers for three consecutive days.
- Supplier's water demand for all or part of the delivery system approaches delivery capacity because delivery capacity is inadequate.
- Supply source becomes contaminated.
- Supplier's water supply system is unable to deliver water due to the failure or damage of major water system components.
- Supplier's individual plan may be implemented if other criteria dictate.

NTMWD has terminated Stage 1, which may be terminated due to one or more of the following:

- The Executive Director, with the concurrence of the NTMWD Board of Directors, finds that conditions warrant the termination of Stage 1.
- The storage level in Lavon Lake, as published by the TWDB, [3] is greater than 75 percent of the total conservation pool capacity during any of the months of April through October or greater than 65 percent of the total conservation pool capacity during any of the months of November through March.
- Other circumstances that caused NTMWD initiation of Stage 1 no longer prevail.

Supplier has terminated Stage 1, which may be terminated due to the cause of the Supplier's initiation of Stage 1 no longer prevail.

Goal for Use Reduction and Actions Available under Stage 1

Stage 1 is intended to raise public awareness of potential drought or water emergency problems. The goal for water use reduction under Stage 1 is a two percent (2%) reduction in the amount of water produced by NTMWD from the previous corresponding annual payment period prior to institution of drought restrictions. **If circumstances warrant, of if required by NTMWD, the General Manager or official designee can set a goal for greater or lesser water use reduction under Stage 1.** The General Manager or official designee may order the implementation of any of the actions listed below, as deemed necessary, to achieve a two percent (2%) reduction. Measures described as "requires notification to TCEQ" are those that impose mandatory requirements on customers. The supplier must notify TCEQ and NTMWD within five (5) business days if such mandatory measures are implemented.

- Continue actions established by Water Conservation Plan.
- Notify customers of actions being taken and request implementation of similar procedures.
- Initiate engineering studies to evaluate alternative water sources and/or alternative delivery mechanisms should conditions worsen.
- Increase public education efforts on ways to reduce water use.
- Halt non-essential Blackland WSC water use:

  (Examples: street cleaning, vehicle washing, operation of ornamental fountains, etc.)

- Encourage the public to wait until the current drought or emergency situation has passed before establishing New Landscape.
- Encourage all users to reduce the frequency of draining and refilling swimming pools.
- **Requires Notification to TCEQ -** Increase enforcement of the following landscape watering restrictions established by the Water Conservation Plan: (1) limit landscape watering with sprinklers or irrigation systems at each service

address to no more than two (2) days per week, on designated days, between April 1 and October 31; and (2) limit landscape watering with sprinklers or irrigation systems at each service address to once every week, on designated days, between November 1 and March 31. Exceptions are as follows:

- An exception is allowed for New Landscape associated with new construction that may be watered as necessary for 30 days from the date of installation of new landscape features.
- An exception for additional watering of landscape may be provided by hand-held hose with shutoff nozzle, and/or use of dedicated irrigation drip zones provided no runoff occurs.
- Foundation (within 2 feet), New Landscape watering, watering of new plantings (first year) of shrubs, and watering of trees (within a ten foot radius of its trunk) may occur by a hand-held hose, a soaker hose, or a dedicated zone using a Drip Irrigation system provided no runoff occurs.
- Restrictions do not apply to locations using treated wastewater effluent for irrigation or the legal use of water pumped from Lake Ray Hubbard as may be regulated by the City of Dallas.

- **Requires Notification to TCEQ -** Initiate a rate surcharge for all water use over a certain level.
- **Requires Notification to TCEQ -** Public athletic fields used for competition may be watered twice per week.
- **Requires Notification to TCEQ -** Prohibit watering of golf courses using treated water, except as needed to keep greens and tee boxes alive.

4.3.2 Stage 2

Initiation and Termination Conditions for Stage 2

The NTMWD has initiated Stage 2, which may be initiated due to one or more of the following:

- The NTMWD Executive Director, with the concurrence of the NTMWD Board of Directors, finds that conditions warrant the declaration of Stage 2.
- Water demand is projected to approach the limit of NTMWD permitted supply.
- The storage in Lavon Lake, as published by the TWDB,[3] is less than 55 percent of the total conservation pool during any of the months of April through October or less than 45 percent of the total conservation pool capacity during any of the months of November through March.
- The Sabine River Authority has indicated that its Upper Basin water supplies used by NTMWD (Lake Tawakoni and/or Lake Fork) are in a Stage 2 drought.
- NTMWD has concern that Lake Texoma, Jim Chapman Lake, the East Fork Water Reuse Project, the Main Stem Pump Station, or some other NTMWD source may be limited in availability in the next three (3) months.

- NTMWD water demand exceeds 98 percent of the amount that can be delivered to customers for three (3) consecutive days.
- NTMWD water demand for all or part of the delivery system equals delivery capacity because delivery capacity is inadequate.
- NTMWD's supply source is interrupted or unavailable due contamination, invasive species, equipment failure, or other causes.
- NTMWD's water supply system is unable to deliver water due to the failure or damage of major water system components.
- Part of the system has a shortage in supply or damage to equipment. NTMWD may implement measures for only that portion of the system impacted.

Supplier has initiated Stage 2 due to one or more of the following reasons:

- Supplier's water demand exceeds 98 percent of the amount that can be delivered to customers for three (3) consecutive days.
- Supplier's water demand for all or part of the delivery system exceeds delivery capacity because delivery capacity is inadequate.
- Supply source becomes contaminated.
- Supplier's water supply system is unable to deliver water due to the failure or damage of major water system components.
- Supplier's individual plan may be implemented if other criteria dictate.

NTMWD has terminated Stage 2, which may terminate due to one of the following:

- The Executive Director, with the concurrence of the NTMWD Board of Directors, finds that conditions warrant the termination of Stage 2.
- The storage level in Lavon Lake, as published by the TWDB, [3] is greater than 70 percent of the total conservation pool capacity during any of the months of April through October or greater than 60 percent of the total conservation pool capacity during any of the months of November through March.
- Other circumstances that caused NTMWD initiation of Stage 2 no longer prevail.

Supplier has terminated Stage 2, which may be terminated due to the cause of the Supplier's initiation of Stage 2 no longer prevail.

Goal for Use Reduction and Actions Available under Stage 2

The goal for water use reduction under Stage 2 is a reduction of ten percent (10%) in the amount of water obtained from NTMWD from the previous corresponding annual payment period prior to institution of drought restrictions. **If circumstances warrant, of if required by NTMWD, the General Manager or official designee can set a goal for greater or lesser water use reduction.** The General Manager or official designee may order the implementation of any of the actions listed below, as deemed necessary, to achieve a two-percent reduction. Measures described as "requires notification to TCEQ" are those that

impose mandatory requirements on customers. The supplier must notify TCEQ and NTMWD within five (5) business days if such mandatory measures are implemented.

- Continue or initiate any actions available under Water Conservation Plan and Stage 1.
- Notify customers of actions being taken and request them to implement similar procedures.
- Implement viable alternative water supply strategies.
- Further accelerate public education efforts on ways to reduce water use.
- Encourage all users to reduce the frequency of draining and refilling swimming pools.
- **Requires Notification to TCEQ -** Limit landscape watering with sprinklers or irrigation systems at each service address to once per week, on designated days between April 1 and October 31. and (2) limit landscape watering with sprinklers or irrigation systems at each service address to once every week, on designated days, between November 1 and March 31. Exceptions are as follows:
    - An exception is allowed for New Landscape associated with new construction that may be watered as necessary for 30 days from the date of installation of new landscape features.
    - An exception for additional watering of landscape may be provided by hand-held hose with shutoff nozzle, and/or use of dedicated irrigation drip zones provided no runoff occurs.
    - Foundation (within 2 feet), New Landscape Watering, watering of new plantings (first year) of shrubs, and watering of trees (within a ten foot radius of its trunk) may occur by a hand-held hose, a soaker hose, or a dedicated zone using a Drip Irrigation system provided no runoff occurs.
    - Athletic Fields may be watered twice per week.
    - An exemption is allowed for Drip Irrigation system from the designated outdoor water use day limited to no more than one day per week. Drip Irrigation systems are however subject to all other restrictions applicable under this stage.
    - Hand water with shutoff nozzle, drip lines, and Soaker Hoses are allowed before 10 am and after 6 pm, provided no runoff occurs.
    - Restrictions do not apply to locations using treated wastewater effluent for irrigation or the legal use of water pumped from Lake Ray Hubbard as may be regulated by the City of Dallas.
- **Requires Notification to TCEQ -** Prohibit hydro seeding, hydro mulching, and sprigging.
- **Requires Notification to TCEQ -** Initiate a rate surcharge as requested by NTMWD.

- **Requires Notification to TCEQ -** Initiate a rate surcharge for all water used over a certain level.
- **Requires Notification to TCEQ -** Prohibit watering of golf courses using treated water, except as needed to keep greens and tee boxes alive.
- **Requires Notification to TCEQ -** If NTMWD has imposed a reduction in water availability, 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:

    - A customer's monthly allocation shall be a percentage of the customer's water usage baseline. The percentage will be set by the General Manager or his/her designee based on the 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 the General Manager or his/her designee as conditions warrant. Once pro rata allocations are in effect, water diversions by or deliveries to each customer shall be limited to the allocation established for each month.
    - A monthly water usage allocation shall be established by the General Manager or his/her designee for each customer. The customer's water usage baseline will be computed on the average water usage by month for the past five years. If the customer's billing history is less than five (5) years, the monthly average for the period for which there is a record shall be used for any monthly period for which no billing history exists.
    - The General Manager or his/her designee shall provide notice, by certified mail, to each customer informing them of their monthly water usage allocations and shall notify the news media, the Texas Natural Resource Conservation Commission, and the Texas Water Development Board upon initiation of pro rata water allocations.
    - Upon request of the customer, a request for a temporary variance to the pro rata water allocation may be requested.
    - At the initiative of the General Manager or his/her designee, the allocation may be reduced if, (a) the customer agrees to transfer part of its allocation to another customer, or (2) other objective evidence demonstrates that the designated allocation is inaccurate under present conditions.
    - City wholesale water users will be advised to continue all relevant actions from the previous stages including appropriate public water use restrictions and to implement the next stage of their own individual Retail Water Supplier Resource and Emergency Management Plan.

4.3.2 Stage 3

Initiation and Termination Conditions for Stage 3

The NTMWD has initiated Stage 3, which may be initiated due to one or more of the following:

- The NTMWD Executive Director, with the concurrence of the NTMWD Board of Directors, finds that conditions warrant the declaration of Stage 3
- Water demand is projected to approach or exceed the limit of the permitted supply.
- The storage in Lavon Lake, as published by the TWDB, [3] is less than 30 percent of the total conservation pool during any of the months of April through October or less than 20 percent of the total conservation pool capacity during any of the months of November through March.
- The Sabine River Authority has indicated that its Upper Basin water supplies used by NTMWD (Lake Tawakoni and/or Lake Fork) are in Stage 3.
- The water supplied from Lake Texoma, Jim Chapman Lake, the East Fork Water Reuse Project, the Main Stem Pump Station, or some other NTMWD water source has become limited in availability.
- NTMWD water demand exceeds the amount that can be delivered to Customers.
- NTMWD water demand for all or part of the delivery system exceeds delivery capacity because delivery capacity is inadequate.
- NTMWD's supply source is interrupted or unavailable due contamination, invasive species, equipment failure, or other causes.
- Part of the system has a shortage in supply or damage to equipment. NTMWD may implement measures for only that portion of the system impacted.

Supplier has initiated Stage 3 due to one or more of the following reasons:

- Supplier's water demand exceeds the amount that can be delivered to customers.
- Supplier's water demand for all or part of the delivery system exceeds delivery capacity because delivery capacity is inadequate.
- Supply source becomes contaminated.
- Supplier's water supply system is unable to deliver water due to the failure or damage of major water system components.
- Supplier's individual plan may be implemented if other criteria dictate.

NTMWD has terminated Stage 3, which may terminate due to one or more of the following:

- The Executive Director, with the concurrence of the NTMWD Board of Directors, finds that conditions warrant the termination of Stage 3.
- The storage level in Lavon Lake, as published by the TWDB, [3] is greater than 55 percent of the total conservation pool capacity during any of the months of April through October or greater than 45 percent of the total conservation pool capacity during any of the months of November through March.

- Other circumstances that caused NTMWD initiation of Stage 2 no longer prevail.

Supplier has terminated Stage 3, which may be terminated due to the cause of the Supplier's initiation of Stage 3 no longer prevail.

Goals for Use Reduction and Actions Available under Stage 3

The goal for water use reduction under Stage 3 is a reduction of whatever amount is designated by NTMWD in the amount of water obtained from NTMWD from the corresponding previous annual payment period prior to institution of drought restrictions. If circumstances warrant or if required by NTMWD, the General Manager or official designee can set a goal for greater water use reduction.

The General Manager or official designee must implement any action(s) required by NTMWD. In addition, the General Manager or official designee may order the implementation of any of the actions listed below, as deemed necessary. Measures described as "requires notification to TCEQ" impose mandatory requirements on customers. The supplier must notify TCEQ and NTMWD within five (5) business days if these measures are implemented:

- Continue or initiate any actions available under Stages 1 and 2.
- Notify customers of actions being taken and request them to implement similar procedures.
- Implement viable alternative water supply strategies.
- **Requires Notification to TCEQ** – Initiate mandatory water use restrictions as follows:
    - Prohibit hosing and washing of paved areas, buildings, windows or other surfaces is prohibited except by variance and performed by a professional service using high efficiency equipment.
    - Prohibit operation of all ornamental fountains or other amenity impoundments to the extent they use treated water.
- **Requires Notification to TCEQ -** Prohibit hydro seeding, hydro mulching, and sprigging.
- **Requires Notification to TCEQ -** Prohibit the use of potable water for the irrigation of new landscape.
- **Requires Notification to TCEQ -** Prohibit commercial and residential landscape watering, except that foundations and trees may be watered for 2 hours on any day with a hand-held hose, a soaker hose, or a dedicated zone using a drip irrigation system provided no runoff occurs. ET/Smart controllers and drip irrigation systems are not exempt from this requirement.
- **Requires Notification to TCEQ -** Prohibit washing of vehicles except at Commercial Vehicle Wash Facilities, except as necessary for health, sanitation, or safety reasons.

- **Requires Notification to TCEQ -** Prohibit watering of golf courses using treated water, except as needed to keep greens and tee boxes alive.
- **Requires Notification to TCEQ -** Prohibit the permitting of private pools. Pools already permitted may be completed and filled with water. Existing private and public pools may add water to maintain pool levels but may not be drained and refilled.
- **Requires Notification to TCEQ -** Require all commercial water users to reduce water use by a percentage established by the General Manager or official designee.
- **Requires Notification to TCEQ -** Initiate a rate surcharge for all water use over normal rates for all water use.
- **Requires Notification to TCEQ -** If NTMWD has imposed a reduction in water availability, 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

  In the event that the triggering criteria specified in the Plan for Stage 3 and Severe 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:

  - A customer's monthly allocation shall be a percentage of the customer's water usage baseline. The percentage will be set by the General Manager or his/her designee based on the 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 the General Manager or his/her designee as conditions warrant. Once pro rata allocations are in effect, water diversions by or deliveries to each customer shall be limited to the allocation established for each month.
  - A monthly water usage allocation shall be established by the General Manager or his/her designee for each customer. The customer's water usage baseline will be computed on the average water usage by month for the past five years. If the customer's billing history is less than five (5) years, the monthly average for the period for which there is a record shall be used for any monthly period for which no billing history exists.
  - The General Manager or his/her designee shall provide notice to each customer informing them of their monthly water usage allocations and shall notify the news media, the Texas Natural Resource Conservation Commission, and the Texas Water Development Board upon initiation of pro rata water allocations.

- Upon request of the customer, a request for a temporary variance to the pro rata water allocation may be requested.
- At the initiative of the General Manager or his/her designee, the allocation may be reduced if, (a) the customer agrees to transfer part of its allocation to another customer, or (2) other objective evidence demonstrates that the designated allocation is inaccurate under present conditions.
- City wholesale water users will be advised to continue all relevant actions from the previous stages including appropriate public water use restrictions and to implement the next stage of their own individual Retail Water Supplier Resource and Emergency Management Plan.

4.4 Procedures for Granting Variances to the Plan

The General Manager or official designee may grant temporary variances for existing water uses otherwise prohibited under this Water Resource and Emergency Management Plan if one or more of the following conditions are met:

- Failure to grant such a variance would cause an emergency condition adversely affecting health, sanitation, or fire safety for the public or the person or entity requesting the variance
- Compliance with this plan cannot be accomplished due to technical or other limitations
- Alternative methods that achieve the same level of reduction in water use can be implemented

Variances shall be granted or denied at the discretion of the General Manager or official designee. All petitions for variances should be in writing and should include the following information:

- Name and address of the petitioners
- 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
- Other pertinent information

4.5 Procedures for Enforcing Mandatory Water Use Restrictions

Mandatory water use restrictions may be imposed in Stage 1, Stage 2 and Stage 3 through adoption of this Water Resource and Emergency Management Plan by Resolution of the Blackland WSC Board of Directors.

4.6 Coordination with the Regional Water Planning Group and NTMWD

A copy of this Water Resource and Emergency Management plan will be sent to the Chair of the Region C Water Planning Group and the Chairs of North East Texas Water Planning Group.

4.7 Review and Update of Drought Contingency and Water Emergency Response Plan

As required by TCEQ rules, Member Cities and Customer Cites must review the drought contingency and water emergency response plan every five years. The plan will be updated as appropriate based on new or updated information.

APPENDIX A

LIST OF REFERENCES

Appendix A
List of References

(1) Title 30 of the Texas Administrative Code, Part 1, Chapter 288, Subchapter B, Rule 288.20, downloaded from http://www.tnrcc.state.tx.us/oprd/rules/pdflib/288a.pdf, July 2007.

(2) Freese and Nichols, Inc.: *North Texas Municipal Water District Water Conservation and Drought Contingency and Water Emergency Response Plan*, prepared for the North Texas Municipal Water District, Fort Worth, March 2008.

The following conservation and drought contingency plans and related documents were reviewed in the development of this plan. References marked with a * were used heavily in the development of this plan.

(3) City of Austin Water Conservation Division: "City of Austin Water Drought Contingency Plan, Developed to Meet Senate Bill 1 Regulatory Requirements," Austin, August 1999.

(4) City of Austin Water Conservation Division: "City of Austin Water Conservation Plan, Developed to Meet Senate Bill 1 Regulatory Requirements," Austin, August 1999.

(5) Upper Trinity Regional Water District: "Water Conservation Plan and Emergency Water Demand Management Plan," adopted by the Board of Directors, Lewisville, August 5, 1999.

(6) Upper Trinity Regional Water District: "Water Conservation Plan and Emergency Water Demand Management Plan (2002 Amended)," adopted by the Board of Directors, Lewisville, February 2002.

(7) *City of Dallas Water Utilities Department: "City of Dallas Water Management Plan," adopted by the City Council, Dallas, September 1999.

(8) Updates to City of Dallas Water Management Plan found at http://www.dallascityhall.com in September 2003.

(9) *City of Dallas Water Utilities Department: "City of Dallas Water Conservation Plan," adopted by the City Council, Dallas, September 1999.

(10) *City of Fort Worth: "Water Conservation plan for the City of Fort Worth," Fort Worth, August 1999.

(11) Updates to the City of Fort Worth water conservation plan found at http://ci./fort-worth.tx.us in September 2003.

(12) *City of Fort Worth: "Emergency Water Management Plan for the City of Fort Worth," Fort Worth, August 19, 2003.

(13) HDR Engineering, Inc.: "Water Conservation and Emergency Demand Management Plan," prepared for the Tarrant Regional Water District, Austin, February 2000.

(14) Freese and Nichols, Inc.: "Water Conservation and Drought Contingency Plan," prepared for Brown County Water Improvement District No. 1, Fort Worth, August 1999.

(15) Freese and Nichols, Inc.: "Water Conservation and Drought Contingency Plan," prepared for the Sabine River Authority of Texas, Fort Worth, September 1994.

(16) HDR Engineering, Inc.: "Water Conservation and Emergency Demand Management Plan," prepared for the Tarrant Regional Water District, Austin, June 1998.

(17) HDR Engineering, Inc.: "Water Conservation Plan for the City of Corpus Christi," adopted by the City of Corpus Christi City Council, August 24, 1999.

(18) City of Houston's water conservation plan downloaded September 2003 from http://www.cityofhouston.gov

(19) City of Houston: "Ordinance N. 2001-753, Amending Chapter 47 of the Code of Ordinances Relating to Water Emergencies," Houston, August 2001.

(20) City of Houston: "Ordinance No. 98-764, Relating to Water Conservation," Houston, September 1998.

(21) City of Houston: "Water Conservation Plan," 1998.

(22) City of Houston: "Water Emergency Response Plan," Houston, July 15, 1998.

(23) City of Lubbock: "Water Conservation Plan," ordinance number 10177 adopted by the City Council in August 1999.

(24) City of El Paso Water Conservation Ordinance downloaded August 14, 2003 from http://www.epwu.org/ordinance.html

(25) San Antonio Water System: "Water Conservation and Reuse Plan," San Antonio, November 1998 with June 2002 updates.

(26) North Texas Municipal Water District: "District Policy No. 24 Water Conservation Plan Containing Drought Contingency Plan," adopted August 1999.

(27) GDS Associates, Inc.: "Water Conservation Study," prepared for the Texas Water Development Board, Fort Worth, 2002.

(28) A & N Technical Services, Inc.: "BMP Costs & Savings Study: A Guide to Data and Methods for Cost-Effectiveness Analysis of Urban Water Conservation Best Management Practices," prepared for The California Urban Water Conservation Council, Santa Monica, California, July 2000.

(29) *City of Dallas: "City of Dallas Ordinances, Chapter 49, Section 21.1," Dallas, October 1, 2001.

APPENDIX B

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY RULES ON DROUGHT CONTINGENCY PLANS

APPENDIX B
Texas Commission on Environmental Quality Rules on Drought Contingency Plans

Texas Administrative Code

TITLE 30	ENVIRONMENTAL QUALITY
PART 1	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CHAPTER 288	WATER CONSERVATION PLANS, DROUGHT CONTINGENCY PLANS, GUIDELINES AND REQUIREMENTS
SUBCHAPTER B	DROUGHT CONTINGENCY PLANS
RULE §288.20	**Drought Contingency Plans for Municipal Uses by Public Water Suppliers**

(a) A drought contingency plan for a retail public water supplier, where applicable, must include the following minimum elements.

(1) Minimum requirements. Drought contingency plans must include the following minimum elements.

(A) Preparation of the plan shall include provisions to actively inform the public and affirmatively provide opportunity for public input. Such acts may include, but are not limited to, having a public meeting at a time and location convenient to the public and providing written notice to the public concerning the proposed plan and meeting.

(B) Provisions shall be made for a program of continuing public education and information regarding the drought contingency plan.

(C) The drought contingency plan must document coordination with the regional water planning groups for the service area of the retail public water supplier to ensure consistency with the appropriate approved regional water plans.

(D) The drought contingency plan must include a description of the information to be monitored by the water supplier, and specific criteria for the initiation and termination of drought response stages, accompanied by an explanation of the rationale or basis for such triggering criteria.

(E) The drought contingency plan must include drought or emergency response stages providing for the implementation of measures in response to at least the following situations:

(i) reduction in available water supply up to a repeat of the drought of record;

(ii) water production or distribution system limitations;

(iii) supply source contamination; or

(iv) system outage due to the failure or damage of major water system components (e.g., pumps).

(F) The drought contingency plan must include the specific, quantified targets for water use reductions to be achieved during periods of water shortage and drought. The entity preparing the plan shall establish the targets. The goals established by the entity under this subparagraph are not enforceable.

(G) The drought contingency plan must include the specific water supply or water demand management measures to be implemented during each stage of the plan including, but not limited to, the following:

(i) curtailment of non-essential water uses; and

(ii) utilization of alternative water sources and/or alternative delivery mechanisms with the prior approval of the executive director as appropriate (e.g., interconnection with another water system, temporary use of a non-municipal water supply, use of reclaimed water for non-potable purposes, etc.).

(H) The drought contingency plan must include the procedures to be followed for the initiation or termination of each drought response stage, including procedures for notification of the public.

(I) The drought contingency plan must include procedures for granting variances to the plan.

(J) The drought contingency plan must include procedures for the enforcement of any mandatory water use restrictions, including specification of penalties (e.g., fines, water rate surcharges, discontinuation of service) for violations of such restrictions.

(2) Privately-owned water utilities. Privately-owned water utilities shall prepare a drought contingency plan in accordance with this section and incorporate such plan into their tariff.

(3) Wholesale water customers. Any water supplier that receives all or a portion of its water supply from another water supplier shall consult with that supplier and shall include in the drought contingency plan appropriate provisions for responding to reductions in that water supply.

(b) A wholesale or retail water supplier shall notify the executive director within five business days of the implementation of any mandatory provisions of the drought contingency plan.

(c) The retail public water supplier shall review and update, as appropriate, the drought contingency plan, at least every five years, based on new or updated information, such as the adoption or revision of the regional water plan.

Source Note: The provisions of this §288.20 adopted to be effective February 21, 1999, 24 TexReg 949; amended to be effective April 27, 2000, 25 TexReg 3544; amended to be effective October 7, 2004, 29 TexReg 9384.