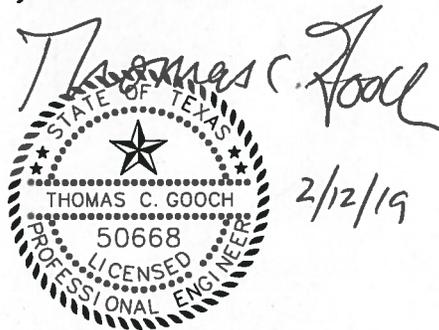


# 2019 NORTH TEXAS MUNICIPAL WATER DISTRICT WATER RESOURCE AND EMERGENCY MANAGEMENT PLAN

JANUARY 2019



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TEXAS REGISTERED  
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F-2144

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## FOREWORD

This 2019 Water Resource and Emergency Management Plan (which is an update to the 2014 Water Resource and Emergency Management Plan) was prepared by Freese and Nichols, Inc. for the North Texas Municipal Water District (NTMWD), pursuant to Texas Commission on Environmental Quality (TCEQ) rules governing drought contingency plans. Some material is based on NTMWD's previous water conservation and drought contingency plans listed in Appendix A.

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This Water Resource and Emergency Management Plan is based on the Texas Administrative Code in effect on January 18, 2019.

## TABLE OF CONTENTS

1.	INTRODUCTION AND OBJECTIVES .....	1-1
2.	DEFINITIONS and ABBREVIATIONS .....	2-1
3.	STATE REQUIREMENTS FOR DROUGHT CONTINGENCY PLANS.....	3-1
3.1	State Requirements for Drought Contingency Plans for Wholesale Water Suppliers	3-1
3.2	State Requirements for Drought Contingency Plans for Public Water Suppliers .....	3-2
4.	NORTH TEXAS MUNICIPAL WATER DISTRICT WATER RESOURCE AND EMERGENCY MANAGEMENT PLAN .....	4-1
4.1	Introduction.....	4-1
4.2	Provisions to Inform the Public and Opportunity for Public Input .....	4-2
4.3	Initiation and Termination of Water Resource Management Stages .....	4-2
4.4	Water Resource Management Stages, Conditions, and Measures.....	4-4
4.5	Procedure for Curtailment of Water Supplies.....	4-12
4.6	Procedure for Granting Variances to the Plan .....	4-12
4.7	Procedures for Enforcing Mandatory Water Use Restrictions.....	4-13
4.8	Coordination with the Regional Water Planning Groups.....	4-13
4.9	Review and Update of Water Resource and Emergency Management Plan .....	4-13

## LIST OF FIGURES

Figure 1-1:	NTMWD Service Area with Existing and Planned Raw Water Supplies .....	1-2
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## APPENDICES

APPENDIX A	List of References
APPENDIX B	Texas Commission on Environmental Quality Rules on Drought Contingency Plans <ul style="list-style-type: none"><li>• Texas Administrative Code Title 30, Chapter 288, Section 288.20 - Drought Contingency Plans for Municipal Uses by Public Water Suppliers (Page B-1)</li><li>• Texas Administrative Code Title 30, Chapter 288, Section 288.22 - Drought Contingency Plans for Wholesale Water Suppliers (Page B-4)</li></ul>
APPENDIX C	Letters to Region C and Region D Water Planning Groups
APPENDIX D	North Texas Municipal Water District Board Minutes Showing Adoption of the Water Conservation Plan and Water Resource and Emergency Management Plan
APPENDIX E	Texas Water Code Section 11.039

## 1. INTRODUCTION AND OBJECTIVES

Water supply has always been a key issue in the development of Texas. In recent years, the increasing population and economic development of North Central Texas have led to growing demands for water supplies. At the same time, local and less expensive sources of water supply are already largely developed. Additional supplies to meet future demands will be expensive and difficult to secure. It is therefore important that NTMWD makes efficient use of its existing supplies and makes them last as long as possible. This will delay the need for new supplies, minimize the environmental impacts associated with developing new supplies, and delay the high cost of additional water supply development.

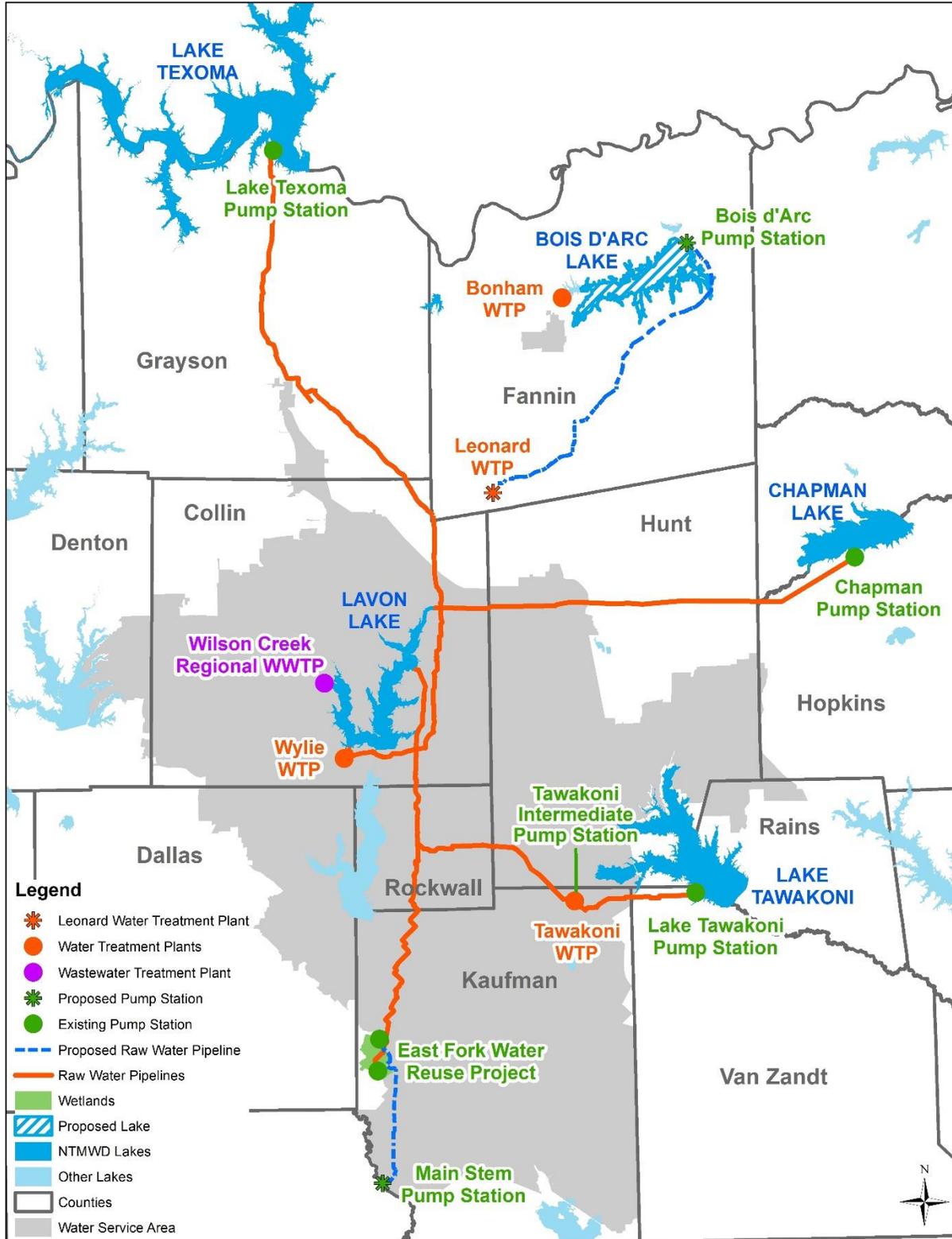
Recognizing the need for efficient use of existing water supplies, TCEQ has developed guidelines and requirements governing the development of water conservation and drought contingency plans for wholesale water suppliers.<sup>1</sup> The TCEQ drought contingency plan regulations applicable to public water suppliers and wholesale water suppliers are included in Appendix B. NTMWD has developed this Water Resource and Emergency Management Plan (Plan) pursuant to TCEQ guidelines and requirements. NTMWD is a regional wholesale water supplier for 13 Member Cities and numerous other Customers in Collin, Dallas, Denton, Fannin, Grayson, Hopkins, Hunt, Kaufman, Rains, Rockwall, and Van Zandt Counties in North Central Texas. NTMWD currently provides water for approximately 1.7 million people. Figure 1-1 shows the NTMWD service area along with existing and planned water supplies. This Plan has been developed in concert with the Model Water Resource and Emergency Management Plan drafted by NTMWD for use by NTMWD Member Cities and Customers.<sup>2</sup> This NTMWD Water Resource and Emergency Management Plan will replace the Water Resource and Emergency Management Plan dated April 2014.

The main objective of this Water Resource and Emergency Management Plan is to have mechanisms in place to preserve supplies for essential uses under drought, water supply shortage, water emergency conditions, or other supply interruptions.

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<sup>1</sup>Superscripted numbers match references listed in Appendix A.

Figure 1-1: NTMWD Service Area with Existing and Planned Raw Water Supplies



## 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 whom 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 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 two feet of) 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. NTMWD RETAIL CUSTOMERS include those customers to whom NTMWD provides retail water.
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. 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.
22. 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.

#### Abbreviations

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
WREMP	NTMWD Water Resource and Emergency Management Plan

### **3. STATE REQUIREMENTS FOR DROUGHT CONTINGENCY PLANS**

#### **3.1 STATE REQUIREMENTS FOR DROUGHT CONTINGENCY PLANS FOR WHOLESALE WATER SUPPLIERS**

NTMWD acts primarily as a wholesale water provider, but NTMWD also has 29 retail customers. This section outlines with the state law requirements for wholesale water providers to develop a drought contingency plan. Section 3.2 of this report discusses the requirements that apply to NTMWD as a retail public water supplier regarding a drought contingency plan.

This 2019 Water Resource and Emergency Management Plan is consistent with Texas Commission on Environmental Quality (TCEQ) regulations for the development of drought contingency plans by wholesale water suppliers, contained in Title 30, Chapter 288, Section 288.22 of the Texas Administrative Code, which is included in Appendix B.

#### Minimum Requirements

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

- 288.22(a)(1) – Provisions to Inform the Public and Provide Opportunity for Public Input – Section 4.2
- 288.22(a)(2) – Coordination with the Regional Water Planning Groups – Section 4.8
- 288.22(a)(3) – Criteria for Initiation and Termination of Drought Stages – Section 4.3
- 288.22(a)(4) – Drought and Emergency Response Stages – Section 4.4
- 288.22(a)(5) – Procedures for Initiation and Termination of Drought Stages – Section 4.3
- 288.22(a)(6) – Specific, Quantified Targets for Water Use Reductions During Water Shortages – Section 4.4
- 288.22(a)(7) – Specific Water Supply or Water Demand Management Measures to be Implemented during Each Drought Stage – Section 4.4
- 288.22(a)(8) – Provision in Wholesale Contracts to Require Water Distribution According to Texas Water Code Section §11.039 – Sections 4.4 and 4.5
- 288.22(a)(9) – Procedures for Granting Variances to the Plan - Section 4.6
- 288.22(a)(10) - Procedures for Enforcement of Mandatory Restrictions – Section 4.7

- 288.22(b) – TCEQ Notification of Implementation of Mandatory Measures – Sections 4.3 and 4.4
- 288.22(c) – Review and Update of the Plan – Section 4.9

### **3.2 STATE REQUIREMENTS FOR DROUGHT CONTINGENCY PLANS FOR PUBLIC WATER SUPPLIERS**

In addition to serving as a wholesale water supplier, NTMWD is also a public water supplier of potable water, providing direct retail service to 29 customers who do not have access to retail service from other sources. The TCEQ has established rules for the development of drought contingency plans for public water suppliers that provide retail service. The rules for drought contingency plans for public water suppliers are contained in Title 30, Chapter 288, Section 288.20 of the Texas Administrative Code, which is included in Appendix B.

Section 3.1 of this report (which addresses rules applicable to wholesale water providers) addresses the majority of the requirements dictated by the regulations applicable to for public water suppliers. This section covers any additional information needed to meet TCEQ requirements for public water suppliers that were not already addressed in the section above.

- 288.20(a)(1)(A) – Provisions to Inform Public and Provide Opportunity for Public Input – Addressed in Section 4.2.
- 288.20(a)(1)(B) – Program for Continuing Public Education and Information – NTMWD shall provide for continuing public education and information by the following measures:
  - Discussing the Water Conservation Plan and Water Resource and Emergency Management Plan when staff speaks to the public on water conservation issues.
  - Including information on the Water Conservation Plan and Water Resources and Emergency Management Plan in bills for its retail Customers.
  - Notification of the public and the media as Water Resource Management Stages are implemented.
- 288.20(a)(1)(C) – Coordination with Regional Water Planning Groups – Addressed in Section 4.8.
- 288.20(a)(1)(D) – Description of Information to Be Monitored and Criteria for the Initiation and Termination of Water Resource Management Stages – Addressed in Sections 4.3 and 4.4.

- 288.20(a)(1)(E) – Stages for Implementation of Measures in Response to Situations – Addressed in Section 4.4.
- 288.20(a)(1)(F) – Specific, Quantified Targets for Water Use Reductions During Water Shortages – Addressed in Section 4.4.
- 288.20(a)(1)(G) – Specific Water Supply or Water Demand Measures to Be Implemented at Each Stage of the Plan – Addressed in Section 4.4.
- 288.20(a)(1)(H) – Procedures for Initiation and Termination of Drought Contingency and Water Emergency Response Stages – Addressed in Section 4.3.
- 288.20(a)(1)(I) – Description of Procedures to Be Followed for Granting Variances to the Plan – Addressed in Section 4.6. Retail Customers may request variances under the same terms as Member Cities and Customers.
- 288.20(a)(1)(J) – Procedures for Enforcement of Mandatory Water Use Restrictions – Addressed in Section 4.7.
- 288.20(b) – TCEQ Notification of Implementation of Mandatory Provisions – Addressed in Section 4.3.
- 288.20(c) – Review of Drought Contingency and Water Emergency Response Plan Every Five (5) Years – Addressed in Section 4.9.

## **4. NORTH TEXAS MUNICIPAL WATER DISTRICT WATER RESOURCE AND EMERGENCY MANAGEMENT PLAN**

### **4.1 INTRODUCTION**

The purpose of this 2019 Water Resource and Emergency Management Plan is as follows:

- To conserve the available water supply in times of drought, water supply shortage, 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.

In the absence of Water Resource Management measures, municipal water demand tends to increase during a drought due to increased demand for lawn irrigation. The severity of a 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 its supply reservoirs refill to conservation storage pool levels.

It is important to note that a water supply shortage can be the result of drought or the result of conditions that may render all or some portion of the water supply unavailable. These conditions can include but are not limited to the presence of invasive species, contamination of the water supply, or infrastructure failure.

In the fall of 2005, NTMWD began preparing a public education campaign regarding water conservation. In June 2006, NTMWD initiated a major educational campaign using the “Water IQ – Know your water” message originally developed for the state’s Water Conservation Implementation Task Force in 2004. This NTMWD campaign was the first major local campaign based on this message. NTMWD hired Enviromedia Social Marketing of Austin, Texas, to assist in program implementation. Through the end of 2018, NTMWD has invested \$16.6 million since 2006 in this public education campaign. Since 2006, Water IQ has been used for on-going water conservation education and to encourage demands reduction in response to drought and water supply challenges. The Water IQ campaign includes multiple methods to reach and educate the public:

- Television ads
- Radio ads

- Billboards
- Yard signs
- Newspaper and magazine ads
- Messages on gasoline pumps
- Movie theatre ads
- Mall ads
- Fact sheets
- Website
- On-going media relations campaign with print and electronic media
- Outreach programs (including a traveling exhibit for community events and breakfasts with irrigators, nurseries, and other industries with influence on water use).

The specifics of the public outreach and education campaign in the future will vary depending on the circumstances of future droughts. The Water IQ program shows NTMWD's commitment to an appropriate drought and water emergency response in addition to the ongoing effort to educate the public in the wise and efficient use of water supplies regardless of weather conditions.

#### **4.2 PROVISIONS TO INFORM THE PUBLIC AND OPPORTUNITY FOR PUBLIC INPUT**

NTMWD provided opportunity for public input in the development of this Water Resource and Emergency Management Plan by the following means:

- Providing written notice of the proposed Plan and the opportunity to comment on the Plan by newspaper and posted notice.
- Posting the draft Plan on the NTMWD website and on social media.
- Meeting with representatives of Member Cities and Customers to discuss the draft Plan.
- Providing the draft Plan to anyone requesting a copy.
- Holding a public meeting regarding the Water Resource and Emergency Management Plan at the NTMWD offices in Wylie on January 9, 2019. Public notice of this meeting was provided on the NTMWD website and in local newspapers.

#### **4.3 INITIATION AND TERMINATION OF WATER RESOURCE MANAGEMENT STAGES**

Initiation of a Water Resource Management Stage

The Executive Director, with the consent of the NTMWD Board of Directors, may order the implementation of a Water Resource Management Stage for all or part of the NTMWD service area when one or more of the trigger conditions for the respective stage is met. The following actions will be taken when a stage is initiated:

- The public will be notified through local media.
- NTMWD Member Cities and Customers will be notified by e-mail and with a follow-up letter 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, NTMWD will notify the TCEQ Executive Director within 5 business days.
- The Executive Director may decide not to order the implementation of a Water Resource Management Stage even though one or more of the trigger criteria for the stage is met. Factors that 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.

#### Termination of a Water Resource Management Stage

The Executive Director, with the concurrence of the NTMWD Board of Directors, may order the termination of a Water Resource Management Stage when the conditions for termination are met or at his/her discretion. The following actions will be taken when a stage is terminated:

- The public will be notified through local media.
- Member Cities and Customers will be notified by e-mail and with a follow-up letter.
- When any mandatory provisions of the Water Resource and Emergency Management Plan that have been activated are terminated, NTMWD will notify the Executive Director of the TCEQ within 5 business days.
- The Executive Director 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 that could influence such a decision include, but are not limited to, the time of the year, weather conditions, or the anticipation of potential changed conditions that warrant the continuation of the Water Resource Management Stage.

## 4.4 WATER RESOURCE MANAGEMENT STAGES, CONDITIONS, AND MEASURES

### 4.4.1 Stage 1

#### Initiation and Termination Conditions for Stage 1

**Stage 1 may be implemented when one or more of the following conditions is met:**

- The 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)<sup>3</sup>, is less than 70 percent of the total conservation pool capacity during any of the months of 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 (SRA) 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, Main Stem Pump Station, or some other NTMWD water source may be limited in availability within the next 6 months.
- 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 the delivery system approaches delivery capacity because delivery capacity is inadequate.
- Supply source is interrupted or unavailable due to contamination, invasive species, equipment failure or other cause.
- 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.

**Stage 1 may terminate when one or more of the following conditions is met:**

- 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, 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 the initiation of Stage 1 no longer prevail.

#### Goal for Use Reduction and Measures Available under Stage 1

The goal for water use reduction under Stage 1 is a reduction of two percent (2%) in the use that would have occurred in the absence of water resource management measures. **If circumstances warrant, the Executive Director can set a goal for greater or lesser water use reduction.** The actions listed below are provided as potential strategies to reduce water demand. Member Cities and Customers are encouraged to adopt any or all of these measures necessary to achieve the designated reduction in use. Measures described as “requires notification to TCEQ” are those that impose mandatory requirements which must be implemented by Member Cities and Customers. NTMWD must notify TCEQ within five business days if these measures are implemented.

- Continue actions described in the Water Conservation Plan.
- Require Member Cities and Customers (including indirect Customers) to initiate Stage 1 restrictions in their respective, independently-adopted Water Resource Management Plans.
- Initiate engineering studies to evaluate alternative actions that can be implemented if conditions worsen.
- Accelerate public education efforts on ways to reduce water use.
- Halt non-essential NTMWD water use not supplied from treated wastewater effluent.
- Encourage the public to wait until the current drought or water emergency situation has passed before establishing New Landscaping.
- All users are encouraged to reduce the frequency of draining and refilling swimming pools.
- **Requires Notification to TCEQ** – Increase enforcement of the following landscape watering restrictions from the Water Conservation Plan: (1) limit landscape watering with sprinklers or irrigation systems at each service address to no more than two 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 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 Watering (within two-feet), New Landscape Watering, water 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.
- Locations using alternative sources of water supply only for irrigation may irrigate without day-of-the-week restrictions provided proper signage is employed to notify the public of the alternative water source(s) being used. However, irrigation using alternative sources of supply is subject to all other restrictions applicable to this stage. If the alternative supply source is a well, proper proof of well registration with your local water supplier (e.g. city, Water Supply Corporation) is required. Other sources of water supply may not include imported treated water.
- **Requires Notification to TCEQ** – Initiate a rate surcharge for all water use over a certain level.
- **Requires Notification to TCEQ** – Parks, golf courses, and Athletic Fields using potable water for landscape watering are required to meet the same reduction goals and measures outlined in this stage. As an exception, golf course greens and tee boxes which may be hand watered as needed.

#### 4.4.2 Stage 2

##### Initiation and Termination Conditions for Stage 2

**Stage 2 may be implemented when one or more of the following conditions is met:**

- The 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's permitted supply.
- The storage level in Lavon Lake, as published by the TWDB<sup>3</sup>, is less than 55 percent of the total conservation pool capacity 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.

- SRA 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 water source may be limited in availability within the next three (3) months.
- Water demand exceeds 98 percent of the amount that can be delivered to Customers for three (3) consecutive days.
- Water demand for all or part of the delivery system equals delivery capacity, because delivery capacity is inadequate.
- Supply source is interrupted or unavailable due to contamination, invasive species, equipment failure or other cause.
- 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.

**Stage 2 may terminate when one or more of the following conditions is met:**

- 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<sup>3</sup>, 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 the 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 use that would have occurred in the absence of water resource management measures. **If circumstances warrant, the Executive Director can set a goal for greater or lesser water use reduction.** Member Cities and Customers

are encouraged to adopt any or all measures necessary to achieve the designated reduction in use. Measures described as “requires notification to TCEQ” are those that impose mandatory requirements that must be implemented by NTMWD, Member Cities, and Customers. NTMWD must notify TCEQ within five (5) business days if these measures are implemented.

- Continue or initiate any actions available under the Water Conservation Plan and Stage 1.
- Require Member Cities and Customers (including indirect Customers) to initiate Stage 2 restrictions in their respective, independently-adopted Water Resource Management Plans.
- Implement viable alternative water supply strategies.
- All users are encouraged 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. Limit landscape watering with sprinklers or irrigation systems at each service address to once every other week on designated days between November 1 and March 31. Exceptions are as follows:
  - New construction may be watered as necessary for 30 days from the installation of New Landscape features.
  - Foundations Watering (within two-feet), watering of new plantings (first year) of shrubs, and watering of trees (within a ten-foot radius of its trunk) occur watered for up to two hours on any day 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.
  - Locations using alternative sources of water supply only for irrigation may irrigate without day-of-the-week restrictions provided proper signage is employed to notify the public of the alternative water source(s) being used. However, irrigation using alternative sources of supply is subject to all other restrictions applicable to this stage. If the alternative supply source is a well, proper proof of well registration with your local water supplier (e.g. city, Water Supply Corporation) is required. Other sources of water supply may not include imported treated water.

- An exemption is for Drip Irrigation systems 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.
- **Requires Notification to TCEQ** – Prohibit overseeding, sodding, sprigging, broadcasting or plugging with or watering, except for golf courses and athletic fields.
- **Requires Notification to TCEQ** – Institute a mandated reduction in water deliveries to all Member Cities and Customers. Such a reduction will be distributed as required by Texas Water Code Section §11.039 (Appendix E of this Plan).
- **Requires Notification to TCEQ** – Initiate a rate surcharge for all water use over a certain level.
- **Requires Notification to TCEQ** – Parks and golf courses using potable water for landscape watering are required to meet the same reduction goals and measures outlined in this stage. Exception for golf course greens and tee boxes, which may be hand watered as needed.

#### 4.3.3 Stage 3

##### Initiation and Termination Conditions for Stage 3

**Stage 3 may be implemented when one or more of the following conditions is met:**

- The 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 level in Lavon Lake, as published by the TWDB<sup>3</sup>, is less than 30 percent of the total conservation pool capacity 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.
- SRA has indicated that its Upper Basin water supplies used by NTMWD (Lake Tawakoni and/or Lake Fork) are in a Stage 3 drought.
- The supply 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.
- Water demand exceeds the amount that can be delivered to Customers.
- Water demand for all or part of the delivery system exceeds delivery capacity, because delivery capacity is inadequate.

- Supply source is interrupted or unavailable due to contamination, invasive species, equipment failure, or other cause.
- 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.

**Stage 3 may terminate when one or more of the following conditions is met:**

- 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<sup>3</sup>, 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 the initiation of Stage 3 no longer prevail.

Goal for Use Reduction and Actions Available under Stage 3

The goal for water use reduction under Stage 3 is a reduction of thirty percent (30%) percent in the use that would have occurred in the absence of water resource management measures, or the goal for water use reduction is whatever reduction is necessary. **If circumstances warrant, the Executive Director can set a goal for greater or lesser water use reduction.** Member Cities and Customers are encouraged to adopt any or all measures necessary to achieve the designated reduction in use. Measures described as “requires notification to TCEQ” are those that impose mandatory requirements which must be implemented by Member Cities and Customers. NTMWD must notify TCEQ within five (5) business days if these measures are implemented.

- Continue or initiate any actions available under the Water Conservation Plan and Stages 1 and 2.
- Require Member Cities and Customers (including indirect Customers) to initiate Stage 3 restrictions in their respective, independently-adopted Water Resource Management Plans.
- Implement viable alternative water supply strategies.
- **Requires Notification to TCEQ** – Initiate mandatory water use restrictions as follows:

- Hosing and washing of paved areas, buildings, structures, windows or other surfaces is prohibited except by variance and performed by a professional service using high efficiency equipment.
- Prohibit operation of ornamental fountains or ponds that use potable water except where supporting aquatic life or water quality.
- **Requires Notification to TCEQ** – Prohibit new sod, overseeding, sodding, sprigging, broadcasting or plugging with or watering.
- **Requires Notification to TCEQ** – Prohibit the use of potable water for the irrigation of New Landscape.
- **Requires Notification to TCEQ** – Prohibit all commercial and residential landscape watering, except that foundations (within two-feet) and trees (within a ten-foot radius of its trunk) may be watered for two hours one day per week with a hand-held hose, a Soaker Hose, or a dedicated zone using a drip irrigation system provided no runoff occurs. Drip Irrigation systems are not exempt from this requirement.
- **Requires Notification to TCEQ** – Prohibit washing of vehicles except at a Commercial Vehicle Wash Facility.
- **Requires Notification to TCEQ** – Landscape watering of parks, golf courses, and Athletic Fields with potable water is prohibited. Exception for golf course greens and tee boxes that may be hand watered as needed. Variances may be granted by the water provider under special circumstances.
- **Requires Notification to TCEQ** – Prohibit the filling, draining, and/or refilling of existing swimming pools, wading pools, Jacuzzi and hot tubs except to maintain structural integrity, proper operation and maintenance or to alleviate a public safety risk. Existing pools may add water to replace losses from normal use and evaporation. Permitting of new swimming pools, wading pools, Jacuzzi and hot tubs is prohibited.
- **Requires Notification to TCEQ** – Prohibit the operation of interactive water features such as 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.

- **Requires Notification to TCEQ** – Require all commercial water users to reduce water use by a set percentage.
- **Requires Notification to TCEQ** – Institute a mandated reduction in deliveries to all Member Cities and Customers. Such a reduction will be distributed as required by Texas Water Code Section 11.039.
- **Requires Notification to TCEQ** – Initiate a rate surcharge over normal rates for all water use or for water use over a certain level.

#### **4.5 PROCEDURE FOR CURTAILMENT OF WATER SUPPLIES**

Any mandatory reduction of deliveries from NTMWD to its Member Cities and Customers shall be distributed as required by Texas Water Code Section 11.039, which is attached to this Plan as Appendix E. In addition, every wholesale water supply contract entered into or renewed after adoption of this Water Resource and Emergency Management Plan, including contract extensions, shall include a provision that water will be distributed in accordance with Texas Water Code Section 11.039 in case of a water shortage resulting from drought or water emergency.

#### **4.6 PROCEDURE FOR GRANTING VARIANCES TO THE PLAN**

The Executive Director may grant temporary variances for existing water uses otherwise prohibited under this Water Resource and Emergency Management Plan to a Member City, Customer, or Retail Customer of NTMWD 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 Executive Director. All petitions for variances should be in writing and should include the following information:
  - Name and address of the petitioner(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.
- Other pertinent information.

#### **4.7 PROCEDURES FOR ENFORCING MANDATORY WATER USE RESTRICTIONS**

Mandatory water use restrictions may be imposed in all stages of the Water Resource and Emergency Management Plan. These mandatory water use restrictions will be enforced by warnings and penalties as follows:

- On the first violation, the Member City or Customer will be given a written warning that they have violated the mandatory water use restriction.
- After a second violation, NTMWD may monitor and validate the flow in the line and ensure that the appropriate amount of water is delivered to the Member City or Customer.
- NTMWD may charge up to twice the established rate for any water used in violation of mandatory water use restrictions.

Each Member City and Customer will determine and enforce its own set of penalties associated with the mandatory water use restrictions applicable to its retail and wholesale customers.

#### **4.8 COORDINATION WITH THE REGIONAL WATER PLANNING GROUPS**

Appendix C of this report includes copies of letters sent to the Chairs of the Region C and Region D water planning groups with this 2019 Water Resource and Emergency Management Plan. NTMWD has fully coordinated with both regional water planning groups regarding development of the WREMP to the extent those groups wished to coordinate.

#### **4.9 REVIEW AND UPDATE OF WATER RESOURCE AND EMERGENCY MANAGEMENT PLAN**

As required by TCEQ rules, NTMWD will review this Plan every five (5) 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, Rules 288.20 and 288.22, downloaded from [http://texreg.sos.state.tx.us/public/readtac\\$ext.ViewTAC?tac\\_view=5&ti=30&pt=1&ch=288&sc\\_h=B&rl=Y](http://texreg.sos.state.tx.us/public/readtac$ext.ViewTAC?tac_view=5&ti=30&pt=1&ch=288&sc_h=B&rl=Y), July 2018.
2. Freese and Nichols, Inc.: 2019 Model Water Resource Management Plan for NTMWD Members Cities and Customers, prepared for the North Texas Municipal Water District, Fort Worth, February 2019.
3. Texas Water Development Board, Water Data for Texas, Lavon Lake, <https://waterdatafortexas.org/reservoirs/individual/lavon>.

**APPENDIX B**

**TEXAS COMMISSION ON ENVIRONMENTAL QUALITY**

**RULES ON DROUGHT CONTINGENCY PLANS**

## APPENDIX B

### TEXAS COMMISSION ON ENVIRONMENTAL QUALITY RULES ON DROUGHT CONTINGENCY PLANS

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

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(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 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 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.

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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

<b><u>TITLE 30</u></b>	ENVIRONMENTAL QUALITY
<b><u>PART 1</u></b>	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
<b><u>CHAPTER 288</u></b>	WATER CONSERVATION PLANS, DROUGHT CONTINGENCY PLANS, GUIDELINES AND REQUIREMENTS
<b><u>SUBCHAPTER B</u></b>	DROUGHT CONTINGENCY PLANS
<b>RULE §288.22</b>	<b>Drought Contingency Plans for Wholesale Water Suppliers</b>

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(a) A drought contingency plan for a wholesale water supplier must include the following minimum elements.

(1) Preparation of the plan shall include provisions to actively inform the public and to affirmatively provide opportunity for user input in the preparation of the plan and for informing wholesale customers about the plan. 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.

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

(3) 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.

(4) The drought contingency plan must include a minimum of three drought or emergency response stages providing for the implementation of measures in response to water supply conditions during a repeat of the drought-of-record.

(5) The drought contingency plan must include the procedures to be followed for the initiation or termination of drought response stages, including procedures for notification of wholesale customers regarding the initiation or termination of drought response stages.

(6) The drought contingency plan must include 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 paragraph are not enforceable.

(7) 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:

(A) pro rata curtailment of water deliveries to or diversions by wholesale water customers as provided in Texas Water Code, §11.039; and

(B) utilization of alternative water sources 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.).

(8) The drought contingency plan must include a provision in every wholesale water contract entered into or renewed after adoption of the plan, including contract extensions, that in case of a shortage of water resulting from drought, the water to be distributed shall be divided in accordance with Texas Water Code, §11.039.

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

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

(b) The wholesale public 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 wholesale 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 adoption or revision of the regional water plan.

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**Source Note:** The provisions of this §288.22 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

## **APPENDIX C**

### **LETTERS TO REGION C AND REGION D WATER PLANNING GROUPS**



*Regional. Reliable. Everyday.*

January 28, 2019

Mr. Kevin Ward  
Chair, Region C Water Planning Group  
c/o Trinity River Authority  
P.O. Box 60  
Arlington, Texas 76004

Re: NTMWD Water Conservation and Water Resource and Emergency Management Plans

Dear Mr. Ward:

Enclosed please find a copy of the following documents:

- 2019 Water Conservation Plan for the North Texas Municipal Water District
- 2019 Water Resource and Emergency Management Plan for the North Texas Municipal Water District
- 2019 Model Water Conservation Plan for North Texas Municipal Water District Member Cities and Customers
- 2019 Model Water Resource and Emergency Management Plan for North Texas Municipal Water District Member Cities and Customers

NTMWD is submitting a copy of these plans to the Region C Water Planning Group in accordance with the Texas Water Development Board and Texas Commission on Environmental Quality rules. The Board of Directors of the North Texas Municipal Water District adopted the plans on January 24, 2019.

Sincerely,

  
THOMAS W. KULA  
Executive Director

TWK/DH/bb



*Regional. Reliable. Everyday.*

January 25, 2019

Mr. Richard LeTourneau  
Chair, Region D Water Planning Group  
P.O. Box 12071  
Longview, Texas 75607

Re: NTMWD Water Conservation and Water Resource and Emergency Management Plans

Dear Mr. LeTourneau:

Enclosed please find a copy of the following documents:

- 2019 Water Conservation Plan for the North Texas Municipal Water District
- 2019 Water Resource and Emergency Management Plan for the North Texas Municipal Water District
- 2019 Model Water Conservation Plan for North Texas Municipal Water District Member Cities and Customers
- 2019 Model Water Resource and Emergency Management Plan for North Texas Municipal Water District Member Cities and Customers

NTMWD is submitting a copy of these plans to the Region D Water Planning Group in accordance with the Texas Water Development Board and Texas Commission on Environmental Quality rules. The Board of Directors of the North Texas Municipal Water District adopted the plans on January 24, 2019.

Sincerely,

  
THOMAS W. KULA  
Executive Director

TWK/DH/bb

## **APPENDIX D**

# **NTMWD BOARD MINUTES SHOWING ADOPTION OF THE WATER CONSERVATION AND WATER RESOURCE AND EMERGENCY MANGEMENT PLAN**

## APPENDIX D

# NORTH TEXAS MUNICIPAL WATER DISTRICT BOARD MINUTES SHOWING ADOPTION OF THE WATER CONSERVATION AND WATER RESOURCE AND EMERGENCY MANAGEMENT PLAN

**APPENDIX E**  
**TEXAS WATER CODE 11.039**

## APPENDIX E

### TEXAS WATER CODE SECTION 11.039

#### § 11.039. DISTRIBUTION OF WATER DURING SHORTAGE.

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

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

(1) the amount of water to which each customer may be entitled; or

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

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

Amended by Acts 1977, 65th Leg., p. 2207, ch. 870, § 1, eff. Sept. 1, 1977; Acts 2001, 77th Leg., ch. 1126, § 1, eff. June 15, 2001.