

**NORTH TEXAS  
MUNICIPAL  
WATER DISTRICT**

**WATER CONSERVATION  
AND DROUGHT  
CONTINGENCY PLAN**

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**AUGUST 2004**

**REVISED APRIL 2006**

**Prepared for:**

**NORTH TEXAS  
MUNICIPAL WATER  
DISTRICT**

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Stephanie W. Griffin, P.E.

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Thomas C. Gooch, P.E.

**NTD03301  
WCF-03-7**

**Prepared by:**

**Freese and Nichols, Inc.**  
4055 International Plaza  
Suite 200  
Fort Worth, TX 76109  
817/735-7300

## ACKNOWLEDGEMENTS

This water conservation and drought contingency plan was prepared by Freese and Nichols for the North Texas Municipal Water District (NTMWD), pursuant to Texas Commission on Environmental Quality rules. Some material is based on the existing water conservation plans listed in Appendix A. For the purposes of regional coordination, the conservation plans and drought contingency plans for the NTMWD (1999) and the emergency water management (drought contingency) plans for the City of Fort Worth and the City of Dallas were used extensively.

Questions regarding this water conservation and drought contingency plan should be addressed to the following:

Tom Gooch, P.E.  
Freese and Nichols, Inc.  
(817) 735-7300  
[tcg@freese.com](mailto:tcg@freese.com)

Stephanie Griffin, P.E.  
Freese and Nichols, Inc.  
(817) 735-7300  
[swg@freese.com](mailto:swg@freese.com)

Denise Hickey  
North Texas Municipal  
Water District  
(972) 442-5405  
[Dhickey@ntmwd.com](mailto:Dhickey@ntmwd.com)

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# **NORTH TEXAS MUNICIPAL WATER DISTRICT**

## **Water Conservation and Drought Contingency Plan**

AUGUST 2004, REVISED APRIL 2006

### **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 largely developed. Additional supplies to meet higher demands will be expensive and difficult to develop. It is therefore important that we make efficient use of our existing supplies and make 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, the Texas Commission on Environmental Quality (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 guidelines and requirements for wholesale suppliers are included in Appendix B. The North Texas Municipal Water District (NTMWD) has developed this water conservation and drought contingency plan pursuant to TCEQ guidelines and requirements. NTMWD is a regional wholesale supplier for 13 member cities and numerous other customers in Collin, Dallas, Denton, Rockwall, Kaufman, Hunt, Hopkins, and Rains Counties in North Central Texas. The District currently provides water for over one million people. This plan replaces the plan dated February 1997.

The objectives of this water conservation and drought contingency plan are as follows:

- To reduce water consumption from the levels that would prevail without conservation efforts.
- To reduce the loss and waste of water.
- To improve efficiency in the use of water.
- To document the level of recycling and reuse in the water supply.
- To extend the life of current water supplies by reducing the rate of growth in demand.

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

## 2. TEXAS COMMISSION ON ENVIRONMENTAL QUALITY RULES

### 2.1 Conservation Plans

The TCEQ rules governing development of water conservation plans for wholesale water suppliers are contained in Title 30, Part 1, Chapter 288, Subchapter A, Rule 288.5 of the Texas Administrative Code, which is included in Appendix B. For the purpose of these rules, a water conservation plan is defined as “A strategy or combination of strategies for reducing the volume of water withdrawn from a water supply source, for reducing the loss or waste of water, for maintaining or improving the efficiency in the use of water, for increasing the recycling and reuse of water, and for preventing the pollution of water. A water conservation plan may be a separate document identified as such or may be contained within another water management document(s) <sup>1</sup>.” The elements in the TCEQ water conservation rules covered in this conservation and drought contingency plan are listed below.

#### Minimum Conservation Plan Requirements for Wholesale Water Suppliers

NTMWD is a wholesale water supplier to member cities and customers in North Central Texas. (NTMWD’s customers include cities, water supply corporations, and utility districts.) The minimum requirements in the Texas Administrative Code for water conservation plans for wholesale water suppliers are covered in this report as follows:

- 288.5(1)(A) – Description of Service Area – Section 3 and Appendix C
- 288.5(1)(B) – Specification of Goals – Section 4
- 288.5(1)(C) – Measure and Account Water Diverted – Section 5.1
- 288.5(1)(D) – Monitoring and Record Management System – Sections 5.2 and 7.4
- 288.5(1)(E) – Program of Metering and Leak Detection and Repair – Section 5.3
- 288.5(1)(F) – Requirement for Water Conservation Plans by Wholesale Customers – Section 6.1
- 288.5(1)(G) – Reservoir System Operation Plan – Section 6.2
- 288.5(1)(H) – Means of Implementation and Enforcement – Section 9
- 288.5(1)(I) – Documentation of Coordination with Regional Water Planning Group – Section 6.3

#### Additional Conservation Strategies

The Texas Administrative Code lists additional water conservation strategies that can be adopted by a wholesale supplier but are not required. Additional strategies adopted by North Texas Municipal Water District include the following:

- 288.5(2)(B) – Program to Assist Customers – Section 7
- 288.5(2)(C) – Program for Reuse and/or Recycling – Section 8.1

- 288.5(2)(D) – Other Measures – Sections 8.2 (public education), 8.3 (zero discharge from water treatment plants), and 8.4 (in-house conservation measures)

## **2.2 Drought Contingency Plans**

The TCEQ rules governing development of drought contingency plans for wholesale water suppliers are contained in Title 30, Part 1, Chapter 288, Subchapter B, Rule 288.22 of the Texas Administrative Code, which is included in Appendix B. North Texas Municipal Water District also serves as a retail water supplier. Thus, Title 30, Part 1, Chapter 288, Subchapter B, Rule 288.20 applies to NTMWD and is also 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. A drought contingency plan may be a separate document identified as such or may be contained within another water management document(s) <sup>1</sup>.” The drought contingency plan for NTMWD is contained in Section 10 of this water conservation and drought contingency plan. The drought contingency plan for NTMWD as a retail water supplier is addressed in Section 11 of this plan.

### **3. DESCRIPTION OF THE NTMWD SERVICE AREA**

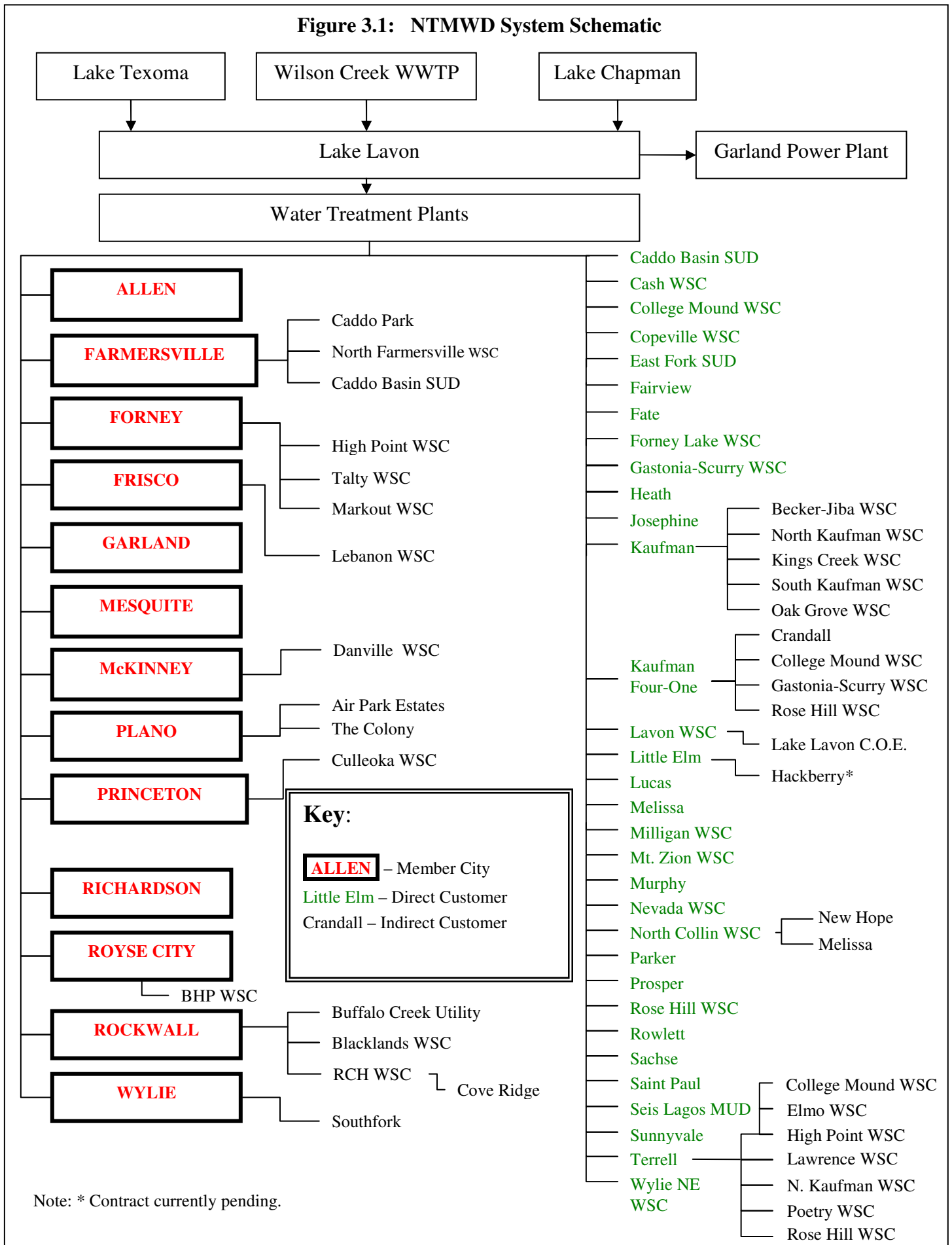
NTMWD provides treated water to 13 member cities and 56 other customers (some direct and some indirect) in North Central Texas. Figure 3.1 shows NTMWD's member cities and customers. Figure 3.2 shows the NTMWD service area, which covers 1,975 square miles in Collin, Dallas, Denton, Rockwall, Kaufman, Hunt, Hopkins, and Rains Counties. (The NTMWD service area shown in Figure 3.2 includes the entire service area of all of the entities to which NTMWD provides water. Actual NTMWD facilities do not extend into Hopkins, Hunt, and Rains Counties. Some of NTMWD's customers have other sources of water supply in addition to NTMWD.)

NTMWD obtains its raw water supplies from Lake Lavon, Lake Texoma, Chapman Lake, and reuse of treated wastewater effluent from its Wilson Creek Regional Wastewater Treatment Plant. The total permitted supply currently available to NTMWD is about 274,000 acre-feet per year, and NTMWD is seeking additional supplies to meet its projected demands. NTMWD operates three water treatment plants in Wylie, near Lake Lavon, with a total treatment capacity of 630 MGD. Plate 1 in the envelope at the back of this report shows NTMWD's current water treatment and distribution system.

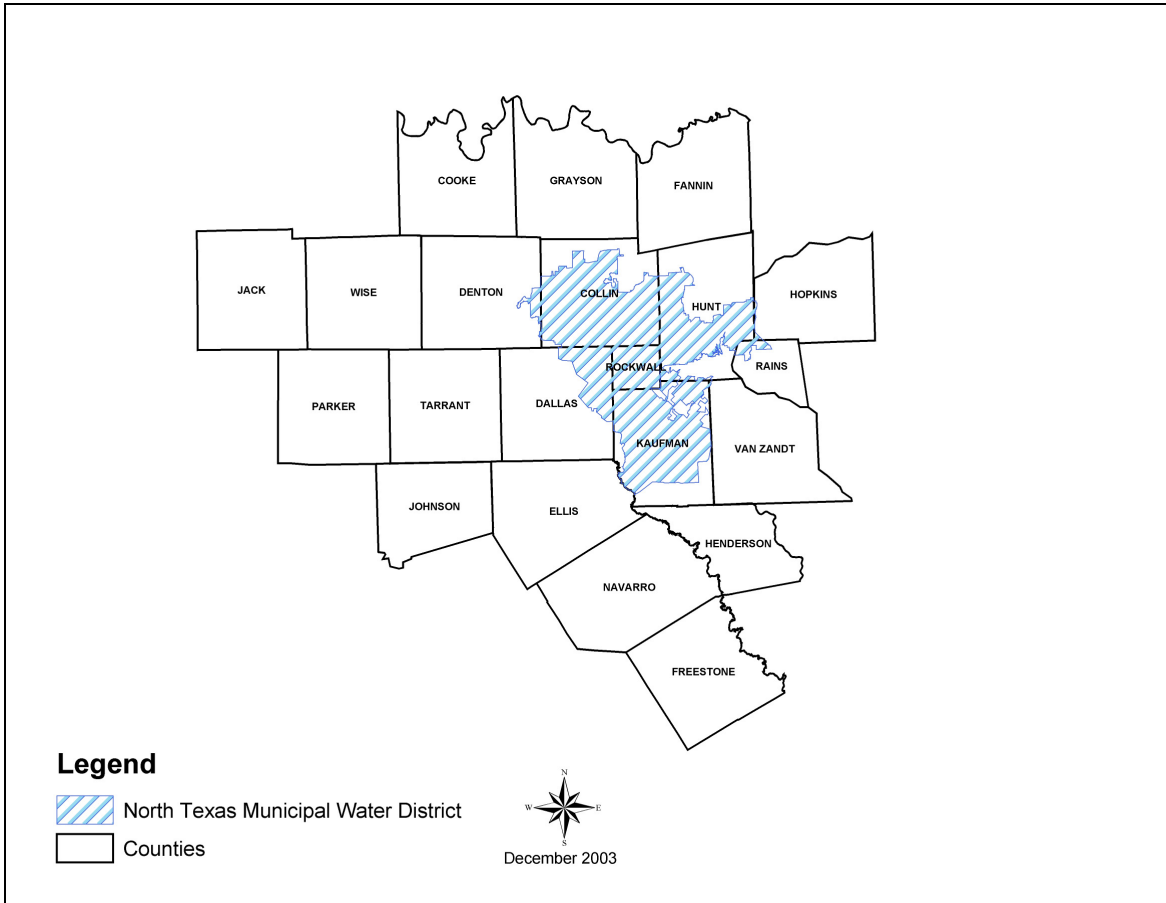
Appendix C to this water conservation and drought contingency plan is a water utility profile for NTMWD, based on the format recommended by the TCEQ. Table 3.1 summarizes key facts from the Water Utility Profile.



**Figure 3.1: NTMWD System Schematic**



**Figure 3.2: North Texas Municipal Water District Service Area Map**



**Table 3.1  
Summary of Water Utility Profile for North Texas Municipal Water District**

<b>Water Service Area</b> = 1,975 square miles					
<b>Miles of Distribution Pipeline</b> = 1,000 miles					
<b>Population:</b>					
Current Population Served = 1,171,395 in 2003					
Projected 2060 Population = 3,148,237 (current member cities & customers only)					
<b>Connections:</b>					
Current Retail Connections = 83 in 2003					
<b>Information on Water Sales for the Last Five Years:</b>					
Year	Sales (Million gallons)	Estimated Population*	Municipal per Capita**	Unaccounted Water FY Ending	Peak Day to Average Day
1999	72,294	964,088	201	4.34%	2.06
2000	81,953	1,011,266	209	4.31%	2.13
2001	78,496	1,058,444	—	2.31%	2.05
2002	77,709	1,105,622	—	3.49%	2.03
2003	84,969	1,152,800	—	1.93%	2.01
* The estimated 2000 population served is from the census and TWDB populations for non-city customers. Other estimates are based on the 2000 value and TWDB's projected 2000-2010 population growth rate for NTMWD customers.					
** Municipal per capita values are for the 21 NTMWD member cities and customers for which TWDB has long-term records of use, which used 89% of the water NTMWD sold in 2000.					
<b>Water Supply Sources</b> = Lake Lavon, Lake Texoma, Chapman Lake, Reuse from Wilson Creek Regional Wastewater Treatment Plant					
<b>Treatment and Distribution System:</b>					
Treatment Plant Capacity = 630 MGD					
Ground storage = 48 million gallons					
<b>Current Wastewater Flow</b> = 29,288 million gallons from 19 plants in 2002 (NTMWD now has 21 plants.)					

#### 4. SPECIFICATION OF WATER CONSERVATION GOALS

As a wholesale water supplier, NTMWD does not directly control the water use of its member cities and customers and does not have a direct relationship with the retail customers who are the ultimate consumers of the water. Many NTMWD member cities and customers are projected to have increasing per capita municipal demands in the future<sup>4, 5</sup>. The reasons for these projected increases include the following<sup>4</sup>:

- Some NTMWD member cities and customers have a trend of increasing historical per capita use which is projected to continue for a time in the future, as the NTMWD service area continues to transform from a historically rural to a primarily suburban population.
- Some NTMWD member cities and customers are expected to see rapid population growth, which historically has been associated with increasing capita municipal water use in Region C.
- Some NTMWD customers currently have very low per capita municipal water use (below 115 gallons per capita per day), which is projected to increase over time as development continues.

The per capita municipal use for NTMWD's system can be affected by changes in per capita use for its customers. It can also be affected by how much water NTMWD is asked to supply to high per capita use customers or low per capita use customers. These factors cannot be controlled by NTMWD.

NTMWD does control the operation of its water supply, treatment, and delivery system and can take direct action to maximize the efficiency of that system. In areas under its direct control, NTMWD adopts the following goals for water conservation and efficiency:

- Keep the level of unaccounted water in the system below 5% in 2004 and subsequent years, as discussed in Section 5.2.
- Maintain universal metering of customers, meter calibration, and meter replacement and repair, as discussed in Section 5.2.
- Maintain a program of leak detection and repair, as discussed on Section 5.3.
- Continue to utilize wastewater reuse as a major source of water supply, as discussed in Section 8.1. Seek TCEQ authorization for additional reuse to increase the efficiency of the NTMWD water supply system.
- Continue to recycle wash water from NTMWD water treatment plants, as discussed in Section 8.3.
- Continue to implement other in-house water conservation efforts, as discussed in Section 8.4.
- Raise public awareness of water conservation and encourage responsible public behavior by a public education program, as discussed in Section 8.2.

As a wholesale provider, NTMWD will assist its member cities and customers in the development of water conservation programs. NTMWD has developed a *Model Water Conservation Plan for NTMWD Member Cities and Customers*<sup>2</sup> and a *Model Drought Contingency Plan for NTMWD Member Cities and Customers*<sup>3</sup> that its member cities and customers can use to develop their own water conservation and drought contingency plans. As part of the model water conservation plan, NTMWD requires member cities and customers to provide annual water conservation reports. NTMWD will review these reports and compile the information as part of its own annual conservation report, which will be used to manage NTMWD's water conservation program.

Table 4.1 shows the projected per capita municipal water use for NTMWD, as recommended by the Region C Water Planning Group<sup>4</sup> and adjusted and approved by the Texas Water Development Board (TWDB)<sup>5</sup>. The projected per capita use approved by the TWDB includes the estimated effect of low-flow plumbing fixtures but does not include the effect of new water conservation measures that may be adopted by NTMWD member cities and customers. Table 4.1 also shows NTMWD's targets for reduction to per capita use due to the implementation of this water conservation and drought contingency plan and the plans to be developed by its member cities and customers. The data shown on the table reflect the following:

- Projected per capita municipal water use figures are for a dry year, in which outdoor water use would be high. Per capita municipal water use in a year with normal or high precipitation during the summer should be less than projected here.
- Projected per capita municipal water use does not include industrial use.
- The target for combined 2009 per capita municipal water use for all NTMWD member cities and customers (direct and indirect) is 197 gallons per capita per day in a dry year, as shown in Table 4.1 (5-year target). This represents a reduction of 17 gallons per capita per day from TWDB's projected per capita municipal use without low-flow plumbing fixtures or other conservation measures.
- The target for 2014 per capita municipal water use for all NTMWD member cities and customers (direct and indirect) is 197 gallons per capita per day in a dry year, as shown in Table 4.1 (10-year target). This represents a reduction of 20 gallons per capita per day from TWDB's projected per capita municipal use without low-flow plumbing fixtures and or other conservation measures.

**Table 4.1**

**Projected per Capita Use without Implementation of Water Conservation Measures beyond Those in Effect in 2000 and Targets for NTMWD**

Description	Highest Historical		2009	2014
	Year	Per Capita	5-year	10-year
Actual Historical per Capita Municipal Use	2000	201*	-	-
TWDB Projected per Capita Municipal Use without Low-Flow Plumbing Fixtures	-	-	214	217
TWDB Reduction Due to Low-Flow Plumbing Fixtures	-	-	5	6
TWDB Projected Per Capita Municipal Use with Low-Flow Plumbing Fixtures	-	-	209	211
Other Projected Reductions	-	-	12	14
Water Conservation Targets	-	-	197	197

Note: \* 201 gpcd is per capita municipal water use for all NTMWD customers in 2000. The 21 member cities and customers for whom NTMWD has long-term records of use had an average per capita use of 209, as shown in Table 3.1.

## **5. METERING, WATER USE RECORDS, CONTROL OF UNACCOUNTED WATER, AND LEAK DETECTION AND REPAIR**

One of the key elements in water conservation is careful tracking of water use and control of losses. Accurate metering of water deliveries, detection and repair of leaks in the raw water delivery and treated water distribution systems and regular monitoring of unaccounted water are important elements of NTMWD's program to control losses.

### **5.1 Practices to Measure and Account for the Amount of Water Diverted**

NTMWD meters its raw water diversions from Lake Lavon, Lake Texoma, and Chapman Lake by meters with accuracy of  $\pm 2\%$ . These meters are calibrated on a monthly basis by NTMWD and are repaired and/or replaced as needed.

### **5.2 Monitoring and Record Management Program for Determining Deliveries, Sales, and Losses**

As a wholesale water supplier, NTMWD has instituted a program of careful monitoring and record management to assure that its member cities and customers are charged appropriately for their water use. The program includes the following elements:

- Deliveries to all member cities and wholesale customers are metered by meters with accuracy of  $\pm 2\%$ , which are read monthly by NTMWD personnel. These readings are used to bill member cities and wholesale customers.
- The meters used to measure deliveries to the member cities and wholesale customers are calibrated every month and tested, as necessary.
- Treated drinking water leaving NTMWD's water treatment plants is metered by meters with accuracy of  $\pm 2\%$ .
- Plant treated water discharge meters are calibrated at least quarterly and more frequently if necessary.
- All meter readings are sent to member cities and wholesale customers so that they can compare the readings against the operation of their systems.
- NTMWD monitors unaccounted water in its delivery system. (For NTMWD, unaccounted water is defined as raw water diverted from Lake Lavon less metered sales to member cities and customers and line flushing use.) Historical records of unaccounted water for the last 15 years are shown in Section II. A. 3 of Appendix C. NTMWD's unaccounted water has been as high as 8.4 percent and as low as 0.9 percent of raw water diversions and averaged 3.8 percent over that period, with values less than 3.5 percent for the last three years. This extraordinarily low level of unaccounted water is evidence of NTMWD's diligence in metering all uses and controlling losses in its system.

One of the goals of NTMWD's water conservation program is to maintain unaccounted water below 5 percent in every year.

### **5.3 Metering and Leak Detection and Repair**

NTMWD's metering program for raw and treated water is described in Sections 5.1 and 5.2. As evidenced by the low level of unaccounted water described in Section 5.2, NTMWD has an effective program to control, detect, and repair leaks:

- All NTMWD water transmission pipelines are reinforced concrete cylinder pipe or steel cylinder pipe with an internal protective liner and an external protective coating. Because of the multiple layers of material, these pipelines have very long service lives and are not subject to frequent development of leaks.
- Most joints in NTMWD pipelines are designed with bell and spigot joint construction including a rubber gasket. Some joints are welded. For larger lines, each joint is also sealed with concrete.
- All NTMWD water pipelines are constructed in legally defined and identified rights-of-way, properly registered with authorities in each county.
- NTMWD personnel routinely inspect NTMWD facilities and pipelines for leaks or mechanical problems. Repairs are undertaken as soon as practicable in order to minimize waste.
- NTMWD operates a program for right-of-way identification for construction projects adjacent to NTMWD facilities and pipelines in order to minimize leaks caused by pipeline damage during construction.
- NTMWD's metering program allows comparison of measured flows in the system and metered deliveries to member cities and customers, which can be used to identify leaks.
- NTMWD's regular monitoring of unaccounted water (on a monthly basis) provides a further check for problems in the distribution system.
- NTMWD makes regular inspections of its system to detect unauthorized connections.



## 6. OTHER REQUIRED MEASURES

### 6.1 Requirement for Water Conservation Plans by Wholesale Customers

Every contract for the wholesale sale of water by NTMWD entered into, renewed, or extended after the adoption of this water conservation and drought contingency plan will include a requirement that the wholesale customer and any wholesale customers of that wholesale customer develop and implement a water conservation plan meeting the requirements of Title 30, Part 1, Chapter 288, Subchapter A, Rule 288.2 of the Texas Administrative Code. This requirement will extend to each successive wholesale customer in the resale of the water. NTMWD will provide the model water conservation and drought contingency plans described in Section 7.2 to all wholesale customers to assist them in developing their own water conservation and drought contingency plans.

### 6.2 Reservoir System Operation Plan

NTMWD currently has a total permitted water supply of about 274,000 acre-feet per year from the following sources:

Lake Lavon water right (municipal)	100,000 acre-feet per year
Lake Lavon water right (industrial)	4,000 acre-feet per year
Lake Texoma	77,300 acre-feet per year
Chapman Lake	57,214 acre-feet per year
Reuse - Wilson Creek Reg. WWTP	<u>35,941 acre-feet per year</u>
<b>TOTAL</b>	<b>274,455 acre-feet per year</b>

Water from Lake Texoma and Chapman Lake is pumped by pipeline to the Lake Lavon watershed, where it flows into Lake Lavon. Treated wastewater effluent from the Wilson Creek Regional Wastewater Treatment Plant is returned to the Lake Lavon watershed. NTMWD has developed a reservoir system operation plan for Lake Lavon, Lake Texoma, and Chapman Lake in order to maximize the efficiency of operation within existing water rights. The NTMWD system operation plan calls for pumping from Lake Texoma and Chapman Lake before Lake Lavon reaches extremely low levels to avoid water supply problems that would be caused by low water surface elevations. The plan avoids pumping into the lake during flood conditions. The plan also avoids unnecessary pumping from Lake Texoma and Chapman Lake to minimize energy use and avoid causing low levels in Texoma and Chapman. Overall, the operation of the reservoir system is intended to optimize the use of the three reservoirs (within the constraints of existing water rights) while maintaining water quality and minimizing potential impacts on recreational users of the reservoirs and fish and wildlife. NTMWD is also seeking an amendment to its water rights that will allow overdrafting of Lake Lavon when Lake Lavon and Lake Ray Hubbard are full and spilling in order to avoid unnecessary pumping from Lake Chapman. When granted, this amendment will allow NTMWD to further optimize its use of available water supplies.

### **6.3 Coordination with Regional Water Planning Groups**

Appendix D includes a copy of letters sent to the Chairs of the Region C and Region D water planning group with this water conservation and drought contingency plan.

## **7. ADDITIONAL NTMWD WATER CONSERVATION MEASURES TO ASSIST MEMBER CITIES AND CUSTOMERS**

NTMWD has implemented a number of water conservation measures intended to help member cities and customers with their water conservation planning, including:

- Holding water conservation workshops for the staff of member cities and customers.
- Providing model water conservation and drought contingency plans for use by member cities and customers in developing their own plans.
- Developing industrial pretreatment programs that encourage recycling to reduce water demands when requested to do so by member cities and customers.
- Requiring an annual report on water conservation efforts from member cities and customers and developing a district water conservation report.

These measures will allow NTMWD to serve as a regional resource for water conservation efforts in its service area.

### **7.1 Water Conservation Workshops**

Beginning in 2003, NTMWD has held a series of water conservation workshops with staff of member cities. These workshops have covered TCEQ requirements for water conservation and drought contingency plans, current NTMWD water conservation efforts, water conservation programs of the cities, and related topics. In future workshops, NTMWD will present the model water conservation and drought contingency plans described in Section 7.2 to the member cities and assist in the development of their plans. In 2004, water conservation workshops will also be extended to direct and indirect customers receiving water from NTMWD.

### **7.2 NTMWD Model Water Conservation Plan for NTMWD Member Cities and Customers and Model Drought Contingency Plan for NTMWD Member Cities and Customers**

In order to assist its member cities and customers in the development of their own water conservation and drought contingency plans, NTMWD has developed a *Model Water Conservation Plan for NTMWD Member Cities and Customers*<sup>2</sup> and a *Model Drought Contingency Plan for NTMWD Member Cities and Customers*<sup>3</sup>. The model water conservation plan addresses the TCEQ requirements for water conservation plans for municipal use by public water suppliers<sup>6</sup> and includes several provisions that go beyond TCEQ requirements. NTMWD will work with its member cities and customers to develop water conservation and drought contingency plans using the model plan as a guide.

The model water conservation plan includes the following elements addressing TCEQ requirements for water conservation plans for public water suppliers<sup>6</sup>:

- 288.2(a)(1)(A) – Utility Profile

- 288.2(a)(1)(B) – Specification of Goals
- 288.2(a)(1)(C) – Accurate Metering
- 288.2(a)(1)(D) – Universal Metering
- 288.2(a)(1)(E) – Determination and Control of Unaccounted Water
- 288.2(a)(1)(F) – Public Education and Information Program
- 288.2(a)(1)(G) – Non-Promotional Water Rate Structure
- 288.2(a)(1)(H) – Reservoir System Operation Plan
- 288.2(a)(1)(I) – Means of Implementation and Enforcement
- 288.2(a)(1)(J) – Coordination with Regional Water Planning Group
- 288.2(a)(2)(A) – Leak Detection, Repair, and Water Loss Accounting
- 288.2(a)(2)(B) – Record Management System
- 288.2(a)(2)(C) – Requirement for Water Conservation Plans by Wholesale Customers

NTMWD’s model water conservation plan also includes water conservation strategies that go beyond TCEQ’s requirements:

- 288.2(a)(3)(A) – Conservation Oriented Water Rates
- 288.2(a)(3)(B) – Ordinances, Plumbing Codes or Rules on Water-Conserving Fixtures
- 288.2(a)(3)(D) – Reuse and Recycling of Wastewater
- 288.2(a)(3)(F) – Landscape Water Management Ordinance
- 288.2(a)(3)(G) – Monitoring Method

### **7.3 Industrial Pretreatment Program**

As part of its wastewater system, NTMWD has developed industrial pretreatment programs for the cities of Allen, Forney, Frisco, McKinney, Mesquite, Murphy, Plano, Richardson, Rockwall, Terrell, and Wylie. The pretreatment programs developed by NTMWD are adopted and implemented by the cities, which are also responsible for enforcement. By reducing allowable volumes of specific pollutants and encouraging pretreatment of industrial wastes, this joint NTMWD-city effort has improved water quality in the region’s streams and lakes. NTMWD industrial pretreatment personnel are also available to assist cities on request in the review or design of systems to allow industrial recycling and reuse of wastewater. Such systems have reduced water use by some industries, while also reducing wastewater volumes and saving money for the industries.

### **7.4 Annual Reports**

One element of NTMWD’s *Model Water Conservation Plan for NTMWD Member Cities and Customers*<sup>2</sup> for its member cities and customers is a requirement that they produce

annual conservation reports (Appendix E) by March 31 of the following year and submit them to NTMWD. NTMWD will compile these reports and use them to help generate its own annual water conservation report. NTMWD's report will be used to review the effectiveness of its water conservation program and will be shared with the NTMWD Board and the Water Committee.

## **8. ADDITIONAL NTMWD WATER CONSERVATION MEASURES**

### **8.1 Reuse and Recycling of Wastewater**

NTMWD currently has the largest wastewater reuse program in the state. NTMWD's Wilson Creek Regional Wastewater Treatment Plant discharges treated effluent into Wilson Creek upstream from Lake Lavon. NTMWD has water rights allowing reuse of up to 35,941 acre-feet per year of this treated wastewater for municipal purposes, providing about 13 percent of NTMWD's total water supply. NTMWD is currently seeking a permit amendment that would double its permitted reuse and is considering future reuse projects to increase this supply further.

The 21 wastewater treatment plants that NTMWD owns and/or operates use treated effluent for all necessary wastewater plant washdowns and for wastewater plant site irrigation. NTMWD also makes treated wastewater from its plants available for direct reuse for landscape irrigation use. In 2003, over 300 million gallons of NTMWD's treated wastewater were used for off-site irrigation.

### **8.2 Public Education Program**

As a regional wholesale water supplier, NTMWD does not interact directly with the retail customers at whom public education is aimed. NTMWD's public education program is intended to assist and supplement the public education efforts of its member cities and customers. NTMWD's public education efforts include the following elements:

- NTMWD has prepared and presented programs to area cities, civic organizations and other groups concerning the need for water conservation and strategies that can be implemented on an individual and corporate level. Presentations have been made to Rotary Clubs, Lions Clubs, Chambers of Commerce, Leadership Training Classes, Boy Scouts, Girl Scouts, mayors, city councils, city staff, etc.
- NTMWD provided funding for the conversion of the Texas Smartscape CD-ROM into an interactive web site and for regional distribution of Smartscape CD-ROMs. Texas Smartscape is an educational tool designed to assist citizens with the design and development of landscaping using Texas native and drought tolerant plants.
- Since 1996, NTMWD has provided the "Learning to Be Water Wise" curriculum to area school districts at no cost. The "Learning to Be Water Wise" curriculum includes individual kits and activities to educate 5<sup>th</sup> grade students on the importance of water and the need for water conservation in their homes and communities.
- NTMWD provides conservation brochures and information to interested civic groups and schools. Information includes brochures on water-saving measures and xeriscape landscaping.
- NTMWD participates in special events to distribute water conservation information to the public.

- A video on water conservation has been produced, which has been used on a local public access cable channel. NTMWD also has this video available for use by schools.

### **8.3 Zero Discharge from Water Treatment Plants**

Since 1975, NTMWD's water treatment plants have operated under zero discharge permits. Wash water from filter washing and sludge from the water treatment process are pumped to lagoons for solar drying. After settling of solids, suitable water is decanted from the lagoons and recycled to the head of the water treatment plant for treatment. This saves water and contributes to NTMWD's excellent control of unaccounted water in treatment and distribution.

### **8.4 In-House Water Conservation Efforts**

NTMWD has implemented an in-house water conservation program, including the following elements:

- Wherever possible, landscapes will use native or adapted drought tolerant plants, trees, and shrubs.
- Irrigation at NTMWD facilities will occur between 11 p.m. and 5 a.m. in the peak consumption summer months (June 1 through September 30) in order to lower evaporation losses. This time period is also off-peak for the water systems that supply NTMWD facilities.
- Irrigation will be limited to the amount needed to promote survival and health of plants and lawns.
- Irrigation will be avoided on Saturday and Sunday if possible, since these are periods of high water use by the public.
- Irrigation will be done with treated wastewater effluent wherever feasible and reasonable.

**9. IMPLEMENTATION AND ENFORCEMENT OF THE WATER CONSERVATION PLAN**

Appendix F contains a copy of the minutes of the NTMWD Board meeting at which this water conservation and drought contingency plan was adopted. The Executive Director of NTMWD is authorized to implement and enforce the water conservation and drought contingency plan. As discussed in Section 8.4, NTMWD will prepare a water conservation report every year, incorporating the reports required from member cities and customers. This report will be used to review the effectiveness of NTMWD's water conservation program, and results will be reported to the Water Committee of the NTMWD Board and the Board.



## **10. DROUGHT CONTINGENCY PLAN**

### **10.1 Introduction**

The purpose of this drought contingency 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.

As this plan is being prepared (April of 2006), NTMWD is in a Stage 2 drought, with plans to go to a Stage 3 drought in early June unless conditions improve. In response to the current drought, NTMWD has 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 is the first major local campaign based on this message, and NTMWD has hired Enviromedia of Austin to assist in program implementation. NTMWD is investing \$2.3 million in the first year of the campaign, which includes multiple methods to reach and educate the public:

- Television ads (planned to coincide with peak outdoor use in the summer)
- Radio ads (already underway to raise public awareness)
- Billboards (planned for the summer)
- Yard signs (planned for the summer)
- Newspaper and magazine ads (already underway)
- Messages on gasoline pumps (“pump toppers”)
- Movie theatre ads (planned for the summer)
- Mall ads (already underway)
- Fact sheets (already underway)
- Web site (already underway)
- An on-going media relations campaign with print and electronic media
- Outreach programs (including a traveling exhibit for community events and breakfasts with plumbers, nurseries, and other industries with influence on water use).

The specifics of the public outreach and education campaign will vary depending on the circumstances of future droughts, but this current example shows NTMWD’s commitment to an appropriate drought response.

## 10.2 State Requirements for Drought Contingency Plans

This drought plan is consistent with Texas Commission on Environmental Quality (TCEQ) guidelines and requirements for the development of drought contingency plans by wholesale water suppliers, contained in Title 30, Part 1, Chapter 288, Subchapter B, Rule 288.22 of the Texas Administrative Code. This rule 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 10.3
- 288.22(a)(2) – Coordination with the Regional Water Planning Group – Section 10.9
- 288.22(a)(3) – Criteria for Initiation and Termination of Drought Stages – Section 10.4
- 288.22(a)(4) – Drought and Emergency Response Stages – Section 10.5
- 288.22(a)(5) – Procedures for Initiation and Termination of Drought Stages – Section 10.5
- 288.22(a)(6) – Specific Measures to Be Implemented during Each Drought Stage – Section 10.5
- 288.22(a)(7) – Provision for Wholesale Contracts to Require Water Distribution According to Texas Water Code §11.039 – Sections 10.5 and 10.6
- 288.22(a)(8) – Provision for Granting Variances to the Plan - Section 10.7
- 288.22(a)(9) - Procedures for Enforcement of Mandatory Restrictions – Section 10.8
- 288.22(b) – Notification of Implementation of Mandatory Measures – Section 10.4
- 288.22(c) – Review and Update of Plan – Section 10.10

## 10.3 Provisions to Inform the Public and Opportunity for Public Input

NTMWD provided opportunity for public input in the development of this drought contingency 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.
- Meeting with representatives to member cities to discuss the draft plan.
- Providing the draft plan to anyone requesting a copy.
- Holding a public meeting at the North Texas Municipal Water District offices in Wylie, at 4:00 p.m., on Monday, June 21, 2004.

- Holding a public meeting on the revision of the drought plan at the North Texas Municipal Water District offices in Wylie, at 2:00 p.m. on April 25, 2006.

#### **10.4 Initiation and Termination of Drought Response Stages**

##### Initiation of a Drought Response Stage

The Executive Director may order the implementation of a drought response stage or water emergency when one or more of the trigger conditions for that stage is met. The following actions will be taken when a drought stage is initiated:

- The public will be notified through local media.
- Member cities and wholesale customers will be notified by telephone with a follow-up letter, e-mail, or fax that provides details of the reasons for initiation of the drought stage.
- If any mandatory provisions of the drought contingency plan are activated, NTMWD will notify the Executive Director of the TCEQ within 5 business days.

The Executive Director may decide not to order the implementation of a drought response 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.

##### Termination of a Drought Stage

The Executive Director may order the termination of a drought response stage or water emergency when the conditions for termination are met or at his/her discretion. The following actions will be taken when a drought stage is terminated:

- The public will be notified through local media.
- Member cities and wholesale customers will be notified by telephone with a follow-up letter, e-mail or fax.
- When any mandatory provisions of the drought contingency 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 drought response stage or water emergency 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 the year, weather conditions, or the anticipation of potential changed conditions that warrant the continuation of the drought stage.

## 10.5 Drought and Emergency Response Stages and Measures

### Stage 1, Mild

#### Triggering and Termination Conditions for Stage 1, Mild

- The water level in Lake Lavon has fallen below elevation 484.0 msl (8 feet below the top of conservation storage).
- The water level in Lake Chapman has fallen below elevation 432.0 msl (8 feet below the top of conservation storage).
- Water demand is projected to approach the limit of the permitted supply.
- NTMWD has concern that Lake Texoma or some other NTMWD source may be limited in availability within the next 6 months.
- Demand exceeds 90% of the amount that can be delivered to customers for seven consecutive days.
- Water demand for all or part of the delivery system approaches delivery capacity because delivery capacity is inadequate.
- Supply source becomes contaminated.
- Water supply system is unable to deliver water due to the failure or damage of major water system components.
- The Executive Director, with the concurrence of the NTMWD Board of Directors, finds that conditions warrant the declaration of a Stage 1 drought.

Stage 1 may terminate when Lake Lavon rises above elevation 488.0 msl, and/or when Lake Chapman rises above elevation 435.0, and/or when the circumstances that caused the initiation of Stage 1 no longer prevail, or at the discretion of the Executive Director.

#### Goal for Use Reduction and Actions Available under Stage 1, Mild

Stage 1, Mild, is intended to raise public awareness of potential drought problems. There is no goal for reduction of water use. The Executive Director can order the implementation of any of the actions listed below, as deemed necessary:

- Require member cities and customers (including indirect customers) to initiate Stage 1 in their drought contingency plans.
- Request voluntary reductions in water use by the public and by member cities and customers.
- Increase public education efforts on ways to reduce water use.
- Review the problems that caused the initiation of Stage 1.
- Intensify efforts on leak detection and repair.

- Reduce non-essential NTMWD water use.
- Ask member cities and customers to initiate voluntary landscape watering schedules.

## **Stage 2, Moderate**

### Triggering Conditions for Stage 2, Moderate

- The water level in Lake Lavon has fallen below elevation 481.0 msl (11 feet below the top of conservation storage).
- The water level in Lake Chapman has fallen below elevation 430.0 msl (10 feet below the top of conservation storage).
- Water demand is projected to approach the limit of the permitted supply.
- NTMWD has concern that Lake Texoma or some other NTMWD source may be limited in availability within the next 3 months.
- Demand exceeds 95% of the amount that can be delivered to customers for five consecutive days.
- Water demand for all or part of the delivery system equals delivery capacity because delivery capacity is inadequate.
- Supply source becomes contaminated.
- Water supply system is unable to deliver water due to the failure or damage of major water system components.
- The Executive Director, with the concurrence of the NTMWD Board of Directors, finds that conditions warrant the declaration of a Stage 2 drought.

Stage 2 may terminate when Lake Lavon rises above elevation 485.0 msl, and/or when Lake Chapman rises above elevation 433.0, and/or when the circumstances that caused the initiation of Stage 2 no longer prevail, or at the discretion of the Executive Director.

### Goal for Use Reduction and Actions Available under Stage 2, Moderate

The goal for water use reduction under Stage 2, Moderate, is a two percent reduction of the use that would have occurred in the absence of drought contingency measures. The Executive Director can order the implementation of any of the actions listed below, as deemed necessary:

- Continue or initiate any actions available under Stage 1.
- Require member cities and customers (including indirect customers) to initiate Stage 2 in their drought contingency plans.
- Initiate engineering studies to evaluate alternative actions if conditions worsen.
- Further 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 emergency situation has passed before establishing new landscaping.

### **Stage 3, Severe**

#### Triggering Conditions for Stage 3, Severe

- The water level in Lake Lavon has fallen below elevation 478.0 msl (14 feet below the top of conservation storage).
- The water level in Lake Chapman has fallen below elevation 426.0 msl (14 feet below the top of conservation storage).
- Water demand is projected to approach or exceed the limit of the permitted supply.
- The supply from Lake Texoma or some other NTMWD source has become limited in availability.
- Demand exceeds 98% of the amount that can be delivered to customers for three consecutive days.
- Water demand for all or part of the delivery system exceeds delivery capacity because delivery capacity is inadequate.
- Supply source becomes contaminated.
- Water supply system is unable to deliver water due to the failure or damage of major water system components.
- The Executive Director, with the concurrence of the NTMWD Board of Directors, finds that conditions warrant the declaration of a Stage 3 drought.

Stage 3 may terminate when Lake Lavon rises above elevation 482.0 msl, and/or when Lake Chapman rises above elevation 430.0, and/or when the circumstances that caused the initiation of Stage 3 no longer prevail, or at the discretion of the Executive Director.

#### Goal for Use Reduction and Actions Available under Stage 3, Severe

The goal for water use reduction under Stage 3, Severe, is a reduction of five percent in the use that would have occurred in the absence of drought contingency measures. If circumstances warrant, the Executive Director can set a goal for greater water use reduction.

The Executive Director can order the implementation of any of the actions listed below, as deemed necessary. Measures described as “requires notification to TCEQ” impose mandatory requirements on member cities and customers. NTMWD must notify TCEQ within five business days if these measures are implemented.

- Continue or initiate any actions available under Stages 1 and 2.
- Require member cities and customers (including indirect customers) to initiate Stage 3 in their drought contingency plans.
- Implement viable alternative water supply strategies.

- **Requires Notification to TCEQ** – Require member cities and customers (including indirect customers) to initiate mandatory water use restrictions as follows:
  - Prohibit hosing of paved areas, buildings, or windows.
  - Prohibit operation of ornamental fountains if they use treated water.
  - Prohibit washing or rinsing of vehicles by hose.
  - Prohibit using water in such a manner as to allow runoff or other waste.
  - Prohibit outdoor watering with sprinklers between 10:00 a.m. and 6:00 p.m. year round.
- **Requires Notification to TCEQ** – Require member cities and customers (including indirect customers) to limit landscape watering with sprinklers or irrigation systems at each service address to once every seven days. (Exceptions: Foundations, new plantings (first year) of shrubs, and trees may be watered for up to 2 hours on any day by a hand-held hose or a soaker hose. Golf courses may water greens and tee boxes without restrictions. Restrictions do not apply to locations using treated wastewater effluent for irrigation.)
- **Requires Notification to TCEQ** – Existing swimming pools may not be drained and refilled (except to replace normal water loss).
- **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 §11.039 (Appendix G).
- **Requires Notification to TCEQ** – Require member cities and customers to initiate a rate surcharge for all water use over a certain level.
- **Requires Notification to TCEQ** – Require member cities and customers to prohibit watering of golf courses using treated water, except as needed to keep greens and tee boxes alive.

#### **Stage 4, Emergency**

##### Triggering Conditions for Stage 4, Emergency

- The water level in Lake Lavon has fallen below elevation 475.0 msl (17 feet below the top of conservation storage).
- The water level in Lake Chapman has fallen below elevation 423.0 msl (17 feet below the top of conservation storage).
- Water demand is projected to approach or exceed the limit of the permitted supply.
- The supply from Lake Texoma or some other NTMWD source has become severely limited in availability.
- Demand exceeds the amount that can be delivered to customers.
- Water demand for all or part of the delivery system seriously exceeds delivery capacity because the delivery capacity is inadequate.
- Supply source becomes contaminated.

- Water supply system unable to deliver water due to the failure or damage of major water system components.
- The Executive Director, with the concurrence of the NTMWD Board of Directors, finds that conditions warrant the declaration of a Stage 4 drought.

Stage 4 may terminate when Lake Lavon rises above elevation 479.0 msl, and/or when Lake Chapman rises above elevation 427.0, and/or or when the circumstances that caused the initiation of Stage 4 no longer prevail, or at the discretion of the Executive Director.

#### Goal for Use Reduction and Actions Available under Stage 4, Emergency

The goal for water use reduction under Stage 4, Emergency, is a reduction of ten percent in the use that would have occurred in the absence of drought contingency measures. If circumstances warrant, the Executive Director can set a goal for greater water use reduction.

The Executive Director can order the implementation of any of the actions listed below, as deemed necessary. Measures described as “requires notification to TCEQ” impose mandatory requirements on member cities and customers. NTMWD must notify TCEQ within five business days if these measures are implemented.

- Continue or initiate any actions available under Stages 1, 2, and 3.
- Require member cities and customers (including indirect customers) to initiate Stage 4 in their drought contingency plans.
- Implement viable alternative water supply strategies.
- **Requires Notification to TCEQ** – Require member cities and customers (including indirect customers) to prohibit establishment of new landscaping.
- **Requires Notification to TCEQ** – Require all member cities and customers (including indirect customers) to prohibit washing of vehicles except as necessary for health, sanitation, or safety reasons
- **Requires Notification to TCEQ** – Require all member cities and customers (including indirect customers) to 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 or a soaker hose.
- **Requires Notification to TCEQ** – Require all member cities and customers (including indirect customers) to prohibit golf course watering with treated water except for greens and tee boxes.
- **Requires Notification to TCEQ** – Require all member cities and customers (including indirect customers) to prohibit permitting of private pools. Pools already permitted may be completed and filled with water. Existing private and public pool may add water to maintain pool levels but may not be drained and refilled.
- **Requires Notification to TCEQ** – Require all member cities and customers (including indirect customers) to 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 §11.039.
- **Requires Notification to TCEQ** – Require member cities and customers to initiate a rate surcharge over normal rates for all water use.

## **10.6 Procedure for Curtailment of Water Supplies**

Any mandatory reduction to deliveries from NTMWD to its member cities and customers shall be distributed as required by Texas Water Code §11.039, which is attached as Appendix G. In addition, every wholesale water supply contract entered into or renewed after adoption of this plan, including contract extensions, shall include a provision that water will be distributed in accordance with Texas Water Code §11.039 in case of a water shortage resulting from drought.

## **10.7 Procedure for Granting Variances to the Plan**

The Executive Director may grant temporary variances for existing water uses otherwise prohibited under this drought contingency plan to a member city or customer 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 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.

### **10.8 Procedures for Enforcing Mandatory Water Use Restrictions**

Mandatory water use restrictions may be imposed in Stage 3 and Stage 4 drought stages. 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 install a flow restrictor in the line or other device to limit the amount of water delivered to the member city or customer.
- North Texas may charge up to twice the established rate for any water used in violation of mandatory water use restrictions.

### **10.9 Coordination with the Regional Water Planning Groups**

Appendix D includes copies of letters sent to the Chairs of the Region C and Region D water planning group with this water conservation and drought contingency plan.

### **10.10 Review and Update of Drought Contingency Plan**

As required by TCEQ rules, NTMWD will review this water plan in 2009 and every five years thereafter. The plan will be updated as appropriate based on new or updated information.

## **11. CONSERVATION AND DROUGHT CONTINGENCY PLAN REQUIREMENTS FOR A PUBLIC WATER SUPPLIER**

### **11.1 Introduction**

In addition to serving as a wholesale water supplier, the NTMWD is also a public water supplier of treated water, providing direct retail service to 83 customers who do not have access to retail service from other sources. The TCEQ has established rules for the development of water conservation and drought contingency plans for public water suppliers that provide retail service. The rules for water conservation plans for public water suppliers are contained in Title 30, Part 1, Chapter 288, Subchapter B, Rule 288.2 of the Texas Administrative Code. The rules for 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. Both of these rules are included in Appendix B.

The water conservation and drought contingency plans for NTMWD as a wholesale water provider given in sections 1-10 of this report address most of the requirements covered in the rules for public water suppliers. This section summarizes the TCEQ requirements for public water suppliers, indicates where they are met in the report, and covers any additional information needed to meet public water supplier requirements.

### **11.2 State Requirements for Water Conservation Plans for Public Water Suppliers**

Title 30, Part 1, Chapter 288, Subchapter B, Rule 288.2 of the Texas Administrative Code gives the requirements for water conservation plans for public water suppliers. This rule is included in Appendix B.

#### Minimum Requirements

TCEQ's minimum requirements for water conservation plans for public water suppliers are addressed below:

- 288.2(a)(1)(A) – Utility Profile – Included in Appendix C.
- 288.2(a)(1)(B) – Specification of Conservation Goals – Addressed in Section 4.
- 288.2(a)(1)(C) – Metering of Diversions – Addressed in Section 5.1.
- 288.2(a)(1)(D) – Universal Metering – Addressed in Section 5.3. Deliveries to all of NTMWD's retail customers (like those to all of its wholesale customers) are metered. NTMWD tracks use for its retail customers to assure that the meters remain in good working order.
- NTMWD will implement a meter replacement program within the next three years, in accordance with AWWA standards. At a minimum, all customer meters will be replaced every 15 years.
- 288.2(a)(1)(E) – Measures to Determine and Control Unaccounted Water – Addressed in Sections 5.2 and 5.3.

- 288.2(a)(1)(F) – Program of Continuing Public Education and Information – Addressed in Section 8.2. NTMWD also will also communicate directly with its retail customers by including brochures and other material on water conservation in their bills.
- 288.2(a)(1)(G) – Non-Promotional Rate Structure – The District charges its retail customers a monthly service fee of \$15, which includes up to 2,000 gallons of water, and a uniform rate of \$2.00 per thousand gallons for use beyond 2,000 gallons. The District will develop a three-tiered rate structure for its residential customers as follows:
  - Monthly minimum charge with up to 2,000 gallons.
  - Base rate per 1,000 gallons for water use of 2,000 to 10,000 gallons
  - 2<sup>nd</sup> tier rate of 1.25 to 2 times the base charge per 1,000 gallons from 10,000 to 20,000 gallons
  - 3<sup>rd</sup> tier rate of 1.25 to 2 times the 2<sup>nd</sup> tier rate per 1,000 gallons for water use above 20,000 gallons

The District will develop a two tiered rate for its commercial/industrial customers as follows:

- Base rate per 1,000 gallons for water use up to 10,000 gallons
- 2<sup>nd</sup> tiered rate of 1.25 to 2 times the base rate per 1,000 gallons for water use above 10,000 gallons.

These rate structures will be implemented by 2007.

- 288.2(a)(1)(H) – Reservoir Systems Operation Plan – Addressed in Section 6.2.
- 288.2(a)(1)(I) – Means of Implementation and Enforcement – Addressed in Section 9.
- 288.2(a)(1)(J) – Documentation of Coordination with Regional Water Planning Groups – Addressed in Section 6.3.

#### Additional Requirements for Users Serving a Current Population of 5,000 or More

TCEQ has additional requirements for water conservation plans for public water suppliers serving more than 5,000 people. Including its wholesale customers, NTMWD serves more than 5,000 people. The additional TCEQ requirements this imposes are addressed below:

- 288.2(a)(2)(A) – Program of Leak Detection, Repair, and Water Loss Accounting – Addressed in Sections 5.2, 5.3, and 7.4.
- 288.2(a)(2)(B) – Record Management System – NTMWD’s retail customers include 76 residential accounts, 3 commercial accounts, and 4 public accounts. NTMWD has no retail industrial customers. The vast majority of NTMWD’s sales are to wholesale suppliers. NTMWD can make records available for residential use by retail customers, commercial use by retail customers, public use by retail customers, and wholesale sales.

- 222.8(a)(2)(C) – Requirement for Conservation Plans for Wholesale Customers – Addressed in Section 6.1.

#### Additional Conservation Strategies

TCEQ also lists additional water conservation strategies which may be implemented by a public water supplier but are not required. This water conservation plan includes several of those strategies:

- According to TCEQ regulations, a uniform rate structure is a conservation-oriented rate structure. NTMWD's has a uniform rate of \$2.00 per thousand gallons for retail customers. However, the District plans to modify its retail rate structure to comply with the rate structure adopted in the model water conservation plan for NTMWD member cities.
- NTMWD's program for reuse and recycling of wastewater is described in Section 8.1.
- Section 7 describes additional measures NTMWD has adopted to encourage water conservation by its customers.
- Section 7.4 describes NTMWD's plans to monitor the effectiveness of the water conservation program.
- Section 8.2 describes NTMWD's public education program.
- Section 8.3 describes NTMWD's program to maintain zero discharge from its water treatment plants.
- Section 8.4 describes NTMWD's in-house water conservation efforts.

### **11.3 State Requirements for Drought Contingency Plans for Public Water Suppliers**

Title 30, Part 1, Chapter 288, Subchapter B, Rule 288.20 of the Texas Administrative Code gives the requirements for drought contingency plans for public water suppliers. This rule is included in Appendix B.

- 288.20(a)(1)(A) – Provisions to Inform Public and Provide Opportunity for Public Input – Addressed in Section 10.3.
- 288.20(a)(1)(B) – Provisions for Continuing Public Education and Information – NTMWD shall provide for continuing public education and information by the following measures:
  - Discussing the drought contingency plan when staff speaks to the public on water conservation issues.
  - Including information on the drought contingency plan in bills for its retail customers.
  - Notification of the public and the media as drought contingency stages are implemented.

- 288.20(a)(1)(C) – Document Coordination with Regional Water Planning Groups – Addressed in Section 10.9.
- 288.20(a)(1)(D) – Description of Information to Be Monitored and Criteria for the Initiation and Termination of Drought Response Stages – Addressed in Sections 10.4 and 10.5.
- 288.20(a)(1)(E) – Stages for Implementation of Measures in Response to Situations – Addressed in Section 10.5.
- 288.20(a)(1)(F) – Specific Water Supply or Water Demand Measures to Be Implemented at Each Stage of the Plan – Addressed in Section 10.5.
- 288.20(a)(1)(G) – Description of Procedures to Be Followed for the Initiation and Termination of Drought Response Stages – Addressed in Section 10.4.
- 288.20(a)(1)(H) – Description of Procedures to Be Followed for Granting Variances to the Plan – Addressed in Section 10.7. Retail customers may request variances under the same terms as member cities and wholesale customers.
- 288.20(a)(1)(I) – Procedures for Enforcement of Mandatory Water Use Restrictions – Addressed in Section 10.8.
- 288.20(b) – Notification of TCEQ for Implementation of Mandatory Provisions – Addressed in Section 10.4.
- 288.20(c) – Review Drought Contingency Plan Every 5 Years – Addressed in Section 10.10.