CITY OF PRINCETON

ORDINANCE NO. 2008-12-09-02

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF PRINCETON ADOPTING A WATER CONSERVATION AND DROUGHT CONTINGENCY PLAN; REPEALING ALL CONFLICTING ORDINANCES; PROVIDING FOR SEVERABILITY; PROVIDING A PENALTY; PROVIDING AN EFFECTIVE DATE.

WHEREAS, the City Council of the City of Princeton, Texas, ("City") adopted a Water Conservation and Drought Contingency Plan, 97-007, and amended the Drought Contingency Plan by Ordinance No. 2003-02-18-2; and

WHEREAS, the City Council has determined that it in the best interest of the City of Princeton, Texas to update the Water Conservation and Drought Contingency Plan; and

WHEREAS, the City Staff has recommended that such Plan be adopted by the City Council; and

WHEREAS, the City Council now desires to evidence its approval of the Water Conservation and Drought Contingency Plan and adopt such Plan and adopt such plan as an official policy of the City; and

WHEREAS, the Planning and Zoning Commission held a public hearing and recommended approval of the Water and Waste Water Master Plan on September 20, 2005; and

WHEREAS, the City Council of the City has reviewed the Water Conservation and Drought Contingency Plan set forth in the attached Exhibit "A", which is incorporated herein by reference as if fully set forth herein.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF PRINCETON, TEXAS:

Section 1. ***Incorporation of Premises.***

That all of the above premises are found to be true and correct and are incorporated into the body of this Ordinance as if copied in their entirety.

Section 2. ***Adoption of Water Conservation and Drought Contingency Plan***

The City Council of the City hereby adopts the Water Conservation and Drought Contingency Plan set forth on the attached Exhibit "A," as the Water Conservation and Drought Contingency Plan for the City of Princeton and shall implement the Plan according to the procedures set forth therein.

Section 3. ***Repeal of Conflicting Ordinances.***

This Ordinance shall be and is hereby declared to be cumulative of all other ordinances of the City of Princeton, and this Ordinance shall not operate to repeal or affect any of such other ordinances except insofar as the provisions thereof might be inconsistent or in conflict with the provisions of this Ordinance, in which event such conflicting provisions, if any, in such other ordinance or ordinances are hereby repealed.

Section 4. ***Severability.***

If any section, article, paragraph, sentence, clause, phrase or word in this Ordinance, or application to any person or circumstance is held invalid or unconstitutional by a court of competent jurisdiction, such holding shall not affect the validity of the remaining portions of this Ordinance; and the City Council hereby declares it would have passed such remaining portions of the Ordinance despite such invalidity, which remaining portions shall remain in full force and effect.

Section 5. ***Penalty***

Any person violating the terms and provisions of this Ordinance shall, upon conviction, be punished by a fine of not more than Two Thousand Dollars ($2,000.00) and each and every day this Ordinance is violated shall constitute a separate offense.

Section 6. ***Providing an Effective Date.***

The Ordinance shall become effective immediately upon its passage.

PASSED AND APPROVED BY THE CITY COUNCIL OF THE CITY OF PRINCETON, TEXAS, ON THIS THE 9 DAY OF December, 2008.

Billy H. Combest

Billy Combest, Mayor Pro Tempore

ATTEST AND
CORRECTLY ENROLLED:

Lesia Thornhill, City Secretary

CITY OF PRINCETON, TEXAS
INCORPORATED 1912

APPROVED AS TO FORM:

Bonnie Lee Goldstein, City Attorney

CITY OF PRINCETON
ORDINANCE NO. 2008-12-09-02

Exhibit "A"

CITY OF PRINCETON

WATER CONSERVATION
AND
DROUGHT CONTINGENCY PLAN

AS ADOPTED BY CITY COUNCIL

OF THE CITY OF PRINCETON

December 9, 2008

NORTH TEXAS MUNICIPAL WATER DISTRICT

WATER CONSERVATION AND DROUGHT CONTINGENCY AND WATER EMERGENCY RESPONSE PLAN

MARCH 2008

THIS DOCUMENT WAS ORIGINALLY SIGNED, SEALED AND DATED BY:

AUTHORIZED BY: STEPHANIE W. GRIFFIN, P.E.
TEXAS NO.: 88504
ON DATE: MARCH 31, 2008

THIS ELECTRONIC FILE IS PROVIDED FOR INFORMATION ONLY AND IS NOT INTENDED FOR ANY USE WITHOUT AN ORIGINAL SEAL, SIGNATURE AND DATE.

Stephanie W. Griffin, P.E.

THIS DOCUMENT WAS ORIGINALLY SIGNED, SEALED AND DATED BY:

AUTHORIZED BY: THOMAS C. GOOCH, P.E.
TEXAS NO.: 50668
ON DATE: MARCH 31, 2008

THIS ELECTRONIC FILE IS PROVIDED FOR INFORMATION ONLY AND IS NOT INTENDED FOR ANY USE WITHOUT AN ORIGINAL SEAL, SIGNATURE AND DATE.

Thomas C. Gooch, P.E.

NTD06130
WCF 06-4

Prepared for:

NORTH TEXAS MUNICIPAL WATER DISTRICT

Prepared by:

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

FORWARD

This water conservation and drought contingency and water emergency response 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 (2004 and 2006) and the emergency water management (drought contingency) plans for the City of Fort Worth and the City of Dallas were consulted.

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

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

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

Denise Hickey
North Texas Municipal Water District
(972) 442-5405
dhickey@ntmwd.com

The water conservation and drought contingency and water emergency response plan is based on the Texas Administrative Code in effect on August 31, 2007. The Texas Commission on Environmental Quality (TCEQ) is currently preparing additional regulations in compliance with the mandates of Senate Bill 3 and House Bill 4 enacted in 2007 by the 80th Texas Legislature. The draft regulations have been considered in the preparation of this plan. The following items are presented in the draft regulations and are not currently in the regulations:

- A definition for "best management practices" will be added.
- A copy of the plan must be submitted to the Executive Administrator of the Texas Water Development Board.
- An annual progress report will be required to be submitted to the Texas Water Development Board. (The annual report may be in a different format than the annual report included in Appendix E).
- Requirement that water suppliers providing service to 3,300 or more connections must prepare a water conservation plan.
- Enforcement authority in relation to violations of the rules regulating water conservation plans and annual report is provided to the Texas Water Development Board.

None of the proposed adjustments will cause this plan to be obsolete. The most current annual report form should be obtained from TCEQ when preparing the annual report (Appendix E) to submit to the TCEQ. A copy of the annual report should be sent to the Texas Water Development Board as well as to the TCEQ.

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NORTH TEXAS MUNICIPAL WATER DISTRICT

Water Conservation and Drought Contingency and Water Emergency Response Plan

MARCH 2008

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 [1]. 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 and water emergency response plan pursuant to TCEQ guidelines and requirements. The best management practices established by the Water Conservation Implementation Task Force [2] were also considered in the development of the water conservation measures.

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 NTMWD currently provides water for over 1.3 million people. This plan has been developed in concert with the model water conservation and drought contingency and water emergency response plans for the NTMWD Member Cities and Customers. [3, 4] This plan replaces the plan dated August 2004 and updated April 2006.

The objectives of this water conservation and drought contingency and water emergency response 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.

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

- 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.
- To preserve supplies for essential uses under drought or water emergency conditions.

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)." [1] The elements in the TCEQ water conservation rules covered in this conservation and drought contingency plan are listed below. The TCEQ water conservation and drought contingency rules for retail water providers are addressed in Section 12 of this plan.

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) – Specific, Quantified Goals – Section 4
- 288.5(1)(D) – Measure and Account Water Diverted – Section 5.1
- 288.5(1)(E) – Monitoring and Record Management System – Sections 5.2 and 7.4
- 288.5(1)(F) – Program of Metering and Leak Detection and Repair – Section 5.3
- 288.5(1)(G) – Requirement for Water Conservation Plans by Wholesale Customers – Section 6.1
- 288.5(1)(H) – Reservoir System Operation Plan – Section 6.2
- 288.5(1)(I) – Means of Implementation and Enforcement – Section 9
- 288.5(1)(J) – Documentation of Coordination with Regional Water Planning Group – Section 6.4
- 288.5(3) – Review and Update of Plan – Section 10

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 NTMWD include the following:

- 288.5(2)(C) – Program for Reuse and/or Recycling – Section 8.1
- 288.5(2)(D) – Other Measures
    - Section 7.2 (model water conservation and drought contingency/water emergency response plans)
    - Section 8.2 (public education),
    - Section 8.3 (zero discharge from water treatment plants),
    - Section 8.4 (in-house conservation measures),
    - Section 8.5 (landscape water management measures), and
    - Section 8.7 (rebate program)

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. NTMWD 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 and water emergency response 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 and water emergency response plan may be a separate document identified as such or may be contained within another water management document(s)." [1] The drought contingency and water emergency response plan for NTMWD is contained in Section 11 of this water conservation and drought contingency and water emergency response plan. The drought contingency and water emergency response plan for NTMWD as a retail water supplier is addressed in Section 12 of this plan.

3. DESCRIPTION OF THE NTMWD SERVICE AREA

NTMWD provides treated water to 13 Member Cities and 60 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 1,976 square miles in Collin, Dallas, Denton, Rockwall, Kaufman, Hunt, Hopkins, Fannin, 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 Lavon Lake, Lake Texoma, Jim Chapman Lake, and reuse of treated wastewater effluent from its Wilson Creek Regional Wastewater Treatment Plant. As of 2008, the NTMWD will have additional raw water supplies from the Sabine River Authority (SRA) and the East Fork Raw Water Supply Project. The total permitted supply available to NTMWD in 2008 will be 517,789 acre-feet per year, and NTMWD is seeking additional supplies to meet its projected demands. NTMWD operates four water treatment plants in Wylie, near Lavon Lake, with a total treatment capacity of 770 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 and water emergency response 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 3.3 shows the historical per capita water use for the NTMWD.

Figure 3.1: NTMWD System Schematic

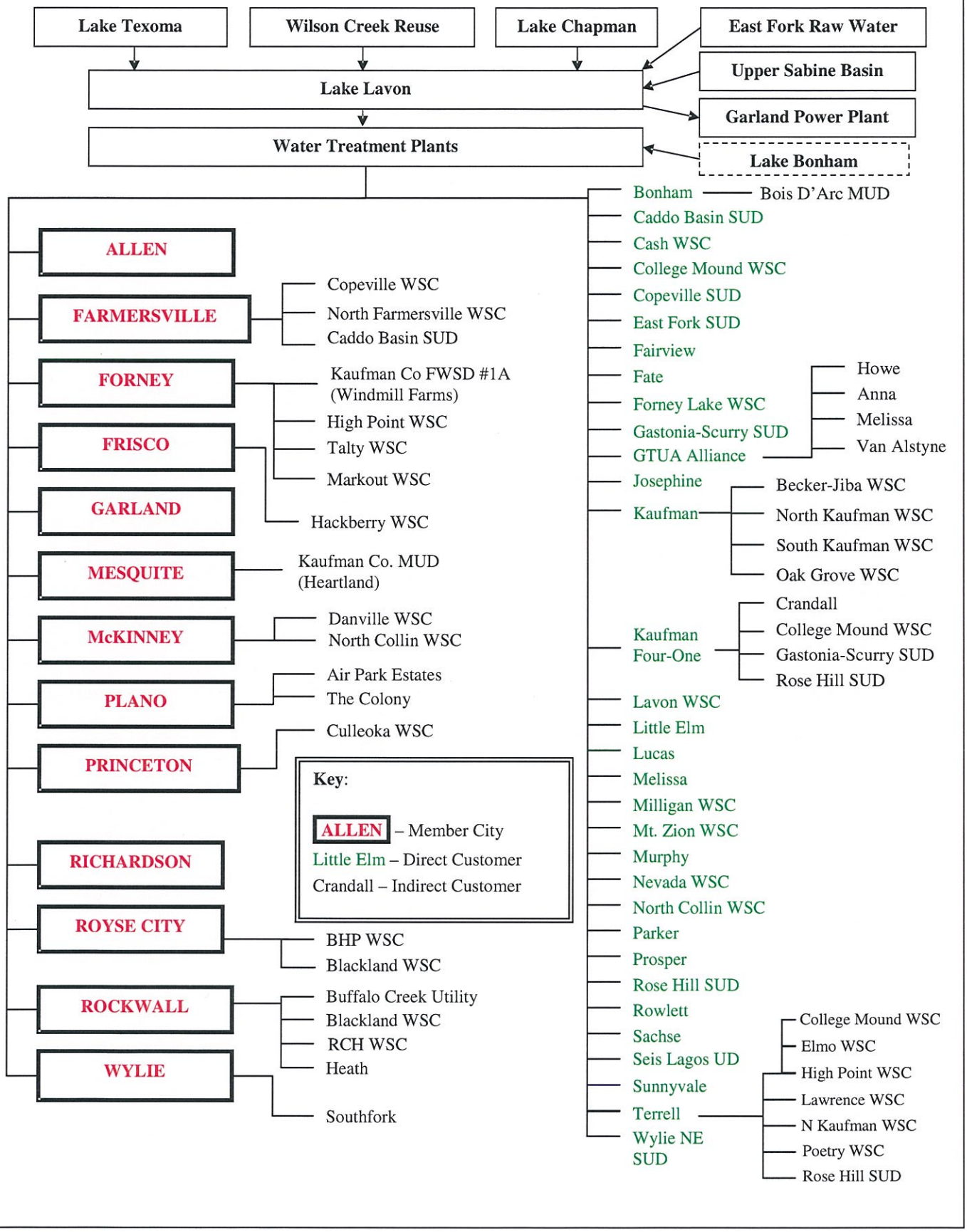


Figure 3.2: North Texas Municipal Water District Service Area Map

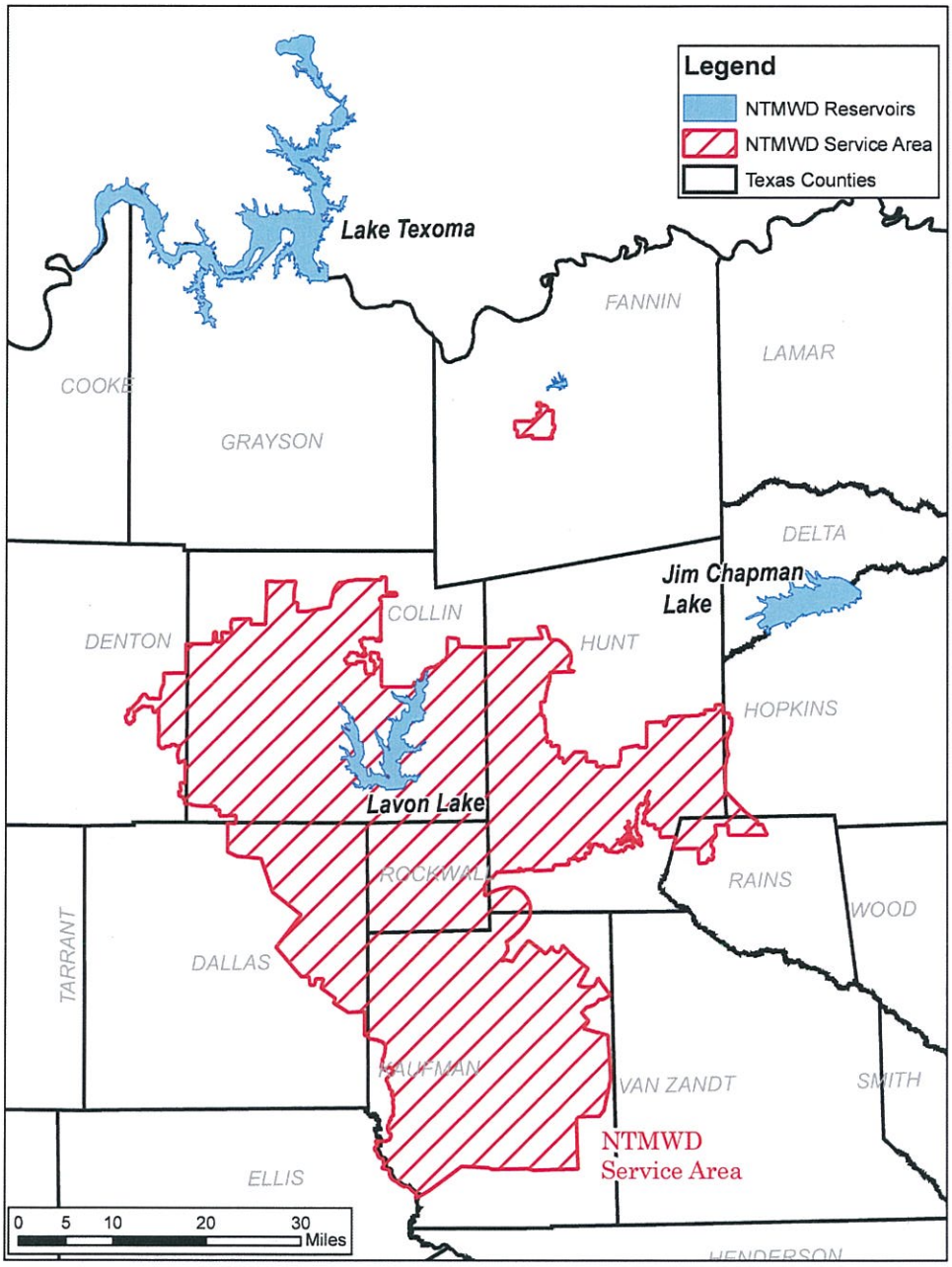


Table 3.1
Summary of Water Utility Profile for North Texas Municipal Water District

Water Service Area = 1,975 square miles

Miles of Distribution Pipeline = 395 miles

Population:

Current Population Served = 1,357,230 in 2007 (estimated)
Projected 2060 Population = 3,090,268 (current Member Cities & Customers only)

Connections:

Current Retail Connections = 72 in 2007

Information on Water Sales for the Last Five Years:

Year	Total Municipal Raw Water Diverted (Million Gallons)	Estimated Population*	Raw Water Municipal per Capita with Credit for Industrial Use and Reuse (gpcd)**	Unaccounted Water	Ratio of Peak Day to Average Day
2003	86,266	1,182,007	171	2.04%	2.01
2004	80,630	1,220,396	149	2.27%	1.79
2005	96,916	1,264,402	180	1.39%	1.74
2006	97,888	1,309,994	173	4.46%	1.81
2007	80,978	1,357,230	129	4.22%	1.91

* The estimated population served in 2000 is from the Census for cities and TWDB estimates for others. Estimates for other years are based on TWDB 's projected 2000-2010 population growth rate for NTMWD customers.

**Municipal per capita water use includes the water diverted for residential, commercial, and public and institutional uses and provides a credit against the diversion volumes for indirect reuse.

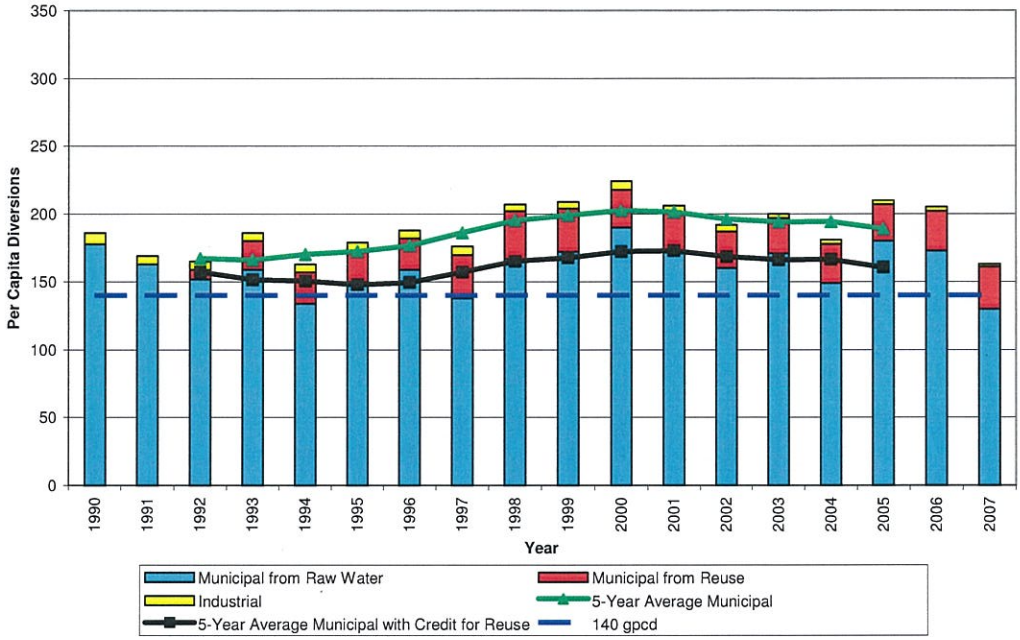
Water Supply Sources (as of 2008) = Lavon Lake, Lake Texoma, Jim Chapman Lake, Reuse from Wilson Creek Regional Wastewater Treatment Plant, East Fork Raw Water Supply, and Upper Sabine Raw Water Supply.

Treatment and Distribution System:

Treatment Plant Capacity = 770 MGD in September 2007
Ground storage = 69.6 million gallons (34 MG at Plant, 34.6 MG remote, 1 MG at Royse City)

Current Wastewater Flow = 44,615 million gallons in 2007

Figure 3.3: North Texas Municipal Water District GPCD Analysis



4. SPECIFICATION OF WATER CONSERVATION GOALS

As a wholesale water supplier, NTMWD does not 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 municipal per capita demands in the future.[5] The reasons for these projected increases include the following:

- 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 municipal per capita water use in this part of Texas.
- Some NTMWD customers currently have very low municipal per capita water use (below 115 gallons per capita per day), which is projected to increase over time as development continues.

The municipal per capita 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.

A commonly accepted definition of residential per capita water use has yet to be defined in the Texas Administrative Code. For the purposes of this plan, residential per capita water use is the total residential water use with credit for indirect reuse divided by the population. Residential water use includes single and multi-family housing. Hotels and motels are considered commercial establishments and should not be included as residential water use.

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 percent in 2008 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 continue to 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* [3] and a *Model Drought Contingency and Water Emergency Response Plan for NTMWD Member Cities and Customers* [4] that its Member Cities and Customers can use to develop their own water conservation and drought contingency and water emergency response 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 municipal per capita water use for NTMWD, as recommended by the Region C Water Planning Group [5] and approved by the Texas Water Development Board (TWDB) [6]. 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 municipal per capita water use with credit for reuse as a result of implementing this water conservation and drought contingency and water emergency response plan and the plans to be developed by its Member Cities and Customers. The data shown on the table reflect the following:

- The five year moving average of the current municipal water use with credit for reuse is used based on the Water Conservation Implementation Task Force recommendation [2].
- Projected municipal per capita water use does not include industrial use.
- The target for the five-year (2012) municipal per capita water use for all NTMWD Member Cities and Customers (direct and indirect) is 170 gallons per capita per day based on a five-year rolling average, as shown in Table 4.1 (5-year goal). This represents a reduction of 6 gallon per capita per day from TWDB's projected municipal per capita use without low-flow plumbing fixtures or other conservation measures.
- The target for the ten-year (2017) municipal per capita water use for all NTMWD Member Cities and Customers (direct and indirect) is 165 gallons per capita per day based on a five year rolling average, as shown in Table 4.1 (10-year goal). This represents a reduction of 11 gallons per capita per day from TWDB's projected municipal per capita use without low-flow plumbing fixtures or other conservation measures.

Table 4.1
Five-Year and Ten-Year Municipal* Per Capita Water Use Goals (gpcd)

Description	Current Average (gpcd)	5-Year Goal (gpcd)	10-Year Goal (gpcd)
Current 5-Year Average Per Capita Municipal Use with Credit for Reuse	167		
Adjustments Due to 2006 Drought Measures	9		
Current 5-Year Average without Drought Measures	176		
Expected Reduction Due to Low-Flow Plumbing Fixtures		1	3
Projected Reduction Due to Elements in this Plan		5	8
Water Conservation Goals (with credit for reuse)		**170**	**165**

* Municipal per capita water use removes the industrial water use and provides a credit for reuse water.

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 by meters with accuracy of ±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 ±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 ±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 Lavon Lake 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. 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 and water emergency response 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 518,000 acre-feet per year from the following sources:

Lavon Lake water right (municipal)	100,000 acre-feet per year
Lavon Lake water right (industrial)	4,000 acre-feet per year
Lake Texoma	77,300 acre-feet per year
Lake Texoma (GTUA)	15,470 acre-feet per year
Jim Chapman Lake	57,214 acre-feet per year
Reuse - Wilson Creek Reg. WWTP*	71,882 acre-feet per year
East Fork Raw Water Supply*	157,393 acre-feet per year
Upper Sabine Basin	50,000 acre-feet per year
TOTAL	**533,259 acre-feet per year**

* Availability from Wilson Creek WWTP and East Fork Raw Water Supply Project is limited to actual discharges and is currently less than amount authorized.

Water from Lake Texoma and Jim Chapman Lake is pumped by pipeline to the Lavon Lake watershed, where it flows into Lavon Lake. Treated wastewater effluent from the Wilson Creek Regional Wastewater Treatment Plant is returned to the Lavon Lake watershed. Water from East Fork Raw Water Supply Project will be pumped to Lavon Lake. Water from Lake Tawakoni (Upper Sabine Basin) will also be pumped to Lake Tawakoni. NTMWD has developed a reservoir system operation plan for its various sources of supply in order to maximize the efficiency of operation within existing water rights. The NTMWD system operation plan calls for pumping from alternative sources before Lavon Lake reaches extremely low levels to avoid water supply problems that would be caused by low water surface elevations. The plan minimizes pumping into the lake during flood conditions. The plan also avoids unnecessary pumping from alternative sources to minimize energy use and avoid causing low levels in other sources. Overall, the operation of the reservoir system is intended to optimize the use of the district's sources (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.

6.3 Water Conservation Implementation Report

Appendix E includes the TCEQ-required water conservation implementation report. The report is due to the TCEQ by May 1 of every year, starting in the year 2010. This report lists the various water conservation strategies that have been implemented, including the date the strategy was implemented. The report also calls for the five-year and ten-year per capita water use goals from the previous water conservation plan. The reporting entity must answer whether or not these goals have been met and if not, why not. The amount of water saved is also reported.

6.4 Coordination with Regional Water Planning Groups

Appendix F 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 and water emergency response 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 and Customers. These workshops have covered TCEQ requirements for water conservation and drought contingency plans, current NTMWD water conservation efforts, water conservation programs of the cities, current drought status, progress on future water supplies, and related topics. The model water conservation and drought contingency and water emergency response plans were discussed and developed based on input from the Member Cities and Customers.

7.2 NTMWD *Model Water Conservation Plan for NTMWD Member Cities and Customers* and *Model Drought Contingency and Water Emergency Response 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 and water emergency response plans, NTMWD has developed a *Model Water Conservation Plan for NTMWD Member Cities and Customers* [3] and a *Model Drought Contingency and Water Emergency Response Plan for NTMWD Member Cities and Customers* [4]. The model water conservation plan addresses the TCEQ requirements for water conservation plans for municipal use by public water suppliers [1] and includes several provisions that go beyond TCEQ requirements. NTMWD continues to work with its Member Cities and Customers to develop water conservation and drought contingency and water emergency response 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 [6]:

- 288.2(a)(1)(A) – Utility Profile
- 288.2(a)(1)(B) – Specification of Goals
- 288.2(a)(1)(C) –Specific, Quantified Goals
- 288.2(a)(1)(D) – Accurate Metering
- 288.2(a)(1)(E) – Universal Metering
- 288.2(a)(1)(F) – Determination and Control of Unaccounted Water
- 288.2(a)(1)(G) – Public Education and Information Program
- 288.2(a)(1)(H) – Non-Promotional Water Rate Structure
- 288.2(a)(1)(I) – Reservoir System Operation Plan
- 288.2(a)(1)(J) – Means of Implementation and Enforcement
- 288.2(a)(1)(K) – 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
- 288.2(c) – Review and Update of Plan
- The TCEQ requires a water utility profile to be completed and submitted with the update to the water conservation plan. This is included as Appendix C in the model plan.
- The TCEQ requires that a water conservation implementation report be completed and submitted to them on an annual basis. This is included in Appendix E of the model plan.

In addition to the TCEQ requirements, the NTMWD model plan also requires that the following strategy be included in the Member City and Customer plans:

- 288.2(a)(3)(F) – Considerations for Landscape Water Management Regulations

The NTMWD requires a water usage report to be submitted to the NTMWD on an annual basis. This report is included as Appendix D in the model water conservation plan.

The NTMWD recommends the following strategies be included in the Member City and Customer plans:

- 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) – Additional Considerations for Landscape Water Management Regulations
- 288.2(a)(3)(G) – Monitoring Method
- 288.2(a)(3)(H) – Additional Conservation Ordinance Provisions

The TCEQ lists the following optional strategy that the NTMWD also suggests as an optional strategy in the model water conservation plan:

- 288.2(a)(3)(C) – Replacement or Retrofit of Water-Conserving Plumbing Fixtures

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* [3] is a requirement that Member Cities and Customers produce annual conservation reports (Appendix D of model plans) 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 NTMWD's 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 Lavon Lake. NTMWD has water rights allowing reuse of up to 71,882 acre-feet per year of this treated wastewater through Lake Lavon for municipal purposes. In addition, NTMWD has developed the East Fork Raw Water Supply Project which can divert up to 157,393 acre-feet per year based on treated wastewater discharges by the NTMWD. When fully developed, these two reuse projects will provide up to 44 percent of the NTMWD's currently permitted water supplies.

The 18 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 2006, almost 350 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. Texas Smartscape is an educational tool designed to assist citizens with the design and development of landscaping using Texas native and drought tolerant plants. NTMWD promotes the use of the Texas Smartscape web site (www.txsmartscape.com).
- From 1996 through 2006, NTMWD provided the "Learning to Be Water Wise" curriculum to area school districts at no cost. The "Learning to Be Water Wise" curriculum included individual kits and activities to educate 5th 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.
- In 2006 and 2007, NTMWD invested $4 million in the "Water IQ: Know Your Water" campaign, including newspaper ads, radio spots, billboards, a web site, and other forms of communication. NTMWD has budgeted an additional $1.6 million for the "Water IQ: Know Your Water" campaign for 2008.

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 (April 1 and ending October 31) 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.

8.5 Landscape Water Management Measures

The following landscape water management measures are included in the NTMWD model water conservation plan. The minimal measures that should be implemented and enforced in order to irrigate the landscape appropriately are as follows.

- Time of day restrictions prohibiting lawn irrigation watering from 10 AM to 6 PM beginning April 1 and ending October 31 of each year.

- Prohibition of watering of impervious surfaces. (Wind driven water drift will be taken into consideration.)
- Prohibition of outdoor watering during precipitation or freeze events.
- Lawn and landscape irrigation limited to twice per week.
- Prohibiting the use of treated water to fill or refill residential, amenity, and any other natural or manmade ponds. A pond is considered to be a still body of water with a surface area of 500 square feet or more.
- Rain and freeze sensors and/or ET or Smart controllers required on all new irrigation systems. Rain and freeze sensors and/or ET or Smart controllers must be maintained to function properly.
- "At home" car washing can be done only when using a water hose with a shut-off nozzle.
- Member Cities and Customers are responsible for developing regulations, ordinances, policies, or procedures for enforcement of water conservation guidelines.
- Prohibition of watering areas that have been overseeded with cool season grasses (such as rye grass or other similar grasses), except for golf courses and public athletic fields.

8.6 Additional Water Conservation Measures (Not Required in the Model Water Conservation Plan)

The following water conservation measures are also included in the model water conservation plan as options to be considered by Member Cities and Customers:

- Additional landscape water management regulations
- Landscape ordinance
- Water audits
- Rebates

Appendix E of the model water conservation plan is a summary of considerations for landscape water management regulations adopted as part of the development of this water conservation and drought contingency and water emergency response plan. These regulations are intended to minimize waste in landscape irrigation. Appendix E includes the required landscape water measures mentioned above, as well as the ones discussed below. The NTMWD recommends the following measures be included in Member City and Customer water conservation plans, but they are not required:

- Requirement that all existing irrigation systems be retrofitted with rain and freeze sensors and/or ET or Smart controllers capable of multiple programming. Rain and freeze sensors and/or ET or Smart controllers must be maintained to function properly.
- Prohibition of use of poorly maintained sprinkler systems that waste water.

- Prohibition of planting cool season grasses (such as rye grass or other similar grasses) that intensify cool season water requirements, exception allowed for golf courses or public athletic fields.
- Requirement that all new athletic fields be irrigated by a separate irrigation system from surrounding areas.
- Implementation of other measures to encourage off-peak water use.

Landscape ordinances are developed by cities to guide developers in landscaping requirements for the city. NTMWD recommends that the following measures be included in the entity's landscape ordinance:

- Requirement that all new irrigation systems be in compliance with state design and installation regulations (TAC Title 30, Part 1, Chapter 344).
- Native, drought tolerant, or adaptive plants should be encouraged.
- Drip irrigation systems should be promoted.
- ET/Smart controllers that only allow sprinkler systems to irrigate when necessary should be promoted.

Water audits are useful in finding ways in which water can be used more efficiently at a specific location. NTMWD recommends that Member Cities and Customers offer water audits to customers. This measure is recommended but not required.

In addition to the conservation measures described above, the NTMWD considers the following water conservation incentive programs as options to consider:

- Low-flow toilet replacement and rebate programs,
- Rebates for rain/freeze sensors and/or ET or Smart controllers,
- Low-flow showerhead and sink aerators replacement programs or rebates,
- ET/Smart irrigation controller rebates,
- Water efficient clothes washer rebates,
- Pressure reducing valve installation programs or rebates,
- Rain barrel rebates,
- On-demand hot water heater rebates, or
- Other water conservation incentive programs.

9. IMPLEMENTATION AND ENFORCEMENT OF THE WATER CONSERVATION AND DROUGHT CONTINGENCY AND WATER EMERGENCY RESPONSE PLAN

Appendix G contains a copy of the minutes of the NTMWD Board of Directors meeting at which this water conservation and drought contingency and water emergency response plan was adopted. The Executive Director of NTMWD is authorized to implement and enforce the water conservation and drought contingency and water emergency response plan. As discussed in Section 7.4, 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 NTMWD Water Committee of the NTMWD Board and the Board of Directors.

10. REVIEW AND UPDATE OF WATER CONSERVATION PLAN

TCEQ requires that the water conservation plans be updated prior to May 1, 2009. The plans are required to be updated every five years thereafter. The plan will be updated as required and as appropriate based on new or updated information.

11. DROUGHT CONTINGENCY AND WATER EMERGENCY RESPONSE PLAN

11.1 Introduction

The purpose of this drought contingency and water emergency response 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.

A drought is defined as an extended period of time when an area deceives insufficient amounts of rainfall to replenish the water supply, causing water supply sources (in this case reservoirs) to be depleted. In the absence of drought response measures, demand tends to increase during a drought due to the need for additional lawn irrigation. The severity of a drought depends on the degree of depletion of supplies and on the relationship of demand to available supplies. The NTMWD considers a drought to end when all of its supply reservoirs refill t the conservation storage pool.

In the Fall of 2005, the NTMWD began preparing a public education campaign. 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 was the first major local campaign based on this message. NTMWD hired Enviromedia Social Marketing of Austin, Texas to assist in program implementation. NTMWD invested $1.9 million in the first year of the campaign, and another $1.7 million in 2007, which 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
- Web site
- An 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 will vary depending on the circumstances of future droughts. This current example 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.

11.2 State Requirements for Drought Contingency and Water Emergency Response Plans

This drought contingency and water emergency response 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 11.3
- 288.22(a)(2) – Coordination with the Regional Water Planning Group – Section 11.9
- 288.22(a)(3) – Criteria for Initiation and Termination of Drought Stages – Section 11.4
- 288.22(a)(4) – Drought and Emergency Response Stages – Section 11.5
- 288.22(a)(5) – Procedures for Initiation and Termination of Drought Stages – Section 11.5
- 288.22(a)(6) – Specific, Quantifiable Targets for Water Use Reduction – Section 11.5
- 288.22(a)(7) – Specific Measures to be Implemented during Each Drought Stage – Section 11.5
- 288.22(a)(8) – Provision for Wholesale Contracts to Require Water Distribution According to Texas Water Code §11.039 – Sections 11.5 and 11.6
- 288.22(a)(9) – Provision for Granting Variances to the Plan - Section 11.7
- 288.22(a)(10) - Procedures for Enforcement of Mandatory Restrictions – Section 11.8
- 288.22(b) – Notification of Implementation of Mandatory Measures – Section 11.4

- 288.22(c) – Review and Update of Plan – Section 11.10

11.3 Provisions to Inform the Public and Opportunity for Public Input

NTMWD provided opportunity for public input in the development of this drought contingency and water emergency response plan by the following means:

- Providing written notice of the proposed plan and the opportunity to comment on the plan by 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 regarding the drought contingency and water emergency response plan at the NTMWD offices in Wylie, at 4:00 P.M., on Tuesday, February 12, 2008.

11.4 Initiation and Termination of Drought or Water Emergency Response Stages

Initiation of a Drought or Water Emergency Response Stage

The Executive Director with the consent of the NTMWD Board of Directors may order the implementation of a drought or water emergency response stage 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.
- NTMWD Member Cities and Customers will be notified by e-mail with a follow-up letter or fax that provides details of the reasons for initiation of the drought contingency and water emergency response stage.
- If any mandatory provisions of the drought contingency and water emergency response 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 contingency and water emergency response stage 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 Contingency or Water Emergency Response Stage

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

- The public will be notified through local media.
- Member Cities and Customers will be notified by e-mail with a follow-up letter or fax.
- When any mandatory provisions of the drought contingency and water emergency response 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 contingency and water emergency response stage even though the conditions for termination of the stage are met. Factors which could influence such a decision include, but are not limited to, the time of the year, weather conditions, or the anticipation of potential changed conditions that warrant the continuation of the drought contingency and water emergency response stage.

11.5 Drought Contingency and Water Emergency Response Stages and Measures

Stage 1

Initiation and Termination Conditions for Stage 1

- 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 is less than 65 percent of the total conservation pool capacity.
- NTMWD's storage in Jim Chapman Lake is less than 65 percent of the total conservation pool capacity.
- The Sabine River Authority has indicated that its Upper Basin water supplies used by NTMWD (Lake Tawakoni and/or Lake Fork) are in a Mild drought.
- NTMWD has concern that Lake Texoma, the East Fork Raw Water Supply Project, or some other NTMWD source may be limited in availability within the next 6 months.
- Water demand exceeds 90 percent of the amount that can be delivered to customers for three 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.

Stage 1 may terminate when the circumstances that caused the initiation of Stage 1 no longer prevail.

Goal for Use Reduction and Actions Available under Stage 1

Stage 1 is intended to raise public awareness of potential drought and water emergency problems. The goal for water use reduction under Stage 1 is a two percent reduction of the use that would have occurred in the absence of drought contingency and water emergency response measures. 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 and water emergency response 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.

Stage 2

Initiation and Termination Conditions for Stage 2

- 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 the permitted supply.
- The water storage in Lavon Lake is less than 55 percent of the total conservation pool capacity.
- NTMWD's storage in Jim Chapman Lake is less than 55 percent of NTMWD's conservation pool capacity.
- The Sabine River Authority has indicated that its Upper Basin water supplies used by NTMWD (Lake Tawakoni and/or Lake Fork) are in a Mild drought.
- NTMWD has concern that Lake Texoma, the East Fork Raw Water Supply Project, or some other NTMWD source may be limited in availability within the next 3 months.
- Water demand exceeds 95 percent of the amount that can be delivered to customers for three 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.

Stage 2 may terminate when the 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 five percent reduction of the use that would have occurred in the absence of drought contingency and water emergency response 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 Stage 1.
- Require Member Cities and Customers (including indirect customers) to initiate Stage 2 in their drought contingency and water emergency response 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 water emergency situation has passed before establishing new landscaping.
- **Requires Notification to TCEQ** – Limit landscape watering with sprinklers or irrigation systems to no more than two days per week. An exception is allowed for landscape associated with new construction that may be watered as necessary for 30 days from the date of the certificate of occupancy. An exemption is also allowed for registered and properly functioning ET/Smart irrigation systems and drip irrigation systems, which do not have restrictions to the number of days per week of operation.
- **Requires Notification to TCEQ** – Restrict landscape and lawn irrigation from 10 AM to 6 PM beginning April 1 and ending October 31 of each year.
- **Requires Notification to TCEQ** – Prohibit planting of cool season grasses (such as rye grass or other similar grasses) that intensify cool season water requirements.

Stage 3

Initiation and Termination Conditions for Stage 3

- 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 in Lavon Lake is less than 45 percent of the total conservation pool capacity.

- NTMWD's storage in Jim Chapman Lake is less than 45 percent of NTMWD's total conservation pool capacity.
- The Sabine River Authority has indicated that its Upper Basin water supplies used by NTMWD (Lake Tawakoni and/or Lake Fork) are in a Moderate drought. (Measures required by SRA under a Moderate drought designation are similar to those under NTMWD's Stage 3.)
- The supply from Lake Texoma, the East Fork Raw Water Supply Project, or some other NTMWD source has become limited in availability.
- Water demand exceeds 98 percent 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.

Stage 3 may terminate when the 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 ten percent in the use that would have occurred in the absence of drought contingency and water emergency response 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 and water emergency response 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. (Pressure washing of impervious surfaces is allowed.)
  - Prohibit operation of all ornamental fountains if they use treated water.
  - Prohibit washing or rinsing of vehicles by hose except with a hose end cutoff nozzle.
  - Prohibit using water in such a manner as to allow runoff or other waste.

- **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 are as follows:
  - Foundations, new landscaping, new plantings (first year) of shrubs, and trees may be watered for up to 2 hours on any day by a hand-held hose, a soaker hose, or a dedicated zone using a drip irrigation system.
  - Golf courses may water greens and tee boxes without restrictions.
  - Public athletic fields used for competition may be watered twice per week.
  - Locations using other sources of water supply for irrigation may irrigate without restrictions.
  - Registered and properly functioning ET/Smart irrigation systems and drip irrigation systems may irrigate without restrictions.
- **Requires Notification to TCEQ** – Limit landscape watering with sprinklers or irrigation systems between November 1 and March 31 to once every two weeks. An exception is allowed for landscape associated with new construction that may be watered as necessary for 30 days from the date of the certificate of occupancy, temporary certificate of occupancy, or certificate of completion.
- **Requires Notification to TCEQ** – Prohibit hydroseeding, hydromulching, and sprigging.
- **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

Initiation and Termination Conditions for Stage 4

- The Executive Director, with the concurrence of the NTMWD Board of Directors, finds that conditions warrant the declaration of Stage 4.
- Water demand is projected to approach or exceed the limit of the permitted supply.
- The storage in Lavon Lake is less than 35 percent of the total conservation pool capacity.

- NTMWD's storage in Jim Chapman Lake is less than 35 percent of NTMWD's total conservation pool capacity.
- The Sabine River Authority has indicated that its Upper Basin water supplies used by NTMWD (Lake Tawakoni and/or Lake Fork) are in a Severe drought or Emergency.
- The supply from Lake Texoma, the East Fork Raw Water Supply Project, or some other NTMWD source has become severely limited in availability.
- Water 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.

Stage 4 may terminate when the circumstances that caused the initiation of Stage 4 no longer prevail.

Goal for Use Reduction and Actions Available under Stage 4

The goal for water use reduction under Stage 4 is a reduction of whatever amount is necessary in the use that would have occurred in the absence of drought contingency and water emergency response 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 and water emergency response plans.
- Implement viable alternative water supply strategies.
- **Requires Notification to TCEQ** – Require Member Cities and Customers (including indirect customers) to prohibit the use of treated water for the irrigation 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, a soaker hose, or a dedicated zone using a drip

irrigation system. ET/Smart irrigation systems and drip irrigation systems are not exempt from this requirement.

- **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 pools 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.

11.6 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 H. 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 or water emergency.

11.7 Procedure for Granting Variances to the Plan

The Executive Director may grant temporary variances for existing water uses otherwise prohibited under this drought contingency and water emergency response 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 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.

11.8 Procedures for Enforcing Mandatory Water Use Restrictions

Mandatory water use restrictions may be imposed in Stage 2, Stage 3 and Stage 4 drought contingency and water emergency response 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.
- 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 within its distribution system its own set of penalties associated with the mandatory water use restrictions.

11.9 Coordination with the Regional Water Planning Groups

Appendix F 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 and water emergency response plan.

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

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

12. CONSERVATION AND DROUGHT CONTINGENCY AND WATER EMERGENCY RESPONSE PLAN REQUIREMENTS FOR A PUBLIC WATER SUPPLIER

12.1 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 75 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 and water emergency response 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.

12.2 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) – Specific, Quantifiable Goals – Addressed in Section 4.
- 288.2(a)(1)(D) – Metering of Diversions – Addressed in Section 5.1.
- 288.2(a)(1)(E) – 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)(F) – Measures to Determine and Control Unaccounted Water – Addressed in Sections 5.2 and 5.3.
- 288.2(a)(1)(G) – 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)(H) – Non-Promotional Rate Structure – The NTMWD has a three-tiered rate structure for its residential customers as follows:
    - Monthly minimum charge of $15.00 with up to 2,000 gallons.
    - Base rate of $2.15 per 1,000 gallons for water use of 2,000 to 10,000 gallons
    - 2nd tier rate of $4.03 per 1,000 gallons from 10,000 to 20,000 gallons
    - 3rd tier rate of $5.04 per 1,000 gallons for water use above 20,000 gallons
- 288.2(a)(1)(I) – Reservoir System Operation Plan – Addressed in Section 6.2.
- 288.2(a)(1)(J) – Means of Implementation and Enforcement – Addressed in Section 9.
- 288.2(a)(1)(K) – Documentation of Coordination with Regional Water Planning Groups – Addressed in Section 6.3.
- 288.2(c) – Review and Update of Plan – Section 6.4

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:

- 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 Member Cities and 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.

12.3 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 11.3.
- 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 water conservation and drought contingency and water emergency response plan when staff speaks to the public on water conservation issues.
    - Including information on the water conservation and drought contingency and water emergency response 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 11.9.
- 288.20(a)(1)(D) – Description of Information to Be Monitored and Criteria for the Initiation and Termination of Drought Contingency and Water Emergency Response Stages – Addressed in Sections 11.4 and 11.5.

- 288.20(a)(1)(E) – Stages for Implementation of Measures in Response to Situations – Addressed in Section 11.5.
- 288.20(a)(1)(F) – Specific, Quantifiable Targets for Water Use Reduction – Addressed in Section 11.5.
- 288.20(a)(1)(G) – Specific Water Supply or Water Demand Measures to Be Implemented at Each Stage of the Plan – Addressed in Section 11.5.
- 288.20(a)(1)(H) – Description of Procedures to Be Followed for the Initiation and Termination of Drought Contingency and Water Emergency Response Stages – Addressed in Section 11.4.
- 288.20(a)(1)(I) – Description of Procedures to Be Followed for Granting Variances to the Plan – Addressed in Section 11.7. 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 11.8.
- 288.20(b) – Notification of TCEQ for Implementation of Mandatory Provisions – Addressed in Section 11.4.
- 288.20(c) – Review Drought Contingency and Water Emergency Response Plan Every 5 Years – Addressed in Section 11.10.

APPENDIX A

LIST OF REFERENCES

Appendix A
List of References

(1) Title 30 of the Texas Administrative Code, Part 1, Chapter 288, Subchapter A, Rules 288.1 and 288.5, and Subchapter B, Rule 288.22, downloaded from http://info.sos.state.tx.us/pls/pub/readtac$ext.ViewTAC?tac_view=4&ti=30&pt=1&ch=288, July 2007.

(2) Water Conservation Implementation Task Force: "Texas Water Development Board Report 362, Water Conservation Best Management Practices Guide," prepared for the Texas Water Development Board, Austin, November 2004.

(3) Freese and Nichols, Inc.: *Model Water Conservation Plan for NTMWD Members Cities and Customers,* prepared for the North Texas Municipal Water District, Fort Worth, March 2008.

(4) Freese and Nichols, Inc.: *Model Drought Contingency and Water Emergency Response Plan for NTMWD Members Cities and Customers,* prepared for the North Texas Municipal Water District, Fort Worth, March 2008.

The following conservation and drought contingency plans and related documents were reviewed in the development of this plan.

(5) Edward Motley, Marisa Vergara, Tom Gooch, and Stephanie Griffin: Memorandum to File on "Region C Municipal Water Use Projections Adopted on August 18, 2003," Fort Worth, August 21, 2003.

(6) Texas Water Development Board: E-mail from Dan Hardin to Tom Gooch with TWDB demand projections for regional water planning, November 5, 2003.

(7) Freese and Nichols, Inc.: *North Texas Municipal Water District Water Conservation and Drought Contingency Plan,* Fort Worth, August 2004 and revised April 2006.

(8) Freese and Nichols, Inc.: *Model Water Conservation Plan for NTMWD Members Cities and Customers,* prepared for the North Texas Municipal Water District, Fort Worth, August 2004.

(9) Freese and Nichols, Inc.: *Model Drought Contingency Plan for NTMWD Members Cities and Customers,* prepared for the North Texas Municipal Water District, Fort Worth, August 2004 and revised in April 2006.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

APPENDIX B

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY RULES ON MUNICIPAL WATER CONSERVATION AND DROUGHT CONTINGENCY PLANS FOR WHOLESALE WATER SUPPLIERS

APPENDIX B
Texas Commission on Environmental Quality Rules on Water Conservation and Drought Contingency Plans for Wholesale Water Suppliers

Texas Administrative Code

TITLE 30	ENVIRONMENTAL QUALITY
PART 1	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CHAPTER 288	WATER CONSERVATION PLANS, DROUGHT CONTINGENCY PLANS, GUIDELINES AND REQUIREMENTS
SUBCHAPTER A	WATER CONSERVATION PLANS
RULE §288.1	**Definitions**

The following words and terms, when used in this chapter, shall have the following meanings, unless the context clearly indicates otherwise.

(1) Agricultural or Agriculture--Any of the following activities:

(A) cultivating the soil to produce crops for human food, animal feed, or planting seed or for the production of fibers;

(B) the practice of floriculture, viticulture, silviculture, and horticulture, including the cultivation of plants in containers or non-soil media by a nursery grower;

(C) raising, feeding, or keeping animals for breeding purposes or for the production of food or fiber, leather, pelts, or other tangible products having a commercial value;

(D) raising or keeping equine animals;

(E) wildlife management; and

(F) planting cover crops, including cover crops cultivated for transplantation, or leaving land idle for the purpose of participating in any governmental program or normal crop or livestock rotation procedure.

(2) Agricultural use--Any use or activity involving agriculture, including irrigation.

(3) Conservation--Those practices, techniques, and technologies that reduce the consumption of water, reduce the loss or waste of water, improve the efficiency in the use of water, or increase the recycling and reuse of water so that a water supply is made available for future or alternative uses.

(4) Drought contingency plan--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).

(5) Industrial use--The use of water in processes designed to convert materials of a lower

order of value into forms having greater usability and commercial value, commercial fish production, and the development of power by means other than hydroelectric, but does not include agricultural use.

(6) Irrigation--The agricultural use of water for the irrigation of crops, trees, and pastureland, including, but not limited to, golf courses and parks which do not receive water through a municipal distribution system.

(7) Irrigation water use efficiency--The percentage of that amount of irrigation water which is beneficially used by agriculture crops or other vegetation relative to the amount of water diverted from the source(s) of supply. Beneficial uses of water for irrigation purposes include, but are not limited to, evapotranspiration needs for vegetative maintenance and growth, salinity management, and leaching requirements associated with irrigation.

(8) Mining use--The use of water for mining processes including hydraulic use, drilling, washing sand and gravel, and oil field repressuring.

(9) Municipal per capita water use--The sum total of water diverted into a water supply system for residential, commercial, and public and institutional uses divided by actual population served.

(10) Municipal use--The use of potable water within or outside a municipality and its environs whether supplied by a person, privately owned utility, political subdivision, or other entity as well as the use of sewage effluent for certain purposes, including the use of treated water for domestic purposes, fighting fires, sprinkling streets, flushing sewers and drains, watering parks and parkways, and recreational purposes, including public and private swimming pools, the use of potable water in industrial and commercial enterprises supplied by a municipal distribution system without special construction to meet its demands, and for the watering of lawns and family gardens.

(11) Municipal use in gallons per capita per day--The total average daily amount of water diverted or pumped for treatment for potable use by a public water supply system. The calculation is made by dividing the water diverted or pumped for treatment for potable use by population served. Indirect reuse volumes shall be credited against total diversion volumes for the purpose of calculating gallons per capita per day for targets and goals.

(12) Nursery grower--A person engaged in the practice of floriculture, viticulture, silviculture, and horticulture, including the cultivation of plants in containers or nonsoil media, who grows more than 50% of the products that the person either sells or leases, regardless of the variety sold, leased, or grown. For the purpose of this definition, grow means the actual cultivation or propagation of the product beyond the mere holding or maintaining of the item prior to sale or lease, and typically includes activities associated with the production or multiplying of stock such as the development of new plants from cuttings, grafts, plugs, or seedlings.

(13) Pollution--The alteration of the physical, thermal, chemical, or biological quality of, or the contamination of, any water in the state that renders the water harmful, detrimental, or injurious to humans, animal life, vegetation, or property, or to the

public health, safety, or welfare, or impairs the usefulness or the public enjoyment of the water for any lawful or reasonable purpose.

(14) Public water supplier--An individual or entity that supplies water to the public for human consumption.

(15) Regional water planning group--A group established by the Texas Water Development Board to prepare a regional water plan under Texas Water Code, §16.053.

(16) Retail public water supplier--An individual or entity that for compensation supplies water to the public for human consumption. The term does not include an individual or entity that supplies water to itself or its employees or tenants when that water is not resold to or used by others.

(17) Reuse--The authorized use for one or more beneficial purposes of use of water that remains unconsumed after the water is used for the original purpose of use and before that water is either disposed of or discharged or otherwise allowed to flow into a watercourse, lake, or other body of state-owned water.

(18) Water conservation plan--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).

(19) Wholesale public water supplier--An individual or entity that for compensation supplies water to another for resale to the public for human consumption. The term does not include an individual or entity that supplies water to itself or its employees or tenants as an incident of that employee service or tenancy when that water is not resold to or used by others, or an individual or entity that conveys water to another individual or entity, but does not own the right to the water which is conveyed, whether or not for a delivery fee.

Source Note: The provisions of this §288.1 adopted to be effective May 3, 1993, 18 TexReg 2558; amended to be effective February 21, 1999, 24 TexReg 949; amended to be effective April 27, 2000, 25 TexReg 3544; amended to be effective August 15, 2002, 27 TexReg 7146, amended to be effective October 7, 2004, 29 TexReg 9384.

Texas Administrative Code

TITLE 30	ENVIRONMENTAL QUALITY
PART 1	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CHAPTER 288	WATER CONSERVATION PLANS, DROUGHT CONTINGENCY PLANS, GUIDELINES AND REQUIREMENTS
SUBCHAPTER A	WATER CONSERVATION PLANS
RULE §288.2	**Water Conservation Plans for Municipal Uses by Public Water Suppliers**

(a) A water conservation plan for municipal water use by public water suppliers shall provide information in response to the following. If the plan does not provide information for each requirement, the public water supplier shall include in the plan an explanation of why the requirement is not applicable.

(1) Minimum requirements. All water conservation plans for municipal uses by public drinking water suppliers must include the following elements:

(A) a utility profile including, but not limited to, information regarding population and customer data, water use data, water supply system data, and wastewater system data;

(B) until May 1, 2005, specification of conservation goals including, but not limited to, municipal per capita water use goals, the basis for the development of such goals, and a time frame for achieving the specified goals;

(C) beginning May 1, 2005, specific, quantified five-year and ten-year targets for water savings to include goals for water loss programs and goals for municipal use, in gallons per capita per day. The goals established by a public water supplier under this subparagraph are not enforceable;

(D) metering device(s), within an accuracy of plus or minus 5.0% in order to measure and account for the amount of water diverted from the source of supply;

(E) a program for universal metering of both customer and public uses of water, for meter testing and repair, and for periodic meter replacement;

(F) measures to determine and control unaccounted-for uses of water (for example, periodic visual inspections along distribution lines; annual or monthly audit of the water system to determine illegal connections; abandoned services; etc.);

(G) a program of continuing public education and information regarding water conservation;

(H) a water rate structure which is not "promotional," i.e., a rate structure which is cost-based and which does not encourage the excessive use of water;

(I) a reservoir systems operations plan, if applicable, providing for the

coordinated operation of reservoirs owned by the applicant within a common watershed or river basin in order to optimize available water supplies; and

(J) a means of implementation and enforcement which shall be evidenced by:

(i) a copy of the ordinance, resolution, or tariff, indicating official adoption of the water conservation plan by the water supplier; and

(ii) a description of the authority by which the water supplier will implement and enforce the conservation plan; and

(K) documentation of coordination with the regional water planning groups for the service area of the public water supplier in order to ensure consistency with the appropriate approved regional water plans.

(2) Additional content requirements. Water conservation plans for municipal uses by public drinking water suppliers serving a current population of 5,000 or more and/or a projected population of 5,000 or more within the next ten years subsequent to the effective date of the plan must include the following elements:

(A) a program of leak detection, repair, and water loss accounting for the water transmission, delivery, and distribution system in order to control unaccounted-for uses of water;

(B) a record management system to record water pumped, water deliveries, water sales, and water losses which allows for the desegregation of water sales and uses into the following user classes:

(i) residential;

(ii) commercial;

(iii) public and institutional; and

(iv) industrial.

(C) a requirement in every wholesale water supply contract entered into or renewed after official adoption of the plan (by either ordinance, resolution, or tariff), and including any contract extension, that each successive wholesale customer develop and implement a water conservation plan or water conservation measures using the applicable elements in this chapter. If the customer intends to resell the water, then the contract between the initial supplier and customer must provide that the contract for the resale of the water must have water conservation requirements so that each successive customer in the resale of the water will be required to implement water conservation measures in accordance with the provisions of this chapter.

(3) Additional conservation strategies. Any combination of the following strategies shall be selected by the water supplier, in addition to the minimum requirements in paragraphs (1) and (2) of this subsection, if they are necessary to achieve the stated water conservation goals of the plan. The commission may require that any of the following strategies be implemented by the water supplier if the commission determines that the strategy is necessary to achieve the goals of the

water conservation plan:

(A) conservation-oriented water rates and water rate structures such as uniform or increasing block rate schedules, and/or seasonal rates, but not flat rate or decreasing block rates;

(B) adoption of ordinances, plumbing codes, and/or rules requiring water-conserving plumbing fixtures to be installed in new structures and existing structures undergoing substantial modification or addition;

(C) a program for the replacement or retrofit of water-conserving plumbing fixtures in existing structures;

(D) reuse and/or recycling of wastewater and/or graywater;

(E) a program for pressure control and/or reduction in the distribution system and/or for customer connections;

(F) a program and/or ordinance(s) for landscape water management;

(G) a method for monitoring the effectiveness and efficiency of the water conservation plan; and

(H) any other water conservation practice, method, or technique which the water supplier shows to be appropriate for achieving the stated goal or goals of the water conservation plan.

(b) A water conservation plan prepared in accordance with 31 TAC §363.15 (relating to Required Water Conservation Plan) of the Texas Water Development Board and substantially meeting the requirements of this section and other applicable commission rules may be submitted to meet application requirements in accordance with a memorandum of understanding between the commission and the Texas Water Development Board.

(c) Beginning May 1, 2005, a public water supplier for municipal use shall review and update its water conservation plan, as appropriate, based on an assessment of previous five-year and ten-year targets and any other new or updated information. The public water supplier for municipal use shall review and update the next revision of its water conservation plan not later than May 1, 2009, and every five years after that date to coincide with the regional water planning group.

Source Note: The provisions of this §288.2 adopted to be effective May 3, 1993, 18 TexReg 2558; amended 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.

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TITLE 30	ENVIRONMENTAL QUALITY
PART 1	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CHAPTER 288	WATER CONSERVATION PLANS, DROUGHT CONTINGENCY PLANS, GUIDELINES AND REQUIREMENTS
SUBCHAPTER A	WATER CONSERVATION PLANS
RULE §288.5	**Water Conservation Plans for Wholesale Water Suppliers**

A water conservation plan for a wholesale water supplier must provide information in response to each of the following paragraphs. If the plan does not provide information for each requirement, the wholesale water supplier shall include in the plan an explanation of why the requirement is not applicable.

(1) Minimum requirements. All water conservation plans for wholesale water suppliers must include the following elements:

(A) a description of the wholesaler's service area, including population and customer data, water use data, water supply system data, and wastewater data;

(B) until May 1, 2005, specification of conservation goals including, where appropriate, target per capita water use goals for the wholesaler's service area, maximum acceptable unaccounted-for water, the basis for the development of these goals, and a time frame for achieving these goals;

(C) beginning May 1, 2005, specific, quantified five-year and ten-year targets for water savings including, where appropriate, target goals for municipal use in gallons per capita per day for the wholesaler's service area, maximum acceptable unaccounted-for water, and the basis for the development of these goals. The goals established by wholesale water suppliers under this subparagraph are not enforceable;

(D) a description as to which practice(s) and/or device(s) will be utilized to measure and account for the amount of water diverted from the source(s) of supply;

(E) a monitoring and record management program for determining water deliveries, sales, and losses;

(F) a program of metering and leak detection and repair for the wholesaler's water storage, delivery, and distribution system;

(G) a requirement in every water supply contract entered into or renewed after official adoption of the water conservation plan, and including any contract extension, that each successive wholesale customer develop and implement a water conservation plan or water conservation measures using the applicable elements of this chapter. If the customer intends to resell the water, then the contract between the initial supplier and customer must provide that the contract for the resale of the water must have water conservation requirements so that each successive customer in the resale of the water will be required to implement water

conservation measures in accordance with applicable provisions of this chapter;

(H) a reservoir systems operations plan, if applicable, providing for the coordinated operation of reservoirs owned by the applicant within a common watershed or river basin. The reservoir systems operations plans shall include optimization of water supplies as one of the significant goals of the plan;

(I) a means for implementation and enforcement, which shall be evidenced by: a copy of the ordinance, rule, resolution, or tariff, indicating official adoption of the water conservation plan by the water supplier; and a description of the authority by which the water supplier will implement and enforce the conservation plan; and

(J) documentation of coordination with the regional water planning groups for the service area of the wholesale water supplier in order to ensure consistency with the appropriate approved regional water plans.

(2) Additional conservation strategies. Any combination of the following strategies shall be selected by the water wholesaler, in addition to the minimum requirements of paragraph (1) of this section, if they are necessary in order to achieve the stated water conservation goals of the plan. The commission may require by commission order that any of the following strategies be implemented by the water supplier if the commission determines that the strategies are necessary in order for the conservation plan to be achieved:

(A) conservation-oriented water rates and water rate structures such as uniform or increasing block rate schedules, and/or seasonal rates, but not flat rate or decreasing block rates;

(B) a program to assist agricultural customers in the development of conservation pollution prevention and abatement plans;

(C) a program for reuse and/or recycling of wastewater and/or graywater; and

(D) any other water conservation practice, method, or technique which the wholesaler shows to be appropriate for achieving the stated goal or goals of the water conservation plan.

(3) Review and update requirements. Beginning May 1, 2005, the wholesale water supplier shall review and update its water conservation plan, as appropriate, based on an assessment of previous five-year and ten-year targets and any other new or updated information. A wholesale water supplier shall review and update the next revision of its water conservation plan not later than May 1, 2009, and every five years after that date to coincide with the regional water planning group.

Source Note: The provisions of this §288.5 adopted to be effective May 3, 1993, 18 TexReg 2558; amended 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.

Texas Administrative Code

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

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

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

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

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

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

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

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

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

(ii) water production or distribution system limitations;

(iii) supply source contamination; or

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

(F) The drought contingency plan must include the specific, quantified targets for water use reductions to be achieved during periods of water shortage and drought. The entity preparing the plan shall establish the targets. The goals

established by the entity under this subparagraph are not enforceable.

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

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

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

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

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

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

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

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

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

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

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

Texas Administrative Code

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

(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.

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

NORTH TEXAS MUNICIPAL WATER DISTRICT WATER UTILITY PROFILE BASED ON TCEQ FORMAT

APPENDIX C
North Texas Municipal Water District Water Utility Profile Based on TCEQ Format

Name of Utility:	North Texas Municipal Water District
Address & Zip:	P.O. Box 2408, Wylie, TX 75098
Telephone Number:	(972) 442-5405
Fax Number:	(972) 295-6440
Form Completed by:	Denise Hickey
Title:	Public Relations Coordinator
Signature:	
Date:	

Name and phone number of person responsible for implementing a water conservation program:

Name:	Jim Parks
Phone Number:	(972) 442-5405

I. CUSTOMER DATA

A. Population and Service Area Data

Service area map is included as Figure 3.2.

1. Service area size (square miles): 1,975
2. Current population of service area: 1,309,994 (Estimated 2006 total population of member cities and customers)
3. Current (2007) population served by utility:
   water: 1,357,230
   wastewater: 1,167,218

4. Population served by utility for the previous five years:

Year	Estimated Population
2003	1,182,007
2004	1,220,396
2005	1,264,402
2006	1,309,994
2007	1,357,230

The year 2000 population is the total population for member cities and customers based on the 2000 census. Estimated populations for other years are based on the ratio of major city populations as compared to total estimated population served in 2000 times the major city population estimates determined in other years from the Texas State Data Center.

5. Projected population for service area in the following decades:

Year	Estimated Population
2010	1,500,615
2020	1,914,251
2030	2,241,909
2040	2,553,365
2050	2,820,013
2060	3,090,268

Projected total population for current Member Cities and Customers from Region C projections for the 2006 regional water plan (as approved by TWDB). New customers would add to these projections.

6. List source(s)/method(s) for the calculation of current and projected population:
As described above, the estimates are total populations of current Member Cities and Customers, based on 2000 census numbers and projections made for the *2006 Region C Water Plan* and approved by the TWDB.

B. Customers Data

List the names of all wholesale customers, amount of annual contract, and amount of the annual use for each for the previous year:
Note: NTMWD is primarily a wholesale water provider. However, NTMWD does provide retail service to 72 customers.

Customer	Contracted Amount (Acre-Feet)	Year 2007 Water Delivered (Acre-Feet)
Member Cities		
Allen	Demand Based Contract with Minimum Take or Pay	12,363
Farmersville		554
Forney		3,422
Frisco		21,199
Garland		34,383
McKinney		21,716
Mesquite		17,687
Plano		58,870
Princeton		1,052
Richardson		22,140
Rockwall		7,160
Royse City		1,199
Wylie		4,169
Subtotal Members		**205,914**

Customers		
Caddo Basin SUD	Demand Based Contract with Minimum Take or Pay	784
Cash WSC		755
College Mound WSC		142
Copeville WSC		170
East Fork SUD		788
Fairview		1,457
Fate		849
Forney Lake WSC		639
Gastonia-Scurry WSC		344
GTUA		0
Josephine		121
Kaufman		1,056
Kaufman Four One		1,017
Lavon WSC		437
Little Elm		2,405
Lucas		902
Melissa		431
Milligan WSC		326
Mt. Zion WSC		291
Murphy		2,820
Nevada WSC		184
N. Collin WSC		685
Parker		923
Prosper		946
Rose Hill SUD		55
Rowlett		6,480
Sachse		2,577
Seis Lagos MUD		183
Sunnyvale		1,100
Terrell		2,851
Wylie NE WSC		390
Subtotal Customers		**32,108**
Retail Customers		
Subtotal		19
Total		**238,041**

II. WATER USE DATA FOR SERVICE AREA

A. Water Delivery

Indicate if the water provided under wholesale contracts is treated or raw water and the annual amount for each for previous year.

Total amount sold for Year 2007 (acre-feet)

Treated	238,041
Raw	0

B. Water Accounting Data

1. Total amount of water diverted at point of diversion(s) for previous five years (in acre-feet) for all water uses:

Diversions from Lavon Lake (acre-feet)

Year	2003	2004	2005	2006	2007
January	14,905	15,360	13,636	20,961	14,843
February	13,081	13,472	12,471	14,788	14,265
March	16,175	16,589	15,969	18,376	18,638
April	20,293	20,027	20,851	25,372	17,740
May	23,602	24,017	24,901	30,119	18,391
June	23,818	19,797	31,403	33,432	18,867
July	34,613	29,188	34,938	34,263	20,758
August	37,138	29,952	34,088	37,158	32,888
September	23,314	28,992	35,933	27,732	29,691
October	24,193	21,029	31,896	23,177	24,722
November	17,615	15,570	23,379	19,345	21,047
December	16,580	14,743	18,387	16,128	17,070
Total	**265,327**	**248,736**	**297,852**	**300,851**	**248,920**

2. Wholesale population served and total amount of water diverted for **municipal** use for previous five years:

Year	Total Population Served	Total Annual Water Diverted for Municipal Use (Acre-Feet)
2003	1,182,007	264,620
2004	1,220,396	248,008
2005	1,264,402	297,231
2006	1,309,994	300,272
2007	1,357,230	248,398

C. Projected Water Demands

If applicable, project and attach water supply demands for the next ten years using information such as population trends, historical water use, and economic growth in the service area over the next ten years and any additional water supply requirement from such

Year	Projected Demand (AF/Y)		Source of data
	Without Low-Flow	With Low-Flow	
2010	361,566	353,786	2006 Region C Plan
2020	472,667	457,329	2006 Region C Plan
2030	555,503	533,741	2006 Region C Plan
2040	632,473	604,578	2006 Region C Plan
2050	697,165	664,786	2006 Region C Plan
2060	762,857	727,329	2006 Region C Plan

Note: Projections are for current customers only. Additional customers would add to projected demand. Projections include TWDB estimated reductions for plumbing fixtures. Projections are from Region C Water Planning Group information for the 2006 Plan, as approved by TWDB.

III. WATER SUPPLY SYSTEM DATA

A. Water Supply Sources

List all current water supply sources and the amounts available with each:

Type	Source	Amount Authorized (AF/Y)
Surface Water	Lavon Lake - municipal right	100,000
Surface Water	Lavon Lake - industrial or municipal	4,000
Surface Water	Lake Texoma (delivered)	77,300
Surface Water	Lake Texoma (GTUA)	15,470
Surface Water	Jim Chapman Lake	57,214
Reuse	Wilson Creek WWTP	71,882
Reuse	East Fork Raw Water Supply	157,393
Surface Water	Upper Sabine Basin	50,000
Total		**533,259**

Notes: a. NTMWD dos not have any groundwater supplies.

b. Availability from Wilson Creek WWTP and East Fork Raw Water Supply Project

B. Treatment and Distribution System

1. Design daily capacity of system:

Plant 1	70 MGD	
Plant 2	280 MGD	
Plant 3	280 MGD	
Plant 4	140 MGD	to be in service September 2007
Total	770 MGD	

2. Storage capacity:

Elevated	0	MG
Ground	69.6	MG

3. If surface water, do you recycle filter backwash to the head of the plant?
   Yes X No ___. Approximately 5 MGD.

4. Please describe the water system and attach. Include the number of treatment plants, wells, and storage tanks. If possible, attach a sketch of the system layout.

   Plate 1 at the back of the report is a map of the NTMWD water system. Raw water is diverted from Lavon Lake. (Raw water from Lake Texoma, Jim Chapman Lake, the East Fork Raw Water Supply Project, and the Upper Sabine Basin is pumped to the Lavon Lake watershed through pipelines and delivered by bed and banks of streams. Treated effluent from Wilson Creek WWTP is released into Wilson Creek and delivered to Lavon Lake by the bed and banks.) The raw water is treated at four water treatment plants with a total treatment capacity of 770 mgd, all located near Lavon Lake in Wylie. The treated water is delivered to NTMWD Member Cities and Customers through the system of pump stations and pipelines shown on Plate 1. Treated water is delivered to member cities and customers through air gaps into ground storage facilities owned by the member cities and customers.

IV. WASTEWATER SYSTEM DATA

A. Wastewater System Data (if applicable)

1. Design capacity of wastewater treatment plant(s): 125.255 MGD

2. Briefly describe NTMWD's wastewater systems. Identify treatment plants with the TCEQ name and number, the operator, owner, and, if wastewater is discharged, the receiving stream. Please provide a location map showing the plants. Plants are described below. Locations are shown on Plate 1:

Treatment Plant Name	TCEQ Number	Discharge (MGD)	Operator	Owner	Receiving Stream
Bear Creek	14577-001	0.250	NTMWD	World Land Developers	Bear Creek to Lake Ray Hubbard
Buffalo Creek	12047-001	2.250	NTMWD	NTMWD	Buffalo Creek thence East Fork Trinity #0819
Cottonwood Creek	10172-002	0.300	NTMWD	NTMWD	Cottonwood Branch to Lake Lewisville
Farmersville #1	10442-001	0.225	NTMWD	NTMWD	Unnamed tributary of Elm Creek
Farmersville #2	10442-002	0.530	NTMWD	NTMWD	Unnamed tributary of Elm
Floyd Branch	10257-001	4.750	NTMWD	NTMWD	Floyd Branch to Cottonwood Creek
Muddy Creek	14216-001	5.000	NTMWD	NTMWD	Muddy Creek to Lake Ray Hubbard
Panther Creek	14245-001	5.000	NTMWD	NTMWD	Unnamed tributary of
Rowlett Creek	10363-001	24.000	NTMWD	NTMWD	Rowlett Creek
Sabine Creek	14469-001	1.500	NTMWD	NTMWD	Parker Creek
Seis Lagos	11451-001	0.250	NTMWD	NTMWD	Unnamed tributary of Lavon
South Mesquite	10221-001	25.000	NTMWD	NTMWD	South Mesquite Creek
Squabble Creek	10262-001	1.200	NTMWD	NTMWD	Squabble Creek
Stewart Creek West	14008-001	5.000	NTMWD	NTMWD	Stewart Creek
Wilson Creek	12446-001	48.000	NTMWD	NTMWD	Lake Lavon Seg.# 0821
Wylie WWTP	10384-001	2.000	NTMWD	NTMWD	Unnamed tributary thence to

B. Wastewater Data for Service Area (if applicable)

1. Percent of water service area served by wastewater system: 62%

2. Monthly volume treated for previous three years (in 1,000 gallons):

Year	2005	2006	2007
January	4,218,505	3,151,996	4,480,181
February	3,511,900	3,055,337	2,942,983
March	3,572,569	3,871,185	1,975,311
April	3,265,086	3,184,107	3,586,517
May	3,394,377	3,266,748	4,185,728
June	3,216,512	2,722,589	4,615,932
July	3,174,555	2,830,886	4,588,457
August	3,340,098	2,906,257	3,225,373
September	3,033,071	2,880,601	3,314,255
October	3,032,843	3,210,448	3,488,293
November	2,901,530	3,115,680	3,027,445
December	3,026,812	3,547,173	5,184,838
Total	**39,687,858**	**37,743,007**	**44,615,313**

APPENDIX C1
Summary of NTMWD Water Use
Additional Information Not Required by TCEQ Water Utility Profile

Entity Reporting:	NTMWD Summary
Filled Out By:	Stephanie Griffin, Freese and Nichols, Inc.
Date Completed:	2/7/2008
Year Covered:	2007

NTMWD System Summary

Month	Municipal Raw Water Diversion (MG)	Amount of Reuse (MG)	Total Municipal Diversion (MG)	Industrial Raw Water Diversion (MG)	Percent of Municipal Supply from Reuse	Municipal Sales (MG)
January	3,209.470	1,621.850	4,831.320	7.498	33.57%	4,537.432
February	3,547.532	1,094.056	4,641.588	8.802	23.57%	4,434.869
March	4,826.756	1,231.628	6,058.384	17.604	20.33%	5,888.332
April	4,400.022	1,375.720	5,775.742	7.498	23.82%	5,599.590
May	4,506.298	1,480.692	5,986.990	8.476	24.73%	5,997.201
June	4,563.022	1,569.038	6,132.060	18.582	25.59%	6,043.881
July	5,137.434	1,593.814	6,731.248	35.860	23.68%	6,083.764
August	9,458.711	1,231.481	10,690.192	31.296	11.52%	10,020.794
September	8,502.127	1,157.253	9,659.380	19.886	11.98%	9,281.863
October	6,839.463	1,210.781	8,050.244	9.128	15.04%	7,476.461
November	5,882.670	975.718	6,858.388	2.934	14.23%	6,861.123
December	4,439.468	1,122.744	5,562.212	2.608	20.19%	5,337.610
TOTAL	65,312.973	15,664.775	80,977.748	170.172	19.34%	77,562.920

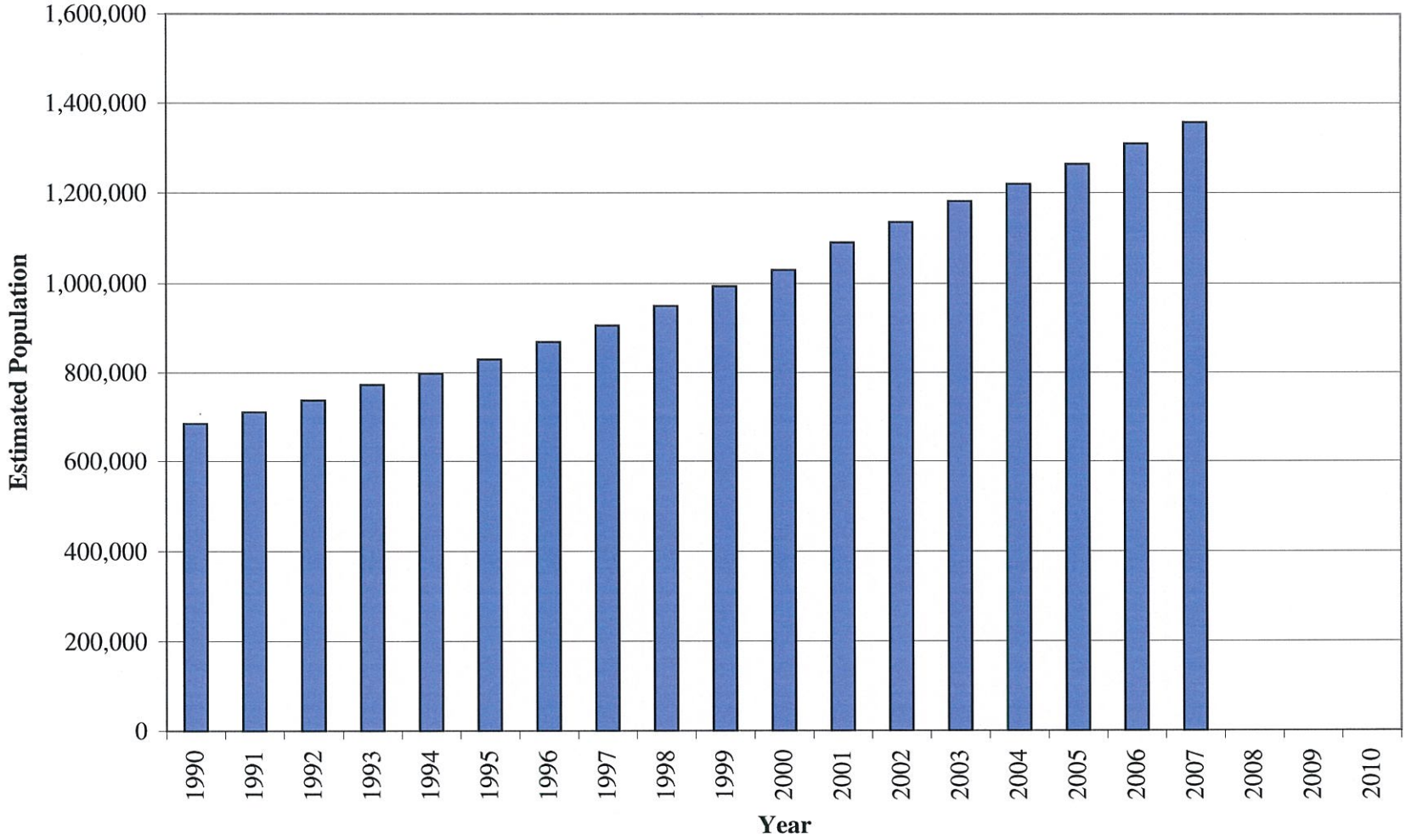
Historical Water Use Data for NTMWD

Year	Estimated Population	Raw Water & Reuse Diversions (MG)		Total Raw Water & Reuse Diversions (MG)	Reuse (MG)	Sales by Category (MG)		
		Municipal	Industrial			Municipal	Industrial Raw Water	Total
1990	684,435	46,544.324	280.686	46,825.010	0.000	46,483.362	280.686	46,764.048
1991	710,591	43,687.586	335.454	44,023.040	0.000	43,663.788	335.454	43,999.242
1992	736,859	44,488.242	367.076	44,855.318	2,004.574	43,426.134	367.076	43,793.210
1993	772,203	52,529.358	440.100	52,969.458	6,068.490	49,582.318	440.100	50,022.418
1994	797,386	47,542.536	478.894	48,021.430	6,976.400	47,091.026	478.894	47,569.920
1995	829,707	54,118.282	508.234	54,626.516	7,069.310	52,916.320	508.234	53,424.554
1996	869,142	59,779.924	429.668	60,209.592	7,418.456	55,655.046	429.668	56,084.714
1997	906,187	58,322.704	349.472	58,672.176	10,666.720	54,865.148	349.472	55,214.620
1998	949,808	71,851.378	444.664	72,296.042	12,218.806	69,444.846	444.664	69,889.510
1999	993,865	75,908.122	369.684	76,277.806	11,384.572	72,337.118	369.684	72,706.802
2000	1,028,985	84,090.070	402.936	84,493.006	10,672.914	81,991.608	402.936	82,394.544
2001	1,089,788	81,987.696	305.788	82,293.484	11,510.408	78,537.638	305.788	78,843.426
2002	1,135,190	79,444.896	277.426	79,722.322	11,426.626	77,732.092	277.426	78,009.518
2003	1,182,007	86,266.120	230.482	86,496.602	10,936.322	84,503.764	230.482	84,734.246
2004	1,220,396	80,629.906	237.328	80,867.234	12,930.790	78,797.460	237.328	79,034.788
2005	1,264,402	96,916.214	202.446	97,118.660	12,461.024	95,572.116	202.446	95,774.562
2006	1,309,994	97,888.346	188.754	98,077.100	13,735.684	93,524.510	188.754	93,713.264
2007	1,357,230	80,977.748	170.172	81,147.920	15,664.775	77,562.920	170.172	77,733.092
2008								
2009								
2010								

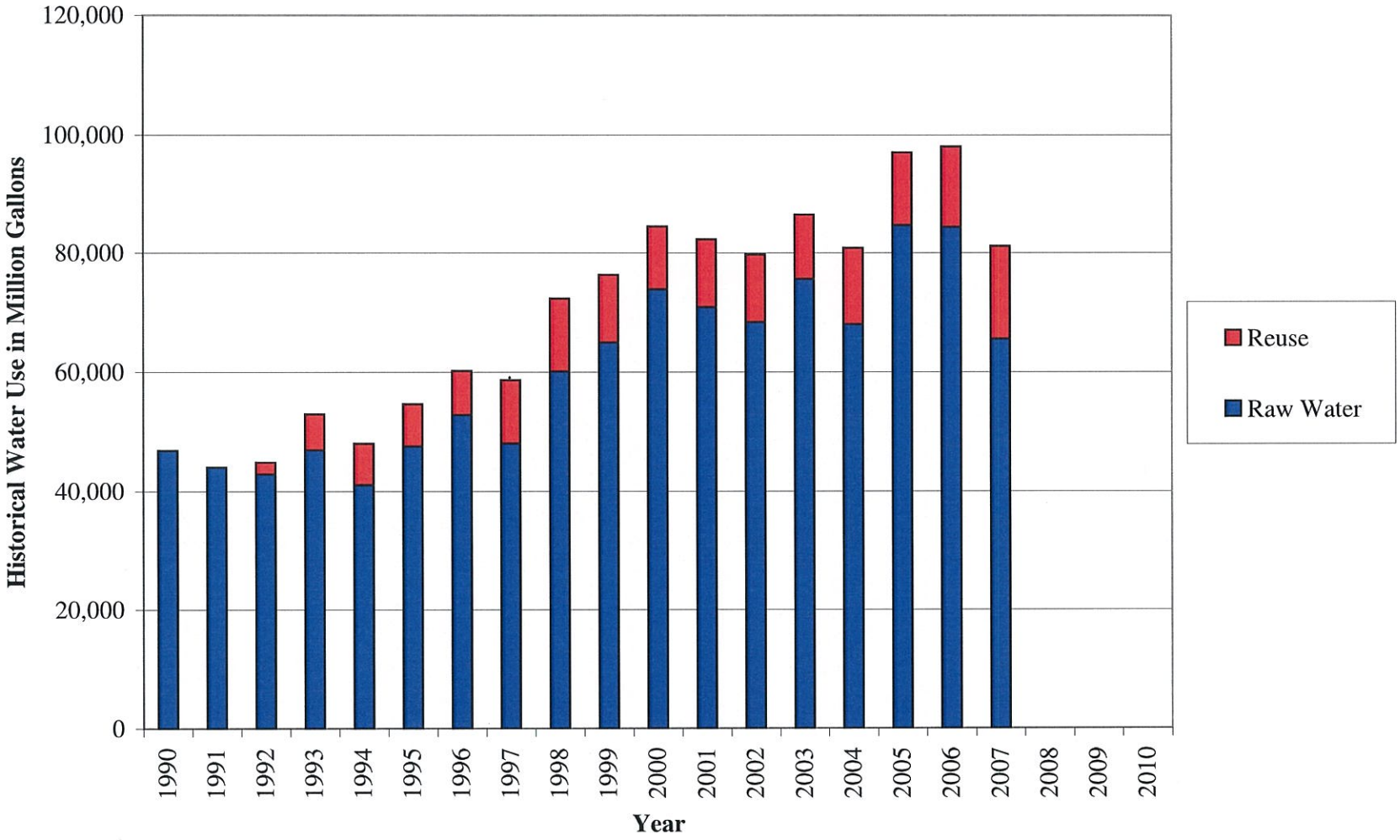
Historical Per Capita Use Data and Unaccounted Water for NTMWD

Year	Estimated Population	Municipal Raw Water & Reuse Diversions (MG)	Reuse (MG)	Industrial Sales by Customers (MG)	Municipal Treated Water Sales (MGD)	Unaccounted Water (MG)	% Unaccounted	% Reuse	Raw Water GPCD			Treated Water GPCD		
									Total gpcd	With Credit for Industrial Use	With Credit for Industrial Use and Reuse	Total gpcd	With Credit for Industrial Use	With Credit for Industrial Use and Reuse
1990	684,435	46,544.324	0.000	2,103.678	46,483.362	60.962	0.13%	0.00%	186	178	178	186	178	178
1991	710,591	43,687.586	0.000	1,585.990	43,663.788	23.798	0.05%	0.00%	168	162	163	168	162	162
1992	736,859	44,488.242	2,004.574	1,673.684	43,426.134	1,062.108	2.39%	4.51%	165	159	152	161	155	148
1993	772,203	52,529.358	6,068.490	1,768.550	49,582.318	2,947.040	5.61%	11.55%	186	180	159	176	170	148
1994	797,386	47,542.536	6,976.400	1,775.070	47,091.026	451.510	0.95%	14.67%	163	157	134	162	156	132
1995	829,707	54,118.282	7,069.310	1,804.084	52,916.320	1,201.962	2.22%	13.06%	179	173	150	175	169	146
1996	869,142	59,779.924	7,418.456	1,913.294	55,655.046	4,124.878	6.90%	12.41%	188	182	159	175	169	146
1997	906,187	58,322.704	10,666.720	2,126.172	54,865.148	3,457.556	5.93%	18.29%	176	170	138	166	159	127
1998	949,808	71,851.378	12,218.806	1,805.388	69,444.846	2,406.532	3.35%	17.01%	207	202	167	200	195	160
1999	993,865	75,908.122	11,384.572	2,072.708	72,337.118	3,571.004	4.70%	15.00%	209	204	172	199	194	162
2000	1,028,985	84,090.070	10,672.914	2,028.372	81,991.608	2,098.462	2.50%	12.69%	224	218	190	218	213	185
2001	1,089,788	81,987.696	11,510.408	2,030.980	78,537.638	3,450.058	4.21%	14.04%	206	201	172	197	192	164
2002	1,135,190	79,444.896	11,426.626	1,848.420	77,732.092	1,712.804	2.16%	14.38%	192	187	160	188	183	156
2003	1,182,007	86,266.120	10,936.322	1,434.400	84,503.764	1,762.356	2.04%	12.68%	200	197	171	196	193	167
2004	1,220,396	80,629.906	12,930.790	1,225.760	78,797.460	1,832.446	2.27%	16.04%	181	178	149	177	174	145
2005	1,264,402	96,916.214	12,461.024	1,215.980	95,572.116	1,344.098	1.39%	12.86%	210	207	180	207	204	177
2006	1,309,994	97,888.346	13,735.684	1,408.320	93,524.510	4,363.836	4.46%	14.03%	205	202	173	196	193	164
2007	1,357,230	80,977.748	15,664.775	1,285.913	77,562.920	3,414.828	4.22%	19.34%	163	161	129	157	154	122
2008														
2009														
2010														

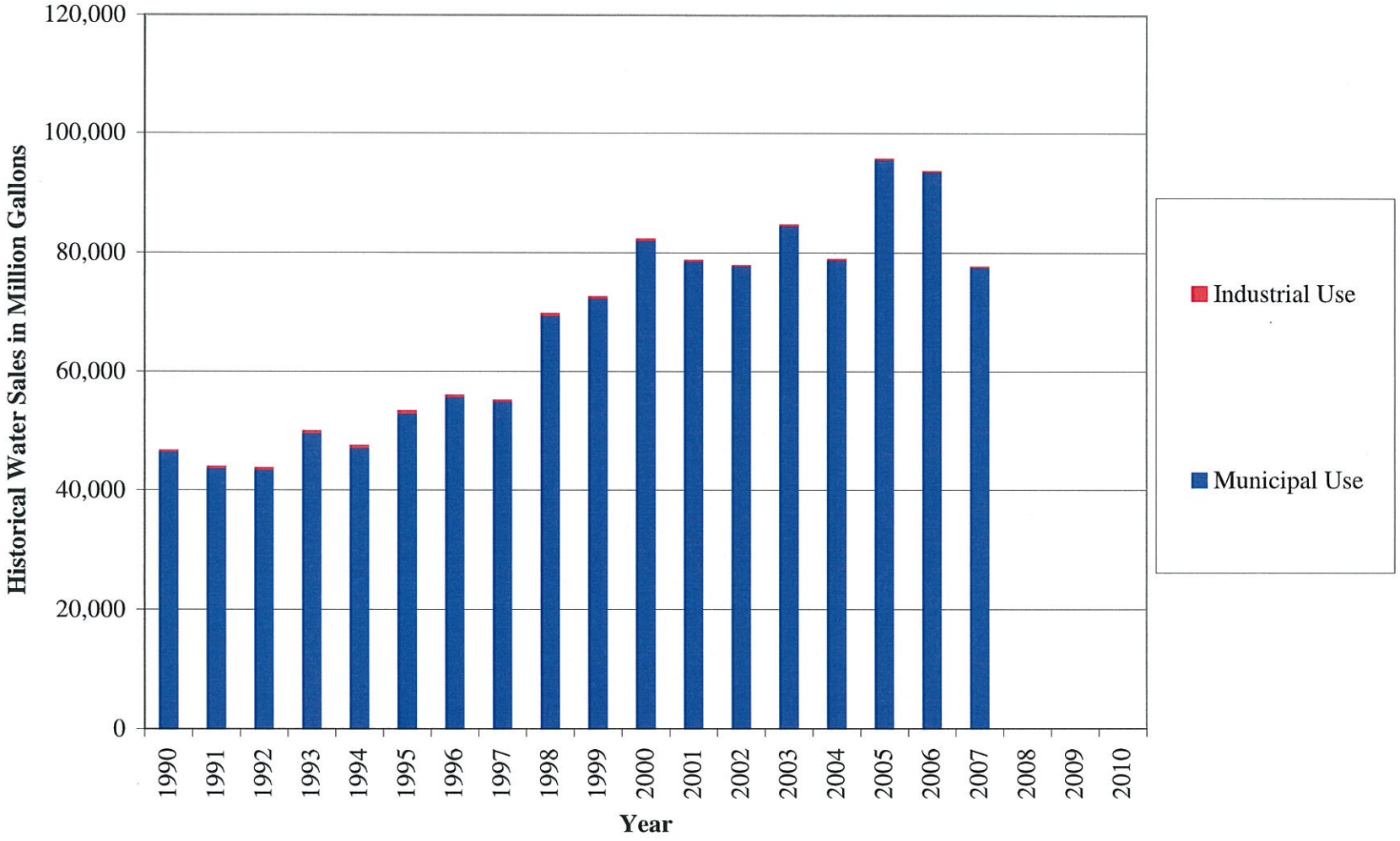
Estimated Historical NTMWD Service Area Population



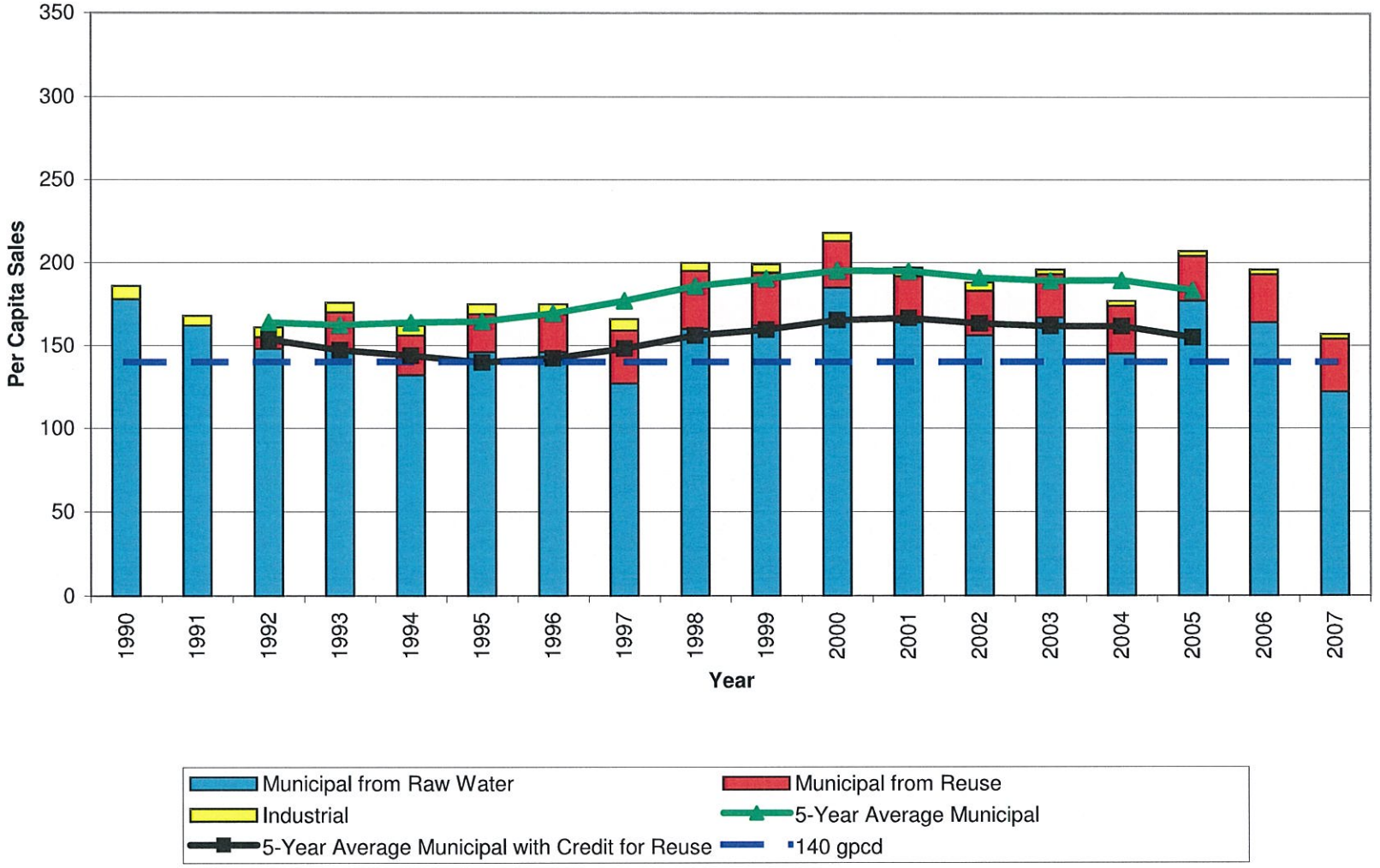
Historical NTMWD Raw Water & Reuse Diversions

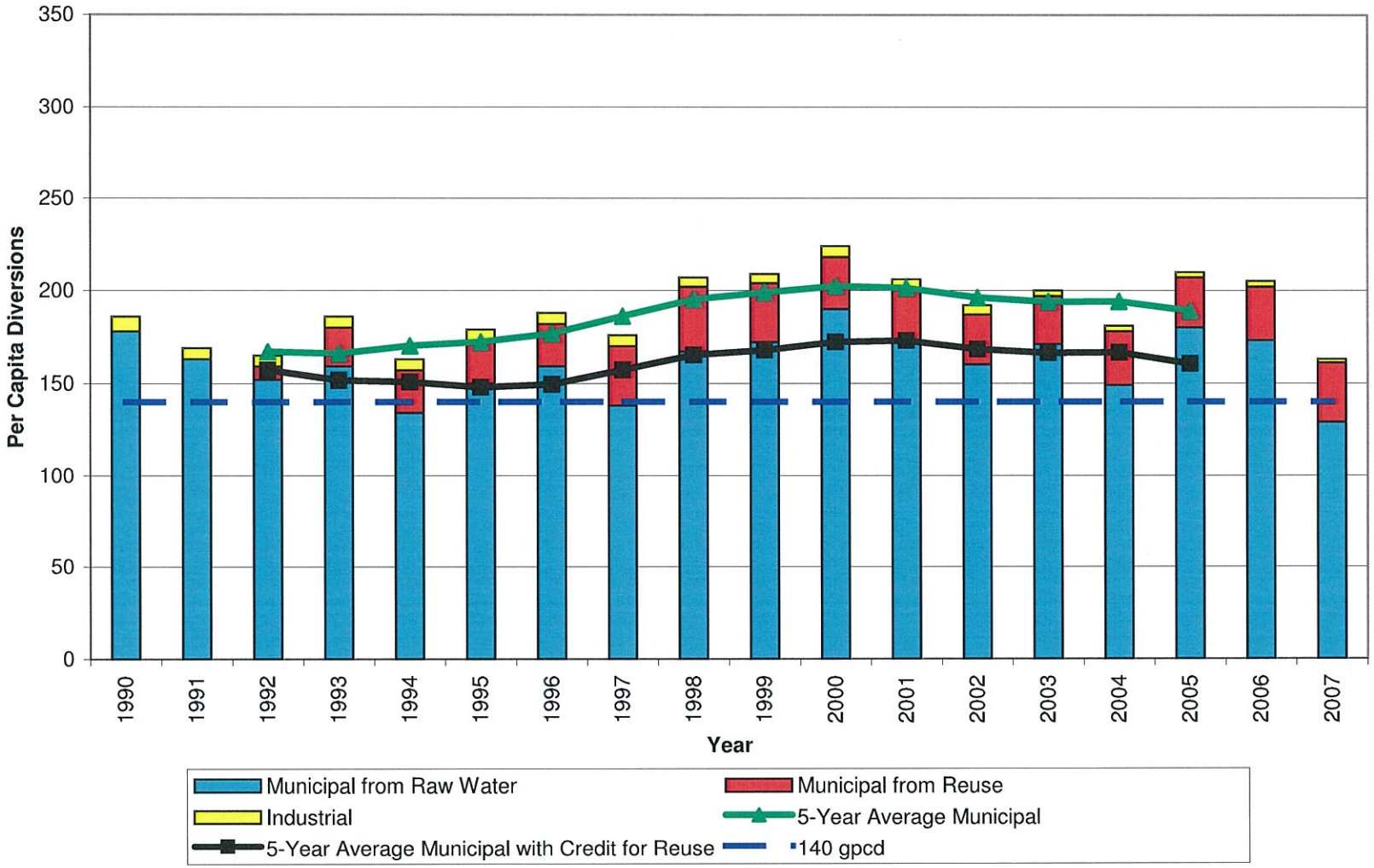


NTMWD Historical Water Sales by Classification

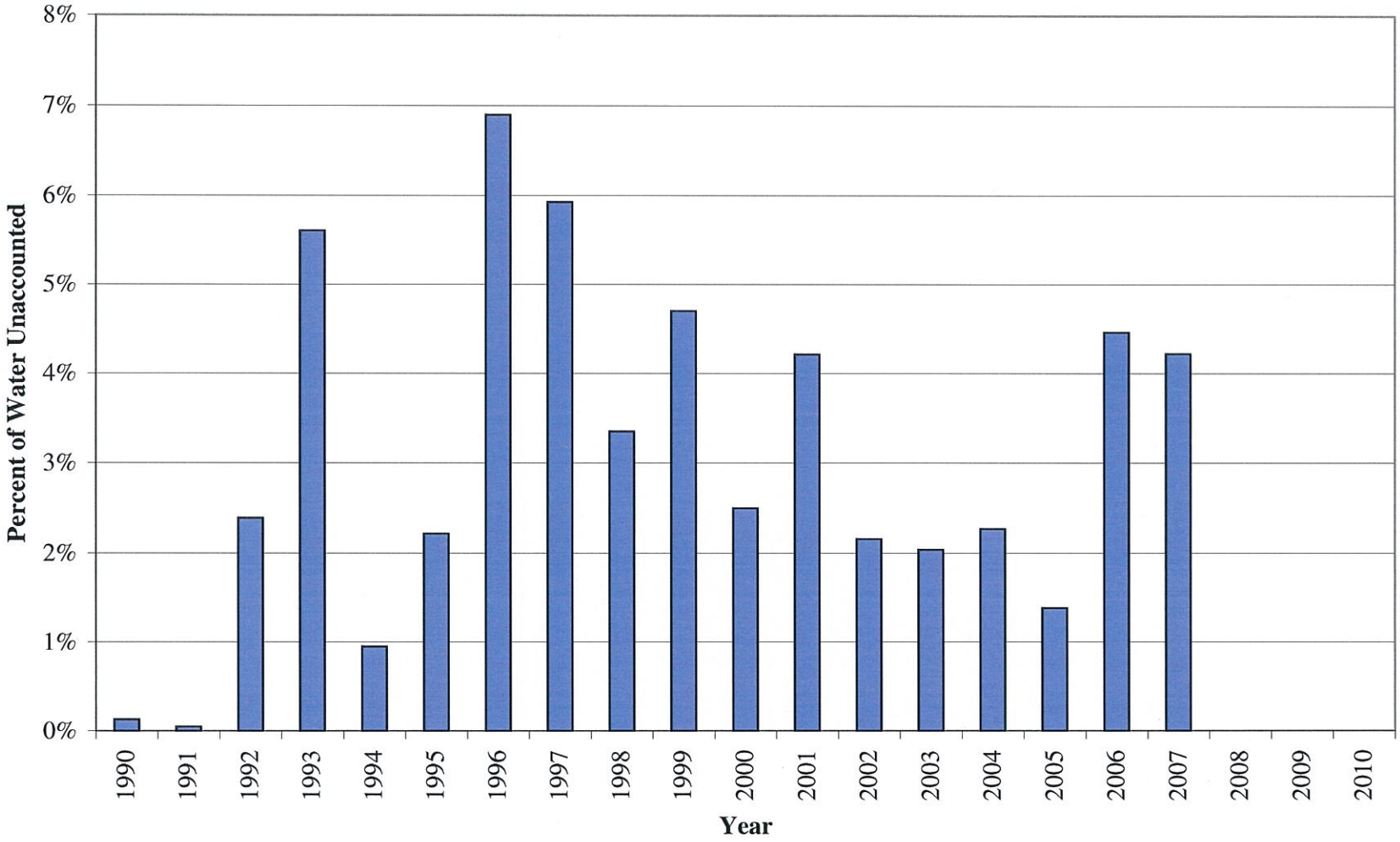


NTMWD Per Capita Treated Water Sales




NTMWD Per Capita Raw Water Diversions
Per Capita Diversions
350
300
250
200
150
100
50
0
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
Year
Municipal from Raw Water
Municipal from Reuse
Industrial
5-Year Average Municipal
5-Year Average Municipal with Credit for Reuse
140 gpcd

NTMWD Historical Percent Unaccounted Water



APPENDIX D

NTMWD MEMBER CITY AND CUSTOMER ANNUAL WATER CONSERVATION REPORT

APPENDIX D
NTMWD Member City and Customer Annual Water Conservation Report
Due March 31 of Every Year

Entity Reporting: _____
Filled Out By: _____
Date Completed: _____
Year Covered: _____
# of Connections _____

Recorded Deliveries and Sales by Month (in Million Gallons):

Month	Deliveries from NTMWD	Other Supplies	Sales by Category					
			Residential	Commercial	Public/ Institutional	Industrial	Wholesale	Total
January								
February								
March								
April								
May								
June								
July								
August								
September								
October								
November								
December								
TOTAL								

Unaccounted Water (Million Gallons):

NTMWD Deliveries		from Table above
Other Supplies		from Table above
Total Sales		from Table above
Estimated Fire Use		estimated from best available data
Estimated line flushing		estimated from best available data
Unaccounted Water		
% Unaccounted		
Goal for % Unaccounted	12.00%	

Per Capita Municipal Use (Gallons per person per day)

Municipal Use (MG)	from Table above (Deliveries - industrial sales - municipal sales - other sales)
Estimated Population	please describe source of population estimate
Per Capita Use (gpcd)	
5-year Per Capita Goal (___)	
10-year Per Capita Goal (___)	

Recorded Wholesale Sales by Month (in Million Gallons):

Month	Sales to _____	Sales to _____	Sales to _____	Sales to _____	Sales to _____	Sales to _____	Sales to _____	Total Wholesale Sales
January								
February								
March								
April								
May								
June								
July								
August								
September								
October								
November								
December								
TOTAL								

Information on Wholesale Customers:

Customer	Estimated Population

Unusual Circumstances (use additional sheets if necessary):

Progress in Implementation of Conservation Plan (use additional sheets if necessary):

Conservation measures planned for next year (use additional sheets if necessary):

Assistance requested from North Texas Municipal Water District (use additional sheets if necessary):

Other (use additional sheets if necessary):

Historical Water Use Data for _____

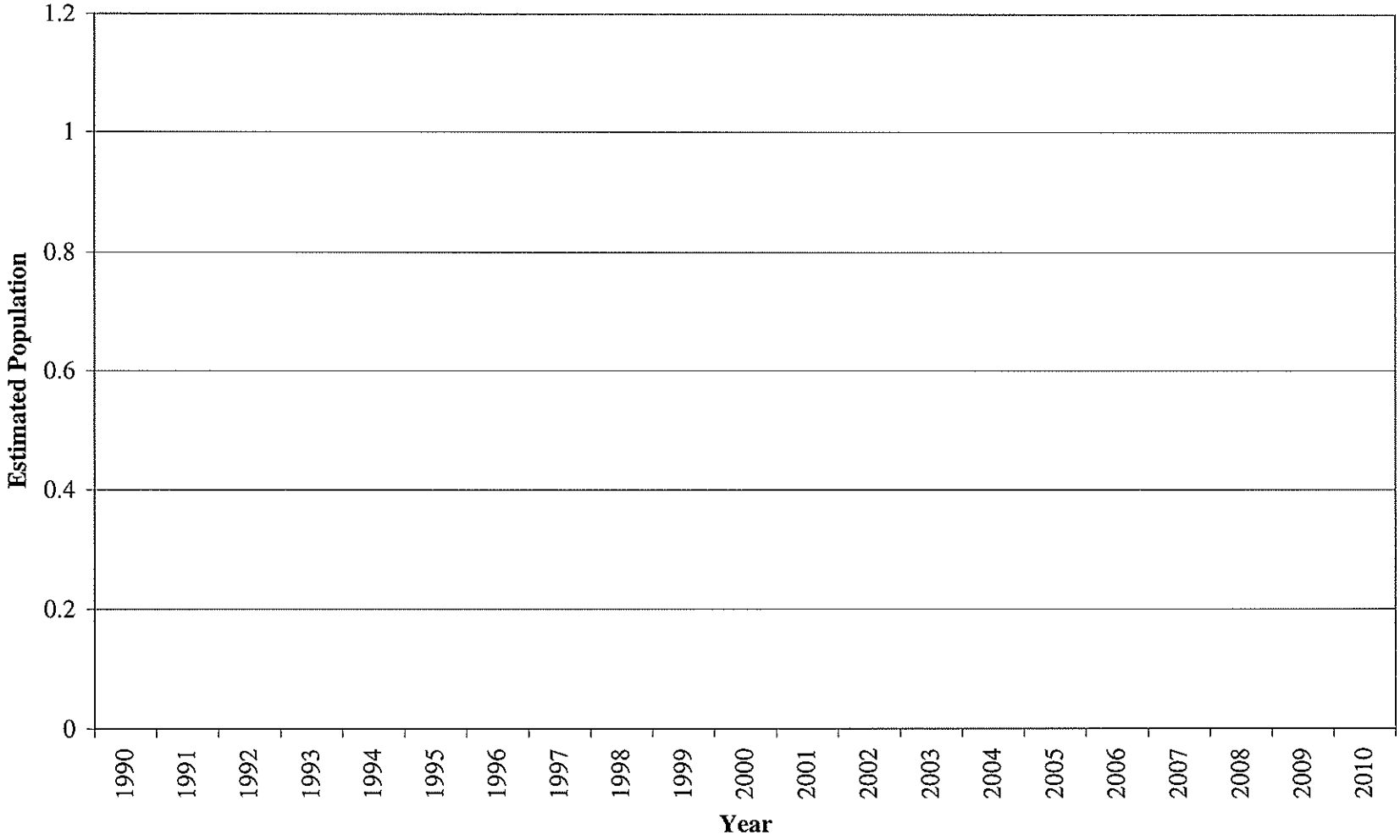
Year	Connections	Estimated Population	Deliveries from NTMWD	Other Supplies	Metered Sales by Category					
					Residential	Commercial	Public/ Institutiona	Industrial	Wholesale	Total
1990										
1991										
1992										
1993										
1994										
1995										
1996										
1997										
1998										
1999										
2000										
2001										
2002										
2003										
2004										
2005										
2006										
2007										
2008										
2009										
2010										

Historical Per Capita Use Data and Unaccounted Water for _____

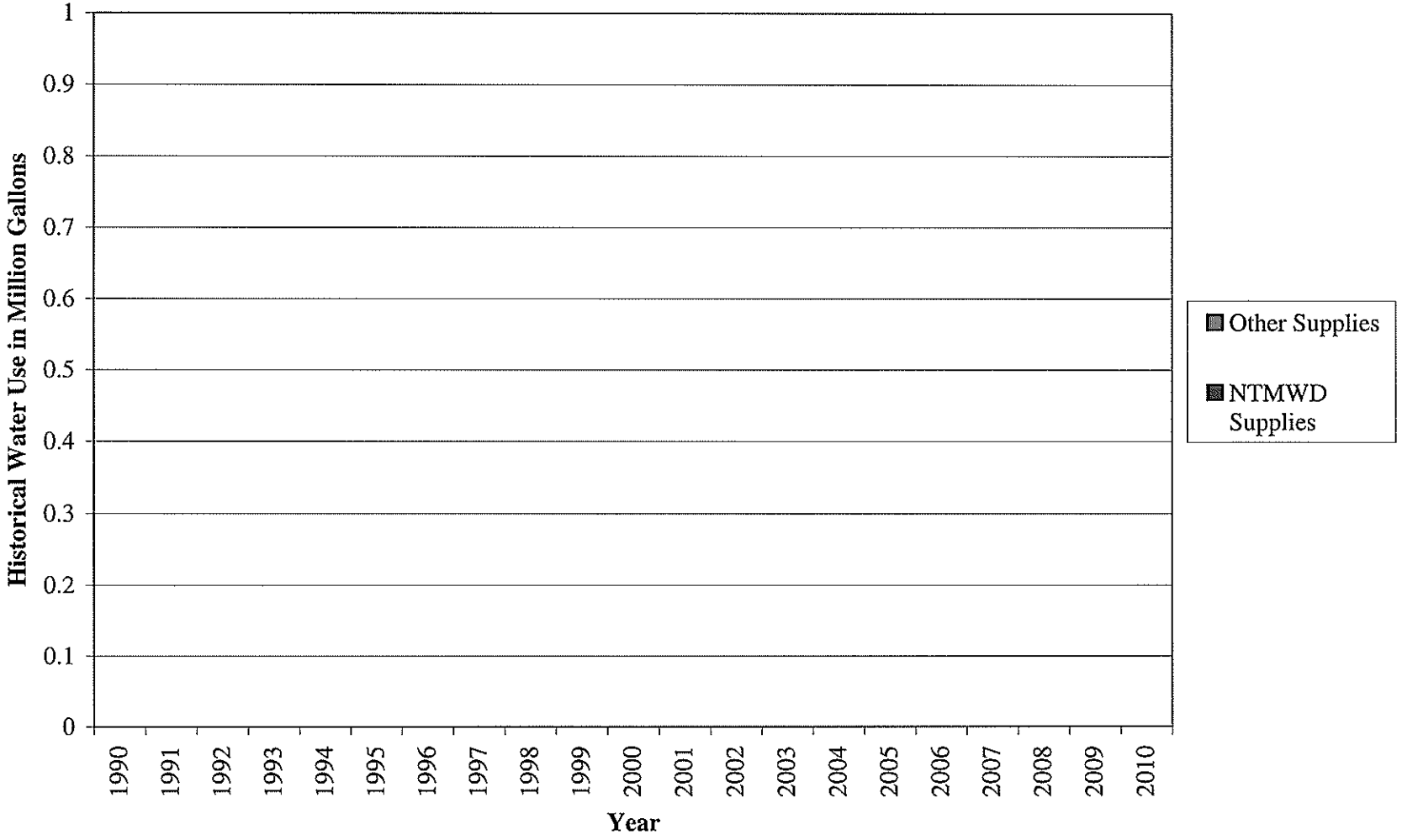
Year	Estimated Population	In-City Municipal Use	Per Capita Municipal Use	Deliveries from NTMWD	Other Supplies	Total Metered Sales	Estimated Fire Use	Estimated Line Flushing	Unaccounted Water	% Unaccounted
1990										
1991										
1992										
1993										
1994										
1995										
1996										
1997										
1998										
1999										
2000										
2001										
2002										
2003										
2004										
2005										
2006										
2007										
2008										
2009										
2010										

Note: In-city municipal use = total water supplied less sales to industry and wholesale sales.

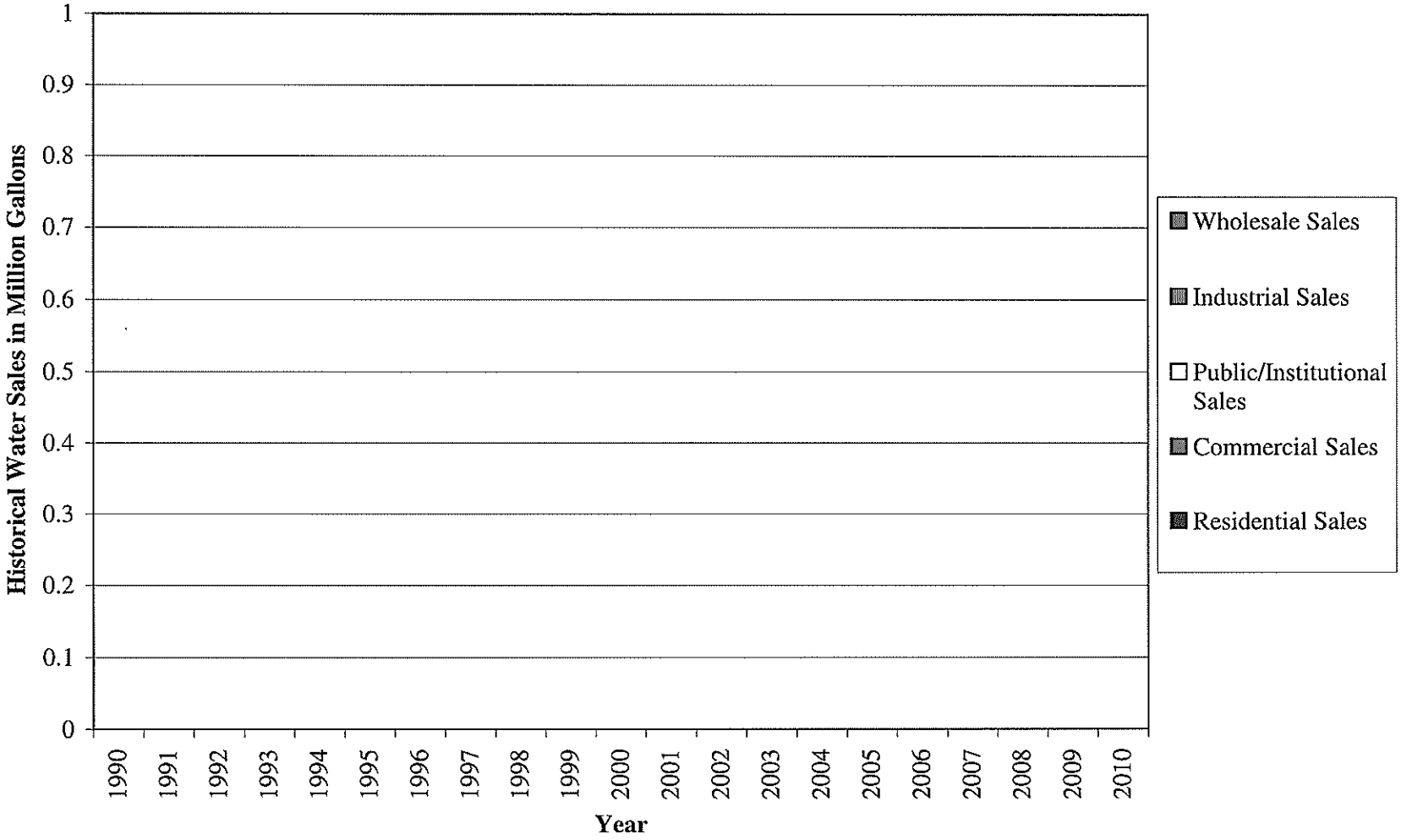
Estimated Historical Population



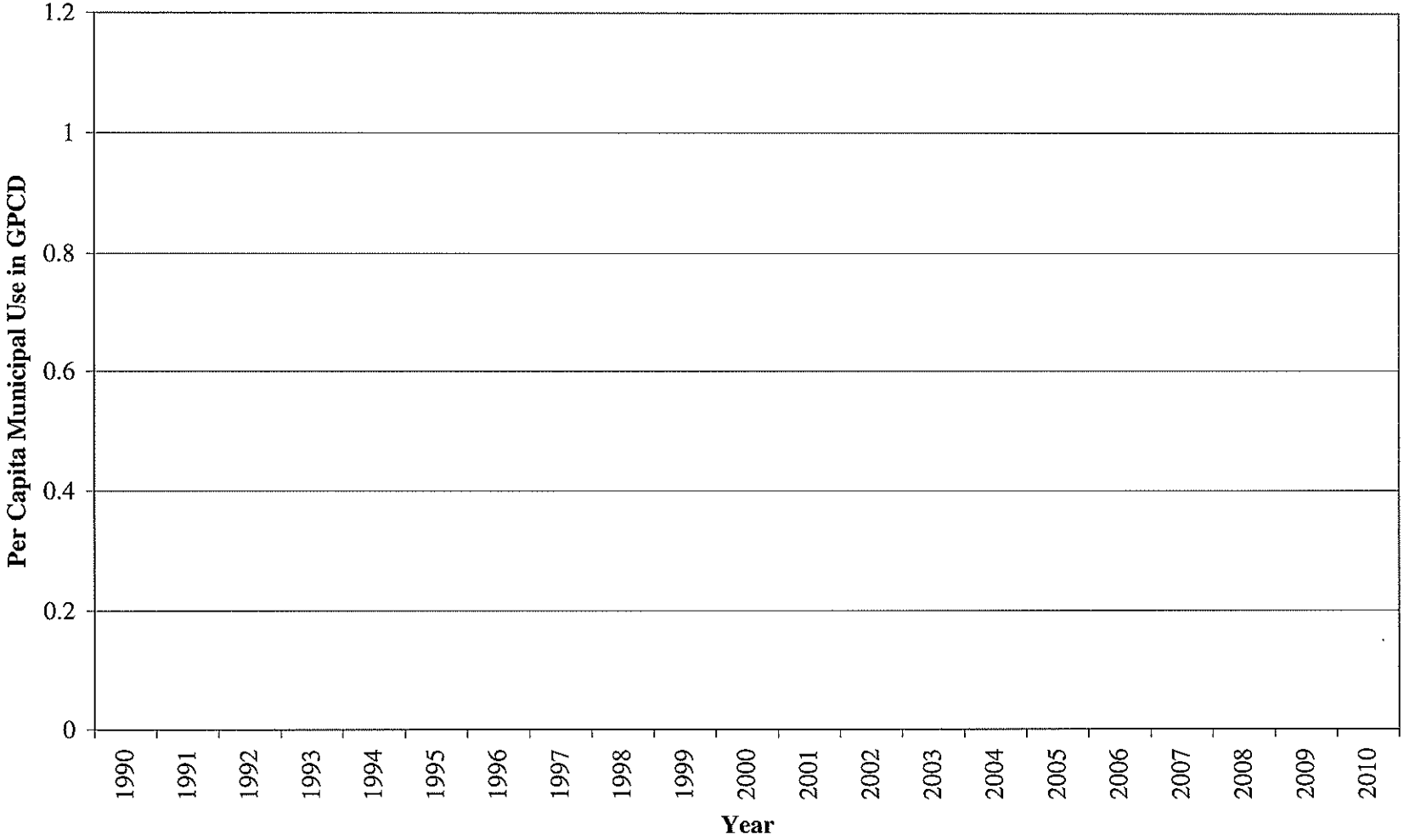
Historical Water Use



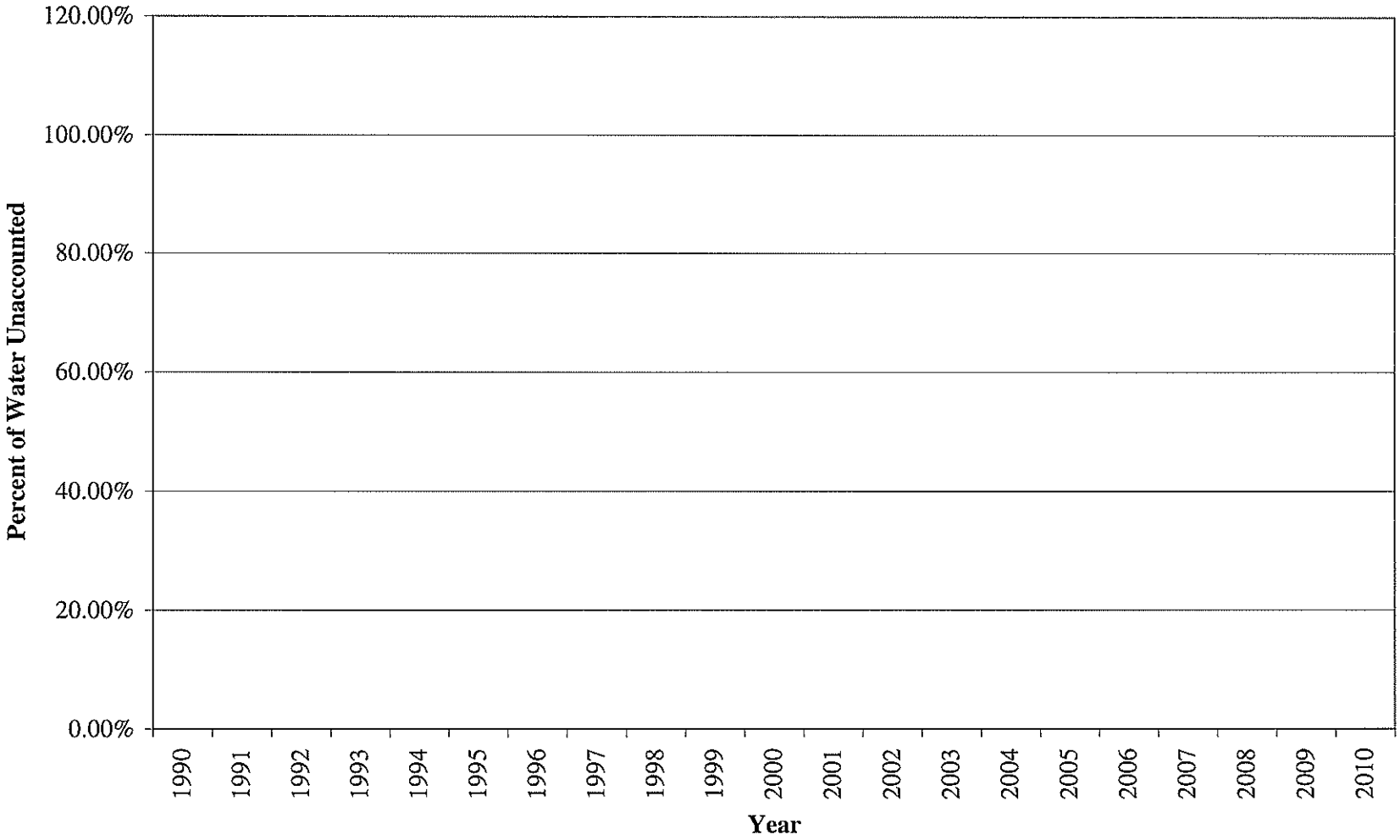
Historical Water Sales by Classification



Historical Per Capita Municipal Use



Historical Percent Unaccounted Water



APPENDIX E

TCEQ WATER CONSERVATION IMPLEMENTATION REPORT

APPENDIX E
TCEQ Water Conservation Implementation Report

Texas Commission on Environmental Quality

Water Conservation Implementation Report

This report must be completed by entities that are required to submit a water conservation plan to the TCEQ in accordance with Title 30 Texas Administrative Code, Chapter 288. Please complete this report and submit it to the TCEQ. If you need assistance in completing this form, please contact the Resource Protection Team in the Water Supply Division at (512) 239-4691.

Name:	North Texas Municipal Water District	
Address:	P.O. Box 2408, Wylie, TX 75098	
Telephone Number:	(972) 442-5405	**Fax:** (972) 295-6440
Form Completed By:	Denise Hickey	**Title:** Public Relations Coordinator
Signature:	Denise Hickey	**Date:** 3/31/08

I. WATER USES

Indicate the type(s) of water uses (example: municipal, industrial, or agricultural).

Municipal Use

Industrial Use

II. WATER CONSERVATION MEASURES IMPLEMENTED

Provide the water conservation measures and the dates the measures were implemented.

Description of Water Conservation Measure:

Initiated public education and outreach, including public speaking opportunities, water conservation course "Learn to be Water Wise" for 5th graders, sponsor of the SmartScape CD, community outreach, business outreach, and water conservation brochures. First in the state to implement the "Water IQ: Know Your Water" awareness campaign.

Date Implemented: ongoing

Description of Water Conservation Measure:

Active reuse program, including indirect reuse that serves municipal purposes and direct reuse for irrigating landscaping at the wastewater treatment plants. NTMWD has the largest operating reuse program in Texas.

Date Implemented: ongoing

Description of Water Conservation Measure:

Hold water conservation workshops with member cities and customers. These meeting are held regularly and allow for open discussion of water conservation successes and challenges.

Date Implemented: Spring 2004

Description of Water Conservation Measure:

Developed model water conservation and drought contingency plans for member cities and customers with their input.

Date Implemented: August 2004

Date Updated: April 2006

Description of Water Conservation Measure:

Initiated Drought Contingency Plan Stage 1 that included voluntary actions to raise public awareness. Member cities and customers were required to implement Stage 1 of their drought contingency plans. Public education regarding water conservation measures was stepped up. Leak detection efforts were increased. Non-essential water use at NTMWD facilities was reduced. Member and customer cities were asked to initiate voluntary landscape watering schedules. Began planning Water IQ: Know Your Water campaign.

Date Implemented: October 28, 2005

Date Discontinued: January 11, 2006 (Stage 2 implemented)

Description of Water Conservation Measure:

Initiated Drought Contingency Plan Stage 2 that included voluntary measures with a goal of reducing water use by 2 percent. All member cities and customers were required to implement Stage 2. Stage 2 actions included any measures not previously implemented in Stage 1, engineering studies to evaluate actions if conditions worsen, additional public education efforts to reduce water use, halt all non-essential NTMWD water use not supplied from treated wastewater effluent, and encourage the public to wit until the drought ends before establishing new landscaping. Continued planning Water IQ: Know Your Water campaign.

Date Implemented: January 11, 2006

Date Discontinued: June 1, 2006 (Stage 3 implemented)

Description of Water Conservation Measure:

Initiated Drought Contingency Plan Stage 3 that included mandatory measures and a water savings goal of 5 percent. All member cities and customers were required to implement Stage 3. Required prohibition of hosing of paved areas and building, operation of ornamental

ornamental fountains, washing/rinsing vehicles with hose, draining and filling existing pools, and outdoor watering between 10 AM and 6 PM. Landscape watering was limited to once every seven days. Water IQ: Know Your Water Campaign was launched.

Date Implemented: June 1, 2006

Date Discontinued: July 3, 2007 (High runoff in spring and early summer reduced water use and refilled reservoirs)

Description of Water Conservation Measure:

Initiated media campaign Water IQ: Know Your Water through a press conference that included water conservation demonstrations. The media campaign includes television commercials, radio spots, Water IQ web site, gas pump toppers, mall and theater ads, billboards, and an outreach video. First implementation of Water IQ campaign developed by State Water Conservation Implementation Task Force. Licensed material developed for the campaign to others around the state. NTMWD spent $3.8 million in a two year period on implementation of the Water IQ: Know Your Water awareness campaign. NTMWD has also committed to spend an additional $1.6 million for the third year campaign. The NTMWD reduced water consumption by an estimated 10-12% with the implementation of the mandatory Stage 3 restrictions and the implementation of the Water IQ: Know Your Water campaign.

Date Implemented: June 1, 2006 and expanded in Spring 2007. Ongoing.

Description of Water Conservation Measure:

Purchased vehicle dedicated to water conservation programming. Placement of "Water IQ: Know Your Water" vehicle decal and tail gate decals on NTMWD fleet vehicles. Placement of large "Water IQ: Know Your Water" sign/billboards on Solid Waste transfer trailers, providing mobile messaging within the communities.

Date Implemented: Fall 2006

III. TARGETS

A. Provide the **specific and quantified five and ten-year targets** as listed in water conservation plan for previous planning period. (Municipal targets less industrial sales plus credit for reuse.)
5-Year Specific/Quantified Target: 197 gpcd
Date to achieve target: 2009

10-Year Specific/Quantified Target: 197 gpcd
Date to achieve target: 2014

B. State if these targets in the water conservation plan are being met.

Yes, these targets are being met. Target goals are to the achieved by 2009.

C. List the **actual amount of water saved.**
In 2006, the following water savings were achieved:

Reuse	42,134 acre-feet
Water conservation and drought contingency measures*	24,479 acre-feet
Total	65,613 acre-feet

* Estimated based on per capita use in 2000 (drought year before conservation and drought contingency measures) with 2006 (drought year with conservation and drought contingency measures).

D. If the targets are not being met, provide an explanation as to why, including any progress on the targets.
The requested information is not necessary because the goals are being met.

If you have any questions on how to fill out this form or about the Water Conservation program, please contact the Texas Commission on Environmental Quality at (512) 239-4691.

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512-239-3282.

APPENDIX F

LETTERS TO REGION C AND REGION D WATER PLANNING GROUPS

Appendix F
Letters to Region C and Region D Water Planning Groups

Date

Region C Water Planning Group
c/o North Texas Municipal Water District
P.O. Box 2408
Wylie, TX 75098

Dear Sir:

Enclosed please find a copy of the following documents:

- Model Water Conservation Plan for the Member Cities and Customers of the North Texas Municipal Water District
- Model Drought Contingency Plan for the Member Cities and Customers of the North Texas Municipal Water District
- Water Conservation and Drought Contingency Plan for the North Texas Municipal Water District

We are 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 the North Texas Municipal Water District adopted the attached plans on _____.

Sincerely,

Jim Parks
North Texas Municipal Water District

Date

Mr. Jim Thompson
Chair, Region D Water Planning Group
P.O. Box 1107
Atlanta, TX 75551

Dear Mr. Thompson:

Enclosed please find a copy of the following documents:

- Model Water Conservation Plan for the Member Cities and Customers of the North Texas Municipal Water District
- Model Drought Contingency Plan for the Member Cities and Customers of the North Texas Municipal Water District
- Water Conservation and Drought Contingency Plan for the North Texas Municipal Water District

We are 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 the North Texas Municipal Water District adopted the attached plans on _____.

Sincerely,

Jim Parks
Executive Director
North Texas Municipal Water District

APPENDIX G

NORTH TEXAS MUNICIPAL WATER DISTRICT BOARD MINUTES SHOWING ADOPTION OF THE WATER CONSERVATION AND DROUGHT CONTINGENCY PLAN

NORTH TEXAS MUNICIPAL WATER DISTRICT

MINUTES OF A REGULAR MEETING OF THE BOARD OF DIRECTORS
HELD ON THURSDAY, MARCH 27, 2008
IN THE NTMWD ADMINISTRATIVE OFFICES, WYLIE, TEXAS

The North Texas Municipal Water District Board of Directors met in Regular Session on Thursday, March 27, 2008, at 4:00 p.m. in the Administrative Offices, 505 East Brown Street, Wylie, Texas. Notice of the meeting was legally posted in accordance with Government Code, Title 551, Open Meetings.

I. INVOCATION

President Bill Harrison called the meeting to order. Director Bobby Robinson offered the invocation.

President Harrison advised that Director Larry Parks would be abstaining from agenda items related to Freese and Nichols, Inc., which included Agenda Item Nos. III. F, H, and IV. B, C, I, and K.

II. ROLL CALL

The following NTMWD staff members attended the meeting: Jim Parks, Joe Stankiewicz, Mike Rickman, Judd Sanderson, Dolan McKnight, Jim Kelly, Bruce Cole, Bobby Reeves, John Montgomery, Vicki Haseloff, and Melisa Fuller. Also in attendance were John Gay of Gay, McCall, Isaacks, Gordon & Roberts and David Medanich of First Southwest Company.

Secretary James Kerr conducted a roll call. Directors Terry Anderson and Richard Roach were absent from the roll call and the meeting. The following Directors were present for the March 27, 2008, Board meeting:

Ken Bell
Don Cates
Gary Downey
Joe Farmer
Marvin Fuller
Bill Harrison
Paul Hoffman
Joe Joplin
Jim Kerr
Bill Lofland
C. L. McCuistion, Jr.
Charles McKissick
Patrick Nicklen
Bob Nusser
Larry Parks
Bobby Robinson
Alex R. Schell, III
Lynn Shuyler
Bob Thurmond
Darwin Whiteside
Jerry Yancey

III. CONSENT AGENDA ITEMS

Upon the recommendation of the Water Committee, a motion by Director Marvin Fuller, and a second by Director Bill Lofland, the Board voted unanimously to approve the consent agenda items as follows:

A. Consider Approval of Minutes – February 28, 2008
(Consent Agenda Item No. 08-03-01)

B. Consider Authorizing Review of District Policy No. 21, A Smoke-Free Workplace Policy
(Consent Agenda Item No. 08-03-02)

C. Consider Authorizing Amendment of District Policy No. 4, Personnel Policy
(Consent Agenda Item No. 08-03-03)

D. Consider Authorizing Amendment of District Policy No. 18, Substance Abuse Policy and Procedures
(Consent Agenda Item No. 08-03-04)

E. Consider Authorizing Amendment of District Policy No. 29, Employee Recognition Program
(Consent Agenda Item No. 08-03-05)

F. Consider Authorizing Reduction of Retainage on Indian Creek/Preston Road Subsystem Improvements, Indian Creek Force Main, Contract B, Project No. IRS 06-1 (055)
(Consent Agenda Item No. 08-03-06)

G. Consider Authorizing Adjustment of Engineering Services Agreement on Rowlett/West Rowlett Parallel Trunk Sewer, Section 3, Project No. IRSCF 97-14 (049)
(Consent Agenda Item No. 08-03-07)

H. Consider Authorizing Budget Amendment on Allen/Plano/Frisco/McKinney Water Transmission 90-Inch Pipeline, Project B, Phase I, Project No. WCF 02-16
(Consent Agenda Item No. 08-03-08)

IV. AGENDA ITEMS FOR INDIVIDUAL CONSIDERATION

A. Consider Authorizing Amendments to Water Conservation and Drought Contingency/Water Emergency Response Plan and Authorizing Amendment to District Policy No. 24
(Please refer to Administrative Memorandum No. 3143)

Upon the recommendation of the Water Committee, a motion by Director Bill Lofland, and a second by Director Don Cates, the Board voted to authorize amendments to the Water Conservation and Drought Contingency/Water Emergency Response Plan and to authorize amendments to District Policy No. 24.

Prior to the vote, Director Joe Farmer presented a minority report on behalf of Director James Kerr, the City of Allen staff and himself regarding the City of Allen's position on:

1. Exempting irrigation systems equipped with properly functioning and registered ET/Smart controllers from the watering restrictions imposed in Stage 3 of the Plan.
2. Allowing the installation of new landscaping during Stage 4 of the Plan.

The City of Allen staff expressed their desire to modify the proposed changes to the Plan and not allow either of these provisions.

Mike Rickman, Assistant General Manager, reviewed the proposed changes and addressed the City of Allen's concerns. He advised that the Member City representatives and NTMWD's staff had meet on numerous occasions to formulate the changes to the Plan. The consensus of the group was to exempt the use of irrigation systems, with properly functioning and registered ET/Smart controllers, from the watering restriction imposed in Stage 3 of the Plan hoping to provide an incentive for the installation of ET/Smart controllers. Mr. Rickman also shared that during the TCEQ required public meeting, industry representatives questioned NTMWD's authority to restrict new plantings in Stage 4 of the Plan. As an example, NTMWD does not have the authority to restrict a party from using groundwater or a riparian water right to water new landscaping. After reviewing the information provided by the industry representatives, NTMWD concurred and modified the Plan "to prohibit commercial and residential landscape watering, except that foundations and trees can be watered for 2 hours on any day with a hand-held hose, soaker hose, or a dedicated zone using drip irrigation system."

Mr. Rickman shared that the City of Allen can enhance the restrictions to meet their preferences without affecting the Plan.

Director Farmer stated that the City of Allen was complimentary of the planning effort but was uncomfortable with the two areas of concern and suggested that the changes be considered by the Board. Mr. Rickman stated that the City of Allen's representatives were very involved in developing the changes, providing beneficial input in the meeting, reviewing the Plan and having a positive influence in the process.

B. Consider Authorizing Engineering Services Agreement for High Service Pump Station 2-2, Project No. 130
(Please refer to Administrative Memorandum No. 3144)

Upon the recommendation of the Water Committee, a motion by Director C. L. McCuistion, Jr., and a second by Director Lynn Shuyler, the Board voted unanimously to authorize the Executive Director to execute an engineering services agreement with Freese and Nichols, Inc., to install an additional 10 MVA transformer at High Service Pump Station 2-2, Project No. 130, in the lump sum amount of $62,600.

C. Consider Authorizing Adjustment to Contract Quantities and Authorization to Final Lake Tawakoni Raw Water Transmission Facilities Project, Contract No. 7, East Pipeline, Project No. WCF 05-10 (032)
(Please refer to Administrative Memorandum No. 3145)

Upon the recommendation of the Water Committee, a motion by Director Alex R. Schell, III, and a second by Director Bobby Robinson, the Board voted unanimously to take the following action on Project No. WCF 05-10 (032), Lake Tawakoni Raw Water Transmission Facilities Project, Contract No. 7, East Pipeline: (1) authorize an adjustment to contract quantities for a decrease of $41,625.57; and, (2) authorize final payment to Garney Companies, Inc., in the revised final contract amount of $17,423,633.79 upon completion of all contract work.

D. Consider Authorizing Granting of Easement to Wylie Northeast Utility District
(Please refer to Administrative Memorandum No. 3146)

Upon the recommendation of the Water Committee, a motion by Director Ken Bell and a second by Director Jerry Yancey, the Board voted unanimously to authorize the Executive Director to execute an easement document granting Wylie Northeast Special Utility District a 10-foot waterline easement and a 100-foot temporary construction easement on the NTMWD Plant III site.

E. Consider Authorizing Engineering Services Agreement for Water Treatment Plant II Spent Backwash Basin Dewatering Pump, Project No. 131
(Please refer to Administrative Memorandum No. 3147)

Upon the recommendation of the Water Committee, a motion by Director Bob Nusser and a second by Director Jerry Yancey, the Board voted unanimously to authorize the Executive Director to execute an engineering services agreement with Black & Veatch Corporation for the Dewatering Pump for Water Treatment Plant II Spent Backwash Basin, Project No. 131, in the lump sum amount of $52,000.

F. Consider Authorizing Change Order No. 1 and Reduction of Retainage on Mustang Creek Interceptor, Contraot C, Project No. LEFISCF 05-1 (059)
(Please refer to Administrative Memorandum No. 3148)

Upon a motion by Director Bill Lofland, and a second by Director Bobby Robinson, the Board voted unanimously to take the following action on Project No. LEFISCF 05-1 (059), Mustang Creek Interceptor, Contract C: (1) authorize Change Order No. 1 for an increase in the amount of $31,545 resulting in a revised contract amount of $5,462,503.65; and, (2) authorize a reduction of retainage to Rodman Utilities, L.P., from 5% to 2.5%, for a total retained of $127,232.54.

G. Consider Authorizing Engineering Services Agreement for Wylie to Garland 42-Inch Waterline Protection, Project No. 132
(Please refer to Administrative Memorandum No. 3149)

Upon the recommendation of the Water Committee, a motion by Director Marvin Fuller and a second by Director Lynn Shuyler, the Board voted unanimously to authorize the Executive Director to execute an engineering services agreement with Birkhoff, Hendricks & Conway, L.L.P., in the amount of $18,800 for protection of the 42-inch Wylie to Garland water pipeline along Merritt Road at President George Bush Turnpike (SH 190), Project No. 132.

H. Consider Authorizing Change Order No. 2 for Wilson Creek Regional Wastewater Treatment Plant Improvements, Project No. RWWCF 06-2 (091)
(Please refer to Administrative Memorandum No. 3150)

Upon a motion by Director Alex R. Schell, III, and a second by Director Robert Thurmond, the Board voted unanimously to authorize Change Order No. 2 to Project No. RWWCF 06-2 (091), Wilson Creek Regional Wastewater Treatment Plant Improvements, an increase in the amount of $76,606.85, resulting in a revised contract amount of $1,423,983.69.

I. Consider Authorizing Reduction of Retainage on East Fork Raw Water Supply Project Diversion Pump Station, Project No. WCF 04-5 (021)
(Please refer to Administrative Memorandum No. 3151)

Upon the recommendation of the Water Committee, a motion by Director C. L. McCuistion, Jr., and a second by Director Joe Farmer, the Board voted unanimously to authorize a reduction of retainage to Eagle Contracting, L.P., for Project No. WCF 04-5 (021), East Fork Raw Water Supply Project, Diversion Pump Station, from 5% to 1%, for a total retained of $118,457.34.

J. Consider Authorizing Engineering Services Agreement on Beck Branch Lift Station Rehabilitation, Project No. 133
(Please refer to Administrative Memorandum No. 3152)

Upon a motion by Director Lynn Shuyler, and a second by Director Joe Joplin, the Board voted unanimously to authorize the Executive Director to execute an engineering services agreement with Birkhoff, Hendricks and Conway, L.L.P, for Project No. 133, Beck Branch Lift Station Rehabilitation, in the lump sum amount of $62,300.

K. Consider Authorizing Change Order No. 3 on East Fork Raw Water Supply Project Conveyance Pipeline - Central Section, Project No. WCF 04-5 (021)
(Please refer to Administrative Memorandum No. 3153)

Upon the recommendation of the Water Committee, a motion by Director Larry Parks, and a second by Director Paul Hoffman, the Board voted unanimously to authorize Change Order No. 3 to Project No. WCF 04-5 (021), East Fork Raw Water Supply Project, Conveyance Pipeline - Central Section, for an increase of $257,223.40, resulting in a revised contract amount of $42,480,313.06.

L. Consider Authorizing Change Order No. 3 on Custer Road Transfer Station Expansion, Project No. SWCF 03-2 (044)
(Please refer to Administrative Memorandum No. 3154)

Upon a motion by Director Alex R. Schell, III, and a second by Director Bob Nusser, the Board voted unanimously to authorize Change Order No. 3 for an increase of $170,692.98, resulting in a revised contract amount of $5,824,817.98 and 21-day time extension to Custer Road Transfer Station Expansion, Project No. SWCF 03-2 (044).

V. DISCUSSION ITEMS

A. Discuss Recent News Article Concerning Microconstituents in Drinking Water

Executive Director Jim Parks discussed the recent news coverage concerning microconstituents in drinking water.

B. Other (Matters brought to Board by Directors for Discussion)

Executive Director Jim Parks displayed the new Water IQ advertisements, discussed the current lake levels, and awarded Bob Thurmond his one-year service pin.

Director Joe Farmer gave an update on the Legislative Committee activities.

VI. ADJOURNMENT

There being no further business, the meeting adjourned at approximately 4:55 p.m. The next regular meeting of the NTMWD Board of Directors will be held Thursday, April 24, 2008, at 4:00 p.m. in the NTMWD Administrative Offices, 505 E. Brown Street, Wylie, Texas.

APPROVED:

Bill Harrison

BILL HARRISON, President

ATTEST:

James D Kerr

JAMES KERR, Secretary

(SEAL)

APPENDIX H

TEXAS WATER CODE SECTION 11.039

APPENDIX H
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.

Amended by Acts 2001, 77th Leg., ch. 1126, § 1, eff. June 15, 2001.