Talty WSC
Water Conservation Ordinance

Adopted July 2007

Talty WSC
Water Conservation Plan

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APPENDICES

Model Water Conservation Plan for

Talty WSC

JULY 2007

1. INTRODUCTION AND OBJECTIVES

Water supply has always been a key issue in the development of Texas. In recent years, the growing population and economic development of North Central Texas have led to increasing 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 plans for public water suppliers [1]. TCEQ guidelines and requirements are included in Appendix B. The North Texas Municipal Water District (NTMWD) has also developed this model water conservation plan for its member cities and customers following TCEQ guidelines and requirements.

The objectives of this water conservation plan are as follows:

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

In order to adopt this plan, the City of Forney requires Talty WSC to do the following:

- Complete the water utility profile.
- Set five- and ten-year goals for per capita water use.
- Adopt ordinance(s) or regulation(s) approving the model plan.

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

The water utility profile, goals, and ordinance(s) or regulations should be provided to the City of Forney in draft form for review and comments. Final adopted versions should also be provided to the City of Forney.

This model plan includes all of the elements required by TCEQ. Some elements of this model plan go beyond TCEQ requirements, and member cities and customers can be flexible in their implementation. The following elements are recommended for inclusion in the water conservation plan but are not required:

- landscape water management plan and
- 12% goal for unaccounted water. (The goal for unaccounted water might be higher for rural systems.)

2. TEXAS COMMISSION ON ENVIRONMENTAL QUALITY RULES

The TCEQ rules governing development of water conservation plans for public water suppliers are contained in Title 30, Part 1, Chapter 288, Subchapter A, Rule 288.2 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 [1]." The elements in the TCEQ water conservation rules covered in this conservation plan are listed below.

Minimum Conservation Plan Requirements

The minimum requirements in the Texas Administrative Code for Water Conservation Plans for Public Water Suppliers are covered in this report as follows:

- 288.2(a)(1)(A) – Utility Profile – Section 3
- 288.2(a)(1)(B) – Specification of Goals – Section 4
- 288.2(a)(1)(C) – Accurate Metering – Sections 5.1 and 5.2
- 288.2(a)(1)(D) – Universal Metering – Section 5.2
- 288.2(a)(1)(E) – Determination and Control of Unaccounted Water – Section 5.4
- 288.2(a)(1)(F) – Public Education and Information Program – Section 6
- 288.2(a)(1)(G) – Non-Promotional Water Rate Structure – Section 7
- 288.2(a)(1)(H) – Reservoir System Operation Plan – Section 8.1
- 288.2(a)(1)(I) – Means of Implementation and Enforcement – Section 9
- 288.2(a)(1)(J) – Coordination with Regional Water Planning Group – Section 8.6

Conservation Additional Requirements (Population over 5,000)

The Texas Administrative Code includes additional requirements for water conservation plans for cities with a population over 5,000:

- 288.2(a)(2)(A) – Leak Detection, Repair, and Water Loss Accounting – Sections 5.4, 5.5, and 5.6
- 288.2(a)(2)(B) – Record Management System – Section 5.3
- 288.2(a)(2)(C) – Requirement for Water Conservation Plans by Wholesale Customers – Section 8.5

Additional Conservation Strategies

TCEQ rules also list additional optional but not required conservation strategies, which may be adopted by suppliers. The following optional strategies are included in this plan:

- 288.2(a)(3)(A) – Conservation Oriented Water Rates – Section 7
- 288.2(a)(3)(B) – Ordinances, Plumbing Codes or Rules on Water-Conserving Fixtures – Section 8.3
- 288.2(a)(3)(D) – Reuse and Recycling of Wastewater – Section 8.2
- 288.2(a)(3)(F) – Landscape Water Management Regulations – Section 8.4 and Appendix C
- 288.2(a)(3)(G) – Monitoring Method – Section 5.6

3. WATER UTILITY PROFILE

In adopting this model water conservation plan, Talty WSC will provide a draft water utility profile to the City of Forney for review and comment. A final water utility profile will be provided to the City of Forney.

4. SPECIFICATION OF WATER CONSERVATION GOALS

Current TCEQ rules require the adoption of specific water conservation goals for a water conservation plan. As part of plan adoption, each member city and customer will develop 5-year and 10-year goals for per capita municipal use, following TCEQ procedures described in the water utility profile. These goals should be submitted to the City of Forney in draft form for review. The goals for this water conservation plan include the following:

- Keep the per capita municipal water use below the specified amount in gallons per capita per day in a dry year, to be shown on the completed Table C-1 (5-year and 10-year goals).
- Keep the level of unaccounted water in the system below 12% annually in 2008 and subsequent years, as discussed in Section 5.4. (The 12% goal for unaccounted water is recommended but is not required. Systems with long distances between customers may adopt a higher unaccounted water goal.)
- Implement and maintain a program of universal metering and meter replacement and repair, as discussed in Section 5.2.
- Decrease waste in lawn irrigation by implementation and enforcement of landscape water management regulations, as discussed in Section 8.4. (The landscape water management regulations are recommended but are not required.)
- Raise public awareness of water conservation and encourage responsible public behavior by a public education and information program, as discussed in Section 6.
- Develop a system specific strategy to conserve water during peak demands, thereby reducing the peak use.

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 through illegal diversions and leaks. Careful metering of water deliveries and water use, detection and repair of leaks in the distribution system and regular monitoring of unaccounted water are important in controlling losses.

5.1 Accurate Metering of Treated Water Deliveries from the City of Forney

The City of Forney supplies all of the water used by Talty WSC. Water deliveries are metered by the City of Forney using meters with accuracy of ±2%. These meters are calibrated on an annual basis by Talty WSC to maintain the required accuracy.

5.2 Metering of Customer and Public Uses and Meter Testing, Repair, and Replacement

All customers of member cities and customers, including public and governmental users, should be metered. In many cases, member cities and customers already meter all of their water users. For those member cities and customers who do not currently meter all of their water uses, these entities will implement a program to meter all water uses within the next three years.

Most member cities and customers test and replace their customer meters on a regular basis. All customer meters should be replaced on a 15-year cycle. Those who do not currently have a meter testing and replacement program will implement such a program over the next three years.

5.3 Record Management System

As required by TAC Title 30, Part 1, Chapter 288, Subchapter A, Rule 288.2(a)(2)(B), the record management system allows for the separation of water sales and uses into residential, commercial, public/institutional, and industrial categories. This information will be included in an annual water conservation report, as described in Section 5.6 below.

For those entities whose record management systems do not currently allow for the separation of water sales as described above, they will move to implement such a system within the next five years.

5.4 Determination and Control of Unaccounted Water

Unaccounted water is the difference between water delivered to Talty WSC from the City of Forney and metered deliveries to customers plus authorized but unmetered uses. (Authorized but unmetered uses would include use for fire fighting, releases for flushing of lines, and uses associated with new construction.) Unaccounted water can include several categories:

- Inaccuracies in customer meters. (Customer meters tend to run more slowly as they age and under-report actual use.)
- Accounts which are being used but have not yet been added to the billing system.
- Losses due to water main breaks and leaks in the water distribution system.
- Other.

Measures to control unaccounted water are part of the routine operations of member cities and customers. Maintenance crews and personnel are asked to look for and report evidence of leaks in the water distribution system. The leak detection and repair program is described in Section 5.5 below. Meter readers are asked to watch for and report signs of illegal connections, so they can be addressed quickly.

Unaccounted water is to be calculated. With the measures described in this plan, member cities and customers intend to maintain the unaccounted water below 12% in 2008 and subsequent years. If unaccounted water exceeds this goal, the member city or customer will implement a more intensive audit to determine the source(s) of and reduce the unaccounted water. The annual conservation report described below is the primary tool used to monitor unaccounted water.

5.5 Leak Detection and Repair

As described above, city crews and personnel are asked to look for and report evidence of leaks in the water distribution system. Areas of the water distribution system in which numerous leaks and line breaks occur are targeted for replacement as funds are available.

5.6 Monitoring of Effectiveness and Efficiency - Annual Water Conservation Report

Appendix D is a form that will be used in the development of an annual water conservation report for member cities and customers. This form will be completed by March 31 of the following year and will be used to monitor the effectiveness and efficiency of the water conservation program and to plan conservation-related activities for the next year. The form records the water use by category, per capita municipal use, and unaccounted water for the current year and compares them to historical values. The annual water conservation report will also be sent to the City of Forney, which will monitor regional water conservation trends.

6. CONTINUING PUBLIC EDUCATION AND INFORMATION CAMPAIGN

The continuing public education and information campaign on water conservation includes the following elements:

- Insert water conservation information with water bills. Inserts will include material developed by member cities' and customers' staff and material obtained from the TWDB, the TCEQ, and other sources.
- Encourage local media coverage of water conservation issues and the importance of water conservation.
- Notify local organizations, schools, and civic groups that member city or customer staff and staff of the NTMWD are available to make presentations on the importance of water conservation and ways to save water.
- Make the *Texas Smartscape CD*, water conservation brochures, and other water conservation materials available to the public at City Hall and other public places.
- Make information on water conservation available on its website (if any) and include links to the *Texas Smartscape* website and to information on water conservation on the TWDB and TCEQ web sites.

As a regional water supplier, the NTMWD has made the "Learning to Be Water Wise" educational materials for 5th grade students available to local school districts. This program contains individual kits and activities to educate students on the importance of water and water conservation activities in the community and in their homes.

7. WATER RATE STRUCTURE

Member cities and customers will adopt, if they have not already done so, an increasing block rate water structure that is intended to encourage water conservation and discourage excessive use and waste of water upon completion of the next rate study or within five years. An example water rate structure is as follows:

Residential Rates

1. Monthly minimum charge. This can (but does not have to) include up to 2,000 gallons water use with no additional charge.
2. Base charge per 1,000 gallons up to the approximate average residential use.
3. 2nd tier (from the average to 2 times the approximate average) at 1.25 to 2.0 times the base charge.
4. 3rd tier (above 2 times the approximate average) at 1.25 to 2.0 times the 2nd tier.
5. The residential rate can also include a lower tier for basic household use up to 4,000 gallons per month or so.

Commercial/Industrial Rates

Commercial/industrial rates should include at least 2 tiers, with rates for the 2nd tier at 1.25 to 2.0 times the first tier. Higher water rates for commercial irrigation use are encouraged, but not required.

Note: Talty establishes water rates in a separate ordinance.

8. OTHER WATER CONSERVATION MEASURES

8.1 NTMWD Reservoir System Operation Plan

Member cities and customers of NTMWD purchase treated water from NTMWD and do not have surface water supplies for which to implement a reservoir system operation plan. NTMWD's permits do allow some coordinated operation of its reservoirs, and NTMWD is seeking additional water rights for coordinated operation to optimize its available water supplies.

8.2 Reuse and Recycling of Wastewater

Most member cities and customers do not own and operate their own wastewater treatment plants. Their wastewater is treated by NTMWD. NTMWD currently has the largest wastewater reuse program in the state. NTMWD has water rights allowing reuse of up to 35,941 acre-feet per year of treated wastewater for municipal purposes, which provides about 13 percent of NTMWD's total water supply. NTMWD is currently seeking a permit that would double its permitted reuse and is also considering additional reuse projects to increase this supply further. NTMWD also makes treated wastewater from its plants available for direct reuse for landscape irrigation and industrial use.

For those member cities and customers who do own and operate their own wastewater treatment plants, they will move toward reusing treated effluent for irrigation purposes around their plants over the next three years. These entities will also seek other alternatives for reuse of recycled wastewater.

8.3 Ordinances, Plumbing Codes, or Rules on Water-Conserving Fixtures

The State of Texas has required water-conserving fixtures in new construction and renovations since 1992. The state standards call for flows of no more than 2.5 gallons per minute (gpm) for faucets, 3.0 gpm for showerheads, and 1.6 gallons per flush for toilets. Similar standards are now required nationally under federal law. These state and federal standards assure that all new construction and renovations will use water-conserving fixtures.

8.4 Landscape Water Management Regulations

Appendix C is a summary of considerations for landscape water management regulations adopted as part of the development of this water conservation plan. These regulations are intended to minimize waste in landscape irrigation.

Talty WSC will consider adopting additional water conservation programs including but not limited to:

- Low-flow toilet replacement and rebate programs,
- Pressure reduction in the system or for individual customers,
- Rebates for rain/freeze sensors,

- Low-flow showerhead and sink aerators replacement programs, or
- Other water conservation incentive programs.

8.5 Requirement for Water Conservation Plans by Wholesale Customers

Every contract for the wholesale sale of water by the City of Forney that is entered into, renewed, or extended after the adoption of this water conservation and drought contingency plan will include a requirement that the wholesale customer and any wholesale customers of that wholesale customer develop and implement a water conservation plan meeting the requirements of Title 30, Part 1, Chapter 288, Subchapter A, Rule 288.2 of the Texas Administrative Code. The requirement will also extend to each successive wholesale customer in the resale of the water.

8.6 Coordination with Regional Water Planning Group and NTMWD

The City of Forney will send a copy of their draft ordinance(s) or regulation(s) implementing the plan and their water utility profile to NTMWD for review and comment. The adopted ordinance(s) or regulation(s) and the adopted water utility profile will also be sent to NTMWD.

9. IMPLEMENTATION AND ENFORCEMENT OF THE WATER CONSERVATION PLAN

Appendix D contains a copy of an ordinance adopted by the Board of Directors or governing board regarding this water conservation plan. The ordinance, order, or resolution designates responsible officials to implement and enforce the water conservation plan. Appendix C, the landscape water management regulations, also includes information about enforcement.