

SECTION H.

WATER CONSERVATION PLAN

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 has led to increasing demands for water. Additional supplies to meet higher demands will be expensive and difficult to develop. Therefore, it is important that we make efficient use of our existing supplies to minimize the amount of new resources needed.

Effective water conservation can postpone or reduce the need for development of new water supplies, minimize the associated environmental impacts, and reduce the high cost of water supply development. Nonetheless, to respond to the growing population of our area, the planning for new water resources must continue. Mustang considers water conservation an integral part of this planning process.

Recognizing the need for efficient use of existing water supplies, the Texas Commission on Environmental Quality (“TCEQ”) has announced guidelines and requirements governing the development of water conservation plans for Public Water Suppliers. Mustang has prepared this Water Conservation Plan (the “Plan”) following the TCEQ guidelines, recommendations from UTRWD and certain best management practices by the TWDB.

The objectives of this Plan include:

- To reduce water consumption from levels that would prevail without conservation efforts;
- To reduce the loss and waste of water, as evidenced by per capita use;
- To improve efficiency in the use of water;
- To extend the adequacy of current water supplies by reducing the pace of per capita annual growth and demand water.

1.2 Texas Commission on Environmental Quality Rules

TCEQ rules governing the development of water conservation plans for Public Water Suppliers are contained in Title 30, Part 1, Chapter 288, Subchapter A, and Rule 288.2 of the Texas Administrative Code. Copies of these rules are included in Appendix A. The rules define a water conservation plan 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“A strategy or combination of strategies for reducing the volume of water withdrawn from a water supply source, for reducing the loss or waste of water, for maintaining or improving the efficiency in the use of water, for increasing the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) Minimum Water Conservation Plan Requirements: The minimum requirements for water conservation plans for municipal uses by Public Water Suppliers required by TCEQ are summarized below:

- Utility Profile: Includes information regarding population and customer data, water use data, water supply system data, and wastewater system data. (Section 2.0)
- Goals: 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 (GPCD). The goals established by a Public Water Supplier are not enforceable under this subparagraph. (Section 3.0)
- Accurate Metering Devices: TCEQ requires that metering devices have an accuracy of plus or minus five percent (5%) for measuring water diverted from the source of supply. (Section 4.1)
- Universal Metering, Testing, Repair and Replacement: TCEQ requires that there be a program for universal metering of both customer and public uses of water, for meter testing and repair, and for periodic meter replacement. (Section 4.2)
- Determination and Control of Unaccounted-for Water: Regulations require specific measures to determine and control unaccounted-for water. The measures may include periodic visual inspections along distribution pipelines, periodic audits of the water system for illegal connections or abandoned services. (Section 4.3)
- Continuing Public Education Program: A continuing public education and information program regarding water conservation is required as part of the Plan. (Section 4.4)
- Non-Promotional Water Rate Structure: Chapter 288 requires a water rate structure that is not "promotional"; that is, rates that discourage waste and excessive use of water such as increasing block rate instead of volume discounts. (Section 4.5)
- Reservoir Systems Operational Plan: If applicable, this requirement is to provide a coordinated operational structure for operation of reservoirs owned by the water supply entity within a common watershed or river basin in order to optimize available water supplies.
- Coordination with Regional Water Planning Group: Mustang SUD is required to document that the Plan has been coordinated with the Regional Water Planning Group to insure consistency with the appropriate approved regional water plan. (Section 7.0)
- Means of Implementation and Enforcement: The regulations require a strategy for implementing and enforcing the provisions of this Plan, as evidenced by an ordinance, resolution, or tariff, and a description of the authority by which the Plan is enforced. (Section 8.0)

(B) Additional Requirements for Larger Public Water Suppliers: Water conservation plans covering municipal uses by Public Water Suppliers that: (1) currently serve a population of 5,000 or more; or (2) a projected population of 5,000 or more within ten (10) years from the effective date of this Plan; or, (3) provide potable water service to 3,300 or more connections, are required to include the following additional strategies.

- Program for Leak Detection & Repair, and Water Loss Accounting: The Plan must include a description of a program of leak detection and repair, and water loss accounting for the water transmission, delivery, and distribution system. (Section 5.1)
- Record Management System: The Plan must include a record management system to record water pumped, water delivered, water sold and water lost, which allows for the desegregation of water sold and used into user classes (residential, commercial, public and institutional, and industrial). (Section 5.2)
- Wholesale Customer Requirements: If applicable, the Plan must include a requirement that 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 Title 30 TAC Chapter 288. (Section 5.3)

(C) Additional Water Conservation Program Strategies: Landscape Water Management Measures are a strategy that can be used to reduce discretionary water use during summer months. It is an **optional** strategy within the TCEQ regulations. However, it is recommended that Mustang implement a landscape water management ordinance as part of the Plan.

- Landscape Water Management Measures: These regulations are minimal measures to reduce waste in landscape irrigation and peak water demand within the water distribution system. (Section 6.1)

Mustang SUD may also incorporate any or all of the following additional conservation strategies, **which are optional**, as needed to achieve the conservation goals stated in this Plan:

- Adoption of ordinance, plumbing codes or rules requiring water-conserving fixtures (Section 6.3);
- A program for replacement or retrofit of water-conserving plumbing fixtures in existing structures;
- Reuse and/or recycling of wastewater and/or gray water (Section 6.2);
- A program for pressure control and/or reduction in distribution system and/or customer connections;
- A program for landscape water management (Section 6.1); or,
- A method for monitoring the effectiveness and efficiency of the Plan.

This Plan sets forth a program of long-term measures under which Mustang can improve the overall efficiency of water use and conserve its water resources. Short-term measures that respond to specific water management conditions (i.e., periods of drought, unusually high water demands, unforeseen equipment or system failure, or contamination of a water supply source) are provided in Mustang's Drought Contingency Plan.

2. Water Utility Profile

Appendix B to this Plan provides the utility profile as recommended by TCEQ. The utility profile includes information regarding population and customer data, water use data, water supply system data, and wastewater system data. A copy of the utility profile for Mustang SUD will be provided to TCEQ and UTRWD.

(Additional information may be included in this section if desired)

3. Water Conservation Planning Goals

Current TCEQ rules require the adoption of specific water conservation goals as part of the Plan. Mustang SUD will develop 5-year and 10-year target water saving goals (see Table 3.1 below) for per capita municipal use. Specific water conservation strategies are discussed in the subsequent sections of this Plan. The goals of this Plan include the following:

- Maintain per capita municipal water use within the specified range in gallons per capita per day in a dry year, as shown in Table 3.1;
- Maintain the level of unaccounted-for water in Mustang's water system below 10% annually in 2010 and subsequent years (The goal for unaccounted-for water is recommended but 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;
- Raise public awareness of water conservation and encourage responsible public behavior through a coordinated public education and information program;
- Decrease waste in lawn irrigation by implementing and enforcing landscape water management regulations; and,
- Develop a strategy to conserve water during peak demands, thereby reducing the peak use.

**Table 3.1
Municipal Per Capita Target Water Saving Goals**

Description	Current Average (GPCD)	5-Year Goal (GPCD)	10-Year Goal (GPCD)
Average Per Capita Municipal Use			
Less Expected Reduction due to Low-Flow Plumbing Fixtures			
Less Projected Reduction Due to Elements in this Plan			
Water Conservation Goals			

4. Mustang Special Utility District's Water Conservation Program

This section outlines Mustang's water conservation program strategies that are planned to be implemented to achieve or exceed the stated water conservation goals above.

4.1 Accurate Supply Source Metering

Mustang SUD uses two sources of water: groundwater pumped plus treated surface water supplied by UTRWD. Mustang meters all water delivered into the distribution system from each water well site using meters having an accuracy of plus or minus five percent (5%). Mustang currently calibrates its meters at each water well site on an annual basis.

For surface water, UTRWD measures all water delivered to its customers using meters with an accuracy of plus or minus two percent (2%) in accordance with AWWA standards. UTRWD calibrates its meters annually in accordance with AWWA standards. This is well within the TCEQ requirements of five percent (5%) accuracy.

4.2 Universal Metering, Meter Testing and Repair, and Periodic Meter Replacement

Universal Metering – Delivery of water to all customers, including public and governmental users, should be metered.

Meter Testing and Repair – As part of this Plan, Mustang SUD has developed and implemented a meter testing and calibration program of its service connections to identify any unaccounted-for water, and to determine if the meter readings are outside the acceptable range according to AWWA standards. Mustang will continue to pull, test and repair any meter determined to be registering unusual or questionable meter reads.

Periodic Meter Replacement – Most residential meters should be replaced at 10-year to 15-year intervals depending on meter size. Repair or replacement of larger general service meters is generally provided at 5-year intervals. Mustang will replace any meter determined to be inaccurate, or cannot be reasonably repaired.

4.3 Determination and Control of Unaccounted-for Water

Unaccounted-for water is the difference between the amount of water produced or received and the amount delivered to retail, public and governmental users - - plus authorized but un-metered uses. Unaccounted-for water can include several categories:

- Inaccuracies in customer meters;
- 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;
- Losses due to illegal connections and theft;

- Un-metered uses such as firefighting, flushing water mains, and water for public buildings and water treatment plants.

Measures to control unaccounted-for water has become part of the routine operations of Mustang SUD. Field crews and other personnel are expected to look for and report evidence of leaks in the water distribution system. A leak detection and repair program is described in Section 5.1 below. Personnel are trained to watch for and report signs of illegal connections, so they can be quickly addressed.

Unaccounted-for water will be calculated in accordance with the water utility profile in Appendix B. With the measures described in this Plan, the goal for Mustang is to maintain its unaccounted-for water below 10% annually. If unaccounted-for water exceeds this goal, Mustang will complete an audit of its water distribution system to determine the source(s) of and reduce the unaccounted-for water. The annual conservation report described in Section 4.6 is the primary tool that should be used to monitor unaccounted-for water.

4.4 Continuing Public Education and Information Campaign

The public education program is comprised of a wide array of measures and activities to promote water conservation, including those discussed below:

- Promote Mustang's water conservation strategies outlined in this Plan;
- Insert water conservation information with water bills at least twice per year. Inserts will include material developed by Mustang's staff using material obtained from the TWDB, TCEQ, UTRWD and other sources that pertain to water conservation in general, and specific to landscape irrigation conservation, and including protection of pipes from freezing;
- Encourage local media coverage of water conservation issues and the importance of water conservation;
- Notify local organizations, schools, and civic groups that Mustang's staff, and staff of the UTRWD, are available to make presentations on the importance of water conservation and the best ways to save water;
- Make water conservation brochures, and other water conservation materials available to the public at utility offices or other public places, and
- Make information on water conservation available on Mustang's website and include links to the Texas Smartscape website and to other sites with good information about water conservation, including the TWDB and TCEQ web sites.

As a demonstration project, UTRWD maintains a Water Conservation Garden to showcase the beauty and practicality of water-conserving landscape. The Conservation Garden includes over 100 varieties of plants that are either native to Texas or well adapted to the area, and is available for use by Mustang SUD, garden clubs, developers or other civic groups who

desire to advance their knowledge and use of water conservation practices in home and business landscapes.

Other best management practices that may be included as part of the public education program:

- Public service announcements
- Water efficient landscape judging/competition
- Awards/certificates to recognize water efficient commercial users – recognize water saving landscape designs

4.5 Non-Promotional Water Rate Structure

Mustang SUD has adopted, or will adopt, an increasing block water rate structure that is intended to encourage water conservation and discourage waste and excessive use of water. If such a rate structure is not yet adopted, Mustang will adopt an increasing block rate structure as part of its next rate study, or within three (3) years.

An example water rate structure is below:

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 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.
- * The residential rate can also include a lower tier (a life-line rate) for basic household use up to 4,000 gallons per month or a determined basic use.

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.

4.6 Annual Water Conservation Report

Mustang SUD is required to submit an annual water conservation implementation report as provided in Appendix C to TCEQ on an annual basis. Said report will be completed by March 31 of the following year and used to monitor the effectiveness and efficiency of Mustang's water conservation program. The results of the annual report may also be used to

plan conservation-related activities for the following year. A copy of the annual report should be sent to UTRWD, which will monitor regional water conservation trends.

5. Requirements for Larger Public Water Suppliers

Guidance. Water conservation plans covering municipal uses by Public Water Suppliers that: (1) currently serve a population of 5,000 or more; or (2) a projected population of 5,000 or more within ten (10) years from the effective date of this Plan; or (3) provide potable water service to 3,300 or more connections, are required to include the following additional strategies.

5.1 Leak Detection and Repair

Most water leaks, illegal connections, or abandoned water services are discovered through the visual observation of field crews and other personnel, or are reported by the public. Mustang SUD has trained its personnel to look for and report evidence of water leaks in the water distribution system to the appropriate department. All leaks will be repaired as soon as possible in order to maintain a sound water system. Areas of the water distribution system in which numerous leaks and line breaks occur should be programmed for replacement, as funds are available.

Specialized, state-of-the-art leak detection equipment is available free of charge from the Conservation Division of the Texas Water Development Board to reduce water loss by detecting water leaks within the water distribution system. Mustang SUD will develop a leak detection and repair program to minimize unaccounted-for water losses in its water distribution system within the next three (3) years.

5.2 Monitoring and Record Management of Water Deliveries, Sales and Losses

Mustang SUD will regularly monitor all water deliveries and sales to its customers. All water sources and all service connection accounts will be individually metered and read on a regular basis. Mustang will maintain a billing system that recognizes the following user categories: residential, commercial (including public and governmental water uses) and industrial. The information to be collected and maintained as described herein will be used to complete the annual water conservation report, as described in Section 4.6 above.

Additional Water Conservation Program Strategies

6.1 Landscape Water Management Measures

To provide good communication and understanding throughout the UTRWD service area about time-of-day water use in landscape, a common schedule is included herein as follows:

Guidelines for Use of Water in Gardens and Landscape. No outdoor watering with automatic irrigation systems or hose-end sprinklers from 10:00 am to 6:00 pm each day beginning June 1 and ending September 30 of each year. Watering with hand-held hoses, soaker hoses, or drip irrigation systems is allowed anytime.

These guidelines are intended to be actively promoted by Mustang SUD through public information programs for voluntary compliance by its customers. During a drought period (Stages 2 through 4), these guidelines become mandatory and will be enforced.

Guidance. For many utilities, water use rises 50% or more during summer months, taking a toll on water treatment and delivery infrastructure and available water resources. Managing peak season water demand is a component of water sustainability. As part of the development of this Plan, **it is recommended that Mustang SUD** implement a landscape water management ordinance. The ordinance is intended to reduce waste in landscape irrigation and peak water demands; and, such an ordinance should be phased in over at least a three (3) year period. The implementation of the program in phases should allow time for staff to develop an ordinance ensuring sufficient public participation as well as provide an adequate amount of time necessary to educate its customers about the requirements and restrictions of the ordinance.

A typical ordinance would include most of the following elements:

- Prohibit outdoor watering with automatic irrigation systems or hose-end sprinklers from 10:00 am to 6:00 pm each day beginning June 1 and ending September 30 of each year. Watering with hand-held hoses, soaker hoses, or drip irrigation systems is allowed anytime.
- Require all new irrigation systems include rain sensors;
- Require all new irrigation systems be in compliance with state design and installation standards (TAC Title 30, Part 1, Chapter 344);
- Prohibit the design and installation of irrigation systems that spray directly onto impervious surfaces such as sidewalks and roads or onto other non-irrigated areas;
- Require well maintained automatic irrigation systems to avoid waste of water;
- Prohibit outdoor watering during any form of precipitation; and,
- Enforce ordinance by a system of warnings followed by fines for continued or repeat violations.

6.2 Reuse and Recycling of Wastewater (Optional)

Guidance. Entity cooperates with UTRWD in the promotion of and achieving reuse of treated effluent on a regular basis.

6.3 Ordinances, Plumbing Codes, or Rules on Water-Conserving Fixtures (Optional)

Guidance. 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. It is recommended that Mustang SUD has or will incorporate these plumbing code standards into its building regulations.

Over the next five (5) years, Mustang SUD plans to evaluate the feasibility and merits of an optional rebate program to encourage replacement of older fixtures with water conserving fixtures. A rebate program may include one or more of the following concepts:

- Low-flow toilet replacement and rebate;
- Pressure reduction in the system or for individual customers;
- Rain/freeze sensors for irrigation systems,
- Low-flow showerhead and sink aerators replacement;
- Water efficient clothes washer rebates; or
- Other water conservation incentive programs.

6.4 Water Conservation Coordinator (Optional)

Guidance. The Texas Water Development Board's Water Conservation Implementation Task Force has recommended, as part of its Best Management Practices, utilities such as Mustang SUD designate a Water Conservation Coordinator. The Conservation Coordinator would be responsible for the preparation and implementation of the Plan and Mustang's drought contingency plan, preparation and submittal of annual conservation status reports, and implementation of Mustang's conservation program.

7. Coordination with Regional Water Planning Group and UTRWD

Mustang SUD will send a copy of the adopted ordinance(s) or resolution(s) implementing the Plan and their water utility profile to the Executive Director of TCEQ and the Executive Administrator of TWDB. Appendix D includes a copy of a letter to be sent to the Chair of the Region C Water Planning along with Mustang's Plan.

8. Enforcement

Guidance. A copy of an ordinance or resolution, which may be tailored to meet the needs of Mustang SUD, and be adopted by the governing board regarding this Plan is provided in Appendix E. The ordinance or resolution designates responsible officials to implement and enforce the Plan. The responsible official should:

- Oversee the execution and administration of all Plan elements;
- Supervise the keeping of records for the program verification and to assess the program effectiveness; and,
- Make recommendations for changes in the Plan as needed.

9. Review and Update of Water Conservation Plan

As required by TCEQ rules, Mustang Special Utility District will review this Plan every five years. The Plan will be updated as appropriate based on new or updated information. Should the Plan be revised during any five-year period, an amended plan must be submitted to TCEQ within 90 days of being adopted.