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# Water Conservation Plan

## 1. INTRODUCTION AND OBJECTIVES

Having a dependable water supply has always been a key issue in the development of Texas. The growing population and economic expansion occurring in North Central Texas are placing increased demands on our water supplies. In order to meet the challenge of providing for our current and future needs we must learn to use the water we already have more efficiently. By stretching our existing supplies we can delay the need for new supplies, minimize the environmental impacts associated with developing new water resources, and postpone the high cost of building the infrastructure (dams, treatment facilities, and pipelines) necessary to capture, treat, and transport the additional water into our homes and businesses.

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. TCEQ guidelines and requirements are included in Appendix A. The City of Mansfield has developed this water conservation plan in response to 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 extend the life of current water supplies by reducing the rate of growth in demand.
- To educate the citizens of Mansfield about the need for water conservation and the benefits of conserving our most valued natural resource.

## **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a water conservation plan is defined as “A strategy or combination of strategies for reducing the volume of water withdrawn from a water supply source, for reducing the loss or waste of water, for maintaining or improving the efficiency in the use of water, for increasing the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.” 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 and Appendix B
- 288.2(a)(1)(C) – Specification of Goals – Section 4
- 288.2(a)(1)(D) – Accurate Metering – Sections 5.1 and 5.2
- 288.2(a)(1)(E) – Universal Metering – Section 5.2
- 288.2(a)(1)(F) – Determination and Control of Unaccounted Water – Section 5.4
- 288.2(a)(1)(G) – Public Education and Information Program – Section 6
- 288.2(a)(1)(H) – Non-Promotional Water Rate Structure – Section 7
- 288.2(a)(1)(I) – Reservoir System Operation Plan – Section 8.1
- 288.2(a)(1)(J) – Means of Implementation and Enforcement – Section 9
- 288.2(a)(1)(K) – Coordination with Regional Water Planning Group – Section 8.6 and Appendix C

### 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) – Considerations for Landscape Water Management Regulations – Section 8.4
- 288.2(a)(3)(G) – Monitoring Method – Section 5.6

### **3. WATER UTILITY PROFILE**

Appendix C to this water conservation plan is a modified water utility profile based on the format recommended by the TCEQ. Some additional sections were added in order to gather the information necessary to assess the effectiveness of the water conservation plan.

#### **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 customer will develop 5-year and 10-year goals for per capita municipal use, following TCEQ procedures described in the water utility profile (Appendix B). The goals for this water conservation plan include the following:

- Keep the per capita municipal water use below 160 gallons per capita per day in 2012 (5-year goal) and 155 gallons per capita per day in 2017 (10-year goal).
- Keep the level of unaccounted water in the system below 10% annually in 2008 and subsequent years, as discussed in Section 5.4.
- 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.
- Raise public awareness of water conservation and encourage responsible public behavior by a public education and information program, as discussed in Section 6.

## **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**

The metering devices that measure raw water delivered to the City of Mansfield, Texas will be maintained within a minimum of +/- 5% accuracy. The largest raw water meter is located at the water treatment plant. This meter is an Endress Hauser, Pro-Mag W, which has an accuracy range of +/- 0.5%.

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

All connections to the water system are metered connections. All meters will be maintained within an acceptable operating accuracy range as defined by the manufacturer or AWWA Standard for meter accuracy, which ever is more stringent. Dead meters and meters that indicate reduced usage will be flagged during the computerized billing process. These meters will be checked, field tested, and replaced when found to be out of manufacturer specifications or not meeting AWWA Standards.

### **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.

The City of Mansfield will continue to maintain a record management system that accounts for; raw water received, drinking water treated, drinking water pumped, water delivered, water sold, and water system loss. This record management system will continue to separate and account for monthly usage in the following customer categories; residential domestic, residential irrigation, commercial usage, commercial/industrial irrigation, builders / construction, institutional, and industrial.

### **5.4 Determination and Control of Unaccounted Water**

Unaccounted water is the difference between raw water purchased from TRWD and metered deliveries to customers. 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.)
- Losses due to water main breaks and leaks in the water distribution system.
- Losses due to illegal connections and theft.
- Other.

The City of Mansfield will continue to monitor and minimize unaccounted water use by; periodic visual field inspection of all water facilities, use of fire hydrant meters to quantify the volume of water lost during flushing, review of property occupancy, and monthly comparisons of historical metered usage. Additional measures will be taken at the water treatment plant to quantify process water.

As shown in the Water Utility Profile, unaccounted water has varied from 8% to 17% in the last five years. With the measures described in this plan, the City of Mansfield intends to maintain the unaccounted water below 10% in 2008 and subsequent years.

### **5.5 Leak Detection and Repair**

The City of Mansfield will continue to vigilantly monitor the water distribution system and customer service connections for water leaks, and address the repair of any leaks found in a manner that expeditiously stops water loss. All leaks will be isolated and repaired as soon as possible.

Meter readers watch for and report signs of illegal connections so they can be addressed quickly. Crews and personnel look for and report evidence of leaks in the water distribution system. Maintenance crews respond quickly to repair leaks reported by the public and city personnel. The City of Mansfield uses 2 three-man distribution line crews. 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 B is a modified water utility profile form that will be used in the development of an annual water conservation report for the City of Mansfield. This form will be completed by May 1 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 modified water utility profile and annual water conservation report will also be sent to TRWD, which will monitor regional water conservation trends.

## 6. CONTINUING PUBLIC EDUCATION AND INFORMATION CAMPAIGN

The City of Mansfield will continue to promote conservation through public education by:

- Participating in various conservation programs with the Tarrant Regional Water District.
- Promoting a consistent, regional message of conservation awareness in public and private schools.
- Making conservation information available at the public library and on the City of Mansfield website.
- Including a conservation message in the city's E-Newsletter.
- Ensuring that the annual consumer confidence report will continue to contain a conservation message for the entire service area.
- Encouraging local media coverage of water conservation issues and the importance of water conservation.
- Making the *Texas Smartscape* CD, water conservation brochures, and other water conservation materials available to the public at the City of Mansfield Utility Department and other public places.
- Water Department staff will participate in the *Texas Smartscape* workshops, teaching attendees how to develop water management strategies and proper irrigation scheduling.
- The City of Mansfield sponsors the Newspapers in Education initiative. Up to 350 area teachers can sign up to receive a free supplement, "Water: From Here to Eternity and Back Again." TRWD and its primary customers (including Mansfield) have customized the supplement with additional topics that specifically relate to water issues in North Central Texas.

## 7. NON-PROMOTIONAL WATER RATE STRUCTURE

With the intent of encouraging water conservation and discouraging waste and excessive use of water, the City of Mansfield has adopted an increasing block rate structure. The unit price for water increases with increasing water usage. Current water rates are shown in tables 7.1 and 7.2.

Table 7.1 Monthly Meter Charges

| Meter Size (inches) | Total Charge | Meter Size (inches) | Total Charge | Meter Size (inches) | Total Charge |
|---------------------|--------------|---------------------|--------------|---------------------|--------------|
| 5/8 or 3/4          | \$14.72      | 2                   | \$117.76     | 6                   | \$828.76     |
| 1                   | \$36.80      | 3                   | \$235.53     |                     |              |
| 1 1/2               | \$73.60      | 4                   | \$404.81     |                     |              |

Table 7.2 Volume Unit Charges

| Water User                           | Type/Volume             | Volume Unit Charge (\$ per 1,000 gal.) |
|--------------------------------------|-------------------------|--|
| Residential and Commercial Customers | 0 to 2,000 gallons      | Included in base                       |
|                                      | 2,000 to 32,000 gallons | \$2.47                                 |
|                                      | 32,000 gallons or above | \$3.09                                 |
| Industrial Customers                 | 0 to 2,000 gallons      | Included in base                       |
|                                      | 2,000 to 32,000 gallons | \$1.64                                 |
|                                      | 32,000 gallons or above | \$2.05                                 |

## **8. OTHER WATER CONSERVATION MEASURES**

### **8.1 Reservoir System Operation Plan**

Tarrant Regional Water District is responsible for all reservoir operation. The City of Mansfield will continue to provide elected official representation on the Advisory Board and staff representation on the Technical Advisory Committee of the Tarrant Regional Water District.

### **8.2 Reuse and Recycling of Wastewater**

The City of Mansfield does not own and operate its own wastewater treatment plant. The city's wastewater is treated by the Trinity River Authority.

### **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 Water Waste Prohibition**

Landscape irrigation and outdoor watering are responsible for a large portion of the water wasted in the state of Texas. The City of Mansfield will adopt the following conservation measures in an effort to reduce the amount of waster water:

- Prohibition of outdoor watering with sprinklers from 10:00 a.m. to 6:00 p.m. every day, year-round. Watering with hand-held hoses (provided that they are equipped with positive shut-off devices), soaker hoses, or hand-held dispensers is allowed.
- Requirement that all irrigation systems installed or receiving major repair work on or after May 1, 2008, be equipped with operational rain and freeze sensors. Existing residential irrigation systems are encouraged to be retrofitted with similar rain and freeze sensors.
- Requirement that all commercial and home owners' association (HOA) irrigation systems be equipped with operational rain and freeze sensors.
- Requirement that all irrigation systems installed or receiving major repair work on or after May 1, 2008, be equipped with controllers capable of multiple programs.
- Requirement that all irrigation systems installed or receiving major repair work on or after May 1, 2008, be equipped with an approved manual shut-off valve with lock-out capabilities. City personnel must be able to lock-out the valve with a standard padlock.

- Requirement that all irrigation systems be in compliance with current state design and installation regulations (Texas Administrative Code Title 30, Part 1, Chapter 344).
- Prohibition of designs and installations that spray directly onto impervious surfaces such as sidewalks and roads or onto other non-irrigated areas.
- Prohibition of poorly maintained sprinkler systems that waste water.
- Prohibition of outdoor watering during any form of precipitation.
- Prohibition of outdoor watering during a freeze or when the temperature has the potential of reaching 32°F.

Failure to comply with any portion of this section will constitute a violation and may be subject to enforcement.

Any of the following shall constitute major repair work:

- Any repair or maintenance that exposes the main line to the atmosphere.
- Any repair or maintenance that has an associated cost equal to or greater than \$500.00.

## **8.5 Requirement for Water Conservation Plans by Wholesale Customers**

The City of Mansfield is a wholesale water supplier. Every contract for the wholesale sale of water that is entered into, renewed, or extended after the adoption of this water conservation 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 TRWD**

Appendix C includes a letter sent to the Chair of the Region C Water Planning Group with this water conservation plan. A copy of this plan has also been sent to TRWD.

## **8.7 Requests for Variance**

The Director of Utility Operations or his/her designee may grant temporary variance for water use prohibited by this plan if it is determined that an emergency condition resulting in an adverse affect to health, sanitation, or fire protection of a customer, person, or entity would result if a variance is not granted. Temporary variance may also be granted if it is determined that a customer, person, or entity is caused undue hardship or financial burden if a variance is not granted.

Outdoor watering at a service address with large multi-station irrigation systems may take place in accordance with a variance granted by the Director of Utility Operations or his/her designee if it is determined that the property can not be adequately irrigated in a single day.

Temporary variance may also be granted to playing fields which require watering to maintain league standards.

Skinned areas of sports fields may be watered as needed for dust control without applying for temporary variance.

In order to receive a written variance from the Director of Utility Operation or his/her designee the customer, person, or entity must provide a written request including:

- Name and address of the person requesting the variance.
- Location of the proposed water use.
- Detailed statement of potential damage and reason for the variance.
- The volume of water needed and specific purpose of water use.
- Period of time the variance is needed.
- Detailed statement of water conservation measures that are being used.
- Any diagram or other explanation that demonstrates the need for a variance.

Variances not retroactive and do not justify violations of the plan.

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

Mandatory water conservation measures will be enforced by warnings and penalties as follows:

- On the first violation, customers will be given a verbal warning that they have violated the mandatory water conservation measures. City staff will provide the customer with the information and educational materials needed to comply with the plan.
- On the second violation, customers will be issued a written warning that they have violated the mandatory water conservation measures.
- On the third and subsequent violations, a violation notice will be issued to customers, with minimum and maximum fines established by ordinance.
- After four violations have occurred, in a twelve month timeframe, the utility may cut off water service to the customer.
  - In order to restore water service, a customer must sign a statement of intent to comply with all applicable water conservation measures established or adopted by ordinance and pay a restore service fee.

The Director of Utility Operations or his/her designee may assess an administrative fee approved by the City Manager in addition to any criminal penalty assessed for a violation of this plan as described below. Administrative fees will not be assessed for verbal or written warnings. The administrative fee shall be assessed on the third and subsequent violations in order to recover costs associated with enforcement. Each day that a violation occurs shall constitute a separate violation.

- Violations involving irrigation systems with lock-out capabilities.
  - The Director of Utility Operations or his/her designee may install a lock on an irrigation system found to be operating in violation of this plan on more than three occasions and shall assess an administrative fee as approved by the City Manager (if applicable).
  - Notice shall be left on the premise to advise the owner/operator that the irrigation system has been locked; and
  - Notice shall be sent by United States Postal Service to the person recorded as the city's water customer notifying that person that a violation has been found and that the irrigation system has been locked. The notice shall also state the amount of the assessed administrative fee and shall advise the person of the procedures for payment of the fees and the procedure to request removal of the lock.
- Violations involving irrigation systems without lock-out capabilities.
  - The Director of Utility Operations or his/her designee shall leave notice on the premise to advise the owner/operator that the person was in violation of

this plan and has been assessed an administrative fee as approved by the City Manager (if applicable).

- Notice shall be sent by United States Postal Service to the person recorded as the city's water customer notifying that person that a violation has been found. The notice shall also state the amount of the assessed administrative fee and shall advise the person of the procedures for payment of the fees.
- Violations of mandatory water conservation measures not involving an underground irrigation system.
  - The Director of Utility Operations or his/her designee shall leave notice on the premise to advise the owner/operator that the person was in violation of this plan and has been assessed an administrative fee as approved by the City Manager (if applicable).
  - Notice shall be sent by United States Postal Service to the person recorded as the city's water customer notifying that person that a violation has been found. The notice shall also state the amount of the assessed administrative fee and shall advise the person of the procedures for payment of the fees.
- It shall be unlawful for any person to tamper with, cause damage to, or remove a locking device placed on an irrigation system by the Director of Utility Operations or his/her designee.
- The locking device will be removed from the irrigation system by the Director of Utility Operations or his/her designee within three (3) working days after payment is received from the customer.
- The Director of Utility Operations or his/her designee may require that an irrigation system comply with all current regulations and ordinances if:
  - The customer or irrigation system is found to be in violation of this plan on four (4) separate occasions;
  - In the opinion of the Director of Utility Operations or his/her designee, the violation warrants immediate compliance; or
  - The design, installation, or operation of the irrigation system prohibits the efficient use of water.
- Failure to pay assessed administrative fees within the indicated timeframe will constitute a separate violation of this plan.

**APPENDIX A**

**TEXAS COMMISSION ON ENVIRONMENTAL QUALITY RULES  
ON MUNICIPAL WATER CONSERVATION PLANS**

**Texas Commission on Environmental Quality Rules on Water Conservation Plans  
for Municipal Uses by Public Water Suppliers**

**Texas Administrative Code**

|                            |  |
|----------------------------|--|
| <b><u>TITLE 30</u></b>     | ENVIRONMENTAL QUALITY  |
| <b><u>PART 1</u></b>       | TEXAS COMMISSION ON ENVIRONMENTAL QUALITY  |
| <b><u>CHAPTER 288</u></b>  | WATER CONSERVATION PLANS, DROUGHT<br>CONTINGENCY PLANS, GUIDELINES AND<br>REQUIREMENTS |
| <b><u>SUBCHAPTER A</u></b> | WATER CONSERVATION PLANS   |
| <b>RULE §288.1</b>         | <b>Definitions</b>   |

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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.

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**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**  
**PART 1**  
**CHAPTER 288**

ENVIRONMENTAL QUALITY  
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY  
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 must 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; and
  - (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 applicable 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 greywater;
  - (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.

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**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

**APPENDIX B**

**FORM FOR WATER UTILITY PROFILE  
AND WATER CONSERVATION REPORT**

**APPENDIX B**  
**Customer Water Conservation Report**  
**Due May 1 of Every Year**

**Name of Utility:** \_\_\_\_\_

**Address & Zip:** \_\_\_\_\_

**Telephone Number:** \_\_\_\_\_ **Fax:** \_\_\_\_\_

**Form Completed By:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

Name and Phone Number of Person/Department responsible for implementing a water conservation program:

\_\_\_\_\_

|                        |
|------------------------|
| <b>UTILITY PROFILE</b> |
|------------------------|

**I. POPULATION CUSTOMER DATA**

**A. Population and Service Area Data**

1. Service area size (square miles): \_\_\_\_\_
2. Current population of service area: \_\_\_\_\_
3. Current population served by utility:
  - a: water \_\_\_\_\_
  - b: wastewater \_\_\_\_\_

4. Population served by water utility service area for the previous five years:
5. Projected population for in the following decades:

| <u>Year</u> | <u>Population</u> | <u>Year</u> | <u>Population</u> |
|-------------|-------------------|-------------|-------------------|
| _____       | _____             | 2010        | _____             |
| _____       | _____             | 2020        | _____             |
| _____       | _____             | 2030        | _____             |
| _____       | _____             | 2040        | _____             |
| _____       | _____             | 2050        | _____             |
| _____       | _____             | 2060        | _____             |

5. List specific source(s)/method(s) for the calculation of current and projected population:

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**B. Active Connections**

1. Current number of active connections by user type. Check whether multi-family service is counted as Residential \_\_\_ or Commercial \_\_\_ .

| Treated water users | Metered | Not-metered | Total |
|---------------------|---------|-------------|-------|
| Residential         |         |             |       |
| Commercial          |         |             |       |
| Industrial          |         |             |       |
| Public              |         |             |       |
| Other               |         |             |       |

2. List the net number of new connections per year for most recent three years:

|             |             |             |             |
|-------------|-------------|-------------|-------------|
| <b>Year</b> | <u>20XX</u> | <u>20XX</u> | <u>20XX</u> |
| Total       | _____       | _____       | _____       |

**C. High Volume Customers**

List annual water use for the ten highest volume customers (indicate if treated or raw water delivery). Provide date of most recent water use audit – if never audited, please indicate so.

|     | Customer | Use (1,000 gallons / year) | Treated / Raw Water | Date of Last Water Use Audit |
|-----|----------|----------------------------|---------------------|------------------------------|
| (1) |          |                            |                     |                              |
| (2) |          |                            |                     |                              |
| (3) |          |                            |                     |                              |
| (4) |          |                            |                     |                              |
| (5) |          |                            |                     |                              |
| (6) |          |                            |                     |                              |

|      |  |  |  |  |
|------|--|--|--|--|
| (7)  |  |  |  |  |
| (8)  |  |  |  |  |
| (9)  |  |  |  |  |
| (10) |  |  |  |  |

**II. WATER USE DATA FOR SERVICE AREA**

**A. Water Accounting Data**

1. Amount of water use for previous five years (in 1,000 gal.):

| <b>Total Diverted and Treated Water Deliveries and Sales by Month</b> |             |             |             |             |             |
|---|-------------|-------------|-------------|-------------|-------------|
| <b>Month</b>  | <b>Year</b> |             |             |             |             |
|   | <b>20XX</b> | <b>20XX</b> | <b>20XX</b> | <b>20XX</b> | <b>20XX</b> |
| <b>January</b>  |             |             |             |             |             |
| <b>February</b>   |             |             |             |             |             |
| <b>March</b>  |             |             |             |             |             |
| <b>April</b>  |             |             |             |             |             |
| <b>May</b>  |             |             |             |             |             |
| <b>June</b>   |             |             |             |             |             |
| <b>July</b>   |             |             |             |             |             |
| <b>August</b>   |             |             |             |             |             |
| <b>September</b>  |             |             |             |             |             |
| <b>October</b>  |             |             |             |             |             |
| <b>November</b>   |             |             |             |             |             |
| <b>December</b>   |             |             |             |             |             |
| <b>Total</b>  |             |             |             |             |             |

Indicate how the above figures were determined (e.g., from a master meter located at the point of a diversion from the source or located at a point where raw water enters the treatment plant, or from water sales).

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2. Indicate whether water is supplied from:

a. Untreated surface water sources: \_\_\_\_\_

b. Another utility as treated water: \_\_\_\_\_

2a. For entities that treat their own water:

Does utility operate a raw water intake? If so, indicate intake location and minimum elevations of safe operation.

| <u>Location of raw water intake</u> | <u>Elevation</u> |
|-------------------------------------|------------------|
| _____                               | _____            |
| _____                               | _____            |
| _____                               | _____            |
| _____                               | _____            |

2b. For entities that purchase treated water from another utility, list water supply sources and quantity purchased from each source:

| <u>Treated water sources purchased</u> | <u>Quantity</u> |
|--|-----------------|
| _____                                  | _____           |
| _____                                  | _____           |
| _____                                  | _____           |
| _____                                  | _____           |

3. Amount of water (in 1,000 gallons) delivered (sold) as recorded by the following account types for the past five years.

| Account Type                  | Year |      |      |      |      |
|-------------------------------|------|------|------|------|------|
|                               | 20XX | 20XX | 20XX | 20XX | 20XX |
| <b>Residential</b>            |      |      |      |      |      |
| <b>Commercial</b>             |      |      |      |      |      |
| <b>Public / Institutional</b> |      |      |      |      |      |
| <b>Industrial</b>             |      |      |      |      |      |
| <b>Wholesale</b>              |      |      |      |      |      |
| <b>Other</b>                  |      |      |      |      |      |
| <b>Total Sold</b>             |      |      |      |      |      |

Residential:                      Single + multifamily residences

- Commercial: Restaurants, retail, office
- Public / Institutional: Municipal, airports, schools, hospitals
- Industrial: Large manufacturing
- Wholesale: Deliveries to successive customers
- Other: Uses not included in above categories.  
Please describe: \_\_\_\_\_

4. Calculate gallons per capita per day by account types for the past five years.

| Account Type           | Gallons per capita per day by Account Type<br>(Total water diverted (or treated) / population / 365) |      |      |      |      |
|------------------------|--|------|------|------|------|
|                        | 20XX   | 20XX | 20XX | 20XX | 20XX |
| Residential            |  |      |      |      |      |
| Commercial             |  |      |      |      |      |
| Public / Institutional |  |      |      |      |      |
| Industrial             |  |      |      |      |      |
| Wholesale              |  |      |      |      |      |
| Other                  |  |      |      |      |      |
| <b>Total</b>           |  |      |      |      |      |

5. List previous five years records for water loss (the difference between water diverted (or treated) and water delivered (or sold)). The goal for percent of unaccounted for water is 12%.

| <u>Year</u> | <u>Amount (gal.)</u> | <u>% of Total Water Diverted or Treated</u> |
|-------------|----------------------|---|
| _____       | _____                | _____                                       |
| _____       | _____                | _____                                       |
| _____       | _____                | _____                                       |
| _____       | _____                | _____                                       |
| _____       | _____                | _____                                       |

6. List previous five years records for water reuse. Reuse is 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.

| <u>Year</u> | <u>Amount (gal.)</u> | <u>% of Total Water Diverted or Treated</u> |
|-------------|----------------------|---|
| _____       | _____                | _____                                       |
| _____       | _____                | _____                                       |
| _____       | _____                | _____                                       |
| _____       | _____                | _____                                       |
| _____       | _____                | _____                                       |

7. Municipal per capita water use (in gallons per day) for previous five years. Municipal per capita water use is the sum total of water diverted into a water supply system for residential, commercial, and public and institutional uses divided by total population served. GPCD includes water losses.

| <u>Year</u> | <u>Population</u> | <u>Total Water Diverted (or Treated)(1,000 gal.)</u> | <u>Municipal Per Capita Use (GPCD)</u> |
|-------------|-------------------|--|--|
| _____       | _____             | _____  | _____                                  |
| _____       | _____             | _____  | _____                                  |
| _____       | _____             | _____  | _____                                  |
| _____       | _____             | _____  | _____                                  |
| _____       | _____             | _____  | _____                                  |

7. Previously stated per capita goals: 5-year: \_\_\_\_\_ 10-year: \_\_\_\_\_  
 (by 200X) (by 200X)

8. Did water use (GPCD) increase or decrease from previous year? \_\_\_\_\_  
 Percent increase or decrease from previous year? \_\_\_\_\_

9. Briefly discuss reasons for the increase or decrease in municipal water use.
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

**APPENDIX C**  
**LETTER TO REGION C**  
**WATER PLANNING GROUP**

**APPENDIX C**  
**Letter to Region C Water Planning Group**

Date

Mr. Jim Parks  
Chair, Region C Water Planning Group  
North Texas Municipal Water District  
P.O. Box 2408  
Wylie, TX 75098

Dear Mr. Parks:

Enclosed please find a copy of the water conservation plan for customers of the City of Mansfield. I am submitting a copy of this plan to the Region C Water Planning Group in accordance with the Texas Water Development Board and Texas Commission on Environmental Quality rules.

Sincerely,

Joe Smolinski  
Pretreatment Coordinator  
City of Mansfield

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