



**Public Works
Water/Wastewater Utility Division
Water Conservation Plan**

Revised: April 2014

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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 suppliers¹. TCEQ guidelines and requirements are included in Appendix B. The Tarrant Regional Water District (TRWD) has also developed this model water conservation plan for its direct and indirect customers following TCEQ guidelines and requirements. An indirect customer refers to any successive wholesale customers of TRWD's primary customers.

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.
- Encourage efficient outdoor water use.
- 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.

Specific objectives achieved in this document are:

- Completion of the water utility profile and water conservation report (provided in Appendix C).
- Set five- and ten-year goals for per capita water use.
- Adopt ordinance(s) or regulation(s) approving the model plan.

Superscripted numbers match references listed in Appendix A.

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 and Appendix C
- 288.2(a)(1)(B) – Record Management System – Section 5.3
- 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)(J) – Means of Implementation and Enforcement – Section 9
- 288.2(a)(1)(K) – Coordination with Regional Water Planning Group – Section 8.6
and Appendix E

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

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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:

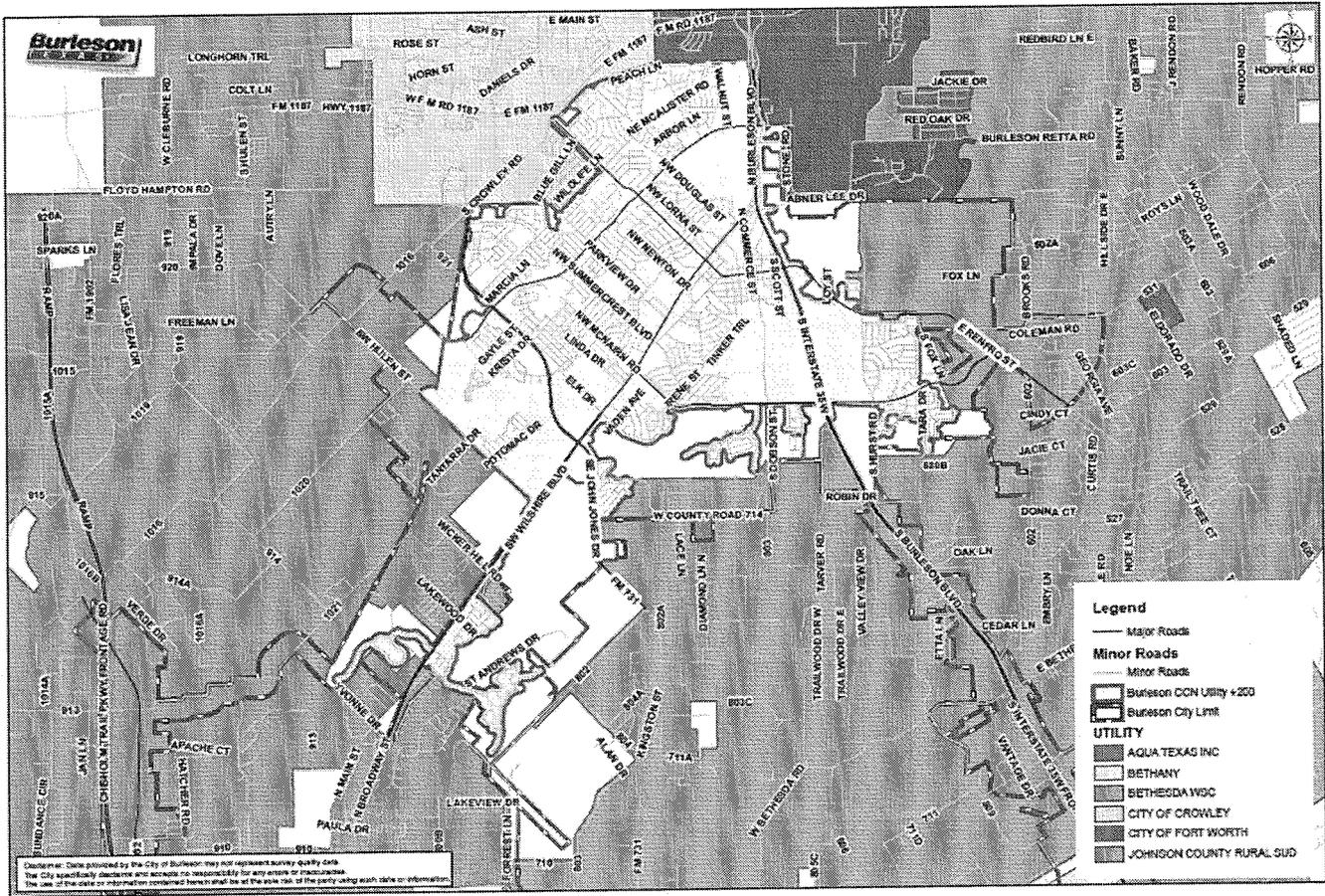
- 288.2(a)(3)(A) – Conservation Oriented Water Rates – Section 7
- 288.2(a)(3)(B) – Ordinances, Plumbing Codes or Rules on Water-Conserving Fixtures – Section 8.1
- 288.2(a)(3)(F)–Considerations for Landscape Water Management Regulations – Section 8.2 and Appendix D
- 288.2(a)(3)(G) – Monitoring Method – Section 5.6
- 344.1 – Landscape Irrigation Definitions, Appendix B
- 344.60 – Landscape Irrigation, Water Conservation, Appendix B
- 344.62 – Landscape Irrigation Systems, Minimum Design and Installation Requirements, Appendix B.

3. WATER UTILITY PROFILE

Presented below is a description and service area map of the City of Burleson public water system. In addition, 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 City of Burleson's water conservation plan. The data in the report will be based on the Burleson public water system's water use during the previous calendar year.

Description:

City of Burleson Water System (Public Water System ID 1260002) currently serves more than 41,000 residents in 2014 with the population expected to grow to more than 65,000 by the year 2050. The City of Burleson currently purchases over 1.6 Billion gallons of treated water from the City of Fort Worth each year which is provided to Burleson residents through the City owned and maintained water distribution system. The water systems customer base is approximately ninety-three percent residential and the remaining seven percent are multi-family and commercial/industrial customers. The Burleson water system employs nine tanks with a combined storage capability of 8.61 million gallons, and five pump stations with a combined pumping capacity of 17 million gallons per day to provide an average of nearly five million gallons of water per day to the nearly 13,329 connections. The following graphic is a map of the City of Burleson water system service area.



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 C). These goals will be submitted to the City of Fort Worth Water Department 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 2013 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 8.2.
- 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.

Table C-1 – Calculations include all customer classes:

Year	Population	Water Use	GPCD
2005	28,350	1,273,369,170	123
2010	35,000	1,697,953,103	133
2015	43,402	2,054,276,338	130
2020	55,393	2,556,319,094	126
2025	64,215	2,879,416,654	123

NOTE: The Tarrant Regional Water Districts estimates approximately two-percent of the annual water supplies over the next five years will be derived from reuse.

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 to the City of Burleson

Fort Worth supplies all of the water used by the City of Burleson. Water deliveries are metered by Fort Worth using meter with accuracy of $\pm 2\%$. These meters are calibrated on a quarterly basis by Fort Worth to maintain the required accuracy.

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

The City of Burleson meters all connections to the public water system.

All connections to the water system are metered connections. All meters will be maintained within 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 checked, field tested, and replaced when found to be out of manufacturer specifications or not meeting AWWA standards.

Meters 3" and larger will be tested every year. Meters 1 1/2" to 2" will be tested every three years and all meters smaller than 1 1/2" will be tested every ten years. Water meters will also be tested for accuracy as requested by customers and as part of internal water audits.

5.3 Record Management System

As required by TAC Title 30, Part 1, Chapter 288, Subchapter A, Rule 288.2(a)(2)(B), the City of Burleson will maintain a records management system that 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

5.4 Determination and Control of Unaccounted Water

Unaccounted water is the difference between water delivered to the City of Burleson from the City of Fort Worth Water Department 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.
- 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.
- Other.

Measures to control unaccounted water are part of the routine operations of the City of Burleson. Maintenance crews and personnel consistently monitor and inspect for and report evidence of leaks in the water distribution system. The leak detection and repair program is described in Section 5.5. Meter readers, technicians, inspectors and field operations personnel watch for and report signs of illegal connections, so they can be addressed quickly.

Unaccounted water is calculated in Appendix C. With the measures described in this water conservation plan, the City of Burleson intends to maintain the unaccounted water below 12% in 2013 and subsequent years. If unaccounted water exceeds this goal, the customer will implement a more intensive audit to determine the source(s) of and reduce the unaccounted water. The annual conservation report is the primary tool used to monitor unaccounted water.

5.5 Leak Detection and Repair

As described above, city crews and personnel are directed 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 are targeted for replacement as funds are available.

5.6 Monitoring of Effectiveness and Efficiency - Annual Water Conservation Report

Appendix C is a modified water utility profile form that will be used in the development of an annual water conservation report for the City of Burleson. 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 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 customers' staff and material obtained from TRWD, TWDB, 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 customer staff and staff of the City of Burleson and/or Tarrant Regional Water District are available to make presentations on the importance of water conservation and ways to save water.
- Make information on *Texas Smartscape* principles, water conservation brochures, and other water conservation materials available to the public at City Hall and other public places.
- Links to the *Texas Smartscape* (www.txsmartscape.com) are available Web site and to information on water conservation on TRWD (www.trwd.com), TWDB (www.twdb.state.tx.us), and TCEQ (www.tceq.state.us) Web sites.
- As part of the Tarrant Regional Water Districts customer base, Burleson supports the Water Districts regional water conservation media campaign "Save water. Nothing can replace it."
- Burleson will work to promote a new regional Web site (www.savetarrantwater.com) designed to centralize water conservation information for residents in North Texas. In addition, the Web site will also provide up-to-date information on water resources, sustainability, and local events and workshops.

7. WATER RATE STRUCTURE

"Water conservation pricing is the use of rate structures that discourage the inefficient use or waste of water. Conservation pricing structures include increasing unit prices with increased consumption such as inverted block rates, base rates, and excess use rates such as water budget rates and seasonal rates. Seasonal rate structures may include additional charges for

upper block (outdoor) usage or excess-use surcharges for commercial customers to reduce demand during summer months.”³

The City of Burleson rate structure is designed to promote efficient use of water for all customers. It is developed on a block rate structure that incrementally increases the rates for customers in blocks of ten thousand with anything over twenty-thousand gallons of use monthly resulting in the maximum domestic rate charged. In addition, the rates incorporate a monthly charge for meter size which increases with each increase in meter size. The application of meter charges is designed to promote the use of accurate methodology when determining water needs and meter sizes for new development and redevelopment. Listed below is a schedule of the City of Burleson’s water rates:

All meter sizes	1- 10,000 gallons	Rate = \$3.96/1,000 gallons
	10,001 – 20,000 gallons	Rate = \$4.77/1,000 gallons
	Over 20,000 gallons	Rate = \$5.53/1,000 gallons
Gas Well Development		Rate = \$12.87/1,000 gallons

Monthly meter charges are administered as shown in the following schedule:

Meter Size	¾"	1"	1 ½"	2"	3"	4"	6"
Monthly Rate	\$12.43	\$18.08	\$34.18	\$50.29	\$121.14	\$201.65	\$402.96

8. OTHER WATER CONSERVATION MEASURES

8.1 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.

8.2 Landscape Water Management Regulations

Appendix D 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. The City of Burleson regulations include the following elements:

- Prohibition of outdoor watering with sprinklers from 10:00 a.m. to 6:00 p.m. year-round. (Resetting of watering times in sprinkler systems is recommended to comply with the

water schedule. Watering with hand-held hoses, soaker hoses, or dispensers is allowed.)

- Requirement that all new irrigation systems include rain and freeze sensors capable of multiple programming. Existing irrigation systems are encouraged to be retrofitted with similar rain and freeze sensors.
- Requirement that all new irrigation systems be in compliance with state design and installation regulations (TAC Title 30, Part 1, Chapter 344).
- Prohibition of irrigation systems that spray directly onto impervious surfaces or onto other non-irrigated areas. (Wind driven water drift will be taken into consideration.)
- Prohibition of use of poorly maintained sprinkler systems that waste water.
- Prohibition of outdoor watering during any form of precipitation.
- Enforcement of the regulations by a system of warnings followed by fines for continued or repeat violations.
- Implement other measures to encourage off-peak water use.

The City and other regional water providers (North Texas Municipal Water District, Tarrant Regional Water District, Upper Trinity Regional Water District, the Trinity River Authority and the city of Dallas) have collaborated and agreed upon implementing a year round no more than twice per week watering schedule. The City will have a mandatory twice per week water schedule similar to Stage 1 of its drought plan.

TWICE PER WEEK WATERING SCHEDULE	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Monday						
No outdoor watering	Non-residential	Residential addresses ending in (0,2,4,6,8)	Residential addresses ending in (1,3,5,7,9)	Non-residential	Residential addresses ending in (0,2,4,6,8)	Residential addresses ending in (1,3,5,7,9)

Additional water conservation incentive programs might include:

- Pressure reduction in the system or for individual customers

8.3 Coordination with Regional Water Planning Group and TRWD

Appendix E includes a letter sent to the Chair of the Region C and Region G Water Planning Group with this water conservation plan. Each customer (direct and indirect) will send a copy of their draft resolution(s) or regulation(s) implementing the plan and their water utility profile to TRWD for review and comment. The adopted resolution(s) or regulation(s) and the adopted water utility profile will also be sent to TRWD.

9. Implementation and enforcement of the Water Conservation Plan

The Director of Public Works or his/her duly appointed representative will act as the Administrator of the Water Conservation Plan. The Administrator will oversee the execution and implementation of all elements of the Plan. The Administrator will also be responsible for overseeing records of program implementation.

Appendix F contains a copy of the Resolution adopted by the City of Burleson Council on April 7, 2014. Appendix D, the considerations for landscape water management regulations, also includes information about enforcement. Appendix G includes a copy of Ordinance B - 293 to illegal connections and water theft.

APPENDIX A
LIST OF REFERENCES

Appendix A
List of References

- (1) Title 30 of the Texas Administrative Code, Part 1, Chapter 288, Subchapter A, Rules 288.1 and 288.5, and Subchapter B, Rule 288.22, downloaded from <http://www.tceq.state.tx.us/assets/public/legal/rules/rules/pdflib/288a.pdf>.
- (2) Tarrant Regional Water District, "Water Conservation and Drought Contingency Plan", prepared by the Tarrant Regional Water District, April 2009
- (3) Texas Water Development Board: "Report 362 – Water Conservation Best Management Practices," prepared by Water Conservation Implementation Task Force, Austin, November 2004.
- (4) Water Conservation Advisory Council: Guidance and Methodology for Reporting on Water Conservation and Water Use, December 2012
- (5) Texas Commission on Environmental Quality Annual Report. [http://www.tceq.texas.gov/permitting/water rights/conserve.html#imple](http://www.tceq.texas.gov/permitting/water%20rights/conserve.html#imple)
- (6) City of Fort Worth, "Draft Water Conservation Plan", Prepared by Freese and Nichols, Inc., March 11, 2014

APPENDIX B

**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

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

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

- (1) Agricultural or Agriculture--Any of the following activities:
 - (A) cultivating the soil to produce crops for human food, animal feed, or planting seed or for the production of fibers;
 - (B) the practice of floriculture, viticulture, silviculture, and horticulture, including the cultivation of plants in containers or non-soil media by a nursery grower;
 - (C) raising, feeding, or keeping animals for breeding purposes or for the production of food or fiber, leather, pelts, or other tangible products having a commercial value;
 - (D) raising or keeping equine animals;
 - (E) wildlife management; and
 - (F) planting cover crops, including cover crops cultivated for transplantation, or leaving land idle for the purpose of participating in any governmental program or normal crop or livestock rotation procedure.
- (2) Agricultural use--Any use or activity involving agriculture, including irrigation.
- (3) Conservation--Those practices, techniques, and technologies that reduce the consumption of water, reduce the loss or waste of water, improve the efficiency in the use of water, or increase the recycling and reuse of water so that a water supply is made available for future or alternative uses.
- (4) Drought contingency plan--A strategy or combination of strategies for temporary supply and demand management responses to temporary and potentially recurring water supply shortages and other water supply emergencies. A drought contingency plan may be a separate document identified as such or may be contained within another water management document(s).
- (5) Industrial use--The use of water in processes designed to convert materials of a lower order of value into forms having greater usability and commercial value, commercial fish production, and the development of power by means other than hydroelectric, but does not include agricultural use.
- (6) Irrigation--The agricultural use of water for the irrigation of crops, trees, and pastureland, including, but not limited to, golf courses and parks which do not receive water through a municipal distribution system.
- (7) Irrigation water use efficiency--The percentage of that amount of irrigation water which is beneficially used by agriculture crops or other vegetation relative to the amount of water diverted from the

source(s) of supply. Beneficial uses of water for irrigation purposes include, but are not limited to, evapotranspiration needs for vegetative maintenance and growth, salinity management, and leaching requirements associated with irrigation.

- (8) Mining use--The use of water for mining processes including hydraulic use, drilling, washing sand and gravel, and oil field repressuring.
- (9) Municipal per capita water use--The sum total of water diverted into a water supply system for residential, commercial, and public and institutional uses divided by actual population served.
- (10) Municipal use--The use of potable water within or outside a municipality and its environs whether supplied by a person, privately owned utility, political subdivision, or other entity as well as the use of sewage effluent for certain purposes, including the use of treated water for domestic purposes, fighting fires, sprinkling streets, flushing sewers and drains, watering parks and parkways, and recreational purposes, including public and private swimming pools, the use of potable water in industrial and commercial enterprises supplied by a municipal distribution system without special construction to meet its demands, and for the watering of lawns and family gardens.
- (11) Municipal use in gallons per capita per day--The total average daily amount of water diverted or pumped for treatment for potable use by a public water supply system. The calculation is made by dividing the water diverted or pumped for treatment for potable use by population served. Indirect reuse volumes shall be credited against total diversion volumes for the purpose of calculating gallons per capita per day for targets and goals.
- (12) Nursery grower--A person engaged in the practice of floriculture, viticulture, silviculture, and horticulture, including the cultivation of plants in containers or nonsoil media, who grows more than 50% of the products that the person either sells or leases, regardless of the variety sold, leased, or grown. For the purpose of this definition, grow means the actual cultivation or propagation of the product beyond the mere holding or maintaining of the item prior to sale or lease, and typically includes activities associated with the production or multiplying of stock such as the development of new plants from cuttings, grafts, plugs, or seedlings.
- (13) Pollution--The alteration of the physical, thermal, chemical, or biological quality of, or the contamination of, any water in the state that renders the water harmful, detrimental, or injurious to humans, animal life, vegetation, or property, or to the public health, safety, or welfare, or impairs the usefulness or the public enjoyment of the water for any lawful or reasonable purpose.
- (14) Public water supplier--An individual or entity that supplies water to the public for human consumption.
- (15) Regional water planning group--A group established by the Texas Water Development Board to prepare a regional water plan under Texas Water Code, §16.053.
- (16) Retail public water supplier--An individual or entity that for compensation supplies water to the public for human consumption. The term does not include an individual or entity that supplies water to itself or its employees or tenants when that water is not resold to or used by others.
- (17) Reuse--The authorized use for one or more beneficial purposes of use of water that remains unconsumed after the water is used for the original purpose of use and before that water is either disposed of or discharged or otherwise allowed to flow into a watercourse, lake, or other body of state-owned water.
- (18) Water conservation plan--A strategy or combination of strategies for reducing the volume of water withdrawn from a water supply source, for reducing the loss or waste of water, for maintaining or improving the efficiency in the use of water, for increasing the recycling and reuse of water, and for preventing the pollution of water. A water conservation plan may be a separate document identified

as such or may be contained within another water management document(s).

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

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

Texas Administrative Code

<u>TITLE 30</u>	ENVIRONMENTAL QUALITY
<u>PART 1</u>	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
<u>CHAPTER 288</u>	WATER CONSERVATION PLANS, DROUGHT CONTINGENCY PLANS, GUIDELINES AND REQUIREMENTS
<u>SUBCHAPTER A</u>	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 water suppliers must include the following elements:
- (A) a utility profile in accordance with the Texas Water Use Methodology, including, but not limited to, information regarding population and customer data, water use data (including total gallons per capita per day (GPCD) and residential GPCD), water supply system data, and wastewater system data;
- (B) a record management system which allows for the classification of water sales and uses into the most detailed level of water use data currently available to it, including, if possible, the sectors listed in clauses (i) - (vi) of this subparagraph. Any new billing system purchased by a public water supplier must be capable of reporting detailed water use data as described in clauses (i) - (vi) of this subparagraph:
- (i) residential;
 - (I) single family;
 - (II) multi-family;
 - (ii) commercial;
 - (iii) institutional;
 - (iv) industrial;
 - (v) agricultural; and,
 - (vi) wholesale.
- (C) specific, quantified five-year and ten-year targets for water savings to include goals for water loss programs and goals for municipal use in total GPCD and residential GPCD. 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 water loss (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;

(B) 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, the contract between the initial supplier and customer must provide that the contract for the resale of the water must have water conservation requirements so that each successive customer in the resale of the water will be required to implement water conservation measures in accordance with the provisions of this chapter.

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

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

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

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

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

- (E) a program for pressure control and/or reduction in the distribution system and/or for customer connections;
 - (F) a program and/or ordinance(s) for landscape water management;
 - (G) a method for monitoring the effectiveness and efficiency of the water conservation plan; and
 - (H) any other water conservation practice, method, or technique which the water supplier shows to be appropriate for achieving the stated goal or goals of the water conservation plan.
- (b) A water conservation plan prepared in accordance with 31 TAC §363.15 (relating to Required Water Conservation Plan) of the Texas Water Development Board and substantially meeting the requirements of this section and other applicable commission rules may be submitted to meet application requirements in accordance with a memorandum of understanding between the commission and the Texas Water Development Board.
- (c) 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 every five years to coincide with the regional water planning group.

Source Note: The provisions of this §288.2 adopted to be effective May 3, 1993, 18 TexReg 2558; amended to be effective February 21, 1999, 24 TexReg 949; amended to be effective April 27, 2000, 25 TexReg 3544; amended to be effective October 7, 2004, 29 TexReg 9384

Texas Administrative Code

<u>TITLE 30</u>	ENVIRONMENTAL QUALITY
<u>PART 1</u>	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
<u>CHAPTER 344</u>	LANDSCAPE IRRIGATION
<u>SUBCHAPTER A</u>	DEFINITIONS
RULE §344.1	Definitions

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

- (1) Air gap--A complete physical separation between the free flowing discharge end of a potable water supply pipeline and an open or non-pressure receiving vessel.
- (2) Atmospheric Vacuum Breaker--An assembly containing an air inlet valve, a check seat, and an air inlet port. The flow of water into the body causes the air inlet valve to close the air inlet port. When the flow of water stops the air inlet valve falls and forms a check against back-siphonage. At the same time it opens the air inlet port allowing air to enter and satisfy the vacuum. Also known as an Atmospheric Vacuum Breaker Back-siphonage Prevention Assembly.
- (3) Backflow prevention--The mechanical prevention of reverse flow, or back siphonage, of nonpotable water from an irrigation system into the potable water source.
- (4) Backflow prevention assembly--Any assembly used to prevent backflow into a potable water system. The type of assembly used is based on the existing or potential degree of health hazard and backflow condition.
- (5) Completion of irrigation system installation--When the landscape irrigation system has been installed, all minimum standards met, all tests performed, and the irrigator is satisfied that the system is operating correctly.
- (6) Consulting--The act of providing advice, guidance, review or recommendations related to landscape irrigation systems.
- (7) Cross-connection--An actual or potential connection between a potable water source and an irrigation system that may contain contaminants or pollutants or any source of water that has been treated to a lesser degree in the treatment process.
- (8) Design--The act of determining the various elements of a landscape irrigation system that will include, but not limited to, elements such as collecting site specific information, defining the scope of the project, defining plant watering needs, selecting and laying out emission devices, locating system components, conducting hydraulics calculations, identifying any local regulatory requirements, or scheduling irrigation work at a site. Completion of the various components will result in an irrigation plan.

- (9) Design pressure--The pressure that is required for an emission device to operate properly. Design pressure is calculated by adding the operating pressure necessary at an emission device to the total of all pressure losses accumulated from an emission device to the water source.
- (10) Double Check Valve--An assembly that is composed of two independently acting, approved check valves, including tightly closed resilient seated shutoff valves attached at each end of the assembly and fitted with properly located resilient seated test cocks. Also known as a Double Check Valve Backflow Prevention Assembly.
- (11) Emission device--Any device that is contained within an irrigation system and that is used to apply water. Common emission devices in an irrigation system include, but are not limited to, spray and rotary sprinkler heads, and drip irrigation emitters.
- (12) Employed--Engaged or hired to provide consulting services or perform any activity relating to the sale, design, installation, maintenance, alteration, repair, or service to irrigation systems. A person is employed if that person is in an employer-employee relationship as defined by Internal Revenue Code, 26 United States Code Service, §3212(d) based on the behavioral control, financial control, and the type of relationship involved in performing employment related tasks.
- (13) Head-to-head spacing--The spacing of spray or rotary heads equal to the manufacturer's published radius of the head.
- (14) Health hazard--A cross-connection or potential cross-connection with an irrigation system that involves any substance that may, if introduced into the potable water supply, cause death or illness, spread disease, or have a high probability of causing such effects.
- (15) Hydraulics--The science of dynamic and static water; the mathematical computation of determining pressure losses and pressure requirements of an irrigation system.
- (16) Inspector--A licensed plumbing inspector, water district operator, other governmental entity, or irrigation inspector who inspects irrigation systems and performs other enforcement duties for a municipality or water district as an employee or as a contractor.
- (17) Installer--A person who actually connects an irrigation system to a private or public raw or potable water supply system or any water supply, who is licensed according to Chapter 30 of this title (relating to Occupational Licenses and Registrations).
- (18) Irrigation inspector--A person who inspects irrigation systems and performs other enforcement duties for a municipality or water district as an employee or as a contractor and is required to be licensed under Chapter 30 of this title (relating to Occupational Licenses and Registrations).

- (19) Irrigation plan--A scaled drawing of a landscape irrigation system which lists required information, the scope of the project, and represents the changes made in the installation of the irrigation system.
- (20) Irrigation services--Selling, designing, installing, maintaining, altering, repairing, servicing, permitting, providing consulting services regarding, or connecting an irrigation system to a water supply.
- (21) Irrigation system--An assembly of component parts that is permanently installed for the controlled distribution and conservation of water to irrigate any type of landscape vegetation in any location, and/or to reduce dust or control erosion. This term does not include a system that is used on or by an agricultural operation as defined by Texas Agricultural Code, §251.002.
- (22) Irrigation technician--A person who works under the supervision of a licensed irrigator to install, maintain, alter, repair, service or supervise installation of an irrigation system, including the connection of such system in or to a private or public, raw or potable water supply system or any water supply, and who is required to be licensed under Chapter 30 of this title (relating to Occupational Licenses and Registrations).
- (23) Irrigation zone--A subdivision of an irrigation system with a matched precipitation rate based on plant material type (such as turf, shrubs, or trees), microclimate factors (such as sun/shade ratio), topographic features (such as slope) and soil conditions (such as sand, loam, clay, or combination) or for hydrological control.
- (24) Irrigator--A person who sells, designs, offers consultations regarding, installs, maintains, alters, repairs, services or supervises the installation of an irrigation system, including the connection of such system to a private or public, raw or potable water supply system or any water supply, and who is required to be licensed under Chapter 30 of this title (relating to Occupational Licenses and Registrations).
- (25) Irrigator-in-Charge--The irrigator responsible for all irrigation work performed by an exempt business owner, including, but not limited to obtaining permits, developing design plans, supervising the work of other irrigators or irrigation technicians, and installing, selling, maintaining, altering, repairing, or servicing a landscape irrigation system.
- (26) Landscape irrigation--The science of applying the necessary amount of water to promote or sustain healthy growth of plant material or turf.
- (27) License--An occupational license that is issued by the commission under Chapter 30 of this title to an individual that authorizes the individual to engage in an activity that is covered by this chapter.
- (28) Mainline--A pipe within an irrigation system that delivers water from the water source to the individual zone valves.

- (29) Maintenance checklist--A document made available to the irrigation system's owner or owner's representative that contains information regarding the operation and maintenance of the irrigation system, including, but not limited to: checking and repairing the irrigation system, setting the automatic controller, checking the rain or moisture sensor, cleaning filters, pruning grass and plants away from irrigation emitters, using and operating the irrigation system, the precipitation rates of each irrigation zone within the system, any water conservation measures currently in effect from the water purveyor, the name of the water purveyor, a suggested seasonal or monthly watering schedule based on current evapotranspiration data for the geographic region, and the minimum water requirements for the plant material in each zone based on the soil type and plant material where the system is installed.
- (30) Major maintenance, alteration, repair, or service--Any activity that involves opening to the atmosphere the irrigation main line at any point prior to the discharge side of any irrigation zone control valve. This includes, but is not limited to, repairing or connecting into a main supply pipe, replacing a zone control valve, or repairing a zone control valve in a manner that opens the system to the atmosphere.
- (31) Master valve--A remote control valve located after the backflow prevention device that controls the flow of water to the irrigation system mainline.
- (32) Matched precipitation rate--The condition in which all sprinkler heads within an irrigation zone apply water at the same rate.
- (33) New installation--An irrigation system installed at a location where one did not previously exist.
- (34) Non-health hazard--A cross-connection or potential cross connection from a landscape irrigation system that involves any substance that generally would not be a health hazard but would constitute a nuisance or be aesthetically objectionable if introduced into the potable water supply.
- (35) Non-potable water--Water that is not suitable for human consumption. Non-potable water sources include, but are not limited to, irrigation systems, lakes, ponds, streams, gray water that is discharged from washing machines, dishwashers or other appliances, water vapor condensate from cooling towers, reclaimed water, and harvested rainwater.
- (36) Pass-through contract--A written contract between a contractor or builder and a licensed irrigator or exempt business owner to perform part or all of the irrigation services relating to an irrigation system.
- (37) Potable water--Water that is suitable for human consumption.
- (38) Pressure Vacuum Breaker--An assembly containing an independently operating internally loaded check valve and an independently operating loaded air inlet valve located on the discharge side of the check valve. Also known as a Pressure Vacuum Breaker Back-siphonage Prevention Assembly.

- (39) Reclaimed water--Domestic or municipal wastewater which has been treated to a quality suitable for beneficial use, such as landscape irrigation.
- (40) Records of landscape irrigation activities--The irrigation plans, contracts, warranty information, invoices, copies of permits, and other documents that relate to the installation, maintenance, alteration, repair, or service of a landscape irrigation system.
- (41) Reduced Pressure Principle Backflow Prevention Assembly--An assembly containing two independently acting approved check valves together with a hydraulically operating mechanically independent pressure differential relief valve located between the two check valves and below the first check valve.
- (42) Static water pressure--The pressure of water when it is not moving.
- (43) Supervision--The on-the-job oversight and direction by a licensed irrigator who is fulfilling his or her professional responsibility to the client and/or employer in compliance with local or state requirements. Also a licensed installer working under the direction of a licensed irrigator or beginning January 1, 2009, an irrigation technician who is working under the direction of a licensed irrigator to install, maintain, alter, repair or service an irrigation system.
- (44) Water conservation--The design, installation, service, and operation of an irrigation system in a manner that prevents the waste of water, promotes the most efficient use of water, and applies the least amount of water that is required to maintain healthy individual plant material or turf, reduce dust, and control erosion.
- (45) Zone flow--A measurement, in gallons per minute or gallons per hour, of the actual flow of water through a zone valve, calculated by individually opening each zone valve and obtaining a valid reading after the pressure has stabilized. For design purposes, the zone flow is the total flow of all nozzles in the zone at a specific pressure.
- (46) Zone valve--An automatic valve that controls a single zone of a landscape irrigation system.

Source Note: The provisions of this §344.1 adopted to be effective January 1, 2009, 33 TexReg 5713

Texas Administrative Code

<u>TITLE 30</u>	ENVIRONMENTAL QUALITY
<u>PART 1</u>	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
<u>CHAPTER 344</u>	LANDSCAPE IRRIGATION
<u>SUBCHAPTER F</u>	STANDARDS FOR DESIGNING, INSTALLING, AND MAINTAINING LANDSCAPE IRRIGATION SYSTEMS
RULE §344.60	Water Conservation

All irrigation systems shall be designed, installed, maintained, altered, repaired, serviced, and operated in a manner that will promote water conservation as defined in §344.1(44) of this title (relating to Definitions).

Source Note: The provisions of this §344.60 adopted to be effective January 1, 2009, 33 TexReg 5713

Texas Administrative Code

<u>TITLE 30</u>	ENVIRONMENTAL QUALITY
<u>PART 1</u>	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
<u>CHAPTER 344</u>	LANDSCAPE IRRIGATION
<u>SUBCHAPTER F</u>	STANDARDS FOR DESIGNING, INSTALLING, AND MAINTAINING LANDSCAPE IRRIGATION SYSTEMS
RULE §344.62	Minimum Design and Installation Requirements

(a) No irrigation design or installation shall require the use of any component, including the water meter, in a way which exceeds the manufacturer's published performance limitations for the component.

(b) Spacing.

(1) The maximum spacing between emission devices must not exceed the manufacturer's published radius or spacing of the device(s). The radius or spacing is determined by referring to the manufacturer's published specifications for a specific emission device at a specific operating pressure.

(2) New irrigation systems shall not utilize above-ground spray emission devices in landscapes that are less than 48 inches not including the impervious surfaces in either length or width and which contain impervious pedestrian or vehicular traffic surfaces along two or more perimeters. If pop-up sprays or rotary sprinkler heads are used in a new irrigation system, the sprinkler heads must direct flow away from any adjacent surface and shall not be installed closer than four inches from a hardscape, such as, but not limited to, a building foundation, fence, concrete, asphalt, pavers, or stones set with mortar.

(3) Narrow paved walkways, jogging paths, golf cart paths or other small areas located in cemeteries, parks, golf courses or other public areas may be exempted from this requirement if the runoff drains into a landscaped area.

(c) Water pressure. Emission devices must be installed to operate at the minimum and not above the maximum sprinkler head pressure as published by the manufacturer for the nozzle and head spacing that is used. Methods to achieve the water pressure requirements include, but are not limited to, flow

control valves, a pressure regulator, or pressure compensating spray heads.

(d) Piping. Piping in irrigation systems must be designed and installed so that the flow of water in the pipe will not exceed a velocity of five feet per second for polyvinyl chloride (PVC) pipe.

(e) Irrigation Zones. Irrigation systems shall have separate zones based on plant material type, microclimate factors, topographic features, soil conditions, and hydrological requirements.

(f) Matched precipitation rate. Zones must be designed and installed so that all of the emission devices in that zone irrigate at the same precipitation rate.

(g) Irrigation systems shall not spray water over surfaces made of concrete, asphalt, brick, wood, stones set with mortar, or any other impervious material, such as, but not limited to, walls, fences, sidewalks, streets, etc.

(h) Master valve. When provided, a master valve shall be installed on the discharge side of the backflow prevention device on all new installations.

(i) PVC pipe primer solvent. All new irrigation systems that are installed using PVC pipe and fittings shall be primed with a colored primer prior to applying the PVC cement in accordance with the Uniform Plumbing Code (Section 316) or the International Plumbing Code (Section 605).

(j) Rain or moisture shut-off devices or other technology. All new automatically controlled irrigation systems must include sensors or other technology designed to inhibit or interrupt operation of the irrigation system during periods of moisture or rainfall. Rain or moisture shut-off technology must be installed according to the manufacturer's published recommendations. Repairs to existing automatic irrigation systems that require replacement of an existing controller must include a sensor or other technology designed to inhibit or interrupt operation of the irrigation system during periods of moisture or rainfall. El Paso, Hudspeth, Culberson, Jeff Davis, Presidio, Brewster, Terrell, Loving, Winkler, Ward, Reeves, Ector, Crane and Pecos are excluded from this requirement.

(k) Isolation valve. All new irrigation systems must include an isolation valve between the water meter and the backflow prevention device.

(l) Depth coverage of piping. Piping in all irrigation systems must be installed according to the manufacturer's published specifications for depth coverage of piping.

(1) If the manufacturer has not published specifications for depth coverage of piping, the piping must be installed to provide minimum depth coverage of six inches of select backfill, between the top of the pipe and the natural grade of the topsoil. All portions of the irrigation system that fail to meet this standard must be noted on the irrigation plan. If the area being irrigated has rock at a depth of six inches or less, select backfill may be mounded over the pipe. Mounding must be noted on the irrigation plan and discussed with the irrigation system owner or owner's representative to address any safety issues.

(2) If a utility, man-made structure, or roots create an unavoidable obstacle, which makes the six-inch depth coverage requirement impractical, the piping shall be installed to provide a minimum of two inches of select backfill between the top of the pipe and the natural grade of the topsoil.

(3) All trenches and holes created during installation of an irrigation system must be backfilled and compacted to the original grade.

(m) Wiring irrigation systems.

(1) Underground electrical wiring used to connect an automatic controller to any electrical component of the irrigation system must be listed by Underwriters Laboratories as acceptable for burial underground.

(2) Electrical wiring that connects any electrical components of an irrigation system must be sized according to the manufacturer's recommendation.

(3) Electrical wire splices which may be exposed to moisture must be waterproof as certified by the wire splice manufacturer.

(4) Underground electrical wiring that connects an automatic controller to any electrical component of the irrigation system must be buried with a minimum of six inches of select backfill.

(n) Water contained within the piping of an irrigation system is deemed to be non-potable. No drinking

or domestic water usage, such as, but not limited to, filling swimming pools or decorative fountains, shall be connected to an irrigation system. If a hose bib (an outdoor water faucet that has hose threads on the spout) is connected to an irrigation system for the purpose of providing supplemental water to an area, the hose bib must be installed using a quick coupler key on a quick coupler installed in a covered purple valve box and the hose bib and any hoses connected to the bib must be labeled "non-potable, not safe for drinking." An isolation valve must be installed upstream of a quick coupler connecting a hose bib to an irrigation system.

(o) Beginning January 1, 2010, either a licensed irrigator or a licensed irrigation technician shall be on-site at all times while the landscape irrigation system is being installed. When an irrigator is not on-site, the irrigator shall be responsible for ensuring that a licensed irrigation technician is on-site to supervise the installation of the irrigation system.

Source Note: The provisions of this §344.62 adopted to be effective January 1, 2009, 33 TexReg 5713

APPENDIX C

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

APPENDIX C
Customer Water Conservation Report
Due May 1 of Every Year

Name of Utility: City of Burleson

Address & Zip: 141 W. Renfro St.

Telephone Number: 817-426-9830

Form Completed By:

Title: Assistant Director of Public Works

Signature: _____ **Date:** _____

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

Kevin North 817-426-9830

UTILITY PROFILE

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
5. Projected population for service area for the previous five years:

in the following decades:

<u>Year</u>	<u>Population</u>	<u>Year</u>	<u>Population</u>
<u>2009</u>	_____	<u>2010</u>	37,148
<u>2010</u>	_____	<u>2020</u>	50,546
<u>2011</u>	_____	<u>2030</u>	64,975
<u>2012</u>	_____	<u>2040</u>	N/A
<u>2013</u>	_____	<u>2050</u>	N/A
		<u>2060</u>	N/A

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

North Central Texas Council of Government Projections.

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:

<u>Year</u>	<u>2010</u>	<u>2012</u>	<u>2013</u>
Total	_____	_____	_____

C. High Volume Customers

	Customer	Use (1,000 gallons / year)	Treated / Raw Water	Date of Last Water Use Audit
(2)			Treated	N/A
(3)			Treated	N/A
(4)			Treated	N/A
(5)			Treated	N/A
(6)			Treated	N/A
(7)			Treated	N/A
(8)			Treated	N/A
(9)			Treated	N/A
(10)			Treated	N/A

N/A = Never audited

II. WATER USE DATA FOR SERVICE AREA

A. Water Accounting Data

1. Amount of water use for previous five years:

Total Diverted and Treated Water Deliveries and Sales by Month					
Month	Year				
	2009	2010	2011	2012	2013
January					
February					
March					
April					
May					
June					
July					

August					
September					
October					
November					
December					
Total					

Numbers provided in the previous table were determined through master metering performed by City of Fort Worth, the City of Burleson's wholesale water provider.

2. The City of Burleson water system purchases treated water from the City of Fort Worth through a long-term wholesale customer contract.

2a. 100% of the water provided by the City of Burleson water system is purchased from the City of Fort Worth.

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

Account Type	Year				
	2009	2010	2011	2012	2013
Residential					
Commercial/Institutional					
Industrial	NA	N/A	N/A		
Wholesale	N/A	N/A	N/A	N/A	N/A
Other	N/A	N/A	0	0	0
Total Sold					

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 (Total water diverted (or treated) / population / 365)				
	2009	2010	2011	2012	2013
Residential					
Commercial/Inst.					
Industrial					
Wholesale	N/A	N/A	N/A	N/A	N/A
Other					
Total					

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>
<u>2009</u>	_____	% _____
<u>2010</u>	_____	% _____
<u>2011</u>	_____	% _____
<u>2012</u>	_____	% _____
<u>2013</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.

Currently the City of Burleson does not have any application of water reuse, staff will continue to explore potential applications for future development.

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.

Year	Population	Total Water Diverted (or Treated) 1,000 gal.)	Municipal Per Capita Use (GPCD)
2009			
2010			
2011			
2012			
2013			

8. Previously stated per capita goals: 5-year: $\frac{107}{2000}$ 10-year: $\frac{98}{2010}$

9. Did water use (GPCD) increase or decrease from previous year?

Increase

Percent increase or decrease from previous year? **21%**

10. Briefly discuss reasons for the increase or decrease in municipal water use.

Increased use by gas well development operators. Goals for the previous projection did not account for the significant growth the City of Burleson has experienced over the past five to seven years. In addition, gas well development has become extremely active in the City of Burleson. Alternative sources of water are utilized as often as possible and recommended in the gas well application process however many times; domestic water is the only option.

We hope to see an increased reduction of gallons per capita per day use through the various restrictions recently implemented through additional landscape irrigation requirements and anticipated decrease in gas well development applications.

11. Water use Projections:

Table C-1

Year	Population	Water Use	GPCD
2005	28,350	1,273,369,170	123
2010	34,007	1,650,869,815	133
2015	43,402	2,054,276,338	130
2020	55,393	2,556,319,094	126
2025	64,215	2,879,416,654	123

Population estimations are based on 5% growth over the period to 2020 and 3% growth to 2025.

III. Wastewater System Data

Wastewater Service Area Information

- Percent of potable water customers sewered by your utilities wastewater treatment system? 0%, Burleson conveys all wastewater collected to the City of Fort Worth
- Percent of Burleson water customers the have septic tanks? <1% or 15 systems.
- Percent of water customers sewered by another wastewater treatment utility? 100%, all wastewater collected by the City of Burleson is treated by the City of Fort Worth through a long-term wholesale wastewater contract.

APPENDIX D
LANDSCAPE WATER MANAGEMENT REGULATIONS

APPENDIX D
Landscape Water Management Regulations

A. Purpose

The purpose of these proposed landscape water management regulations is to provide a consistent mechanism for preventing the waste of water resources. To enact these provisions, entities must verify legal authority to adopt such provisions, and must promulgate valid rules, orders, or ordinances.

- B.** The City and other regional water providers (North Texas Municipal Water District, Tarrant Regional Water District, Upper Trinity Regional Water District, the Trinity River Authority and the city of Dallas) have collaborated and agreed upon implementing a year round no more than twice per week watering schedule. The City will have a mandatory twice per week water schedule similar to Stage 1 of its drought plan.

TWICE PER WEEK WATERING SCHEDULE	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Monday						
No outdoor watering	Non-residential	Residential addresses ending in (0,2,4,6,8)	Residential addresses ending in (1,3,5,7,9)	Non-residential	Residential addresses ending in (0,2,4,6,8)	Residential addresses ending in (1,3,5,7,9)

C. Lawn and Landscape Irrigation Restrictions

1. A person commits an offense if the person irrigates, waters, or knowingly or recklessly causes or allows the irrigation or watering of any lawn or landscape located on any property owned, leased, or managed by the person between the hours of 10:00 a.m. and 6:00 p.m. any time of the year.
2. A person commits an offense if the person knowingly or recklessly irrigates, waters, or causes or allows the irrigation or watering of lawn or landscape located on any property owned, leased, or managed by that person in such a manner that causes:
 - a. over-watering lawn or landscape, such that a constant stream of water overflows from the lawn or landscape onto a street or other drainage area; or
 - b. irrigating lawn or landscape during any form of precipitation. This restriction applies to all forms of irrigation, including automatic sprinkler systems; or

- c. irrigation of impervious surfaces or other non-irrigated areas, wind driven water drift taken into consideration.
- 3. A person commits an offense if the person knowingly or recklessly operates a lawn or irrigation system or device on property that the person owns, leases, or manages that:
 - a. has broken or missing sprinkler head(s); or
 - b. has not been properly maintained to prevent the waste of water.

D. Rain and Freeze Sensors

1. Any new irrigation system installed on or after June 1, 2007, must be equipped with rain and freeze sensing devices in compliance with state design and installation regulations. Existing irrigation systems must be retrofitted with similar rain and freeze sensors within 5 years.
2. A person commits an offense on property owned, leased or managed if the person:
 - a. knowingly or recklessly installs or allows the installation of new irrigation systems in violation of Subsection C.1; or
 - b. knowingly or recklessly operates or allows the operation of an irrigation system that does not comply with Subsection C.1.

E. Variances

1. In special cases, variances may be granted to persons demonstrating extreme hardship or need. Variances may be granted under the following circumstances:
 - a. the applicant must sign a compliance agreement agreeing to irrigate or water the lawn and/or landscape only in the amount and manner permitted by the variance; and
 - b. the variance must not cause an immediate significant reduction to the water supply; and
 - c. the extreme hardship or need requiring the variance must relate to the health, safety, or welfare of the person making the request; and
 - d. the health, safety, and welfare of the public and the person making the request must not be adversely affected by the requested variance.
2. A variance will be revoked upon a finding that:
 - a. the applicant can no longer demonstrate extreme hardship or need; or
 - b. the terms of the compliance agreement are violated; or
 - c. the health, safety, or welfare of the public or other persons requires revocation.

APPENDIX E
LETTERS TO REGION C AND REGION G
WATER PLANNING GROUPS



PUBLIC WORKS

141 West Renfro
Burleson, Texas 76028-4261
817-447-5410
fax 817-447-9989
www.burlesontx.com

March 27, 2014

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

Dear Mr. Parks,

Please find the enclosed copy of the City of Burleson's amended Water Conservation Plan. This document is effective May 1, 2014.

This plan is submitted to the Region C Water Planning Group in accordance with Chapter 288 of Title 30, Texas Administrative Code, "Water Conservation Plans, Drought Contingency Plans, Guidelines and Requirements."

Please contact me if you need any additional information regarding the submitted information.

Respectfully,

A handwritten signature in cursive script that reads "Kevin North".

Kevin North
Assistant Director of Public Works
City of Burleson, Texas

cc: Aaron Russell P.E., Director of Public Works
File



PUBLIC WORKS

141 West Renfro
Burleson, Texas 76028-4261
817-447-5410
fax 817-447-9989
www.burlesontx.com

March 27, 2014

Mr. Wayne Wilson
Chair, Region G Water Planning Group
Wilson Cattle Company
7026 East OSR
Bryan, TX 77808

Dear Mr. Wilson,

Please find the enclosed copy of the City of Burleson's amended Water Conservation Plan. This document is effective May 1, 2014.

This plan is submitted to the Region G Water Planning Group in accordance with Chapter 288 of Title 30, Texas Administrative Code, "Water Conservation Plans, Drought Contingency Plans, Guidelines and Requirements."

Please contact me if you need any additional information regarding the submitted information.

Respectfully,

A handwritten signature in cursive script that reads "Kevin North".

Kevin North
Assistant Director of Public Works
City of Burleson, Texas

cc: Aaron Russell P.E., Director of Public Works
File

APPENDIX F
ADOPTION OF WATER CONSERVATION PLAN

RESOLUTION _____

A RESOLUTION BY THE CITY COUNCIL OF BURLESON, TEXAS, TO ADOPT THE WATER CONSERVATION PLAN TO PROMOTE THE RESPONSIBLE USE OF WATER; AND PROVIDING AN EFFECTIVE DATE.

Whereas, the City of Burleson (the City), recognizes that the amount of water available to its water customers is limited; and

Whereas, the City recognizes that due to natural limitations, drought conditions, system failures and other acts of God which may occur, the City cannot guarantee an uninterrupted water supply for all purposes at all times; and

Whereas, Title 30, Chapter 288 of the Texas Administrative Code requires the City to revise its Water Conservation Plan every five years; and,

Whereas, the City has determined an urgent need in the best interest of the public to adopt a Water Conservation Plan; and,

Whereas, the Council of the City of Burleson desires to adopt the revised Water Conservation Plan as official City policy for the conservation of water.

NOW THEREFORE BE IT RESOLVED BY THE COUNCIL OF THE CITY OF BURLESON, TEXAS, THAT:

SECTION 1.

The City Council hereby approves and adopts the Water Conservation Plan (the "Plan"), attached hereto as Exhibit A. The City commits to implement the requirements and procedure set forth in the adopted Plan.

SECTION 2.

The City Manager or his/her designee is hereby directed to file a copy of the Plan and this Resolution with the Executive Director of the Texas Commission on Environmental Quality and with the Executive Administrator of the Texas Water Development Board in accordance with Title 30, Chapter 288 of the Texas Administrative Code.

SECTION 3.

Should any paragraph, sentence, clause, phrase, or word of this Resolution be declared unconstitutional or invalid for any reason, the remainder of this Resolution shall not be affected.

SECTION 4.

Resolution Number 1149, adopted on April 6, 2009, is hereby repealed.

SECTION 5.

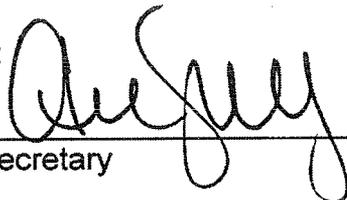
This Resolution shall take effect upon its passage and approval, and it is accordingly so resolved.

Signed this 21st day of April, 2014

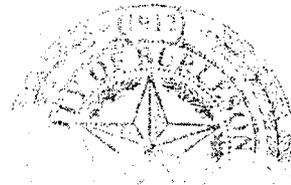


Mayor, Ken Shetter

Attest:



City Secretary



APPENDIX G
ILLEGAL WATER CONNECTIONS
AND THEFT OF WATER

Ordinance Prohibiting Water Theft

ORDINANCE B-293

AN ORDINANCE OF THE CITY OF BURLESON, JOHNSON AND TARRANT COUNTIES, TEXAS, TO BE KNOWN AS THEFT OF CITY SERVICES; TO MAKE IT UNLAWFUL FOR A PERSON TO KNOWINGLY AND INTENTIONALLY CONTRACT FOR CITY SERVICES INTENDING NOT TO PAY FOR THEM; DIVERTING SERVICES OF ANOTHER TO HIS BENEFIT WITHOUT CONSENT; CREATING A PRIMA FACIE PRESUMPTION OF INTENT NOT TO PAY IF THE ACTOR HAS REFUSED TO PAY FOR THE SERVICE WITHIN 30 DAYS OF NOTICE; PENALTY CLAUSE; REPEALER CLAUSE; SEVERABILITY CLAUSE; AND EFFECTIVE DATE CLAUSE.

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF BURLESON, JOHNSON AND TARRANT COUNTIES, TEXAS:

I.

This Ordinance shall henceforth be known as "Theft of City Services Ordinance".

II.

- A. A person commits theft of City services if, with intent to avoid payment for any service that he knows is provided only for compensation:
1. He intentionally or knowingly secures performance of a City service by deception, threat, false token, or fraudulent representation; or
 2. Having control over the disposition of services of another to which he is not entitled, he intentionally or knowingly diverts the other's services to his own benefit or to the benefit of another not entitled to them.
- B. For the purposes of this section, intent to avoid payment is presumed if the actor refuses to pay for the service within 30 days after the bill is posted to the actor addressed to the mailing address of the property or the one provided by the actor. For the purpose of this section, failure to receive payment by the City of Burleson for the services is prima facie evidence of actor's refusal to pay.

III.

Any person who shall violate any of the provisions of this ordinance shall be deemed guilty of a misdemeanor and upon conviction thereof in the Municipal Corporation Court of the City

shall be fined in any sum not exceeding two hundred (\$200.00) dollars and each offense and each day such violation continues shall constitute a separate offense.

IV.

All ordinances or parts of ordinances not consistent or conflicting with the provisions of this Ordinance are hereby repealed; provided that such repeal shall be only to the extent of such inconsistency and in all other respects this Ordinance shall be cumulative of other Ordinances regulating and governing the subject matter covered by this Ordinance.

V.

If any article, section, sub-section, sentence or phrase of this Ordinance should be held to be invalid for any reason whatsoever such invalidity shall not affect the remaining portions of this Ordinance which shall remain in full force and effect to this end the provisions of this Ordinance are declared to be severable.

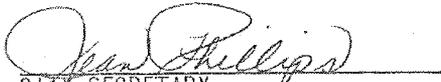
VI.

This Ordinance shall be effective after final passage and publication as required by law.

PASSED AND APPROVED this the 27 day of August, 1981.


MAYOR

ATTEST:


CITY SECRETARY

First Reading: July 23, 1981

Second Reading: August 13, 1981