



CITY OF WATAUGA WATER CONSERVATION PLAN

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APPENDICES

APPENDIX

DESCRIPTION

- A** **Texas Commission on Environmental Quality Rules on Municipal Water Conservation Plans**
- ◆ Texas Administrative Code Title 30, Part 1, Chapter 288, Subchapter A, Rule § 288.1 – Definitions
 - ◆ Texas Administrative Code Title 30, Part 1, Chapter 288, Subchapter A, Rule §288.2 – Water Conservation Plans for Municipal Uses by Public Water Suppliers
- B** **City of Watauga’s Water Utility Profile and Water Conservation Report**
- C** **Letters to North Richland Hills, the Texas Water Development Board, and the Texas Commission on Environmental Quality**
- D** **City of Watauga’s Ordinance Adopting Water Conservation Plan**
- E** **City of Watauga Lawn and Landscape Irrigation Ordinance and Amendment to Outside Watering Ordinance**

1.0 INTRODUCTION AND OBJECTIVES

This document outlines the City of Watauga's Water Conservation Plan. The objective of the conservation plan is to reduce the quantity required for each water using activity, insofar as is practical, through implementation of efficient water use practices.

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 a requirement governing the development of water conservation plans for public water suppliers. TCEQ guidelines and requirements are included in Appendix A. The City of Watauga 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 Watauga about the need for water conservation and the benefits of conserving our most valued natural resource.

2.0 TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) 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 (TAC), which is included in Appendix A. 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 water conservation plan are listed below.

Minimum Water Conservation Plan Requirements

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

<u>TAC</u>	<u>PLAN SECTION</u>
▪ 288.2(a)(1)(A)	Utility Profile – Appendix B, City of Watauga Utility Profile
▪ 288.2(a)(1)(C)	Specification of Goals – Page 3, Section 4.0
▪ 288.2(a)(1)(D)	Accurate Metering – Page 4, Sections 5.1 and 5.2
▪ 288.2(a)(1)(E)	Universal Metering – Page 4, Section 5.2
▪ 288.2(a)(1)(F)	Determination and Control of Unaccounted Water – Page 5, Section 5.4
▪ 288.2(a)(1)(G)	Public Education and Information Program – Page 6, Section 6.0
▪ 288.2(a)(1)(H)	Water Rate Structure – Page 7, Section 7.0
▪ 288.2(a)(1)(I)	Reservoir System Operation Plan – Page 7, Section 8.1
▪ 288.2(a)(1)(J)	Means of Implementation and Enforcement – Page 10, Section 9.0
▪ 288.2(a)(1)(K)	Coordination with Regional Water Planning Group – Page 9, 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:

TAC	PLAN SECTION
288.2(a)(2)(A)	Leak Detection, Repair, and Water Loss Accounting – Page 5 and 6, Sections 5.4, 5.5, and 5.6
288.2(a)(2)(B)	Record Management System – Page 5, Section 5.3
288.2(a)(2)(C)	Requirement for Water Conservation Plans by Wholesale Supplier – Page 8, 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:

TAC	PLAN SECTION
288.2(a)(3)(B)	Ordinances, Plumbing Codes or Rules on Water - Conserving Fixtures – Page 8, Section 8.3
288.2(a)(3)(D)	Reuse and Recycling of Wastewater – Page 8, Section 8.2
288.2(a)(3)(F)	Water Waste Prohibition – Page 8, Section 8.4
288.2(a)(3)(G)	Monitoring of Effectiveness and Efficiency – Page 6, Section 5.6

3.0 WATER UTILITY PROFILE

Included in Appendix B, to this water conservation plan is the City of Watauga Water Utility Profile.

The City of Watauga will develop and implement a conservation plan that meets our contractual obligation to North Richland Hills and applicable TCEQ Water Conservation Plan Requirements.

4.0 SPECIFICATION OF WATER CONSERVATION GOALS

Current TCEQ regulations require the adoption of specific water conservation goals for a water conservation plan. As part of the plan adoption, the City of Watauga will develop 5-year and 10-year goals for per capita municipal use, following TCEQ procedures described in the water utility profile, Appendix B for the City of Watauga. The goals for this water conservation plan include the following:

- Current five (5) year average per capita use for the City of Watauga is 110 gallons per capita per day. The projected reduction for the City is 1% per year due to elements in this plan. An anticipated 1% reduction per year will keep the per capita municipal water use below 105 gallons per capita per day in 2014 (5-year goal) and 100 gallons per capita per day in 2019 (10-year goal).

- Keep the level of unaccounted water in the system below 10% annually in 2009 and subsequent years, as discussed on page 5, Section 5.4.
- Maintain meter replacement and repair programs, as discussed on page 4, Section 5.2.
- Decrease waste in lawn irrigation by continuing enforcement of the lawn and landscape irrigation ordinance, as discussed on page 8, Section 8.4.
- Raise public awareness of water conservation and encourage responsible public behavior with a public education and information program, as discussed on page 6, Section, 6.0.

5.0 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

Watauga supplies all of the water used by its customers. Wholesale water deliveries are metered by the City of North Richland Hills using a meter accuracy of $\pm 5\%$. These meters are calibrated by the City's wholesale supplier on an annual basis to maintain their level of accuracy.

Watauga has four (4) main points of entry for treated water intake into the City. Three (3) entry points are from North Richland Hills and one (1) entry point from the City of Fort Worth. Each point of entry contains a master meter that is the property of the providers (Fort Worth/NRH). By the wholesale contract, these entry point meters are tested and calibrated to ensure accuracy at least once per year.

The City of North Richland Hills is the provider of wholesale water for the City of Watauga. North Richland Hills has installed several meters at the main entry points into the City of Watauga. The main entry point meters are tested, calibrated, and maintained by the City of North Richland Hills.

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 are maintained within an acceptable operating accuracy range as defined by the manufacturer or American Water Works Association (AWWA) Standards for meter accuracy, which ever is more stringent. Non-functioning meters and meters that indicate reduced or high usage will be flagged during the billing process. These meters will be checked, field tested, and replaced when found to be out of the manufacturer specifications or not meeting AWWA Standards.

The City of Watauga has implemented a meter replacement program in 2009. The goal is to replace 25 % of customer meters per year.

The City also replaces water meters on an as needed basis. These meters are usually suspected of inaccurate readings, such as reading high or too low, erratic, or not reading any flow at all.

This aggressive water meter replacement program helps to ensure the meters are accurate and helps to reduce the unaccounted for water in the City.

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 Watauga's record management system allows for the separation of water sales and uses into residential, commercial, and public categories. This information will be included in an annual water conservation report, as described on page 6, Section 5.6.

The City of Watauga will continue to maintain a record management system that separates the monthly usage in the following customer categories; residential, commercial and public.

5.4 Determination and Control of Unaccounted Water

Unaccounted water is the difference between water purchased from the North Richland Hills and metered deliveries to Watauga customers. Authorized, but unmetered uses would include fire fighting, flushing of water lines, and uses associated with new construction. Unaccounted water can include several categories:

- Inaccuracies in customer meters. Customer meters tend to run more slowly or become erratic as they age and under-report actual use.
- Water losses due to water main breaks and leaks in the water distribution system.
- Losses due to illegal connections and theft.

Measures to control unaccounted water are part of the routine operations of the City. Maintenance crews and personnel are directed to look for and report evidence of leaks in the water distribution system. A leak detection and repair program is described on page # 6, Section 5.5. Meter readers are directed to watch for and report signs of illegal connections, so they can be addressed quickly.

With the measures described in this plan, the City of Watauga expects to maintain the unaccounted water below 10% in 2009 and subsequent years.

5.5 Leak Detection and Repair

The City of Watauga monitors the water distribution system and customer service connections for water leaks. City personnel who are in the field do this. Any water leaks found are reported immediately and repaired as quickly as possible.

The City also conducts regular inspections throughout the City for leaks on large water transmission lines. Areas along drainage streams and limited access areas are regularly investigated for potential water leaks.

The Public Works Utility Department is responsible for repairing water line leaks. Typically all water leaks are repaired within 24 hours after they have been reported. Large main line water leaks require quick response and the department provides this quick response 24 hours a day.

The Public Works Utility Department also has an annual program for replacing water lines that are old, deteriorated, and have had numerous water leaks. The City of Watauga has a program for tracking water main line leaks. This program helps the department to determine which water lines are in need of replacement.

5.6 Monitoring of Effectiveness and Efficiency - Annual Water Conservation Report

Appendix B is a water utility profile form that will be used in the development of an annual water conservation report for the City of Watauga. This form will be completed by May 1st of 2010 and will be used to monitor the effectiveness and efficiency of the water conservation plan. This will help the City to plan conservation-related activities for the following years. The water utility profile 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 water utility profile and annual water conservation report will be sent to the City of North Richland Hills, Texas Water Development Board and the Texas Commission on Environment Quality.

6.0 CONTINUING PUBLIC EDUCATION AND INFORMATION CAMPAIGN

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

- Making conservation information available at the public library and on the City of Watauga's website. Links on the City's website will be provided for information on water conservation from, Texas Water Development Board TWDB, and TCEQ websites.
- The City of Watauga publishes a City News publication on a monthly basis and will periodically include water conservation messages. This publication is sent to Watauga's customers and includes information about City activities, events, and advertisements.
- Encourage local media coverage of water conservation issues and the importance of water conservation.
- Make information on water conservation brochures, and other water conservation materials available to the public at City Hall and other public places.

- The city will make water conservation materials available to new customers applying for water service.

7.0 WATER RATE STRUCTURE

The City of Wataugas' rate structure is provided in Table 7.0 Below:

Table 7.0 Rate Structure

Meter Size (inches)	¾"	1"	2"	3"	4"	6"
Minimum Volume (CCF)	0-267	0-345	0-1,300	0-2400	0-4000	0-10,000
Minimum Bill	\$10.92	\$15.20	\$56.53	\$104.34	\$173.90	\$444.98
Water Rates	Minimum Charge + \$3.463 per 100 cubic feet over minimum					
*Water Pass Through	\$0.8819 x total consumption					

Watauga will continue consideration of various rate plans to insure cost effectiveness and compliance with state regulations.

- * The water pass through rate is the fee charged to Watauga customers for wastewater disposal. The amount is based on the rate charge that the City's wholesale provider (Fort Worth) sets for wastewater treatment and operation and maintenance costs.

8.0 OTHER WATER CONSERVATION MEASURES

8.1 Reservoir System Operation Plan

Watauga purchases treated water from the City of North Richland Hills. Watauga does not purchase untreated surface water supplies and therefore does not have a reservoir system operation plan.

8.2 Reuse and Recycling of Wastewater

The City of Watauga does not own and operate its own wastewater treatment plant. The City's wastewater is treated by the City of Fort Worth.

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. The City of Watauga follows these standards.

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 Watauga has adopted the following water conservation measures in an effort to reduce the amount of wasted water:

- Prohibition of outdoor watering with irrigation systems from 10:00 a.m. to 6:00 p.m. every day of the year. Watering with hand-held hoses and soaker hoses is allowed, Ordinance # 1368.
- Requirement that all irrigation systems installed on or after October 25, 1999, with the exception of those associated with agricultural and/or single family residential uses, must be equipped with rain and freeze sensors, Ordinance # 1286.
- Requirement that all agricultural and/or single family residential irrigation system installed within the City on or after September 1, 2006 must be equipped with rain and freeze sensors, Ordinance # 1286.
- Prohibition of irrigation systems that result in a substantial amount of water to fall upon impervious surfaces, such that a constant stream of water overflows from the lawn or landscape onto a street or other drainage area, Ordinance # 1397.
- Prohibition of poorly maintained irrigation systems that waste water, Ordinance #1368.
- Prohibition of outdoor watering during any form of precipitation, Ordinance # 1286.
- Requirement for customers to repair a water service line or irrigation line leaking on private property within a designated time period as directed by the Public Works Director.

Failure to comply with any portion of this section will constitute a violation and may be subject to a fine not less than (\$250.00) per violation.

8.5 Requirement for Water Conservation Plans by Wholesale Supplier

The City of North Richland Hills is a wholesale water supplier for the City of Watauga. 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 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 City of Watauga will develop and implement a water conservation plan as required by their wholesale water supplier.

8.6 Coordination with Regional Water Planning Organizations

Appendix C includes letters sent to the City of North Richland Hills, the Texas Water Development Board and the Texas Commission on Environmental Quality. A copy of the water conservation plan is included with each letter.

8.7 Requests for Variance

The Public Works Director or his/her designee may grant a 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. A 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 Public Works Director or his/her designee if it is determined that the property can not be adequately irrigated in a single day.

A 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 a temporary variance.

In order to receive a written variance from the Public Works Director 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.

9.0 IMPLEMENTATION AND ENFORCEMENT OF THE WATER CONSERVATION PLAN

Appendix D includes a copy of the ordinance passed by the City Council, which formally approves and adopts this water conservation plan. The ordinance includes penalties for non-compliance and designates responsible officials to implement and enforce the water conservation plan. Those official would include the City Manager, Public Works Director and the Public Works Superintendent.

Appendix E includes a copy of the City's adopted Lawn and Landscape Irrigation Ordinance # 1397 and Amendment to Outside Watering Ordinance # 1368.

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

<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 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 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

- (13) includes activities associated with the production or multiplying of stock such as the development of new plants from cuttings, grafts, plugs or seedlings.
- (14) 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.
- (15) Public water supplier - An individual or entity that supplies water to the public for human consumption.
- (16) 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.
- (17) 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.
- (18) 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 water course, lake, or other body of state-owned water.
- (19) 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).
- (20) 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 delivery a 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 938

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 §288.2</u>	Water Conservation Plans for Municipal Uses by Public Water Suppliers

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 service 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.

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 CITY OF WATAUGA
WATER UTILITY PROFILE
AND WATER CONSERVATION REPORT**

**CITY OF WATAUGA
WATER UTILITY PROFILE
AND WATER CONSERVATION REPORT**

APPLICANT DATA

Name of Utility: **City of Watauga**

Address & Zip: **7800 Virgil Anthony Blvd.**

Telephone Number: **(817) 514-5851** Fax: **(817) 427-0935**

Form Completed By: **James L. Medders** Title: **Public Works Utility Superintendent**

Signature: _____

Date: _____

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

Name: **Johnnie Reagan, Public Works Director**

Phone: **(817) 514-5837**

UTILITY DATA

I. CUSTOMER DATA

A. Population and Service Area Data

1. Please attach a copy of your Certificate of Convenience and Necessity (CCN) from the TCEQ
2. Service area size (square miles): **4.5**
3. Current population of service area: **24,150**

4. Current population served by utility: a: water **25,150**
b: wastewater **24,150**
5. Population served by water utility for the previous five years:
6. Projected population for service area in the following decades:

<u>Year</u>	<u>Population</u>	<u>Year</u>	<u>Population</u>
<u>2004</u>	<u>23,750</u>	<u>2019</u>	<u>24,274</u>
<u>2005</u>	<u>23,800</u>	<u>2020</u>	<u>26,175</u>
<u>2006</u>	<u>23,950</u>	<u>2030</u>	<u>27,969</u>
<u>2007</u>	<u>24,025</u>	<u>2040</u>	<u>29,906</u>
<u>2008</u>	<u>24,150</u>	<u>2050</u>	<u>29,906</u>

7. List source(s)/method(s) for the calculation of current and projected population:
Current populations were taken from the North Central Texas Council of Governments. Projected populations were taken from the Region C Water Planning Group.

B. Active Connections

1. Current number of active connections by user type. If not a separate classification, check whether multi-family service is counted as Residential or Commercial

<u>Treated water users:</u>	<u>Metered</u>	<u>Not-metered</u>	<u>Total</u>
Residential-Single-Family	<u>7825</u>	<u>0</u>	<u>7825</u>
Residential-Multi-Family	<u>0</u>	<u>0</u>	<u>0</u>
Commercial	<u>345</u>	<u>0</u>	<u>345</u>
Industrial	<u>0</u>	<u>0</u>	<u>0</u>
Public	<u>30</u>	<u>0</u>	<u>30</u>
Other	<u>0</u>	<u>0</u>	<u>0</u>

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

Year	<u>2006</u>	<u>2007</u>	<u>2008</u>
Residential –Single-Family	<u>30</u>	<u>25</u>	<u>23</u>
Residential-Multi-Family	<u>0</u>	<u>0</u>	<u>0</u>
Commercial	<u>5</u>	<u>6</u>	<u>3</u>
Industrial	<u>0</u>	<u>0</u>	<u>0</u>
Public	<u>1</u>	<u>0</u>	<u>1</u>
Other	<u>0</u>	<u>0</u>	<u>0</u>

C. High Volume Customers

List annual water use for the five highest volume retail and wholesale customers (Please indicate if treated or raw water delivery.)

	<u>Customer</u>	<u>Use (1,000gal./yr.)</u>	<u>Indicate Treated or Raw</u>
(1)	<u>Daybreak Venture</u>	<u>7,724,000</u>	<u>Treated</u>
(2)	<u>Harvest Church</u>	<u>3,298,000</u>	<u>Treated</u>
(3)	<u>TPCMW Inc.</u>	<u>2,792,000</u>	<u>Treated</u>
(4)	<u>RNF Group Inc.</u>	<u>2,619,000</u>	<u>Treated</u>
(5)	<u>Milan Jariwala</u>	<u>2,519,000</u>	<u>Treated</u>

II. WATER USE DATA FOR SERVICE AREA

A. Water Accounting Data

1. Amount of water use for previous five years (in 1,000 gal.):
 Please indicate: Diverted Water _____
 Treated Water X

<u>Year</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>
January	<u>60,984,000</u>	<u>76,782,000</u>	<u>80,985,000</u>	<u>56,730,000</u>	<u>66,210,000</u>
February	<u>55,045,000</u>	<u>55,220,000</u>	<u>58,982,000</u>	<u>54,153,000</u>	<u>49,670,000</u>
March	<u>63,399,000</u>	<u>69,960,000</u>	<u>65,966,000</u>	<u>61,255,000</u>	<u>63,119,000</u>
April	<u>70,385,000</u>	<u>78,957,000</u>	<u>73,925,000</u>	<u>65,439,000</u>	<u>61,294,000</u>
May	<u>83,110,000</u>	<u>84,161,000</u>	<u>105,431,000</u>	<u>66,380,000</u>	<u>69,244,000</u>
June	<u>71,741,000</u>	<u>112,451,000</u>	<u>98,799,000</u>	<u>62,341,000</u>	<u>109,836,000</u>
July	<u>105,213,000</u>	<u>131,582,000</u>	<u>133,454,000</u>	<u>62,290,000</u>	<u>107,621,000</u>
August	<u>112,781,000</u>	<u>101,259,000</u>	<u>124,814,000</u>	<u>88,143,000</u>	<u>110,034,000</u>
September	<u>87,863,000</u>	<u>117,076,000</u>	<u>77,071,000</u>	<u>92,959,000</u>	<u>78,318,000</u>
October	<u>80,782,000</u>	<u>99,760,000</u>	<u>88,529,000</u>	<u>78,790,000</u>	<u>73,786,000</u>
November	<u>68,278,000</u>	<u>72,870,000</u>	<u>70,521,000</u>	<u>60,755,000</u>	<u>70,394,000</u>
December	<u>67,524,000</u>	<u>67,591,000</u>	<u>66,032,000</u>	<u>80,829,000</u>	<u>89,708,000</u>
Total	<u>927,105,000</u>	<u>1,067,669,000</u>	<u>1,044,509,000</u>	<u>830,064,000</u>	<u>949,234,000</u>

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

Master meters at points of entry and water sales.

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

<u>Year</u>	<u>Residential</u>	<u>Commercial</u>	<u>Industrial</u>	<u>Wholesale</u>	<u>Other</u>	<u>Total Sold</u>
<u>2004</u>	<u>721,175,000</u>	<u>150,425,000</u>	<u>N / A</u>	<u>N / A</u>	<u>N / A</u>	<u>871,600,000</u>
<u>2005</u>	<u>740,586,000</u>	<u>156,305,000</u>	<u>N / A</u>	<u>N / A</u>	<u>N / A</u>	<u>896,891,000</u>
<u>2006</u>	<u>787,503,000</u>	<u>171,461,000</u>	<u>N / A</u>	<u>N / A</u>	<u>N / A</u>	<u>958,964,000</u>
<u>2007</u>	<u>692,047,000</u>	<u>142,488,000</u>	<u>N / A</u>	<u>N / A</u>	<u>N / A</u>	<u>834,535,000</u>
<u>2008</u>	<u>659,058,000</u>	<u>152,584,000</u>	<u>N / A</u>	<u>N / A</u>	<u>N / A</u>	<u>811,642,000</u>

3. List previous five years records for water loss

<u>Year</u>	<u>Amount (gal.)</u>
<u>2004</u>	<u>83,897.000</u>
<u>2005</u>	<u>115,607.000</u>
<u>2006</u>	<u>142,578.000</u>
<u>2007</u>	<u>64,027.000</u>
<u>2008</u>	<u>115,137.000</u>

4. List previous five years records for annual peak-to-average daily use ratio

<u>Year</u>	<u>Average MGD</u>	<u>Peak MG</u>	<u>Ratio</u>
<u>2004</u>	<u>2.540</u>	<u>3.219</u>	<u>1.26</u>
<u>2005</u>	<u>2.295</u>	<u>4.683</u>	<u>2.04</u>
<u>2006</u>	<u>2.861</u>	<u>4.410</u>	<u>1.54</u>
<u>2007</u>	<u>2.274</u>	<u>3.403</u>	<u>1.49</u>
<u>2008</u>	<u>2.600</u>	<u>4.226</u>	<u>1.62</u>

5. Total per capita water use for previous five years

<u>Year</u>	<u>Population</u>	<u>Total Diverted or (1,000 gal.) Sales</u>	<u>Per Capita (gpcd)</u>
<u>2004</u>	<u>23,750</u>	<u>905,992,000</u>	<u>104</u>
<u>2005</u>	<u>23,800</u>	<u>1,075,669,000</u>	<u>123</u>
<u>2006</u>	<u>23,950</u>	<u>1,057,146,000</u>	<u>120</u>
<u>2007</u>	<u>24,025</u>	<u>836,065,000</u>	<u>95</u>
<u>2008</u>	<u>24,150</u>	<u>949,234,000</u>	<u>107</u>

6. Seasonal water use for the previous five years (in gallons per person per day)

<u>Year</u>	<u>Population</u>	<u>Base Per Capita Use</u>	<u>Summer Per Capita Use</u>
<u>2004</u>	<u>23,750</u>	<u>83</u>	<u>136</u>
<u>2005</u>	<u>23,800</u>	<u>93</u>	<u>161</u>
<u>2006</u>	<u>23,950</u>	<u>96</u>	<u>166</u>
<u>2007</u>	<u>24,025</u>	<u>82</u>	<u>98</u>
<u>2008</u>	<u>24,150</u>	<u>90</u>	<u>150</u>

B. Projected Water Demands

Project water supply requirements for at least the next ten years using population trends, historical water use, and economic growth, etc. Indicate sources of data and how projected water demands were determined.

The City of Watauga does not expect a large increase in water demand in the near future. The city is land locked and there is very little room for residential or commercial growth. In March 2008 the city passed Ordinance # 1368 restricting customers to no watering between the hours of 10:00 am and 6:00 pm year round. In December 2008 the city council passed Ordinance # 1397 with restrictions for irrigation installation and operation. Ordinance number 1397 states that all irrigation systems shall be designed, installed, maintained, altered, repaired, serviced and operated in a manner that will promote water conservation.

III. WATER SUPPLY SYSTEM

A. Water Supply Sources

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

	<u>Source</u>	<u>Amount Available</u>
Surface Water:	North Richland Hills	<u>17</u> MGD
Groundwater:	N/A	MGD
Contracts:	N/A	MGD
Other:	N/A	MGD

B. Treatment and Distribution System

1. Design daily capacity of system: 2.5 MGD
2. Storage Capacity: Elevated 2 MGD, Ground 2 MGD
3. If surface water, do you recycle filter backwash to the head of the plant?
Yes n/a No n/a If yes, approximately n/a MGD.
4. Please describe the water system. Include the number of treatment plants, wells, and storage tanks. If possible, include a sketch of the system layout.

The City of Watauga's water system receives purchased water from North Richland Hills, supplied by the City of Fort Worth and the Trinity River Authority. Watauga has a distribution system, a two (2) million gallon elevated storage facility and one two (2) million gallon ground storage facility. The ground storage facility is jointly used with North Richland Hills.

IV. WASTEWATER UTILITY SYSTEM

A. Wastewater System Data

1. Design capacity of wastewater treatment plant(s): n/a MGD
2. Is treated effluent used for irrigation on-site n/a off-site n/a, plant wash down n/a, or chlorination / dechlorination n/a?
If yes, approximately n/a gallons per month. Could this be substituted for potable water now being used in these areas n/a?
3. Briefly describe the wastewater system(s) of the area serviced by the water utility. Describe how treated wastewater is disposed of. Where applicable, identify treatment plant(s) with the TCEQ name and number, the operator, owner, and, if wastewater is discharged, the receiving stream. Please provide a sketch or map which locates the plant(s) and discharge points or disposal sites.

The City of Watauga does not have a wastewater treatment plant. Watauga's Wastewater is treated by The City of Fort Worth. The numbers in B were taken from billing invoices from Fort Worth.

B. Wastewater Data for Service Area

1. Percent of water service area served by wastewater system: **100** %
2. Monthly volume treated for previous three years (in 1,000 gallons):

<u>Year</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>
<u>January</u>	<u>50,725,000</u>	<u>73,698,000</u>	<u>58,945,000</u>
<u>February</u>	<u>49,097,000</u>	<u>60,177,000</u>	<u>52,702,000</u>
<u>March</u>	<u>57,334,000</u>	<u>72,313,000</u>	<u>86,157,000</u>
<u>April</u>	<u>56,318,000</u>	<u>62,903,000</u>	<u>72,260,000</u>
<u>May</u>	<u>54,204,000</u>	<u>91,291,000</u>	<u>63,089,000</u>
<u>June</u>	<u>54,093,000</u>	<u>95,793,000</u>	<u>50,836,000</u>
<u>July</u>	<u>48,109,000</u>	<u>87,395,000</u>	<u>54,050,000</u>
<u>August</u>	<u>48,962,000</u>	<u>60,565,000</u>	<u>58,710,000</u>
<u>September</u>	<u>56,296,000</u>	<u>59,170,000</u>	<u>49,890,000</u>
<u>October</u>	<u>53,704,000</u>	<u>59,211,000</u>	<u>49,024,000</u>
<u>November</u>	<u>48,362,000</u>	<u>54,273,000</u>	<u>55,981,000</u>
<u>December</u>	<u>55,760,000</u>	<u>58,486,000</u>	<u>50,864,000</u>
Total	<u>632,964,000</u>	<u>835,275,000</u>	<u>702,503,000</u>

APPENDIX C

**LETTERS TO NORTH RICHLAND HILLS, THE TEXAS WATER
DEVELOPMENT BOARD, AND THE TEXAS COMMISSION ON
ENVIRONMENTAL QUALITY**



Jimmy Cates
Public Works Operations Manager
City of North Richland Hills
Public Works Department
P.O. Box 820609
North Richland Hills, Texas 76180

RE: Water Conservation Plan

Dear Mr. Cates,

Please find enclosed with this letter the City of Watauga's Water Conservation Plan. The Texas Commission on Environmental Quality (TCEQ) is requiring all municipalities with a population over 5,000 to submit a new plan that meets the minimum requirements set out in the Texas Administrative Code Title 30, Part 1, Chapter 288, and Subchapter A Rule 288.20. As a wholesale customer of North Richland Hills we have reviewed your plan and drafted one we believe is consistent with your plan and meets the requirements set out in (TAC) Title 30.

If you require additional information please feel free to contact me at (817) 514-5851.

Respectfully,

James L. Medders



Texas Water Development Board
ATTN: Ethan Ham
P.O. Box 13231
Austin, Texas 78711

RE: Water Conservation Plan

Dear Mr. Ham,

Please find enclosed with this letter the City of Watauga's Water Conservation Plan. The Texas Commission on Environmental Quality (TCEQ) is requiring all municipalities with a population over 5,000 to submit a new plan that meets the minimum requirements set out in the Texas Administrative Code Title 30, Part 1, Chapter 288, and Subchapter A Rule 288.20. As a wholesale customer of North Richland Hills we have reviewed their plan and drafted one we believe is consistent with their plan and meets the requirements set out in (TAC) Title 30.

If you require additional information please feel free to contact me at (817) 514-5851.

Respectfully,

James L. Medders



Texas Commission on Environmental Quality
ATTN: Kristian Wang – MC160
P.O. Box 13087
Austin, Texas 78711-3087

RE: Water Conservation Plan

Dear Ms. Wang,

Please find enclosed with this letter the City of Watauga's Water Conservation Plan. The Texas Commission on Environmental Quality (TCEQ) is requiring all municipalities with a population over 5,000 to submit a new plan that meets the minimum requirements set out in the Texas Administrative Code Title 30, Part 1, Chapter 288, and Subchapter A Rule 288.20. As a wholesale customer of North Richland Hills we have reviewed their plan and drafted one we believe is consistent with their plan and meets the requirements set out in (TAC) Title 30.

If you require additional information please feel free to contact me at (817) 514-5851.

Respectfully,

James L. Medders

APPENDIX D
CITY OF WATAUGA
ORDINANCE ADOPTING WATER CONSERVATION

APPENDIX E

**CITY OF WATAUGA
LAWN AND LANDSCAPE IRRIGATION ORDINANCE
AND AMENDMENT TO OUTSIDE WATERING ORDINANCE**

