



Panhandle Water Planning Area

Initially Prepared Plan

Model Water Conservation Plan for Municipal Users

Water Conservation Plan for [Entity]

Date

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Water Conservation Plan for [Entity]

1. Introduction and Objectives

Recognizing the need for efficient use of existing water supplies, the Texas Commission on Environmental Quality (TCEQ) has developed guidelines and requirements governing the development of water conservation plans for public water suppliers.

The objectives of this water conservation plan are as follows:

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

The water conservation plan presented in this document is a model water conservation plan intended for adoption by wholesale or retail public water suppliers in the Panhandle Water Planning Area (PWPA). This model plan includes all of the elements required by TCEQ. In order to adopt this plan, each water supplier will need to do the following:

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

2. Texas Commission on Environmental Quality Rules

2.1 Conservation Plans

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a water conservation plan is defined as “A strategy or combination of strategies for reducing the volume of water withdrawn from a water supply source, for reducing the loss or waste of water, for maintaining or improving the efficiency in the use of water, for increasing the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 water¹.” 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 5.2
- 288.2(a)(1)(C) – Specific, Quantified Five-Year and Ten-Year Targets – Section 4
- 288.2(a)(1)(D) – Accurate Metering – Section 5.1
- 288.2(a)(1)(E) – Universal Metering – Section 5.1
- 288.2(a)(1)(F) – Determination and Control of Unaccounted Water – Section 5.3
- 288.2(a)(1)(G) – Public Education and Information Program – Section 6
- 288.2(a)(1)(H) – Non-Promotional Water Rate Structure – Section 7
- 288.2(a)(1)(I) – Reservoir System Operation Plan – Section 8.2
- 288.2(a)(1)(J) – Means of Implementation and Enforcement – Section 9
- 288.2(a)(1)(K) – Coordination with Regional Water Planning Group – Section 8.5

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 5.3, 5.4, and 5.5
- 288.2(a)(2)(B) – Requirement for Water Conservation Plans by Wholesale Customers – Section 8.4

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

¹ Title 30 of the Texas Administrative Code, Part 1, Chapter 288, Subchapter A, Rules 288.1 and 288.2, and Subchapter B, Rule 288.20, downloaded from [http://texreg.sos.state.tx.us/public/readtac\\$ext.ViewTAC?tac_view=5&ti=30&pt=1&ch=288&sch=A&rl=Y](http://texreg.sos.state.tx.us/public/readtac$ext.ViewTAC?tac_view=5&ti=30&pt=1&ch=288&sch=A&rl=Y), April 2015.

- 288.2(a)(3)(B) – Ordinances, Plumbing Codes or Rules on Water-Conserving Fixtures – Section 8.1
- 288.2(a)(3)(F) – Program for Landscape Water Management Regulations – Section 8.3
- 288.2(a)(3)(G) – Monitoring Method – Section 5.5

3. Water Utility Profile

Appendix C to this water conservation plan is a sample water utility profile provided by the TCEQ.

[Water supplier is to complete the utility profile and provide information on the public water supply system and customers if appropriate for this section.] The following information is included in the utility profile, in accordance with the Texas Water Use Methodology:

- 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

4. Specification of Water Conservation Targets

[Current TCEQ rules require the adoption of specific water conservation goals for a water conservation plan. As part of plan adoption, each water supplier will develop 5-year and 10-year goals for municipal use in total GPCD and residential GPCD and goals for water loss programs, following TCEQ procedures described in the water utility profile (Appendix C).]

The goals for this water conservation plan include the following:

- Strive to attain the total and residential per capita water use below the specified amount in gallons per capita per day using a 5-year rolling average calculation. (See 5-year and 10-year goals in Appendix C).
- Conduct water audits as required by the TCEQ and maintain water loss to *[insert amount]* percent of the total water used through existing and new maintenance programs.
- Raise public awareness of water conservation and encourage responsible public behavior by a public education and information program, as discussed in Section 6.

5. Metering, Water Use Records, Control of Water Loss, 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. *[Water suppliers serving a population of 5,000 people or more or a having a projected population of greater than 5,000 people or more within the next ten years must include the following elements in their water conservation plans:]*

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

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

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

5.2 Record Management System

As required by TAC Title 30, Part 1, Chapter 288, Subchapter A, Rule 288.2(a)(1)(B), the record management system allows for the separation of water sales and uses into residential, commercial, public/institutional, and industrial categories. This information will be included in an annual water conservation report, as described in Section 5.5 below.

Any new billing system purchased by a public water supplier must be capable of reporting detailed water uses data.

5.3 Determination and Control of Unaccounted Water

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

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

Measures to control unaccounted water are part of the routine operations of water suppliers. Water audits are useful methods of accounting for water usage within a system. Water audits will be conducted by water suppliers in order to decrease water loss. Maintenance crews and personnel will look for and report evidence of leaks in the water distribution system. The leak detection and repair program is described in Section 5.5 below. Meter readers are asked to watch for and report signs of illegal connections, so they can be addressed quickly. Unaccounted water is calculated as part of the utility profile and is included in Appendix C.

5.4 Leak Detection and Repair

City crews and personnel will look for and report evidence of leaks in the water distribution system. Areas of the water distribution system in which numerous leaks and line breaks occur are targeted for replacement as funds are available.

5.5 Monitoring of Effectiveness and Efficiency - Annual Water Conservation Report

[Appendix D is the TWDB form to be used in the development of an annual water conservation report for water suppliers.]

An annual conservation report will be completed by *[insert date]* 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. This report records the water use by category, per capita municipal use, and unaccounted water for the current year and compares them to historical values.

6. Continuing Public Education and Information Campaign

The continuing public education and information campaign on water conservation includes the following elements: *[Water provider is to select the appropriate measures for its system.]*

- Insert water conservation information with water bills. Inserts will include material developed by the [water supplier] staff and material obtained from the TWDB, the TCEQ, and other sources.
- Encourage local media coverage of water conservation issues and the importance of water conservation.
- Make the Texas Smartscape CD, water conservation brochures, and other water conservation materials available to the public.
- Make information on water conservation available on its website (if any) and include links to the Texas Smartscape website and to information on water conservation on the TWDB and TCEQ web sites.

- Provide water conservation materials to schools and utilize existing age-appropriate education programs available through the TCEQ and TWDB.
- Support the State-initiated Water Conservation Awareness and Education Campaign.

7. Water Rate Structure

[If a water supplier has a decreasing block rate structure, it is recommended that a flat rate or increasing rate structure be adopted.]

An increasing block rate water structure that is intended to encourage water conservation and discourage excessive use and waste of water will be adopted upon completion of the next rate study or within five years. An example water rate structure is as follows:

Residential Rates

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

Commercial/Industrial Rates

Commercial/industrial rates should include at least 2 tiers, with rates for the 2nd tier at 1.25 to 2.0 times the first tier.

[If a water supplier has an increasing rate structure, state the current rate structure as follows.]

The *[water supplier]* has adopted an increasing block rate water structure that is intended to encourage water conservation and discourage excessive use and waste of water. The water rate structure adopted on *[insert date]* is as follows:

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. In addition, federal standards governing clothes washing machines will require all washers produced by 2007 to meet higher efficiency standards, which may include lower water use machines. The potential savings from these fixtures can be significant, but historically have been difficult to measure independently from other factors.

8.2 Reservoir System Operation Plan

[Insert description of reservoir system operation plan if public supplier has such a plan.] or

The *[water supplier]* purchases water from *[name]* and/or does not have surface water supplies for which to implement a reservoir system operation plan.

8.3 Considerations for Landscape Water Management Regulations (Optional)

[The water supplier may choose to adopt landscape water management regulations as part of the development of this water conservation plan. These regulations are intended to minimize waste in landscape irrigation. The proposed regulations might include the following elements:

- Require that all new irrigation systems be in compliance with state design and installation regulations (TAC Title 30, Part 1, Chapter 344).
- Prohibit irrigation systems that spray directly onto impervious surfaces or onto other non-irrigated areas. (Wind driven water drift will be taken into consideration.)
- Prohibit use of poorly maintained sprinkler systems that waste water.
- Prohibit outdoor watering during any form of precipitation.
- Enforce the regulations by a system of warnings followed by fines for continued or repeat violations.
- Implement other measures to encourage off-peak water use.]

8.4 Requirement for Water Conservation Plans by Wholesale Customers

[Required for cities with populations over 5,000.]

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

8.5 Coordination with Regional Water Planning Group

In accordance with TCEQ regulations, a copy of this adopted water conservation plan will be sent to the Panhandle Water Planning Group.

9. Implementation and Enforcement of the Water Conservation Plan

A copy of *[an ordinance, order, or resolution]* adopted by the *[City Council or governing board]* regarding this water conservation plan is attached to and made part of this plan. The *[ordinance, order, or resolution]* designates responsible officials to implement and enforce the water conservation plan.



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 288.2, and Subchapter B, Rule 288.20, downloaded from [http://texreg.sos.state.tx.us/public/readtac\\$ext.ViewTAC?tac_view=5&ti=30&pt=1&ch=288&sch=A&rl=Y](http://texreg.sos.state.tx.us/public/readtac$ext.ViewTAC?tac_view=5&ti=30&pt=1&ch=288&sch=A&rl=Y), April 2015.
- (2) Texas Commission on Environmental Quality, Utility Profile and Water Conservation Plan Requirements for Municipal Water use by Public Water Suppliers, http://www.tceq.state.tx.us/permitting/water_rights/conserves.html, April 2015.
- (3) Texas Water Development Board, Water Conservation Plan Annual Reports, <http://www.twdb.texas.gov/conservation/municipal/plans/ARs.asp>, April 2015.



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Appendix B

Texas Commission on Environmental Quality Rules for Municipal Use by Public Water Suppliers

[<<Prev Rule](#)[Next Rule>>](#)

Texas Administrative Code

[TITLE 30](#)

ENVIRONMENTAL QUALITY

[PART 1](#)

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

[CHAPTER 288](#)WATER CONSERVATION PLANS, DROUGHT CONTINGENCY
PLANS, GUIDELINES AND REQUIREMENTS[SUBCHAPTER A](#)

WATER CONSERVATION PLANS

RULE §288.2

Water Conservation Plans for Municipal Uses by Public Water Suppliers

(a) A water conservation plan for municipal water use by public water suppliers must provide information in response to the following. If the plan does not provide information for each requirement, the public water supplier shall include in the plan an explanation of why the requirement is not applicable.

(1) Minimum requirements. All water conservation plans for municipal uses by public 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; amended to be effective December 6, 2012, 37 TexReg 9515

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Appendix C

TCEQ Form for Water Utility Profile



Texas Commission on Environmental Quality

UTILITY PROFILE AND WATER CONSERVATION PLAN REQUIREMENTS FOR MUNICIPAL WATER USE BY RETAIL PUBLIC WATER SUPPLIERS

This form is provided to assist retail public water suppliers in water conservation plan development. If you need assistance in completing this form or in developing your plan, please contact the conservation staff of the Resource Protection Team in the Water Availability Division at (512) 239-4691.

Name: Click to add text

Address: _____

Telephone Number: () Fax: ()

Water Right No.(s): _____

Regional Water Planning
Group: _____

Form Completed by: _____

Title: _____

Person responsible for
implementing conservation
program: _____ Phone: ()

Signature: _____ Date: / /

NOTE: If the plan does not provide information for each requirement, include an explanation of why the requirement is not applicable.

UTILITY PROFILE

I. POPULATION AND CUSTOMER DATA

A. Population and Service Area Data

1. Attach a copy of your service-area map and, if applicable, a copy of your Certificate of Convenience and Necessity (CCN).
2. Service area size (in square miles):
(Please attach a copy of service-area map)
3. Current population of service area:
4. Current population served for:
 - a. Water _____
 - b. Wastewater _____

5. Population served for previous five years:

<i>Year</i>	<i>Population</i>

6. Projected population for service area in the following decades:

<i>Year</i>	<i>Population</i>
2020	
2030	
2040	
2050	
2060	

7. List source or method for the calculation of current and projected population size.

B. Customers Data

Senate Bill 181 requires that uniform consistent methodologies for calculating water use and conservation be developed and available to retail water providers and certain other water use sectors as a guide for preparation of water use reports, water conservation plans, and reports on water conservation efforts. A water system must provide the most detailed level of customer and water use data available to it, however, any new billing system purchased must be capable of reporting data for each of the sectors listed below. http://www.tceq.texas.gov/assets/public/permitting/watersupply/water_rights/sb181_guidance.pdf

1. Current number of active connections. Check whether multi-family service is counted as Residential or Commercial?

<i>Treated Water Users</i>	<i>Metered</i>	<i>Non-Metered</i>	Totals
Residential	_____	_____	_____
Single-Family	_____	_____	_____
Multi-Family	_____	_____	_____
Commercial	_____	_____	_____
Industrial/Mining	_____	_____	_____
Institutional	_____	_____	_____
Agriculture	_____	_____	_____
Other/Wholesale	_____	_____	_____

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

<i>Year</i>	_____	_____	_____
<i>Treated Water Users</i>	_____		
Residential	_____	_____	_____
Single-Family	_____	_____	_____
Multi-Family	_____	_____	_____
Commercial	_____	_____	_____
Industrial/Mining	_____	_____	_____
Institutional	_____	_____	_____
Agriculture	_____	_____	_____
Other/Wholesale	_____	_____	_____

3. List of annual water use for the five highest volume customers.

	<i>Customer</i>	<i>Use (1,000 gal/year)</i>	<i>Treated or Raw Water</i>
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____

II. WATER USE DATA FOR SERVICE AREA

A. Water Accounting Data

1. List the amount of water use for the previous five years (in 1,000 gallons). Indicate whether this is diverted or treated water.

<i>Year</i>	_____	_____	_____	_____	_____
<i>Month</i>	_____				
January	_____	_____	_____	_____	_____
February	_____	_____	_____	_____	_____
March	_____	_____	_____	_____	_____
April	_____	_____	_____	_____	_____
May	_____	_____	_____	_____	_____
June	_____	_____	_____	_____	_____
July	_____	_____	_____	_____	_____
August	_____	_____	_____	_____	_____
September	_____	_____	_____	_____	_____
October	_____	_____	_____	_____	_____
November	_____	_____	_____	_____	_____
December	_____	_____	_____	_____	_____
Totals	_____	_____	_____	_____	_____

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

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

<i>Year</i>	_____	_____	_____	_____	_____
<i>Account Types</i>	_____				
Residential	_____	_____	_____	_____	_____
Single-Family	_____	_____	_____	_____	_____
Multi-Family	_____	_____	_____	_____	_____
Commercial	_____	_____	_____	_____	_____
Industrial/Mining	_____	_____	_____	_____	_____
Institutional	_____	_____	_____	_____	_____
Agriculture	_____	_____	_____	_____	_____
Other/Wholesale	_____	_____	_____	_____	_____

3. List the previous records for water loss for the past five years (the difference between water diverted or treated and water delivered or sold).

<i>Year</i>	<i>Amount (gallons)</i>	<i>Percent %</i>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

B. Projected Water Demands

If applicable, attach or cite projected water supply demands from the applicable Regional Water Planning Group for the next ten years using information such as population trends, historical water use, and economic growth in the service area over the next ten years and any additional water supply requirements from such growth.

III. WATER SUPPLY SYSTEM DATA

A. Water Supply Sources

List all current water supply sources and the amounts authorized (in acre feet) with each.

<i>Water Type</i>	<i>Source</i>	<i>Amount Authorized</i>
Surface Water	_____	_____
Groundwater	_____	_____
Contracts	_____	_____
Other	_____	_____

B. Treatment and Distribution System

1. Design daily capacity of system (MGD):
2. Storage capacity (MGD):
 - a. Elevated _____
 - b. Ground _____
3. If surface water, do you recycle filter backwash to the head of the plant?

Yes No If yes, approximate amount (MGD):

IV. WASTEWATER SYSTEM DATA

A. Wastewater System Data (if applicable)

1. Design capacity of wastewater treatment plant(s) (MGD):

2. Treated effluent is used for on-site irrigation, off-site irrigation, for plant wash-down, and/or for chlorination/dechlorination.

If yes, approximate amount (in gallons per month):

3. Briefly describe the wastewater system(s) of the area serviced by the water utility. Describe how treated wastewater is disposed. Where applicable, identify treatment plant(s) with the TCEQ name and number, the operator, owner, and the receiving stream if wastewater is discharged.

B. Wastewater Data for Service Area (if applicable)

1. Percent of water service area served by wastewater system: _____ %

2. Monthly volume treated for previous five years (in 1,000 gallons):

<i>Year</i>	_____	_____	_____	_____	_____
<i>Month</i>					
January	_____	_____	_____	_____	_____
February	_____	_____	_____	_____	_____
March	_____	_____	_____	_____	_____
April	_____	_____	_____	_____	_____
May	_____	_____	_____	_____	_____
June	_____	_____	_____	_____	_____
July	_____	_____	_____	_____	_____
August	_____	_____	_____	_____	_____
September	_____	_____	_____	_____	_____
October	_____	_____	_____	_____	_____
November	_____	_____	_____	_____	_____
December	_____	_____	_____	_____	_____
Totals	_____	_____	_____	_____	_____

V. ADDITIONAL REQUIRED INFORMATION

In addition to the utility profile, please attach the following as required by Title 30, Texas Administrative Code, §288.2. Note: If the water conservation plan does not provide information for each requirement, an explanation must be included as to why the requirement is not applicable.

A. Specific, Quantified 5 & 10-Year Targets

The water conservation plan must include 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. Note that the goals established by a public water supplier under this subparagraph are not enforceable

B. Metering Devices

The water conservation plan must include a statement about the water suppliers 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.

C. Universal Metering

The water conservation plan must include and a program for universal metering of both customer and public uses of water, for meter testing and repair, and for periodic meter replacement.

D. Unaccounted- For Water Use

The water conservation plan must include 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.).

E. Continuing Public Education & Information

The water conservation plan must include a description of the program of continuing public education and information regarding water conservation by the water supplier.

F. Non-Promotional Water Rate Structure

The water supplier must have 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. This rate structure must be listed in the water conservation plan.

G. Reservoir Systems Operations Plan

The water conservation plan must include 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. The reservoir systems operations plan shall include optimization of water supplies as one of the significant goals of the plan.

H. Enforcement Procedure and Plan Adoption

The water conservation plan must include a means for implementation and enforcement, which shall be evidenced by a copy of the ordinance, rule, resolution, or tariff, indicating official adoption of the water conservation plan by the water supplier; and a description of the authority by which the water supplier will implement and enforce the conservation plan.

I. Coordination with the Regional Water Planning Group(s)

The water conservation plan must include documentation of coordination with the regional water planning groups for the service area of the wholesale water supplier in order to ensure consistency with the appropriate approved regional water plans.

J. Plan Review and Update

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. The revised plan must also include an implementation report.

VI. ADDITIONAL REQUIREMENTS FOR LARGE SUPPLIERS

Required of suppliers serving population of 5,000 or more or a projected population of 5,000 or more within ten years

A. Leak Detection and Repair

The plan must include a description of the 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. Contract Requirements

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.

VII. ADDITIONAL CONSERVATION STRATEGIES

A. Conservation Strategies

Any combination of the following strategies shall be selected by the water supplier, in addition to the minimum requirements of this chapter, if they are necessary in order to achieve the stated water conservation goals of the plan. The commission may require by commission order that any of the following strategies be implemented by the water supplier if the commission determines that the strategies are necessary in order for the conservation plan to be achieved:

1. 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;

2. 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;
3. A program for the replacement or retrofit of water-conserving plumbing fixtures in existing structures;
4. A program for reuse and/or recycling of wastewater and/or graywater;
5. A program for pressure control and/or reduction in the distribution system and/or for customer connections;
6. A program and/or ordinance(s) for landscape water management;
7. A method for monitoring the effectiveness and efficiency of the water conservation plan; and
8. 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.

Best Management Practices

The Texas Water Developmental Board's (TWDB) Report 362 is the Water Conservation Best Management Practices (BMP) guide. The BMP Guide is a voluntary list of management practices that water users may implement in addition to the required components of Title 30, Texas Administrative Code, Chapter 288. The Best Management Practices Guide broken out by sector, including Agriculture, Commercial, and Institutional, Industrial, Municipal and Wholesale along with any new or revised BMP's can be found at the following link on the Texas Water Developments Board's website: <http://www.twdb.state.tx.us/conservation/bmps/index.asp>

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact 512-239-3282.



Panhandle Water Planning Area

Initially Prepared Plan

Appendix D

TWDB Annual Water Conservation Report

Water Conservation Plan Annual Report

Retail Water Supplier

CONTACT INFORMATION

Name of Entity: _____

Public Water Supply Identification Number (PWS ID): _____

Certificate of Convenience and Necessity (CCN) Number: _____

Surface Water Rights ID Number: _____

Wastewater ID Number: _____

Check all that apply:

Retail Water Supplier

Wholesale Water Supplier

Wastewater Treatment Utility

Address: _____ City: _____ Zip Code: _____

Email: _____ Telephone Number: _____

Regional Water Planning Group: _____ [Map](#)

Groundwater Conservation District: _____ [Map](#)

Form Completed By: _____ Title: _____

Date: _____

Reporting Period (**calendar year**):

Period Begin (mm/yyyy) _____

Period End (mm/yyyy) _____

Check all of the following that apply to your entity:

Receive financial assistance of \$500,000 or more from TWDB

Have 3,300 or more retail connections

Have a water right with TCEQ

SYSTEM DATA

Retail Customer Categories*

- Residential Single Family
- Residential Multi-family
- Industrial
- Commercial
- Institutional
- Agricultural

**Recommended Customer Categories for classifying your customer water use. For definitions, refer to [Guidance and Methodology on Water Conservation and Water Use](#).*

1. For this reporting period, select the category(s) used to classify customer water use:

- | | |
|---------------------------|---------------|
| Residential Single Family | Commercial |
| Residential Multi-family | Institutional |
| Industrial | Agricultural |

2. For this reporting period, enter the gallons of **metered retail water** used by each customer category. If the Customer Category does not apply, enter zero or leave blank.

Retail Customer Category	Number of Connections	Gallons Metered
Residential Single Family		
Residential Multi-family		
Industrial		
Commercial		
Institutional		
Agricultural		
Total Retail Water Metered¹		

1. Residential + Industrial + Commercial + Institutional + Agricultural = Total Retail Water Metered

Water Use Accounting

	Total Gallons During the Reporting Period
Water Produced: Water from permitted sources such as rivers, lakes, streams, and wells. <i>Same as line 14 of the water loss audit.</i>	
Wholesale Water Imported: Purchased wholesale water transferred into the system. <i>Same as line 15 of the water loss audit.</i>	
Wholesale Water Exported: Wholesale water sold or transferred out of the system. <i>Same as line 16 of the water loss audit.</i>	
System Input: Total water supplied to system and available for retail use.	Produced + Imported – Exported = System Input
Total Retail Water Metered	
Other Authorized Consumption: Water that is authorized for other uses such as the following: This water may be metered or unmetered. <i>Same as the total of lines 19, 20, and 21 of the water loss audit.</i> <ul style="list-style-type: none"> - back flushing - line flushing - storage tank cleaning - municipal golf courses/parks - fire department use - municipal government offices 	
Total Authorized Use: All water that has been authorized for use.	Total Retail Water + Other Authorized Consumption = Total Authorized Use
Apparent Losses: Water that has been consumed but not properly measured or billed. <i>Same as line 28 of the water loss audit.</i> <i>(Includes losses due to customer meter accuracy, systematic data discrepancy, unauthorized consumption such as theft)</i>	
Real Losses: Physical losses from the distribution system prior to reaching the customer destination. <i>Same as line 29 of the water loss audit.</i> <i>(Includes physical losses from system or mains, reported breaks and leaks, or storage overflow)</i>	
Unidentified Water Losses: Unreported losses not known or quantified.	System Input - Total Authorized Use - Apparent Losses - Real Losses = Unidentified Water Losses
Total Water Loss	Apparent + Real + Unidentified = Total Water Loss

Targets and Goals

Provide the **specific and quantified five and ten-year targets** as listed in your current Water Conservation Plan. Target dates and numbers should match your current Water Conservation Plan.

Achieve Date	Target for Total GPCD	Target for Residential GPCD	Target for Water Loss (expressed in GPCD)	Target for Water Loss Percentage (expressed in percentage)
Five-year target date: _____				
Ten-year target date: _____				

Gallons per Capita per Day (GPCD) and Water Loss

Provide current GPCD and water loss totals. To see if you are making progress towards your stated goals, compare these totals to the above targets and goals. Provide the population and residential water use of your service area.

Total System Input in Gallons	Permanent Population ¹	Total GPCD
Water Produced + Wholesale Imported - Wholesale Exported		$(\text{System Input} \div \text{Permanent Population}) \div 365$

1. Permanent Population is the total permanent population of the service area, including single family, multi-family, and group quarter populations.

Residential Use in Gallons (Single Family + Multi-family)	Residential Population ²	Residential GPCD
		$(\text{Residential Use} \div \text{Residential Population}) \div 365$

2. Residential Population is the total residential population of the service area, including only single family and multi-family populations.

Total Water Loss	Permanent Population	Water Loss	
		GPCD ³	Percent ⁴
Apparent + Real + Unidentified = Total Water Loss			

3. $(\text{Total Water Loss} \div \text{Permanent Population}) \div 365 = \text{Water Loss GPCD}$
 4. $(\text{Total Water Loss} \div \text{Total System Input}) \times 100 = \text{Water Loss Percentage}$

Water Conservation Programs and Activities

As you complete this section, review your utility’s water conservation plan to see if you are making progress towards meeting your stated goals.

1. What year did your entity adopt or revise the most recent Water Conservation Plan? _____
2. Does The Plan incorporate [Best Management Practices](#)? Yes No
3. Using the table below select the types of Best Management Practices or water conservation strategies actively administered during this reporting period and estimate the savings incurred in implementing water conservation activities and programs. Leave fields blank if unknown.

Methods and techniques for determining gallons saved are unique to each utility as they conduct internal effective cost analyses and long-term financial planning. Texas Best Management Practices can be found at TWDB’s Water Conservation Best Management Practices [webpage](#). The [Alliance for Water Efficiency Water Conservation Tracking Tool](#) may offer guidance on determining and calculating savings for individual BMPs.

Best Management Practice	Check if Implemented	Estimated Gallons Saved
Conservation Analysis and Planning		
Conservation Coordinator		
Cost Effective Analysis		
Water Survey for Single Family and Multi-family Customers		
Financial		
Wholesale Agency Assistance Programs		
Water Conservation Pricing		
System Operations		
Metering New Connections and Retrofitting Existing Connections		
System Water Audit and Loss Control		
Landscaping		
Landscape Irrigation Conservation and Incentives		
Athletic Fields Conservation		
Golf Course Conservation		
Park Conservation		
Education and Public Awareness		
School Education		
Public Information		
Rebate, Retrofit, and Incentive Programs		
Conservation Programs for ICI Accounts		
Residential Clothes Washer Incentive Program		
Water Wise Landscape Design and Conversion Programs		

Showerhead, Aerator, and Toilet Flapper Retrofit		
Residential Toilet Replacement Programs		
ICI Incentive Programs		
Conservation Technology		
Water Reuse		
New Construction Graywater		
Rainwater Harvesting and Condensate Reuse		
Regulatory and Enforcement		
Prohibition on Wasting Water		
Other, please describe:		
Total Gallons of Water Saved		

4. For this reporting period, provide the estimated gallons of direct or indirect reuse activities.

Reuse Activity	Estimated Volume (in gallons)
On-site irrigation	
Plant wash down	
Chlorination/de-chlorination	
Industrial	
Landscape irrigation (parks, golf courses)	
Agricultural	
Other, please describe:	
Total Volume of Reuse	

5. For this reporting period, estimate the savings from water conservation activities and programs.

Gallons Saved/Conserved	Gallons Recycled/Reused	Total Volume of Water Saved ⁵	Dollar Value of Water Saved ⁶

5. Estimated Gallons Saved/Conserved + Estimated Gallons Recycled/Reused = Total Volume Saved

6. Estimate this value by taking into account water savings, the cost of treatment or purchase of water, and deferred capital costs due to conservation.

6. During this reporting period, did your rates or rate structure change? Yes No

Select the type of rate pricing structures used. Check all that apply.

Uniform Rates	Water Budget Based Rates	Surcharge - seasonal
Flat Rates	Excess Use Rates	Surcharge - drought
Inclining/Inverted Block Rates	Drought Demand Rates	Other, please describe:
Declining Block Rates	Tailored Rates	
Seasonal Rates	Surcharge - usage demand	

7. For this reporting period, select the public awareness or educational activities used.

	Implemented	Number/Unit
<i>Example: Brochures Distributed</i>	√	<i>10,000/year</i>
<i>Example: Educational School Programs</i>	√	<i>50 students/month</i>
Brochures Distributed		_____
Messages Provided on Utility Bills		_____
Press Releases		_____
TV Public Service Announcements		_____
Radio Public Service Announcements		_____
Educational School Programs		_____
Displays, Exhibits, and Presentations		_____
Community Events		_____
Social Media campaigns		_____
Facility Tours		_____
Other :		_____

Leak Detection and Water Loss

1. During this reporting period, how many leaks were repaired in the system or at service connections? _____

Select the main cause(s) of water loss in your system.

- Leaks and breaks
- Un-metered utility or city uses
- Master meter problems
- Customer meter problems
- Record and data problems
- Other: _____
- Other: _____

2. For this reporting period, provide the following information regarding meter repair:

Type of Meter	Total Number	Total Tested	Total Repaired	Total Replaced
Production Meters				
Meters larger than 1 ½"				
Meters 1 ½ or smaller				

3. Does your system have automated meter reading? Yes No

