



City of Fort Worth

2024 Water Conservation Plan



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CITY OF FORT WORTH 2024 WATER CONSERVATION PLAN

1.0 INTRODUCTION AND OBJECTIVE

Water supply has always been a key issue in the development of Texas. In recent years, increasing population and economic development in north central Texas have led to growing demands for water supplies. Local and less expensive sources of water supply are already developed and additional supplies to meet future demands will be expensive and difficult to secure. Severe drought conditions in the recent past highlight the importance of the efficient use of our existing supplies to make them last as long as possible. Extending current supplies will delay the need for new supplies, minimize the environmental impacts associated with developing new supplies, and delay the cost of additional water supply development.

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. The TCEQ guidelines and requirements are included in **Appendix B**. The City of Fort Worth has developed this Water Conservation Plan (Plan) in accordance with TCEQ guidelines and requirements. To develop a regional approach, Tarrant Regional Water District's (TRWD) Water Conservation and Drought Contingency Plan was consulted since the City of Fort Worth is a customer.

The 2024 Water Conservation Plan replaces the previous Plan dated April 2019.

During the period of the 2019 Plan, programs implemented by Fort Worth Water were impacted by the COVID-19 pandemic. Specifically, programs that were public facing; including education, outreach, ICI surveys, and toilet replacement installations, were heavily curtailed through 2020 and the first half of 2021. The rollout of a new plumbing assistance program for lower-income customers was delayed by nine months in 2020. Another noticeable impact was a shift in water use categories, with residential use increasing.

To achieve its goals of maximizing water conservation and efficiency, it is necessary to develop and implement a water conservation plan that goes beyond basic compliance with TCEQ guidelines and requirements. This Plan reflects Fort Worth Water's commitment to water conservation and efficiency strategies—including best management practices established by the Water Conservation Implementation Task Force and Water Conservation Advisory Council (WCAC), which were incorporated, where practicable, in the development of water conservation measures. The WCAC regularly reviews, updates, and creates additional best management practices through a collaborative process. The Texas Water Development Board (TWDB) published *The Complete Guide: BMPs for Municipal Water Providers* and *The Complete Guide: BMPs for Wholesale Water Providers* in 2017, both of which were consulted for this plan.

As best management practices are developed, they are published online at <https://www.twdb.texas.gov/conservation/BMPs/index.asp>.

The objectives of this 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 encourage efficient outdoor water use;
- To document the level of recycling and reuse in the water supply; and
- To extend the life of current water supplies by reducing the rate of growth in demand.

The Plan will achieve significant conservation savings to help extend the life of existing supplies without burdening the customer with unnecessary additional costs.

Table 1-1: Abbreviations	
Abbreviation	Full Nomenclature
AMI	Advanced Metering Infrastructure
AWWA	American Water Works Association
BMP	Best Management Practices
EPA	Environmental Protection Agency
HOA	Homeowners Association
TAC	Texas Administrative Code
TCEQ	Texas Commission on Environmental Quality
TRA	Trinity River Authority
TRWD	Tarrant Regional Water District
TWDB	Texas Water Development Board
WCAC	Water Conservation Advisory Council
WCP or Plan	Water Conservation Plan

2.0 REGULATORY BASIS FOR WATER CONSERVATION PLAN

2.1 TCEQ RULES GOVERNING CONSERVATION PLANS

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 B**. For these rules, a water conservation plan is defined as “a strategy or combination of strategies for reducing the volume of water withdrawn from a water supply source, for reducing the loss or waste of water, for maintaining or improving the efficiency in the use of water, for increasing the recycling and reuse of water, and for preventing the pollution of water.”

The elements in the TCEQ water conservation rules covered in this conservation plan are listed on page 3–5.

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 Profiles – Section 3.0 and Appendix C
- 288.2(a)(1)(B) – Record Management System – Section 5.2
- 288.2(a)(1)(C) – Specific, Quantified Goals – Section 4.0
- 288.2(a)(1)(D) – Accurate Metering – Section 5.2
- 288.2(a)(1)(E) – Universal Metering – Section 5.2
- 288.2(a)(1)(F) – Determination and Control of Water Loss – Section 5.2 and 5.3
- 288.2(a)(1)(G) – Public Education and Information Program – Section 6.1
- 288.2(a)(1)(H) – Non-Promotional Water Rate Structure – Section 6.2
- 288.2(a)(1)(I) – Reservoir System Operation Plan – Section 6.3
- 288.2(a)(1)(J) – Means of Implementation and Enforcement – Section 6.4
- 288.2(a)(1)(K) – Coordination with Regional Water Planning Groups – Section 6.6 and Appendix D
- 288.2(c) – Review and Update of Plan – Section 9.0

Conservation Additional Requirements (Population over 5,000)

The Texas Administrative Code includes additional requirements for water conservation plans for drinking water supplies serving a population over 5,000:

- 288.2(a)(2)(A) – Leak Detection, Repair, and Water Loss Accounting – Section 5.3
- 288.2(a)(2)(B) – Requirement for Water Conservation Plans by Wholesale Customers – Section 6.5

Additional Conservation Strategies

The Texas Administrative Code lists additional conservation strategies, which may be adopted by suppliers but are not required. Additional strategies adopted by the City of Fort Worth include the following:

- 288.2(a)(3)(A) – Conservation Oriented Water Rates – Section 6.2
- 288.2(a)(3)(B) – Ordinances, Plumbing Codes and Rules on Water-Conserving Fixtures – Section 7.1
- 288.2(a)(3)(C) – Replacement of Retrofit of Water-Conserving Fixtures – Section 7.1
- 288.2(a)(3)(D) – Reuse and Recycling of Wastewater – Section 7.2
- 288.2(a)(3)(E) – Pressure Control and Reduction – Section 8.2
- 288.2(a)(3)(F) – Considerations for Landscape Water Management Regulations – Section 7.3
- 288.2(a)(3)(G) – Method to Monitor Plan Effectiveness/Efficiency – Section 4.1
- 288.2 (a)(3)(H) – Other Water Conservation Practices – Section 6.0

In addition to being a public water supplier under TCEQ rules, the City of Fort Worth also acts as a wholesale provider to 33 current wholesale customers so TCEQ water conservation rules for wholesale providers are also addressed.

The TCEQ rules governing development of water conservation plans for wholesale water suppliers are contained in Title 30, Part 1, Chapter 288, Subchapter A, Rule 288.5 of the Texas Administrative Code, which is included in Appendix B. The elements in the TCEQ water conservation rules for wholesale water suppliers addressed in this Water Conservation Plan are listed below.

Minimum Conservation Plan Requirements for Wholesale Water Suppliers

The minimum requirements in the Texas Administrative Code for water conservation plans for wholesale water suppliers are covered in this Plan as follows:

- 288.5(1)(A) – Description of Service Area – Section 3.0 and Appendix C
- 288.5(1)(B) – Specific, Quantified Goals – Section 4.0
- 288.5(1)(C) – Measure and Account for Water Diverted – Section 5.1
- 288.5(1)(D) – Monitoring and Record Management System – Section 5.2
- 288.5(1)(E) – Program of Metering and Leak Detection and Repair – Section 5.3
- 288.5(1)(F) – Requirement for Water Conservation Plans by Wholesale Customers – Section 6.5
- 288.5(1)(G) – Reservoir System Operation Plan – Section 6.3
- 288.5(1)(H) – Means of Implementation and Enforcement – Section 6.4
- 288.5(1)(I) – Documentation of Coordination with Regional Water Planning Groups – Section 6.6
- 288.5(3) – Review and Update of Plan – Section 9.0

Additional Conservation Strategies for Wholesale Water Suppliers

The Texas Administrative Code lists additional water conservation strategies that can be adopted by a wholesale supplier but are not required. Additional strategies adopted by the Fort Worth Water Utility include the following:

- 288.5(2)(C) – Program for Reuse and/or Recycling – Section 7.2
- 288.5(2)(D) – Other Measures - Section 6.1 (public education), and Sections 7.3 (landscape water management measures)

2.2 GUIDANCE AND METHODOLOGY FOR REPORTING ON WATER CONSERVATION AND WATER USE

In addition to TCEQ rules regarding water conservation, this Plan also incorporates elements of the *Guidance and Methodology for Reporting on Water Conservation and Water Use* developed by TWDB and TCEQ, in consultation with the Water Conservation Advisory Council (the “Guidance”). The Guidance was developed in response to a charge by the 82nd Texas

Legislature to develop water use and calculation methodology and guidance for preparation of water use reports and water conservation plans in accordance with TCEQ rules. Fort Worth Water has considered elements of the Guidance in the preparation of this Plan.

2.3 TEXAS WATER DEVELOPMENT BOARD WATER CONSERVATION PLANNING TOOL

The TWDB has developed a Municipal Water Conservation Planning Tool to be utilized by utilities to evaluate various best management practices. The tool is pre-loaded with data submitted by utilities as part of the water use surveys and has a library of best management practices with water savings and associated costs. Fort Worth Water utilized the tool in development of the per capita goals in this Plan and for comparing cost and savings. In addition, Fort Worth Water encourages each of its Wholesale Customers to utilize the tool, to the extent practical, for water conservation planning.

3.0 DESCRIPTION OF SERVICE AREA AND UTILITY PROFILE

3.1 DESCRIPTION OF SERVICE AREA

Fort Worth Water and TRWD are active participants in the Region C Regional Water Planning Group. Region C includes all or part of 16 counties, mostly in the Fort Worth-Dallas Metroplex. The counties are Collin, Cooke, Dallas, Denton, Ellis, Freestone, Fannin, Grayson, Henderson (partial), Jack, Kaufman, Navarro, Parker, Rockwall, Tarrant and Wise.

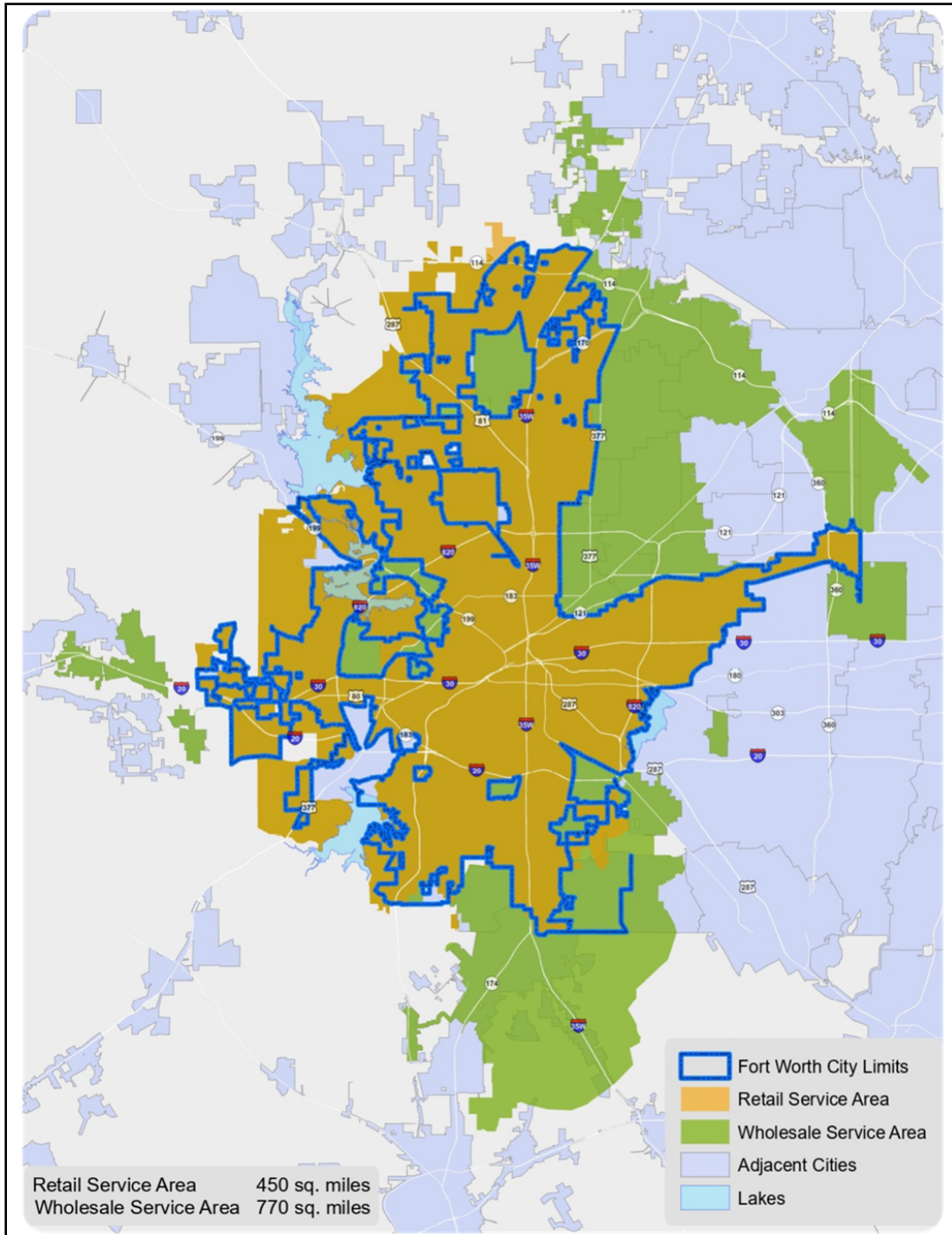
Fort Worth Water purchases raw water (water received directly from a river or lake) from TRWD. As a water wholesaler, TRWD does not treat water, but pumps it to their wholesale customers for treatment.

TRWD is one of the largest water suppliers in Texas, with more than 25 wholesale water customers across 10 counties. Other Metroplex customers include Arlington, Mansfield, and the Trinity River Authority (TRA).

Fort Worth Water provides retail water and sewer service to approximately 975,000 residents (US Census, 2020, as reported by *TWDB Region C Water Plan*) and wholesale water service to 33 wholesale customers listed in **Table 3-1**. Service through wholesale customers accounts for approximately 448,000 additional residents. In total, Fort Worth Water provides water directly or indirectly to 1.4 million people in Tarrant, Denton, Johnson, Parker, and Wise counties. **Figure 3-1** shows its retail water service area.

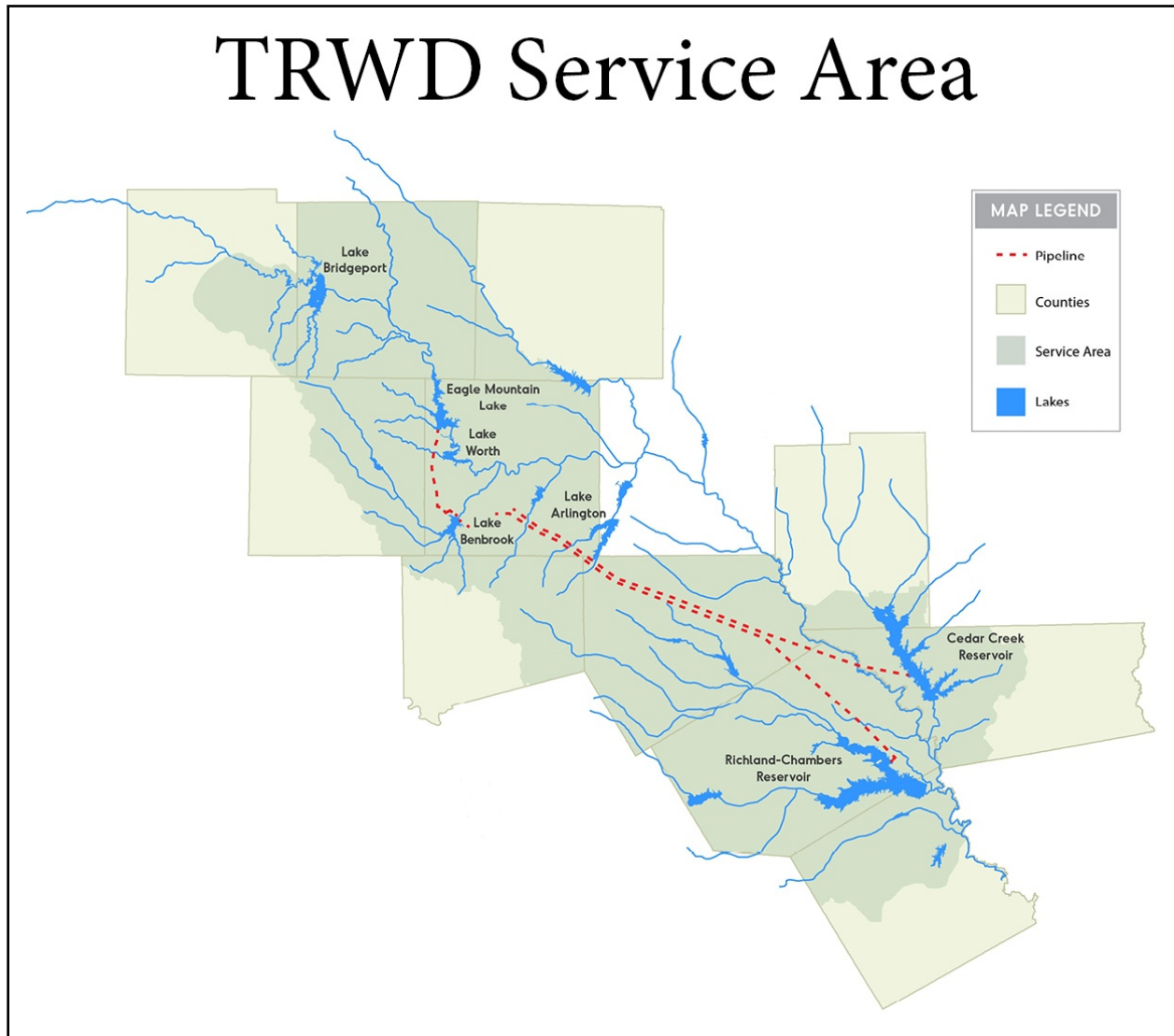
Fort Worth Water uses surface water from six sources. The West Fork system includes Lake Bridgeport, Eagle Mountain Lake, and Lake Worth. The East Texas reservoirs are Cedar Creek and Richland-Chambers. Benbrook Lake is another water source. Fort Worth owns Lake Worth, and Benbrook Lake is the responsibility of the U. S. Army Corps of Engineers. The other four lakes are owned and operated by TRWD. **Figure 3-2** shows the TRWD service area.

Figure 3-1: Fort Worth Water Service Areas*



*Source: <https://www.fortworthtexas.gov/departments/water/about-us/annual-report> (2022)

Figure 3-2: Tarrant Regional Water District Supply Sources*



*Source: <https://www.trwd.com/wp-content/uploads/2019/09/ServiceArea-1.jpg> (2019)

The wholesale service area includes 33 customers. There were approximately 448,000 people in the combined wholesale customer service area in 2023. **Table 3-1** lists each wholesale customer, population, water purchased from Fort Worth Water in 2023, and wastewater customer status.

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Table 3-1: City of Fort Worth Water Wholesale Customers			
Wholesale Customer	2020 Population*	2023 Usage (MG)	Wastewater Customer
Aledo	4,270	248,887,530	No
Benbrook	0^	0	Yes
Bethesda WSC	22,435	1,212,454,983	Yes
Burleson	46,544	2,051,990,408	Yes
Crowley	19,439	786,774,526	Yes
Dalworthington Gardens	1,148	97,047,180	No
DFW Airport	N/A	378,248,840	No
Edgecliff Village	3,992	180,564,314	Yes
Everman	0^	22,962,240	Yes
Forest Hill	14,289	449,281,747	Yes
Grand Prairie	20,497	497,713,800	No
Haltom City	46,382	1,555,688,930	Yes
Haslet	3,543	512,297,454	No
Hudson Oaks	4,000	240,809,577	No
Hurst	40,047	1,880,546,418	Yes
Keller+	46,308	3,517,338,990	No
Kennedale	1,621	86,119,124	Yes
Lake Worth	3,918	233,882,177	Yes
North Richland Hills	42,100	2,144,772,620	Yes
Northlake	2,920	259,381,943	No
Richland Hills	6,902	205,665,910	Yes
River Oaks	0^	229,869,800	Yes
Roanoke	9,858	571,630,733	No
Saginaw	24,974	1,384,699,570	Yes
Sansom Park	0^	0	Yes
Southlake	31,975	3,908,740,378	No
Trinity River Authority	N/A	0	Yes
Trophy Club MUD #1	13,681	1,018,276,468	No
Westlake	1,922	686,822,169	No
Westover Hills	682	257,715,124	Yes
Westworth Village	2,605	147,966,400	Yes
White Settlement	10,106	524,110,256	Yes
Willow Park	1,641	4,261,940	No
Total	447,506	25,296,523,939	

*Source: Texas Water Development Board Region C and G Water Plan 2020 Population Estimates

^Wastewater Customer only

+Includes Keller and Keller/Southlake Agreement

3.2 WATER TREATMENT CAPACITY

The Fort Worth Water service area is currently served by five water treatment plants. Approved treatment capacity is 512 million gallons per day (MGD). A breakdown of treatment capacity by plant is provided in **Table 3-2** below.

Treatment Plant	Approved Capacity
Rolling Hills, est. 1972	200
North Holly, est. 1918	90
South Holly, est. 1952	100
Eagle Mountain, est. 1992	107
Westside, est. 2012	15
Total	512

Fort Worth Water has a wastewater treatment capacity of 166 MGD at the Village Creek Water Reclamation Facility in east Fort Worth.

Appendix C contains Fort Worth Water’s most recent Water Utility Profile based on the formats recommended by TCEQ for both retail suppliers and wholesale suppliers.

Figure 3-3 shows the categories of water use for Fort Worth Water. The Other category includes water authorized for other uses, including back flushing, line flushing, storage tank cleaning, fire department use, municipal government offices, or municipal golf courses/parks.

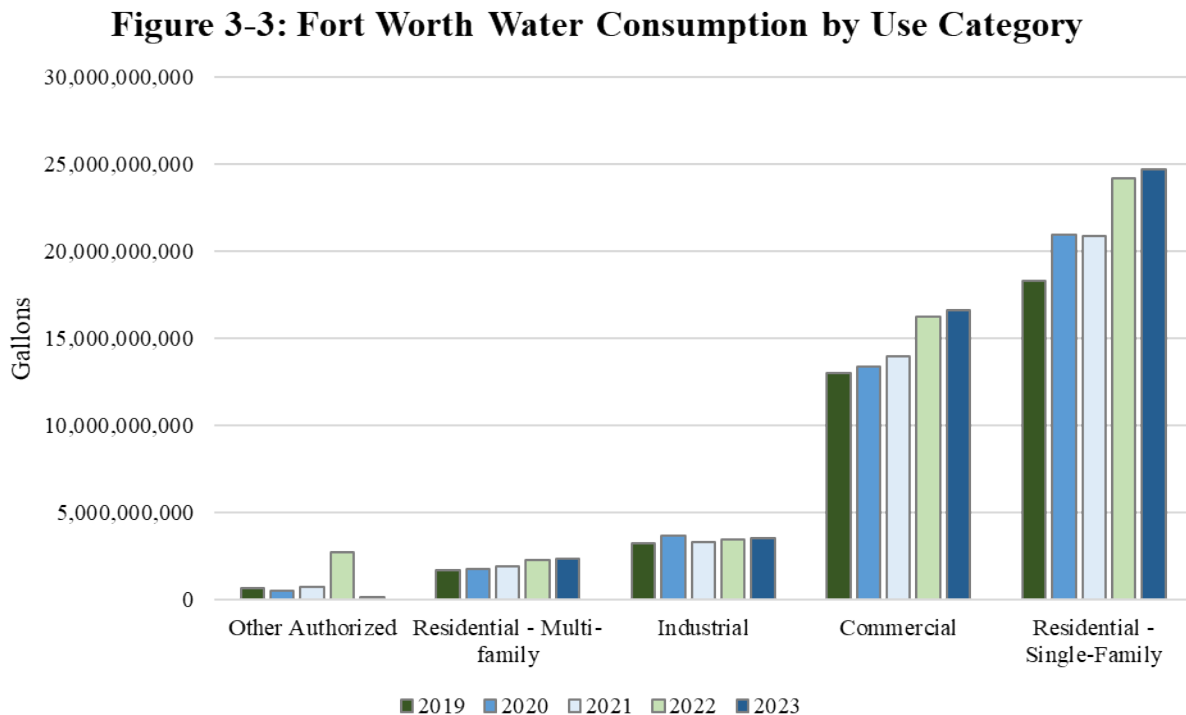
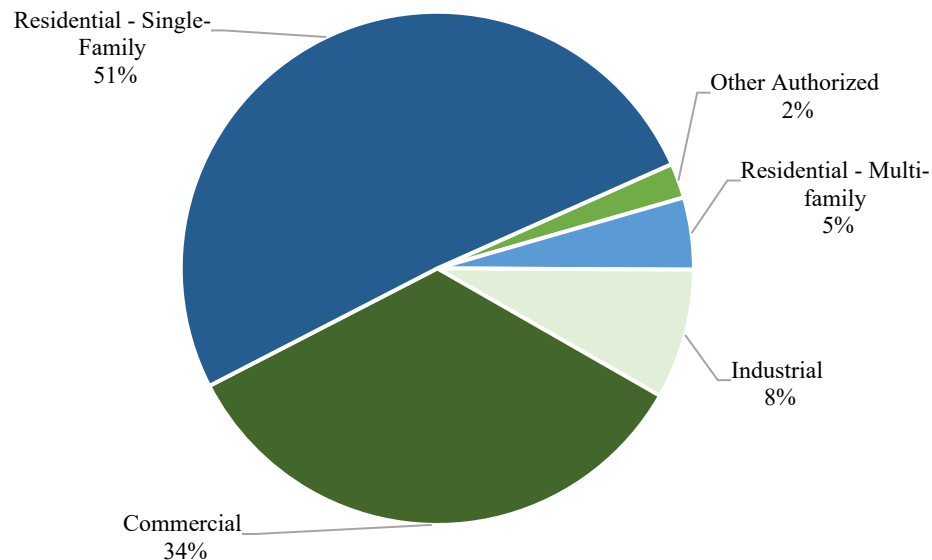


Figure 3-4 illustrates the percentage of water use per category averaged for the period from 2019-2023.

**Figure 3-4: Percentage of Water Consumption by Category
(Based on 2019-2023 Average Yearly Consumption in MG)**



4.0 SPECIFICATION OF WATER CONSERVATION GOALS

4.1 TCEQ WATER CONSERVATION GOALS

TCEQ rules require the adoption of specific water conservation goals for a water conservation plan. The goals for this Plan include the following:

- Maintain the 5-year moving average total per capita and residential per capita water use below specified amount in Table 4-2;
- Maintain a program of universal metering and meter replacement and repair as discussed in Section 5.2;
- Maintain the Infrastructure Leakage Index (ILI), as described in Section 5.3, below the specified amount in Table 5-3;
- Maintain the level of water loss in the system below the specified amount in Table 5-3;
- Raise public awareness of water conservation and encourage responsible public behavior through a public education and information program as discussed in Section 6.1; and
- Increase efficient water usage and decrease waste in lawn irrigation by enforcement of reasonable irrigation and landscape water management regulations described in Section 7.3.

4.2 GPCD GOALS

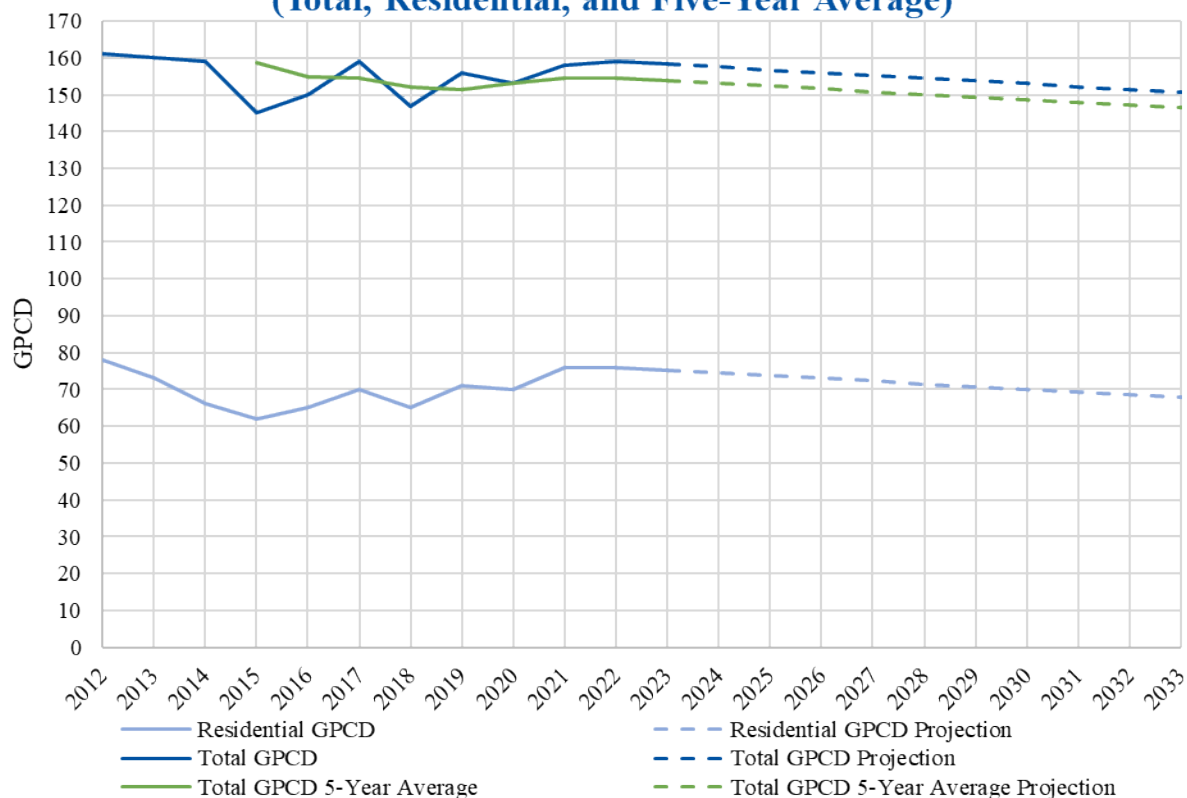
The 2022 State Water Plan required planning groups to set a per capita water use goal for municipal water users. About half the planning groups, including Region C, selected 140 gallons per capita per day (GPCD). While not there yet, Fort Worth Water is working diligently to achieve the GPCD goals shown in **Table 4-1** and **Figure 4-1** below. Part of the conservation plan includes setting goals for reducing water consumption. This Plan's goals are shown in **Table 4-1** and **Figure 4-1**. These GPCD goals in **Table 4-1** are based on a reduction calculation of 0.75 gallons per capita per day for each year for the five- and ten-year periods. **Figure 4-1** shows the historic and projected total and residential GPCD since 2012. Weather plays a major factor in water use and can cause significant variations in water use from one year to the next. To smooth out the impacts of weather changes, Fort Worth Water uses a five-year rolling average to determine GPCD goals and track progress.

Table 4-1: GPCD Goals (Five-Year Rolling Average)				
Description	Units	2023	2029	2034
Total GPCD ^a	GPCD	155	150	146
Residential GPCD ^b	GPCD	76	72	68

a. Total GPCD = (Total Gallons in System ÷ Permanent Population) ÷ 365

b. Residential GPCD = (Gallons Used for Residential Use ÷ Residential Population) ÷ 365

**Figure 4-1: Fort Worth Historic and Projected GPCD
(Total, Residential, and Five-Year Average)**



4.3 ANALYSIS OF BEST MANAGEMENT PRACTICES

To update the Plan, Fort Worth Water evaluated best management practices outlined in the Water Conservation Best Management Practices Guide. For a complete analysis of the Best Management Practices for Municipal Water Providers and Wholesale Water Providers, refer to **Table 4-3** on the following pages.

Table 4-3 looks at the implementation of the BMPs for the practices Fort Worth Water has implemented and proposed implementation dates for additional strategies.

Technical Assistance and Outreach

The utility holds regular meetings with its wholesale customers to update them on programs the City is implementing. Water conservation staff are available for wholesale customers to contact regarding their programs and to assist wholesale customers with implementing their own programs. Water Conservation staff also participate in the Water Efficiency Network of North Texas, a regional conservation coordinator workgroup, and will investigate participation in the TWDB Water Conservation Advisory Council.

Wholesale Conservation Rates

Fort Worth Water structures its wholesale rates such that the utility achieves adequate cost recovery.

Water Conservation Education and Public Awareness

Fort Worth Water has an active water conservation public education program in place. Fort Worth Water collaborates with and provides a financial contribution to TRWD to provide a regionally consistent message on the importance of water conservation (Water Is Awesome) and intends to continue involvement throughout the region.

Providing Financial Incentives Directly to Customer's End-Users

Although Fort Worth Water is both a retail and wholesale provider, it conducts replacement and retrofit programs for retail customers but does not intend to offer a collective purchase or direct distribution program for wholesale customers. While there is not a formal cost sharing program with its wholesale customers, Fort Worth Water participates in the Water Efficiency Network of North Texas that organizes cooperative buying programs across the region and allows wholesale customers to piggyback on specific contracts for services.

Strategic Water Plan

Fort Worth Water last completed a 10-Year Strategic Water Plan in 2007. The myriad changes to state and local codes and ordinances in the past 15 years has dramatically shifted the water conservation goals for cities across the state. A new Strategic Water Plan will be developed during this planning period.

Table 4-3: Water Conservation Best Management Practices Implementation Schedule

BMP	Best Management Practices (BMP) Description	Implementation Schedule				Notes
		Date	Code	Before 2024	Before 2029	
Municipal BMPs						
Conservation Analysis and Planning						
2.1	Conservation Coordinator	1990				Duties assigned 1990, program manager hired 2008.
2.2	Cost-Effectiveness Analysis for Municipal Water Users				✓	Work on a 10-year Strategic Water Plan will begin.
2.3	Water Survey for Single-Family and Multi-Family Customers	2011				The survey program has existed since 2011. Additional funding was added to the program in 2022. Program also includes ICI customers.
2.4	Customer Characterization	2019			✓	A new customer characterization will be part of the 10-year Strategic Water Plan.
Financial						
3.1	Water Conservation Pricing	1994				Super-user tier was removed in 2020.
3.2	Wholesale Agency Assistance Programs			✓		City to provide technical assistance on an as needed basis and stakeholder meetings.
Systems Operations						
4.1	Metering of All New Connections and Retrofit of Existing Connections	<1980		✓		Implementation of MyH2O to exchange all City analog meters with advanced metering infrastructure began in 2016. By the end of 2023, just a few large industrial meters remain incomplete.
4.2	System Water Audit and Water Loss	2002		✓		
Landscaping						
5.1	Athletic Field Conservation				✓	Provide outreach and education including an inventory of conservation measures; City to develop communication strategy concerning golf courses, athletic fields, parks.
5.2	Golf Course Conservation				✓	See comments on 5.1.
5.3	Landscape Irrigation Conservation and Incentives	2003				Continue offering residential and add HOA irrigation evaluations. Evaluation reports encourage equipment replacements with more water efficient controllers and spray heads.

5.4	Park Conservation				✓	See comments on 5.1.
5.5	Residential Landscape Irrigation Evaluations	2007				TRWD offers these in the Fort Worth Service Area. Fort Worth offers landscape irrigation evaluations for HOA through city staff, and ICIM customers through the Water Survey program.
5.6	Outdoor Watering Schedule	2014				City Ordinance.
Education and Public Awareness						
6.1	Public Information	1983				
6.2	School Education	1990		✓		Two new school education programs, Meter Heroes and Conservation Captains, in collaboration with TRWD, were implemented in 2023.
6.3	Public Education and Outreach	2008				Continue to add and grow partnerships with TRWD, Master Gardeners, Botanic Gardens, BRIT, Texas A&M AgriLife, Tarrant County College District, and Rooted In to develop and deliver educational programming.
6.4	Partnerships with Nonprofit Organizations	2008				
Rebate, Retrofit, Incentive Programs						
7.1	Conservation Programs for Industrial, Commercial, and Institutional Accounts	2010		✓		City completed NAICS coding and benchmarking for commercial customers to help identify future ICI survey candidates in 2020. A water use survey program began in 2011. Additional funding in 2022.
7.2	Residential Clothes Washer Incentive Program		1992			Not anticipating any program in next five years.
7.3a	Plumbing Code Residential Toilet Replacement Programs		1992/ 2014			
7.3b	Additional Residential and Commercial Toilet Replacement Programs	2009				Standards for toilets has become progressively more restrictive and programs have adapted requirements for participation.
7.4a	Plumbing Code Showerhead, Aerator and Toilet Flapper Retrofit		1992/ 2014			
7.4b	Additional Showerhead, Aerator and Toilet Flapper Retrofit Program	2018				Showerheads and aerators currently distributed to commercial facilities and at promotional events.
7.5	Water Wise Landscape Design and Conversion Programs					Not anticipating any program in next five years.
7.6	ICIM Custom Conservation Rebates			✓		The commercial toilet replacement program has been extended to customers who participate in ICIM conservation survey program. This is not a rebate program; toilets are provided at no charge.

7.7	Plumbing Assistance Programs for Economically Disadvantaged Customers	2020				SmartRepair leak repair program was implemented in 2020 for low-income, single-family homeowners.
Conservation Technology						
8.1	New Construction Graywater	2021				Addressed in plumbing provisions
8.2	Rainwater Harvesting and Condensate Reuse	2021				Addressed in plumbing provisions
8.3	Water Reuse	1999				
Regulatory and Enforcement						
9.1	Prohibition on Wasting Water	1994				City Water Conservation Ordinance in 2014.
9.2	Conservation Ordinance Planning/Development				✓	Irrigation and Landscape Ordinances Review will be completed during this Plan.
9.3	Enforcement of Irrigation Standards	2020				Adopted by TWDB in 2020.
Draft Municipal BMPs						
	Pressure Reducing Valve Replacement Program				✓	Implementation of Pressure Reducing Valves retrofit program for existing homeowners in 2025.
Wholesale BMPs						
2.1	Customer Contract Requirement to Develop and Implement Water Conservation / Drought Contingency Plans	2009				
2.2	Technical Assistance and Outreach	2014				

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5.0 METERING, WATER USE RECORDS, CONTROL OF NON-REVENUE WATER, LEAK DETECTION AND REPAIR

One of the key elements in water conservation is careful tracking of water use and control of losses. Reducing non-revenue water is one of the few conservation programs that directly impacts rates. Programs for universal metering, meter testing, meter repair, and periodic meter replacement have been developed using American Water Works Association (AWWA) standards and are essential elements in Fort Worth Water’s program to control losses.

5.1 PRACTICES TO MEASURE AND ACCOUNT FOR THE AMOUNT OF WATER DIVERTED FROM TRWD

Water deliveries from TRWD are metered by Fort Worth Water using meters with accuracy of at least $\pm 5\%$. TRWD can access the meters at all reasonable times, and meters are calibrated to maintain the required accuracy.

5.2 MONITORING AND RECORD MANAGEMENT PROGRAM FOR DETERMINING DELIVERING, SALES, AND LOSSES

Fort Worth Water has an effective record management system in place. As required by TAC Title 30, Part 1, Chapter 288, Subchapter A, Rule 288.2 (a)(2)(B), the utility’s record management system allows for the separation of water sales and uses into residential, commercial, municipal, and industrial categories. This information is included in the TCEQ-required Water Conservation Annual Report, as described in Section 6.4.

Fort Worth Water meters all the connections in the distribution system. The meter distribution by water use category is included in **Table 5-1** below. Meters range in size from $\frac{3}{4}$ inches to 10 inches. All meters met AWWA accuracy standards when installed. As of March 2024, there were a total of 295,840 active retail customer meters in the City.

Table 5-1: Meter Distribution	
Meter Type by Water Use Category	Total Number
Residential – Single-Family	271,258
Residential – Multi-Family	2,642
Industrial	575
Commercial	21,365
Total	295,840

Fort Worth Water has implemented a meter exchange program that provides for the annual replacement of meters in the system that do not register the correct amount of water flowing through them. The implementation of the meter replacement program is aligned with the deployment of the MyH2O Advanced Metering Infrastructure program, further described in Section 7.5.

5.3 LEAK DETECTION, REPAIR, AND WATER LOSS ACCOUNTING

A system water audit is used annually to monitor the total amount of non-revenue water. Many variables influence revenue and nonrevenue components of the utility's water system, including meter inaccuracy, data discrepancies, unauthorized consumption, reported breaks and leaks, and unreported losses.

Since the TWDB approved the initial water loss thresholds in 2014, the American Water Works Association Water Loss Control Committee has developed new water loss performance indicators, and more recent water loss audit data is now available to update the thresholds. New thresholds were developed from quality-controlled, statewide data from 2015 to 2020 and are based on connection density rather than population to align with the industry's standards. The water loss threshold values will help address concerns with utilities that have a high volume of real water loss and ensure water loss mitigation is included as an effective strategy for utilities receiving financial assistance for drinking water projects. These thresholds will apply only to a utility that requests financial assistance from the TWDB for a water supply project and are being used to calculate water loss thresholds for applications for financial assistance received after July 1, 2023.

Fort Worth Water uses gallons per connection per day as its preferred water loss metric. It is less affected by weather conditions than other metrics. In the 2019 plan, water loss (gallons per connection per day) was 76 with a goal of 72.5 by 2025 and 70 by 2030 (**Table 5-2**). Due to the utility's water loss reduction programs, by 2023 water loss was reduced to 42.4 gallons per connection per day. The goals for this Plan period are set out in **Table 5-3**.

The Infrastructure Leakage Index (ILI) is a calculation of the theoretical lowest leakage possible divided by existing calculated leakage. This is developed as a unique value for every city and includes variables such as the distance from the curb stop to the meter boxes, the pressure in the system, and the number of service lines or connections per mile of water main. In 2023, the Unavoidable Annual Real Losses (UARL) were approximately 5.7 million gallons per day. This is the theoretical lowest leakage currently possible with the existing infrastructure and service connection density. In 2023, Fort Worth Water had an ILI of approximately 2.86, which means that theoretically the leakage could be reduced 2.86 times before reaching the lowest possible value. This puts Fort Worth Water in the efficient zone of ILIs within the United States. ILI is a reliable performance indicator for benchmarking the performance of a utility in operational management of real losses. An ILI of less than 3.0 is considered an extremely efficient system and the goals in this Plan are designed to maintain this level over an extended period.

Although Fort Worth Water exceeds the threshold of 30 gallons per connection per day, staff have aggressively and methodically taken on the challenge of reducing water loss and invested time, resources, and significant funding to making lasting improvements by working on several approaches to address and minimize water loss, both apparent loss and real loss, within its distribution system.

Table 5-2: Previous Water Loss (2019 Plan)				
Description	Units	2017	2025	2030
Water Loss GPCD ^a	GPCD	27	25	23
Real Water Loss per Connection	Gals/connection per day	76	72.5	70
Real Losses	ILI ^b	4.78	3.75	3.5

a. $\text{Water Loss GPCD} = (\text{Total Water Loss} \div \text{Permanent Population}) \div 365$

b. $\text{ILI} = \text{Current Annual Real Losses} \div \text{Unavoidable Annual Real Losses}$

Table 5-3: Water Loss Goals (2024 Plan)				
Description	Units	2023	2029	2034
Water Loss GPCD ^a	GPCD	19	18	17
Real Water Loss per Connection	Gals/connection per day	42.4	41.2	40
Real Losses	ILI ^b	2.86	2.68	2.5

a. $\text{Water Loss GPCD} = (\text{Total Water Loss} \div \text{Permanent Population}) \div 365$

b. $\text{ILI} = \text{Current Annual Real Losses} \div \text{Unavoidable Annual Real Losses}$

The Real Water Loss Management Plan was developed and implemented in 2019. It includes a five-year roadmap with recommendations for training, software, District Metered Areas, Pressure Management Areas, and other methods to help locate and reduce real losses within the water system. In 2024, Fort Worth Water initiated an update to the Real Water Loss Management Plan, to review all actions implemented from the previous plan, leverage what has been learned, capitalize on successes, and develop, prioritize, and implement recommendations to further reduce water loss over the next five years.

Fort Worth Water owns and utilizes acoustic leak detection equipment to conduct proactive internal leak surveys. The utility tracks Key Performance Indicators (KPIs), which includes conducting internal proactive leak surveys of 1.5 million linear feet/year and budgets \$200,000 annually for a contractor to conduct additional leak surveys and coordinate with the utility to validate and repair identified leaks. The goal is to survey the entire system every four years (25% annually).

Fort Worth Water has installed and commissioned one District Metered Area (DMA) to date and is in the process of completing the installation of four DMAs in 2024. The DMA has improved the monitoring of water loss and has led to corrective actions being taken within the area.

Another KPI is annual cast iron pipe replacement, with the goal of replacing 20 miles of cast iron pipe annually. Prioritizing the oldest cast iron pipe for replacement has an added benefit of reducing main breaks within the oldest pressure plane. Fort Worth Water is reviewing and adjusting pressure plane boundaries to improve pressure management and serve lower elevation areas with an appropriate but reduced pressure to further minimize water loss.

The MyH2O program, recently completed, upgrades to Advance Metering Infrastructure (AMI). MyH2O has significantly improved how data is gathered and used by allowing for consistent, reliable, and repeatable data yielding a higher level of confidence in the data used for the annual Water Loss Audit report. Immediate reductions in apparent losses were recognized, including systematic data handling errors and customer meter inaccuracy losses. The greatest area of

improvement afforded by MyH2O is the reduction in real losses. AMI allows system users to quickly identify potential leaks and breaks and respond accordingly.

Fort Worth Water has implemented new software, including a dashboard, to consolidate data programs, analyze data from multiple sources, including SCADA, and detect and flag events in the water distribution systems, including unobserved leaks and breaks.

Table 5-4 below summarizes leak detection program activity over the past five fiscal years.

Table 5-4: Leak Detection Program Implementation			
Fiscal Year	Leaks Found	Water Saved (MG)	Million Linear Feet Surveyed
FY19	36	32.31	1.5
FY20	258	208.81	3.9
FY21	412	1,213.21	6.4
FY22	869	1,023.37	5.4
FY23	236	366.84	1.9

The utility's Water Efficiency Condition Assessment Program (WECAP) is another proactive approach utilizing objective decision-making tools to identify and prioritize inspection, rehabilitation, and renewal strategies for raw water transmission and water distribution pipelines. Water lines are evaluated using a risk-based assessment approach, calculated as a product of a line's likelihood of failure (condition) and the consequences of a failure (criticality).

Every water distribution system line asset in the utility's geographic information system (GIS) is scored based on the parameters listed in **Table 5-5** below.

Table 5-5: WECAP Risked-Based Assessment Scoring Parameters	
Condition Parameters	Critical Parameters
Pipe Material	Ease of Access
Pipe Age	Proximity to Critical Customers
Pipe Work Order History	Number of Customers Served
Pipe Modeled Pressures	Available Resiliency

Risk-based assessment provides Fort Worth Water with locations for highest risk assets prioritized for system renewal. The program also identifies lines which need renewal not just because of overall risk score, but also other priority initiatives. Some of these initiatives include:

- Replacements of lines with multiple breaks/leaks from the work order system;
- Renewal/relocation of active distribution system lines from alleyways;
- Replacement of all cast iron pipes in the distribution system; and
- Renewal of small diameter lines to the City's standard sizing.

The WECA program developed this prioritized process to enable water line evaluation on a regular interval to maintain an updated program. Another component of the program is the ongoing development of inspection plans to identify large diameter lines for field testing. As Fort Worth Water actively renews older portions of the distribution system, identifies problematic lines, and implements the MyH2O program, water losses should continue to decrease. More information on the MyH2O and AMI programs can be found in **Section 7.5**.

6.0 OTHER REQUIRED CONSERVATION MEASURES

6.1 PUBLIC EDUCATION AND INFORMATION

Fort Worth Water has an active, comprehensive water conservation public education program in place. It coordinates with TRWD to provide a regionally consistent message on the importance of water conservation by helping fund the Water Is Awesome regional, multimedia public awareness campaign promoting the value of water in north central Texas (<https://waterisawesome.com/>).

COVID-19 advanced the use of online seminars, both replacing and augmenting in-person classes/presentations for adults and school-age children to reach new audiences who had previously not engaged with the City's water conservation programs.

Water conservation staff implemented or enhanced public education activities during the period of the 2019 Plan. They are listed below and summarized in **Table 6-1**.

- Water bill inserts are distributed monthly with topics related to water conservation, such as Water Saving Seminars, Watering Schedules, Fix-a-Leak Week, and Smart Irrigation Month.
- Robust water conservation information is located on Fort Worth's websites (fortworthtexas.gov, savefortworthwater.org) and was redesigned in 2021. Eight educational videos about irrigation systems and landscape maintenance, an online irrigation water use calculator, and the EPA WaterSense *Your Better Yard* program were added.
- Staff planned and participated in EPA's *Fix-A-Leak Week* activities through the statewide, two-part online seminar series, in collaboration with the cities of Dallas, Houston, and Round Rock in 2021, 2022, and 2023.
- Water Community Engagement and Water Conservation staff collaborated to create a month-long series of short, animated videos, featuring the Drop family, to help customers understand their bill and how to reduce indoor and water use. The videos were produced in English and Spanish and are shared on social media channels.
- The Water and City communications teams worked together to encourage local media coverage of water conservation issues and the importance of water conservation.
- Conservation staff distributed brochures and promotional items at educational seminars and community events. Most brochures were refreshed and rebranded in 2020-2022, including a new brochure featuring a menu of water conservation programs.
- Conservation staff provided hundreds of educational posts for water and city social media accounts (Facebook, X, Instagram, Next Door, YouTube).
- Conservation staff made presentations to local organizations, schools, and civic groups and

offered classes on the importance of water conservation and ways to save water.

- Conservation staff participated in or sponsored community events, including YardSmart and water-saving seminars and classes, and provided support for displays, exhibits and presentations in the community. Since 2019, about 32,000 customers have been reached. The City also promoted TRWD Learn & Grow classes for its water customers.
- Fort Worth Water supported new education programs delivered by TRWD and the City's Community Engagement Office existing programs for schools within the Fort Worth Independent School District and schools within the 13 other districts which operate inside Fort Worth city limits. Despite COVID-19, more than 15,000 students received water conservation education in the last five years.
 - MeterHero by STEMHero provides a turnkey, standards-aligned curricula accessible to all students regardless of housing situation (home, apartment, school, shelter, business). MeterHero engages students at school and at home, leveraging their families' interest to be examples of wise utility consumption.
 - The Conservation Captains program is delivered by classroom teachers with a curriculum aligned with Texas Essential Knowledge and Skills (TEKS) standards. Lessons encourage water-saving habits and educate students about the value of water in our community and our water supply system. Participating students received a Water Conservation Kit, including a bucket for catching shower water to reuse for watering plants, a digital shower timer, a pan scraper, a water flow rate bag, and toilet leak detection tablets.

Table 6-1: Public Education and Information Summary*

Type	2019		2020		2021		2022		2023	
	No.	Reach	No.	Reach	No.	Reach	No.	Reach	No.	Reach
Brochures	-	18,537	9	328	-	243,000	-	-	-	45,000
Bill Inserts	12	-	15	1,650,000	15	3,600,000	12	2,800,000	12	2,700,000
Press Releases	-	-	-	-	-	-	-	-	-	-
TV/Radio PSAs	<i>Funding Entity and Participant in the TRWD Water is Awesome Regional Water Conservation Campaign</i>									
Educational School Programs	-	4,153	2	15	19	2,883	-	1,726	122	8,395
Displays, Seminars, Presentations	-	1,619	5	176	25	731	-	715	19	1,653
Community Events	-	12,765	12	9,815	4	42	-	4,016	22	10,993
Social Media (Facebook)	-	188,800	512	182,000	957	4,600,000	-	1,200,000	768	1,700,000
Social Media (X, formerly Twitter)	-	165,000	512	95,000	1,046	122,000	-	200,000	742	450,000
Social Media (Instagram)	-	156,000	58	17,400	23	4,800	12	2,500	27	2,800
Social Media (YouTube)	-	14,700	58	80	40	148,000		118,000	6	21,000
Facility Tours	-	-	-	-	-	-	-	-	-	-

*Includes partnership events with TRWD

Fort Worth Water has been a proactive partner in the EPA’s WaterSense program and has been recognized multiple times for its partnership, including during the period since publication of the 2019 Plan. A summary of all recent awards is provided below:

2022 WaterSense Promotional Partner of the Year: Fort Worth Water won its second Partner of the Year Award and fourth WaterSense Award overall. To make water efficiency more accessible, Fort Worth Water launched a minor plumbing leak repair program in 2020 called SmartRepair. Qualifying low-income homeowners could participate in the program, which repairs or replaces toilets and fixtures. Fort Worth Water directed city-contracted plumbers to use WaterSense labeled fixtures whenever possible. Repairs for 50 homes in 2021 resulted in an estimated yearly savings of 821,200 gallons of water! To reduce water waste even further, Fort Worth Water alerted customers who had high water use based on Advanced Metering Infrastructure data showing extended periods of usage; this often indicates a potential leak. In 2021, Fort Worth Water notified over 68,000 customers of high water use with a link to their web page about checking for leaks. An analysis of the mailings showed 68 percent of customers no longer showed continuous usage 30 to 60 days after receiving the letter. Fort Worth Water collaborated with several other partners to promote WaterSense as part of its educational offerings in a combination of live and virtual classes focused on water conservation. Staff increased the number of water conservation classes offered from 11 in 2020 to 25 in 2021, adding new partners for most of them to help develop, teach, and promote the new classes. Four irrigation classes were conducted in collaboration with TRWD, along with two YardSmart conferences. Fort Worth Water created eight landscape videos featuring WaterSense labeled products and a two-part virtual seminar on the Your Better Yard campaign in collaboration with a group called Rooted In. Fort Worth Water also worked with the cities of Dallas and Houston to host a two-part virtual Fix-a-Leak Week workshop.

2022 Texas Section of American Water Works Association Watermark Award for Communication Excellence: Fort Worth Water’s Annual Drinking Water Quality Report won the honor in the publications category for large utilities. The report is a regulatory requirement, but Fort Worth Water enhances the required technical information with stories about what it is doing to improve and protect water quality from source to tap, including sections on water conservation and MyH2O.

6.2 WATER RATE STRUCTURE

Fort Worth Water has conservation-oriented water rate structures in place. The current rate structure consists of the following five classes: Residential, Commercial, Industrial, Irrigation, and Gas Well Use.

Each customer is first charged a flat rate based on meter size as outlined in **Table 6-2**. Usage charges are then assessed according to customer class as shown in **Table 6-3** to **Table 6-7**. The rate structures for all customer classes are designed to encourage water conservation, and an increasing block rate structure is in place for residential and irrigation classes to reduce peak usage. Fort Worth Water analyzes each customer class and sets rates in proportion to those classes which place the most demands upon the water system. The rates shown in the tables below were effective January 1, 2024, and are subject to change as the utility continues to refine

its rate structures to improve impact on water conservation and manage cost of service most effectively.

Table 6-2: Monthly Meter Charges

Meter Size	Service Charge (inside city limits)	Service Charge (outside city limits)
5/8" X 3/4"	\$12.90	\$16.13
3/4" X 3/4"	\$13.15	\$16.44
1"	\$27.25	\$34.06
1 1/2"	\$51.15	\$63.94
2"	\$79.90	\$99.88
3"	\$211.35	\$264.19
4"	\$362.00	\$452.50
6"	\$768.50	\$960.63
8"	\$1,342.40	\$1,678.00
10"	\$2,012.00	\$2,515.00

Table 6-3: Residential Water Rates

Monthly Volume (CCF*)	Inside City Limits	Outside City Limits
First 6 CCF	\$2.27	\$2.84
6 CCF to 18 CCF	\$3.18	\$3.98
18 CCF to 30 CCF	\$4.07	\$5.09
Above 30 CCF	\$4.95	\$6.19

**Note: 1 CCF (hundred cubic feet) = 748.05 gallons*

Table 6-4: Commercial Water Rates

	Inside City Limits	Outside City Limits
All Volumes	\$2.70	\$3.38

Table 6-5: Industrial Water Rates

	Inside City Limits	Outside City Limits
All Volumes	\$2.67	\$3.34

Table 6-6: Irrigation Water Rates

Monthly Volume	Inside City Limits	Outside City Limits
First 100 CCF	\$3.01	\$3.76
Above 100 CCF	\$3.90	\$4.88

Table 6-7: Gas Well Rates

	Inside City Limits	Outside City Limits
All Volumes	\$5.85	\$7.31

6.3 RESERVIOR SYSTEM OPERATION

Fort Worth Water is a raw water customer of TRWD. TRWD is responsible for the operation of its reservoir system which consists of seven major reservoirs: Lake Bridgeport, Eagle Mountain Lake, Lake Worth, Cedar Creek Reservoir, Richland-Chambers Reservoir, Lake Arlington, and Lake Benbrook (See **Figure 3-2**). TRWD's reservoir system operation plan seeks to maximize efficiency of water withdrawals within the constraints of existing water rights. Other priorities include maintaining water quality and minimizing potential impacts on recreational users, fish, and wildlife. Each reservoir is operated on a policy of flood release above the conservation elevation. TRWD coordinates its Operation Plan with all its water customers and provides recommendations for the operations of regional treatment systems including Fort Worth.

For more information regarding TRWD's reservoir system operation, please refer to the TRWD Water Conservation Plan.

6.4 IMPLEMENTATION AND ENFORCEMENT

Fort Worth Water completes the TCEQ required Water Conservation Annual Report by May 1 of each year. The report includes various water conservation strategies that have been implemented, including the date of implementation. Additionally, the report includes progress made on the five- and ten-year per capita water use goals from this Plan. If the goals are not being met, Fort Worth Water document why not. The amount of water saved is also documented in this report.

6.5 REQUIREMENT FOR WATER CONSERVATION PLANS BY WHOLESALE CUSTOMERS

Each of Fort Worth Water's 33 wholesale customers is contractually obligated to develop, implement, and update water conservation plans or conservation measures using the applicable requirements of TCEQ Water Conservation Plans, Drought Contingency & Emergency Water Management Plans, Guidelines and Requirements, and Texas Administrative Code 30 TAC Chapter 288(a)(2)(C). Each of the utility's wholesale customers is contractually obligated to adopt any mandatory measures in this Plan such as time of day restrictions and the year-round twice per week watering schedule. Fort Worth Water's Water Conservation and Drought Contingency Plans are available to wholesale customers to aid with the development of their plans.

The conservation goals as outlined in this section of the Plan are intended as guides for the wholesale customers. When existing contracts are renewed and new contracts are signed, requirements for implementation of water conservation plans will be incorporated into the respective wholesale customer contracts.

Fort Worth Water expects each wholesale customer to voluntarily reduce its water use through conservation practices. The targets in **Table 6-8** below are recommended for each wholesale customer. The utility encourages each wholesale customer to implement conservation plans which reduce water use within 10% of the target goals.

Table 6-8: Wholesale Customer Targets			
	Total GPCD	Residential GPCD	Water Loss per Connection per Day*
By 2029	151	68	105*
By 2034	147	66	100*

**Nonrevenue water targets are based on the new AWWA water audit practices which approve the performance indicator for water losses as gallons lost per connection per day. This includes real and apparent losses. The commonly used percentage is not recommended as it is too variable depending on usage. These are guidelines and are related to the average wholesale customer in a year of average rainfall. These are voluntary guidelines.*

Each wholesale customer is asked to provide a copy of their Water Conservation Plan and required Water System Audit (as required by the TWDB water audit reporting requirement as specified by House Bill 3338) to Fort Worth Water. This will be required in any new contracts developed with wholesale customers as specified in 30 TAC Chapter 288.

In 2000, Fort Worth Water's wholesale customers accounted for slightly over one quarter of the raw water pumped. By 2023, wholesale customers accounted for more than one third of the raw water pumped. As needed, Fort Worth Water will hold meetings with their wholesale customers to provide information on the utility's program and conservation best management practices. Additionally, Fort Worth Water holds meetings with the conservation staff of TRWD to facilitate collaboration and align messaging.

6.6 COORDINATION WITH REGIONAL WATER PLANNING GROUPS

Fort Worth Water works with the local Regional Water Planning Groups (Region C and G) to help develop the water conservation plan documents. This Plan is consistent with Regional Water Planning Groups and their methodology and structure. Letters documenting that a copy of the Water Conservation Plan was sent to the Chairs of the TWDB Region C and G Water Planning Groups and TRWD are attached in **Appendix D**.

7.0 ADDITIONAL CONSERVATION EFFORTS

7.1 WATER-CONSERVING PLUMBING FIXTURES

The City of Fort Worth adopted the 2015 International Plumbing Code, with the following language to be consistent with the 1.28-gallon toilet requirement of the Texas Health and Safety Code, Title 5, Subtitle B, Chapter 372 effective January 1, 2014.

*IPC Section 604.4. 1; added to read as follows: 604.4.1 State maximum flow rate. Where the State mandated maximum flow rate is more restrictive than those of this section, the State flow rate shall take precedence.

The 2015 International Plumbing Code was formally adopted by the Fort Worth City Council and included in the Code of Ordinances. This code encourages water conservation through the requirement that all toilets sold, offered for sale, or distributed must be a dual flush toilet that

may not exceed 1.28 gallons per flush on average or for one full flush. The projected demands for Fort Worth Water included in the 2021 Region C Water Plan account for the new plumbing code requirement. The utility routinely inspects new construction, remodeling, add-ons, etc., through building permits to ensure installation of fixtures adheres to current codes.

SmartFlush

Fort Worth's Water Conservation program encourages the replacement of high-water use fixtures, specifically toilets by offering free toilet replacement programs under the SmartFlush and SmartRepair umbrellas:

- SmartFlush voucher program for residential homeowners;
- SmartFlush commercial program for businesses and multifamily customers;
- SmartFlush CARE program for low income and elderly customers (includes installation); and
- SmartRepair plumbing program for low-income homeowners.

From 2019-2023, nearly 7,500 toilets were distributed across the programs, bringing the total since 2009 to more than 52,000.

SmartRepair

In 2020, Conservation staff launched the SmartRepair program. SmartRepair offers nonemergency plumbing repair services to eligible low-income homeowners. The program covers minor repairs, including leaking or running toilets, dripping faucets, hose bibs, pipe joints, visible broken pipes, and installation of high-efficiency fixtures as replacements when needed. Work is done by a city-contracted plumber at no charge to the homeowner.

This program has served 113 customers since its inception in October 2020.

7.2 REUSE

Fort Worth Water has a direct reuse program for non-potable uses in place at its Village Creek Water Reclamation Facility which supplies reuse water to Dallas-Fort Worth Airport, Arlington, and Euless. The reuse program is a component of the utility's vision to manage its water resources in the most efficient manner.

TRWD has a Texas water right allowing the diversion of return flows of treated wastewater from the Trinity River. The water will be pumped from the river into constructed wetlands for treatment and then pumped into Richland-Chambers Reservoir and Cedar Creek Reservoir. The wetlands project will provide 115,500 acre-feet per year, of which 10,000 acre-feet per year can be supplied from existing facilities. A portion of this water supply indirect reuse is provided to Fort Worth Water.

7.3 LANDSCAPE WATER MANAGEMENT

Fort Worth Water and other regional water providers, including North Texas Municipal Water District (NTMWD), TRWD, Upper Trinity Regional Water District (UTRWD), and the City of Dallas, have collaborated and agreed upon implementing a year-round no more than twice-per-week watering schedule. All Fort Worth wholesale customers have adopted mandatory schedules but not all TRWD customers have adopted this schedule.

The City of Fort Worth has a Conservation Ordinance which prohibits wasting water. This ordinance prohibits watering between 10 a.m. and 6 p.m. year-round and restricts the use of water for irrigation to no more than twice weekly, based on street address. This matches Stage 1 of the Drought Contingency & Emergency Water Management Plan. The schedule is included as **Table 7-1**. In addition, the Irrigation Ordinance requires that only licensed irrigators alter existing or install new irrigation systems within Fort Worth. The City has adopted ordinances to require rain and freeze sensors on new irrigation systems.

Water savings from a year-round no more than twice per week watering schedule vary depending on climate and enforcement and are expected to be lower outside of drought periods.

Table 7-1: Year-round Twice-per-Week Watering Schedule						
Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
No outdoor watering	Non-residential	Residential addresses ending in (0,2,4,6,8)	Residential addresses ending in (1,3,5,7,9)	Non-residential	Residential addresses ending in (0,2,4,6,8)	Residential addresses ending in (1,3,5,7,9)

Residents of Fort Worth have multiple avenues for reporting potential watering violations: text, email, online reporting, calling customer service, or via the MyFW app. When a violation is reported, it is tracked in customer service software. An educational postcard is sent to the customer informing them they may be in violation of the city's watering schedule and reminding them of the correct watering restrictions. From 2019-2023, 8,623 postcards were sent. Further enforcement of ordinance violations requires city enforcement personnel to witness violations to write citations.

With the implementation of the MyH2O, staff can better identify potential noncompliance with the watering schedule and utilize this data for education and enforcement in new ways.

7.4 CONSERVATION PROGRAMS FOR INDUSTRIAL, COMMERCIAL, AND INSTITUTIONAL ACCOUNTS

Fort Worth Water contracts with a vendor to offer comprehensive water efficiency opportunity surveys to industrial, commercial, and institutional (ICI) customers through the SmartWater ICI program.

These surveys consist of a review of historical and current water use for the customer, onsite evaluation of their fixtures, systems, processes, and irrigation system. Analysis from the survey

is summarized in a report detailing recommended improvements, the cost, savings, and return on investment in both water use and dollars.

Despite being dramatically affected by COVID-19 in 2020 and 2021, in the last five years 538 buildings were surveyed, resulting in average potential water savings of 34,132,651 gallons per year.

Table 7-2: SmartWater ICI Results (2019-2023)					
Year	2019	2020	2021	2022	2023
No. of Buildings Surveyed	104	54	14	146	220
Potential Gals. Saved/Year	22,767,540	6,451,916	769,449	92,478,004	48,196,344

7.5 MYH2O AND ADVANCED METERING INFRASTRUCTURE

Electric utilities have used AMI technology for many years, but water utilities have been limited by power sources. Extended battery service life and smaller size has enabled water utilities to move forward.

Fort Worth Water has implemented Advanced Metering Infrastructure (AMI), a comprehensive system designed to modernize utility metering operations. AMI includes:

- Equipment that enables meters to be read remotely rather than physically;
- A communications network that delivers the meter data to a database; and
- Software systems to receive and store data, providing the ability to view and analyze consumption data, detect anomalies, and bill customers.

AMI unlocks the benefits of leveraging granular water consumption data and empowers utilities to:

- Minimize water loss and unbilled consumption by responding swiftly to indicators of leaks, main breaks, and meter tampering;
- Foster greater operational transparency and efficiency;
- Optimize resource allocation and streamline workflows;
- Enhance customer service through user-friendly digital platforms;
- Provide insights for customers to understand and manage their water usage; and
- Facilitate targeted conservation efforts and programs.

The implementation of AMI begins an evolving and transformative shift in the interaction between Fort Worth Water and its customers. The utility continues to refine its business processes, embracing data-driven decision-making, and maximizing the wealth of data made available through AMI.

Installation and Deployment

A feasibility study was authorized by the Fort Worth City Council in 2012 and in 2015, the Council approved the funding source and contracts for installation. The deployment of AMI-ready meters in Fort Worth began in 2016, initially targeting new construction and instances where existing meters required replacement. By the end of 2022, the analog meter exchange to AMI meters was completed across the city for all residential customers and some commercial customers. By March 2024, 295,840 meters had been exchanged. Meter services will exchange a few remaining large industrial meters in 2024.

AMI-enabled meters allow access to near-real-time hourly water data, offering insight into consumption patterns, and enabling proactive measures to address leaks or irregularities that impact non-revenue water loss. Fort Worth Water branded the AMI program as MyH2O because it is much more than a meter program, it is a data program.

Because MyH2O was such an all-encompassing change for customers, emphasis was placed on communications to explain the program, how the new meters work, and what to expect with the portal. The MyH2O brand was introduced in 2017. A series of interactive, public open houses were subsequently held across the city, with a brief pause during COVID-19. Multiple mailings were sent. In all, there were more than 2.2 million points of contact with customers.

The launch of the MyH2O residential customer portal in May 2022 and enterprise (commercial and industrial customers) portal in December 2023 represents a significant milestone in Fort Worth Water's utility management initiatives. The user-friendly digital interface of the portal improves the customer service experience through the ability to monitor water usage, access historical data, conveniently manage billing, receive personalized conservation tips, and enroll in conservation programs. As of March 2024, 173,074 residential and commercial customers are registered on the portal.

Financial Considerations and Return on Investment (ROI)

The adoption of AMI is a substantial investment, encompassing not only retrofitting of meters but also ongoing operational, maintenance, and portal fees associated with data management. Recognizing the importance of this initiative, Fort Worth Water successfully secured low-interest loan financing by the State Water Implementation Fund for Texas (SWIFT) through the TWDB, ensuring the sustainable implementation of the MyH2O program. The loan will be repaid by 2032.

The return on investment (ROI) for the AMI deployment was evaluated prior to committing to SWIFT financing. The investment in AMI can yield significant dividends over time by reducing apparent and real water loss, contributing to the financial viability of the program.

Operating efficiencies from AMI implementation lower ROI by reducing the frequency of customer calls and field investigations. Increased self-service portal usage and streamlined work order management systems enhance operational efficiency, translating into tangible cost savings and improved service delivery.

Water Conservation

Fort Worth Water is committed to water conservation and operational excellence.

Data acquired through the MyH2O program supports initiatives by enabling customers to understand and optimize their water usage behaviors, resulting in more responsible water stewardship among customers. The ability to analyze consumption patterns will provide the opportunity to target customers with various water conservation programs (toilet replacement, irrigation evaluations, leak repair, pressure reduction, classes) that specifically apply to their situation.

Even before the portal was operational, the Fort Worth Water Conservation team initiated a continuous leak notice project for residential customers. Since February 2021, customers with continuous usage of more than 1 CF over a 72-hour minimum period, receive a letter notifying them of continuous usage that may indicate a potential leak. Letters are sent each week to customers with newly identified continuous usage. Each month, repeat letters are sent to customers where continuous usage has not yet stopped. By the end of December 2023, 187,430 letters had been mailed. A study of the drop-off rate for customers (meaning the continuous usage stopped) was conducted for the first 18 months of the project. This study implies that customers responded to the letters and fixed the leaks. The letters also increased participation in other water conservation programs as customers inquired about the letters with water conservation and customer service teams. See **Table 7-3** for percentage-off-list totals.

Staff are investigating the use of AMI hourly water usage data to identify and track suspected irrigation ordinance violations, both for time-of-day and day-of-week misuse of irrigation systems. More studies may be undertaken to determine how to use this data for either education or enforcement, or both.

Table 7-3: Continuous Usage Customer Average Drop-off Rate*				
After 1 month	After 3 months	After 6 months	After 9 months	After 12 months
68%	88%	95%	98%	99%

**Based on letters sent between March 2021-September 2022*

MyH2O facilitates proactive identification and response to system defects, minimizing downtime and optimizing resource utilization. Enhanced data analysis can pinpoint inefficiency within the distribution network, enabling targeted interventions to mitigate water losses, enhance system reliability, and improve operational efficiency.

Enhancing Customer Service and Engagement

Fort Worth Water has undertaken comprehensive efforts to enhance the accessibility and responsiveness of its services. Despite the innovation and convenience of AMI portal technology, it is committed to continuing equitable access to its services, still offering paper billing, and providing in-person and telephone service assistance for customers preferring traditional communication channels or requiring additional support.

Data Security and Privacy

To safeguard data security and privacy, Fort Worth Water prioritizes the protection and confidentiality of customer information. Encryption protocols are employed for data transmission, ensuring sensitive information remains inaccessible to unauthorized parties. Through these proactive measures, the utility instills confidence in its customers, assuring the integrity and security of all personal data.

7.6 ADDITIONAL PRACTICES, METHODS, AND TECHNIQUES

Internal Facilities Water Conservation Effort

Fort Worth Water has implemented water conservation measures internally within City Hall and at other municipal buildings and parks and will continue to do so over the next five-year planning period. This includes contracting SmartWater ICI water efficiency surveys to provide recommendations for retrofits of toilets, faucet aerators, showerheads, equipment, processes, and irrigation systems.

Fifteen facilities have been surveyed since 2019; including two airports, the police safety complex and two police stations, two municipal buildings, a maintenance center, and seven community centers. If fully implemented, the recommendations could save 3.4 million gallons of water annually.

Development of a landscape program in conjunction with the Park and Recreation Department is possible. A new City of Fort Worth initiative in collaboration with TRWD to create and care for new greenspaces in Fort Worth may open more opportunities for landscape and irrigation water conservation projects.

Fort Worth Water promotes demonstration gardens such as the Water Conservation Garden at the Fort Worth Botanic Garden. When the new City Hall is completed, water conservation staff will research the feasibility of a water conservation demonstration garden on the grounds.

Fort Worth Water continues to analyze water savings from these measures.

Graywater

Residential graywater use (i.e., recycling water within the home using a dual plumbing system) is another potential water supply. The Texas Administrative Code Chapter 210 has rules governing the use of graywater for domestic, industrial, commercial, institutional, agricultural purposes, and irrigation. At this time, this practice is not considered economically feasible on a large residential scale, however it may be evaluated on a case-by-case basis for other customer classes. Rules are in place in the City's adopted plumbing code and used on a limited basis.

Rainwater Harvesting And Condensate Reuse

Rainwater harvesting and condensate reuse provide a potential source of supply that could be used for non-potable purposes such as landscape irrigation. Large properties with this potential supply could offset a portion of their irrigation demand depending on the storage capacity. Rainwater and condensate reuse should be evaluated on a case-by-case basis to determine if it is cost effective for large properties. Fort Worth Water Conservation staff will educate residents about the possibility of rainwater harvesting and direct them to classes such as Master Gardeners.

Weather Stations

TRWD has developed an interactive weather station program to install weather stations throughout its service area to provide consumers with a weekly e-mail and information through a website in determining an adequate amount of supplemental water that is needed to maintain healthy grass in specific locations. This service, called the Weekly Watering Advice, provides the public with advanced information regarding outdoor irrigation needs, thereby reducing water use. Through a series of selections on the type of irrigation system a consumer has, a weekly email that will tell the customer how long (in minutes) an irrigation system needs to run based on the past seven days of weather.

This recommendation provides the actual amount of supplemental water that is required for a healthy lawn based on research of the Texas A&M AgriLife Extension Service and proven technologies. Fort Worth will continue to promote this program, encourage its retail and wholesale customers to participate in the program, and makes the information available through its website and social media. As of March 2024, 3,968 Fort Worth residents had signed up for this program.

GIS Tools

GIS is a powerful analysis tool to analyze data with a spatial component. Conservation staff will continue working with GIS staff in Fort Worth Water to build a database for water conservation (including program participation, water use, violations etc.). The GIS tools available could be as simple as identifying target areas for retrofit programs based on the Tarrant County Appraisal District data to as detailed as tying water use to each individual parcel within the City.

As the amount of data continues to increase and with the possibility of Advanced Metering Infrastructure, GIS is a potential tool to manage the data and identify where water conservation, leak detection, and meter replacement programs should be targeted to achieve the greatest savings.

Fort Worth Water now tracks all water conservation programs using GIS technology. GIS mapping provides a visual representation of participation by property parcel (from the Tarrant Appraisal District) by program. These maps allow for outreach to underserved communities by program via targeted messaging through the MyH2O portal, social media channels, and community events.

8.0 POTENTIAL CONSERVATION PROGRAMS

8.1 CUSTOMER CHARACTERIZATION

One of the newer BMPs is Customer Characterization, the practice of analyzing a utility's customer data trends towards the purpose of realizing targeted water savings. Undertaking a Customer Characterization allows the utility to better understand how water is used within its service area, to recognize the differences between various subsets within its customer base, and to facilitate positive experiences between the utility and the customer that inform both parties of their respective values and familiarize high water users with ways to reduce their usage.

Just as the motivations for deploying an AMI program will be different across utilities, each utility's purpose for embarking on Customer Characterization will be different, and the analysis should be crafted with their specific goal(s) in mind. Customer Characterization is one of the most effective tools for tailoring a utility-wide conservation program, because it yields actionable insight and stimulates community conversation.

In the 2019 Plan, a Customer Characterization featuring representative zip codes focused on assisting the utility in evaluating its current and future BMPs to reduce peak demand. Future Customer Characterizations utilizing MyH2O may be considered as part of the process of a Strategic Water Plan to be written during the period of this Water Conservation Plan.

8.2 RESIDENTIAL PRESSURE-REDUCING VALVE PROGRAM

The Fort Worth Water Conservation section will implement a new program called SmartPressure in 2024. The City's adopted plumbing code already requires that water customers install and maintain Pressure Reducing Valves (PRVs) on private plumbing when system pressure exceeds 80 psi. The SmartPressure program will offer necessary parts to repair/replace PRVs for customers with existing/underperforming systems and new equipment for customers with high pressure and no existing pressure regulator. Customers would be responsible for hiring a plumber to complete the installations. In the future, the use of MyH2O data may make it possible to identify customers with high pressure and notify them of the need to preemptively participate in this program.

8.3 IRRIGATION AND LANDSCAPE ORDINANCE REVIEW

The City of Fort Worth projects continued rapid population growth over the next fifty years. To reinforce water conservation goals, it is imperative to review and reinforce irrigation and landscape ordinances and outdoor water use by all customers. By instituting firmer guidelines and regulations and utilizing AMI regarding irrigation practices, Fort Worth Water can more effectively manage and monitor water usage and consumption.

Reviewing and potentially updating irrigation and landscape ordinances will encourage the use of water-efficient irrigation systems, support evaluations that identify leaks and inefficiencies, and assist in detection of remote ordinance violations. Educational irrigation and landscape events for residents and businesses will further reduce reliance on traditional irrigation methods.

Review of ordinances may include but is not limited to:

- Review of the existing ordinances for alignment with the goals of this Plan;
- Utilization of AMI consumption data for possible violation detection;
- Identification of new high-efficiency landscape fixtures;
- Benchmarking of the current ordinance with ordinances from other cities promoting water conservation;
- Identification of drought tolerant turf, groundcover, shrubs, and trees that are allowed to be planted at new homes;
- Integrating landscape ordinances and other outdoor conservation strategies into land use planning;
- Providing opportunity for feedback from interested parties and citizens; and
- Homeowner support for turf reduction within homeowner associations (HOA).

Fort Worth Water is reviewing the existing ordinances for potential to better align ordinances with water conservation goals in the next five and ten years.

8.4 LANDSCAPE AND IRRIGATION SYSTEM INCENTIVES

Fort Worth Water proactively targets programs for indoor water use as documented in this Plan through their ICI program and public education measures. To address outdoor water use, the City implemented year-round time of day and twice-per-week watering schedules.

Fort Worth Water has identified outdoor water use reductions as the best opportunity to further reduce water consumption. The availability of AMI hourly water data will play a role in addressing violations of the irrigation and conservation ordinances to better plan education and enforcement programs.

Encourage Irrigation System Upgrades

Recent research has indicated a strong relationship between irrigation system capacity (total gallons per minute) and total water use. As irrigation system capacity increases, total water use tends to increase linearly. Based on this research, programs or incentives that reduce the capacity of the irrigation system should be effective in reducing outdoor water use.

Fort Worth Water will encourage voluntary upgrades to several types of landscape and irrigation system parts in the next five years. It will not use incentive programs, such as rebates, but will promote the upgrades through education, outreach, and free irrigation evaluations. In 2023, TRWD sponsored 565 free residential irrigation evaluations for Fort Worth water customers.

Potential upgrades include:

- Irrigation nozzle replacement: converting traditional spray nozzles to MP Rotators which have a lower gallon per minute distribution rate;
- Irrigation zone retrofits: changing irrigation zones from spray nozzles to drip irrigation with associated changes in landscaping from turf to landscaped beds;
- Removing irrigation zones: capping and removing a zone from the irrigation system since that area has been converted and no longer requires irrigation;
- Pressure Reducing Valves: these can be utilized for areas with high pressure that cause misting and irrigation nozzles to operate outside of the specified pressure;
- Weather-based Irrigation Controllers: use local weather and landscape conditions to tailor watering schedules; and
- Soil Moisture-based Irrigation Controllers: monitor moisture levels in the soil to prevent irrigation when water is not needed.

8.5 ADVANCED COMMUNITY ENGAGEMENT

As Fort Worth Water evaluates additional conservation initiatives, community support will be essential. City staff engages stakeholders as early as possible to ensure success. Below is a list of potential new ways to stimulate conversation, in addition to its current outreach programs staff will also consider other new engagement opportunities not listed below.

Homebuilder/HOA Coordination

Cultivating positive relationships with homebuilders and HOAs will be essential to potential ordinance changes identified in Section 8.3. During the conceptualization and development of the potential ordinance changes, early collaboration with HOAs will help craft regionally appropriate language, and foster buy-in within the regulated sector. Establishing these connections will not only break down silos but will also streamline the process of enforcing and refining the regulations. Through a partnership with TRWD, Fort Worth Water has begun offering free irrigation system evaluations for HOAs to enhance this relationship.

Demonstration Gardens

Fort Worth Water, in partnership with Texas AgriLife Extension Service, Rooted In, Botanical Research Institute of Texas (BRIT), and the Master Gardeners, hosts a series of monthly free seminars designed to educate the community on ways to reduce discretionary usage. These are held at the demonstration garden at the BRIT. Future expansion of this program to additional neighborhoods and facilities will continue to further awareness within the community. Staff will investigate the possibility of creating a demonstration garden on the grounds of the new city hall property.

Leverage Community Organizations

Utilities are increasingly recognizing that conservation staff cannot be in the community as often as needed. For this reason, the TWDB Water Conservation Advisory Council adopted the Partnerships with Nonprofit Organizations BMP, which recommends taking advantage of volunteer organizations with diverse memberships to bolster staff efforts. Relationships with Tarrant County Master Gardener Association, the Audubon Society, Texas AgriLife Extension

Servies, Rooted In, BRIT, Tarrant County College District, and other future organizations will help raise awareness within the community. These relationships may be compensated or voluntary. By activating knowledgeable members of the community, a utility can increase the number of customer interactions, reduce the unit cost of those interactions, and the partner organizations benefit from greater exposure with the community.

Collaborate with Affordability Partners

Working with other agencies to take advantage of their existing networks to connect with low-income residents can help increase the number of customers enlisted. Fort Worth Water staff can create pipelines with the Code Compliance and Neighborhood Services Departments, Councilmembers Offices, county programs, electric utility affordability programs, and others. Bolstering a strong affordability program will help minimize the impacts to customers from rate adjustments and can provide a conservation benefit as well. Some affordability programs such as a plumbing assistance program will directly reduce water usage, while other affordability programs might be another avenue Fort Worth Water will distribute conservation messaging.

8.6 IRRIGATION DESIGN CRITERIA

As part of the requirement that all new irrigation systems comply with state design and installation regulations (Texas Administrative Code Title 30, Chapter 344), the City of Fort Worth reviews irrigation design during development reviews. The reviews verify that the landscape design meets state and City standards. In the future, it is possible the City may align its design criteria with best practices identified in Section 8.3. The City of Fort Worth may evaluate these design standards to align them with water conservation program goals in the next five years.

9.0 ADOPTION OF WATER CONSERVATION PLAN, PERIODIC REVIEW, AND UPDATE OF PLAN

Opportunity for public comment on the plan was provided at the Fort Worth City Council meeting on April 23, 2024. **Appendix E** contains a copy of the resolution from the April 23, 2024, City Council meeting at which this Plan was adopted.

TCEQ requires that water conservation plans be reviewed and, if necessary, updated every five years to coincide with the regional water planning process. This Plan will be updated as required and will be continually reassessed for opportunities to improve water efficiency and conservation based on new or updated information.

APPENDIX A
LIST OF REFERENCES

LIST OF REFERENCES

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Water Conservation Plans and Water Conservation Implementation Reports

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Water Is Awesome

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APPENDIX B

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY RULES ON MUNICIPAL WATER CONSERVATION PLANS

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY RULES ON MUNICIPAL WATER CONSERVATION PLANS

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 §288.1 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 to produce 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) Best management practices--Voluntary efficiency measures that save a quantifiable amount of water, either directly or indirectly, and that can be implemented within a specific period.
- (4) 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.
- (5) Commercial use--The use of water by a place of business, such as a hotel, restaurant, or office building. This does not include multi-family residences or agricultural, industrial, or institutional users.
- (6) 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).
- (7) 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, and the development of power by means other than hydroelectric but does not include agricultural use.

- (8) Institutional use--The use of water by an establishment dedicated to public service, such as a school, university, church, hospital, nursing home, prison, or government facility. All facilities dedicated to public service are considered institutional regardless of ownership.
- (9) 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 from a public water supplier.
- (10) 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.
- (11) Mining use--The use of water for mining processes including hydraulic use, drilling, washing sand and gravel, and oil field re-pressuring.
- (12) Municipal use--The use of potable water provided by a public water supplier as well as the use of sewage effluent for residential, commercial, industrial, agricultural, institutional, and wholesale uses.
- (13) Nursery grower--A person engaged in the practice of floriculture, viticulture, silviculture, and horticulture, including the cultivation of plants in containers or nonsoil media, who grows more than 50% of the products that the person either sells or leases, regardless of the variety sold, leased, or grown. For the purpose of this definition, grow means the actual cultivation or propagation of the product beyond the mere holding or maintaining of the item prior to sale or lease, and typically includes activities associated with the production or multiplying of stock such as the development of new plants from cuttings, grafts, plugs, or seedlings.
- (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) Residential gallons per capita per day--The total gallons sold for residential use by a public water supplier divided by the residential population served and then divided by the number of days in the year.
- (18) Residential use--The use of water that is billed to single and multi-family residences, which applies to indoor and outdoor uses.
- (19) 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.
- (20) Reuse--The authorized use for one or more beneficial purposes of use of water that remains unconsumed after the water is used for the original purpose of use and before that water is either disposed of or discharged or otherwise allowed to flow into a watercourse, lake, or other body of state-owned water.

- (21) Total use--The volume of raw or potable water provided by a public water supplier to billed customer sectors or nonrevenue uses and the volume lost during conveyance, treatment, or transmission of that water.
- (22) Total gallons per capita per day (GPCD)--The total amount of water diverted and/or pumped for potable use divided by the total permanent population divided by the days of the year. Diversion volumes of reuse as defined in this chapter shall be credited against total diversion volumes for the purposes of calculating GPCD for targets and goals.
- (23) Water conservation coordinator--The person designated by a retail public water supplier that is responsible for implementing a water conservation plan.
- (24) 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).
- (25) Wholesale public water supplier--An individual or entity that for compensation supplies water to another for resale to the public for human consumption. The term does not include an individual or entity that supplies water to itself or its employees or tenants as an incident of that employee service or tenancy when that water is not resold to or used by others, or an individual or entity that conveys water to another individual or entity, but does not own the right to the water which is conveyed, whether or not for a delivery fee.
- (26) Wholesale use--Water sold from one entity or public water supplier to other retail water purveyors for resale to individual customers.

Source Note: The provisions of this §288.1 adopted to be effective May 3, 1993, 18 TexReg 2558; amended to be effective February 21, 1999, 24 TexReg 949; amended to be effective April 27, 2000, 25 TexReg 3544; amended to be effective August 15, 2002, 27 TexReg 7146; amended to be effective October 7, 2004, 29 TexReg 9384; amended to be effective January 10, 2008, 33 TexReg 193; amended to be effective December 6, 2012, 37 TexReg 9515; amended to be effective August 16, 2018, 43 TexReg 5218

**TITLE 30
PART 1**

**ENVIRONMENTAL QUALITY
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. The water supplier shall select any combination of the following strategies, 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

**TITLE 30
PART 1**

**ENVIRONMENTAL QUALITY
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY**

**CHAPTER 288
WATER CONSERVATION PLANS, DROUGHT CONTINGENCY
PLANS, GUIDELINES AND REQUIREMENTS**

**SUBCHAPTER A
WATER CONSERVATION PLANS**

**RULE §288.5
Water Conservation Plans for Wholesale Water Suppliers**

A water conservation plan for a wholesale water supplier must provide information in response to each of the following paragraphs. If the plan does not provide information for each requirement, the wholesale water supplier shall include in the plan an explanation of why the requirement is not applicable.

(1) Minimum requirements. All water conservation plans for wholesale water suppliers must include the following elements:

- (A) a description of the wholesaler's service area, including population and customer data, water use data, water supply system data, and wastewater data;
- (B) specific, quantified five-year and ten-year targets for water savings including, where appropriate, target goals for municipal use in gallons per capita per day for the wholesaler's service area, maximum acceptable water loss, and the basis for the development of these goals. The goals established by wholesale water suppliers under this subparagraph are not enforceable;
- (C) a description as to which practice(s) and/or device(s) will be utilized to measure and account for the amount of water diverted from the source(s) of supply;
- (D) a monitoring and record management program for determining water deliveries, sales, and losses;
- (E) a program of metering and leak detection and repair for the wholesaler's water storage, delivery, and distribution system;
- (F) a requirement in every water supply contract entered into or renewed after official adoption of the water conservation plan, and including any contract extension, that each successive wholesale customer develop and implement a water conservation plan or water conservation measures using the applicable elements of 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;

(G) 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 plans shall include optimization of water supplies as one of the significant goals of the plan;

(H) 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; and

(I) 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.

(2) Additional conservation strategies. The water wholesaler shall select any combination of the following strategies, in addition to the minimum requirements of paragraph (1) of this section 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:

(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) a program to assist agricultural customers in the development of conservation pollution prevention and abatement plans;

(C) a program for reuse and/or recycling of wastewater and/or graywater; and

(D) any other water conservation practice, method, or technique which the wholesaler shows to be appropriate for achieving the stated goal or goals of the water conservation plan.

(3) Review and update requirements. The wholesale water supplier 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. A wholesale water supplier 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 §288.5 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

APPENDIX C

CITY OF FORT WORTH UTILITY PROFILE BASED ON TCEQ FORMAT

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

CONTACT INFORMATION

Name of Utility: CITY OF FORT WORTH

Public Water Supply Identification Number (PWS ID): TX2200012

Certificate of Convenience and Necessity (CCN) Number: 12311

Surface Water Right ID Number:

Wastewater ID Number:

Contact: First Name: Micah Last Name: Reed

Title: Water Conservation Manager

Address: 200 Texas Street City: Fort Worth State: TX

Zip Code: 76102 Zip+4: Email: micah.reed@fortworthtexas.gov

Telephone Number: 8173928211 Date:

Is this person the designated Conservation Coordinator? ☒ Yes ☐ No

Regional Water Planning Group: C

Groundwater Conservation District:

Our records indicate that you:

- ☒ Received financial assistance of \$500,000 or more from TWDB
- ☒ Have 3,300 or more retail connections
- ☐ Have a surface water right with TCEQ

A. Population and Service Area Data

1. Current service area size in square miles: 489

Attached file(s):

File Name	File Description
FW Water Service Area.png	

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

2. Historical service area population for the previous five years, starting with the most current year.

Year	Historical Population Served By Retail Water Service	Historical Population Served By Wholesale Water Service	Historical Population Served By Wastewater Water Service
2023	974,846	447,507	1,194,046
2022	955,900	448,302	1,173,612
2021	890,050	430,796	1,106,549
2020	873,130	423,117	1,086,754
2019	848,860	340,020	1,061,551

3. Projected service area population for the following decades.

Year	Projected Population Served By Retail Water Service	Projected Population Served By Wholesale Water Service	Projected Population Served By Wastewater Water Service
2030	1,124,516	516,208	1,322,923
2040	1,333,700	557,061	1,518,021
2050	1,371,311	592,415	1,559,289
2060	1,477,768	620,493	1,655,719
2070	1,593,514	651,435	1,761,735

4. Described source(s)/method(s) for estimating current and projected populations.

Population projections taken from TWDB's "Population and Municipal Demand Projections Interactive Data"
<https://www.twdb.texas.gov/waterplanning/data/projections/2027/municipal.asp>

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

B. System Input

System input data for the previous five years.

Total System Input = Self-supplied + Imported – Exported

Year	Water Produced in Gallons	Purchased/Imported Water in Gallons	Exported Water in Gallons	Total System Input	Total GPCD
2023	82,024,842,786	0	25,392,524,621	56,632,318,165	159
2022	80,516,370,000	0	25,221,103,643	55,295,266,357	158
2021	71,203,863,438	0	21,601,795,357	49,602,068,081	153
2020	69,740,370,000	0	20,183,326,913	49,557,043,087	156
2019	66,063,161,162	0	20,649,972,057	45,413,189,105	147
Historic Average	73,909,721,477	0	22,609,744,518	51,299,976,959	154

C. Water Supply System

Attached file(s):

File Name	File Description
FW Water Service Area.png	

1. Designed daily capacity of system in gallons
2. Storage Capacity
 - 2a. Elevated storage in gallons:
 - 2b. Ground storage in gallons:

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

D. Projected Demands

1. The estimated water supply requirements for the next ten years using population trends, historical water use, economic growth, etc.

Year	Population	Water Demand (gallons)
2025	1,017,609	61,038,883,528
2026	1,038,990	62,989,137,262
2027	1,060,372	64,939,390,995
2028	1,081,753	66,889,644,730
2029	1,103,135	68,839,898,463
2030	1,124,516	70,790,152,197
2031	1,145,434	72,077,752,424
2032	1,166,353	73,365,352,650
2033	1,187,271	74,652,952,877
2034	1,208,190	75,940,553,103

2. Description of source data and how projected water demands were determined.

****RETAIL ONLY**
 Years 2025 through 2029 are interpolated between 2023 actuals and the 2026 Regional Water Plan Board Adopted Population and Municipal Demand Projects for 2030.
 Years 2031 through 2034 are interpolated between the 2026 Regional Water Plan Board Adopted Population and Municipal Demand Projects for 2030 and 2040."

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

E. High Volume Customers

1. The annual water use for the five highest volume
RETAIL customers.

Customer	Water Use Category	Annual Water Use	Treated or Raw
Miller Brewing Company	Industrial	742,115,350	Treated
Alcon Laboratories	Industrial	329,711,759	Treated
Lockheed Martin Tactical A S	Industrial	194,511,461	Treated
Premium Water Inc.	Industrial	186,433,926	Treated
Carolina Beverage Group LLV	Industrial	173,628,100	Treated

2. The annual water use for the five highest volume
WHOLESALE customers.

Customer	Water Use Category	Annual Water Use	Treated or Raw
City of Southlake	Municipal	3,908,740,378	Treated
City of Keller	Municipal	3,517,338,990	Treated
City of North Richland Hills	Municipal	2,144,772,620	Treated
City of Burleson	Municipal	2,051,990,408	Treated
City of Hurst	Municipal	1,880,546,418	Treated

F. Utility Data Comment Section

Additional comments about utility data.

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

Section II: System Data

A. Retail Water Supplier Connections

1. List of active retail connections by major water use category.

Water Use Category Type	Total Retail Connections (Active + Inactive)	Percent of Total Connections
Residential - Single Family	265,629	92.02 %
Residential - Multi-Family	2,642	0.92 %
Industrial	536	0.19 %
Commercial	19,871	6.88 %
Institutional	0	0.00 %
Agricultural	0	0.00 %
Total	288,678	100.00 %

2. Net number of new retail connections by water use category for the previous five years.

	Net Number of New Retail Connections						
Year	Residential - Single Family	Residential - Multi-Family	Industrial	Commercial	Institutional	Agricultural	Total
2023	741	0	0	0	0	0	741
2022	9,395		85	3,827	0	0	13,307
2021	9,727	292	25	716	0	0	10,760
2020	9,930	246	30	489	0	0	10,695
2019	4,651	261	76	284	0	0	5,272

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

B. Accounting Data

The previous five years' gallons of RETAIL water provided in each major water use category.

Year	Residential - Single Family	Residential - Multi-Family	Industrial	Commercial	Institutional	Agricultural	Total
2023	24,738,623,385	2,310,259,589	3,520,212,243	16,623,134,666	0	0	47,192,229,883
2022	24,184,320,777	2,236,843,076	3,427,223,134	16,245,624,276	0	0	46,094,011,263
2021	20,851,964,660	1,904,378,534	3,278,896,254	13,977,662,730	0	0	40,012,902,178
2020	20,992,997,773	1,732,539,695	3,638,795,730	13,382,002,532	0	0	39,746,335,730
2019	18,340,498,239	1,651,526,205	3,232,580,000	12,991,010,336	0	0	36,215,614,780

C. Residential Water Use

The previous five years residential GPCD for single family and multi-family units.

Year	Total Residential GPCD
2023	76
2022	76
2021	70
2020	71
2019	65
Historic Average	72

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

D. Annual and Seasonal Water Use

1. The previous five years' gallons of treated water provided to RETAIL customers.

Month	Total Gallons of Treated Water				
	2023	2022	2021	2020	2019
January	2,750,191,474	2,589,317,820	3,794,140,000	2,282,720,000	2,288,070,000
February	2,709,209,452	2,679,230,323	2,927,630,000	2,408,090,000	2,147,824,780
March	2,856,370,097	2,871,113,760	3,227,580,000	2,418,190,000	2,110,840,000
April	2,837,618,904	2,982,830,605	2,347,070,000	2,345,590,000	2,563,930,000
May	3,543,411,014	3,481,172,896	2,473,480,000	2,721,050,000	2,631,420,000
June	3,989,058,463	4,388,080,133	2,900,695,900	3,711,920,000	2,663,000,000
July	4,728,045,781	5,189,972,194	2,978,735,000	4,330,370,000	3,218,710,000
August	6,455,391,956	6,248,640,141	2,720,827,000	4,595,580,000	4,401,930,000
September	5,505,483,420	4,702,796,189	2,979,830,900	4,628,920,000	4,226,550,000
October	5,039,932,744	4,491,686,383	4,373,245,834	3,794,140,000	4,578,460,000
November	3,586,632,279	3,417,823,961	3,249,816,706	2,927,630,000	2,861,340,000
December	3,169,540,336	3,051,346,859	3,406,005,568	3,227,580,000	2,335,610,000
Total	47,170,885,920	46,094,011,264	37,379,056,908	39,391,780,000	36,027,684,780

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

2. The previous five years' gallons of raw water provided to RETAIL customers.

Month	Total Gallons of Raw Water				
	2023	2022	2021	2020	2019
January	755,570	3,840,510	0	2,534,410	2,760
February	0	1,988,110	7,078,430	0	3,928,833
March	2,019,135	4,746,010	2,627,990	0	0
April	7,175,350	3,540,290	4,481,780	3,597,770	8,410,285
May	2,443,870	10,842,210	0	4,798,090	21,416,535
June	13,066,520	17,240,150	4,204,920	16,030,239	3,305,560
July	20,514,770	22,778,320	17,832,390	40,386,848	13,315,740
August	16,518,490	13,723,300	6,947,720	22,464,410	14,613,480
September	8,508,960	8,603,170	13,915,270	1,874,350	17,661,900
October	5,838,690	12,374,750	5,151,870	9,643,240	5,818,620
November	964,640	628,450	3,010,480	6,278,246	90
December	1,035,760	240,780	1,620,380	0	1,040
Total	78,841,755	100,546,050	66,871,230	107,607,603	88,474,843

3. Summary of seasonal and annual water use.

	Summer RETAIL (Treated + Raw)	Total RETAIL (Treated + Raw)
2023	15,222,595,980	47,249,727,675
2022	15,880,434,238	46,194,557,314
2021	8,629,242,930	37,445,928,138
2020	12,716,751,497	39,499,387,603
2019	10,314,874,780	36,116,159,623
Average in Gallons	12,552,779,885.00	41,301,152,070.60

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

E. Water Loss

Water Loss data for the previous five years.

Year	Total Water Loss in Gallons	Water Loss in GPCD	Water Loss as a Percentage
2023	6,648,505,163	19	8.07 %
2022	4,509,520,023	13	8.12 %
2021	6,243,546,645	19	10.19 %
2020	6,609,135,675	21	12.34 %
2019	5,922,652,918	19	12.95 %
Average	5,986,672,085	18	10.33 %

F. Peak Day Use

Average Daily Water Use and Peak Day Water Use for the previous five years.

Year	Average Daily Use (gal)	Peak Day Use (gal)	Ratio (peak/avg)
2023	129,451,308	165462999	1.2782
2022	126,560,430	172613415	1.3639
2021	102,591,583	93796118	0.9143
2020	108,217,500	138225559	1.2773
2019	98,948,382	112118204	1.1331

G. Summary of Historic Water Use

Water Use Category	Historic Average	Percent of Connections	Percent of Water Use
Residential - Single Family	21,821,680,966	92.02 %	52.14 %
Residential - Multi-Family	1,967,109,419	0.92 %	4.70 %
Industrial	3,419,541,472	0.19 %	8.17 %
Commercial	14,643,886,908	6.88 %	34.99 %
Institutional	0	0.00 %	0.00 %
Agricultural	0	0.00 %	0.00 %

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

H. System Data Comment Section

Section III: Wastewater System Data

A. Wastewater System Data

1. Design capacity of wastewater treatment plant(s) in gallons per day: 166,000,000

2. List of active wastewater connections by major water use category.

Water Use Category	Metered	Unmetered	Total Connections	Percent of Total Connections
Municipal	5	1	6	54.55 %
Industrial	3	0	3	27.27 %
Commercial	2	0	2	18.18 %
Institutional	0	0	0	0.00 %
Agricultural	0	0	0	0.00 %
Total	10	1	11	100.00 %

3. Percentage of water serviced by the wastewater system: 99.00 %

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

4. Number of gallons of wastewater that was treated by the utility for the previous five years.

Month	Total Gallons of Treated Water				
	2023	2022	2021	2020	2019
January	3,430,974,721	3,019,444,141	3,217,559,607	3,621,608,330	4,448,015,819
February	4,589,616,517	2,943,118,201	3,088,910,916	3,664,723,302	3,459,244,139
March	4,605,921,082	3,13,518,920,870	3,573,128,568	4,930,003,194	3,896,399,141
April	3,591,263,168	3,204,152,725	3,420,640,870	3,298,564,188	4,486,621,566
May	3,677,270,534	3,291,329,542	4,941,465,421	4,035,055,734	5,033,933,627
June	3,388,271,523	3,098,180,295	4,222,734,325	3,453,854,666	3,696,096,407
July	3,212,760,654	3,187,391,656	3,402,225,699	3,088,515,534	3,341,800,268
August	3,241,924,291	3,425,628,829	3,417,071,075	2,723,955,335	3,037,904,700
September	3,205,092,059	3,489,020,214	3,015,858,796	3,094,081,818	2,759,374,924
October	3,731,880,482	3,459,246,032	3,210,900,837	3,060,749,280	2,908,053,550
November	3,921,133,605	3,932,193,915	3,076,289,295	2,902,699,183	2,946,900,000
December	3,885,196,286	4,339,169,233	3,033,508,814	3,026,306,988	2,985,027,972
Total	44,481,304,922	350,907,795,653	41,620,294,223	40,900,117,552	42,999,372,113

5. Could treated wastewater be substituted for potable water?

☐ Yes ☒ No

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

B. Reuse Data

1. Data by type of recycling and reuse activities implemented during the current reporting period.

Type of Reuse	Total Annual Volume (in gallons)
On-site Irrigation	
Plant wash down	2,161,908,390
Chlorination/de-chlorination	
Industrial	416,599,051
Landscape irrigation (park,golf courses)	484,702,279
Agricultural	
Discharge to surface water	
Evaporation Pond	
Other	
Total	3,063,209,720

C. Wastewater System Data Comment

Additional comments and files to support or explain wastewater system data listed below.

APPENDIX D

LETTERS TO REGION C AND REGION G WATER PLANNING GROUPS, AND TARRANT REGIONAL WATER DISTRICT



April 25, 2024

Mr. Kevin Ward, Chair
Region C Water Planning Group
c/o Trinity River Authority
P.O. Box 60
Arlington, TX 76004

Dear Mr. Ward,

Enclosed please find a copy of the recently updated Water Conservation Plan for the City of Fort Worth. I am submitting a copy of this plan to the Region C Water Planning Group in accordance with the Texas Water Development Board and Texas Commission on Environmental Quality rules. The City of Fort Worth adopted the plan on April 23, 2024.

Sincerely,

Micah Reed
City of Fort Worth

**WATER DEPARTMENT
WATER CONSERVATION**

The City of Fort Worth * 200 Texas Street * Fort Worth, Texas 76102
817-392-8740 * Fax 817-392-8735



April 25, 2024

Mr. Wayne Wilson
Chair, Region G Water Planning Group
P.O. Box 7555
Waco, TX 76714

Dear Mr. Wilson,

Enclosed please find a copy of the recently updated Water Conservation Plan for the City of Fort Worth. I am submitting a copy of this plan to the Region G Water Planning Group, based on our wholesale customer Burleson which is located in Region G, in accordance with the Texas Water Development Board and Texas Commission on Environmental Quality rules. The City of Fort Worth adopted the plan on April 9, 2024.

Sincerely,

Micah Reed
City of Fort Worth

**WATER DEPARTMENT
WATER CONSERVATION**

The City of Fort Worth * 200 Texas Street * Fort Worth, Texas 76102
817-392-8740 * Fax 817-392-8735



April 25, 2024

Mr. Dan Buhman General Manager
Tarrant Regional Water District
800 East Northside Drive
Fort Worth, TX 76102

Dear Mr. Buhman,

Enclosed please find a copy of the recently updated Water Conservation Plan for the City of Fort Worth. I am submitting a copy of this plan to the Tarrant Regional Water District in accordance with the Texas Water Development Board and Texas Commission on Environmental Quality rules. The City of Fort Worth adopted the plan on April 23, 2024.

Sincerely,

Micah Reed
City of Fort Worth

**WATER DEPARTMENT
WATER CONSERVATION**

The City of Fort Worth * 200 Texas Street * Fort Worth, Texas 76102
817-392-8740 * Fax 817-392-8735

APPENDIX E

**RESOLUTION FOR ADOPTION
OF WATER CONSERVATION PLAN**

[INSERT COUNCIL RESOLUTION HERE]