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.

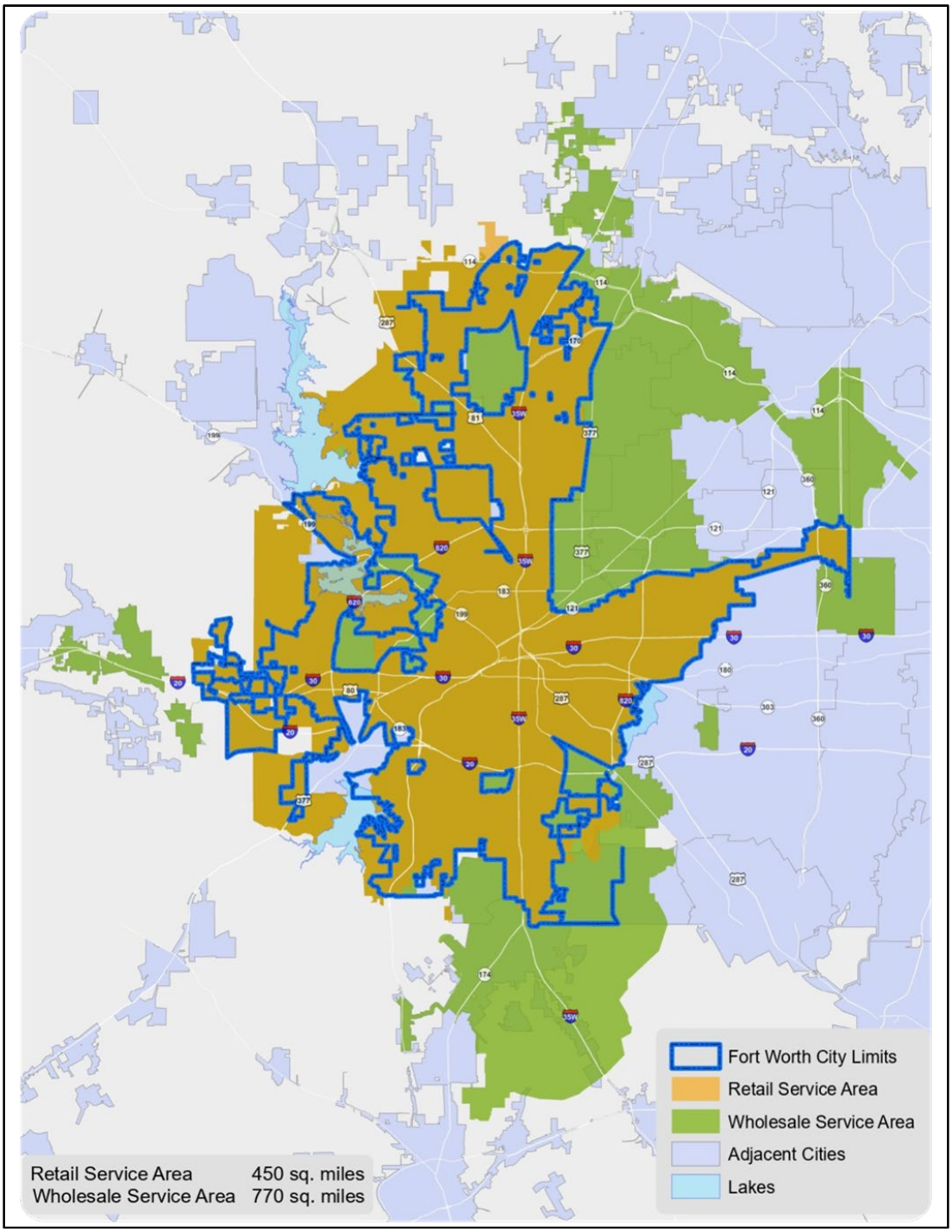
Fort Worth Water purchases raw water (water received directly from a river or lake) from TRWD. As a water wholesaler, TRWD does not treat water, but pumps it to their wholesale customers for treatment.

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.

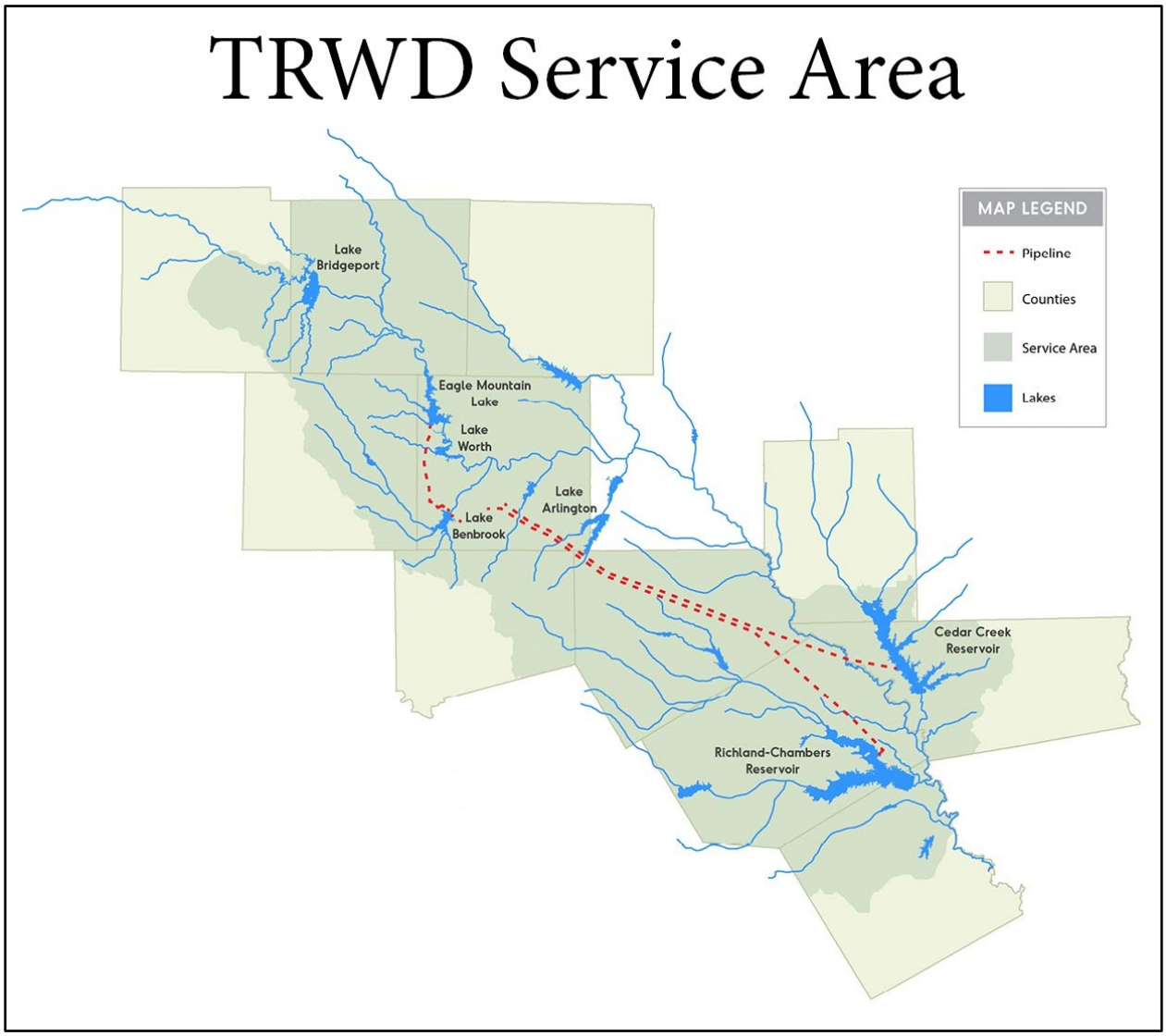
Fort Worth Water uses surface water from six sources. The West Fork system includes Lake Bridgeport, Eagle Mountain Lake, and Lake Worth. The East Texas reservoirs are Cedar Creek and Richland-Chambers. Benbrook Lake is another water source. Fort Worth owns Lake Worth, and Benbrook Lake is the responsibility 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.

Table 3-2: 2023 Treatment Plant Capacity (MGD)	
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 3-3: Fort Worth Water Consumption by Use Category

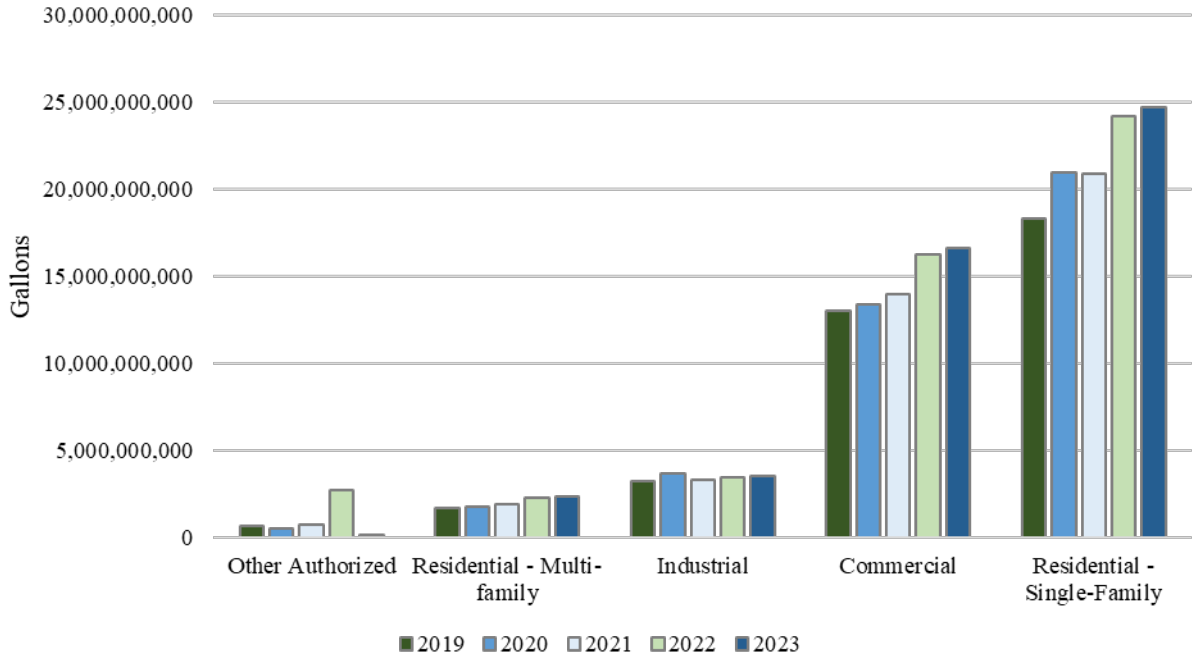
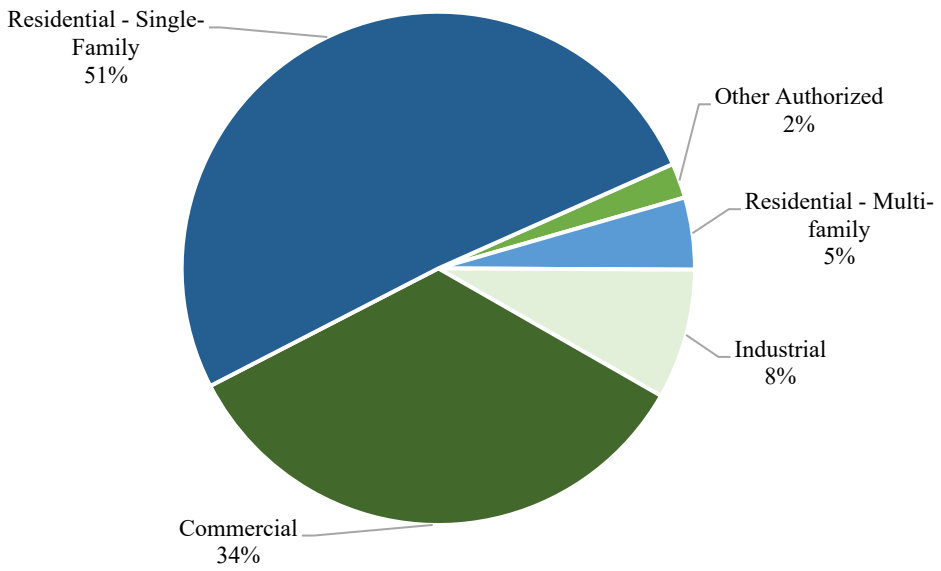


Figure 3-4 illustrates the percentage of water use per category averaged for the period from 2019-2023.

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

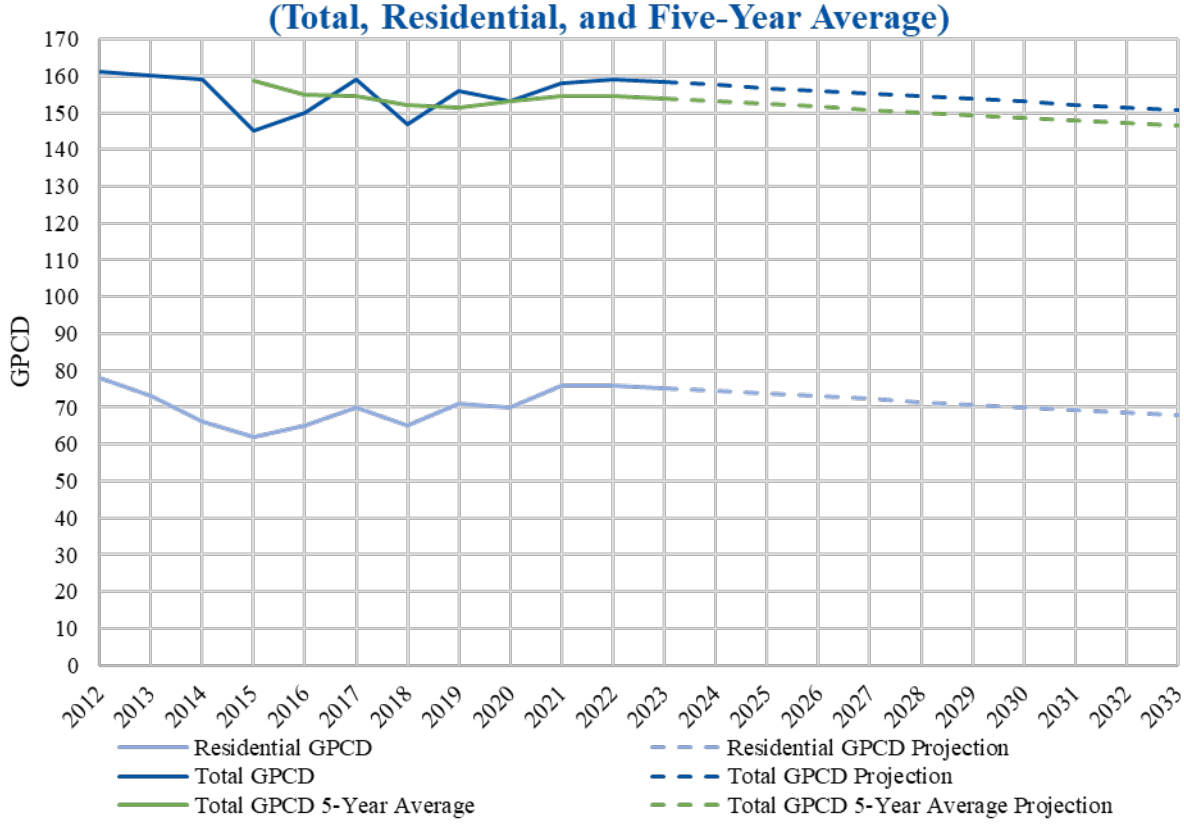
The 2022 State Water Plan required planning groups to set a per capita water use goal for municipal water users. About half the planning groups, including Region C, selected 140 gallons per capita per day (GPCD). While not there yet, Fort Worth Water is working diligently to achieve the GPCD goals shown 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 ±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 ¾ 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. Water Loss GPCD = (Total Water Loss ÷ Permanent Population) ÷ 365
b. ILI = Current Annual Real Losses ÷ 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. Water Loss GPCD = (Total Water Loss ÷ Permanent Population) ÷ 365
b. ILI = Current Annual Real Losses ÷ 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 WECAP 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 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	*Funding Entity and Participant in the TRWD Water is Awesome Regional Water Conservation Campaign*									
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 MyH20 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 MyH20 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

City of Fort Worth Annual & Quarterly Financial Documents
https://www.fortworthtexas.gov/departments/finance/financial-reports

City of Fort Worth Water Department
https://www.fortworthtexas.gov/departments/water

Conservation Captains
https://tinkerteach.com/trwd/

Conserve North Texas Recommended Water Conservation and Reuse in Region C
https://www.conservenorthtexas.org/regional-goals/water/Recommended-Water-Conservation-and-Reuse-in-Region

Guidance and Methodology for Reporting on Water Conservation and Water Use
(developed by TWDB and TCEQ, in consultation with WCAC)
https://www.twdb.texas.gov/conservation/doc/SB181Guidance.pdf

Guidelines for Setting a Target Infrastructure Leakage Index (ILI) (TWDB Guidelines)
https://www.twdb.texas.gov/conservation/municipal/waterloss/doc/InfrastructureLeakageIndex.pdf

Hailstone, Jamie. **"Why Fort Worth Is Taking Action To Protect Its Green Spaces**," *Forbes.com* (online December 18, 2023).
https://www.forbes.com/sites/jamiehailstone/2023/12/18/why-fort-worth-is-taking-action-to-protect-its-green-spaces/?sh=4f6095ac71ce

"IWA/AWWA Water Audit Method." **American Water Works Association.**
https://www.awwa.org/Portals/0/AWWA/ETS/Resources/WLCiwa-awwa-method-awwa-updated.pdf?ver=2014-12-30-084849-787

MeterHero by STEMHERO
https://meterhero.com/

Summary of Evaluations of Best Management Practices in Certain Water Conservation Plans (January 1, 2015)
https://www.twdb.texas.gov/publications/reports/special_legislative_reports/doc/2014WaterConsPlan_BMPReport.pdf

Tarrant Regional Water District – TRWD Plans
https://savetarrantwater.com/about/trwd-plans/

Taylor, Richard. *"What Is The Infrastructure Leakage Index (Ili) And How Did Waitakere City Council Manage To Achieve An Ili Of 1.0?"* **The Sustainability Society.**
https://www.thesustainabilitysociety.org.nz/conference/2008/papers/Taylor.R.pdf

Texas Administrative Code, Title 30 Environmental Quality, Part 1 Texas Commission On Environmental Quality, Chapter 288 Water Conservation Plans, Drought Contingency Plans, Guidelines And Requirements, Subchapter A Water Conservation Plans
https://texreg.sos.state.tx.us/public/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=30&pt=1&ch=288&rl=2

Texas Water Development Board Best Management Practices for Municipal Water Providers https://www.twdb.texas.gov/conservation/BMPs/Mun/index.asp

Texas Water Development Board Best Management Practices for Wholesale Water Providers
https://www.twdb.texas.gov/conservation/BMPs/WS/index.asp

Texas Water Development Board Region C Population and Municipal Water Demand Projections Interactive Data
https://www.twdb.texas.gov/waterplanning/data/projections/2027/municipal.asp

Texas Water Development Board State Water Planning – 2022 State Water Plan and Interactive 2022 State Water Plan
https://www.twdb.texas.gov/waterplanning/swp/

"Validating water loss audits leads to better data and water savings." **Texas Water Newsroom: Water News on Demand.** Posted online: March 7, 2023.
https://texaswaternewsroom.org/articles/validating_water_loss_audits_leads_to_better_data_and_water_savings.html

Water Conservation Plans and Water Conservation Implementation Reports
https://www.tceq.texas.gov/permitting/water_rights/wr_technical-resources/conserve.html

Water Is Awesome
https://waterisawesome.com/

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 ENVIRONMENTAL QUALITY
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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

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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

Texas Water Development Board

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	

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Texas Water Development Board

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

Texas Water Development Board

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: 512

2. Storage Capacity

   2a. Elevated storage in gallons: 20,000,000

   2b. Ground storage in gallons: 77,800,000

Texas Water Development Board

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."

Texas Water Development Board

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.

Texas Water Development Board

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

Texas Water Development Board

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

Texas Water Development Board

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

Texas Water Development Board

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 theprevious 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 %

Texas Water Development Board

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 %

Texas Water Development Board

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	313,518,920,870	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

Texas Water Development Board

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

PLUMMER

FORT WORTH®

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 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

PLUMMER

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

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APPENDIX E

DROUGHT CONTINGENCY & EMERGENCY WATER MANAGEMENT PLAN

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FORT WORTH
WATER

City of Fort Worth
200 Texas Street
Fort Worth, Texas 76102
PWS #2200012

Drought Contingency & Emergency Water Management Plan

for Retail and Wholesale Water Customers

May 2024

Adopted: April 23, 2024

Effective: May 1, 2024

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TABLE OF CONTENTS

1. INTRODUCTION AND OBJECTIVES

The purpose of this Drought Contingency and Emergency Water Management Plan (subsequently referred to as the Plan) is as follows:

- To conserve the available water supply in times of drought and emergency
- To maintain supplies for domestic water use, sanitation, and fire protection
- To protect and preserve public health, welfare, and safety
- To minimize the adverse impacts of water supply shortages
- To minimize the adverse impacts of emergency water supply conditions.

2. TEXAS COMMISSION ON ENVIRONMENTAL QUALITY RULES

TCEQ rule Title 30, Part 1, Chapter 288, Subchapter A, Rule 288.1 (4) defines a drought contingency plan as "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."

TCEQ rules governing development of and minimum requirements for drought contingency plans for municipal water suppliers and wholesale water suppliers are contained in Texas Administrative Code Title 30, Part 1, Chapter 288, Subchapter B, Rule 288.20 and Rule 288.22, respectively.

Minimum Requirements

The minimum requirements in the Texas Administrative Code for Drought Contingency Plans for Retail Public Water Suppliers are covered in this report as follows:

• 288.20(a)(1)(A) – Provisions to Inform the Public and Provide Opportunity for Public Input – Section 4.1

• 288.20(a)(1)(B) – Provisions for Continuing Public Education and Information – Section 4.1

• 288.20(a)(1)(C) – Coordination with the Regional Water Planning Group – Section 4.6

• 288.20(a)(1)(D) – Criteria for Initiation and Termination of Drought Contingency and Water Emergency Response Stages – Section 4.2

• 288.20(a)(1)(E) – Drought Contingency and Water Emergency Response Stages – Section 4.3

• 288.20(a)(1)(F) – Specific, Quantified Targets for Water Use Reductions – Section 4.3

• 288.20(a)(1)(G) – Water Supply and Demand Management Measures for Each Stage – Section 4.3

• 288.20(a)(1)(H) – Procedures for Initiation and Termination of Drought Contingency and Water Emergency Response Stages – Section 4.3

• 288.20(a)(1)(I) - Procedures for Granting Variances – Section 4.4

• 288.20(a)(1)(J) - Procedures for Enforcement of Mandatory Restrictions – Section 4.5

• 288.20(a)(3) – Consultation with Wholesale Supplier – Sections 4.2 and 4.3

• 288.20(b) – Notification of Implementation of Mandatory Measures – Section 4.3

• 288.20(c) – Review and Update of Plan – Section 4.7

The Texas Administrative Code outlines additional requirements for Wholesale Public Water Suppliers, which are covered in this report as follows:

• 288.22(a)(7) – Include the specific water supply or water demand management measures to be implemented during each stage of the plan including, but not limited to, the following:

  - 288.22(a)(7)(A) – Pro rata curtailment of water deliveries to or diversions by wholesale water customers as provided in Texas Water Code, Article 11.039 – Section 4.2

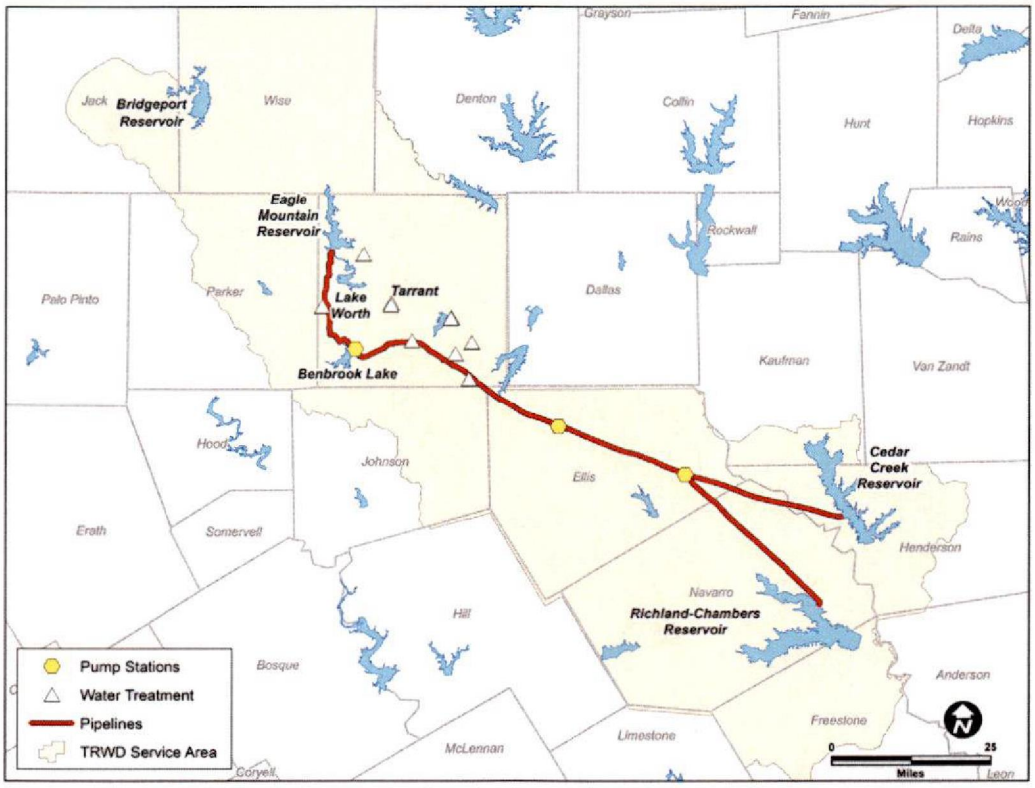
• 288.22(a)(8) – Include a provision in every wholesale water contract entered into or renewed after adoption of the plan, including contract extensions, that in case of water resulting from drought, the water to be distributed shall be divided in accordance with Texas Water Code, Article 11.039 – Section 4.2

3. WATER SYSTEM PROFILE

The City purchases water from the Tarrant Regional Water District (TRWD). The supply sources are:

- Lake Bridgeport (via the West Fork of the Trinity River),
- Eagle Mountain Lake (via the West Fork of the Trinity River),
- Lake Worth (via the West Fork of the Trinity River),
- Lake Benbrook (A pipeline connects Lake Benbrook to the Rolling Hills Water Treatment Plant to supplement supply to that plant. A pump station on the Clear Fork of the Trinity River also supplies the Holly Water Treatment Plant.),
- Cedar Creek Reservoir (via pipeline), located approximately 75 miles southeast of Fort Worth, and
- Richland-Chambers Reservoir (via pipeline), located approximately 75 miles southeast of Fort Worth.

TARRANT REGIONAL WATER DISTRICT SUPPLY SOURCES



System capacity with regards to the defined triggers in Section 4.4 is the total reliable treatment capacity as found in Appendix A. Therefore, the system capacity baseline for triggers is the reliable treatment capacity of 512 million gallons per day (MGD). See Appendix A for more details of the yields of each of the treatment plants. This trigger number will be evaluated each year to take into consideration improvements that may have been added to the system. It should be noted that Fort Worth has a much greater pumping capacity, but the treatment capacity was chosen as the limiting factor for this purpose.

According to its 2022 Water Use Survey, Fort Worth has approximately 292,000 active retail service connections and 33 wholesale water customers. Some of these customers have emergency contracts only and do not take from the Fort Worth system on a regular basis.

Wholesale customers are:

- Aledo
- Benbrook
- Bethesda WSC
- Burleson
- Crowley
- DFW Airport
- Dalworthington Gardens
- Edgecliff Village
- Everman
- Forest Hill
- Grand Prairie
- Haltom City
- Haslet
- Hudson Oaks
- Hurst
- Keller
- Kennedale
- Lake Worth
- North Richland Hills
- Northlake
- Richland Hills
- River Oaks
- Roanoke
- Saginaw
- Sansom Park
- Southlake
- Trophy Club MUD #1
- Trinity River Authority (TRA)
- Westlake
- Westover Hills
- Westworth Village
- White Settlement
- Willow Park

In accordance with Section 2.3 of the wholesale water contract, wholesale customers are required to institute and apply the same rationing, conservation measures or restrictions to the use of water by their customers for so long as any part of their total water supply is being furnished by Fort Worth.

The water supply triggers defined in Section 4.4 were provided to Fort Worth by its water supplier, Tarrant Regional Water District (TRWD). TRWD selected its triggers after hiring an outside consultant to evaluate where the triggers levels should be for the drought plan to achieve meaningful water savings.

4. DROUGHT CONTINGENCY AND EMERGENCY WATER MANAGEMENT PLAN

4.1 Public Education and Involvement

At any time that the Drought Contingency/Emergency Water Management Plan is activated or the stage changes, customers will notify local media of the issues, the current response stage, and the specific actions required of the public. The information will also be publicized on the city's Web site. Bill inserts will also be used as appropriate.

Fort Worth will inform and educate the public about the Drought Contingency/Emergency Water Management Plan by the following means:

- Preparing fact sheets describing the plan and making these available online and at various city sites, and at events where the water department may have a booth.
- Posting a copy of the Plan on the city's Web site.
- Notifying local organizations, schools, and civic groups that staff are available to make presentations on the plan.
- Promote awareness by means of electronic communication to residents through text messages, push notifications, reverse 911, and/or any other online platforms available including social media such as Facebook, Twitter, Instagram and/or Next Door.

Fort Worth provided opportunity for public comment on the draft Drought Contingency and Emergency Water Management Plan at a City Council meeting held on April 23, 2024. Council minutes reflecting the adoption of this plan can be found in Appendix B.

4.2 Initiation & Termination of Drought & Emergency Response Stages

The provisions of this Plan shall apply to all persons, customers, and property utilizing potable water provided by the City of Fort Worth. The terms "person" and "customer" as used in the Plan include individuals, corporations, partnerships, associations, and all other legal entities. The Plan does not apply to locations using treated wastewater effluent, private wells or possessing their own water rights in the Trinity River; however, any pond, impoundment, body of water, or other water source that is supplemented, or has the ability to supplement supply, with potable water shall adhere to the provisions of this plan.

The Plan may be applied to the entire city or geographic portions of the city as necessary. If the Plan is applied only to a limited sector, the boundaries will be defined in terms of roadways, creeks and other easily distinguishable features, such as city limits.

Initiation of a Drought/ Emergency Water Management Stage

The City Manager or his/her official designee may order the implementation of a drought response or water emergency stage when one or more of the trigger conditions for that stage is met. The following actions will occur when a stage is initiated.

- The public will be notified through local media and the City of Fort Worth Web site, as described in Section 4.2.
- Fort Worth's wholesale customers and Tarrant Regional Water District will be notified by telephone and with a follow-up letter, e-mail, or fax that provides details of the reasons for initiation of the drought or water emergency stage.
- The Fort Worth Water Department will notify the Executive Director of the TCEQ within 5 business days when mandatory provisions of the Plan are activated.

Stages imposed by TRWD action must be initiated by the City of Fort Worth.

For other trigger conditions, the City Manager or his/her official designee may decide not to order the implementation of a drought response or water emergency stage even though one or more of the trigger criteria for the stage are met. Factors which could influence such a decision include, but are not limited to, the time of the year, weather conditions, the anticipation of replenished water supplies, or the anticipation that additional facilities will become available to meet needs. The reason for this decision should be documented.

Fort Worth shall include a provision in every wholesale water contract entered into or renewed after adoption of this plan, including contract extensions, that in case of water shortages resulting from drought, the water to be distributed shall be divided in accordance with Texas Water Code, Article 11.039. The City Manager or his/her official designee shall be empowered, at their discretion, at the appropriate time, to cause a proportional reduction of water available to each wholesale customer in accordance with pro rata curtailment of water use provided in Texas Water Code § 11.039, and based on any other conditions, physical, mechanical, or otherwise. The wholesale customer may appeal this decision to the Fort Worth City Council for review of wholesale customer allocation during periods of forced

conservation measures by the City. The wholesale customer may appeal the decision of the City Council to the TCEQ.

Termination of a Drought Stage

The City Manager or his/her official designee may order the termination of a drought response or water emergency stage when the conditions for termination are met or at their discretion. The following actions will be taken when a drought stage is terminated:

- The public will be notified through local media and the City of Fort Worth Web site as described in Section 4.2.
- Wholesale customers and TRWD will be notified by telephone with a follow-up letter, e-mail, or fax.
- If any mandatory provisions of the drought contingency/emergency water management plan that have been activated are terminated, customers will notify the Executive Director of the TCEQ within 5 business days.

The City Manager or his/her official designee may decide not to order the termination of a drought response stage or water emergency even though the conditions for termination of the stage are met. The City Manager or his/her designee may choose to implement a phased out approach when exiting various stages to protect the integrity of the system. Factors which could influence such a decision include, but are not limited to, the time of the year, weather conditions, or the anticipation of potential changed conditions that warrant the continuation of the drought stage. The reason for this decision should be documented.

4.3 Drought and Emergency Response Stages

Stage 1 – Water Watch

Triggering Conditions

- Water demand reaches or exceeds 90% of reliable treatment capacity for three consecutive days. The treatment capacity could be citywide or in a specified portion of the system.
- Fort Worth's water demand for all or part of the delivery system approaches treatment capacity because treatment capacity is inadequate.
- Water supply system is unable to deliver water due to the failure or damage of major water system components, supply source becomes contaminated, power outage, grid failure, natural disaster, or extreme weather event.
- TRWD initiated Stage 1 – Water Watch for one or more of the following reasons:
    - Total combined raw water supply in TRWD water supply reservoirs (Bridgeport, Eagle Mountain, Richland Chambers and Cedar Creek) drops below 75% (25% depleted) of conservation storage capacity.
    - TRWD water demand has exceeded or is expected to exceed 80% of maximum sustainable production of delivery capacity for an extended period.
    - One or more of TRWD's water supply sources has become limited in availability.
    - TRWD water demand is projected to approach the limit of permitted supply.
    - TRWD supply source becomes contaminated or unusable for other regulatory reasons (i.e., invasive species).

- TRWD water supply system is unable to deliver water due to the failure or damage of major water system components.
- The TRWD General Manager finds that conditions warrant the declaration of a Stage 1 drought.

Terminating Conditions for Stage 1

Stage 1 will terminate when the total combined raw water supply in TRWD western and eastern division reservoirs exceeds 95% of conservation storage capacity or remains at or above 85% for 90 consecutive days, whichever occurs first. Fort Worth may also terminate Stage 1 if the City-specific conditions that caused the City to initiate Stage 1 have ceased to exist for seven consecutive days.

Goal for Use Reduction for Stage 1

The goal for water use reduction under Stage 1, Water Watch, is five percent. If circumstances warrant or if required by TRWD, the City Manager or his/her official designee can set a goal for greater water use reduction.

Actions Available for Stage 1

The City Manager or his/her official designee may order the implementation of any of the actions listed below, as deemed necessary. The City Manager or his/her official designee must implement any action(s) required by the Tarrant Regional Water District.

All Water Users

Initiate mandatory restrictions to prohibit non-essential water use as follows:

- Discourage hosing of paved areas, such as sidewalks, driveways, parking lots, tennis courts, patios, or other impervious surfaces, except to alleviate an immediate health or safety hazard. This may include premises with raw or processed food, pharmaceutical or vaccine processing, storage or vending establishments including restaurants and grocery stores may be washed to the extent necessary for sanitary purposes. These areas may also include:
  - Trash and dumpster areas
  - Areas around fuel pumps
  - Store front cleaning of areas with accumulated bird droppings, feathers and debris
  - Localized spot cleaning of parking areas to remove oil, grease buildup that may pose a health and safety issue.
- Discourage hosing of buildings or other structures for purposes other than fire protection or surface preparation prior to painting.
- Prohibit using water in such a manner as to allow runoff or other waste, including:
  - failure to repair a controllable leak, including a broken sprinkler head, a leaking valve, leaking or broken pipes, or a leaking faucet;
  - operating a permanently installed irrigation system with: (a) a broken head; (b) a head that is out of adjustment and the arc of the spray head is over a street or parking lot; or (c) a head that is misting because of high water pressure; or

- during irrigation, allowing water to (a) to run off a property and form a stream of water in a street for a distance of 50 feet or greater; or (b) to pond in a street or parking lot to a depth greater than one-quarter of an inch.
- Allowing or causing an irrigation system or other lawn watering device to operate during any form of precipitation or when temperatures are at or below 32 degrees Fahrenheit.

- Prohibit outdoor watering with sprinklers or irrigation systems between 10 a.m. and 6 p.m.
- Limit landscape watering with sprinklers or irrigation systems at each service address to a twice per week schedule as outlined below. This includes landscape watering of parks, golf courses, and sports fields. Wholesale customers may use a different watering schedule than the one below as long as it limits each service address to a twice per week schedule; however, use of the same schedule would simplify the messages passed to customers through the news media.
  - Residential addresses ending in an even number (0, 2, 4, 6, or 8) may water on Wednesdays and Saturdays.
  - Residential addresses ending in an odd number (1, 3, 5, 7 or 9) may water on Thursdays and Sundays.
  - All non-residential locations (apartment complexes, businesses, industries, parks, medians, etc.) may water on Tuesdays and Fridays.

    Exceptions:

    - Lawns and landscaping may be watered on any day, at any time, by handheld hose, drip irrigation, a soaker hose or tree bubbler. (The intent of this measure is to allow for the protection of structural foundations, trees, and other high value landscape materials).
    - Water use necessary for the repair of an irrigation system, plumbing line, fountain, etc. in the presence of the person making the repair.
    - Outdoor watering at service addresses with large multi-station irrigation systems may take place in accordance with a variance granted by the Water Director, if the Water Director determines that a property cannot be completely irrigated with an average of three-quarters of an inch of water in a single day, and that the property should be divided into sections to be irrigated on different days. If approved, no station will be watered more than twice per week.
    - Establishing new turf is discouraged. If hydromulch, grass sod, or grass seed is installed for the purpose of establishing a new lawn, there are no watering restrictions for the first 30 days while it is being established. After that, the watering restrictions set forth in this stage apply. (This does not include over seeding with rye, or seasonal grasses, since turf already exists.)
    - Golf courses may water greens and tee boxes as necessary, however watering must be done before 10 a.m. and after 6 p.m. Encouraged to reduce water use by five percent.
    - Skinned areas of sports fields may be watered as needed for dust control.

- Watering of athletic fields (fields only, does not include surrounding landscaped areas) used for organized sports practice, competition, or exhibition events may occur as necessary to protect the health and safety of the players, staff, or officials present for athletic events. Encouraged to reduce water use by five percent.
- Public areas that are open to the public at-large and have a high impact from frequent use may be allowed additional watering, with a variance granted by the Water Director, if it is deemed to be beneficial to serve and protect the community amenity. Examples may include but are not limited to: outdoor amphitheaters, demonstration gardens, public art exhibitions, outdoor learning areas, arboretums, etc.

- All users are encouraged to use native and adapted drought tolerant plants in landscaping.
- Washing of any motor vehicle, motorbike, boat, trailer, airplane, or other vehicle shall be limited to the use of a hand-held bucket or a hand-held hose equipped with a positive-pressure shutoff nozzle for quick rinses. Vehicle washing may be done at any time on the premises of a commercial car wash or commercial service station. Companies with an automated on-site vehicle washing facility may wash its vehicles at anytime. Further, such washing may be exempt from these requirements if the health, safety, and welfare of the public are contingent upon frequent vehicle cleansing, such as garbage trucks and vehicles used to transport food and perishables.
- Discourage the filling, draining, or refilling of swimming pools, wading pools, hot tubs and Jacuzzi type pools except to maintain adequate water levels for structural integrity, proper operation and maintenance, and/or to alleviate an issue that poses a public safety risk.
- Encourage signage for customers drawing water from private wells or using recycled water in order to facilitate proper enforcement.

City and Local Governments

In addition to the actions listed above:

- Review conditions and problems that caused Stage 1. Take corrective action.
- Increase public education efforts on ways to reduce water use.
- Review data received through MyH2O as a method of identifying potential water use violations and wasteful water practices. This may lead to more targeted patrols of areas with identified non-compliance.
- Increase enforcement efforts.
- Intensify leak detection and repair efforts.
- Audit all city and local government irrigation systems to ensure proper condition, settings, and operation.
- Identify and encourage voluntary reduction measures by high-volume water users through water use audits.

- Reduce non-essential water use. As used herein, non-essential water uses are those that do not have any health or safety impact and are not needed to meet the core function of the agency.
- The Water Director or their designee will notify wholesale customers of actions being taken and require them to implement the same stage and measures. Such action is in accordance with Section 2.5 of the uniform wholesale water contract. Per the contract, wholesale customers are required to institute and apply the same rationing, conservation measures or restrictions to the use of water by their customers for so long as any part of their total water supply is being furnished by Fort Worth.

Commercial or Industrial

- All actions listed above for all water users apply to commercial and industrial users.
- Stock at commercial plant nurseries is exempt from Stage 1 watering restrictions.
- Hotels, restaurants, and bars are encouraged to serve drinking water to patrons on an "on demand" basis.
- Hotels are encouraged to implement laundry conservation measures by encouraging patrons to reuse linens and towels.
- Car wash facilities must keep equipment in good working order, which should include regular inspections to be sure there are no leaks, broken or misdirected nozzles, and that all equipment is operating efficiently.
- All commercial and industrial customers are encouraged to audit irrigation systems

Stage 2 – Water Warning

Triggering Conditions for Stage 2

- Water demand reaches or exceeds 95% of reliable treatment capacity for three consecutive days. The treatment capacity could be citywide or in a specified portion of the system.
- Demand for all or part of the delivery system equals or exceeds treatment capacity because treatment capacity is inadequate.
- Water supply system is unable to deliver water due to the failure or damage of major water system components, supply source becomes contaminated, power outage, grid failure, natural disaster, or extreme weather event.
- TRWD initiated Stage 2 – Water Warning for one or more of the following reasons:
    - Total raw water supply in TRWD water supply reservoirs (Bridgeport, Eagle Mountain, Richland Chambers and Cedar Creek) drops below 60% (40% depleted) of conservation storage capacity.
    - TRWD water demand has exceeded or is expected to exceed 85% of maximum sustainable production of delivery capacity for an extended period.

- One or more of TRWD's water supply sources has become limited in availability.
- TRWD water demand is projected to approach the limit of permitted supply.
- TRWD supply source becomes contaminated or unusable for other regulatory reasons (i.e. invasive species).
- TRWD water supply system is unable to deliver water due to the failure or damage of major water system components.
- The TRWD General Manager finds that conditions warrant the declaration of a Stage 2 drought.

Terminating Conditions for Stage 2

Stage 2 will terminate when the total combined raw water supply in TRWD western and eastern division reservoirs exceeds 75% of conservation storage capacity or remains at or above 70% for 30 consecutive days. Fort Worth may also terminate Stage 2 if the City-specific conditions that caused the City to initiate Stage 2 have ceased to exist for seven consecutive days.

Goal for Use Reduction for Stage 2

The goal for water use reduction under Stage 2 – Water Warning is to decrease use by 10 percent. If circumstances warrant or if required by TRWD, the City Manager or his/her official designee can set a goal for greater water use reduction.

Actions Available for Stage 2

The City Manager or his/her official designee may order the implementation of any of the actions listed below, as deemed necessary. The City Manager or his/her official designee must implement any action(s) required by the Tarrant Regional Water District.

- Continue actions under Stage 1.
- Initiate engineering studies to evaluate water supply alternatives should conditions worsen.

All Water Users

- Limit landscape watering with sprinklers or irrigation systems to a once per week schedule at each service address as determined by the Water Director. This includes landscape watering at parks, golf courses, and sports fields. Wholesale customers may use a different watering schedule than the one used for Fort Worth retail customers as long as it limits each service address to once per week schedule; however, use of the same schedule would simplify the messages passed to customers through the news media.

  Exceptions:

  - Lawns and landscaping may be watered on any day, at any time, by handheld hose, drip irrigation, a soaker hose or tree bubbler (The intent of this measure is

to allow for the protection of structural foundations, trees, and other high value landscape materials).

- Outdoor watering at service addresses with large multi-station irrigation systems may take place in accordance with a variance granted by the Water Director, if the Director determines that a property cannot be completely irrigated with an average of three-quarters of an inch of water in a single day, and that the property should be divided into sections to be irrigated on different days. If approved, no station will be watered more than once per week.
- Golf courses may water greens and tee boxes as needed to keep them alive, however watering must be done before 10 a.m. and after 6 p.m. Fairways are restricted to once per week watering as outlined above. Golf course rough cannot be watered.
- Watering of athletic fields (fields only, does not include surrounding landscaped areas) used for organized sports practice, competition, or exhibition events may occur as necessary to protect the health and safety of the players, staff, or officials present for athletic events. Encouraged to reduce water use by 10 percent.
- All users are encouraged to wait until the current drought or emergency situation has passed before establishing new landscaping and turf. Variances granted for establishing new turfgrass or landscaping will be for a maximum of 30 days from the date of approval. After that, the watering restrictions set forth in this stage apply. (This does not include over seeding with rye since turf already exists.)

- Discourage the operation of ornamental fountains or ponds that use potable water except where necessary to support aquatic life or where such fountains or ponds are equipped with a recirculation system.
- Discourage the filling, draining, or refilling of swimming pools, wading pools, hot tubs and Jacuzzi type pools except to maintain adequate water levels for structural integrity, proper operation and maintenance, and/or to alleviate an issue that poses a public safety risk.
- Encourage the use of covers for all types of pools, hot tubs, and Jacuzzi type pools when not in use.
- Encourage signage for customers drawing water from private wells or using recycled water in order to facilitate proper enforcement.

City and Local Governments

- Review conditions or problems that caused Stage 2. Take corrective action.
- Review data received through MyH2O as a method for identifying potential water use violations and wasteful water practices.
- Increase frequency of media releases on water supply conditions.
- Further accelerate public education efforts on ways to reduce water use.
- Eliminate non-essential water use. As used herein, non-essential water uses are those that do not have any health or safety impact and are not needed to meet the core function of the agency.

- Prohibit wet street sweeping.
- The Water Director or their designee will notify wholesale customers of actions being taken and require them to implement the same stage and measures. Such action is in accordance with Section 2.5 of the uniform wholesale water contract. Per the contract, wholesale customers are required to institute and apply the same rationing, conservation measures or restrictions to the use of water by their customers for so long as any part of their total water supply is being furnished by Fort Worth.

Commercial or Industrial

- All actions listed above for all water users apply to commercial and industrial users.
- Use of water from fire hydrants for any purpose other than firefighting related activities or other activities necessary to maintain public health, safety and welfare requires a variance issued by the Water Director. Fire hydrant use may be limited to only designated hydrants. Upon declaration of this drought stage, all holders or applicants of a Water Fire Hydrant Meter Agreement are required to apply for a variance as set forth in this plan. If conditions allow, as determined by the Water Director, the use of water from hydrants may continue until the Water Director or their designee issues a determination on the petition for variance. If conditions do not allow, the Water Director may require all fire hydrant meters be immediately returned from the field, pending determination of each petition for variance.

Stage 3 – Emergency Water Use

Triggering Conditions for Stage 3

- Water demand reaches or exceeds 98% of reliable treatment capacity for one day. The treatment capacity could be citywide or in a specified portion of the system.
- Demand for all or part of the delivery system exceeds treatment capacity because treatment capacity is inadequate.
- Water supply system is unable to deliver water due to the failure or damage of major water system components, supply source becomes contaminated, power outage, grid failure, natural disaster, or extreme weather event.
- TRWD has initiated Stage 3 – Emergency Water Use, which may also be initiated by one or more of the following:
    - Total raw water supply in TRWD water supply reservoirs (Bridgeport, Eagle Mountain, Richland Chambers and Cedar Creek) drops below 45% (55% depleted) of conservation storage capacity.
    - TRWD water demand has exceeded or is expected to exceed 90% of maximum sustainable production of delivery capacity for an extended period.
    - TRWD water demand for all or part of the TRWD delivery system approaches delivery capacity because delivery capacity is inadequate.
    - One or more of TRWD's water supply sources has become limited in availability.
    - TRWD water demand is projected to approach the limit of permitted supply.

- TRWD supply source becomes contaminated or unusable for other regulatory reasons (i.e., invasive species).
- TRWD water supply system is unable to deliver water due to the failure or damage of major water system components.
- The TRWD General Manager finds that conditions warrant the declaration of a Stage 3 drought.

Terminating Conditions for Stage 3

Stage 3 will terminate when the total combined raw water supply in TRWD western and eastern division reservoirs exceeds 60% of conservation storage capacity or remains at or above 55% for 30 consecutive days, whichever occurs first. Fort Worth may also terminate Stage 3 if the City-specific conditions that caused the City to initiate Stage 3 have ceased to exist for seven consecutive days.

Goals for Use Reduction for Stage 3

The goal for water use reduction under Stage 3, Emergency Water Use, is to decrease use by 20 percent. If circumstances warrant or if required by TRWD, the City Manager or his/her official designee can set a goal for a greater water use reduction.

Actions Available for Stage 3

The City Manager or his/her official designee may order the implementation of any of the actions listed below, as deemed necessary. The City Manager or his/her official designee must implement any action(s) required by the Tarrant Regional Water District.

- Continue or initiate any actions available under Stages 1 and 2.

All Water Users

- Prohibit landscape watering, including at parks, golf courses, and sports fields.

  Exceptions:

  - Watering with hand-held hose, soaker hose or drip irrigation system may occur any day and any time. (The intent of this measure is to allow for the protection of structural foundations, trees, and other high value landscape materials).
  - Golf course greens only may be watered by hand-held hose as needed to keep them alive. Watering of athletic fields (fields only, does not include surrounding landscaped areas) used for organized sports practice, competition, or exhibition events may occur as necessary to protect the health and safety of the players, staff, or officials present for athletic events may be allowed to water by variance. A water management plan must be submitted to the Water Director detailing how each area will comply with stage 3 drought measures.
- Prohibit establishment of new landscaping. Variances may be granted for those landscape projects started prior to the initiation of stage 3 drought restrictions.
- Vehicle washing restricted to commercial car wash, commercial service station or a private on-site vehicle washing facility and can only be done as necessary for health, sanitation, or safety reasons, including but not limited to the washing of garbage trucks

and vehicles used to transport food and other perishables. All other vehicle washing is prohibited.

- Prohibit the operation of ornamental fountains or ponds that use potable water except where necessary to support aquatic life.
- Prohibit the draining, filling, or refilling of swimming pools, wading pools, hot tubs, and Jacuzzi type pools. Existing private and public pools may add water to maintain pool levels; however they may not be refilled using automatic fill valves. All pools are required to be fully covered by a pool cover to limit evaporation.
- Prohibit hosing of buildings or other structures for purposes other than fire protection or surface preparation prior to painting with high-pressure equipment. Must be performed by a professional power washing service utilizing high efficiency equipment and a vacuum recovery system where possible.
- Require all customers drawing water from private wells or using recycled water to post signs on their property saying so, in order to facilitate proper enforcement.

City and Local Governments

In addition to actions listed above:

- Continue or initiate any actions available under Stages 1 and 2.
- Review conditions or problems that caused Stage 3. Take corrective action.
- Implement viable alternative water supply strategies.
- Review data received through MyH2O as a method for identifying potential water use violations and wasteful water practices.
- Increase frequency of media releases explaining emergency situation.
- Reduce city and local government water use to maximum extent possible.
- Prohibit the permitting of new swimming pools, Jacuzzi type pools, spas, ornamental ponds and fountain construction. Pools already permitted and under construction may be completely filled with water.
- Institute a mandated reduction in deliveries to all wholesale customers. Such a reduction will be distributed as required by Texas Water Code §11.039.
- If TRWD has imposed a reduction in water available to customers, impose the same percent reduction on wholesale customers.
- The Water Director will notify wholesale customers of actions being taken and require them to implement the same stage and measures. Such action is in accordance with Section 2.5 of the uniform wholesale water contract. Per the contract, wholesale customers are required to institute and apply the same rationing, conservation measures or restrictions to the use of water by their customers for so long as any part of their total water supply is being furnished by Fort Worth.

Commercial or Industrial

- All actions listed above for all water users apply to commercial and industrial users.

- Hotels, restaurants, and bars required to serve drinking water to patrons on an "on demand" basis.
- Hotels are required to implement laundry conservation measures by encouraging patrons to reuse linens and towels.
- Stock at commercial plant nursery may be watered only with a hand-held hose, hand-held watering can, or drip irrigation system.
- Commercial and industrial water users required to reduce water use by a set percentage determined by the Water Director.
- Use of water from hydrants for any purpose other than firefighting related activities or other activities necessary to maintain public health, safety and welfare requires a special permit issued by the Water Director. Fire hydrant use may be limited to only designated hydrants.

4.4 Procedures for Granting Variances to the Plan

The Water Director or their official designee may grant temporary variances for existing water uses otherwise prohibited under this drought contingency plan if one or more of the following conditions are met:

- Failure to grant such a variance would cause an emergency condition adversely affecting health, sanitation, or fire safety for the public or the person requesting the variance.
- Compliance with this plan cannot be accomplished due to technical or other limitations.
- Alternative methods that achieve the same level of reduction in water use can be implemented.

Variances shall be granted or denied at the discretion of the Water Director or their official designee. All petitions for variances should be in writing, using the forms provided, and must include the following information:

- Name and address of the petitioner(s)
- Purpose of water use
- Specific provisions from which relief is requested
- Detailed statement of the adverse effect of the provision from which relief is requested
- Description of the relief requested
- Period of time for which the variance is sought
- Detailed schedule of irrigation that shows a reduction in use over the 30 day period for new lawns and landscapes. Schedule should be designed so that at the end of the 30 day period, lawn and landscaped areas can adhere to the twice per week schedule defined in Stage 1.
- Alternative measures that will be taken to reduce water use
- Other pertinent information.

Applicants must adhere to the current restrictions and current watering schedule until the City of Fort Worth has approved the variance. Once an approved variance has expired applicants must resort back to the current watering schedule. Reasons for a variance can include one or more of the following:

- Water used outside of the watering schedule is a primary source of income
- Health, safety, well-being, or cleanliness of the public or environment is in jeopardy
- An endangered plant, animal, aquatic species, or critical environmental feature is at risk
- Property is too large to be completely watered under the current watering schedule and must be watered in sections (excluding new landscape/xeriscape projects)
- Newly installed xeriscape landscape design requiring an alternative watering schedule

4.5 Procedures for Enforcing Mandatory Water Use Measures

Mandatory water use restrictions may be imposed in Stages 1, 2, and 3. The penalties associated with the mandatory water use restrictions are explained below and included in the ordinance enacting this plan. The City reserves the right to issue citations in lieu of administrative fees.

Stage 1:

- Violations must be observed by the City Manager or his/her designee. Violations will be documented by electronic photographs and filed for review.
- First-time violations in Stage 1 will be notified of their violation and be warned of the actions that will be imposed after additional violations.
- For the second violation in Stage 1, a $100.00 administrative fee will be included on the next available water bill. If that second time violation in Stage 1 involved an irrigation system, the $100.00 administrative fee will be waived or credited after the completion of a free irrigation check-up of the violating system, performed by a licensed irrigator contracted with the City. For the third and subsequent violations in Stage 1, a $200.00 administrative fee per violation will be included on the next available water bill.
- Unpaid assessed administrative fees related to violations of water use restrictions shall incur late payment penalties and may result in termination of water service.

Stage 2:

- Violations must be observed by the City Manager or his/her designee. Violations will be documented by electronic photographs and filed for review.
- First-time violations in Stage 2 will be assessed a $100.00 administrative fee on the next available water bill. If that first time violation involved an irrigation system, the $100.00 administrative fee will be waived or credited after the completion of a free irrigation check-up of the violating system, performed by a licensed irrigator contracted with the City.

- For the second violation in Stage 2, a $200.00 administrative fee will be included on the next available water bill. For the third and subsequent violations in Stage 2, a $300.00 administrative fee per violation will be included on the next available water bill.

- Upon the second violation in Stage 2 involving an irrigation system, the irrigation system associated with that property will be disconnected, which could incur additional fees.

- Unpaid assessed administrative fees related to violations of water use restrictions shall incur late payment penalties and may result in termination of water service.

Stage 3:

- Violations must be observed by the City Manager or his/her designee. Violations will be documented by electronic photographs and filed for review.

- First-time violations in Stage 3 will be assessed a $200.00 administrative fee on the next available water bill.

- For the second violation in Stage 3, a $300.00 administrative fee will be included on the next available water bill. For the third and subsequent violations, a $400.00 administrative fee per violation will be included on the next available water bill.

- Upon the first violation in Stage 3 involving an irrigation system, the irrigation system associated with that property will be disconnected, which could incur additional fees.

- Unpaid assessed administrative fees related to violations of water use restrictions shall incur late payment penalties and may result in termination of water service.

Optional Administrative Remedies – Contesting Administrative Fees

A customer may appeal the assessment of an administrative fee be requesting in writing to the City Manager or his/her designee that the fee to be waived, providing all information to support the removal of the fee. The customer shall bear the burden of proof to show why the administrative fee should not be assessed. The City Manager or his/her designee shall send written notice within three business days after receiving the first packet of information, and that decision shall be final and binding.

4.6 Coordination with the Other Entities

Appendix C includes a copy of letters sent to the chair of the Region C Water Planning Group, General Manager of TRWD and the Executive Director of TCEQ and TWDB upon adoption of this Plan.

4.7 Review and Update of Drought Contingency Plan

As required by TCEQ rules, Fort Worth will review this drought contingency plan in 2029 and at least every five years thereafter. Additionally, the plan will be updated as appropriate based on new or updated information.

5. DROUGHT CONTINGENCY AND EMERGENCY WATER MANAGEMENT PLAN DEFINITIONS

Term	Definition
Aesthetic water use	Water use for ornamental or decorative features such as fountains, reflecting pools and water gardens.
Alternative Water Source	Means water produced by a source other than a water treatment plan and in not considered potable. These sources can include, but are not limited to: reclaimed/recycled water, collected rain water, collected grey water, private well water.
Athletic field	Means a sports playing field, the essential feature of which is turf grass, used primarily for organized sports for schools, professional sports, or sanctioned league play.
Automatic Irrigation System	Means a site specific system of delivering water generally for landscaping via a system of pipes or other conduits installed below ground that automatically cycles water use through water emitters to a preset program, whether on a designated timer or through manual operation.
Aquatic Life	Means a vertebrate organism dependent upon an aquatic environment to sustain its life.
Conservation	Those practices, techniques, and technologies that reduce water consumption; reduce the loss or waste of water; improve the efficiency in water use; and increase the recycling and reuse of water so that supply is conserved and made available for other or future uses.
Customer	Any person, company, or organization using water supplied by TRWD or through an entity supplied by TRWD.
Drip irrigation	An irrigation system (drip, porous pipe, etc.) that applies water at a predetermined controlled low-flow levels directly to the roots of the plant
Drought Contingency Plan	Means a strategy or combination of strategies for temporary supply management and demand management responses to temporary or potentially recurring water supply shortages and other water supply emergencies.

Fountain	An artificially created jet, stream or flow of water, a structure, often decorative, from which a jet, stream or flow of water issues.
Golf Course	Means an irrigated and landscaped playing area made up of greens, tees, fairways, roughs and related areas used for the playing of golf.
Hand-held hose	Means a hose physically held by one person, fitted with a manual or automatic shutoff nozzle.
Hand Watering	Means the application of water for irrigation purposes through a hand-held watering hose, watering can, or bucket.
Hose-end Sprinkler	Means a device through which water flows from a hose to a sprinkler to water any lawn or landscape.
Hosing	Means to spray, water, or wash with a water hose.
Industrial water use	Means the use of water for or in connection with commercial or industrial activities, including but not limited to, manufacturing, bottling, brewing, food processing, scientific research and technology, recycling, production of concrete, asphalt, and cement, commercial uses of water for tourism, entertainment, and hotel or motel lodging, generation of power other than hydroelectric and other business activities.
Irrigation system	Means a system of fixed pipes and water emitters that apply water to landscape plants or turfgrass, including, but not limited to, in-ground and permanent irrigation systems.
Lake, lagoon or pond	Means an artificially created body of fresh or salt water.

Landscape irrigation use	Water used for the irrigation and maintenance of landscaped areas, whether publicly or privately owned, including residential and commercial lawns, gardens, golf courses, parks, right-of-ways, medians and entry ways.
"New landscape" means	a. Installed during construction of a new house, multi-family dwelling, or commercial building; b. Installed as part of a governmental entity's capital improvement project; or c. Alters more than one-half the area of an existing landscape.
Non-essential water use	Water uses that are not required for the protection of public health, safety and welfare, such as: a. Irrigating landscape areas, including parks, athletic fields, and golf courses, except as otherwise provided under this plan; b. Washing any sidewalks, walkways, driveways, parking lots, tennis courts, or other hard-surfaced areas; except to alleviate a public health and safety issue; c. Washing any automobile, motorbike, boat (and/or trailer), airplane, or other vehicle except where required by law for safety and sanitary purposes. d. Washing buildings or structures for purposes other than immediate fire protection, or other uses provided under this plan; e. Filling, refilling, or adding to any swimming pools or Jacuzzi-type pools, except to maintain safe operating levels; f. Filling or operation of a fountain or pond for aesthetic or scenic purposes except when necessary to support aquatic life; g. Failure to repair a controllable leak within a reasonable time period after being directed to do so by formal notice; and h. Drawing from hydrants for construction purposes or any other purpose other than firefighting or protection of public drinking water supplies.
Park	Means a non-residential or multifamily tract of land, other than a golf course, maintained by a city, private organization, or individual, as a place of beauty or public recreation and available for use to the general public.
Power/Pressure washer	Means a machine that uses water or a water-based product applied at high pressure to clean impervious surfaces.
Pressure washer (High-Efficiency)	Means a machine that uses water or a water-based product applied at 1500 pounds per square inch (PSI) or greater.

Reclaimed Water	Municipal wastewater effluent that is given additional treatment and distributed for reuse in certain applications. Also referred to as recycled water.
Soaker hose	Means a flexible hose that is designed to slowly emit water across the entire length and connect directly to a flexible hose or spigot. Does not include hose that by design or use sends a fine spray in the air. It is not considered drip irrigation.
Splash Pad/Spray Park	Means an area for water play that has no standing water. Typically, they utilize various spray nozzles which spray water in multiple directions.
Swimming pool	Means any structure, basin, chamber, or tank including hot tubs, containing an artificial body of water for swimming, diving, or recreational bathing, and having a depth of two (2) feet or more at any point.
Vegetable garden	Means any noncommercial vegetable garden planted primarily for household use; "noncommercial" includes incidental direct selling of produce from such a vegetable garden to the public.
Well Water	Means water that has been, or is, obtained from the ground by digging, boring, or drilling to access an underground aquifer.

Appendix A

2024 TREATMENT PLANT CAPACITY

Treatment Plant	Approved Capacity (MGD)
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**

Appendix B

April 23, 2024 Council Minutes Adopting the Plan

Appendix C

Letters to Region C Water Planning Group and General Manager of TRWD

Date

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 2024 *Drought Contingency and Emergency Water Management Plan* (which is an update to the 2019 *Drought Contingency and Emergency Water Management 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 Council of Fort Worth adopted the updated Plan on April 23, 2024.

Sincerely,

Micah Reed
Water Conservation Manager
City of Fort Worth

Date

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 2024 *Drought Contingency and Emergency Water Management Plan* (which is an update to the 2019 *Drought Contingency and Emergency Water Management 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 Council of Keller adopted the updated Plan on April 23, 2024.

Sincerely,

Micah Reed
Water Conservation Manager
City of Fort Worth

APPENDIX F

RESOLUTION FOR ADOPTION OF WATER CONSERVATION PLAN

A Resolution

NO. 5943-04-2024

ADOPTING THE 2024 WATER CONSERVATION PLAN

WHEREAS, the City Council finds that conservation of water and protection of water supplies are in the best interests of its citizens; and

WHEREAS, on April 23, 2024, the City Council adopted a water conservation plan by approving Resolution No. 5943-04-2024; and

WHEREAS, House Bill (HB) 2660 adopted by the 78th Texas Legislation and rules adopted by the Texas Commission on Environmental Quality pursuant to HB 2660 require that, beginning May 1, 2005, water conservation plans for municipal use by public water suppliers must include specific, quantified five-year and ten-year targets for water savings including goals for water loss programs and goals for municipal use in gallons per capita per day, and requires that plans must be reviewed and updated every five years; and

WHEREAS, the water conservation plan attached hereto as Exhibit "A" proposes a goal of water usage of 150 gallons per capita per day by 2029 and 146 gallons per capita by 2034; and

WHEREAS, it is the intent of the City Council that the water conservation plan attached hereto as Exhibit "A" supersede the water conservation plan approved by the City Council on April 23, 2019.

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

The City Council adopts the Water Conservation Plan attached hereto as Exhibit "A" as official City policy.

Adopted this 23rd day of April 2024.

ATTEST:

By: Jannette S. Goodall
Jannette S. Goodall, City Secretary

CITY OF FORT WORTH TEXAS

City of Fort Worth, Texas

Mayor and Council Communication

DATE: 04/23/24 **M&C FILE NUMBER:** M&C 24-0359

LOG NAME: 60WATER CONSERVATION AND DROUGHT 5-YEAR PLAN UPDATE

SUBJECT

(ALL) Adopt Ordinance Adopting a Revised Drought Contingency and Emergency Water Management Plan and Amending Section 35-23 of the City Code to Incorporate the Drought Contingency and Emergency Water Management Plan into the City Code by Reference, and Adopt Resolution Adopting the 2024 Water Conservation Plan

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RECOMMENDATION:

It is recommended that the City Council:

1. Adopt the attached ordinance adopting a Revised Drought Contingency and Emergency Water Management Plan and amending Section 35-23 of the City Code to incorporate the Drought Contingency and Emergency Water Management Plan into the City Code by reference; and
2. Adopty the attached resolution adopting the 2024 Water Conservation Plan.

DISCUSSION:

The City is required to submit an updated Water Conservation Plan and Drought Contingency and Emergency Water Management Plan to the Texas Commission on Environmental Quality (TCEQ) and the Texas Water Development Board (TWDB) by May 1, 2024 in accordance with Title 30 of the Texas Administrative Code, Chapter 288. The City is also required to update its water conservation plan every five years in accordance with Title 30 of the Texas Administrative Code, Chapter 288.

Staff recommends that the City Council adopt the attached ordinance approving an revised Drought Contingency and Emergency Water Management Plan and amending Section 35-23(b) of the City Code to incorporate the updated plan into the City Code by reference.. The revised plan outlines water use restrictions that would be taken if water supply levels drop below a predetermined level, demand exceeds supply, a major system component is damaged, or contamination occurs. This plan maintains three stages escalating in severity based on the situation. Revisions are minimal and limited to incorporating the use of data analytics as aid to understanding water use, and to inform, educate, and regulate customers regarding water consumption during various drought stages.

The Water Conservation Plan, outlines the City's year-round strategies for promoting efficient water use by all customers. The plan includes five-year and ten-year targets for water savings, including goals for reducing water use as measured in gallons per capita day. Securing of future water supplies will require proving to state permitting agencies that existing water supplies are being used efficiently.

This project is located in ALL COUNCIL DISTRICTS.

A Form 1295 is not required because: This M&C does not request approval of a contract with a business entity.

A Form 1295 is not required because: This M&C does not request approval of a contract with a business entity.

FISCAL INFORMATION / CERTIFICATION:

The Director of Finance certifies that approval of these recommendations will have no material effect on City funds.

Submitted for City Manager's Office by:	Fernando Costa	6122
Originating Business Unit Head:	Chris Harder	5020
Additional Information Contact:	Micah Reed	8211