ORDINANCE NO. 2167

AN ORDINANCE AMENDING THE CITY OF KELLER CODE OF ORDINANCES, CHAPTER 19, WATER AND SEWERS, ARTICLE XIV, WATER CONSERVATION AND DROUGHT CONTINGENCY, SECTION 19-1600, ADOPTION OF PLAN AND POLICIES, BY DELETING ATTACHMENT “A”, WATER CONSERVATION PLAN, IN ITS ENTIRETY AND ADDING AN UPDATED ATTACHMENT “A”, WATER CONSERVATION PLAN, AND BY DELETING ATTACHMENT “B”, DROUGHT CONTINGENCY AND EMERGENCY WATER MANAGEMENT PLAN, IN ITS ENTIRETY AND ADDING AN UPDATED ATTACHMENT “B”, DROUGHT CONTINGENCY AND EMERGENCY WATER MANAGEMENT PLAN.

WHEREAS, the City of Keller, Texas recognizes that the amount of water available to its water customers is limited; and

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

WHEREAS, Chapter 11 of the Texas Water Code and Title 30 Texas Administrative Code Chapter 288 to require retail public water suppliers with 3,300 or more connections to submit an updated Water Conservation Plan and an updated Drought Contingency and Water Management Plan to the Texas Water Development Board (TWDB) and the Texas Commission on Environmental Quality (TCEQ) by May 1, 2024; and

WHEREAS, the City of Fort Worth updated its Water Conservation Plan and Drought Contingency and Emergency Water Management Plan in April of 2024; and

WHEREAS, the City of Keller, by contract, must adopt no less than the same restrictions and requirements of the City of Fort Worth as it relates to these plans; and

WHEREAS, the City has determined it is in the best interest of the public to adopt an updated Water Conservation Plan and an updated Drought Contingency and Emergency Water Management Plan; and

WHEREAS, pursuant to Chapter 54 of the Local Government Code, the City is authorized to adopt such Ordinances necessary to preserve and conserve its water resources.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF KELLER THAT:

Section 1: THAT, the above findings are hereby found to be true and correct and are incorporated herein in their entirety.

Section 2: THAT, Chapter 19, Water and Sewers, Article XIV, Water Conservation and Drought Contingency, Section 19-1600 Adoption of plan and policies, is hereby amended by deleting Attachment “A”, 2024 Water Conservation Plan, in its entirety and adding an updated Attachment “A”, Water Conservation Plan for the City of Keller, and by deleting Attachment “B” Drought Contingency and Emergency Water Management Plan, in its entirety and adding an updated Attachment “B”, 2024 Drought Contingency and Emergency Water Management Plan for the City of Keller.

Section 3: THAT, the City commits to implement the requirements and procedures set forth in the adopted Plans.

Section 4: THAT, the City Council does hereby find and declare that sufficient written notice of the date, hour, place and subject of the meeting adopting this Ordinance was posted at a designated place convenient to the public for the time required by law preceding the meeting, that such place of posting was readily accessible at all times to the general public, and that all of the foregoing was done as required by law at all times during which this Ordinance and the subject matter thereof has been discussed, considered and formally acted upon. The City Council further ratifies, approves, and confirms such written notice and the posting thereof.

Section 5: THAT, should any paragraph, sentence, clause, phrase or word of this Ordinance be declared unconstitutional or invalid for any reason, the remainder of this Ordinance shall not be affected.

Section 6: THAT, the City Manager or his designee is hereby directed to file a copy of this Ordinance, the updated Water Conservation Plan and the updated Drought Contingency and Emergency Water Management Plan with the TWDB, the TCEQ and the City of Fort Worth, as required.

Section 7: THAT, the City Secretary is hereby authorized and directed to cause publication of the descriptive caption of this Ordinance as an alternative method of publication provided by law.

Section 8: THAT, this Ordinance shall become effective upon its adoption and publication provided by law.

AND IT IS SO ORDAINED.

Passed and approved by a vote of 7 to 0 on this the 7th day of May 2024.

CITY OF KELLER, TEXAS

BY: _____
Armin Mizani, Mayor

ATTEST:

_____
Kelly Ballard, City Secretary

Approved as to Form and Legality:

_____
L. Stanton Lowry, City Attorney

ATTACHMENT " A"

City of Keller, Texas
P.O. Box 770
Keller, Texas 76244

Water Conservation Plan

Developed to comply with the requirements of
The Texas Commission on Environmental Quality
and The Texas Water Development Board

PWS# 2200096

Adopted by Ordinance No. :

Effective

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1.0 INTRODUCTION AND OBJECTIVES

Water supply has always been a key issue in the development of Texas. In recent years, the increasing population and economic development of North Central Texas have led to growing demands for water supplies. At the same time, local and less expensive sources of water supply are largely already developed. Additional supplies to meet future demands will be expensive and difficult to secure. Drought conditions in recent years have highlighted 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 high 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.[1] The TCEQ guidelines and requirements are included in Appendix B. The City of Keller (Keller) has developed this *Water Conservation Plan* in accordance with TCEQ guidelines and requirements. Since Keller is a wholesale water customer of the City of Fort Worth (Fort Worth), the *Water Conservation Plan*[2] for Fort Worth was consulted during the development of this Plan to ensure consistency. This *Water Conservation Plan* replaces the previous plan dated April 2019.

The objectives of this *Water Conservation Plan* are as follows:

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

[1] Superscripted numbers match references listed in Appendix A

2.0 TEXAS COMMISSION ON ENVIRONMENTAL QUALITY RULES

2.1 TCEQ RULES GOVERNING CONSERVATION PLANS

The TCEQ rules governing development of Water Conservation Plans for public water suppliers are contained in Title 30, Part 1, Chapter 288, Subchapter A, Rule 288.2 of the Texas Administrative Code, which is included in Appendix B. For the purpose of these rules, a Water Conservation Plan is defined as "A strategy or combination of strategies for reducing the volume of water withdrawn from a water supply source, for reducing the loss or waste of water, for maintaining or improving the efficiency in the use of water, for increasing the recycling and reuse of water, and for preventing the pollution of water." The elements in the TCEQ water conservation rules covered in this Plan are listed below.

Minimum Conservation Plan Requirements

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

- 288.2(a)(1)(A) – Utility Profile – Section 1.0 and Appendix C
- 288.2(a)(1)(B) – Record Management System – Section 5.3
- 288.2(a)(1)(C) – Specific, Quantified Goals – Section 4.0
- 288.2(a)(1)(D) – Accurate Metering – Section 5.1
- 288.2(a)(1)(E) – Universal Metering – Section 5.2
- 288.2(a)(1)(F) – Determination and Control of Water Loss – Section 5.4
- 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 6.5 and Appendix D
- 288.2(c) – Review and Update of Plan – Section 8.0

Additional Conservation 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 5.5
- 288.2(a)(2)(B) – Requirement for Water Conservation Plans by Wholesale Customers – Section 7.4

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 Keller include the following:

- 288.2(a)(3)(A) – Conservation Oriented Water Rates – Section 6.2
- 288.2(a)(3)(B) – Ordinances, Plumbing Codes or Rules on Water-Conserving Fixtures – Section 7.2
- 288.2(a)(3)(D) – Reuse and Recycling of Wastewater – Section 7.1
- 288.2(a)(3)(F) – Considerations for Landscape Water Management Regulations – Section 7.3

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").[3] 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. Keller has considered elements of the Guidance in preparation of this Plan.

3.0 DESCRIPTION OF SERVICE AREA AND UTILITY PROFILE

The City of Keller provided retail water service to approximately 46,000 people in 2022. In order to provide this water, Keller purchased an average of 300 million gallons of treated water from the City of Fort Worth per month in 2022, or a total of 3.6 billion gallons (11,000 acre-feet) for all of 2022. **Figure 3-1** shows the City of Keller service area in relation to the City of Fort Worth. The City of Fort Worth purchases raw water from TRWD which comes primarily from four major sources, as shown in **Figure 3-2**:

- The West Fork of Trinity River via Lake Bridgeport, Eagle Mountain Lake and Lake Worth
- The Clear Fork of the Trinity River via 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, located approximately 75 miles southeast of Fort Worth
- Richland-Chambers Reservoir, located approximately 75 miles southeast of Fort Worth.

Keller has no water or wastewater treatment plants. Treated water is purchased from the City of Fort Worth, and Keller's wastewater is treated by the Trinity River Authority. Appendix C contains Keller's most recent water utility profile based on the format recommended by TCEQ for retail suppliers.

FIGURE 3-1: KELLER'S WATER SERVICE AREA

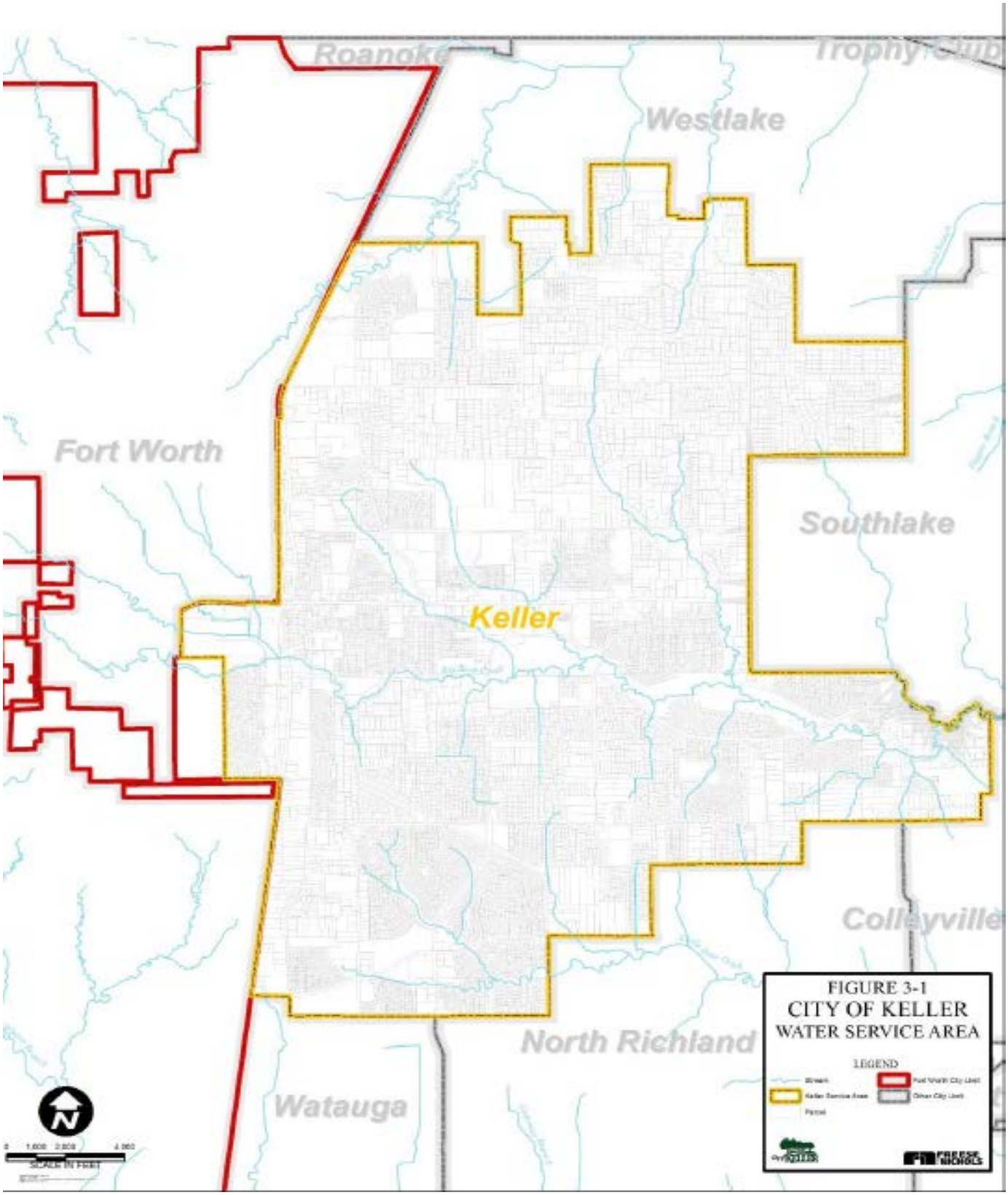
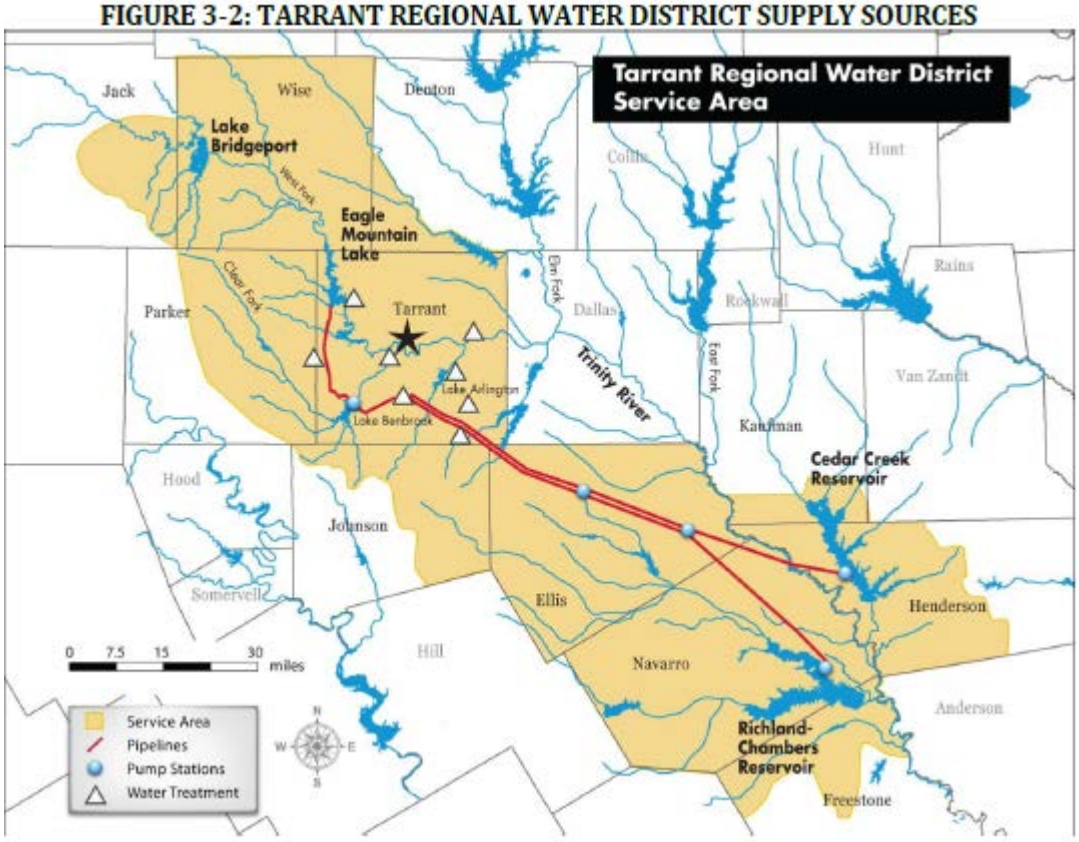


FIGURE 3-2: TARRANT REGIONAL WATER DISTRICT SUPPLY SOURCES



4.0 SPECIFICATION OF WATER CONSERVATION GOALS

TCEQ rules require the adoption of specific 5-year and 10-year water conservation goals for a Water Conservation Plan. The goals for this *Water Conservation Plan* include the following:

- Maintain the 5-year moving average total per capita water use and residential per capita water use below the specified amount in gallons per capita per day, as shown in Table 4-1.
- Implement and maintain a program of universal metering and meter replacement and repair as discussed in Section 5.2.
- Maintain the level of water loss percentage in the system below 8 percent annually in 2024 and subsequent years, as discussed in Section 5.5.
- Raise public awareness of water conservation and encourage responsible public behavior by a public education and information program as discussed in Section 6.1.
- Increase efficient water usage and decrease waste in lawn irrigation by enforcement of landscape water management regulations as described in Section 7.3.
- Develop a system-specific strategy to conserve water during peak demands, thereby reducing the peak use.

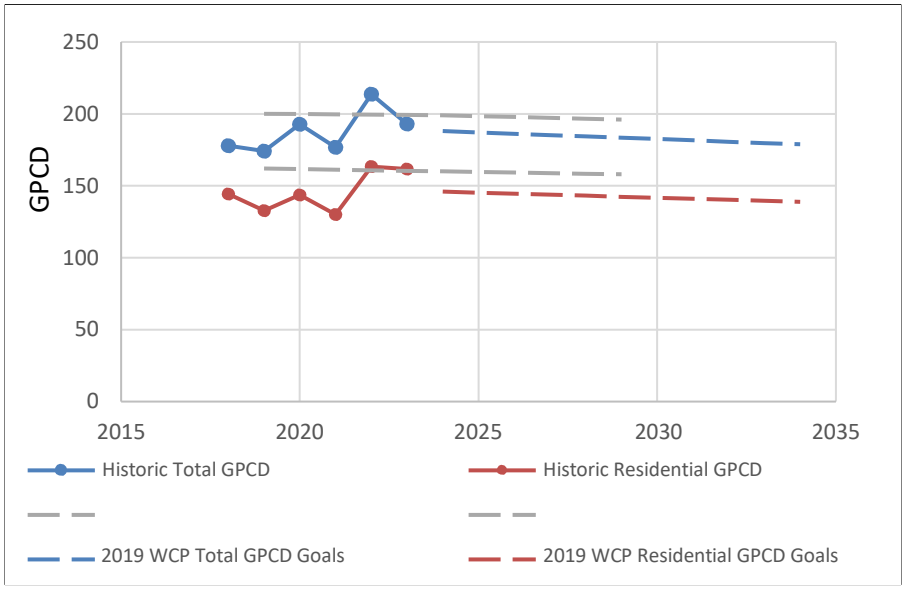
In the previous (2019) Plan, total per capita use goals were 199 gpcd by 2024 and 196 gpcd by 2029 which Keller has already achieved. During the period of 2018-2023, annual precipitation represented the range of totals the City typically experiences. Thus a six-year average (2018-2023) represents a range that captures wet and dry years and should be used as the baseline for goal development. As of 2023, Keller's six-year average total per capita use was 188 gpcd, 9 gpcd lower than the 2008-2017 ten-year average. Keller has developed the 2029 and 2034 goals based on an annual reduction of 0.5% per year and the expected savings from measures in this Plan. The current specific goals are outlined in **Table 4-1** and set a slightly lower goal reduction trend as the 2019 Water Conservation Plan shown in **Figure 4-1**. These goals should be measured against a 5-year average per capita, although some (dry) years will see higher per capita usage than these 5- year average goals. A series of dry years may lead to an average exceeding the goal.

TABLE 4-1: WATER CONSERVATION PLAN 5- AND 10-YEAR GOALS

Description	Units	2018-2023 Average	2029	2034
Total GPCD [a]	GPCD	188	183	177
Residential GPCD [b]	GPCD	143	142	139
Water Loss GPCD[c]	GPCD	14.0	14	14
Water Loss Percentage	%	7.4%	7%	7%

a. Total GPCD = (Total Gallons in System ÷ Permanent Population) ÷ 365
b. Residential GPCD = (Gallons Used for Residential Use ÷ Residential Population) ÷ 365
c. Water Loss GPCD = (Total Water Loss ÷ Permanent Population) ÷ 365
d. Water Loss Percentage = (Total Water Loss ÷ Total Gallons in System) X 100; or (Water Loss GPCD ÷ Total GPCD) X 100

FIGURE 4-1: HISTORIC TOTAL AND RESIDENTIAL GPCD AND GOALS



5.0 METERING, WATER USE RECORDS, CONTROL OF WATER LOSSES, AND LEAK DETECTION AND REPAIR

One of the key elements in water conservation is careful tracking of water use and control of losses through illegal diversions and leaks. Careful metering of water deliveries and water use, detection and repair of leaks in the distribution system, and regular monitoring of water losses are important in controlling losses.

5.1 ACCURATE METERING OF TREATED WATER DELIVERIES FROM FORT WORTH

Fort Worth supplies all of the water used by Keller and monitors all deliveries using meters with an accuracy of at least ±5 percent. Fort Worth's meter testing, repair, and replacement program is based on American Water Works Association (AWWA) standards. Fort Worth has developed a meter exchange program to replace inaccurate meters.

5.2 METERING OF WATER USE AND METER TESTING, REPAIR, AND REPLACEMENT

Keller meters all of its water uses, including retail sales and public and governmental users. Keller estimates the water used by the fire department for fire suppression and hydrant flushing based on the length of time the water flows and the water pressure.

Keller has initiated a program to test and calibrate all water meters that are two inches and larger in diameter on an annual basis. Smaller meters will be tested and calibrated when the water use patterns indicate a decline in water usage that cannot readily be explained. In the year 2000, Keller began a water meter replacement program and has since replaced all of the water meters, including retail sales, public, and governmental in the system. More recently, Keller implemented a program to install Advanced Metering Infrastructure (AMI) throughout its system. As of mid-2024, that program is nearing completion. AMI is one tool in the toolbox of a smart and effective utility which can serve to reduce per capita consumption and therefore delay the need for major capital expenses and rate adjustments, improve customer service, detect potential leaks, and streamline operational decision making and reduce operational costs.

5.3 RECORD MANAGEMENT SYSTEM

As required by Texas Administrative Code Title 30, Part 1, Chapter 288, Subchapter A, Rule 288.2 (a)(1)(B), Keller's record management system allows for the separation of water sales and uses into residential and non-residential classes. The non-residential water use can be tracked by the use of codes into the required categories of commercial, public/institutional, and industrial use categories. Keller's record management system allows water sales and uses to be tracked as separate categories, and includes water sales to multi-family housing in the residential sales category. This information is included in the TCEQ required Water Conservation Implementation Report, as described in Section 6.4. **Table 5-1** shows the number of meters by customer type for 2022.

TABLE 5-1: METER TYPE DISTRIBUTION

Meter Size	Total Number
Residential Single Family	14,740
Residential Multi Family	43*
Commercial	1,009
Institutional	128
Total	**15,920**

*The 43 meters serve 1,956 multi-family units

5.4 DETERMINATION AND CONTROL OF WATER LOSS

Total water loss is the difference between water delivered from Fort Worth and authorized consumption by Keller's customers. Authorized consumption includes billed metered uses, unbilled metered uses, and unbilled unmetered uses such as firefighting and releases for flushing of lines. Water losses include two categories:

- Apparent losses such as inaccuracies in customer meters. (Customer meters tend to run more slowly as they age and under-report actual use).
- Unauthorized consumption due to illegal connections and theft. (Ordinance to protect against losses is included in Appendix E).
- Real Losses due to water main breaks and leaks in the water distribution system and unreported losses.

Measures to control water losses are part of the routine operations of the City of Keller. Maintenance crews and personnel are asked to look for and report evidence of leaks in the water distribution system. The leak detection and repair program is described in Section 5.5 below. Meter readers are asked to watch for and report signs of illegal connections, so they can be addressed quickly. Water losses are included in the Utility Profile in Appendix C. In the previous Plan, water losses averaged 5 percent of the total water

used in Keller. As of 2023, the six-year average water loss has remained at approximately 7.4 percent of the total water used in Keller. The goals for water loss are shown in **Table 5-2**.

TABLE 5-2: WATER LOSS 5- AND 10-YEAR GOALS

Description	Units	2018-2023 Average	2029	2034
Water Loss GPCD [a]	GPCD	14.0	14	14
Water Loss Percentage [b]	%	7.4%	7%	7%

a. Water Loss GPCD = (Total Water Loss ÷ Permanent Population) ÷ 365
b. Water Loss Percentage = (Total Water Loss ÷ Total Gallons in System) x 100; or (Water Loss GPCD ÷ Total GPCD) x 100

5.5 LEAK DETECTION AND REPAIR

The City of Keller will begin an active leak detection and repair program as part of the implementation of this Plan. Components of the active leak detection and repair program will include:

- City crews and personnel are asked to continue looking for and reporting evidence of leaks in the water distribution system during their normal duties.
- Keller has a 24 hour hotline where main breaks and leaks can be reported.
- The City has implemented a work order system to track all of the identified leaks, repairs and estimated real losses.
- Based on the work order system, the City will build a database tied to GIS of areas within the water distribution system in which numerous leaks and line breaks are reported or detected for replacement as funds become available.
- Keller has set aside an annual budget amount dedicated for line replacement for areas identified in the database.

The City in the past has made an adjustment for water leaks within their billing system if the use is three times greater than the average monthly use and the customer provided documentation that the leak has been repaired in a timely manner.

5.6 MONITORING OF EFFECTIVENESS AND EFFICIENCY

The City of Keller will maintain a database of information regarding water sales and use, water losses, and leak detection and repair activities to determine the effectiveness of the programs.

6.0 OTHER REQUIRED CONSERVATION MEASURES

6.1 PUBLIC EDUCATION AND INFORMATION

The continuing public education and information campaign on water conservation includes the following elements:

- Include water conservation information with utility bills. Information will cover material developed by the City of Keller and material obtained from the TWDB, the TCEQ, and other sources.
- Encourage local media coverage of water conservation issues and the importance of water conservation, including local cable television, radio, and newspaper.
- Notify local organizations, schools, and civic groups that City staff are available to make presentations on the importance of water conservation and ways to save water.
- Promote the *Texas Smartscape* website (www.txsmartscape.com) and provide water conservation brochures and other water conservation materials available to the public at City Hall and other public places.
- Make information on water conservation available on the City's website (www.cityofkeller.com), and include links to the *Texas Smartscape* website, and links to information on water conservation on the TWDB and TCEQ websites. More information about public awareness campaigns can be found in Section 7.0.
- Participate in the education programs being used by Fort Worth and the Tarrant Regional Water District for students and the public (www.savetarrantwater.com).
- Provide a public feedback comment window on the City's water conservation website (cityofkeller.com).
- Participate in the TRWD interactive weather station program through information and a link on the City's website (www.cityofkeller.com).

6.2 WATER RATE STRUCTURE

The City of Keller applies an increasing block water rate structure that is intended to encourage water conservation and discourage excessive use and waste of water. The water rate structure is broken down into residential rates and non-residential rates, and is provided in **Table 6-1** and **Table 6-2**. Both residential and non-residential customers are charged a minimum water rate of $23.12 per month for a standard sized meter. The rates shown in the tables below were effective as of October 1, 2023 and are subject to

change as the City continues to refine its rate structures to improve the impact on water conservation and manage the cost of service most effectively.

TABLE 6-1: RESIDENTIAL WATER RATES

Volume (gal/month)	Rate ($/1,000 gal)
0-2,000	3.45
2,001 – 10,000	4.72
10,001 – 20,000	5.15
20,001 – 25,000	5.74
25,001 – 40,000	7.25
> 40,000	7.84

TABLE 6-2: NON-RESIDENTIAL WATER RATES

Volume (gal)	Rate ($/1,000 gal)
0-2,000	3.45
2,001 – 10,000	4.72
10,001 – 20,000	5.91
20,001 – 25,000	6.76
25,001 – 40,000	7.25
> 40,000	7.84

6.3 RESERVOIR SYSTEM OPERATION

Keller purchases treated water from the City of Fort Worth who in turn purchases raw water from TRWD. Thus, Keller does not have surface water supplies for which to implement a reservoir system operation plan. TRWD's permits allow for coordinated operation of its reservoirs.

The TRWD operates its system based on District operating policies, contractual agreements and permit requirements. TRWD is responsible for operation of their 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. 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. For more information regarding TRWD's Reservoir System Operation refer to TRWD's Water Conservation Plan[4].

6.4 IMPLEMENTATION AND ENFORCEMENT

The City of Keller completes the TCEQ required *Water Conservation Implementation 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, Keller must document the reasons why. The amount of water saved is also documented in this report.

Appendix E includes a copy of the ordinance related to illegal connections and water theft. Appendix F contains a copy of the ordinance adopted by the City Council regarding this *Water Conservation Plan*. The ordinance designates responsible officials to implement and enforce the *Water Conservation Plan*.

6.5 COORDINATION WITH REGIONAL WATER PLANNING GROUPS

The service area of the City of Keller is located within the Region C Water Planning Group and the Tarrant Regional Water District, and Keller will provide a copy of this *Water Conservation Plan* to both groups. Appendix D includes copies of the letters sent to the Chair of the Region C Water Planning Group, the General Manager of TRWD, and the Water Director of Fort Worth with copies of the Plan.

7.0 ADDITIONAL CONSERVATION EFFORTS

7.1 REUSE AND RECYCLING OF WASTEWATER

The City of Keller does not own and operate its own wastewater treatment plant. Keller's wastewater is treated by the Trinity River Authority.

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

7.2 WATER-CONSERVING PLUMBING FIXTURES

The City of Keller adopted the International Plumbing Code, 2015 Edition with modifications in Chapter 14 of the City of Keller Code of Ordinances. The Texas Health and Safety Code, Title 5, Subtitle B, Chapter 372 effective January 1, 2014, 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 Keller that have been adopted for the *2021 Region C Water Plan*[4] accounts for the new plumbing code requirement.

7.3 LANDSCAPE WATER MANAGEMENT

Keller has an existing landscape and irrigation ordinance which prohibits wasting water. This ordinance prohibits watering between 10 a.m. and 6 p.m. year round. In addition, the irrigation ordinance requires that only licensed irrigators alter existing or install new irrigation systems within Keller. Keller has adopted ordinances to require rain and freeze sensors on new irrigation systems and that those sensors be properly functioning.

Keller has utilized Tarrant Regional Water District's Residential Sprinkler System Evaluation Program. This program makes recognized industry professionals available to Keller residents at no cost, consists of a comprehensive look at their irrigation system and controller, and provides a valuable, detailed report with recommended changes to help increase efficiency and reduce water waste. Between October 2017 and September 2018, 68 Keller residents took advantage of the program.

Keller, as a wholesale customer of the City of Fort Worth, adopted a year-round no more than twice per week watering schedule on June 17, 2014. Keller amended the landscape and irrigation ordinance to include a mandatory twice per week watering schedule similar to Stage 1 of its drought plan. The schedule is included as **Table 7-1**. Preliminary analysis of alternative watering schedules was evaluated as part of this update, but no changes to the schedule were made for this Plan.

TABLE 7-1: 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)

7.4 REQUIREMENT FOR WATER CONSERVATION PLANS BY WHOLESALE CUSTOMERS

The City of Keller does not provide wholesale water to any customer. The requirement associated with wholesale water contracts as stated in Title 30, Part 1, Chapter 288, Subchapter A, Rule 288.2 of the Texas Administrative Code does not apply to any of Keller's Contracts.

7.5 REGIONAL WATER CONSERVATION PUBLIC AWARENESS CAMPAIGN

TRWD participates in the regional water conservation public awareness campaign with the City of Dallas and North Texas Municipal Water District. The current campaign, "Water is Awesome. Use It. Enjoy It. Just Don't Waste It," is entering its 9th year and includes television, radio, print and digital media. Media outreach is used to increase public awareness on the value of water and encourage adoption of outdoor water efficient behaviors. The City of Keller will support the regional campaign by using, promoting and sharing related campaign resources to our customers.

7.6 WEEKLY WATERING ADVICE SERVICE

TRWD owns and operates four weather stations in Tarrant County. The stations are integrated into the Texas ET Network. Texas ET Network and National Weather Service data is used to calculate accurate weekly watering advice across North Central Texas and the service is map based. Users can sign up to receive weekly emails and/or text messages every Monday for that week's watering advice. The advice is also shared through social media channels. The program gives residents information to water only when

needed and to reduce overwatering. It is a regional program and joint-funded with the City of Dallas. The City of Keller will promote the weekly watering advice and encourage participation to our customers.

7.7 SAVE TARRANT WATER PROMOTION

TRWD operates and maintains SaveTarrantWater.com as a resource to consumers. Regional conservation program information, DIY videos, and Green Pros listing can be found on the website. Save Tarrant Water is also active on social media as a way to promote new information, provide tips, and support customer city efforts. The City of Keller will promote and share Save Tarrant Water resources to our customers.

7.8 YOUTH EDUCATION PROGRAMS

TRWD has developed high-quality and effective youth education programs to increase the awareness, knowledge and appreciation of water and their ability and motivation to conserve and protect it. With a mix of contracted and TRWD-led lessons, the program aims to empower our youth to become water champions. The City of Keller will work with TRWD to participate in and promote youth education programs for our community.

7.9 LEARN AND GROW PROGRAM

Since 2017, TRWD has had an agreement with the Tarrant County Master Gardener Association to provide education and outreach in Tarrant County. Services include community presentations, workshops, event participation and innovative projects. Customer cities can request services from a pre-approved topic list. Example topics include: basic landscape design, native and adapted plants, vegetable gardening, and rainwater harvesting. At every program presentation, the speaker provides information about local water supplies and the importance of water conservation. Water conservation outreach materials are also provided at community events. The City of Keller will participate in and coordinate Learn and Grow activities for our community.

7.10 TWICE-PER-WEEK WATERING SCHEDULE PROMOTION

Outdoor water use, particularly lawn watering, can account for half or more of annual residential water use – and much more than that during the hot, dry Texas summers. Many homeowners have a tendency to overwater by as much as 2-3 times the amount needed by landscapes. Adopting twice-per-week schedules on outdoor watering with sprinklers is an effective way to reduce excessive water use and

stretch existing supplies. The City of Keller has adopted an ordinance related to a twice-per-week watering schedule.

7.11 ANNUAL CONSERVATION REPORTS

By May 1 of each year, conservation implementation reports are required to be submitted to the Texas Water Development Board. Additionally, a utility profile is submitted every 5 years. City of Keller will share these reports with TRWD so they can be included in an overall regional report and evaluation of regional conservation program effectiveness..

8.0 POTENTIAL FUTURE PROGRAMS

8.1 CONSERVATION TREASURES PROGRAM

TRWD created the Conservation Treasures Program in 2020 to promote environmentally responsible landscape features that inspire our community to appreciate and conserve water. The program assists in the creation and development of outdoor spaces that encourage public interest in water conservation, sustainable landscaping practices and local native, drought tolerant plants. Grants are available for school and community gardens and outdoor features that demonstration conservation strategies. The City of Keller will promote the Conservation Treasures Program and look for local opportunities and partners to promote efficient outdoor practices.

8.2 PARTICIPATE IN THE ANNUAL NORTH TEXAS REGIONAL WATER CONSERVATION SYMPOSIUM

Since 2019, the annual North Texas Regional Water Conservation Symposium has been jointly coordinated by the region's four major water providers – City of Dallas, North Texas Municipal Water District, Upper Trinity Regional Water District and TRWD. The event invites staff from customer cities to hear from speakers from across the state and nation about their experience and expertise. Discussions center on key elements of successful water conservation programs, communications, weather and climate, education, etc. City of Keller staff will support the annual symposium by attending, participating and considering the adoption of presented programs and strategies.

8.3 REGIONAL LANDSCAPE INITIATIVES EVALUATION

In 2021, the North Texas Regional Water Providers published the "Regional Landscape Initiatives – Best Management Practices for North Texas Water Conservation Programs" document. As a guide of proven programs that reduce water waste, customer cities of TRWD are encouraged to evaluate the resource and adopt measures to advance long-term water conservation goals. The City of Keller will evaluate the Regional Landscape Initiatives document and consider adoption of best management practices.

8.4 TRWD STRATEGIC WATER CONSERVATION PLAN UPDATE

TRWD adopted its first Strategic Water Conservation Plan in 2013. The document included a review of conservation programs throughout the country, evaluation of different conservation measures, selection of effective programs and an implementation plan. TRWD will begin an update of the plan in 2024,

anticipates it will take approximately one year to complete and encourages their customer cities to participate in the process. The City of Keller will work with TRWD and participate in the Strategic Water Conservation Plan update.

8.5 CONSERVATION COORDINATORS COLLABORATION

TRWD holds monthly meetings to discuss programs, issues and collaboration opportunities to implement conservation outreach initiatives. The goal is to increase communication, partnership and program implementation with all customer cities. The City of Keller will actively participate in conservation coordinators meetings.

8.6 WATER EFFICIENT RECOGNIZED GREEN PROFESSIONAL PROGRAM

The Water Efficient Recognized Green Professional Program (Green Pros) was developed in 2016 with the Texas A&M AgriLife Extension Service in Tarrant County and TRWD. In 2020, Upper Trinity Regional Water District became a program partner. Held annually during winter, participants attend 5 half-day courses over 5 weeks. Topics include water conservation, low impact design, turfgrass, irrigation and low water-use plants. The target audience of the program are green industry professionals such as landscapers, designers, and irrigators. Completing the program provides the participant the opportunity to be listed on SaveTarrantWater.com as a Green Pro. The City of Keller will support the Water Efficient Recognized Green Professional Program and promote the Green Pros listing to our customers.

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

Opportunity for public comment on the Plan was provided at a City of Keller City Council meeting on May 7, 2024. Appendices E and F contain copies of the ordinances related to illegal connections and water theft, as well as the ordinance adopting this Plan. Appendix C contains the adopted water utility profile for Keller.

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

Appendix A

List of References

APPENDIX A

LIST OF REFERENCES

1. Title 30 of the Texas Administrative Code, Part 1, Chapter 288, Subchapter A, Rules 288.1 and 288.2, downloaded from http://texreg.sos.state.tx.us/public/readtac$ext.ViewTAC?tac_view=4&ti=30&pt=1&ch=288, March 2024.
2. City of Fort Worth, "Water Conservation Plan", prepared by Plummer, April 2024.
3. Texas Water Development Board, Texas Commission on Environmental Quality, Water Conservation Advisory Council. "Guidance and Methodology for Reporting on Water Conservation and Water Use", December 2012
4. Tarrant Regional Water District, "Water Conservation and Drought Contingency Plan", prepared by the Tarrant Regional Water District, April 2024

Appendix B

Texas Commission of Environmental Quality Rules

APPENDIX B

TEXAS COMMISSION OF ENVIRONMENTAL QUALITY RULES ON MUNICIPAL WATER CONSERVATION AND DROUGHT CONTINGENCY 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 for the production of fibers;
(B) the practice of floriculture, viticulture, silviculture, and horticulture, including the cultivation of plants in containers or non-soil media by a nursery grower;
(C) raising, feeding, or keeping animals for breeding purposes or for the production of food or fiber, leather, pelts, or other tangible products having a commercial value;
(D) raising or keeping equine animals;
(E) wildlife management; and
(F) planting cover crops, including cover crops cultivated for transplantation, or leaving land idle for the purpose of participating in any governmental program or normal crop or livestock rotation procedure.
(2) Agricultural use--Any use or activity involving agriculture, including irrigation.
(3) 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 time frame.
(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
PART 1	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CHAPTER 288	WATER CONSERVATION PLANS, DROUGHT CONTINGENCY PLANS, GUIDELINES AND REQUIREMENTS
SUBCHAPTER A	WATER CONSERVATION PLANS
RULE §288.2	**Water Conservation Plans for Municipal Uses by Public Water Suppliers**

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

(1) Minimum requirements. All water conservation plans for municipal uses by public water suppliers must include the following elements:

(A) a utility profile in accordance with the Texas Water Use Methodology, including, but not limited to, information regarding population and customer data, water use data (including total gallons per capita per day (GPCD) and residential GPCD), water supply system data, and wastewater system data;

(B) a record management system which allows for the classification of water sales and uses into the most detailed level of water use data currently available to it, including, if possible, the sectors listed in clauses (i) - (vi) of this subparagraph. Any new billing system purchased by a public water supplier must be capable of reporting detailed water use data as described in clauses (i) - (vi) of this subparagraph:

(i) residential;

(I) single family;

(II) multi-family;

(ii) commercial;

(iii) institutional;

(iv) industrial;

(v) agricultural; and,

(vi) wholesale.

(C) specific, quantified five-year and ten-year targets for water savings to include goals for water loss programs and goals for municipal use in total GPCD and residential GPCD. The goals established by a public water supplier under this subparagraph are not enforceable;

(D) metering device(s), within an accuracy of plus or minus 5.0% in order to measure and account for the amount of water diverted from the source of supply;

(E) a program for universal metering of both customer and public uses of water, for meter testing and repair, and for periodic meter replacement;

(F) measures to determine and control water loss (for example, periodic visual inspections along distribution lines; annual or monthly audit of the water system to determine illegal connections; abandoned services; etc.);

(G) a program of continuing public education and information regarding water conservation;

(H) a water rate structure which is not "promotional," i.e., a rate structure which is cost-based and which does not encourage the excessive use of water;

(I) a reservoir systems operations plan, if applicable, providing for the coordinated operation of reservoirs owned by the applicant within a common watershed or river basin in order to optimize available water supplies; and

(J) a means of implementation and enforcement which shall be evidenced by:

(i) a copy of the ordinance, resolution, or tariff indicating official adoption of the water conservation plan by the water supplier; and

(ii) a description of the authority by which the water supplier will implement and enforce the conservation plan; and

(K) documentation of coordination with the regional water planning groups for the service area of the public water supplier in order to ensure consistency with the appropriate approved regional water plans.

(2) Additional content requirements. Water conservation plans for municipal uses by public drinking water suppliers serving a current population of 5,000 or more and/or a projected population of 5,000 or more within the next ten years subsequent to the effective date of the plan must include the following elements:

(A) a program of leak detection, repair, and water loss accounting for the water transmission, delivery, and distribution system;

(B) a requirement in every wholesale water supply contract entered into or renewed after official adoption of the plan (by either ordinance, resolution, or tariff), and including any contract extension, that each successive wholesale customer develop and implement a water conservation plan or water conservation measures using the applicable elements in this chapter. If the customer intends to resell the water, the contract between the initial supplier and customer must provide that the contract for the resale of the water must have water conservation requirements so that each successive customer in the resale of the water will be required to implement water conservation measures in accordance with the provisions of this chapter.

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

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

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

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

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

(E) a program for pressure control and/or reduction in the distribution system and/or for customer connections;

(F) a program and/or ordinance(s) for landscape water management;
(G) a method for monitoring the effectiveness and efficiency of the water conservation plan; and
(H) any other water conservation practice, method, or technique which the water supplier shows to be appropriate for achieving the stated goal or goals of the water conservation plan.
(b) A water conservation plan prepared in accordance with 31 TAC §363.15 (relating to Required Water Conservation Plan) of the Texas Water Development Board and substantially meeting the requirements of this section and other applicable commission rules may be submitted to meet application requirements in accordance with a memorandum of understanding between the commission and the Texas Water Development Board.
(c) A public water supplier for municipal use shall review and update its water conservation plan, as appropriate, based on an assessment of previous five-year and ten-year targets and any other new or updated information. The public water supplier for municipal use shall review and update the next revision of its water conservation plan every five years to coincide with the regional water planning group.

Source Note: The provisions of this §288.2 adopted to be effective May 3, 1993, 18 TexReg 2558; amended to be effective February 21, 1999, 24 TexReg 949; amended to be effective April 27, 2000, 25 TexReg 3544; amended to be effective October 7, 2004, 29 TexReg 9384; amended to be effective December 6, 2012, 37 TexReg 9515

Appendix C

City of Keller Water Utility Profile Based on TCEQ Format

Texas Commission on Environmental Quality

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

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

City of Keller - Utility Profile Based on TCEQ Format

Name:	City of Keller
Address:	PO Box 770
	Keller, TX 76244
Telephone Number:	(817)743-4000
Water Right No.(s):	--
Regional Water Planning Group:	Region C
Form Completed by:	Adam Conner
Title:	Freese and Nichols
Person responsible for implementing conservation program:	Hannah Smith
Signature:	Date:

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

UTILITY PROFILE

I. POPULATION AND CUSTOMER DATA

A. Population and Service Area Data

1. Attach a copy of your service-area map.
   See figure of service area in WCP

2. Service area size (square miles): 18.64

3. Current population of service area: 46,060

4. Current population served for:
   a. water: 46,060
   b. wastewater: 46,060

5. Population served by utility for the previous five years:

Year	*Population*
2018	44,620
2019	45,090
2020	45,400
2021	45,400
2022	46,060

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

Year	*Population*
2030	51,130
2040	51,974
2050	51,974
2060	51,974
2070	51,974
2080	51,974

7. List source or method for the calculation of current and projected population size.
   Historic population is from the City's Water Use Surveys. Projected population is from the draft 2026 Region C Plan.

B. Customers Data

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

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

Note: This represents retail connection count in 2022

Treated Water Users	*Metered*	*Non-Metered*	**Totals**
Residential - Single Family	14,740		14,740
Residental - Multi Family	43		43
Institutional	128		128
Commerical	1,009		1,009
Industrial	0		0
Agriculture	0		0
Reuse	0		0
Total Unmetered	0	0	0
TOTAL	**15,920**	**0**	**15,920**

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

Year	*2020*	*2021*	*2022*
Treated Water Users			
Residential - Single Family	67	-67	82
Residential - Multi Family	0	0	0
Institutional	-1	0	11
Commerical	3	-8	-23
Industrial	0	0	0
Agriculture	0	0	0
Reuse	0	0	0
Total Unmetered	1	-3	0
TOTAL	**70**	**-78**	**70**

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

Note: This represents highest retail customers from Jan.-Dec., 2022

Customer	*Use (1,000 gal/year)*	*Treated or Raw Water*
1. Keller ISD Natatorium	10,352	Treated
2. City of Keller Sports Complex	4,496	Treated
3. Olympus Stone Glen	8,006	Treated
4. Olympus Town Center	3,825	Treated
5. Getty Leasing Inc	3,442	Treated
6. Landscape System of Texas	3,414	Treated

II. WATER USE DATA FOR SERVICE AREA

A. Water Accounting Data

1. List the amount of water use for the previous five years (in 1,000 gallons.)

Indicate whether this is ☐ diverted or ☑ treated water.

Year / *Month*	*2018*	*2019*	*2020*	*2021*	*2022*
January	130,790	116,397	141,828	123,587	151,272
February	112,817	114,910	113,107	138,588	130,240
March	146,605	155,437	133,567	170,030	184,635
April	215,628	176,787	188,909	238,814	270,387
May	304,207	179,584	270,286	170,717	323,435
June	433,504	267,233	382,051	269,674	492,622
July	469,948	375,315	477,342	377,520	545,788
August	381,701	409,284	472,797	381,178	464,313
September	231,321	464,353	302,711	384,322	404,932
October	198,182	298,293	320,462	292,510	307,564
November	129,043	160,636	201,013	198,923	154,550
December	144,954	147,353	189,274	185,022	162,431
Totals	**2,898,700**	**2,865,581**	**3,193,347**	**2,930,885**	**3,592,169**

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

Treated surface water is delivered by Fort Worth Water to Keller

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

Year / *Account Types*	*2018*	*2019*	*2020*	*2021*	*2022*
Residential	2,350,008	2,185,982	2,380,264	2,155,758	2,746,253
Single-Family	*2,313,756*	*2,136,158*	*2,330,619*	*2,105,478*	*2,693,476*
Multi-Family	*36,251*	*49,824*	*49,645*	*50,280*	*52,777*
Commercial	353,318	371,640	385,534	328,242	464,433
Industrial/Mining	0	0	0	0	0
Institutional	59,678	64,308	66,942	86,096	69,305
Agriculture	0	0	0	0	0
TOTAL					

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

Year	*Amount (gallons)*	*Percent*
2018	126,202,885	4.4%
2019	233,997,750	8.2%
2020	320,163,847	10.0%
2021	351,486,876	12.0%
2022	302,622,677	8.4%
2023	43,057,555	1.3%

B. Projected Water Demands

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

Year	**Projected Demand of Served Population (AF/Y)**	**Source of data**
2022	10,066	*Actual Demand*
2023	10,416	*Interpolated*
2024	10,765	*Interpolated*
2025	11,115	*Interpolated*
2026	11,464	*Interpolated*
2027	11,814	*Interpolated*
2028	12,164	*Interpolated*
2029	12,513	*Interpolated*
2030	12,863	*2026 Region C Plan*
2031	12,881	*Interpolated*

Note: Projections for 2022-2030 are calculated by taking the 2022 actual demand and interpolating to the 2030 projection from the draft 2026 Region C Plan. Projections for 2030-2040 are calculated by interpolating between the 2030 and 2040 projections from the 2026 Region C Plan. Projections include TWDB estimated reductions for plumbing fixtures.

III. WATER SUPPLY SYSTEM DATA

A. Water Supply Sources

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

Water Type	*Source*	*Amount Authorized*
Surface Water	-	-
Groundwater	-	-
Contracts	City of Fort Worth	No set Contract amount; Fort
Other	-	Worth will supply amount
Total	-	equal to demand, capped at

B. Treatment and Distribution System

1. Design daily capacity of system:

Treatment Plant	Design Well Pumping Capacity (MGD)	Firm Well Pumping Capacity (MGD)
N/A Purchase Treated Water		
TOTAL		

2. Storage capacity: 10.0 MG
   a. Elevated 4.0 MG
   b. Ground 6.0 MG

3. If surface water, do you recycle filter backwash to the head of the plant?
   ☐ Yes ☐ No If yes, approximate amount (MGD):

IV. WASTEWATER SYSTEM DATA

A. Wastewater System Data (if applicable)

1. Design capacity of wastewater treatment plant(s) (MGD): 173.5

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

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

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

Treatment Plant Name	TCEQ Number	Permitted Discharge (MGD)*	Operator	Owner	Receiving Stream
Central Region Wastewater System	10303-001	162.0	TRA	TRA	West Fork Trinity River
Denton Creek Regional Wastewater System	13457-001 13457-002	11.5	TRA	TRA	Cade Branch, Denton Creek, Grapevine Lake, Whites Branch tributary

**Note: Permitted discharges listed respresent the current and build-out facility design capacities (MGD).*

B. Wastewater Data for Service Area (if applicable)

1. Percent of water service area served by wastewater system: 92% *remaining 8% is septic systems*

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

Year	*2019*	*2020*	*2021*	*2022*
Month				
January	99,517	99,697	87,943	80,772
February	80,069	96,114	90,717	75,399
March	91,362	117,435	88,392	79,292
April	98,977	91,196	87,391	82,120
May	110,399	103,298	117,497	84,769
June	88,593	93,109	103,915	78,411
July	84,873	89,890	87,986	76,212
August	81,590	83,381	89,578	84,063
September	74,964	86,733	77,772	80,769
October	82,942	81,576	80,711	84,593
November	83,071	78,963	80,604	87,694
December	88,695	85,532	80,362	94,333
Totals	**1,065,052**	**1,106,924**	**1,072,868**	**988,427**

Appendix D

Letters to Region C Water Planning Group, TRWD and Fort Worth

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 *Water Conservation Plan* (which is an update to the 2019 *Water Conservation Plan*) for the City of Keller. 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 Keller adopted the updated Plan on May 7, 2024.

Sincerely,

Alonzo Liñán, P.E.
Director of Public Works
City of Keller

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 *Water Conservation Plan* (which is an update to the 2019 *Water Conservation Plan*) for the City of Keller. 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 May 7, 2024.

Sincerely,

Alonzo Liñán, P.E.
Director of Public Works
City of Keller

Date

Mr. Chris Harder, P.E., Water Director
Fort Worth Water Department
P.O. Box 870
Fort Worth, TX 76101

Dear Mr. Harder:

Enclosed please find a copy of the2024 *Water Conservation Plan* (which is an update to the 2019 *Water Conservation Plan*) for the City of Keller. I am submitting a copy of this plan to the City of Fort Worth 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 May 7, 2024.

Sincerely,

Alonzo Liñán, P.E.
Director of Public Works
City of Keller

Appendix E

Illegal Water Connections and Theft of Water Ordinance

ORDINANCE NO. 1281

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF KELLER, TEXAS, PERTAINING TO ILLEGAL WATER CONNECTIONS AND/OR THE THEFT OF WATER FROM THE WATER SUPPLY OF THE CITY OF KELLER; PROVIDING A SEVERABILITY CLAUSE; PROVIDING A PENALTY; AUTHORIZING PUBLICATION; AND ESTABLISHING AN EFFECTIVE DATE.

WHEREAS, The *City* of Keller recognizes that the amount of water available to *its* water customers is limited; and

WHEREAS, pursuant to Chapter 54 of the Local Government Code, the *City* of Keller is authorized to adopt such policies necessary to preserve and conserve available water supplies; and

WHEREAS, the City of Keller seeks to minimize water losses to its supply of water from illegal connections and theft through the adoption of an ordinance pertaining to illegal water connections and theft of water.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF KELLER, TEXAS:

Section 1: THAT, the above findings are hereby found to be true and correct and are incorporated herein in their entirety.

Section 2: A person commits an offense of theft of water by any of the following actions:

(a) A person may not knowingly tamper, connect to, or alter any component of the City's water system including valves, meters, meter boxes, meter box lids, hydrants, lines, pump stations, ground storage tanks, and elevated storage tanks. This shall include direct or indirect efforts to initiate or restore water service without the approval of the City.

(b) If, without the written consent of the City Manager or the City Manager's designee, the person knowingly causes, suffers or allows the initiation or restoration of water service to the property after termination of services(s). For purposes of this section, it shall be assumed that the owner, occupant, or person in control of the property caused, suffered, or allowed the unlawful initiation or restoration of services(s).

(c) A person may not knowingly make or cause a false report to be made to the City of a reading of a water meter installed for metered billing.

(d) A person commits a separate offense each day that the person performs an act prohibited by this section or fails to perform an act required by this section.

Section 3: THAT, any person, firm or corporation violating any provision of this article shall be deemed guilty of a Class C misdemeanor and shall, upon final conviction thereof, be fined in an amount not to exceed $2,000.00 (Two Thousand Dollars)and/or discontinuance of water service by the City.

Section 4: THAT, if any section, paragraph, clause or provision of this Ordinance shall for any reason be held to be invalid or unenforceable, the invalidity or unenforceability of such section, paragraph, clause or provision shall not effect any of the remaining provisions of this Ordinance.

Section 5: THAT, the City Secretary is hereby authorized and directed to cause publication of the descriptive caption and penalty clause of this Ordinance as an alternative method of publication provided by law.

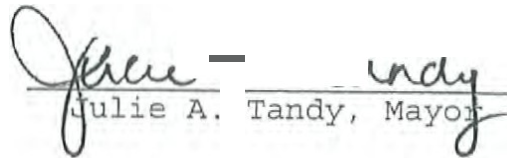
Section 7: THAT, this Ordinance shall become effective upon its adoption and publication provided by law.

AND IT IS SO ORDAINED.

Passed and approved on the first reading by a vote of 5 to 0 on this the 6th day of September, 2005.

Passed and approved on the second reading by a vote of 4 to 0 on this the 20th day of September, 2005.

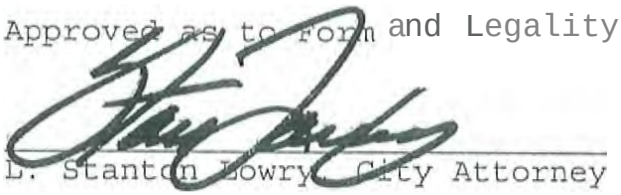
CITY OF KELLER, TEXAS

BY: 
Julie A. Tandy, Mayor

ATTEST:


Sheila Stephens, City Secretary

Approved as to Form and Legality:


L. Stanton Lowry, City Attorney

Appendix F

Ordinance Adopting Water Conservation Plan

ATTACHMENT " B"

City of Keller, Texas
P.O. Box 770
Keller, Texas 76244

Drought Contingency and Emergency Water Management Plan

Developed to comply with the requirements of
The Texas Commission on Environmental Quality
and The Texas Water Development Board

PWS# 2200096

Adopted by Ordinance No. :

Effective

TABLE OF CONTENTS

APPENDICES

1.0 INTRODUCTION AND OBJECTIVES

The City of Keller (Keller) has prepared this *Drought Contingency and Emergency Water Management Plan* in accordance with the requirements established by the Texas Commission on Environmental Quality (TCEQ), as well as the Texas Administrative Code in effect on March 27, 2024.[1] Keller purchases treated water from the City of Fort Worth (Fort Worth), who purchases raw water from Tarrant Regional Water District (TRWD). As a wholesale water customer of Fort Worth, Keller is required to institute and apply the same rationing, conservation measures and restrictions to the use of water as Fort Worth. This Plan complies with the requirements established in the City of Fort Worth *Drought Contingency and Emergency Water Management Plan for Retail and Wholesale Water Customers* adopted April 23, 2024.[2]

This Plan addresses all of the current TCEQ requirements for a Drought Contingency Plan which are included in Appendix B. This Plan replaces the Plan included in Ordinance 1928 dated April 16, 2019. The measures included in this *Drought Contingency and Emergency Water Management Plan* are intended to provide short-term water savings during drought or emergency conditions. Water savings associated with ongoing, long-term strategies are discussed in the City of Keller *Water Conservation Plan.*[3]

The purpose of this *Drought Contingency and Emergency Water Management 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

In the absence of drought response measures, water demands tend to increase during a drought due to increases in outdoor irrigation. The severity of a drought depends on the degree of depletion of water supplies, and on the relationship of demand to available supplies. Keller considers a drought to begin or end when Fort Worth has made the determination that the drought has begun or ended.

[1] Superscripted numbers match references listed in Appendix A.

2.0 TEXAS COMMISSION ON ENVIRONMENTAL QUALITY RULES

TCEQ rule Title 30, Part 1, Chapter 288, subchapter A, rule 288.1 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."[1]

The TCEQ rules governing development of Drought Contingency Plans for public water suppliers are contained in Title 30, Part 1, Chapter 288, Subchapter B, Rule 288.20 of the Texas Administrative Code, a current copy of which is included in Appendix B.

TCEQ's minimum requirements for Drought Contingency Plans are addressed in the following subsections of this report:

- 288.20(a)(1)(A) – Provisions to Inform the Public and Provide Opportunity for Public Input – Section 3.1
- 288.20(a)(1)(B) – Provisions for Continuing Public Education and Information – Section 3.2
- 288.20(a)(1)(C) – Coordination with the Regional Water Planning Group – Section 3.7
- 288.20(a)(1)(D) – Criteria for Initiation and Termination of Drought Contingency and Water Emergency Response Stages – Section 3.3
- 288.20(a)(1)(E) – Drought Contingency and Water Emergency Response Stages – Section 3.4
- 288.20(a)(1)(F) – Specific, Quantified Targets for Water Use Reductions – Section 3.4
- 288.20(a)(1)(G) – Water Supply and Demand Management Measures for Each Stage – Section 3.4
- 288.20(a)(1)(H) – Procedures for Initiation and Termination of Drought Contingency and Water Emergency Response Plan Stages – Section 3.3
- 288.20(a)(1)(I) - Procedures for Granting Variances – Section 3.5
- 288.20(a)(1)(J) - Procedures for Enforcement of Mandatory Restrictions – Section 3.6
- 288.20(a)(3) – Consultation with Wholesale Supplier – Section 3.3
- 288.20(b) – Notification of Implementation of Mandatory Measures – Section 3.4
- 288.20(c) – Review and Update of Plan – Section 3.8

3.0 DROUGHT CONTINGENCY AND EMERGENCY WATER MANAGEMENT PLAN

3.1 PROVISIONS TO INFORM THE PUBLIC AND OPPORTUNITY FOR PUBLIC INPUT

The City of Keller provided opportunity for public input in the development of this *Drought Contingency and Emergency Water Management Plan* by the following means:

- Providing written notice of the proposed Plan and the opportunity to comment on the plan by posted notice, and notice on the City's web site (www.cityofkeller.com).
- Making the draft plan available on the City's web site (www.cityofkeller.com).
- Providing the draft plan for review at Town Hall upon request.
- Providing opportunity for public comment on the plan at a City Council Meeting held on May 7, 2024.

3.2 PROVISIONS FOR CONTINUING PUBLIC EDUCATION AND INFORMATION

The City of Keller will inform and educate the public about the *Drought Contingency and Emergency Water Management Plan* by the following means:

- Preparing fact sheets describing the plan and making these available online and at various City of Keller sites, as well as at events where the Public Works Department may have a booth.
- Posting a copy of the Plan on the City's website (www.cityofkeller.com).
- Notifying local organizations, schools, and civic groups that staff are available to make presentations on the Plan.
- Providing a public feedback comment window on the City of Keller's website.

At any time that this *Drought Contingency and Emergency Water Management Plan* is activated or the stage changes, the City will notify local media of the issues, the current response stage (if applicable), and the specific actions required of the public. The information will also be publicized on the City of Keller's website (if available). Billing inserts may also be used as appropriate.

3.3 INITIATION AND TERMINATION OF DROUGHT CONTINGENCY AND EMERGENCY WATER MANAGEMENT STAGES

The provisions of this Plan shall apply to all persons, customers, and property utilizing potable water provided by the City of Keller. 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.

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 Contingency or Emergency Water Management Stage

The City Manager or their official designee may order the implementation of a Drought Contingency or Emergency Water Management stage, with notification of City Council, when one or more of the trigger conditions for that stage is met. The following actions will be taken when a Drought Contingency or Emergency Water Management stage is initiated:

- The public will be notified through local media and the City's web site as described in Section 3.2.
- The City of Fort Worth and Tarrant Regional Water District (TRWD) will be notified by telephone and with a follow-up letter, or email that provides details of the reasons for initiation of the Drought or Emergency Water Management stage.
- The City will notify the Executive Director of the TCEQ within 5 business days when mandatory provisions of the Plan are activated.

Stages imposed by the City of Fort Worth must be initiated by the City of Keller per the wholesale water contract with the City of Fort Worth.

For other trigger conditions internal to the City, the City Manager or their official designee may decide not to order the implementation of a drought response or water emergency stage, with notification of City Council, 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.

Termination of a Drought Contingency or Emergency Water Management Stage

The City Manager or their official designee may order the termination of a Drought Contingency or Emergency Water Management stage, with notification of City Council, when the conditions for termination are met or at the discretion of the City Manager or their official designee. The following actions will be taken when a Drought Contingency or Emergency Water Management stage is terminated:

- The public will be notified through local media and the City's web site as described in Section 3.2.
- The City of Fort Worth and TRWD will be notified by telephone with a follow-up letter or email.
- If any mandatory provisions of the *Drought Contingency or Emergency Water Management Plan* that have been activated are terminated, the City will notify the Executive Director of the TCEQ within 5 business days.

The City Manager or their official designee may decide not to order the termination of a drought response stage or water emergency, with notification of City Council, even though the conditions for termination of the stage are met. 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.

3.4 DROUGHT CONTINGENCY AND EMERGENCY WATER MANAGEMENT PLAN STAGES AND MEASURES

Stage 1 – Water Watch

Triggering Conditions

- Keller's water demand reaches or exceeds 90% of reliable delivery capacity for three consecutive days. The delivery capacity could be citywide or in a specified portion of the system.
- 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.

- Keller may initiate Stage 1 at any time if the Texas State Governor has issued a drought disaster declaration for Tarrant or the surrounding Counties.
- Fort Worth initiates 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 Fort Worth terminates its Stage 1 condition, or when the circumstances that caused the initiation of Stage 1 no longer prevail.

Goals for Use Reduction for Stage 1

The goal for water use reduction under Stage 1 – Water Watch is five percent (5%). If circumstances warrant, or if required by the City of Fort Worth, the City Manager or their official designee can set a goal for greater water use reduction.

Actions Available for Stage 1

The City Manager or their official designee may order the implementation of any or all of the actions listed below, as deemed necessary to achieve a five percent reduction in water use. The City Manager or their official designee must implement any action(s) required by the City of Fort Worth.

All Water Users

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

- Continue actions described in the Water Conservation Plan
- Prohibit 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.
- Prohibit 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;
  - 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; or
  - 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.
- Increase enforcement of the landscape watering restriction from the Water Conservation Plan to prohibit outdoor watering with sprinklers or irrigation systems between 10 a.m. and 6 p.m.
- Increase the enforcement of the landscape watering restriction from the Water Conservation Plan to 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.

- 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 Director of Public Works, 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 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. Golf courses are 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. Owners of such athletic fields are encouraged to reduce water use by five percent.

Exception Requiring a Variance:

- 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 Public Works 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.

- 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.
- 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 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.

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.
- 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.
- Per the contract, wholesale customers of Fort Worth 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

- Keller's water demand reaches or exceeds 95% of reliable delivery capacity for three consecutive days. The delivery capacity could be citywide or in a specified portion of the system.

- 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.
- Keller may initiate Stage 2 at any time if the Texas State Governor has issued a drought disaster declaration for Tarrant or the surrounding Counties.
- Fort Worth initiates 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 may terminate when Fort Worth terminates its Stage 2 condition, or when the circumstances that caused the initiation of Stage 2 no longer prevail.

Goals for Use Reduction for Stage 2

The goal for water use reduction under Stage 2 is a reduction of ten percent (10%). If circumstances warrant or if required by the City of Fort Worth, the City Manager or official designee can set a goal for greater water use reduction.

Actions Available for Stage 2

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

- Continue or initiate any actions available 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 Director of Public Works. This includes landscape watering at parks, golf courses, and sports fields. Keller 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). If drip irrigation or a soaker hose is used to water a foundation, the system must be placed within 24-inches of the foundation and must not produce a spray of water above the ground. Tree watering is limited to an area not to exceed the drip line of the tree.
  - Outdoor watering at service addresses with large multi-station irrigation systems may take place in accordance with a variance granted by the Director of Public Works, 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. Owners of such athletic fields are 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.)

- Prohibit use of water for dust control, except as required to protect public health.
- Prohibit 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.

<u>City and Local Governments</u>

- Review conditions or problems that caused Stage 2. Take corrective action.
- 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.

- Per the contract, wholesale customers of Fort Worth are required to institute and apply the same rationing, conservation measures or restrictions to the use of water 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 Director of Public Works. 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 Director of Public Works, the use of water from hydrants may continue until the Director of Public Works or their designee issues a determination on the petition for variance. If conditions do not allow, the Director of Public Works 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

- Keller's water demand has reached or exceeds 98% of reliable delivery capacity for one day. The delivery capacity could be citywide or in a specified portion of the system.
- 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.
- Keller may initiate Stage 3 at any time if the Texas State Governor has issued a drought disaster declaration for Tarrant or the surrounding Counties.
- Fort Worth initiates 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 may terminate when Fort Worth terminates its Stage 3 condition, or when the circumstances that caused the initiation of Stage 3 no longer prevail.

Goals for Use Reduction for Stage 3

The goal for water use reduction under Stage 3 is a reduction of twenty percent (20%). If circumstances warrant or if required by the City of Fort Worth, the City Manager or official designee can set a goal for greater water use reduction.

Actions Available for Stage 3

The City Manager or their official designee may order the implementation of any of the actions listed below, as deemed necessary. The City Manager or their 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). If drip irrigation or a soaker hose is used to water a foundation, the system must be placed within 24-inches of the foundation, and must not produce a spray of water above the ground. Tree watering is limited to an area not to exceed the drip line of the tree.
- Golf course greens only may be watered by hand-held hose as needed to keep them alive, however watering must be done before 10 a.m. or 6 p.m.
- 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 Public Works 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 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.
- 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.

<u>City and Local Governments</u>

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.
- 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 Fort Worth has imposed a reduction in water available to customers, impose the same percent reduction on Keller's customers.
- Per the contract, wholesale customers of Fort Worth 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.

<u>Commercial or Industrial</u>

- 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 only 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 Director of Public Works.
- 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 Director of Public Works. Fire hydrant use may be limited to only designated hydrants.

3.5 PROCEDURES FOR GRANTING VARIANCES TO THE PLAN

The Director of Public Works or their official designee may grant temporary variances for existing water uses otherwise prohibited under this *Drought Contingency and Emergency Water Management 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 or entity 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 Director of Public Works 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.

3.6 PROCEDURES FOR ENFORCING MANDATORY WATER USE RESTRICTIONS

Mandatory water use restrictions may be imposed in Stages 1, 2, and 3. These mandatory water use restrictions will be enforced by warnings and penalties as follows:

- On the first violation, customers will be given a written warning that they have violated the mandatory water use restriction.
- On the second and subsequent violations, citations may be issued to customers, with minimum and maximum fines established by ordinance.
- After three violations have occurred, the utility may cut off water service to the customer. The City may assess additional fees for disconnecting water service.

Appendix D contains a copy of the City of Keller City ordinance adopting this Plan and the enforcement actions and penalties.

3.7 COORDINATION WITH OTHER ENTITIES

The City of Keller's retail service area is located entirely within the Region C water planning area and the Tarrant Regional Water District. Appendix C includes copies of the letters sent to the Chair of the Region C Water Planning Group, the Tarrant Regional Water District, and the City of Fort Worth with a copy of this Plan.

3.8 REVIEW AND UPDATE OF DROUGHT CONTINGENCY AND EMERGENCY WATER MANAGEMENT PLAN

As required by TCEQ rules, Keller will review this *Drought Contingency and Emergency Water Management Plan* at least every five years. The Plan will be updated as appropriate based on new or updated information.

Appendix A

List of References

APPENDIX A

LIST OF REFERENCES

1. Title 30 of the Texas Administrative Code, Part 1, Chapter 288, Subchapter B, Rule 288.20, downloaded from http://texreg.sos.state.tx.us/public/readtac$ext.ViewTAC?tac_view=2&ti=30, March 26, 2024.
2. City of Fort Worth, *Drought Contingency and Emergency Water Management Plan for Retail and Wholesale Water Customers*, April 2024.
3. Freese and Nichols, Inc., *Water Conservation Plan*, prepared for the City of Keller, May 2024.

Appendix B

Texas Commission on Environmental Quality Rules on Drought Contingency Plans

APPENDIX B

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY RULES ON DROUGHT CONTINGENCY PLANS

TITLE 30	ENVIRONMENTAL QUALITY
PART 1	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CHAPTER 288	WATER CONSERVATION PLANS, DROUGHT CONTINGENCY PLANS, GUIDELINES AND REQUIREMENTS
SUBCHAPTER B	DROUGHT CONTINGENCY PLANS
RULE §288.20	**Drought Contingency Plans for Municipal Uses by Public Water Suppliers**

(a) A drought contingency plan for a retail public water supplier, where applicable, must include the following minimum elements.

(1) Minimum requirements. Drought contingency plans must include the following minimum elements.

(A) Preparation of the plan shall include provisions to actively inform the public and affirmatively provide opportunity for public input. Such acts may include, but are not limited to, having a public meeting at a time and location convenient to the public and providing written notice to the public concerning the proposed plan and meeting.

(B) Provisions shall be made for a program of continuing public education and information regarding the drought contingency plan.

(C) The drought contingency plan must document coordination with the regional water planning groups for the service area of the retail public water supplier to ensure consistency with the appropriate approved regional water plans.

(D) The drought contingency plan must include a description of the information to be monitored by the water supplier, and specific criteria for the initiation and termination of drought response stages, accompanied by an explanation of the rationale or basis for such triggering criteria.

(E) The drought contingency plan must include drought or emergency response stages providing for the implementation of measures in response to at least the following situations:

(i) reduction in available water supply up to a repeat of the drought of record;

(ii) water production or distribution system limitations;

(iii) supply source contamination; or

(iv) system outage due to the failure or damage of major water system components (e.g., pumps).

(F) The drought contingency plan must include specific, quantified targets for water use reductions to be achieved during periods of water shortage and drought. The entity preparing the plan shall establish the targets. The goals established by the entity under this subparagraph are not enforceable.

(G) The drought contingency plan must 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:

(i) curtailment of non-essential water uses; and

(ii) utilization of alternative water sources and/or alternative delivery mechanisms with the prior approval of the executive director as appropriate (e.g., interconnection with another water system, temporary use of a non-municipal water supply, use of reclaimed water for non-potable purposes, etc.).

(H) The drought contingency plan must include the procedures to be followed for the initiation or termination of each drought response stage, including procedures for notification of the public.

(I) The drought contingency plan must include procedures for granting variances to the plan.

(J) The drought contingency plan must include procedures for the enforcement of mandatory water use restrictions, including specification of penalties (e.g., fines, water rate surcharges, discontinuation of service) for violations of such restrictions.

(2) Privately-owned water utilities. Privately-owned water utilities shall prepare a drought contingency plan in accordance with this section and incorporate such plan into their tariff.

(3) Wholesale water customers. Any water supplier that receives all or a portion of its water supply from another water supplier shall consult with that supplier and shall include in the drought contingency plan appropriate provisions for responding to reductions in that water supply.

(b) A wholesale or retail water supplier shall notify the executive director within five business days of the implementation of any mandatory provisions of the drought contingency plan.

(c) The retail public water supplier shall review and update, as appropriate, the drought contingency plan, at least every five years, based on new or updated information, such as the adoption or revision of the regional water plan.

Source Note: The provisions of this §288.20 adopted to be effective February 21, 1999, 24 TexReg 949; amended to be effective April 27, 2000, 25 TexReg 3544; amended to be effective October 7, 2004, 29 TexReg 9384

Appendix C

Letters to Region C Planning Group, TRWD and Fort Worth

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 Keller. 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 Keller adopted the updated Plan on May 7, 2024.

Sincerely,

Alonzo Liñán, P.E.
Director of Public Works
City of Keller

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 Keller. 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 May 7, 2024.

Sincerely,

Alonzo Liñán, P.E.
Director of Public Works
City of Keller

Date

Mr. Chris Harder, P.E., Water Director
Fort Worth Water Department
P.O. Box 870
Fort Worth, TX 76101

Dear Mr. Harder:

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 Keller. I am submitting a copy of this plan to the City of Fort Worth 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 May 7, 2024.

Sincerely,

Alonzo Liñán, P.E.
Director of Public Works
City of Keller

Appendix D

Adoption of Drought Contingency and Emergency Water Management Plan