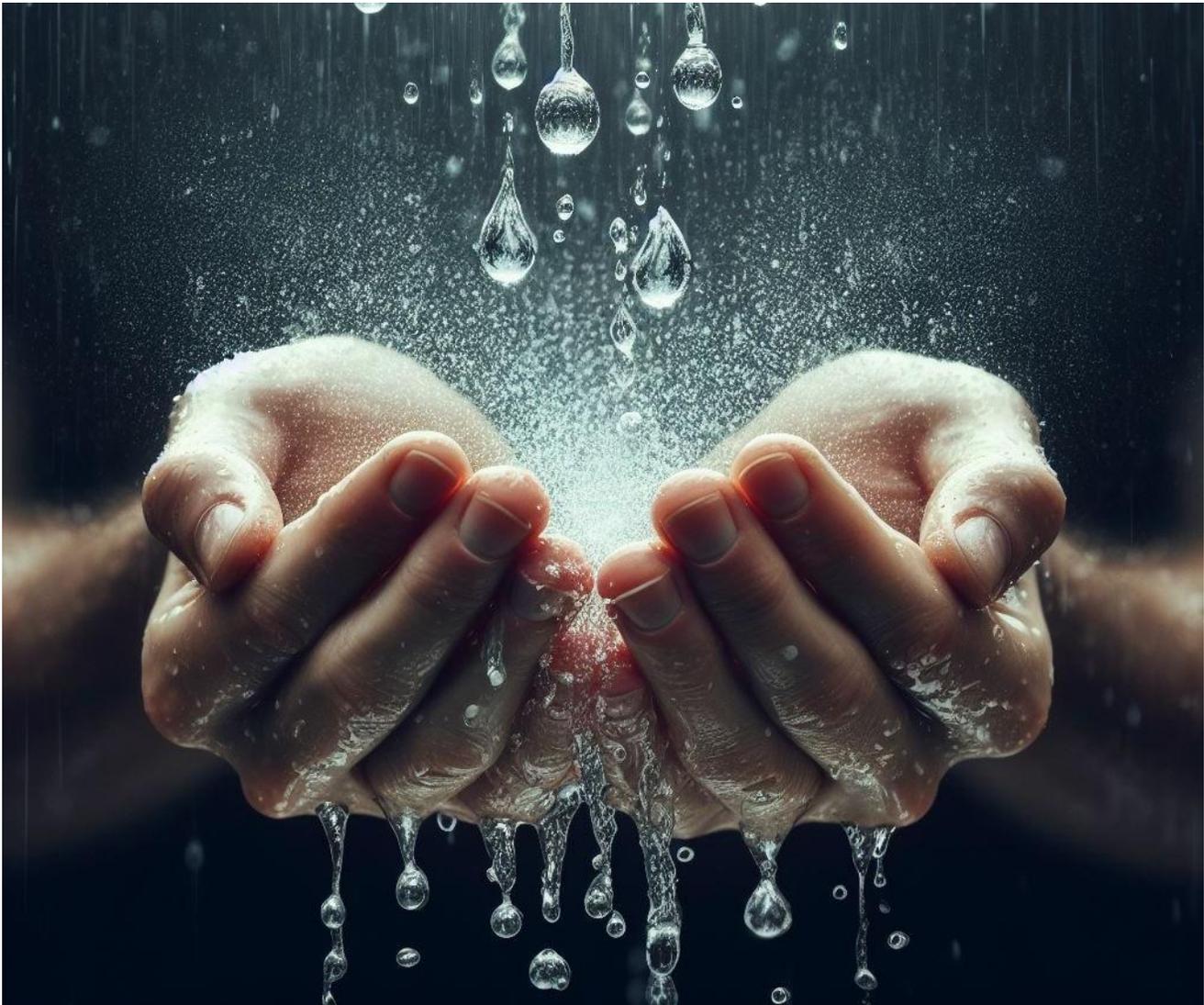


City of McKinney

2024 Water Conservation Plan



*This Water Conservation Plan has been developed in accordance with the requirements of Title 30 Texas Administrative Code (TAC) Chapter 288, Water Conservation Plans for Municipal Uses by Public Water Suppliers, stating public water suppliers are required to develop, implement and submit an updated Water Conservation Plan every five years. A copy of the version of Title 30 TAC Chapter 288 in place at the time of this Plan preparation is included in **Appendix B**.*

Adopted on 4/16/2024

TABLE OF CONTENTS

Water Conservation Plan

1.00 Introduction	1
2.00 Minimum Regulatory Requirements Checklist.....	1
2.01 Conservation Coordinator.....	2
2.02 Water Utility Profile.....	2
2.03 Record Management Program	2
2.04 5-Year and 10-Year Target Goals.....	2
2.05 Metering Device Program.....	3
2.06 Water Loss Control Program.....	4
2.07 Public Education Advocacy Resources.....	6
2.08 Water Rate Structure	12
2.09 Reservoir System Operations Plan.....	12
2.10 Means of Implementation and Enforcement	12
2.11 Regional Water Planning Group and NTMWD Notification	12
2.12 Contract Requirements for Wholesale Customers	13
3.00 Additional Conservation Strategies.....	13
3.01 Ordinances, Plumbing Codes, or Rules on Water-Conserving Fixtures.....	13
3.02 Outdoor Watering Schedules.....	14
3.03 Irrigation System Requirements for New and Commercial Systems.....	14
3.04 Landscape Water Management Provisions	16
3.05 Use of ET-Based Weekly Watering Advice/Recommendations	17
3.06 Rebates.....	18
3.07 Water Efficient Landscape Initiatives.....	18
3.08 Park/Athletic Field Conservation.....	19
3.09 Golf Course Conservation and Reuse.....	19

APPENDICES

APPENDIX A	List of References
APPENDIX B	Title 30 Texas Administrative Code Chapter 288
APPENDIX C	Water Utility Profile
APPENDIX D	NTMWD Member City and Customer Annual Water Conservation Report
APPENDIX E	Letters to Regional Water Planning Group and NTMWD
APPENDIX F	Adoption of Plans

DEFINITIONS

ATHLETIC FIELD means a public sports competition field, the essential feature of which is turf grass, used primarily for organized sports practice, competition or exhibition events for schools, professional sports and league play sanctioned by the utility providing retail water supply.

BEST MANAGEMENT PRACTICES are voluntary efficiency measures that save a quantifiable amount of water, either directly or indirectly, and that can be implemented within a specific time frame.

COMMERCIAL FACILITY means business, such as hotel, restaurant, or office building and the associated landscaping, but does not include the fairways, greens, or tees of a golf course.

CONSERVATION includes 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.

CUSTOMERS include those entities to whom NTMWD provides wholesale water that are not member cities of NTMWD.

DOMESTIC WATER USE water use for personal needs or for household or sanitary purposes such as drinking, bathing, heating, cooking, sanitation, or for cleaning a residence, business, industry, or institution.

DRIP IRRIGATION is a type of micro-irrigation system that operates at low pressure and delivers water in slow, small drips to individual plants or groups of plants through a network of plastic conduits and emitters; also called trickle irrigation.

DROUGHT for the purposes of this report, means an extended period of time when an area receives insufficient amounts of rainfall to replenish the water supply, causing water supply sources (in this case reservoirs) to be depleted.

ET/SMART CONTROLLERS are irrigation controllers that adjust their schedule and run times based on weather data. These controllers are designed to replace the amount of water lost to evapotranspiration.

EVAPOTRANSPIRATION represents the amount of water lost from plant material to evaporation and transpiration. The amount of ET can be estimated based on the temperature, wind, and relative humidity.

ENVIROSCAPE is a small-scale, hands-on, interactive learning tool that displays the direct impacts of pollution on streams.

EXECUTIVE DIRECTOR means the Executive Director of NTMWD and includes a person the Executive Director has designated to administer or perform any task, duty, function, role, or action related to this Plan or on behalf of the Executive Director.

INDUSTRIAL FACILITY means business that uses water in processes designed to convert materials of a lower order of value into forms having greater usability and commercial value.

IRRIGATION SYSTEM is a system that is permanently installed on a site and is composed of an assembly of component parts that is permanently installed for the controlled distribution and conservation of water to irrigate, reduce dust, and control erosion in any type of landscape vegetation in any location. This term does not include a system that is used on or by an agricultural operation or connected to a groundwater well used by a property owner for domestic use.

LANDSCAPE means any plant material on a property, including any tree, shrub, vine, herb, flower, succulent, ground cover, grass or turf species, that is growing or has been planted out of doors.

LANDSCAPE IRRIGATION USE water used for the irrigation and maintenance of landscaped areas, whether publicly or privately owned, including residential and commercial lawns, gardens, golf courses, parks, and right-of-way and medians.

MEMBER CITIES include the cities of Allen, Farmersville, Forney, Frisco, Garland, McKinney, Mesquite, Plano, Princeton, Richardson, Rockwall, Royse City, and Wylie, Texas, which are members of NTMWD.

MUNICIPAL USE means the use of potable water provided by a public water supplier as well as the use of treated wastewater effluent for residential, commercial, industrial, agricultural, institutional, and wholesale uses.

NEW LANDSCAPE means: (a) vegetation installed at the time of the construction of a residential or commercial facility; (b) installed as part of a governmental entity's capital improvement project; or (c) installed to stabilize an area disturbed by construction.

NORMALLY SCHEDULED TRASH/RECYCLING COLLECTION DAY means a day prescribed by a rule on which a person is permitted to irrigate outdoors.

POND is considered to be a still body of water with a surface area of 500 square feet or more. This does not include recreational swimming pools.

PUBLIC WATER SUPPLIER is an individual or entity that supplies water to the public for human consumption.

RECREATIONAL/SWIMMING POOL is defined as a body of water that involves contact recreation. This includes activities that are presumed to involve a significant risk of ingestion of water (e.g. wading by children, swimming, water skiing, diving, tubing, surfing, etc.)

REGIONAL WATER PLANNING GROUP is a group established by the Texas Water Development Board to prepare a regional water plan under Texas Water Code, §16.053.

RESIDENTIAL GALLONS PER CAPITA PER DAY means the total gallons sold for retail residential use by a public water supplier divided by the residential population served and then divided by the number of days in the year.

RETAIL CUSTOMERS include those customers to whom the utility provides retail water from a water meter.

REUSE is 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.

SPRINKLER/SPRAY IRRIGATION is the science of applying the necessary amount of water to promote or sustain healthy growth of plant material or turf. The water is distributed through a network that may consist of pumps, valves, pipes, and sprinklers.

SPRINKLER means an above-ground water distribution device that may be attached to a garden hose.

STEWARDSHIP the careful and responsible approach to supervising or managing an item, organization, or property.

RECREATIONAL/SWIMMING POOL is defined as a body of water that involves contact recreation. This includes activities that are presumed to involve a significant risk of ingestion of water (e.g. wading by children, swimming, water skiing, diving, tubing, surfing, etc.)

TOTAL GALLONS PER CAPITA PER DAY means the total amount of water diverted and/or pumped for potable use less wholesale sales divided by the total permanent population divided by the days of the year.

WATER CONSERVATION COORDINATOR is the person designated by a retail public water supplier that is responsible for implementing a water conservation plan.

WATER CONSERVATION PLAN means the Member City or Customer water conservation plan approved and adopted by the utility.

WATER RESOURCE AND EMERGENCY MANAGEMENT PLAN means a plan for temporary supply management and demand management responses to temporary and potentially recurring water supply shortages and other water supply emergencies required by Title 30 of the Texas Administrative Code, Chapter 288, Subchapter B. This is sometimes called a drought contingency plan.

ABBREVIATIONS

AWWA American Water Works Association
EPA..... Environmental Protection Agency
ET..... Evapotranspiration
gpf Gallons per Flush
gpmGallons per Minute
GPCD..... Gallons per Capita per Day
ICIM..... Industrial, Commercial, Institutional and Multifamily
IPC.....International Plumbing Code
NCTCOG.....North Central Texas Council of Governments
NTMWDNorth Texas Municipal Water District
OES Office of Environmental Sustainability
TAC.....Texas Administrative Code
TAWWATexas American Water Works Association
TCEQ.....Texas Commission on Environmental Quality
TRWD Tarrant Regional Water District
TWDBTexas Water Development Board
UTRWD Upper Trinity Regional Water District
WCP.....Water Conservation Plan
WREMP Water Resource and Emergency Management Plan

1.00 INTRODUCTION

The City of McKinney is a Member City of the North Texas Municipal Water District (NTMWD). This Plan was developed following the Texas Commission on Environmental Quality (TCEQ) guidelines and requirements governing the development of water conservation plans.

The goal of the Water Conservation Plan is to serve as good stewards of water resources by preserving water supplies for essential uses and the protection of public health. The objectives to achieve this goal are as follows:

- To reduce the loss and waste of water.
- To improve efficiency in both indoor and outdoor water use.
- To maximize the level of recycling and reuse.
- To protect and preserve environmental resources.
- To extend the life of current water supplies.
- To raise public awareness of water conservation and encourage responsible personal behavior through public education programs.

2.00 MINIMUM REGULATORY REQUIREMENTS CHECKLIST

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. A water conservation plan may be a separate document identified as such or may be contained within another water management document.” Recognizing the need for efficient use of existing water supplies, the TCEQ has developed guidelines and requirements governing the development of water conservation and drought contingency plans. The minimum TCEQ requirements and where they are addressed within this document are included in **Appendix B**.

2.01 CONSERVATION COORDINATOR

The designation of a Conservation Coordinator is required by House Bill 1648, effective September 1, 2017, and Texas Water Code Section 13.146 for all retail public water utilities with 3,300 service connections or more. The Conservation Coordinator will serve as the primary point of contact between the entity and the District on conservation matters.

The City of McKinney's Conservation Coordinator is identified below. The city will notify NTMWD if this changes at any point before the water conservation plan is updated.

Mary Abercrombie
972-547-7435
mabercrombie@mckinneytexas.org

2.02 WATER UTILITY PROFILE

This section contains a description of City of McKinney's service area and water system. This information can be reviewed in **Appendix C**, which contains a completed Water Utility Profile for the City of McKinney.

WATER SOURCES PROFILE

City of McKinney's existing water supply is composed of the following sources.

- Purchased treated water from NTMWD.

2.03 RECORD MANAGEMENT PROGRAM

The City of McKinney Utility Billing department utilizes a record management system that allows for the separation of water sales and uses into different categories of residential, commercial, public/institutional, and industrial categories. This information is included in the City of McKinney NTMWD Member City and Customer Water Conservation Report that is submitted annually and is included in **Appendix D**.

With the addition of a new work order management system, the Water Utilities department actively tracks water flushed for such activities as repairs, maintenance or inspections.

2.04 5-YEAR AND 10-YEAR TARGET GOALS

Specific 5-year and 10-year targets are required for a water conservation plan. The targets should include goals for water loss programs, goals for municipal use in total gallons per capita per day (GPCD) and residential GPCD. Per capita water use varies from year to year based on several factors including weather conditions, changing demographics and other variables.

Table 1: 5-Year and 10-Year Per Capita Water Use Goals

	Historic 5-Year Average	Baseline	5-Year Goal 2029	10-Year Goal 2034
Total (GPCD) ¹	159	159	151	143
Residential (GPCD) ²	96	96	91	86
ICIM (GPCD) ³	26	26	25	23
Water Loss (GPCD) ⁴	18	18	17	16
Water Loss (Percentage) ⁵	11%	11%	10%	8%

(5-Year Goal calculated at 5% of Baseline & 10-Year Goal calculated at 10% of Baseline, excluding Water Loss Percentage)

¹Total GPCD = (Total Gallons in System / Permanent Population) / 365

²Residential GPCD = (Gallons Used for Residential Use / Residential Population) / 365

³ICIM GPCD = (Gallons Used for Industrial, Commercial, Institutional and Multi-family Use / Permanent Population) / 365

⁴Water Loss GPCD = (Total Water Loss / Permanent Population) / 365

⁵Water Loss Percentage = (Total Water Loss / Total Gallons in System) x 100; or (Water Loss GPCD / Total GPCD) x 100

2.05 METERING DEVICE PROGRAM

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

ACCURATE METERING OF TREATED WATER DELIVERIES FROM NTMWD

Accurate metering of water diversions and deliveries, detection, and repair of leaks in the raw water transmission and potable water distribution systems and regular monitoring of non-revenue water are important elements of NTMWD’s program to control losses. Water deliveries from NTMWD are metered by NTMWD using meters with an accuracy of ±2%. These meters are calibrated on an annual basis by NTMWD to maintain the required accuracy.

METERING OF CUSTOMER AND PUBLIC USES

The City of McKinney uses Master Meter multi-jet meters on all residential applications and Master Meter ultrasonic meters on irrigation and commercial applications. All meters utilize the Master Meter Allegro AMI network and send readings twice daily as well as alarm notifications for leaks, pipe bursts, reverse flows, etc. All leaks, high consumption and zero usage accounts are inspected monthly to reduce and limit water loss as well as excessive use. The findings from the inspection are provided to the account holder in an effort of public outreach.

METER TESTING, REPAIR AND REPLACEMENT

The City of McKinney’s meter testing and replacement program goes above AWWA recommendations. Annually 2% of all residential meters are tested, in addition to randomly testing 50% of all commercial meters. The testing equipment utilized is a Mars test bench for in-house testing as well as a Mars field tester for on-site testing. As a component of the meter testing program, each testing unit is calibrated annually to ensure accuracy. Test data indicates the average meter accuracy at or above 98% for the last 5 years. The replacement program targets consumption as well as the age of meters. Components of the replacement program include:

- Standard replacement of mechanical meters registering over 2.5 million gallons.
- A 10-year replacement rule on all mechanical meters.
- Commercial meters with no moving parts are tested every 2 years to ensure accuracy, in addition to battery replacement, as needed.

2.06 WATER LOSS CONTROL PROGRAM

DETERMINATION AND CONTROL OF WATER LOSS

Total water loss is the difference between treated water pumped and authorized consumption or metered deliveries to customers. Authorized consumption includes billed metered uses, billed unmetered 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.
- Real losses due to water main breaks and leaks in the water distribution system and unreported losses.

METHOD FOR TRACKING

The completion of several annual reports, such as the NTMWD Member City and Customer Water Conservation Report, (also known as the Appendix D Report), the TWDB Water Loss Audit, and the TWDB Water Conservation Plan Report allows the City of McKinney to track the effectiveness of its water conservation programs over time and reassess those programs that are not providing water savings, ensuring maximum water use efficiency and greater

levels of conservation. A copy of the latest NTMWD Member City and Customer Water Conservation Report is included as **Appendix D**.

The city utilizes various other tools for tracking and controlling water loss. The work order management system tracks and trends monthly water loss and water sales through a dashboard that all staff can access. The AWWA water loss calculator is also a viable tool the city utilizes to compare industry standards and ranges.

LEAK DETECTION AND REPAIR

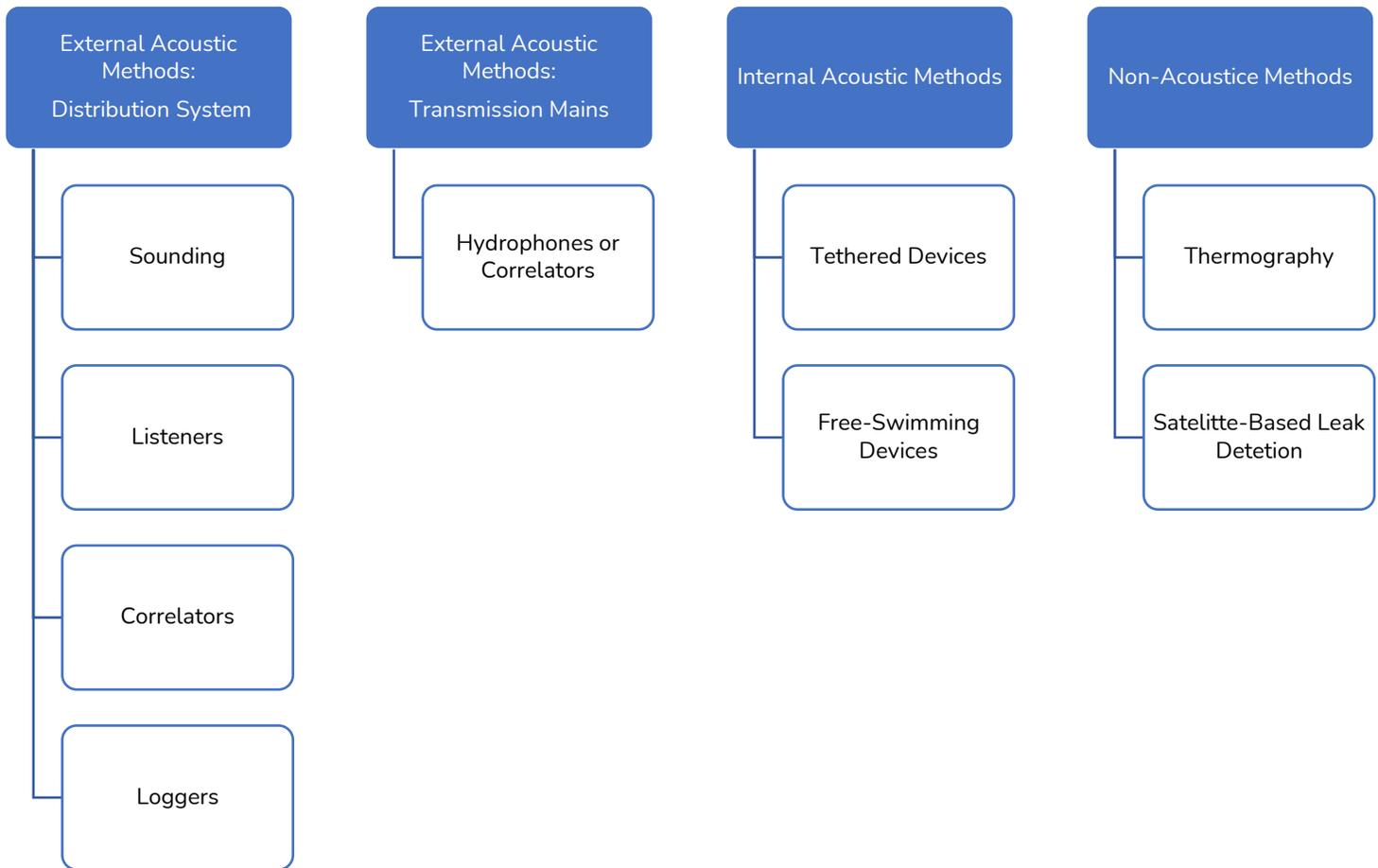
Detecting and repairing leaks is an important component of water conservation. With an advanced and aggressive leak detection program, the City of McKinney has experienced many benefits:

- Improved operational efficiency.
- Lowered water system operational costs.
- Reduced potential property damage and water system liability.
- Reduced water outage events.
- Lowered total water loss per connection per day and overall water loss percentage.*

The leak detection program is a collaborative effort that is continuing to develop. The program relies heavily on GIS data and mapping. GIS staff utilize the data and maps to identify subdivisions within the water distribution system that are potential risks for leaks. Utilizing various leak detection techniques, staff can pinpoint the location of the leak. Once a leak is identified, repair crews will schedule the work and generally within one week the leak is repaired.

* See **Appendix C** for specific data and information.

Leak detection techniques utilized by the City of McKinney include:



2.07 PUBLIC EDUCATION ADVOCACY RESOURCES

PUBLIC EDUCATION ADVOCACY AND SUPPORT RESOURCES

The City of McKinney utilizes and collaborates with NTMWD, Texas American Water Works Association (TAWWA), Texas Water Development Board (TWDB), and Texas Commission on Environmental Quality (TCEQ) to promote and facilitate educational goals related to water education. This involves various public education and outreach advocacy efforts such as:

- The “Water IQ: Know Your Water” campaign, which includes newspaper ads, radio spots, billboards, a website, and other forms of communication all intended to educate the public regarding water use and water conservation.
- The “Water My Yard” program, which encourages customers to sign-up and receive weekly watering advice recommending the adequate amount of supplemental water that is needed to maintain healthy grass in specific locations. Through a series of

selections regarding the customers irrigation system the program will provide a recommendation on how long (in minutes) that the irrigation system needs to run based on the past seven days of weather.

- “Water4Otter” is a water conservation campaign for kids launched by NTMWD. It is based on the insight that most parents agree they would listen if their kids asked them to conserve water.
- “Love Lavon Lake” is a water conservation campaign designed to help North Texans know their primary water source. The campaign was based on market research showing the more people know the source of their drinking water, the more likely they are to use it wisely and efficiently.
- NTMWD implemented the “#PledgetoPlantSmart” initiative that seeks to inspire positive change in water conservation by encouraging North Texas residents to do their part and plant smart by selecting native or adapted plants for their garden and landscaping.
- Utilize the regional outreach campaign called “Water is Awesome.” NTMWD Member Cities and Customers have access to various campaign materials. Which include a “customer city toolkit” that provides customizable resources allowing cities to incorporate their logos with the campaign brand for their website, social media, and print. In addition, the creation and use of the Regional Landscape Initiative. This document was developed as a resource of best management practices for municipal staff to help reduce water waste and encourage long-term water conservation in the North Texas region. Several of the optional water management measures included in this Plan are from this collaborative initiative.
- “The Stream Trailer” is a mobile, self-contained hands-on rolling classroom that demonstrates stream hydrology and how it is impacted by different land uses. NTMWD makes the stream trailer available and free of charge to Member Cities and Customers organizations in support of their outreach and educational goals. The stream trailer demonstrates the direct impact of urban development, agriculture, and natural landscapes on stream health. By bridging theory with real-world examples, the trailer is a tool for promoting environmental awareness and literacy.
- Conservation materials and more are made available to Member Cities and Customers through an online portal that is hosted by NTMWD. In addition to the portal, NTMWD actively provides technical assistance through the following:

- Holding regularly scheduled meetings with Member Cities and Customers for water supply updates, public campaign strategies, and legislative activities related to water and water conservation.
- NTMWD purchases AWWA Research Foundation Publications for use by Member Cities and Customers to further enhance resources for water efficiency, water rate structures, etc. Additionally, NTMWD pays for Member City and Customer membership to the Alliance for Water Efficiency.
- NTMWD developed the Model Water Conservation Plan for Member Cities and Customers.
- NTMWD holds numerous Water Conservation Workshops for staff of its Member Cities and Customers. These workshops have covered several conservation-related topics, including TCEQ requirements for water conservation and drought contingency plans, advanced water conservation strategies, current NTMWD water conservation efforts, current drought status, progress on future water supplies, and related topics. These workshops also provide training and education regarding water use accounting, irrigation evaluations, industrial, commercial, and institutional audits, and other procedures.
- The District's targeted program for Industrial, Commercial, Institutional and Multifamily (ICIM) users was created to categorize water use data and identify areas to concentrate water conservation efforts. This program can help Member Cities and Customers' ICIM water customers develop targeted methods for increasing water efficiency as an alternative to a traditional voluntary approach for water consumption improvement.
- As part of the ICIM program, the District engages with the Member and Customer Cities to encourage their ICIM customers to participate in Water Efficiency Opportunity Surveys. These surveys encompass a building audit that recommends various water conservation measures that can be implemented to save both money and water. Items addressed include toilet retrofits, urinal retrofits, showerhead retrofits, lavatory retrofits, non-lavatory faucet retrofits, leak repair, water cooled ice machine retrofit, commercial disposer, food steam, cooling tower efficiency and irrigation system efficiency.
- As part of its wastewater system, NTMWD developed Industrial Pretreatment Programs. By reducing allowable volumes of specific pollutants and encouraging pretreatment of industrial wastes, this joint effort by NTMWD and the cities has improved water quality in the region's streams and reservoirs.

- TAWWA plays an important role in advancing the understanding and management of water resources, water quality, and water supply within the region. The organization provides a platform for water professionals, engineers, and experts to collaborate, share knowledge, and address challenges related to water treatment, distribution, and conservation. TAWWA actively provides technical assistance through the following:
 - Holding conferences and seminars.
 - Providing publications that contribute to the development and dissemination of best practices in the field of water management.
 - TAWWA and NTMWD collectively host public education and outreach advocacy efforts such as, Water Trivia Nights. These trivia nights focus on the essential nature of water in everyday items, such as No Water No Beer and No Water No Wags.
 - “Water Geek” is a campaign designed to inform the public about the work water utilities perform. These videos support all water entities and provide educational resources.
- TWDB promotes environmental literacy through interactive resources. These resources provide a better understanding of water conservation practices and include the following programs:
 - A series of video modules focused on groundwater and how aquifers function.
 - “H2O Parody” is an interactive, Jeopardy style game designed to encourage classroom participation and discussion of water related topics.
 - “Interactive Water Cycle for Kids and Students” is a collaborative game illustrating the ever changing water cycle.
- “Take Care of Texas” is a statewide campaign from the TCEQ created to raise awareness on how each of us can make our state a better place to live, work, and play. Everyone’s first step to Take Care of Texas is to learn about ways to get involved and includes the following:
 - Interactive worksheets and lesson plans geared toward educating students on environmental issues, native landscapes, and the human impacts on the environment.
 - The promotion of the Take Care of Texas art competition encourages and challenges students to get creative and express their ideas on ways to care for the water and the environment.
 - Numerous printed and digital resources are available covering the topics of water conservation, proper waste disposal, and watershed protection.

CITY OF MCKINNEY PUBLIC EDUCATION PROGRAM

Conserving water goes beyond saving money, it ensures clean water for generations to come. The City of McKinney’s Office of Environmental Sustainability (OES) offers tools, programs, and resources to help customers conserve one of our most precious resources – water.

All conservation and efficiency measures are aimed at reducing water. This decreases the demand on our water treatment plants and extends the life of our water supplies. The Office of Environmental Sustainability provides educational and community outreach opportunities for McKinney residents and businesses while preserving and protecting the high quality of life for all residents, businesses and visitors to McKinney. This involves various public education and outreach advocacy efforts such as:

- Green seminars encompass various topics and are offered in-person or virtually. The seminars provide residents the opportunity to connect, get hands-on experience, and have their conservation questions answered.
 - Summer and Winter Water Conservation, educating on irrigation strategies for different seasons, reminding residents to adjust watering schedules, and sharing landscaping tips for water conservation during warmer and colder months.
 - Preventing Freeze Damage, empowering residents with winter water management know-how, from safely shutting down water supplies to techniques for insulating and protecting outdoor water sources.
 - Smart Watering for North Texas landscapes, discussing native and drought-tolerant plant species that are suitable for our region and educating on effective low-water options for their home gardens and planting methods.
 - Educational classes focused on Enviroscapes. The idea is to demonstrate how water pollution can result from a variety of activities and sources in our own backyard and neighborhoods, and how the pollution can impact our water resources.
 - Various educational trainings and seminars concentrated on water conservation, watershed protection, zero-waste initiatives, proper waste disposal, and land stewardship will be implemented in the coming years.
- Volunteer opportunities provide an outlet for public participation. The City of McKinney holds several events annually that encourage public participation and highlights the importance of reducing pollution in our waterways.
 - The Adopt-A-Spot Program encourages volunteers to maintain, clean, or beautify various landscapes, such as right of ways, publicly owned landscapes, and with permission from property owners, privately owned landscapes or areas. The program is organized at minimum of 4 times a year.

- One-Time Clean Ups are hosted by the OES and provide volunteers with the tools and supplies to clean up sites in need.
- New residents receive a complimentary “Welcome Packet” provided by the Chamber of Commerce. The packet includes a variety of information highlighting the many activities and resources available to residents. The information is also intended to educate the residents about their trash and recycling service, outdoor water conservation, and information related to Fats, Oils, and Greases.
- By attending various events in the community, staff can speak one-on-one and discuss important initiatives with residents.

Regular and consistent messaging regarding customer education provides an overall picture of water resources in the community. The Office of Environmental Sustainability collaborates closely with the Communications and Marketing department to achieve this goal. By providing relevant, timely, and fact-based information, we build trust and enhance customer service.

Measuring the effectiveness of public education activities is an essential step in ensuring goals are met and educational efforts have made a positive impact on the community. The OES staff utilize a variety of tracking tools and techniques to monitor the success and effectiveness of the programs and resources provided to the community.

2.08 WATER RATE STRUCTURE

The City of McKinney has a conservation-oriented rate structure for residential customers and for irrigation. Customers are billed at a base rate, determined by meter size, in addition to consumption. Under the tiered rate structure, rates increase as consumption increases, thus encouraging water conservation and discouraging excessive use and waste of water. This type of rate structure is an additional conservation strategy set forth by TCEQ. The current water rates can be found on the City of McKinney website at www.mckinneytexas.org.

2.09 RESERVOIR SYSTEM OPERATIONS PLAN

The City of McKinney purchases treated water from NTMWD and does not have surface water supplies for which to implement a reservoir system operations plan. NTMWD operates multiple sources of water supply as a system. The operation of the reservoir system is intended to optimize the use of the District's sources (within the constraints of existing water rights) while minimizing energy use cost for pumping, maintaining water quality, minimizing potential impacts on recreational users of the reservoirs and fish and wildlife.

2.10 MEANS OF IMPLEMENTATION AND ENFORCEMENT

City of McKinney staff will implement the Plan in accordance with adoption of the Plan. **Appendix F** contains a copy of the resolution adopted regarding this Plan. The document designates responsible officials to implement and enforce the Plan.

Procedures of enforcement are outlined in the City of McKinney Code of Ordinances, Chapter 110, Article VIII – Landscape Water Management and Article III – Water. The current code of ordinances can be found on the City of McKinney Code of Ordinances website at https://library.municode.com/tx/mckinney/codes/code_of_ordinances.

2.11 REGIONAL WATER PLANNING GROUP AND NTMWD NOTIFICATION

In accordance with TCEQ regulations, a copy of this water conservation plan was provided to the Region C Water Planning Group. Additionally, a copy of this water conservation plan was also sent to NTMWD. **Appendix E** includes a copy of the letters sent.

2.12 CONTRACT REQUIREMENTS FOR WHOLESALE CUSTOMERS

Every water supply contract entered into or renewed after official adoption of this water conservation plan, including any contract extension, will include a requirement that each wholesale customer of City of McKinney must develop and implement a water conservation plan and water conservation measures. The City of McKinney is not currently a wholesale customer. However, in the future if the situation does arise and if the customer intends to resell the water, then the contract between the initial supplier and customer must specify 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 Title 30 TAC Chapter 388. Note: NTMWD and the City of McKinney refer to their drought contingency plan (DCP) as the Water Resources Emergency Management Plan (WREMP) and should be considered synonymous with a DCP.

3.00 ADDITIONAL CONSERVATION STRATEGIES

These strategies represent measures to be implemented to promote water conservation. In addition to the minimum requirements, these strategies are essential to achieve the water conservation goals of the Plan. Water conservation should involve design, installation, service, and operation of an irrigation system in a manner that prevents waste of water, promotes the most efficient use of water, and applies the least amount of water that is required to maintain healthy individual plant material or turf, reduce dust, and control erosion.

3.01 ORDINANCES, PLUMBING CODES, OR RULES ON WATER-CONSERVING FIXTURES

The City of McKinney adheres to the International Plumbing Code (IPC). The IPC standards encourage water conservation and ensures that plumbing systems are installed correctly and meet minimum statutory standards. The minimum standards call for flows of no more than 2.2 gallons per minute (gpm) for faucets, 2.5 gpm for showerheads, maximum average flow rates of 1.28 gallons per flush (gpf) for toilets and 0.5 gpf for urinals. Similar standards are now required under federal law. These state and federal standards assure that all new construction and renovations will use water-conserving fixtures.

3.02 OUTDOOR WATERING SCHEDULES

The adoption of consistent weekly watering schedules is important for customer understanding and adherence.

- **Summer (April 1 – October 31)** – Spray irrigation with sprinklers or irrigation systems at each service address must be limited to no more than two days per week. Watering occurs on a day that is the customers normally scheduled trash/recycling collection day in the property’s residential trash/recycling collection zone or three (3) calendar days thereafter. Additionally, prohibit lawn irrigation watering from 10:00 a.m. to 6:00 p.m. Education should be provided that irrigation should only be used when needed, which is often less than twice per week, even in the heat of summer. Midday irrigation is not an optimal time to irrigate because evapotranspiration rates are higher, and plants are more susceptible to stress associated with factors such as higher temperatures and lower relative humidity.
- **Winter (November 1 – March 31)** – Spray irrigation with sprinklers or irrigation systems at each service address must be limited to no more than two days per week with education that less than once per week (or not at all) is usually adequate. Watering occurs on a day that is the customers normally scheduled trash/recycling collection day in the property’s residential trash/recycling collection zone or three (3) calendar days thereafter.

3.03 IRRIGATION SYSTEM REQUIREMENTS FOR NEW AND COMMERCIAL SYSTEMS

Texas legislation regulates irrigation systems and irrigators by adopting minimum standards and specifications for designing, installing, and operating irrigation systems. Populations over 20,000 must develop a landscape irrigation program that includes permitting, inspection, and enforcement of water conservation for new irrigation systems.

Irrigation requirements for new and commercial systems is outlined in the City of McKinney Code of Ordinances, Chapter 110, Article X – Landscape Irrigation. The current code of ordinances can be found on the City of McKinney Code of Ordinances website at https://library.municode.com/tx/mckinney/codes/code_of_ordinances. The Landscape Irrigation Ordinance addresses the following:

- 1) All new irrigation systems must be in compliance with state design and installation regulations (Title 30 TAC, Chapter 344). In most instances, the City of McKinney Landscape Irrigation Ordinance is more stringent than the Texas Administrative Code.
- 2) Require a permit for the installation of an irrigation system.

- 3) Require operational rain and freeze sensors and/or ET or Smart controllers on all new irrigation systems.
- 4) Require the use of EPA WaterSense labeled products on all irrigation controllers.
- 5) Require that new irrigation systems be inspected at the same time as the initial backflow preventer inspection.
- 6) Require a master valve to be installed on the discharge side of the backflow prevention device on all new installations.

WATER SAVING MEASURES FOR NEW IRRIGATION SYSTEM REQUIREMENTS

As discussed previously, the Texas legislation regulates irrigation systems and irrigators by adopting minimum standards and specifications for designing, installing, and operating irrigation systems. Conservation practices can be improved with these additional water savings measures for new irrigation systems.

The City of McKinney promotes the use of the following watering saving measures for new irrigation systems:

- Require property owners who install their irrigation system to also comply with the adopted city ordinance.
- Require submission of the irrigation plan in conjunction with the permit application to the applicable city official/department.
- Require all new irrigation systems to not utilize above-ground spray in landscapes that are less than 48 inches in either length or width and which contain impervious pedestrian or vehicular traffic surfaces along two or more perimeters. The use of subsurface or drip irrigation and pressure compensating tubing is permitted if the qualifying area will be irrigated.
- Require a master valve to be installed on the discharge side of the backflow prevention device on all new installations.
- Require check valves where elevation differences may result in low head drainage. Check valves may be located at the sprinkler head(s) or on the lateral line.
- Require that pop-up heads shall be installed at grade level and operated to extend above all landscape turfgrass.
- Require additional information and description for the required “walk-through.” This may include but is not limited to a checklist of things to cover on the “walk-through” with the homeowner or educational leave behind materials.

- Require the signed maintenance checklist be submitted to the applicable city official/department. Require the irrigator's name, license number, company name, telephone number, and the dates of the warranty period to be on the maintenance checklist.

USE OF LICENSED IRRIGATORS TO INSPECT AND REVIEW ALL IRRIGATION PERMITS AND PLANS

Another potential conservation practice that the City of McKinney utilizes is dedicated licensed irrigation inspectors. The licensed inspectors implement all aspects of an irrigation system permitting program and provide a certain level of focus for complying with water efficiency standards. Reviewing irrigation permits and plans before installing allows for changes to be made to the plans and not after the pipe is already in the ground. This ensures the irrigation system's overall quality, promotes irrigation efficiency and guarantees that the system will comply with state and local requirements.

Developing a review and inspection program at the municipal level reduces the chance for unlicensed irrigators to install irrigation systems improperly. Improper installation can waste water, money, cause future maintenance issues, but most importantly, it may contaminate the public water supply. It is crucial to prevent non-potable water in lawn irrigation pipes from flowing into public water supply pipes.

3.04 LANDSCAPE WATER MANAGEMENT PROVISIONS

Landscape water management provisions stipulate for a means to enforce, prevent water waste during lawn and landscape irrigation, conserve water resources for the most beneficial and vital uses, and protect public health. The landscape water management provisions provide a defined enforcement mechanism and are for exceptional neglect related to the proper maintenance and efficient use of water fixtures, pipes, and irrigation systems. The ordinance can provide additional assistance or enforcement if no corrective action has been taken after a certain number of correspondences.

The landscape water management provisions are outlined in the City of McKinney Code of Ordinances, Chapter 110, Article VIII – Landscape Water Management. The current code of ordinances can be found on the City of McKinney Code of Ordinances website at https://library.municode.com/tx/mckinney/codes/code_of_ordinances. The Landscape Water Management Ordinance addresses the following:

- 1) The use of irrigation systems between the hours of 10:00 am and 6:00 pm between the months of April 1 through October 31 of any year.

- 2) Outdoor watering that occurs on a day other than the normally scheduled trash/recycling collection day in the property's residential trash/recycling collection zone or three (3) days thereafter.
- 3) Outdoor watering during precipitation or freeze events.
- 4) The use of poorly maintained sprinkler systems that wastes water.
- 5) Excess water runoff or other obvious waste.
- 6) The use of potable water to fill or refill residential, amenity, and any other natural or manmade ponds. A pond is considered to be a still body of water with a surface area of 500 square feet or more. This does not include recreational swimming pools.

3.05 USE OF ET-BASED WEEKLY WATERING ADVICE/RECOMMENDATIONS

Conservation practices can be improved with the use of ET-based weekly watering advice and recommendations. Providing evapotranspiration (ET)-based weekly watering recommendations can reduce the amount of water applied for outdoor watering if customers follow the guidance.

The City of McKinney promotes the use of the following watering advice and recommendations:

- **Water My Yard** – An online platform where homeowners can sign up to receive weekly watering recommendations based on their location and a few specifications about their sprinkler system. Users can then choose to accept the recommendations by email, text, or both. The program is sponsored by NTMWD and Texas A&M AgriLife Extension Service (WaterMyYard.org).
- **Water Is Awesome Weekly Watering Advice** – Weekly watering recommendations for most of North Texas and is based on data from weather stations scattered throughout the DFW area. The recommendations are distributed by email and text every week and are provided in inches of water needed and the number of minutes necessary to apply that amount of water for spray, rotor, and multi-stream sprinklers. The advice service is available for all of North Central Texas and sponsored by DWU and TRWD (<https://waterisawesome.com/weekly-watering-advice>).

3.06 REBATES

By changing out less efficient equipment, this conservation practice intends to increase the irrigation efficiency by 10% or more. With 31% of all residential water use statewide attributed to irrigation, and most of that conducted using spray heads with an average efficiency of 50%, there is a real benefit for developing a rebate program for irrigation systems.

The City of McKinney promotes the following rebates:

- Rebates for ET or Smart controllers.
- Rebates for rain/freeze sensors.

3.07 WATER EFFICIENT LANDSCAPE INITIATIVES

A water efficient landscape is a landscape that is created and maintained using essential horticultural principles. It seeks a vibrant, healthy appearance without heavy reliance on additional watering and avoids causing any runoff from the property. The City of McKinney has incorporated into their design specifications an approved plant list for meeting landscaping requirements. This list promotes the use of drought tolerant plants, with any unlisted trees needing approval from the Director of Planning. Water efficient landscapes utilize plants or landscaping materials that need minimal to no extra watering. These are chosen for their ability to adapt to the local soil and climate conditions. The Office of Environmental Sustainability at the City of McKinney plans to expand the approved plant list even further and hopefully include even more drought tolerant plants and turf grasses that will minimize water loss and maximize water uptake.

The #PledgeToPlantSmart initiative from NTMWD aims to drive water conservation by motivating North Texas residents to play a role by choosing native or adaptive plants for their gardens and landscaping. Water efficient landscapes offer a practical alternative to non-functional turf grasses, suitable for new developments or upgrading existing landscapes in both commercial and residential areas.

There are several programs available that offer a wealth of information on designing and implementing water efficient landscape. The City of McKinney promotes the following:

- Water Wise (<http://urbanlandscapeguide.tamu.edu/waterwise.html>)
- Texas SmartScape™ (<http://www.txsmartscape.com/>)

3.08 PARK/ATHLETIC FIELD CONSERVATION

Park irrigation and athletic field conservation practices can effectively reduce water demands. The City of McKinney has dedicated staff that implement a watering regimen that only uses the amount of water necessary to maintain the viability of the turf and health of its users.

All parks and athletic fields are metered appropriately, and all utilize smart controllers. The controllers are linked to a platform and staff utilize the Rainbird IQ System for monitoring. The platform notifies staff of any inconsistencies or fluctuations. Staff immediately address any issues in the field, the same day.

The Conservation Coordinator will work closely with the Parks and Recreation Department to implement appropriate land stewardship practices. These practices will further enhance the greenspaces of the city. The designated areas will flourish with native tall grasses and flora that develop deep root systems, retaining water in the soil, and increasing available filtration thus reducing stormwater runoff and conserving natural resources.

3.09 GOLF COURSE CONSERVATION AND REUSE

Golf courses can use a considerable amount of water for irrigation. Irrigation of course play areas, such as fairways and tee boxes are necessary to support healthy turfgrass and landscape plants, which are important for course playability and aesthetics. However, golf courses can employ several practices to reduce water use while maintaining the course's playability and aesthetics. Also, overwatering and over-fertilization can negatively impact the water quality in local streams and lakes.

The City of McKinney owns and operates, Oak Hollow Golf Course. Originally, by design the course was constructed to emphasize the use of native grasses and highlight the use of rainwater harvesting with on-site pond storage. The dedicated staff carry out a conservation oriented watering regimen that has cut watering uses by 35% compared to three years ago.

Water conservation and water quality protection measures for Oak Hollow Golf Course include the following:

Golf Course Landscape Design and Water Sources

- The use of alternative water sources, such as rainwater harvesting and on-site pond storage.
- Selecting more drought-tolerant turfgrass varieties to minimize water use while maintaining a high-quality playing surface.

- Reducing the number of irrigated acres on the course by converting non-play and rough areas to native grasses and other drought-tolerant plants. These plants provide an attractive and low-maintenance landscape alternative.

Irrigation System Design and Maintenance

- Irrigating the golf course to maximize water use efficiency while reducing operational costs and maintaining a healthy and playable course.
- Utilizing new technology, such as soil moisture sensors and evapotranspiration data that maximize water efficiency by irrigating based on the turfgrasses moisture needs.
- Hand watering greens or other smaller areas save water compared to running the entire zone in that area.
- Dedicated staff frequently inspect all sprinkler heads and other components of the irrigation system and make any adjustments or repairs as needed to improve water use efficiency.
- Leaks in the system are repaired and fixed immediately.
- Irrigating in the early morning hours before temperatures rise and when wind speeds are low reduces the amount of water lost to evaporation.
- Frequent mowing assures turfgrass is healthy and minimizes scalping of the grass that would increase the need for water and fertilization.
- Wetting agents are applied during watering to increase absorption and minimize water requirements.

Water Quality Protection

- Quarterly obtain a soil test before applying fertilizer to ensure the correct type and amount is used. Only applying those nutrients or elements that are lacking minimizes costs and reduces the needs for additional watering.
- Apply fertilizers and chemicals according to the directions on the label, careful not to overapply.
- Do not overwater fertilizers when applying, resulting in runoff that could carry fertilizers into a nearby stream or pond.

Appendix A

List of References

The following appendix contains a list of references used throughout the plan.

APPENDIX A

LIST OF REFERENCES

1. Texas Commission on Environmental Quality Water Conservation Implementation Report. <https://www.tceq.texas.gov/assets/public/permitting/forms/20645.pdf>.
 2. Title 30 of the Texas Administrative Code, Part 1, Chapter 288, Subchapter A, Rules 288.1 and 288.5, and Subchapter B, Rule 288.22, downloaded from [http://texreg.sos.state.tx.us/public/readtac\\$ext.ViewTAC?tac_view=4&ti=30&pt=1&ch=288](http://texreg.sos.state.tx.us/public/readtac$ext.ViewTAC?tac_view=4&ti=30&pt=1&ch=288), November 2019.
 3. Water Conservation Implementation Task Force: “Texas Water Development Board Report 362, Water Conservation Best Management Practices Guide,” prepared for the Texas Water Development Board, Austin, November 2004.
 4. Freese and Nichols, Inc.: Model Water Conservation Plan for NTMWD Members Cities and Customers, prepared for the North Texas Municipal Water District, Fort Worth, March 2014.
 5. 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.
 6. Freese and Nichols Inc., Alan Plummer and Associates, CP & Y Inc. and Cooksey Communications. “2016 Region C Regional Water Plan.”
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Appendix B

Title 30 Texas Administrative Code

Chapter 288

The following appendix contains the Texas Administrative Code that regulates both water conservation and drought contingency plans. Prior to the code, a summary is given that outlines where each requirement is fulfilled within the plans.

APPENDIX B

TITLE 30 TEXAS ADMINISTRATIVE CODE CHAPTER 288

The TCEQ rules governing development of water conservation plans are contained in Title 30, Chapter 288, Subchapter A of the Texas Administrative Code, which is included in this appendix for reference.

The water conservation plan elements required by the TCEQ water conservation rules that are covered in this water conservation plan are listed below.

Minimum Conservation Plan Requirements for Public Water Suppliers

- **288.2(a)(1)(A)** – Utility Profile – Section 2.02
 - **288.2(a)(1)(B)** – Record Management System – Section 2.03
 - **288.2(a)(1)(C)** – Specific, Quantified Goals – Section 2.04
 - **288.2(a)(1)(D)** – Accurate Metering – Section 2.05
 - **288.2(a)(1)(E)** – Universal Metering – Section 2.05
 - **288.2(a)(1)(F)** – Determination and Control of Water Loss – Section 2.06
 - **288.2(a)(1)(G)** – Public Education and Information Program – Section 2.07
 - **288.2(a)(1)(H)** – Non-Promotional Water Rate Structure – Section 2.08
 - **288.2(a)(1)(I)** – Reservoir System Operation Plan – Section 2.09
 - **288.2(a)(1)(J)** – Means of Implementation and Enforcement – Section 2.10
 - **288.2(a)(1)(K)** – Coordination with Regional Water Planning Group – Section 2.11
 - **288.2(c)** – Review and Update – Cover page, 2024 Water Conservation Plan
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Additional Requirements for Public Water Suppliers (Population over 5,000)

- **288.2(a)(2)(A)** – Leak Detection, Repair, and Water Loss Accounting – Section 2.06
- **288.2(a)(2)(B)** – Requirement for Water Conservation Plans by Wholesale Customers – Section 2.12

Additional Conservation Strategies for Public Water Suppliers

- **288.2(a)(3)(A)** – Conservation-Oriented Water Rates – Section 2.08
 - **288.2(a)(3)(B)** – Adoption of Ordinances, Plumbing Codes, and/or Rules Requiring Water-Conserving Plumbing Fixtures – Section 3.01
 - **288.2(a)(3)(F)** – Ordinance for Landscape Water Management – Section 3.04
 - **288.2(a)(3)(G)** – Means of Monitoring the Effectiveness – Section 2.06
 - **288.2(a)(3)(H)** – Any other Water Conservation Practices Appropriate for Achieving Goal(s) – Entire Section 3.00
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<u>TITLE 30</u>	ENVIRONMENTAL QUALITY
<u>PART 1</u>	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
<u>CHAPTER 288</u>	WATER CONSERVATION PLANS, DROUGHT CONTINGENCY PLANS, GUIDELINES AND REQUIREMENTS
<u>SUBCHAPTER A</u>	WATER CONSERVATION PLANS
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

<u>TITLE 30</u>	ENVIRONMENTAL QUALITY
<u>PART 1</u>	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
<u>CHAPTER 288</u>	WATER CONSERVATION PLANS, DROUGHT CONTINGENCY PLANS, GUIDELINES AND REQUIREMENTS
<u>SUBCHAPTER A</u>	WATER CONSERVATION PLANS
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 -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

<u>TITLE 30</u>	ENVIRONMENTAL QUALITY
<u>PART 1</u>	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
<u>CHAPTER 288</u>	WATER CONSERVATION PLANS, DROUGHT CONTINGENCY PLANS, GUIDELINES AND REQUIREMENTS
<u>SUBCHAPTER A</u>	WATER CONSERVATION PLANS
RULE §288.5	Water Conservation Plans for Wholesale Water Suppliers

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

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

(A) a description of the wholesaler's service area, including population and customer data, water use data, water supply system data, and wastewater data;

(B) specific, quantified five-year and ten-year targets for water savings including, where appropriate, target goals for municipal use in gallons per capita per day for the wholesaler's service area, maximum acceptable water loss, and the basis for the development of these goals. The goals established by wholesale water suppliers under this subparagraph are not enforceable;

(C) a description as to which practice(s) and/or device(s) will be utilized to measure and account for the amount of water diverted from the source(s) of supply;

(D) a monitoring and record management program for determining water deliveries, sales, and losses;

(E) a program of metering and leak detection and repair for the wholesaler's water storage, delivery, and distribution system;

(F) a requirement in every water supply contract entered into or renewed after official adoption of the water conservation plan, and including any contract extension, that each successive wholesale customer develop and implement a water conservation plan or water conservation measures using the applicable elements of this chapter. If the customer intends

to resell the water, then the contract between the initial supplier and customer must provide that the contract for the resale of the water must have water conservation requirements so that each successive customer in the resale of the water will be required to implement water conservation measures in accordance with applicable provisions of this chapter;

(G) a reservoir systems operations plan, if applicable, providing for the coordinated operation of reservoirs owned by the applicant within a common watershed or river basin. The reservoir systems operations plans shall include optimization of water supplies as one of the significant goals of the plan;

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

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

(2) Additional conservation strategies. Any combination of the following strategies shall be selected by the water wholesaler, in addition to the minimum requirements of paragraph (1) of this section, if they are necessary in order to achieve the stated water conservation goals of the plan. The commission may require by commission order that any of the following strategies be implemented by the water supplier if the commission determines that the strategies are necessary in order for the conservation plan to be achieved:

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

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

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

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

(3) Review and update requirements. The wholesale water supplier shall review and update its water conservation plan, as appropriate, based on an assessment of previous five-year and ten-year targets and any other new or updated information. A wholesale water supplier shall review and update the next revision of its water conservation plan every five years to coincide with the regional water planning group.

Source Note: The provisions of this §288.5 adopted to be effective May 3, 1993, 18 TexReg 2558; amended to be effective February 21, 1999, 24 TexReg 949; amended to be effective April 27, 2000, 25 TexReg 3544; amended to be effective October 7, 2004, 29 TexReg 9384; amended to be effective December 6, 2012, 37 TexReg 9515

Appendix C

Water Utility Profile

The following appendix contains the most recent City of McKinney's Water Utility Profile. The Water Utility Profile is submitted to TWDB every 5 years by May 1.

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

CONTACT INFORMATION

Name of Utility:

Public Water Supply Identification Number (PWS ID):

Certificate of Convenience and Necessity (CCN) Number:

Surface Water Right ID Number:

Wastewater ID Number:

Contact: First Name: Last Name:

Title:

Address: City: State:

Zip Code: Zip+4: Email:

Telephone Number: Date:

Is this person the designated Conservation Coordinator? Yes No

Coordinator: First Name: Last Name:

Title:

Address: City: Zip Code:

Email: Telephone Number:

Regional Water Planning Group:

Groundwater Conservation District:

Our records indicate that you:

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

A. Population and Service Area Data

1. Current service area size in square miles:

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

Attached file(s):

File Name	File Description
City of McKinney CCN Map 3-5-24.pdf	City of McKinney Service Area Map

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

Year	Historical Population Served By Retail Water Service	Historical Population Served By Wholesale Water Service	Historical Population Served By Wastewater Water Service
2023	211,397	0	0
2022	206,654	0	0
2021	198,507	38,185	0
2020	198,507	0	0
2019	195,342	0	0

3. Projected service area population for the following decades.

Year	Projected Population Served By Retail Water Service	Projected Population Served By Wholesale Water Service	Projected Population Served By Wastewater Water Service
2030	263,712	0	0
2040	317,991	0	0
2050	357,391	0	0
2060	384,416	0	0
2070	400,844	0	0

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

Current population was determined utilizing the 2022 American Community Survey, in addition to staff in the City of McKinney Planning department. Projected populations were determined utilizing the Gompertz model. The model utilizes a logarithmic equation that projects the population based on historical data.

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

B. System Input

System input data for the previous five years.

Total System Input = Self-supplied + Imported – Exported

Year	Water Produced in Gallons	Purchased/Imported Water in Gallons	Exported Water in Gallons	Total System Input	Total GPCD
2023	0	12,537,478,949	0	12,537,478,949	162
2022	0	12,349,427,626	0	12,349,427,626	164
2021	0	11,109,838,613	446,274,058	10,663,564,555	147
2020	0	12,610,180,612	1,219,812,245	11,390,368,367	157
2019	0	12,352,616,327	1,096,400,000	11,256,216,327	158
Historic Average	0	12,191,908,425	552,497,261	11,639,411,165	158

C. Water Supply System

Attached file(s):

File Name	File Description
Water System Diagram vs4 February 2024.pdf	City of McKinney Water System Diagram

1. Designed daily capacity of system in gallons 204,800,000
2. Storage Capacity
 - 2a. Elevated storage in gallons: 18,000,000
 - 2b. Ground storage in gallons: 52,000,000

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

D. Projected Demands

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

Year	Population	Water Demand (gallons)
2025	226,095	13,584,201,000
2026	233,038	13,932,794,000
2027	239,982	14,281,385,000
2028	246,925	14,629,977,000
2029	253,868	14,978,569,000
2030	263,712	15,327,160,481
2031	268,437	15,675,752,000
2032	275,437	16,024,344,000
2033	282,437	16,213,192,000
2034	289,437	16,689,579,000

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

Using historical data from 2014 to present, population and water demand amounts were forecasted.

E. High Volume Customers

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

Customer	Water Use Category	Annual Water Use	Treated or Raw
Stonebridge Ranch HOA	Commercial	177,979,000	Treated
Craig Ranch HOA	Commercial	88,479,000	Treated
Harbert Parkside Investors	Residential	58,934,000	Treated
Baylor Health Care	Commercial	53,890,000	Treated
Blount Fine Foods	Industrial	52,546,000	Treated

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

Customer	Water Use Category	Annual Water Use	Treated or Raw
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UTILITY PROFILE FOR RETAIL WATER SUPPLIER

F. Utility Data Comment Section

Additional comments about utility data.

Please note the population stated in Section 2. Utility Data Population and Service Area Data for the previous five years has two incorrect amounts. The population for 2020 should be 195,342 and the population for 2019 should be 187,802.

Also note, Section 5. Utility Data High Volume Customers, for wholesale customers; the City of McKinney is no longer considered a wholesale water provider. However, it should be stated that we have two pass-through agreements with North Texas Municipal Water District. These agreements allow water to be passed through from the City of McKinney to the City of Melissa and North Collin SUD. TWDB stated do not include pass through data as exported water.

Section II: System Data

A. Retail Water Supplier Connections

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

Water Use Category Type	Total Retail Connections (Active + Inactive)	Percent of Total Connections
Residential - Single Family	62,282	69.68 %
Residential - Multi-Family	22,344	25.00 %
Industrial	101	0.11 %
Commercial	4,458	4.99 %
Institutional	195	0.22 %
Agricultural	0	0.00 %
Total	89,380	100.00 %

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

Net Number of New Retail Connections							
Year	Residential - Single Family	Residential - Multi-Family	Industrial	Commercial	Institutional	Agricultural	Total
2023	2,368	604	12	154	2	0	3,140
2022	1,531	791	56	147	0	0	2,525
2021	1,784	2,233	18	162	15	0	4,212
2020	990	1,040	0	95	60	0	2,185
2019	2,276	1,448	0	128	85	0	3,937

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

B. Accounting Data

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

Year	Residential - Single Family	Residential - Multi-Family	Industrial	Commercial	Institutional	Agricultural	Total
2023	7,168,805,000	1,100,729,000	218,933,000	2,345,454,000	158,837,000	0	10,992,758,000
2022	6,783,087,000	1,045,295,000	231,316,000	2,223,566,000	175,573,000	0	10,458,837,000
2021	5,863,746,000	919,797,000	164,069,000	1,803,170,000	342,783,000	0	9,093,565,000
2020	6,148,600,000	851,539,000	115,844,000	1,799,899,000	345,951,000	0	9,261,833,000
2019	5,591,212,000	730,410,000	243,316,000	1,781,377,000	326,814,000	0	8,673,129,000

C. Residential Water Use

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

Year	Total Residential GPCD
2023	107
2022	104
2021	94
2020	97
2019	89
Historic Average	98

D. Annual and Seasonal Water Use

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

Month	Total Gallons of Treated Water				
	2023	2022	2021	2020	2019
January	549,719	489,549	429,973	448,604	438,109
February	494,120	510,726	519,692	426,013	382,216
March	689,862	636,394	658,250	495,418	482,584
April	815,247	698,917	635,686	706,075	582,013
May	1,017,894	969,947	552,370	867,473	676,187
June	1,183,246	1,307,174	898,792	1,125,477	711,262
July	1,411,371	1,633,402	1,140,031	1,284,683	1,214,207
August	1,694,724	1,230,597	1,163,979	1,080,759	1,273,621
September	1,214,729	1,197,620	1,123,984	911,431	1,248,264
October	909,226	818,589	773,294	796,082	687,921
November	656,879	594,075	613,393	586,562	495,904
December	590,905	576,791	584,121	533,256	480,842
Total	11,227,922	10,663,781	9,093,565	9,261,833	8,673,130

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

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

Month	Total Gallons of Raw Water				
	2023	2022	2021	2020	2019
January	0	0	0	0	0
February	0	0	0	0	0
March	0	0	0	0	0
April	0	0	0	0	0
May	0	0	0	0	0
June	0	0	0	0	0
July	0	0	0	0	0
August	0	0	0	0	0
September	0	0	0	0	0
October	0	0	0	0	0
November	0	0	0	0	0
December	0	0	0	0	0
Total	0	0	0	0	0

3. Summary of seasonal and annual water use.

	Summer RETAIL (Treated + Raw)	Total RETAIL (Treated + Raw)
2023	4,289,341	11,227,922
2022	4,171,173	10,663,781
2021	3,202,802	9,093,565
2020	3,490,919	9,261,833
2019	3,199,090	8,673,130
Average in Gallons	3,670,665.00	9,784,046.20

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

E. Water Loss

Water Loss data for the previous five years.

Year	Total Water Loss in Gallons	Water Loss in GPCD	Water Loss as a Percentage
2023	921,959,949	12	7.00 %
2022	1,230,172,433	16	10.00 %
2021	1,118,486,555	15	13.00 %
2020	1,519,851,367	21	12.00 %
2019	2,080,327,119	29	15.00 %
Average	1,374,159,485	19	11.40 %

F. Peak Day Use

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

Year	Average Daily Use (gal)	Peak Day Use (gal)	Ratio (peak/avg)
2023	30,761	46623	1.5157
2022	29,215	45338	1.5519
2021	24,913	34813	1.3974
2020	25,374	37944	1.4954
2019	23,762	34772	1.4633

G. Summary of Historic Water Use

Water Use Category	Historic Average	Percent of Connections	Percent of Water Use
Residential - Single Family	6,311,090,000	69.68 %	65.09 %
Residential - Multi-Family	929,554,000	25.00 %	9.59 %
Industrial	194,695,600	0.11 %	2.01 %
Commercial	1,990,693,200	4.99 %	20.53 %
Institutional	269,991,600	0.22 %	2.78 %
Agricultural	0	0.00 %	0.00 %

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

H. System Data Comment Section

Please note in Section 7. System Data Retail Water Supplier Connections for the 2022 Institutional connections, the amount difference is actually negative (-) 327. Negative numbers are not allowed, therefore a zero was stated in the report. During an internal audit several connection categories found discrepancies and were adjusted accordingly causing the negative value.

Section III: Wastewater System Data

A. Wastewater System Data

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

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

Water Use Category	Metered	Unmetered	Total Connections	Percent of Total Connections
Municipal	0	0	0	0.00 %
Industrial	0	0	0	0.00 %
Commercial	0	0	0	0.00 %
Institutional	0	0	0	0.00 %
Agricultural	0	0	0	0.00 %
Total	0	0	0	100.00 %

3. Percentage of water serviced by the wastewater system:

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

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

Month	Total Gallons of Treated Water				
	2023	2022	2021	2020	2019
January	0	0	0	0	0
February	0	0	0	0	0
March	0	0	0	0	0
April	0	0	0	0	0
May	0	0	0	0	0
June	0	0	0	0	0
July	0	0	0	0	0
August	0	0	0	0	0
September	0	0	0	0	0
October	0	0	0	0	0
November	0	0	0	0	0
December	0	0	0	0	0
Total	0	0	0	0	0

5. Could treated wastewater be substituted for potable water?

Yes
 No

B. Reuse Data

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

Type of Reuse	Total Annual Volume (in gallons)
On-site Irrigation	
Plant wash down	
Chlorination/de-chlorination	
Industrial	
Landscape irrigation (park,golf courses)	0
Agricultural	
Discharge to surface water	0
Evaporation Pond	0
Other	
Total	0

C. Wastewater System Data Comment

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

Wastewater processed and treated by North Texas Municipal Water District (NTMWD).

Appendix D

City of McKinney NTMWD Member City and Customer Water Conservation Report

The following appendix contains the 2023 City of McKinney's Water Conservation Report, also known as the Appendix D Report. The report is submitted to NTMWD annually by March 31.

APPENDIX D
NTMWD MEMBER CITY AND CUSTOMER WATER CONSERVATION REPORT
Due: March 31 of every year

Contact Information

TWDB Survey Number:	548600
Name of System:	City of McKinney
PWS ID:	TX0430039
Contact Name:	Mandra Caplinger
Title:	Regulatory Compliance Coordinator
Email Address:	mrcapling@mcokinneytexas.org
Telephone Number:	972-547-7619
Year Covered:	2023

Water System Information

Estimated Water Service Area Population:	211,397	Source:	2022 American Community Survey & the City of McKinney Demographics, Census and Reports
# of Backflow Preventers:	25,627	Description:	Estimated water that has been sold but not metered, for example dust control trucks and types of businesses using authorized water drawn from fire hydrants or other unmetered uses, such as contractor flushings.
Billed Unmetered (MG):	23.102	Description:	Water that is metered but not billed, such as city/government offices, city park irrigation, water treatment facility use, and some fire department use.
Unbilled Metered (MG):	235.164	Description:	Estimated water not billed or metered, such as most line flushing.
Unbilled Unmetered (MG):	364.495		

Water System Information by Delivery Point

Delivery Point	Total System	EP001 - Gerrish PS	EP002 - McKinney Ranch PS	EP003 - University PS	EP004 - Redbud PS
Peak Day (MG)	67.447	5.758	24.663	28.052	14.816
Firm Pumping Capacity (MGD)	189.80	14.54	40.19	80.00	30.24
Storage Volume (MG)	70.00	5.50	23.00	33.50	8.00

Retail Water Metered by Month (in Million Gallons):

Month	Sales by Category							
	Residential Single Family	Residential Multi-Family	Public/Institutional	Commercial	Industrial	Agriculture	Metered Irrigation	Direct Reuse
January	350,216	72,495	8,692	60,039	12,584	0,000	40,607	0,000
February	312,215	62,652	8,065	62,148	11,455	0,000	33,452	0,000
March	447,876	69,713	9,816	78,863	14,758	0,000	61,656	0,000
April	543,104	61,544	8,888	74,422	12,057	0,000	98,551	0,000
May	656,821	68,651	7,711	79,319	12,792	0,000	164,960	0,000
June	745,411	72,578	8,820	90,206	15,741	0,000	220,268	0,000
July	913,910	70,047	8,931	102,083	18,415	0,000	266,001	0,000
August	1,088,640	79,213	12,177	102,563	23,393	0,000	347,553	0,000
September	748,915	68,038	9,933	82,075	18,401	0,000	254,959	0,000
October	553,111	71,910	9,836	76,458	15,153	0,000	161,260	0,000
November	405,511	67,777	7,999	67,499	12,991	0,000	83,637	0,000
December	380,790	70,283	7,568	63,196	13,722	0,000	49,664	0,000
# of Connections (or Units)	62,282	21,571	100	2,359	63	0	3,103	0

Water Sales to Industrial Production Facilities (in Million Gallons):

Buyer Name Type of Water Name of Source	Sale 1	Sale 2	Sale 3	Sale 4	Sale 5	Sale 6	Sale 7	Sale 8
	Blount Fine Foods		Raytheon	Leon's Texas Cuisine				
Surface Water		Surface Water	Surface Water					
NTMWD - Leonard		NTMWD - Leonard	NTMWD - Leonard					
WTP		WTP	WTP					
January	4,710	2,347	1,190					
February	4,101	2,246	1,391					
March	3,403	1,847	1,034					
April	4,612	2,837	1,461					
May	3,712	2,614	0,922					
June	3,346	3,236	1,203					
July	4,505	5,197	1,511					
August	3,564	7,013	1,626					
September	5,872	8,982	2,031					
October	4,949	6,173	1,499					
November	5,386	3,499	1,579					
December	4,387	2,448	1,378					

Appendix E
Letter to Regional Water
Planning Group

[Enter Date]

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

Dear Mr. Ward:

Enclosed please find a copy of the Water Conservation and Water Resource and Emergency Management Plan for City of McKinney. 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 plans were adopted on [Enter date of adoption].

Sincerely,

Ryan Gillingham
Public Works Director
City of McKinney

Appendix F
Adoption of Plans
