City of Wylie

2024 Water Conservation and Water Resource and Emergency Management Plan

Adopted on 4/23/2024

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DEFINITIONS

AQUATIC LIFE means a vertebrate organism dependent upon an aquatic environment to sustain its life.

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 (BMPs) 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 VEHICLE WASH FACILITY means a permanently located business that washes vehicles or other mobile equipment with water or water-based products, including but not limited to self-service car washes, full-service car washes, roll-over/in-bay style car washes, and facilities managing vehicle fleets or vehicle inventory.

COMMERCIAL FACILITY means business or industrial buildings 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.

COOL SEASON GRASSES are varieties of turf grass that grow best in cool climates primarily in northern and central regions of the U.S. Cool season grasses include but are not limited to perennial and annual rye grass, Kentucky blue grass and fescues.

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

DESIGNATED OUTDOOR WATER USE DAY means a day prescribed by a rule on which a person is permitted to irrigate outdoors.

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 (ET) data. These controllers are designed to replace the amount of water lost to evapotranspiration.

EVAPOTRANSPIRATION (ET) 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.

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.

FOUNDATION WATERING means an application of water to the soils directly abutting (within 2 feet of) the foundation of a building or structure.

INTERACTIVE WATER FEATURES means water sprays, dancing water jets, waterfalls, dumping buckets, shooting water cannons, inflatable pools, temporary splash toys or pools, slip-n-slides, or splash pads that are maintained for recreation.

IRRIGATION SYSTEM means a permanently installed, custom-made, site-specific system of delivering water generally for landscape irrigation via a system of pipes or other conduits installed below ground.

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.

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.

ORNAMENTAL FOUNTAIN means an artificially created structure from which a jet, stream, or flow of treated water emanates and is not typically utilized for the preservation of aquatic life.

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.

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.

REGULATED IRRIGATION PROPERTY means any property of a designated customer class (i.e., commercial) that uses one million gallons of water or more for irrigation purposes in a single calendar year or is greater than one acre in size.

RESIDENTIAL GALLONS PER CAPITA PER DAY (RESIDENTIAL GPCD) 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.

SOAKER HOSE means a perforated or permeable garden-type hose or pipe that is laid above ground that provides irrigation at a slow and constant rate.

SPRINKLER/SPRAY IRRIGATION is the method of applying water in a controlled manner that is similar to rainfall. 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.

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 (TOTAL GPCD) 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. Diversion volumes of reuse as defined in TAC 288.1 shall be credited against total diversion volumes for the purposes of calculating GPCD for targets and goals.

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 Texas Administrative Code Title 30, Chapter 288, Subchapter B. This is sometimes called a drought contingency plan.

ABBREVIATIONS

Ac-Ft/Yr ..... Acre-Feet per Year
BMP ..... Best Management Practices
CDC ..... Centers for Disease Control and Prevention
DWU ..... Dallas Water Utilities
E&O ..... Education and Outreach
ED ..... Executive Director
EPA ..... Environmental Protection Agency
ET ..... Evapotranspiration
FNI ..... Freese and Nichols, Inc.
gpf ..... Gallons per Flush
gpm ..... Gallons per Minute
LAMP ..... Linear Asset Management Plan
LRWSP ..... Long Range Water Supply Plan
FWSD ..... Fresh Water Supply District
GPCD ..... Gallons per Capita per Day
ICIM ..... Industrial, Commercial, Institutional and Multifamily
MGD ..... Million Gallons per Day
MUD ..... Municipal Utility District
NCTCOG ..... North Central Texas Council of Governments
NTMWD ..... North Texas Municipal Water District
SUD ..... Special Utility District
TCEQ ..... Texas Commission on Environmental Quality
TRWD ..... Tarrant Regional Water District
TWDB ..... Texas Water Development Board
UTRWD ..... Upper Trinity Regional Water District
UD ..... Utility District
WCAC ..... Water Conservation Advisory Council
WCP ..... Water Conservation Plan
WREMP ..... Water Resource and Emergency Management Plan
WSC ..... Water Supply Corporation
WENNT ..... Water Efficiency Network of North Texas
WTP ..... Water Treatment Plant
WWTP ..... Wastewater Treatment Plant

2024 Water Conservation Plan

This Water Conservation Plan has been developed in accordance with the requirements of 30 Texas Administrative Code (TAC) Chapter 288. A copy of the version of 30 TAC Chapter 288 in place at the time of this Plan preparation is included in Appendix B.

1.00 INTRODUCTION

City of Wylie is a Member City of the North Texas Municipal Water District (NTMWD). This Plan was developed following 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.

1.01 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**.

1.02 ADDITIONAL REQUIREMENTS AND GUIDANCE

In addition to TCEQ rules regarding water conservation, this Plan also incorporates both minimum requirements as required from NTMWD and elements from several conservation initiatives.

- **2024 NTMWD Water Conservation Plan** – Member Cities and Customers of the NTMWD are required to implement water conservation strategies as designated in the NTMWD Water Conservation Plan. These strategies

represent minimum measures to be implemented and enforced to promote water conservation and are to remain in effect on a permanent basis.

- **Guidance and Methodology for Reporting on Water Conservation and Water Use** - Developed by TWDB and TCEQ in consultation with the Water Conservation Advisory Council (the Guidance). The Guidance was developed in response to a charge by the 82nd Texas Legislature to develop water use and calculation methodology and guidance for preparation of water use reports and water conservation plans in accordance with TCEQ rules.
- **North Texas Regional Landscape Initiative –** The North Texas regional water providers (NTMWD, DWU, UTRWD and TRWD) collaborated to create the Regional Landscape Initiatives. 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. Information consists of the background, importance, and benefits of each BMP and key talking points to consider when implementing the strategy. Several of the optional water management measures included in this Plan are from this collaborative initiative.

2.00 WATER UTILITY PROFILE

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

2.01 DESCRIPTION OF THE SERVICE AREA

The City of Wylie is a growing community which is a part of the Dallas-Fort Worth metroplex and provides water to a retail service area of approximately 24.6 square miles and about 47,232 residents as of 2022 (NTMWD Member City and Customer Water Conservation Report). Small portions within the City limits are served by other water providers. The City purchases\ treated water from North Texas Municipal Water District (NTMWD) through parallel water supply lines throughout the city limits. The City is divided into two pressure planes, referred to as the 730' Service Area and the 679' Service Area. These area names correspond to the pressure plane elevations they serve.

2.02 WATER UTILITY PROFILE

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

- Purchased Treated Water from NTMWD

3.00 WATER CONSERVATION GOALS

TCEQ rules require the adoption of specific 5-year and 10-year water conservation goals for a water conservation plan.

3.01 5- AND 10-YEAR GOALS

Per capita water use varies from year to year based on several factors including weather conditions, changing demographics and other variables. The TWDB requires specific 5- and 10-year goals which are summarized in **Table 1**. These goals should be measured against a 5-year average per capita, although some (dry) years will see higher per capita usage than these 5- year average goals. A series of dry years may lead to an average exceeding the goal.

It should be noted that the City's nonrevenue water percentage is significantly higher than its water loss percentage. The basis for this difference is the high amount of unbilled unmetered water that has been reported. The City has reported a five-year average of roughly 210,000,000 gallons per year of unbilled unmetered water versus a five-year average of roughly 65,000,000 gallons per year of total water loss. The City has set procedures for estimating usage related to line flushing, main breaks and other unbilled unmetered usage.

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

	Historic 5-Year Average	Baseline	5-Year Goal 2029	10-Year Goal 2034
Total (GPCD)[1]	104	104	102	99
Residential (GPCD)[2]	66	66	64	63
ICIM (GPCD)[3]	22	22	21	20
Water Loss (GPCD)[4]	3.8	3.8	6.8	6.4
Water Loss (Percentage)[5]	3.6%	3.6%	6.7%	6.3%

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

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

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

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

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

3.02 METHOD FOR TRACKING

NTMWD requires Member Cities and Customers to complete annual conservation reports by March 31 of the following year and submit them to NTMWD. A copy of the form is included as **Appendix D**.

The completion of this Annual Water Conservation Report allows City of Wylie 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.

4.00 METERING, RECORDS AND WATER LOSS CONTROL

4.01 METERING 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 nonrevenue water are important elements of NTMWD's program to control losses. Water deliveries from NTMWD are metered by NTMWD using meters with 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 provision of water to all customers, including public and governmental users, is metered in the City of Wylie.

METER TESTING, REPAIR AND REPLACEMENT

The City of Wylie tests and replaces our customer meters on a regular basis. All residential customer meters are budgeted to be replaced on a minimum of a 15-year cycle.

4.02 MONITORING AND RECORD MANAGEMENT PROGRAM

As required by TAC Title 30, Chapter 288, a record management system should allow for the separation of water sales and uses into residential, commercial, public/institutional, and industrial categories. This information is included in the NTMWD annual water conservation report that is included in **Appendix D**.

4.03 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, 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.

LEAK DETECTION AND REPAIR

Measures to control water loss are a part of the routine operations of the City. Maintenance crews and personnel look for and report evidence of leaks in the water distribution system. Meter readers watch for and report signs of illegal connections so that they can be quickly addressed. With the measures described in this Plan, the City should maintain a water loss percentage below 3.6 percent in 2024 and subsequent years. Areas of the water distribution system in which numerous leaks and line breaks occur are targeted for replacement funds as funds are available.

5.00 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 Wylie must develop and implement a water conservation plan and water conservation measures. 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 refers to their drought contingency plan (DCP) as the water resource and emergency management plan (WREMP) and should be considered synonymous with a DCP.

6.00 RESERVOIR SYSTEM OPERATIONS PLAN

City of Wylie 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.

7.00 CONSERVATION PLAN ADOPTION AND ENFORCEMENT

7.01 MEANS OF IMPLEMENTATION AND ENFORCEMENT

Staff will implement the Plan in accordance with adoption of the Plan. **Appendix G** contains a copy of the ordinance adopted regarding this Plan. The document designates responsible officials to implement and enforce the Plan.

An ordinance adopted by the City Council on April 23, 2024 designating responsible officials to implement and enforce the Water Conservation Plan can be found in **Appendix G**. The Plan will be enforced by warning and penalties as follows:

- On the first violation customers will be given a written warning that they have violated the mandatory water use restriction.
- On the second and subsequent violations citations may be issued to customers with fines established by ordinance.

For violations of the Water Resource and Emergency Management Plan, enforcement is outlined in Section 2.06 of that Plan.

7.02 REVIEW AND UPDATE OF WATER CONSERVATION PLAN

TCEQ requires that the water conservation plan be updated every five years. This Plan will be updated as required and as appropriate based on new or updated information.

7.03 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. In accordance with NTMWD contractual requirements, a copy of this water conservation plan was also sent to NTMWD. **Appendix F** includes a copy of the letters sent.

8.00 WATER CONSERVATION PROGRAM

8.01 PUBLIC EDUCATION PROGRAM

A. NTMWD PUBLIC EDUCATION PROGRAM AND TECHNICAL ASSISTANCE

City of Wylie obtains water conservation support from the NTMWD. This includes several public education and outreach efforts such as:

- Beginning in 2006 and continuing through 2018, NTMWD invested in the development and implementation of the "Water IQ: Know Your Water" campaign, including newspaper ads, radio spots, billboards, a website, and other forms of communication all intended to educate the public regarding water use and water conservation. During the 2017 campaign, over a quarter of a million people were reached by the program through media relations, outreach and interactive media. The total audience reached through the campaign in 2017 was over 88 million impressions.
- In 2013, NTMWD participated in the "Water My Yard" program to install weather stations throughout its service area to provide consumers with a weekly email or text message and information through the Water My Yard website recommending the adequate amount of supplemental water that is needed to maintain healthy grass in specific locations. This service represents the largest network of weather stations providing ET-based irrigation recommendations in the state of Texas and provides the public with advanced information regarding outdoor irrigation needs, thereby reducing water use. Through a series of selections on the type of irrigation system a consumer has, a weekly email or text message is provided that will recommend how long (in minutes) that an irrigation system needs to run based on the past seven days of weather. This recommendation provides the actual amount of supplemental water that is required for a healthy lawn based on research of the Texas A&M Agrilife Extension Service and proven technologies.

- "Water4Otter" is a water conservation campaign for kids launched by NTMWD in 2014. It is based on the insight that most parents agree they would listen if their kids asked them to conserve water. The TWDB awarded the NTMWD a conservation grant to develop Water4Otter as a model program that could be used throughout the state. The 2023 program included 22 performances at 11 schools in eight different ISDs including stops at elementary schools in Wylie, Garland, Mesquite, Plano, Princeton, Richardson, and Royse City.
- "Love Lavon Lake" is a water conservation campaign designed to help North Texans know their primary water source. The campaign launched in 2018 with a call to action to, "Conserve your water source. Love Lavon Lake". 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.

NTMWD also participates in a regional outreach campaign called "Water is Awesome" partnering with the City of Dallas and Tarrant Regional Water District. NTMWD Member Cities and Customers have access to the campaign materials which include:

- In 2019, an additional tagline, "Keep Texas Water on Tap", was incorporated to promote the Water is Awesome brand and direct traffic to waterisawesome.com.
- In 2020, a "customer city toolkit" provided customizable resources allowing cities to incorporate their logos with the campaign brand for their website, social media, and print. Cities are encouraged to use campaign resources to advance conservation efforts.
- In 2021, the regional water providers collaborated to create the Regional Landscape Initiatives. 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. Information consists of the background, importance, and benefits of each BMP and key talking points to consider when implementing the strategy. Several of the optional water management measures included in this Plan are from this collaborative initiative.
- The 2023 campaign will include a focus on short HGTV-style web series about converting yards into drought-resistant, water-conservative yardscapes.

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 the NTMWD actively provides technical assistance through the following:

- NTMWD holds **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 **American Water Works Association 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**.
- Since 2003, NTMWD has held **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, water conservation programs of the cities, 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. Additional examples include workshops on Water Loss Audit Training as well as on the TWDB Water Conservation Planning Tool.
- Based on the annual reporting data collected from Member Cities and Customers from 2022, approximately 24% of the District's treated water sales went to supply ICIM users within their service area. To target programs for this customer base, the District hired Plummer Associates, Inc. to create the **Industrial, Commercial, Institutional and Multifamily Program**. The ICIM program provides NTMWD Member City and Customer staff with the knowledge and tools necessary to identify ICIM customers with high water usage. This program was created to categorize water use data to find outliers 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 is currently engaging 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 of June 2023, NTMWD has utilized the ICIM program to audit four buildings resulting in an estimated annual water savings of 87.4 million gallons.

- As part of its wastewater system, NTMWD has developed **Industrial Pretreatment Programs** for the cities of Allen, Forney, Frisco, McKinney, Mesquite, Murphy, Plano, Richardson, Rockwall, Terrell, and Wylie. The pretreatment programs developed by NTMWD are adopted and implemented by the cities, which are also responsible for enforcement of the 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. NTMWD industrial pretreatment personnel are also available to assist cities on request in the review or design of systems to allow industrial recycling and reuse of wastewater. Such systems have reduced water use by some industries, while also reducing wastewater volumes and saving money for the industries.
- NTMWD encourages its Member Cities and Customers to develop and implement **Rebate and Bulk Purchasing Programs** that help the Member Cities and Customers achieve overall water savings. Further, NTMWD provides technical assistance to those Member Cities and Customers who wish to implement rebate and bulk purchasing programs.

B. PUBLIC EDUCATION PROGRAM

In addition to utilizing public education resources shared by North Texas Municipal Water District, Wylie has developed its own public education program. On its Public Works webpage, Water Conservation Guidelines are available for citizens, providing links to helpful conservation resources.

8.02 REQUIRED CONSERVATION STRATEGIES

The following water conservation strategies are required. These strategies represent minimum measures to be implemented and enforced to promote water conservation and are to remain in effect on a permanent basis.

A. TCEQ CONSERVATION PLAN REQUIREMENTS

The preceding sections cover the regulatory requirements identified in TAC Title 30, Part 1, Chapter 288, Subchapter B, Rule 288. These rules are included in **Appendix B**.

B. CONSERVATION COORDINATOR

The designation of a Conservation Coordinator is required by House Bill 1648, effective September 1, 2017 for all retail public water utilities with 3,300 service connections or more. The NTMWD requires that all Member Cities and Customers, regardless of number of connections, appoint a Conservation Coordinator who will serve as the primary point of contact between the entity and the District on conservation matters.

The duties of the Conservation Coordinator are as follows:

- Submit an annual conservation report to NTMWD by March 31. This is referred to as the 'Appendix D Report'. NTMWD will provide a blank workbook for each Member City and Customer to fill out prior to the deadline.
- Submit an adopted water conservation and water resource and emergency management plan by May 1, 2024 (and every five years afterwards). These plans must be submitted to NTMWD, the applicable Regional Water Planning Group, TCEQ and TWDB. The conservation coordinator is also responsible for submitting a copy of the Plan if it is updated after initial adoption and submission.

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

Public Works Utility Manager
972-516-6100
publicworks@wylietexas.gov

C. WATER CONSERVATION PRICING

Wylie has adopted an increasing block rate water structure that is intended to encourage water conservation and to discourage excessive use and waste of water. Wylie will continue to analyze and adjust its increasing block rate structure during its next rate study or within five years. For any updates to water rates that might occur subsequent to the public of this plan, please visit https://www.wylietexas.gov/departments/utility_billing_(water_bill)/water_and_sewer_rates.php.

Wylie's water rate structure is as follows:

Residential Rates

From and after the effective date hereof, the monthly minimum base charges and usage charges for water utility services for all residential customers of the City of Wylie, Texas shall be as set forth below until amended by ordinance of City Council:

Monthly minimum charge for 1st 1,000 gallons of metered water consumption	$20.83
1,001 to 10,000 gallons	$7.10 / thousand gallon
10,001 to 20,000 gallons	$9.20 / thousand gallon
20,001 to 40,000 gallons	$11.96 / thousand gallon
More than 40,000 gallons	$15.55 / thousand gallon

Residential Irrigation Rates

Monthly minimum charge for 1st 1,000 gallons of metered water consumption	$20.83
More than 1,000 gallons	$10.16 / thousand gallon

Commercial/Industrial Rates

From and after the effective date hereof, the monthly minimum base charges and usage charges for water utility services for all commercial/industrial customers of the City of Wylie, Texas shall be as set forth below until amended by ordinance of City Council:

Monthly minimum charge for 1st 1,000 gallons of metered water consumption	$28.44
More than 1,000 gallons	$8.04 / thousand gallon

Commercial Irrigation Rates

Monthly minimum charge for 1st 1,000 gallons of metered water consumption	$28.44
More than 1,000 gallons	$10.16 / thousand gallon

D. ORDINANCES, PLUMBING CODES, OR RULES ON WATER-CONSERVING FIXTURES

City of Wylie's plumbing code standards encourages water conservation and meets the minimum statutory requirements. The state has required water-conserving fixtures in new construction and renovations since 1992. The state standards call for flows of no more than 2.5 gallons per minute (gpm) for faucets, 2.5 gpm for showerheads. As of January 1, 2014, the

state requires 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.

E. REUSE AND RECYCLING OF WASTEWATER

NTMWD currently has the largest wastewater reuse program in the state. NTMWD has water rights allowing reuse of up to 71,882 acre-feet per year (64 MGD) of treated wastewater discharges from the Wilson Creek Wastewater Treatment Plant for municipal purposes. Additionally, NTMWD has permitted and is currently constructing the Sister Grove Regional Water Resource Recovery Facility (WRRF) in the Lavon Lake watershed. This facility will have an initial capacity of 16 MGD and an ultimate capacity of 64 MGD.

NTMWD has also developed the East Fork Water Reuse Project which can divert treated wastewater discharges by NTMWD and purchased wastewater return flows from TRA via Main Stem Pump Station. NTMWD also provides treated effluent from its wastewater treatment plants available for direct reuse for landscape irrigation and industrial use.

City of Wylie wastewater is treated by NTMWD at its Muddy Creek Wastewater Treatment Plant.

F. YEAR-ROUND OUTDOOR WATERING SCHEDULES

A mandatory weekly watering schedule has been gradually gaining acceptance in the region and the state. NTMWD requires all Member Cities and Customers to adhere to a permanent outdoor watering schedule.

- **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**. Additionally, prohibit lawn irrigation watering from **10 a.m. to 6 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.

  For residential water customers, watering days are defined as the assigned trash/recycle pickup day for the property address associated with the irrigation system, plus three days subsequent. If there is no street address associated with the property, or there is more than one street address associated with a single contiguous property, the watering days are Wednesday and Saturday. For industrial, commercial, and institutional water customers, watering day is defined as Wednesday and Saturday.

- **Winter (November 1 – March 31)** – Spray irrigation with sprinklers or irrigation systems at each service address must be limited to no more than ***one day per week*** with education that less than once per week (or not at all) is usually adequate.

For residential water customers, watering day is defined as the assigned trash/recycle pickup day for the property address associated with the irrigation system. If there is no street address associated with the property, or there is more than one street address associated with a single contiguous property, the watering day is Wednesday. For industrial, commercial, and institutional water customers, watering day is defined as Wednesday.

Additional irrigation may be provided by hand-held hose with shutoff nozzle, use of dedicated irrigation drip zones, and/or soaker hose provided no runoff occurs. Many North Texas horticulturists have endorsed twice-weekly watering as more than sufficient for landscapes in the region, even in the heat of summer. Citizens are encouraged to enroll in the Weekly Watering Advice service offered by the Water Is Awesome campaign that is supported by North Texas Municipal Water District, Tarrant Regional Water District, and Dallas Water Utilities. This can be accessed at https://waterisawesome.com/weekly-watering-advice.

G. TIME OF DAY WATERING SCHEDULE

NTMWD requires that during the summer months (April 1 – October 31) under normal conditions, spray irrigation with an irrigation system or sprinkler is only permitted on authorized watering days, before 10 a.m. or after 6 p.m. The primary purpose of this measure is to reduce wind drift and evaporation losses during the active growing season. The time-of-day watering schedule requirement increases watering efficiency by eliminating outdoor irrigation use when climatic factors negatively impact irrigation system efficiencies. 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.

H. IRRIGATION SYSTEM REQUIREMENTS FOR NEW AND COMMERCIAL SYSTEMS

In 2007, the 80th Texas Legislature passed House Bill 1656, Senate Bill 3, and House Bill 4 related to regulating irrigation systems and irrigators by adopting minimum standards and specifications for designing, installing, and operating irrigation systems. The Texas legislation required cities with a population over 20,000 to develop a landscape irrigation program that includes permitting, inspection, and enforcement of water conservation for new irrigation systems.

NTMWD ***requires*** all Member Cities and Customers adhere to a minimum set of irrigation standards:

1) Require that all new irrigation systems be in compliance with state design and installation regulations (Texas Administrative Code Title 30, Chapter 344).

2) Require operational rain and freeze sensors and/or ET or Smart controllers on all new irrigation systems. Rain and freeze sensors and/or ET or Smart controllers must be properly maintained to function properly.

3) Require that irrigation systems be inspected at the same time as initial backflow preventer inspection.

4) Require the owner of a regulated irrigation property to obtain an evaluation of any permanently installed irrigation system on a 10-year basis. The irrigation evaluation shall be conducted by a licensed irrigator in the state of Texas and be submitted to the local water provider (i.e., city, water supply corporation).

I. WATER WASTE PROVISIONS

NTMWD requires all Member Cities and Customers prohibit activities that waste water. The main purpose of a water waste ordinance is to provide for a means to enforce that water waste is prevented during lawn and landscape irrigation, that water resources are conserved for their most beneficial and vital uses, and that public health is protected. It provides a defined enforcement mechanism 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 actions if no corrective action has been taken after a certain number of correspondences.

NTMWD ***requires*** that the following water waste ordinance offenses include:

1) The use of irrigation systems that water impervious surfaces. (Wind-driven water drift will be taken into consideration.)

2) Outdoor watering during precipitation or freeze events.

3) The use of poorly maintained sprinkler systems that waste water.

4) Excess water runoff or other obvious waste.

5) Overseeding, sodding, sprigging, broadcasting or plugging with cool season grasses or watering cool season grasses, except for golf courses and athletic fields.

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.

7) Non-commercial car washing that does not use a water hose with an automatic shut-off valve.

8) Hotels and motels that do not offer a linen reuse water conservation option to customers.

9) Restaurants, bars, and other commercial food or beverage establishments that provide drinking water to customers unless a specific request is made by the customer for drinking water.

8.03 POTENTIAL FUTURE STRATEGIES

A. USE OF ET-BASED WEEKLY WATERING ADVICE/RECOMMENDATIONS

NTMWD requires that Member Cities and Customers adhere to a year-round outdoor watering schedule. However, this conservation practice can be improved with the use of ET-based weekly watering advice and recommendations. Landscapes frequently require less watering than the year-round water schedule allows. This measure can be particularly useful for entities with a significant percentage of customers using automated landscape irrigation systems.

Water providers in the Dallas-Fort Worth area (including NTMWD) sponsor weather stations to collect daily weather data and provide the most accurate watering recommendations. Many cities in the DFW area can already take advantage of these ET-based recommendations and incorporate them into their water conservation programs, at no cost to the city. Examples of such a service are shown below.

- **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. Recommendations are available for select cities in Collin, Dallas, Denton, Fannin, Hunt, Kaufman and Rockwall Counties. 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 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. Advice service is available for all of North Central Texas and sponsored by DWU and TRWD. (https://waterisawesome.com/weekly-watering-advice).

- **WaterWise Newsletter and Hotline** – The City of Frisco provides weekly lawn watering advice on the city's website and through the WaterWise Newsletter distributed to subscribers every Monday. Frisco also has a "Weekly Watering Advice

Hotline" you can into weekly to get this information. Frisco has a weather station that is used to determine how much water is needed each particular week.

Providing evapotranspiration (ET)-based weekly watering recommendations can reduce the amount of water applied for outdoor watering if customers follow the guidance. A drawback with this BMP is the adoption rate. Since these recommendations may change every week, it requires customers to adjust their controllers more often.

It is important to note that at a minimum, Member Cities and Customers must adhere to the year-round outdoor watering schedule set by NTMWD.

B. WATER EFFICIENT LANDSCAPE INITIATIVES

NTMWD recommends that Member Cities and Customers include water efficient landscape initiatives in their water conservation plans. A water efficient landscape is a landscape that is designed and maintained according to basic good horticultural principles that allow for a beautiful healthy landscape with minimal or no supplemental irrigation and no adverse runoff from the landscape property. Water efficient landscapes limit or exclude non-functional turf where possible. Examples of nonfunctional turf include streetscape turf and turf that is purely ornamental. As an alternative to non-functional turf grasses, water efficient landscapes use appropriate plants or other landscaping materials that require little or no supplemental irrigation. Appropriate plants are those selected based on their adaptability to the region's soil and climate. NTMWD's #PledgeToPlantSmart initiative seeks to inspire positive change in water conservation by encouraging North Texas residents to do their part and plant smart by selecting native or adaptive plants for their garden and landscaping. Member Cities and Customers should adopt a native and adaptive recommended plant list for water efficient landscaping. Water efficient landscapes can be an alternative to non-functional turf grasses and may be appropriate for application in new development or retrofits of existing landscapes for both commercial and residential areas.

Water efficient landscape initiatives can be encouraged through financial incentives or required through ordinance. Member cities and customers should also consider review of their existing requirements and removal of current codes that may impede or limit the application of water efficient landscapes. Property code 202.007 may be a helpful resource for language for removing potential barriers to water efficient landscapes.

In lieu of an ordinance, water efficient landscapes can be encouraged through rebates for landscape conversion or installation or award programs. Good examples of water efficient landscapes should also be encouraged through public outreach, demonstration gardens, and/or used in public landscapes and rights-of-way. NTMWD has a great example of the implementation of native plants and xeriscaping at the Bois d'Arc Lake Operations Center.

There are several programs available that offer a wealth of information on designing and implementing water efficient landscape.

- Water Wise (http://urbanlandscapeguide.tamu.edu/waterwise.html)
- Texas SmartScape™ (http://www.txsmartscape.com/)
- EARTH-KIND™ (https://aggie-horticulture.tamu.edu/earthkind/publications/#water)

NTMWD recommends but does not require implementation of this conservation practice in Member Cities and Customers' own water conservation plans.

C. ADDITIONAL WATER SAVING MEASURES FOR NEW IRRIGATION SYSTEM REQUIREMENTS

NTMWD requires certain irrigation system requirements for new and commercial systems. However, this conservation practice can be improved with additional water savings measures. As discussed previously, the Texas legislation regulates irrigation systems and irrigators by adopting minimum standards and specifications for designing, installing, and operating irrigation systems.

Many cities within Region C have adopted irrigation system standards above the minimum state requirements. Some of these standards include:

- 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 60 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 all non-turf landscape areas included in the irrigation plan to be designed with subsurface irrigation, drip irrigation, and/or pressure compensating tubing. If the irrigation plan includes a foundation watering system, require a separate zone to be dedicated for drip irrigation for the purpose of watering a structure's foundation.
- Require a flow control 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 that all new irrigation systems must include an automatic controller capable of providing the following features:
    - Multiple irrigation programs with at least three start times per program
    - Limiting the irrigation frequency to once every 7 days and once every 14 days
    - Water budgeting feature
- 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.
- Require the irrigation plan indicating the actual installation of the system and the associated seasonal watering schedule be submitted to the applicable city official/department.
- Require the irrigation plan and maintenance checklist be transferred from the new home builder to the first home buyer with documentation confirming the transaction provided to the applicable city official/department.

It is important to note that, at a minimum, Member Cities and Customers must adhere to the irrigation system requirements set by NTMWD.

D. ADDITIONAL WATER WASTE PROVISIONS

NTMWD requires certain water waste provisions. However, this conservation practice can be improved with the inclusion of additional water waste provisions suited for your entity. As discussed previously, the main purpose of a water waste ordinance is to provide a means for enforcement that water waste is prevented during lawn and landscape irrigation, that water resources are conserved for their most beneficial and vital uses, and that public health is protected. It provides a defined enforcement mechanism 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 actions if no corrective action has been taken after a certain number of correspondences.

NTMWD **recommends, but does not require**, the following additional water waste ordinance offenses:

1) Sprinkler runoff from a property greater than 50 feet.
2) Operating an irrigation system or other lawn watering device during any form of precipitation or when temperatures are below 32 degrees Fahrenheit.
3) Irrigation to pond in a street or parking lot to a depth greater than 1/4 inch.
4) Failure to repair a controllable leak, including but not limited to a broken sprinkler head, a leaking valve, leaking or broken pipes, or a leaking faucet.
5) Operating a permanently installed irrigation system with a broken head or a head that is out of adjustment where the arc of the spray head is over a street or parking lot.
6) Washing of driveways, sidewalks, parking lots or other impervious surface areas with an open hose or spray nozzle attached to an open hose, except when required to eliminate conditions that threaten public health, safety or welfare.
7) Installation of splash pads that use a flow-through system instead of a cycle tank.

   All splash pads should follow the manufacturer's recommendations and health agency guidance for the operation and management of splash pads and have standard operating procedures that help ensure water quality and promote conservation. Standard operating procedures should be tailored to the type of splash-pad (flow-through or cycle tank). Regardless of splash pad type or configuration, consideration should be given towards conservation efforts. For example, operating hours could be adjusted often based on frequency and duration of public use or the runoff can be diverted to serve a functional purpose, such as maintaining native and adapted vegetation.

It is important to note that, at a minimum, Member Cities and Customers must adhere to the water waste provisions set by NTMWD.

E. PARK/ATHLETIC FIELD CONSERVATION

NTMWD recommends that Member Cities and Customers consider the implementation of this conservation practice if there are parks and/or athletic fields within their system that are heavy water users. This conservation practice is intended to address park and athletic field conservation if the water provider manages and/or serves customers with irrigated parks

and/or athletic fields. These facilities often face scrutiny by the public for using large amounts of water or being perceived as using excessive amounts. Athletic field and park irrigation conservation practices and the careful use of water in the operation and maintenance of park facilities can effectively reduce water demands. Once a water provider or customer adopts this practice, it should be followed closely to achieve maximum water efficiency benefits. With the dedication of an athletic field manager, athletic field conservation can effectively reduce system water demand. A manager can 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 park facilities should be metered, and water use billed to reinforce the importance of water efficiency. Before developing an efficient watering program, the water provider should consider meeting with parks irrigation personnel, management, and authorized landscape manager. This discussion should focus on water conservation issues and developing an adequate scope of action for efficiency. The first key is to understand the performance and capabilities of your irrigation system at these facilities. Requiring automatic irrigation systems and controllers at all facilities is recommended. It is essential to have training in soil management, proper aeration methods, nutrient management, mowing, soil testing, and irrigation management.

Achieving conservation can be voluntary or regulatory, based on the needs of the city. Cities may also consider if there is an opportunity to use reclaimed, reused, or recycled water for parks to conserve potable water. However, specific uses must meet TCEQ water quality standards for reclaimed water and human contact, and they must be appropriate for the particular use of the park. Reclaimed water should be applied based on the appropriate water budget. When developing athletic field conservation practices, identify the various stakeholders, including the school district staff, nonprofit athletic associations, private sports complex managers, and city staff. Meeting with them will help achieve long-term results.

NTMWD recommends but does not require implementation of this conservation practice in Member Cities and Customers' own water conservation plans.

F. GOLF COURSE CONSERVATION AND REUSE

NTMWD recommends that Member Cities and Customers consider the implementation of this conservation practice if there are golf courses within their system that are heavy water users. Golf courses can use a considerable amount of water for irrigation, especially during the summer. The Environmental Institute for Golf found that from 2003-2005, an 18-hole course in the southeast region of the country (including North Central Texas) applied an average of 29 inches of irrigation water per acre every year. Irrigation of course play areas, such as fairways, is 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.

By adopting a conservation plan, golf courses can benefit by:

- Being a good neighbor by conserving local water supplies
- Saving money by reducing water use
- Protecting local water quality
- Maintaining playing conditions on the course
- Increasing irrigation equipment longevity

Water providers may take different golf course conservation approaches: encouraging voluntary efforts by the golf courses to conserve water, making it required as part of a contract, or, if possible, passing an ordinance requiring golf courses to develop and implement a conservation plan. It is important for water providers to work closely with golf courses since they know which practices will have the greatest potential for implementation. The courses may have already completed some best management practices and knowledge which may be effective or not. Water providers should work to coordinate and implement conservation practices on courses that are owned and operated by the local government.

Water conservation and water quality protection measures for golf courses may include, but are not limited to, the following:

Golf Course Landscape Design and Water Sources

- When feasible, use alternative water sources, such as reclaimed or reuse water from wastewater treatment facilities, to supplement or replace potable water sources. Monitor reclaimed water tests regularly for salinity. Rainwater harvesting and on-site pond storage are additional alternative water sources to consider.
- Select drought-tolerant turfgrass varieties to minimize water use while maintaining a high-quality playing surface.
- Reduce 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 will provide an attractive and low-maintenance landscape.
- Reduce water use by limiting the number and/or size of water features that only serve an aesthetic function.
- Develop a drought management plan that can be implemented when water supplies are low enough to enact local drought mitigation efforts.

Irrigation System Design and Maintenance

- Irrigation systems should be properly designed and installed to maximize water use efficiency while reducing operational costs and maintaining a healthy and playable course.
- Utilize new technology, such as soil moisture sensors, evapotranspiration data, and computer-controlled systems that maximize water efficiency by irrigating based on the turfgrass's moisture needs.
- Hand watering greens or other smaller areas will save water compared to running the entire zone in that area.
- Design the irrigation system to ensure that the irrigation water is distributed evenly and efficiently, with a Distribution Uniformity of 80% or better.
- 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. Conducting a system-wide audit by a licensed irrigation professional annually can help identify inefficiencies in the system.
- Fix leaks in the system immediately.
- Rain sensors can shut off the irrigation system when an adequate amount of rainfall is received.
- Irrigating in the early morning hours before temperatures rise and when wind speeds are low will reduce the amount of water lost to evaporation.
- Use mowing, aeration, nutrients, and soil amendments to improve soil condition and increase water infiltration.

Water Quality Protection

- Obtain a soil test before applying fertilizer to ensure the correct type and amount is used.
- Apply fertilizers and chemicals according to the directions on the label. Do not overapply.
- Do not overwater fertilizers when applying, resulting in runoff that could carry fertilizers into a nearby stream or pond.
- Maintain vegetated buffers at least 15 feet from the edge of a stream or pond to capture pollutants that may runoff from the course.

NTMWD recommends but does not require implementation of this conservation practice in Member Cities and Customers' own water conservation plans.

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

Another potential conservation practice to implement is the requirement of licensed irrigation inspectors to review and inspect all irrigation system plans and installed components before a permit is released. Many cities use licensed plumbing inspectors, as allowed by TCEQ rules, to perform these duties. However, having dedicated licensed irrigation inspectors to implement all aspects of an irrigation system permitting program provides 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.

Inspecting the system provides benefits for water conservation. With open-trench inspections, you can check:

- Depth of piping-which protects from freezing temperatures
- Potential invasion of plant/shrubbery roots
- Joints are glued appropriately, and no leaks occur
- Pipe size-to eliminate water hammer
- Pressure management requirements
- The overall layout of the system

Staff can hold an irrigator's license and inspector's license, but to prevent them from installing and inspecting their work, staff can't have both running concurrently. In 2011, the 82nd Texas Legislature passed House Bill 2507, making it a Class C misdemeanor for an individual to operate as an irrigator in the state of Texas without a valid irrigation license. Therefore, effective September 1, 2011, individuals operating without a license are in direct violation of the Texas Occupational Code, Sec. 1903.256.

According to the Texas Administrative Code, upon completion of the irrigation system, four items must be completed to inform and educate the owner of the system: a final walk-through, a maintenance checklist, licensed irrigator contact information, and an as-built plan. All irrigation system plans, installation, and review requirements must be followed for long-term water efficiency. Minimum state requirements for Landscape Irrigation can be found in Chapter 344 of the Texas Administrative Code.

NTMWD recommends but does not require implementation of this conservation practice in Member Cities and Customers' own water conservation plans.

H. OFFER FREE OR DISCOUNTED IRRIGATION SYSTEM CHECK-UPS FOR RESIDENTIAL CUSTOMERS

The EPA estimates that up to 70% of the total water used during the summer months is applied as outdoor irrigation. As much as 50% of the water used outdoors is wasted due to overwatering and inefficient or malfunctioning irrigation system components. Irrigation system check-ups (also known as evaluations or audits) for residential customers, is a tool that cities can employ to reduce outdoor watering demand. Check-ups are typically offered at no charge to homeowners. A licensed irrigator will evaluate the irrigation system components and controller settings during a typical check-up to see if the irrigation system can operate more efficiently and identify needed repairs or adjustments. The licensed irrigator will run the irrigation system to see if the sprinkler heads function correctly and apply water only to the intended areas. They will check the irrigation system's pressure and discuss the controller settings with the homeowner to advise them on the most efficient watering methods.

One valuable aspect of check-ups is the one-on-one assistance and education that a residential customer receives on properly managing the irrigation system. This education can result in long-term water savings because the customer has a better understanding of the system. Water savings may last for multiple years after the evaluation is completed, mainly due to more efficient watering habits. As part of the check-up, the licensed irrigator will identify inefficiencies in the resident's irrigation system and educate them on programming the irrigation controller for more efficient watering practices, such as seasonal adjustment settings and 'Cycle and Soak'. The sponsoring water provider or city can also offer handouts, brochures, and other educational information to residents. The licensed irrigator can provide a report to the residential customer detailing equipment problems and offer recommendations to change watering habits. Reports can include an estimated water savings amount based on recommended adjustments to the controller's run times. The licensed irrigator should also provide a copy of the report to the sponsoring water provider or city.

Benefits of check-ups include one-on-one contact with residential customers, providing educational information that may result in greater water savings than irrigation system fixes

alone. Check-ups are an excellent customer service tool when managing residents' complaints. When using check-ups, cities can be selective by targeting high water users or those with large lots to maximize budget and water savings. Water providers or cities should consider conducting a customer satisfaction survey after the check-up is completed to determine how many residents have implemented recommended modifications and gauge satisfaction with the check-up program.

NTMWD recommends but does not require implementation of this conservation practice in Member Cities and Customers' own water conservation plans.

I. REBATES

NTMWD recommends that Member Cities and Customers consider offering a rebate program as a conservation practice to be included as part of their water conservation plan. As the population increases in the North Texas region, the demand for water grows, especially because many newer cities require irrigation systems in new developments.

Creating a program that encourages residents to become educated on their irrigation system can improve operation and efficiency. Furthermore, when it comes to the type of irrigation system and standard efficiencies, the Texas AgriLife Research and Extension Urban Solutions Center provides the following average efficiencies by system type:

- Surface/Subsurface drip – 90%
- Surface micro drip irrigation – 85%
- Large Rotors – 70%
- Small Rotors – 65%
- Spray Heads – 50%

This conservation practice of a rebate program provides, in conjunction with a sprinkler evaluation (check-up) program, an incentive to have an evaluation done and make recommended changes. With such a substantial opportunity for efficiency gains, some entities may wish to consider offering rebates to both residential and commercial customers for upgrading their current irrigation systems. 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.

Although rebates for irrigation systems can have large impacts, there are also several other water conservation incentive programs that can be implemented. Other examples include:

- Commercial clothes washer rebates for the purchase and installation of high efficiency card- or coin-operated commercial clothes washers
- Low-flow toilet replacement and rebate programs
- Rebates for rain/freeze sensors and/or ET or Smart controllers
- Low-flow showerhead and sink aerators replacement programs or rebates
- Residential water efficient clothes washer rebates
- Pressure reducing valve installation programs or rebates
- Rain barrel rebates
- Pool cover rebates
- On-demand hot water heater rebates
- Other water conservation incentive programs

NTMWD recommends but does not require implementation of this conservation practice in Member Cities and Customers' own water conservation plans.

J. ICIM RECOMMENDATIONS

NTMWD has partnered with Plummer Associates, Inc. to develop the ICIM program to identify where additional ICIM water savings can be achieved. Member Cities and Customers can adopt a similar approach by implementing the following conservation practices:

- **Classification of Customers by Specific End Use** - A billing system that identifies customers by criteria specific enough to assess usage patterns can greatly assist in reviewing drivers of demand and developing targeted conservation efforts. For example, rather than identify customers as residential, commercial, industrial, or institutional, which is very broad, utilities can classify customers by specific end uses such as Veterinary Hospitals, Full-Service Hotels, or Day Care Centers.
- **End Use Analysis** - In order to determine what water conservation and efficiency programs and policies will be most effective in managing demand, a water utility needs to understand the makeup of its customer base and conduct a thorough assessment of end use water efficiency measures. Understanding what technologies are available, understanding how far along end users are in adopting these new technologies, and understanding the potential impacts to long-term water use trends, allow planners to target the most effective drivers of change.

- **Benchmarking** - As businesses grow, they tend to add more customers and productions. As such, it can be difficult to see the benefit of targeted conservation efforts if you are only looking at the total annual water use. Development of effective and meaningful benchmarking, such as gallons per pound of product, gallons per guest per day, gallons per meal, etc., allows end users to gauge their effectiveness in using water and energy efficiently by providing measures that are easy to define and allow for comparison amongst piers. Additionally, benchmarking allows end users to gauge the effectiveness of their efforts year over year.
- **Providing Water Efficiency Opportunity Surveys for ICIM Customers** - A detailed water efficiency survey can enable end users to understand how they use water, develop a complete inventory of water using equipment and processes, identify potential leaks and losses, set realistic reduction goals, identify and implement useful policies, identify low cost/no cost projects and assess potential investments in significant projects aimed at reducing long-term water demand. Members can reach out to NTMWD to participate in the ongoing Water Efficiency Opportunity Surveys.

NTMWD recommends but does not require implementation of this conservation practice in Member Cities and Customers' own water conservation plans. NTMWD recommends that all Member Cities and Customers participate in the ICIM program and takes advantage of the Water Efficiency Opportunity Surveys.

K. WATER EFFICIENCY OUTREACH PROGRAM

NTMWD provides a wealth of technical assistance and outreach. Wholesale and retail water providers benefit from a consistent water conservation message across multiple cities and can enhance their reputation in the community. Utilizing resources and programs from NTMWD's conservation portal allows Member Cities and Customers to save money by not producing the resources or operating the programs themselves and amplifies a common message. Outreach assistance from NTMWD accomplishes public outreach and education elements in both the wholesale and retail water providers respective water conservation plans.

However, it is recommended that each member city and customer develop their own water efficiency outreach program as well. Perhaps one of the most important actions a utility can take in increasing water use efficiency among its customers is through public education and outreach programs (E&O). The goal of E&O programs is to influence behavioral change for short and long-term water savings. Regular and consistent messaging in customer education will provide an overall picture of water resources in the community. Communicating the need for conservation helps manage existing water supplies and avoids or delays the need for expanded or new infrastructure to meet increased water demands. Customer education also provides valuable information on specific actions they can take in their home or business to

meet these community goals while also benefiting from them personally (i.e., managing their water bill).

Each utility should develop an education and outreach plan suited to their community that is adaptable over time. Understanding which messages need to be conveyed regularly and identifying the target audience(s) is key to a successful program. An effective public education program will help develop trust between the community and the utility as relevant, timely, and fact-based information is provided, and customer service is enhanced.

Many cities have dedicated water conservation web pages located within the main city or utility website that provide tips and other resources. The TWDB is one source that provides publications and other materials that can be placed online or made available in city/utility buildings. NTMWD's online conservation portal is another. The various education and outreach tools also allow cities to promote other programs offered, such as rebates or events, and to communicate other important messages, such as drought conditions or water service outages.

Some customers prefer to learn in a classroom setting or to tour facilities or demonstration areas to better understand certain conservation techniques. Offering in-person or virtual classes or workshops provides an opportunity to connect with these customers, provides hands-on experience, and allows questions on a range of conservation issues to be answered. NTMWD offers several programs such as these described in **Section 8.02.**

NTMWD recommends but does not require implementation of this conservation practice in Member Cities and Customers' own water conservation plans.

2024 Water Resource and Emergency Management Plan

Under Texas Water Code Chapter 11 and Title 30 Texas Administrative Code Chapter 288, Retail, Irrigation and Wholesale Public Water Suppliers are required to develop, implement and submit updated Drought Contingency Plans to the TCEQ every five years.

1.00 INTRODUCTION

City of Wylie is a Member City of the North Texas Municipal Water District (NTMWD). This Plan was developed following TCEQ guidelines and requirements governing the development of drought contingency plans.

The goal of the water resource and emergency management plan is to prepare for potential water shortages and to preserve water for essential uses and the protection of public health. The objectives to achieve this goal are as follows:

- To save water during droughts, water shortages, and emergencies.
- To save water for domestic use, sanitation, and fire protection.
- To protect and preserve public health, welfare, and safety.
- To reduce the adverse impacts of shortages.
- To reduce the adverse impacts of emergency water supply conditions.

Note: NTMWD refers to their drought contingency plan (DCP) as the water resource and emergency management plan (WREMP) and should be considered synonymous with a DCP.

1.01 MINIMUM REGULATORY REQUIREMENTS

A drought contingency plan is defined as “a strategy or combination of strategies for temporary supply and demand management responses to temporary and potentially recurring water supply shortages and other water supply emergencies”. 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 described in **Appendix B.**

2.00 IMPLEMENTATION AND ENFORCEMENT

2.01 PROVISIONS TO INFORM THE PUBLIC AND OPPORTUNITY FOR INPUT

City of Wylie provided opportunity for public input in the development of this Plan by the following means:

- Providing written notice of the proposed Plan and the opportunity to comment on the Plan by newspaper and posted notice.
- Posting the draft Plan on the community website and/or social media.
- Providing the draft Plan to anyone requesting a copy.

- Holding a public meeting regarding the Plan on 4/23/2024 Public notice of this meeting was provided on the community website and in local newspapers.
- Approving the Plan at a public Board meeting on 4/23/2024. Public notices of this meeting were provided on the community website and live audio was available during the meeting.

2.02 PROGRAM FOR CONTINUING PUBLIC EDUCATION AND INFORMATION

City of Wylie informs and educates the public about the Plan by the following means:

- Preparing a bulletin describing the plan and making it available at City Hall and/or other appropriate locations.
- Including information and making the Plan available to the public through the community website and/or social media.
- Notifying local organizations, schools, and civic groups that utility staff are available to make presentations on the Plan (usually in conjunction with presentations on water conservation programs).
- At any time that the Plan is activated or changes, City of Wylie will notify local media of the issues, the water resource management stage (if applicable), and the specific actions required of the public. The information will also be publicized on the community website and/or social media. Billing inserts will also be used as appropriate.

2.03 COORDINATION WITH THE REGIONAL WATER PLANNING GROUPS AND NTMWD

Appendix F of this Plan includes copies of letters sent to the Chairs of the appropriate regional water planning groups as well as NTMWD.

2.04 INITIATION AND TERMINATION OF WATER RESOURCE MANAGEMENT STATGES

A. INITITATION OF A WATER RESOURCE MANAGEMENT STAGE

The City Manager or his/her designee may order the implementation of a water resource management stage when one or more of the trigger conditions for that stage is met.

- NTMWD has initiated a water resource management stage. (Stages imposed by NTMWD action ***must*** be initiated by Member Cities and Customers.)
- Other trigger conditions internal to Wylie specified for each drought stage. For these types of internal conditions, the official designee may decide not to order the

implementation of a stage even though one or more of the trigger criteria for the stage are met. Factors which could influence such a decision could include, but are not limited to, the time of the year, weather conditions, the anticipation of replenished water supplies, or the anticipation that additional facilities will become available to meet needs. The reason for this decision must be documented.

The following actions will be taken when a water resource management stage is initiated:

- The public will be notified through local media and the supplier's website.
- Wholesale customers and NTMWD will be notified by email that provides details of the reasons for initiation of the water resource management stage.
- If any mandatory provisions of the Plan are activated, City of Wylie will notify the TCEQ and the NTMWD Executive Director within five business days. Instructions can be accessed on the NTMWD portal online at https://www.ntmwd.com/login/portal/.

B. TERMINATION OF A WATER RESOURCE MANAGEMENT STAGE

Water resource management stages initiated by NTMWD may be terminated after NTMWD has terminated the stage. For stages initiated by the City Manager or his/her official designee, they may order the termination of a water resource management stage when the conditions for termination are met or at their discretion.

The following actions will be taken when a water resource management stage is terminated:

- The public will be notified through local media and the supplier's website.
- Wholesale customers and NTMWD will be notified by email.
- If any mandatory provisions of the Plan that have been activated are terminated, The City of Wylie will notify the TCEQ Executive Director and the NTMWD Executive Director within five business days. Instructions can be accessed on the NTMWD portal online at https://www.ntmwd.com/login/portal/.

The City Manager or his/her official designee may decide not to order the termination of a water resource management stage even though the conditions for termination of the stage are met. Factors which could influence such a decision include, but are not limited to, the time of the year, weather conditions, or the anticipation of potentially changed conditions that warrant the continuation of the water resource management stage. The reason for this decision must be documented.

2.05 PROCEDURE FOR GRANTING VARIANCES TO THE PLAN

The City Manager or his/her official designee may grant temporary variances for existing water uses otherwise prohibited under this Plan if one or more of the following conditions are met:

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

Variances shall be granted or denied at the discretion of the City Manager or his/her official designee. All petitions for variances should be in writing and should include the following information:

- Name and address of the petitioners.
- Purpose of water use.
- Specific provisions from which relief is requested.
- Detailed statement of the adverse effect of the provision from which relief is requested.
- Description of the relief requested.
- Period of time for which the variance is sought.
- Alternative measures that will be taken to reduce water use and the level of water use reduction.
- Other pertinent information.

2.06 PROCEDURES FOR ENFORCING MANDATORY WATER USE RESTRICTIONS

Mandatory water use restrictions may be imposed in Stage 1, Stage 2 and Stage 3. The penalties associated with the mandatory water use restrictions are explained below and included in the ordinance enacting this plan.

Stage 1:

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

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

Stage 2:

- Violations must be observed by the City Manager or his or her designee. Violations will be documented by electronic photographs and filed for review.
- First-time violations in Stage 2 will be assessed a $100.00 administrative fee on the next available water bill. If that first time violation involved an irrigation system, the $100.00 administrative fee will be waived or credited after the completion of a free irrigation check-up of the violating system, performed by a licensed irrigator contracted with the City.
- For the second violation in Stage 2, a $200.00 administrative fee will be included on the next available water bill. For the third and subsequent violations in Stage 2, a $300.00 administrative fee per violation will be included on the next available water bill.
- Upon the second violation in Stage 2 involving an irrigation system, the irrigation system associated with that property will be disconnected, which could incur additional fees.
- Unpaid assessed administrative fees related to violations of water use restrictions shall incur late payment penalties and may result in termination of water service.

Stage 3:

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

- First-time violations in Stage 3 will be assessed a $200.00 administrative fee on the next available water bill.
- For the second violation in Stage 3, a $300.00 administrative fee will be included on the next available water bill. For the third and subsequent violations, a $400.00 administrative fee per violation will be included on the next available water bill.
- Upon the first violation in Stage 3 involving an irrigation system, the irrigation system associated with that property will be disconnected, which could incur additional fees.
- Unpaid assessed administrative fees related to violations of water use restrictions shall incur late payment penalties and may result in termination of water service.

  OPTIONAL ADMINISTRATIVE REMEDIES

  Contesting Administrative Fees

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

2.07 REVIEW AND UPDATE OF WATER RESOURCE AND EMERGENCY MANAGEMENT PLAN

As required by TCEQ rules, City of Wylie must review their respective Plan every five years. The plan will be updated as appropriate based on new or updated information.

3.00 WATER RESOURCE AND EMERGENCY MANAGEMENT PLAN

Initiation and termination criteria for water management stages include general, demand, supply, and emergency criteria. One of the major indicators of approaching or ongoing drought conditions is NTMWD's combined reservoir storage, defined as storage at Lavon Lake plus storage in Bois d'Arc Lake. Percent storage is determined by dividing the current storage by the total conservation storage when the lakes are full. **Table 2** summarizes the water management stages by triggers based on percent combined storage and associated demand

reduction goals and outdoor watering restrictions. The following sections go into more detail on the three water management stages.

TCEQ requires notification when mandatory restrictions are placed on a customer. NTMWD must notify TCEQ when they impose mandatory restrictions on Member Cities and Customers. Member Cities and Customers must likewise notify TCEQ when they impose mandatory restrictions on their customers (wholesale or retail). Measures that impose mandatory requirements on customers are denoted with **"requires notification to TCEQ"**. NTMWD and the utilities must notify TCEQ within five business days if these measures are implemented (https://www.tceq.texas.gov/response/drought/drought-and-public-water-systems).

Table 2: Water Management Plan Stages Summary

Drought Stage		April to October	November to March	Demand Reduction Goal	Outdoor Watering Restrictions
		Percent Combined Storage			
Stage 1	Initiation	70%	60%	2%	2X per week (Apr-Oct) 1X per week (Nov-Mar)
	Termination	75%	65%		
Stage 2	Initiation	55%	45%	5%	1X per week (Apr-Oct) 1X every other week (Nov-Mar)
	Termination	70%	60%		
Stage 3	Initiation	30%	20%	30%	No outdoor watering
	Termination	55%	45%		

3.01 WATER RESOURCE MANAGEMENT – STAGE 1

A. INITIATION AND TERMINATION CRITERIA FOR STAGE 1

NTMWD has initiated Stage 1, which may be initiated when one or more of the following criteria is met:

- **General Criteria**
    - The Executive Director, with the concurrence of the NTMWD Board of Directors, finds that conditions warrant the declaration of Stage 1.
    - One or more source(s) is interrupted, unavailable, or limited due to contamination, invasive species, equipment failure or other cause.
    - The water supply system is unable to deliver needed supplies due to the failure or damage of major water system components.

  - Part of the system has a shortage of supply or damage to equipment. (NTMWD may implement measures for only that portion of the system impacted.)
  - A portion of the service area is experiencing an extreme weather event or power grid/supply disruptions.

- **Demand Criteria**
  - Water demand has exceeded or is expected to exceed 90% of maximum sustainable production or delivery capacity for an extended period.
- **Supply Criteria**
  - The combined storage in Lavon and Bois d'Arc Lake, as published by the TWDB, is less than:
    - 70% of the combined conservation pool capacity during any of the months of April through October
    - 60% of the combined conservation pool capacity during any of the months of November through March
  - The Sabine River Authority (SRA) has indicated that its Upper Basin water supplies used by NTMWD (Lake Tawakoni and/or Lake Fork) are in a Stage 1 drought.
  - NTMWD is concerned that Lake Texoma, Jim Chapman Lake, the East Fork Water Reuse Project, Main Stem Pump Station, and/or some other NTMWD water source may be limited in availability within the next six months.

In addition to NTMWD triggers, listed below are internal triggers that may cause Wylie to initiate Stage 1 restrictions:

- The City's water demand has exceeded 85% of the amount that can be delivered to customers for three consecutive days.
- The City's water demand for all or part of the delivery system equals delivery capacity because delivery capacity is inadequate.
- Water supply system is unable to deliver water due to the failure or damage of major water system components, supply source becomes contaminated, power outage, grid failure, natural disaster, or extreme weather event.
- The City Manager or his/her designee determines that it is appropriate to initiate Stage 1.

Stage 1 may terminate when one or more of the following criteria is met:

- **General Criteria**
    - The Executive Director, with the concurrence of the NTMWD Board of Directors, finds that conditions warrant the termination of Stage 1.
    - The circumstances that caused the initiation of Stage 1 no longer prevail.
- **Supply Criteria**
    - The combined storage in Lavon and Bois d'Arc Lakes, as published by the TWDB, is greater than:
        - 75% of the combined conservation pool capacity during any of the months of April through October
        - 65% of the combined conservation pool capacity during any of the months of November through March

In situations in which NTMWD is not in any stages, listed below are internal triggers that may cause Wylie to terminate Stage 1 restrictions:

- The circumstances that caused Wylie to initiate Stage 1 no longer prevail.

B. GOAL FOR USE REDUCTION UNDER STAGE 1

The goal for water use reduction under Stage 1 is an annual reduction of 2% in the use that would have occurred in the absence of water management measures. Because discretionary water use is highly concentrated in the summer months, savings should be higher than 5% in summer to achieve an annual savings goal of 2%. **If circumstances warrant, the Executive Director can set a goal for greater or less water use reduction.**

C. WATER MANAGEMENT MEASURES AVAILABLE UNDER STAGE 1

The actions listed below are provided as potential measures to reduce water demand. NTMWD may choose to implement any or all of the available restrictions in Stage 1.

- Continue actions described in the water conservation plan.
- Increase enforcement of landscape watering restrictions from the water conservation plan.
- Initiate engineering studies to evaluate alternative actions that can be implemented if conditions worsen.
- Accelerate public education efforts on ways to reduce water use.
- Halt non-essential NTMWD water use.
- Encourage the public to wait until the current drought or water emergency situation has passed before establishing new landscaping.

- Encourage all users to reduce the frequency of draining and refilling swimming pools.
- **Requires notification to TCEQ** Initiate a rate surcharge for all water use over a certain level.
- **Requires notification to TCEQ.** Parks, golf courses, and athletic fields using potable water for landscape watering are required to meet the same reduction goals and measures outlined in this stage. As an exception, golf course greens and tee boxes may be hand watered as needed.

3.02 WATER RESOURCE MANAGEMENT – STAGE 2

A. INITIATION AND TERMINATION CRITERIA FOR STAGE 2

NTMWD has initiated Stage 2, which may be initiated due to one or more of the following criteria is met:

- **General Criteria**
    - The Executive Director, with the concurrence of the NTMWD Board of Directors, finds that conditions warrant the declaration of Stage 2.
    - One or more supply source(s) is interrupted, unavailable, or limited due to contamination, invasive species, equipment failure or other cause.
    - The water supply system is unable to deliver needed supplies due to the failure or damage of major water system components.
    - Part of the system has a shortage of supply or damage to equipment. (NTMWD may implement measures for only that portion of the system impacted.)
    - A portion of the service area is experiencing an extreme weather event or power grid/supply disruptions.
- **Demand Criteria**
    - Water demand has exceeded or is expected to exceed 95% of maximum sustainable production or delivery capacity for an extended period.
- **Supply Criteria**
    - The combined storage in Lavon and Bois d'Arc Lake, as published by the TWDB, is less than
        - 55% of the combined conservation pool capacity during any of the months of April through October
        - 45% of the combined conservation pool capacity during any of the months of November through March

- SRA has indicated that its Upper Basin water supplies used by NTMWD (Lake Tawakoni and/or Lake Fork) are in a Stage 2 drought.
- NTMWD is concerned that Lake Texoma, Jim Chapman Lake, the East Fork Water Reuse Project, the Main Stem Pump Station, and/or some other NTMWD water source may be limited in availability within the next three months.

In addition to NTMWD triggers, listed below are internal triggers that may cause Wylie to initiate Stage 2 restrictions:

- The City's water demand has exceeded 90% of the amount that can be delivered to customers for three consecutive days.
- The City's water demand for all or part of the delivery system equals delivery capacity because delivery capacity is inadequate.
- Water supply system is unable to deliver water due to the failure or damage of major water system components, supply source becomes contaminated, power outage, grid failure, natural disaster, or extreme weather event.
- The City Manager or his/her designee determines that it is appropriate to initiate Stage 2.

<u>Stage 2 may terminate when one or more of the following criteria is met:</u>

- **General Criteria**
  - The Executive Director, with the concurrence of the NTMWD Board of Directors, finds that conditions warrant the termination of Stage 2.
  - The circumstances that caused the initiation of Stage 2 no longer prevail.
- **Supply Criteria**
  - The combined storage in Lavon and Bois d'Arc Lake, as published by the TWDB, is greater than
    - 70% of the combined conservation pool capacity during any of the months of April through October
    - 60% of the combined conservation pool capacity during any of the months of November through March

In situations in which NTMWD is not in any stages, listed below are internal triggers that may cause Wylie to terminate Stage 2 restrictions:

- The circumstances that caused Wylie to initiate Stage 2 no longer prevail.

B. GOAL FOR USE REDUCTION UNDER STAGE 2

The goal for water use reduction under Stage 2 is an annual reduction of 5% in the use that would have occurred in the absence of water resource management measures. Because discretionary water use is highly concentrated in the summer months, savings should be higher than 5% in summer to achieve an annual savings goal of 5%. **If circumstances warrant, the Executive Director can set a goal for greater or less water use reduction.**

C. WATER MANAGEMENT MEASURES AVAILABLE UNDER STAGE 2

The actions listed below are provided as potential measures to reduce water demand. NTMWD may choose to implement any or all of the available restrictions in Stage 2.

- Continue or initiate any actions available under the water conservation plan and Stage 1.
- Implement viable alternative water supply strategies.
- **Requires notification to TCEQ.** Limit landscape watering with sprinklers or irrigation systems at each service address to once per week on designated days between April 1 and October 31. Limit landscape watering with sprinklers or irrigation systems at each service address to once every other week on designated days between November 1 and March 31. For residential water customers, watering day is defined as the assigned trash/recycle pickup day for the property address associated with the irrigation system. If there is no street address associated with the property, or there is more than one street address associated with a single contiguous property, the watering day is defined as Wednesday. For industrial, commercial, and institutional water customers, watering day is defined as Wednesday. Exceptions are as follows:
    - New construction may be watered as necessary for 30 days from the installation of new landscape features.
    - Foundation watering (within 2 feet), watering of new plantings (first year) of shrubs, and watering of trees (within a 10-foot radius of its trunk) for up to two hours on any day by a hand-held hose, a soaker hose, or a dedicated zone using a drip irrigation system, provided no runoff occurs.
    - Athletic fields may be watered twice per week.
    - Locations using alternative sources of water supply only for irrigation may irrigate without day-of-the-week restrictions provided proper signage is employed to notify the public of the alternative water source(s) being used. However, irrigation using alternative sources of supply is subject to all other restrictions applicable to this stage. If the alternative supply source is a well, proper proof of well registration with your local water supplier (e.g., city, water

supply corporation) is required. Other sources of water supply may not include imported treated water.

  - An exemption is for drip irrigation systems from the designated outdoor water use day limited to no more than one day per week. Drip irrigation systems are, however, subject to all other restrictions applicable under this stage.

- **Requires notification to TCEQ.** Prohibit overseeding, sodding, sprigging, broadcasting or plugging with or watering, except for golf courses and athletic fields.
- **Requires notification to TCEQ.** Initiate a rate surcharge for all water use over a certain level.
- **Requires notification to TCEQ.** Parks and golf courses using potable water for landscape watering are required to meet the same reduction goals and measures outlined in this stage. As an exception, golf course greens and tee boxes may be hand watered as needed.

3.03 WATER RESOURCE MANAGEMENT – STAGE 3

A. INITIATION AND TERMINATION CRITERIA FOR STAGE 3

NTMWD has initiated Stage 3, which may be initiated due to one or more of the following criteria is met:

- **General Criteria**
  - The Executive Director, with the concurrence of the NTMWD Board of Directors, finds that conditions warrant the declaration of Stage 3.
  - One or more supply source(s) is interrupted, unavailable, or limited due to contamination, invasive species, equipment failure, or other cause.
  - The water supply system is unable to deliver needed supplies due to the failure or damage of major water system components.
  - Part of the system has a shortage of supply or damage to equipment. (NTMWD may implement measures for only that portion of the system impacted.)
  - A portion of the service area is experiencing an extreme weather event or power grid/supply disruptions.
- **Demand Criteria**
  - Water demand has exceeded or is expected to exceed maximum sustainable production or delivery capacity for an extended period.
- **Supply Criteria**

  - The combined storage in Lavon and Bois d'Arc Lake, as published by the TWDB, is less than
    - 30% of the combined conservation pool capacity during any of the months of April through October
    - 20% of the combined conservation pool capacity during any of the months of November through March
- SRA has indicated that its Upper Basin water supplies used by NTMWD (Lake Tawakoni and/or Lake Fork) are in a drought and have significantly reduced supplies available to NTMWD.
- The supply from Lake Texoma, Jim Chapman Lake, the East Fork Water Reuse Project, the Main Stem Pump Station, and/or some other NTMWD water source has become limited in availability.

In addition to NTMWD triggers, listed below are internal triggers that may cause Wylie to initiate Stage 3 restrictions:

- The City's water demand exceeds the amount that can be delivered to customers.
- The City's water demand for all or part of the delivery system seriously exceeds delivery capacity because delivery capacity is inadequate.
- Water supply system is unable to deliver water due to the failure or damage of major water system components, supply source becomes contaminated, power outage, grid failure, natural disaster, or extreme weather event.
- The City Manager or his/her designee determines that it is appropriate to initiate Stage 3.

Stage 3 may terminate when one or more of the following criteria is met:

- **General Criteria**
  - The Executive Director, with the concurrence of the NTMWD Board of Directors, finds that conditions warrant the termination of Stage 3.
  - Other circumstances that caused the initiation of Stage 3 no longer prevail.
- **Supply Criteria**
  - The combined storage in Lavon and Bois d'Arc Lake, as published by the TWDB, is greater than:
    - 55% of the combined conservation pool capacity during any of the months of April through October

- 45% of the combined conservation pool capacity during any of the months of November through March

In situations in which NTMWD is in Stage 2, Stage 1 or not in any stages, listed below are internal triggers that may cause Wylie to terminate Stage 3 restrictions:

- The circumstances that caused Wylie to initiate Stage 3 no longer prevail.

B. GOAL FOR USE REDUCTION UNDER STAGE 3

The goal for water use reduction under Stage 3 is an annual reduction of 30% in the use that would have occurred in the absence of water resource management measures, or the goal for water use reduction is whatever reduction is necessary. Because discretionary water use is highly concentrated in the summer months, savings should be higher than 30% in summer to achieve an annual savings goal of 30%. **If circumstances warrant, the Executive Director can set a goal for greater or less water use reduction.**

C. WATER MANAGEMENT MEASURES AVAILABLE UNDER STAGE 3

The actions listed below are provided as potential measures to reduce water demand. NTMWD may choose to implement any or all of the available restrictions in Stage 3.

- Continue or initiate any actions available under the water conservation plan and Stages 1 and 2.
- Implement viable alternative water supply strategies.
- **Requires notification to TCEQ.** Initiate mandatory water use restrictions as follows:
    - Hosing and washing of paved areas, buildings, structures, windows or other surfaces is prohibited except by variance and performed by a professional service using high efficiency equipment.
    - Prohibit operation of ornamental fountains or ponds that use potable water except where supporting aquatic life.
- **Requires notification to TCEQ.** Prohibit new sod, overseeding, sodding, sprigging, broadcasting or plugging with or watering.
- **Requires notification to TCEQ.** Prohibit the use of potable water for the irrigation of new landscape.
- **Requires notification to TCEQ.** Prohibit all commercial and residential landscape watering, except foundations (within 2 feet) and trees (within a 10-foot radius of its trunk) may be watered for two hours one day per week with a hand-held hose, a soaker hose, or a dedicated zone using a drip irrigation system provided no runoff occurs. Drip irrigation systems are <u>not</u> exempt from this requirement.

- **Requires notification to TCEQ.** Prohibit washing of vehicles except at a commercial vehicle wash facility.
- **Requires notification to TCEQ.** Landscape watering of parks, golf courses, and athletic fields with potable water is prohibited. As an exception, golf course greens and tee boxes may be hand watered as needed. Variances may be granted by the water provider under special circumstances.
- **Requires notification to TCEQ.** Prohibit the filling, draining, and/or refilling of existing swimming pools, wading pools, Jacuzzi and hot tubs except to maintain structural integrity, proper operation and maintenance or to alleviate a public safety risk. Existing pools may add water to replace losses from normal use and evaporation. Permitting of new swimming pools, wading pools, Jacuzzi and hot tubs is prohibited.
- **Requires notification to TCEQ.** Prohibit the operation of interactive water features such as water sprays, dancing water jets, waterfalls, dumping buckets, shooting water cannons, inflatable pools, temporary splash toys or pools, slip-n-slides, or splash pads that are maintained for recreation.
- **Requires notification to TCEQ.** Require all commercial water users to reduce water use by a set percentage.
- **Requires notification to TCEQ.** Initiate a rate surcharge over normal rates for all water use or for water use over a certain level

Appendix A
List of References

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

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, April 2023.

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. 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

5. Freese and Nichols, Inc.: Model Water Conservation Plan for NTMWD Members Cities and Customers, prepared for the North Texas Municipal Water District, Fort Worth, January 2019.

6. Freese and Nichols, Inc.: Model Water Resource and Emergency Management Plan for NTMWD Members Cities and Customers, prepared for the North Texas Municipal Water District, Fort Worth, January 2019.

7. Freese and Nichols Inc, Alan Plummer Associates, Inc., CP & Y Inc., Cooksey Communications. "2021 Region C Water Plan"

Appendix B

Texas Administrative Code Title 30 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

TEXAS ADMINISTRATIVE CODE TITLE 30 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 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
- 288.2(a)(1)(B) – Record Management System – Section 4
- 288.2(a)(1)(C) – Specific, Quantified Goals – Section 3
- 288.2(a)(1)(D) – Accurate Metering – Section 4
- 288.2(a)(1)(E) – Universal Metering – Section 4
- 288.2(a)(1)(F) – Determination and Control of Water Loss – Section 4
- 288.2(a)(1)(G) – Public Education and Information Program – Section 8
- 288.2(a)(1)(H) – Non-Promotional Water Rate Structure – Section 8
- 288.2(a)(1)(I) – Reservoir System Operation Plan – Section 6
- 288.2(a)(1)(J) – Means of Implementation and Enforcement – Section 7
- 288.2(a)(1)(K) – Coordination with Regional Water Planning Group – Section 7
- 288.2(c) – Review and Update of Plan – Section 7

Additional Requirements for Public Water Suppliers (Population over 5,000)

- 288.2(a)(2)(A) – Leak Detection, Repair, and Water Loss Accounting – Section 4

TITLE 30	ENVIRONMENTAL QUALITY
PART 1	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CHAPTER 288	WATER CONSERVATION PLANS, DROUGHT CONTINGENCY PLANS, GUIDELINES AND REQUIREMENTS
SUBCHAPTER A	WATER CONSERVATION PLANS
RULE §288.1	**Definitions**

The following words and terms, when used in this chapter, shall have the following meanings, unless the context clearly indicates otherwise.

(1) Agricultural or Agriculture--Any of the following activities:

(A) cultivating the soil to produce crops for human food, animal feed, or planting seed or for the production of fibers;

(B) the practice of floriculture, viticulture, silviculture, and horticulture, including the cultivation of plants in containers or non-soil media by a nursery grower;

(C) raising, feeding, or keeping animals for breeding purposes or for the production of food or fiber, leather, pelts, or other tangible products having a commercial value;

(D) raising or keeping equine animals;

(E) wildlife management; and

(F) planting cover crops, including cover crops cultivated for transplantation, or leaving land idle for the purpose of participating in any governmental program or normal crop or livestock rotation procedure.

(2) Agricultural use--Any use or activity involving agriculture, including irrigation.

(3) Best management practices--Voluntary efficiency measures that save a quantifiable amount of water, either directly or indirectly, and that can be implemented within a specific time frame.

(4) Conservation--Those practices, techniques, and technologies that reduce the consumption of water, reduce the loss or waste of water, improve the efficiency in the use of water, or increase the recycling and reuse of water so that a water supply is made available for future or alternative uses.

(5) Commercial use--The use of water by a place of business, such as a hotel, restaurant, or office building. This does not include multi-family residences or agricultural, industrial, or institutional users.

(6) Drought contingency plan--A strategy or combination of strategies for temporary supply and demand management responses to temporary and potentially recurring water supply shortages and other water supply emergencies. A drought contingency plan may be a separate document identified as such or may be contained within another water management document(s).

(7) Industrial use--The use of water in processes designed to convert materials of a lower order of value into forms having greater usability and commercial value, and the development of power by means other than hydroelectric, but does not include agricultural use.

(8) Institutional use--The use of water by an establishment dedicated to public service, such as a school, university, church, hospital, nursing home, prison or government facility. All facilities dedicated to public service are considered institutional regardless of ownership.

(9) Irrigation--The agricultural use of water for the irrigation of crops, trees, and pastureland, including, but not limited to, golf courses and parks which do not receive water from a public water supplier.

(10) Irrigation water use efficiency--The percentage of that amount of irrigation water which is beneficially used by agriculture crops or other vegetation relative to the amount of water diverted from the source(s) of supply. Beneficial uses of water for irrigation purposes include, but are not limited to, evapotranspiration needs for vegetative maintenance and growth, salinity management, and leaching requirements associated with irrigation.

(11) Mining use--The use of water for mining processes including hydraulic use, drilling, washing sand and gravel, and oil field re-pressuring.

(12) Municipal use--The use of potable water provided by a public water supplier as well as the use of sewage effluent for residential, commercial, industrial, agricultural, institutional, and wholesale uses.

(13) Nursery grower--A person engaged in the practice of floriculture, viticulture, silviculture, and horticulture, including the cultivation of plants in containers or nonsoil media, who grows more than 50% of the products that the person either sells or leases, regardless of the variety sold, leased, or grown. For the purpose of this definition, grow means the actual cultivation or propagation of the product beyond the mere holding or maintaining of the item prior to sale or lease, and typically includes activities associated with the production or multiplying of stock such as the development of new plants from cuttings, grafts, plugs, or seedlings.

(14) Pollution--The alteration of the physical, thermal, chemical, or biological quality of, or the contamination of, any water in the state that renders the water harmful, detrimental, or injurious to humans, animal life, vegetation, or property, or to the public health, safety, or welfare, or impairs the usefulness or the public enjoyment of the water for any lawful or reasonable purpose.

(15) Public water supplier--An individual or entity that supplies water to the public for human consumption.

(16) Regional water planning group--A group established by the Texas Water Development Board to prepare a regional water plan under Texas Water Code, §16.053.

(17) Residential gallons per capita per day--The total gallons sold for residential use by a public water supplier divided by the residential population served and then divided by the number of days in the year.

(18) Residential use--The use of water that is billed to single and multi-family residences, which applies to indoor and outdoor uses.

(19) Retail public water supplier--An individual or entity that for compensation supplies water to the public for human consumption. The term does not include an individual or entity that supplies water to itself or its employees or tenants when that water is not resold to or used by others.

(20) Reuse--The authorized use for one or more beneficial purposes of use of water that remains unconsumed after the water is used for the original purpose of use and before that water is either disposed of or discharged or otherwise allowed to flow into a watercourse, lake, or other body of state-owned water.

(21) Total use--The volume of raw or potable water provided by a public water supplier to billed customer sectors or nonrevenue uses and the volume lost during conveyance, treatment, or transmission of that water.

(22) Total gallons per capita per day (GPCD)--The total amount of water diverted and/or pumped for potable use divided by the total permanent population divided by the days of the year. Diversion volumes of reuse as defined in this chapter shall be credited against total diversion volumes for the purposes of calculating GPCD for targets and goals.

(23) Water conservation coordinator--The person designated by a retail public water supplier that is responsible for implementing a water conservation plan.

(24) Water conservation plan--A strategy or combination of strategies for reducing the volume of water withdrawn from a water supply source, for reducing the loss or waste of water, for maintaining or improving the efficiency in the use of water, for increasing the

recycling and reuse of water, and for preventing the pollution of water. A water conservation plan may be a separate document identified as such or may be contained within another water management document(s).

(25) Wholesale public water supplier--An individual or entity that for compensation supplies water to another for resale to the public for human consumption. The term does not include an individual or entity that supplies water to itself or its employees or tenants as an incident of that employee service or tenancy when that water is not resold to or used by others, or an individual or entity that conveys water to another individual or entity, but does not own the right to the water which is conveyed, whether or not for a delivery fee.

(26) Wholesale use--Water sold from one entity or public water supplier to other retail water purveyors for resale to individual customers.

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

TITLE 30	ENVIRONMENTAL QUALITY
PART 1	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CHAPTER 288	WATER CONSERVATION PLANS, DROUGHT CONTINGENCY PLANS, GUIDELINES AND REQUIREMENTS
SUBCHAPTER A	WATER CONSERVATION PLANS
RULE §288.2	**Water Conservation Plans for Municipal Uses by Public Water Suppliers**

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

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

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

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

(i) residential;

(I) single family;

(II) multi-family;

(ii) commercial;

(iii) institutional;

(iv) industrial;

(v) agricultural; and,

(vi) wholesale.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(F) a program and/or ordinance(s) for landscape water management;

(G) a method for monitoring the effectiveness and efficiency of the water conservation plan; and

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

(b) A water conservation plan prepared in accordance with 31 TAC §363.15 (relating to Required Water Conservation Plan) of the Texas Water Development Board and substantially meeting the requirements of this section and other applicable commission rules may be submitted to meet application requirements in accordance with a memorandum of understanding between the commission and the Texas Water Development Board.

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

APPENDIX B

TEXAS ADMINISTRATIVE CODE TITLE 30 CHAPTER 288

The TCEQ rules governing development of drought contingency plans are contained in Title 30, Chapter 288, Subchapter B of the Texas Administrative Code, which is included in this Appendix for reference.

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

Minimum Drought Contingency Plan Requirements for Public Water Suppliers

- **288.20(a)(1)(A)** – Provisions to Inform Public and Provide Opportunity for Public Input - Section 2
- **288.20(a)(1)(B)** – Program for Continuing Public Education and Information – Section 2
- **288.20(a)(1)(C)** –Coordination with Regional Water Planning Groups – Section 2
- **288.20(a)(1)(D)** – Description of Information to Be Monitored and Criteria for the Initiation and Termination of Water Resource Management Stages – Sections 2
- **288.20(a)(1)(E)** – Stages for Implementation of Measures in Response to Situations – Section 3
- **288.20(a)(1)(F)** – Specific, Quantified Targets for Water Use Reductions During Water Shortages – Section 3
- **288.20(a)(1)(G)** – Specific Water Supply or Water Demand Measures to Be Implemented at Each Stage of the Plan – Section 3
- **288.20(a)(1)(H)** – Procedures for Initiation and Termination of Drought Contingency and Water Emergency Response Stages – Section 2
- **288.20(a)(1)(I)** – Description of Procedures to Be Followed for Granting Variances to the Plan – Section 2
- **288.20(a)(1)(J)** – Procedures for Enforcement of Mandatory Water Use Restrictions – Section 2
- **288.20(b)** – TCEQ Notification of Implementation of Mandatory Provisions – Sections 2 and 3
- **288.20(c)** – Review of Drought Contingency and Water Emergency Response Plan Every Five (5) Years – Section 2

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

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

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

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

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

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

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

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

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

(ii) water production or distribution system limitations;

(iii) supply source contamination; or

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

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

(G) The drought contingency plan must include the specific water supply or water demand management measures to be implemented during each stage of the plan including, but not limited to, the following:

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

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

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

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

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

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

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

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

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

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

Appendix C
TCEQ Water Utility Profile

The following appendix contains the form TCEQ-10218 and/or TCEQ-20162.

Texas Commission on Environmental Quality

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

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

City of Wylie - Utility Profile Based on TCEQ Format

Name:	City of Wylie
Address:	949 Hensley Lane
	Wylie, TX 75098
Telephone Number:	(972)516-6151
Water Right No.(s):	--
Regional Water Planning Group:	Region C
Form Completed by:	Adam Conner
Title:	Freese and Nichols
Person responsible for implementing conservation program:	Albert Garza
Signature:	Date:

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

UTILITY PROFILE

I. POPULATION AND CUSTOMER DATA

A. Population and Service Area Data

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

2. Service area size (square miles): 24.63

3. Current population of service area: 47,332

4. Current population served for:
   a. water: 47,332
   b. wastewater: 47,332

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

Year	*Population*
2018	44,418
2019	44,934
2020	46,506
2021	47,133
2022	47,332

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

Year	*Population*
2030	47,379
2040	46,874
2050	49,115
2060	50,589
2070	50,589

7. List source or method for the calculation of current and projected population size.
   TWDB Water Use Surveys and 2026 Region C Final Population Projections

B. Customers Data

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

1. Current number of active connections. Check whether multi-family service is counted as
Residential ☑ or Commercial? ☐
Note: This represents retail connection count in 2022

Treated Water Users	*Metered*	*Non-Metered*	**Totals**
Residential - Single Family	12,871		12,871
Residental - Multi Family	2,001		2,001
Institutional	59		59
Commerical	822		822
Industrial	21		21
Agriculture	0		0
Reuse	0		0
Total Unmetered	0	0	0
TOTAL	**15,774**	**0**	**15,774**

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

Year	*2020*	*2021*	*2022*
Treated Water Users			
Residential - Single Family	2,166	-1,701	103
Residential - Multi Family	-1,667	2,014	-13
Institutional	5	-61	-3
Commerical	15	-37	-24
Industrial	0	-1	0
Agriculture	0	0	0
Reuse	0	0	0
Total Unmetered	0	0	0
TOTAL	**519**	**214**	**63**

3. List of annual water use for the five highest volume customers.
Note: This represents highest retail customers in 2023

	Customer	*Use (1,000 gal/year)*	*Treated or Raw*
1.	Collin County Community College	14,852	Treated
2.	Sanden International	12,083	Treated
3.	Nortex Nursery	10,702	Treated
4.	Tower Extrusions, LLC	9,582	Treated
5.	Founders Plaza Nursing and Rehab	5,759	Treated

II. WATER USE DATA FOR SERVICE AREA

A. Water Accounting Data

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

Year / *Month*	*2018*	*2019*	*2020*	*2021*	*2022*
January	113,451	94,790	114,430	97,770	95,671
February	105,434	89,720	92,210	106,220	90,358
March	107,858	109,260	103,350	114,260	99,646
April	121,665	116,800	136,070	121,690	125,768
May	176,465	133,370	140,300	93,480	147,214
June	174,043	130,880	210,070	145,640	175,213
July	246,576	196,090	230,990	175,930	266,004
August	225,595	261,130	257,900	206,840	236,550
September	133,912	203,110	163,560	200,640	189,011
October	120,146	164,300	169,480	143,710	191,343
November	111,379	109,800	112,020	108,540	119,442
December	98,051	94,730	119,320	109,270	120,920
Totals	**1,734,575**	**1,703,980**	**1,849,700**	**1,623,990**	**1,857,140**

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

Treated surface water is delivered by North Texas Municipal Water District

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

Year / *Account Types*	*2018*	*2019*	*2020*	*2021*	*2022*
Residential	1,042,159	994,846	1,104,132	1,103,870	1,310,860
Single-Family	*1,042,159*	*994,846*	*1,104,132*	*1,031,000*	*1,173,700*
Multi-Family	*0*	*0*	*0*	*72,870*	*137,160*
Commercial	267,437	266,432	290,006	273,760	321,240
Industrial/Mining	48,627	30,068	24,532	34,740	360
Institutional	43,781	36,694	35,460	36,110	36,370
Agriculture	0	0	0	0	0
TOTAL	**1,402,004**	**1,328,040**	**1,454,130**	**1,448,480**	**1,668,830**

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

Year	*Amount (gallons)*	*Percent*
2018	103,731,398	6.0%
2019	78,928,515	4.6%
2020	45,819,000	2.5%
2021	23,454,000	1.4%
2022	62,678,825	3.4%

B. Projected Water Demands

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

Year	**Projected Demand of Served Population (AF/Y)**	**Source of data**
2022	5,121	*Actual Demand*
2023	5,348	*Interpolated*
2024	5,575	*Interpolated*
2025	5,802	*Interpolated*
2026	6,028	*Interpolated*
2027	6,255	*Interpolated*
2028	6,482	*Interpolated*
2029	6,708	*Interpolated*
2030	6,935	*2026 Region C Plan*
2031	6,925	*Interpolated*

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

III. WATER SUPPLY SYSTEM DATA

A. Water Supply Sources

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

Water Type	*Source*	*Amount Authorized*
Surface Water	-	-
Groundwater	-	-
Contracts	North Texas Municipal Water District	
Other	-	-
Total	-	0

B. Treatment and Distribution System

1. Design daily capacity of system: 41.328 MGD

Treatment Plant	Design Well Pumping Capacity (MGD)	Firm Well Pumping Capacity (MGD)
NA		
TOTAL		

2. Storage capacity: 9.0 MG
   a. Elevated 3.0 MG
   b. Ground 6.0 MG

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

IV. WASTEWATER SYSTEM DATA

A. Wastewater System Data (if applicable)

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

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

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

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

Treatment Plant Name	TCEQ Number	Permitted Discharge (MGD)*	Operator	Owner	Receiving Stream
Muddy Creek WWTP	WQ0014216001	10 MGD** 20MGD***	NTMWD	NTMWD	Muddy Creek

**Note: Permitted discharges listed respresent the current and build-out facility design capacities (MGD).*
***Authorized discharge prior to expansion ***Authorized discharge following expansion*

B. Wastewater Data for Service Area (if applicable)

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

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

Year	*2019*	*2020*	*2021*	*2022*
Month				
January	250,330	247,801	239,769	220,757
February	204,645	257,762	221,157	203,194
March	231,245	342,886	252,211	223,204
April	276,640	239,508	239,814	230,448
May	310,972	240,391	326,831	238,889
June	252,058	230,641	304,841	213,529
July	197,859	222,504	249,122	185,823
August	180,851	226,450	215,461	205,289
September	170,287	251,036	188,805	197,731
October	195,176	189,559	209,757	211,595
November	202,814	179,304	216,197	278,329
December	205,332	214,278	214,340	274,740
Totals	**2,678,209**	**2,842,120**	**2,878,302**	**2,683,526**

*Volumes are measured from Muddy Creek, which serves both Murphy and Wylie

Appendix D

NTMWD Member City and Customer Annual Water Conservation Report

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

Contact Information

TWDB Survey Number:	**957600**
Name of System:	**City of Wylie**
PWS ID:	**430011**
Contact Name:	**Albert Garza**
Title:	**Utilities Manager**
Email Address:	**Albert.garza@wylietexas.gov**
Telephone Number:	**972-516-6151**
Year Covered:	**2022**
Days in Year	**365**

Water System Information

Estimated Water Service Area Population: 47,232

Source: *Reference RG-195 Rules and Regulations for Public Water Systems 290.38(10). Population was determined by multipling the number of service connection by three. Service connections in an apartment complex would be equal the number of indiviual apartment units.*

# of Backflow Preventers: 6,866

Peak Day Usage

Delivery Point	**Total System**	**1A**	**2**	**3**
Peak Day (MG)	10.96	4.28	3.75	5.68
Average Day (MG)	5.09	0.99	1.83	2.26
Peak/Average Day Ratio	2.15	4.30	2.04	2.51
Firm Pumping Capacity (MGD)	31.90	10.66	9.22	12.02
Storage Volume (MG)	6.50	1.50	2.50	2.00

Authorized Consumption and Water Loss

Total System Input Volume:	1,857
Billed Metered:	1,704
Billed Unmetered (MG):	0
Unbilled Metered (MG):	0
Unbilled Unmetered (MG):	126
Total Authorized Consumption:	1,830
Water Loss (MG):	27
Water Loss (gpcd):	2
Water Loss (percent):	1%

Description: *0*

Description: *0*

Description: *Estimated water not billed or metered, such as most line flushing.*

Per Capita Use (Gallons per person per day)

Total Use (MG)	1,857
Residential Use (MG)	1,311
Municipal Use (MG)	1,821
ICIM Use (MG)	519
Total Per Capita Use (gpcd)	108
Residential Per Capita Use (gpcd)	76
Municipal Per Capita Use (gpcd)	106
ICIM Per Capita Use (gpcd)	30

Water Conservation Plan 5- and 10-Year Goals for Water Savings

	5-Year Goal	10-Year Goal	
Total GPCD	106	105	*Total GPCD = (Total Gallons in System / Permanent Population) / 365*
Residential GPCD	63	62	*Residential GPCD = (Gallons Used for Residential Use / Residential Population) / 365*
Water Loss (GPCD)	9	9	*Water Loss GPCD = (Total Water Loss / Permanent Population) / 365*
Water Loss (Percentage)	8%	8%	*Water Loss Percentage = (Total Water Loss / Total Gallons in System) x 100; or (Water Loss GPCD / Total GPCD) x 100*

Retail Water Metered by Month (in Million Gallons):

Month	Sales by Category								
	Residential Single Family	Residential Multi-Family	Public/ Institutional	Commercial	Industrial	Agriculture	Bulk Water Sales	Wholesale	Direct Reuse
January	63.11	8.91	1.04	12.64	2.16	-	0.24	-	-
February	116.81	17.04	2.13	24.19	4.29	-	0.84	-	-
March	60.55	7.87	1.19	13.96	2.92	-	0.90	-	-
April	70.95	9.22	1.46	13.51	3.05	-	0.76	-	-
May	93.25	10.52	2.23	20.47	3.15	-	0.81	-	-
June	120.78	10.70	5.17	41.12	3.12	-	2.85	-	-
July	174.99	13.05	5.35	42.49	3.23	-	2.73	-	-
August	133.92	11.29	5.46	40.32	3.31	-	0.91	-	-
September	110.71	10.28	4.63	38.83	3.18	-	0.69	-	-
October	106.47	10.80	5.53	33.13	2.86	-	0.78	-	-
November	70.48	19.80	1.46	18.20	2.80	-	0.08	-	-
December	51.70	7.69	0.73	10.72	1.95	-	0.09	-	-
TOTAL	**1,173.70**	**137.16**	**36.37**	**309.57**	**36.01**	**-**	**11.67**	**-**	**-**
# of Connections (or Units)	***12,871.00***	***2,001.00***	***59.00***	***822.00***	***21.00***	**-**	**-**		**-**

Recorded Supplies from Sources by Month (in Million Gallons):

Month	Deliveries from NTMWD	Other Sources							Total Supplies
January	95.67								95.67
February	90.36								90.36
March	99.65								99.65
April	125.77								125.77
May	147.21								147.21
June	175.21								175.21
July	266.00								266.00
August	236.55								236.55
September	189.01								189.01

October	191.34								191.34
November	119.44								119.44
December	120.92								120.92
TOTAL	**1,857.14**	-	-	-	-	-	-	-	**1,857.14**

Recorded Supplies by Delivery Point from NTMWD by Month (in Million Gallons):

Month	NTMWD Delivery Point								Total System
	1A	2	3						
January	9.39	44.38	41.90						95.67
February	7.63	44.15	38.58						90.36
March	6.98	48.97	43.69						99.65
April	7.67	60.44	57.66						125.77
May	15.13	65.07	67.01						147.21
June	36.91	59.79	78.52						175.21
July	76.47	72.00	117.54						266.00
August	68.71	63.51	104.33						236.55
September	54.66	50.97	83.39						189.01
October	43.50	63.48	84.36						191.34
November	16.60	48.37	54.47						119.44
December	19.31	48.40	53.20						120.92
TOTAL	**362.97**	**669.52**	**824.65**	-	-	-	-	-	**1,857.14**

Wholesale Water Sales to Other Water Systems (in Million Gallons):

	Sale 1	Sale 2	Sale 3	Sale 4	Sale 5	Sale 6	Sale 7	Sale 8	Total Wholesale Sales
Buyer Name									
Type of Water									
Name of Source									
Estimated Water Service Area Population									-
January	-	-	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-	-	-
April	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-
June	-	-	-	-	-	-	-	-	-
July	-	-	-	-	-	-	-	-	-
August	-	-	-	-	-	-	-	-	-
September	-	-	-	-	-	-	-	-	-
October	-	-	-	-	-	-	-	-	-
November	-	-	-	-	-	-	-	-	-
December	-	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-	-

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

	Sale 1	Sale 2	Sale 3	Sale 4	Sale 5	Sale 6	Sale 7	Sale 8	Total Industrial Production Facilities Sales
Buyer Name									
Type of Water									
Name of Source									
January									-
February									-
March									-
April									-
May									-
June									-
July									-
August									-
September									-
October									-
November									-
December									-
TOTAL	-	-	-	-	-	-	-	-	-

Additional Information

Describe Any ICIM (Industrial, Commercial, Institutional & Multi-Family) Practices being Implemented to Improve Water Efficiency

0

Describe any Unusual Circumstances

0

Provide an Update on Progress in Implementation of Conservation Plan

The City of Wylie is currently keeping track of all unmetered water throughout the City by monitoring the following: Firefighting, Dead End Main Flushing, Unidirectional Flushing, Stormdrain Maintenance, Street Cleaning, Water Main Breaks and Sewer Line Jetting. The City of Wylie Conservation Plan was approved by Council on April 28, 2009. The Water Conservation Plan is posted on the City website for public viewing.

What Conservation Measures are Planned for Next Year?

Public education by posting information on City website, insert in utility bill, and local news letter. Staff will continue educating the public on water conservation as needed when wasteful practices are observed, Enforcement if necessary.

Do City Limits Differ Significantly from Water Service Area? If so, explain.

0

Is there any Assistance Requested from the North Texas Municipal Water District?

Please continue to fund the Water IQ program.

Other?

0

Historical Water Use Data for City of Wylie

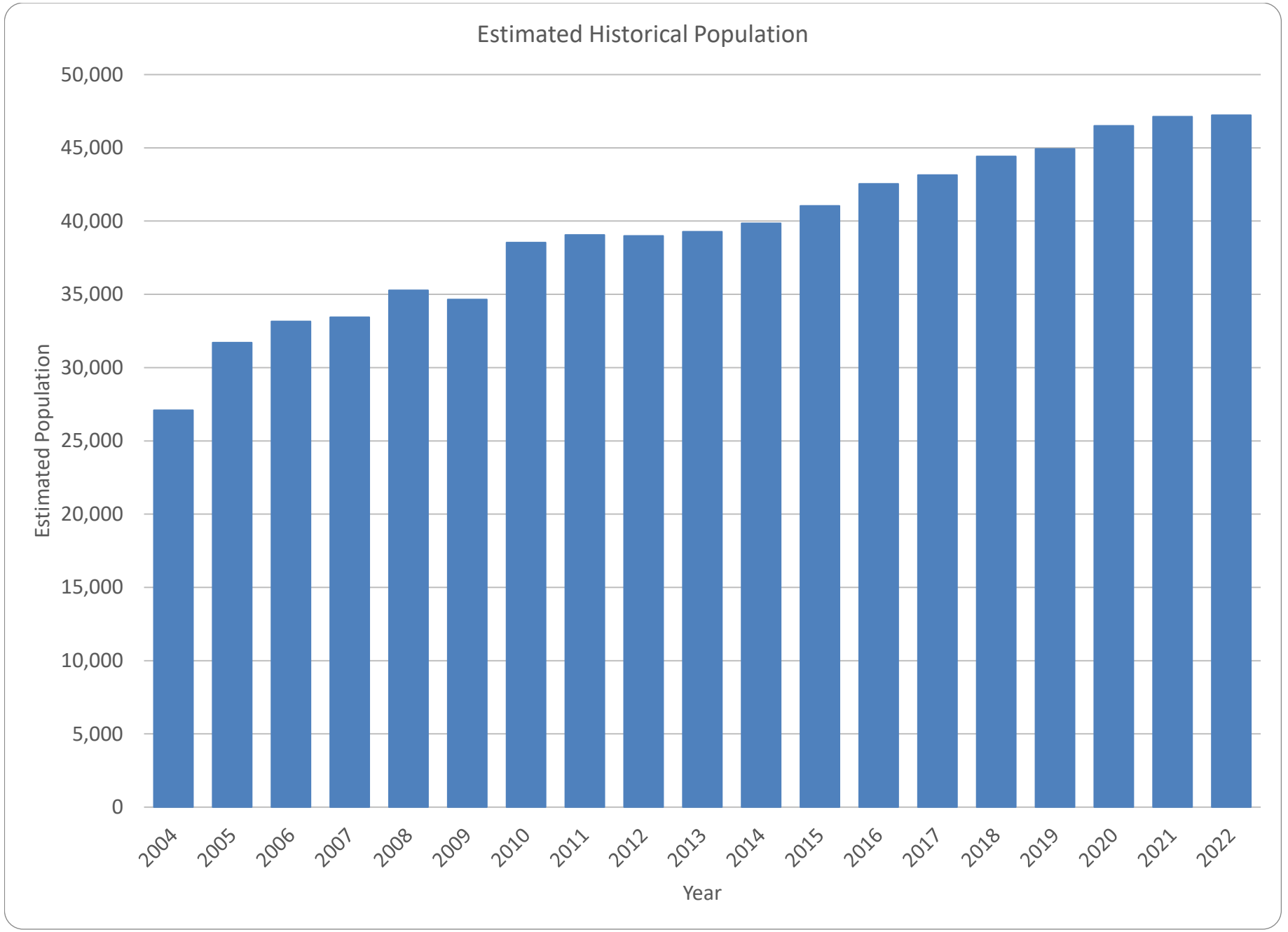
Year	Days in Year	Connections	Estimated Population	Deliveries from NTMWD	Other Supplies	Metered Sales by Category (Million Gallons)									
						Residential	Residential	Public/	Commercial	Industrial	Agriculture	Bulk Water	Wholesale	Direct	Total
2004	366	9,031	27,093	1,275	0	762.93	0.00	42.63	213.30	59.32	0.00	0.00	0.00	0.00	1,078.19
2005	365	10,570	31,710	1,601	0	971.93	0.00	73.13	290.68	87.03	0.00	0.00	0.00	0.00	1,422.77
2006	365	11,052	33,156	1,636	0	1,019.08	0.00	57.23	232.72	118.47	0.00	0.00	0.00	0.00	1,427.50
2007	365	11,147	33,441	1,356	0	821.38	0.00	54.79	175.46	83.44	0.00	0.00	0.00	0.00	1,135.07
2008	366	11,760	35,280	1,574	0	1,070.61	0.00	78.25	229.48	68.16	0.00	0.00	0.00	0.00	1,446.50
2009	365	11,551	34,653	1,476	0	964.67	0.00	51.80	204.24	50.61	0.00	0.00	0.00	0.00	1,271.31
2010	365	12,846	38,538	1,604	0	1,119.63	0.00	57.00	262.11	75.24	0.00	0.00	0.00	0.00	1,513.98
2011	365	13,020	39,060	1,818	0	1,275.83	0.00	75.26	296.95	73.75	0.00	0.00	0.00	0.00	1,721.78
2012	366	12,998	38,994	1,644	0	1,113.70	0.00	75.78	238.22	73.02	0.00	0.00	0.00	0.00	1,500.72
2013	365	13,093	39,279	1,551	0	1,080.60	0.00	54.51	244.98	61.13	0.00	0.00	0.00	0.00	1,441.22
2014	365	13,284	39,852	1,391	0	862.19	0.00	37.36	208.79	56.15	0.00	0.00	0.00	0.00	1,164.49
2015	365	13,681	41,043	1,709	0	1,038.29	0.00	36.44	251.61	54.05	0.00	0.00	0.00	0.00	1,380.38
2016	366	14,182	42,546	1,767	0	982.28	0.00	49.91	277.07	52.57	0.00	0.00	0.00	0.00	1,361.83
2017	365	14,382	43,146	1,668	0	989.53	0.00	38.13	246.16	59.50	0.00	0.00	0.00	0.00	1,333.32
2018	365	14,806	44,418	1,735	0	1,042.16	0.00	43.78	273.67	48.63	0.00	0.00	0.00	0.00	1,408.23
2019	365	14,978	44,934	1,704	0	994.85	0.00	36.69	270.76	30.07	0.00	0.00	0.00	0.00	1,332.36
2020	366	15,502	46,506	1,850	0	1,104.13	0.00	35.46	290.01	24.53	0.00	0.00	0.00	0.00	1,454.13
2021	365	15,711	47,133	1,624	0	1,031.00	72.87	36.11	273.76	34.74	0.00	0.00	0.00	0.00	1,448.48
2022	365	15,774	47,232	1,857	0	1,173.70	137.16	36.37	309.57	36.01	0.00	11.67	0.00	0.00	1,704.49

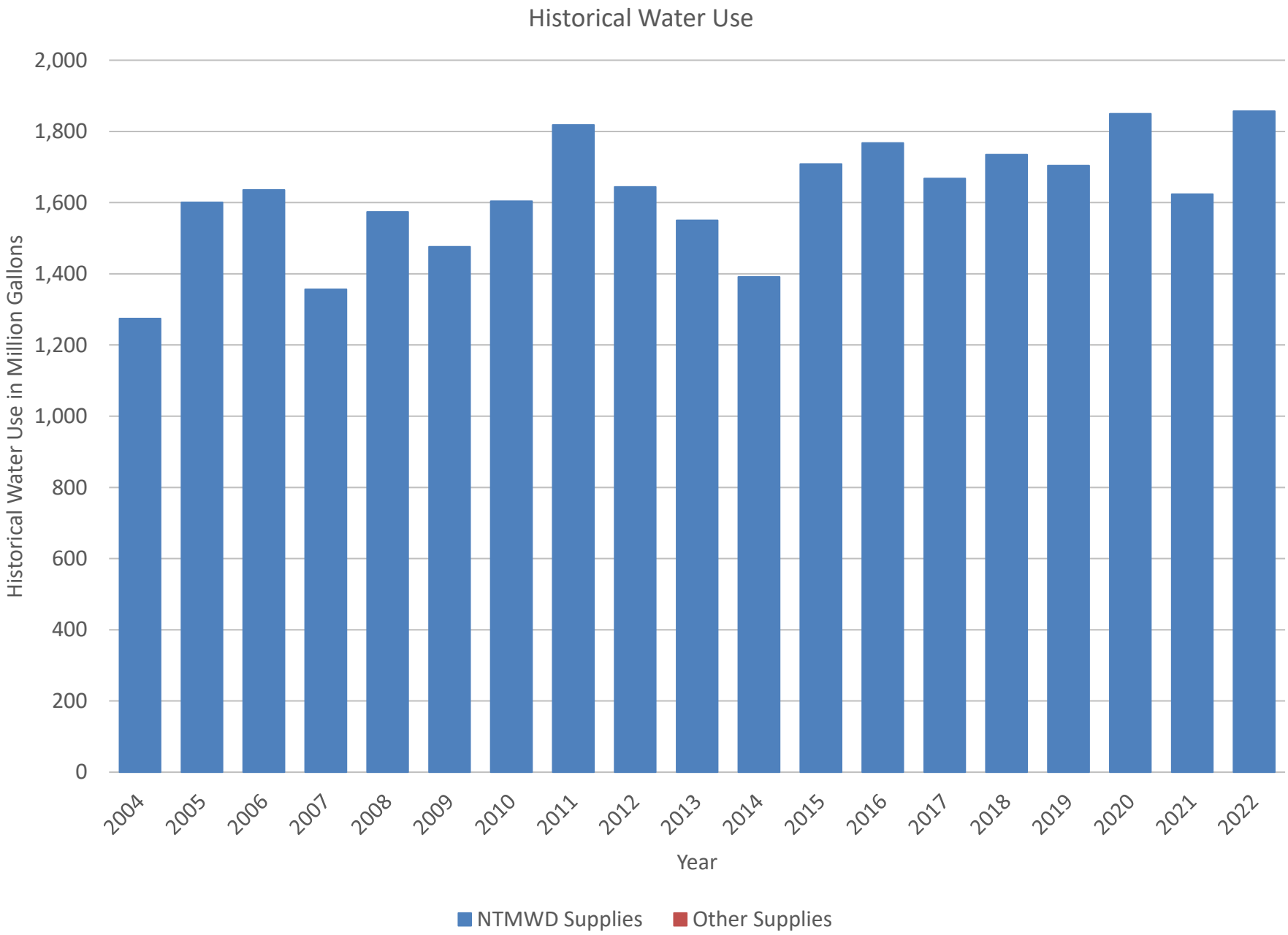
Note: After 2020, Residential sales were divided into single and multi-family classifications. Historical information from the TWDB Water Use Surveys were incorporated where available. The category of 'Other' was removed and replaced with 'Reuse'. Historical volumes for 'Other' were redistributed into the appropriate category when appropriate. These changes were made to be consistent with TWDB terminology.

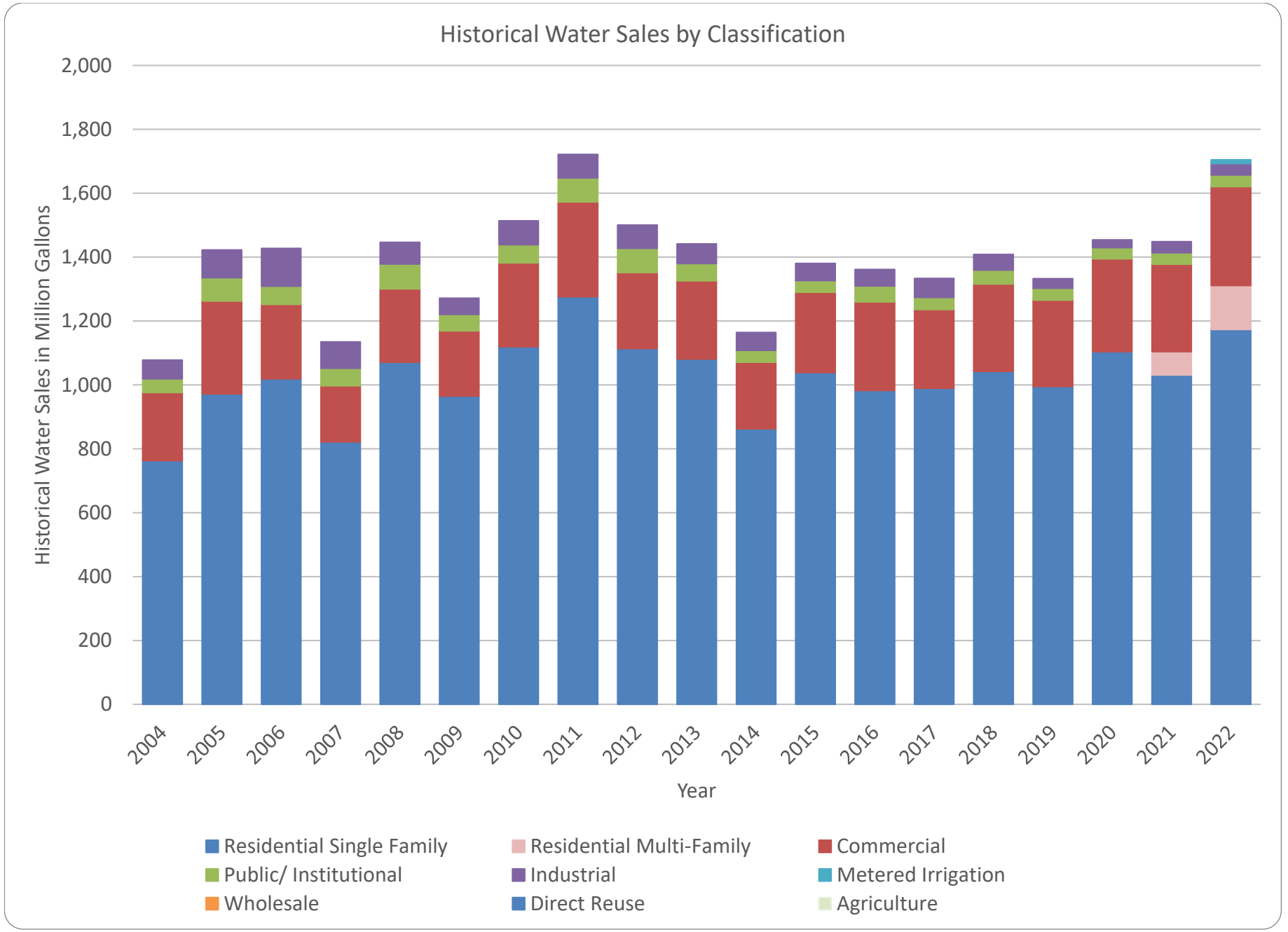
Historical Per Capita Use Data and Water Loss for City of Wylie

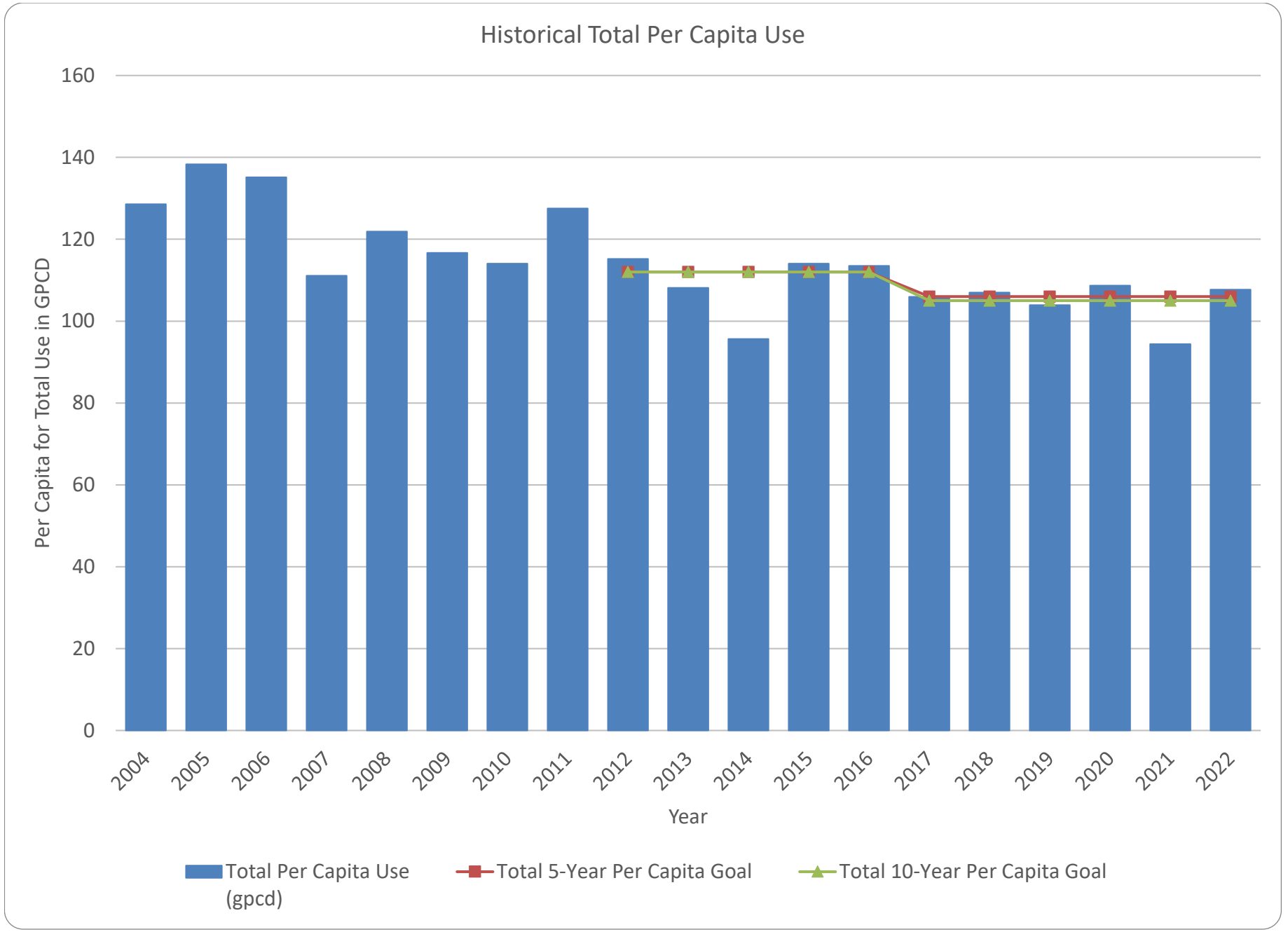
Year	Estimated Population	Total Use			Residential Use			Municipal Per Capita Use (gpcd)	ICIM Per Capita Use (gpcd)	Authorized Consumption				Water Loss						
		Total Per Capita Use (gpcd)	Total 5-Year Per Capita Goal	Total 10-Year Per Capita Goal	Residential Per Capita Use (gpcd)	Residential 5-Year Per Capita Goal	Residential 10-Year Per Capita Goal			Billed Metered (MG)	Billed Unmetered (MG)	Unbilled Metered (MG)	Unbilled Unmetered (MG)	Water Loss (MG)	Water Loss (gpcd)	Water Loss 5-Year Per Capita Goal	Water Loss 10-Year Per Capita Goal	Water Loss (percentage)	Water Loss (percentage) 5-Year Goal	Water Loss (percentage) 10 Year Goal
2004	27,093	129			77			123	31.8	1,078	0	0	1	196	20			15%		
2005	31,710	138			84			131	39.0	1,423	0	14	28	136	12			8%		
2006	33,156	135			84			125	33.7	1,427	0	0	66	142	12			9%		
2007	33,441	111			67			104	25.7	1,135	0	0	36	185	15			14%		
2008	35,280	122			83			117	29.1	1,447	0	0	57	70	5			4%		
2009	34,653	117			76			113	24.2	1,271	0	0	76	128	10			9%		
2010	38,538	114			80			109	28.0	1,514	0	0	24	66	5			4%		
2011	39,060	128			89			122	31.3	1,722	0	0	26	70	5			4%		
2012	38,994	115	112	112	78	89	89	110	27.1	1,500.72	0.00	0.55	24.99	118.02	8	10	10	7%	12%	12%
2013	39,279	108	112	112	75	89	89	104	25.2	1,441.22	0.00	0.59	17.95	90.84	6	10	10	6%	12%	12%
2014	39,852	96	112	112	59	89	89	92	20.8	1,164.49	0.00	0.36	37.67	188.97	13	10	10	14%	12%	12%
2015	41,043	114	112	112	69	89	89	110	22.8	1,380.38	0.00	0.19	56.07	272.19	18	10	10	16%	12%	12%
2016	42,546	113	112	112	63	89	89	110	24.4	1,361.83	0.00	0.04	206.82	198.64	13	10	10	11%	12%	12%
2017	43,146	106	106	105	63	63	62	102	21.8	1,333.32	0.00	0.00	190.81	143.91	9	9	9	9%	8%	8%
2018	44,418	107	106	105	64	63	62	104	22.6	1,408.23	0.00	0.00	181.50	144.84	9	9	9	8%	8%	8%
2019	44,934	104	106	105	61	63	62	102	20.6	1,332.36	0.00	0.00	264.07	107.54	7	9	9	6%	8%	8%
2020	46,506	109	106	105	65	63	62	107	20.6	1,454.13	0.00	0.00	353.44	42.12	2	9	9	2%	8%	8%
2021	47,133	94	106	105	64	63	62	92	24.3	1,448.48	0.00	0.00	156.98	18.52	1	9	9	1%	8%	8%
2022	47,232	108	106	105	76	63	62	106	30.1	1,704.49	0.00	0.00	126.00	26.65	2	9	9	1%	8%	8%

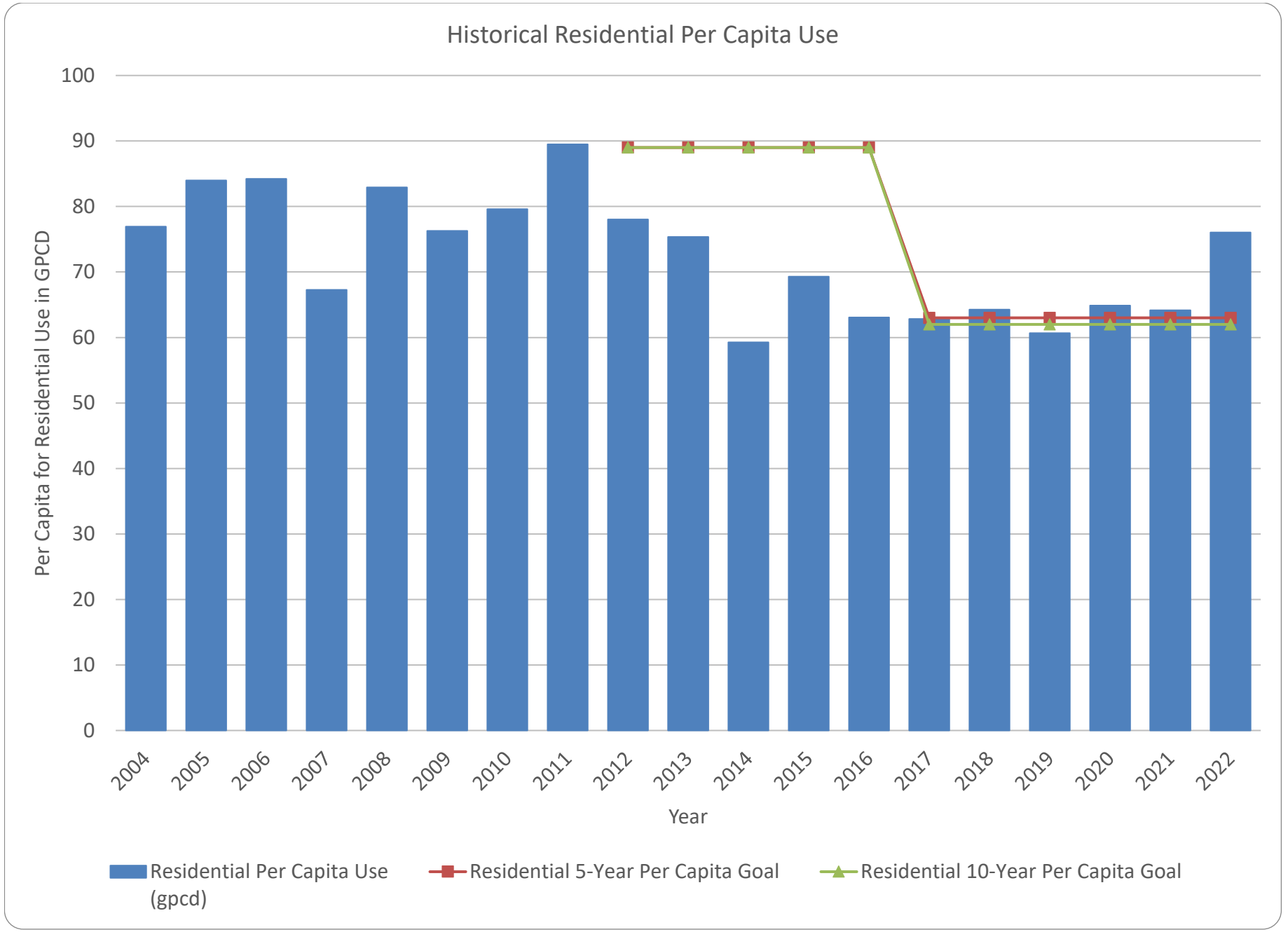
Note:
In-city municipal use = total water supplied less sales to industry, wholesale sales and other sales.
After 2017 - Unaccounted Water has been removed and replaced with Water Losses (per TWDB definition). This category is inclusive of real and apparent losses. Categories for authorized consumption were also added; Unbilled metered replaced estimated fire use, unbilled unmetered replaced estimated line flushing, and a new category for billed unmetered sales was added.

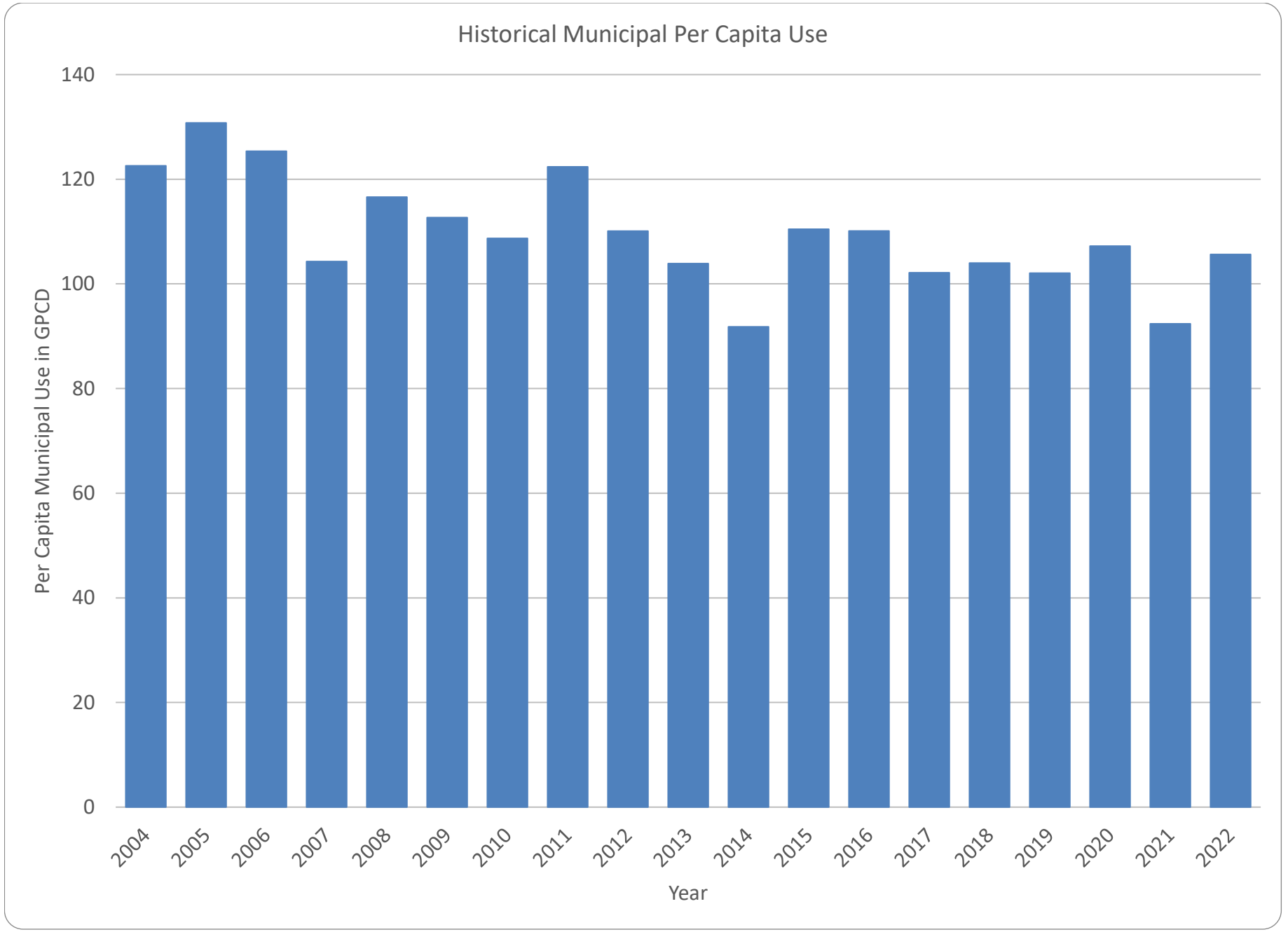

Estimated Historical Population
50,000
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
Estimated Population
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Year

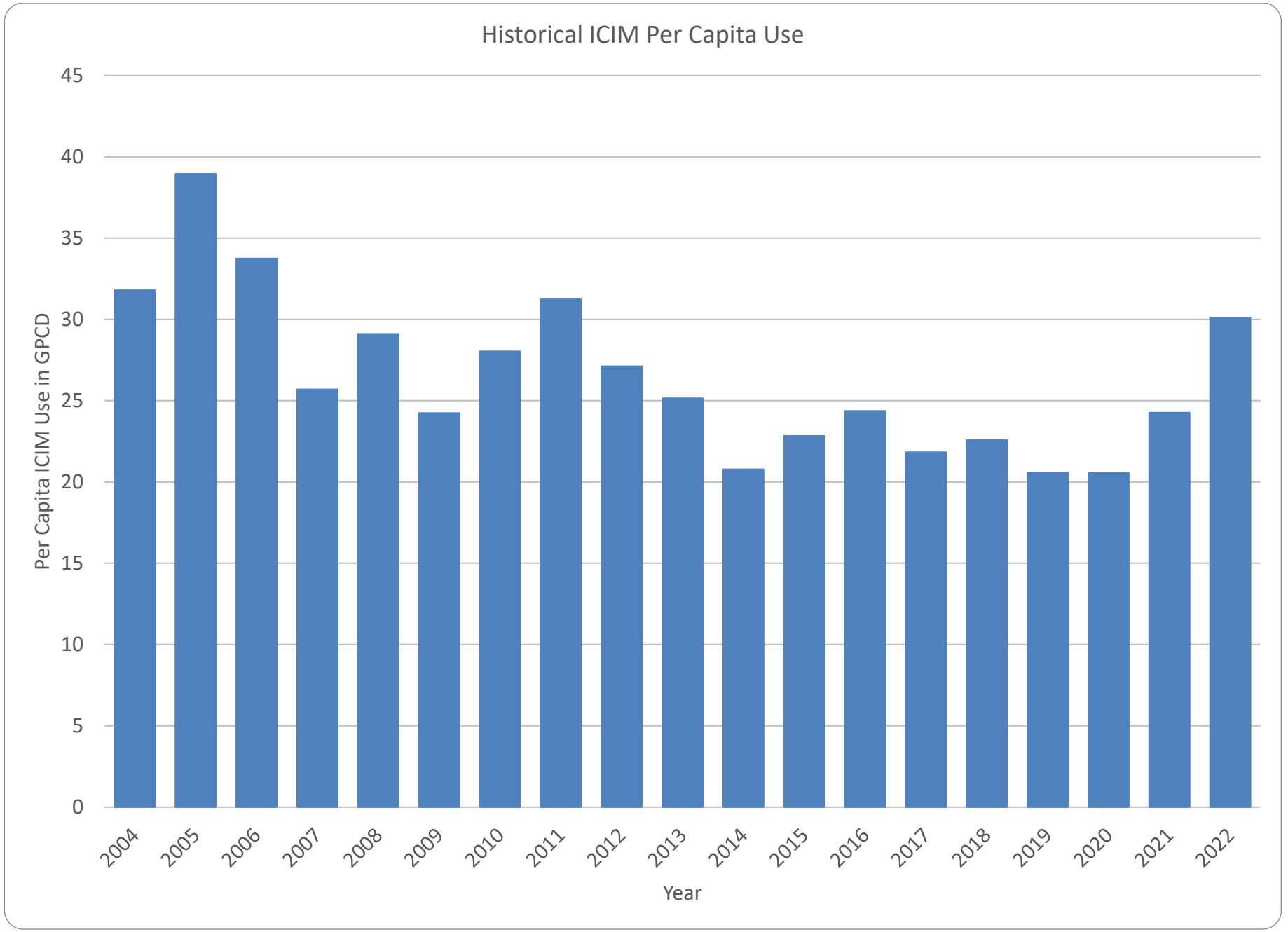

Historical Water Use
Historical Water Use in Million Gallons
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Year
NTMWD Supplies
Other Supplies

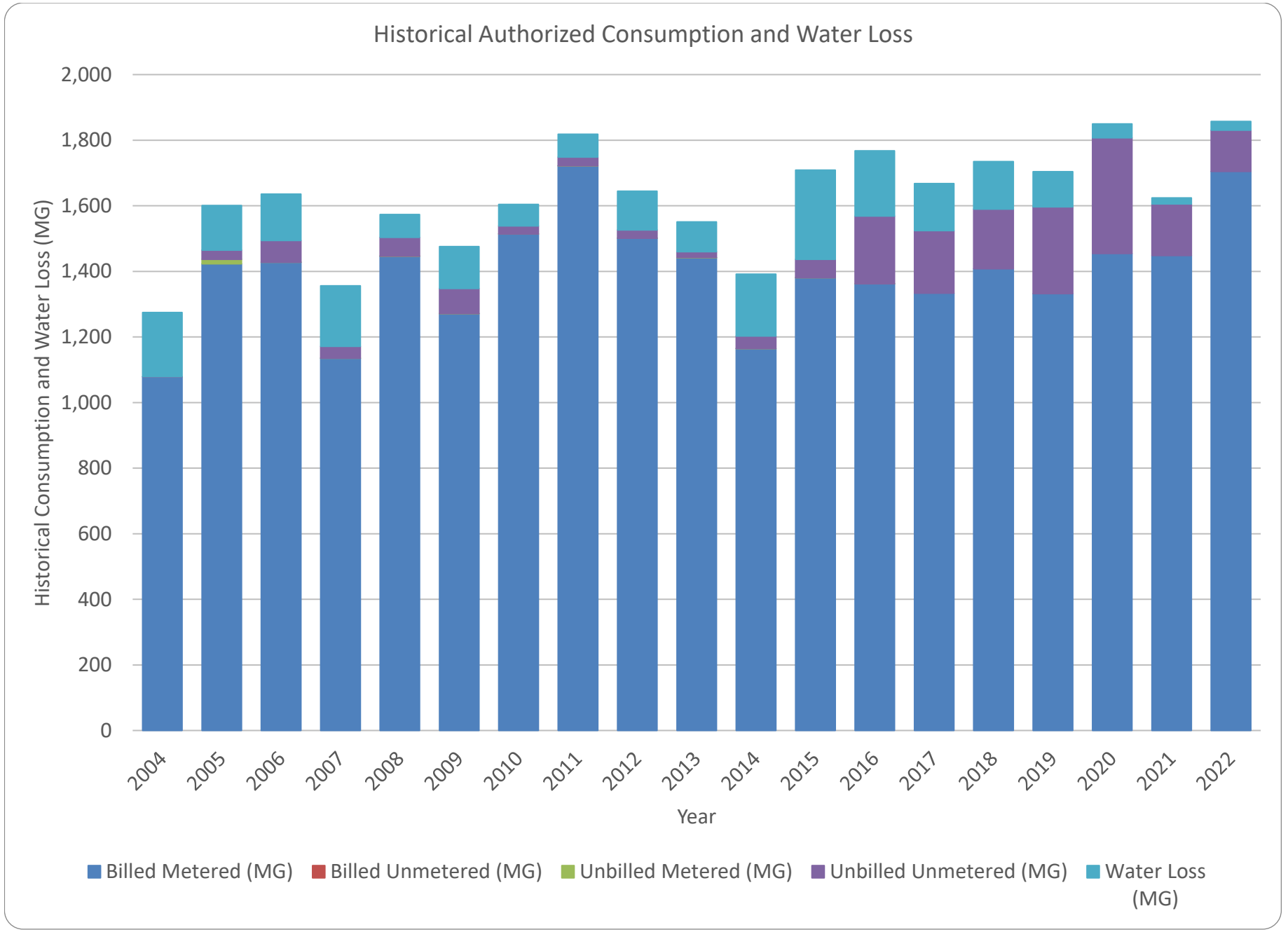

Historical Water Sales by Classification
Historical Water Sales in Million Gallons
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Year
Residential Single Family
Residential Multi-Family
Commercial
Public/ Institutional
Industrial
Metered Irrigation
Wholesale
Direct Reuse
Agriculture

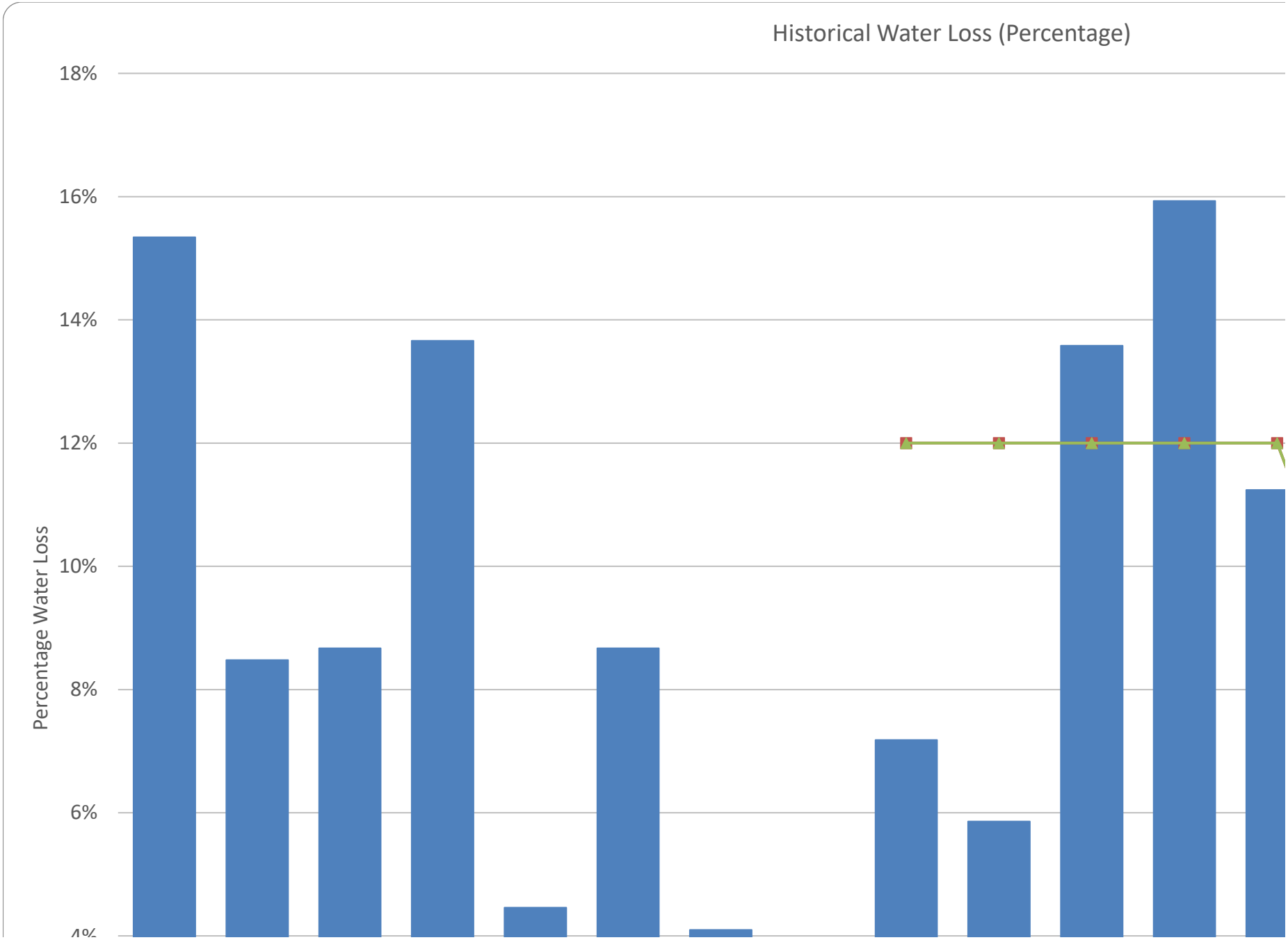

Historical Total Per Capita Use
160
140
120
100
80
60
40
20
0
Per Capita for Total Use in GPCD
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Year
Total Per Capita Use (gpcd)
Total 5-Year Per Capita Goal
Total 10-Year Per Capita Goal


Historical Residential Per Capita Use
Per Capita for Residential Use in GPCD
100
90
80
70
60
50
40
30
20
10
0
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Year
Residential Per Capita Use (gpcd)
Residential 5-Year Per Capita Goal
Residential 10-Year Per Capita Goal


Historical Municipal Per Capita Use
Per Capita Municipal Use in GPCD
140
120
100
80
60
40
20
0
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Year


Historical ICIM Per Capita Use
Per Capita ICIM Use in GPCD
45
40
35
30
25
20
15
10
5
0
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Year


Historical Authorized Consumption and Water Loss
Historical Consumption and Water Loss (MG)
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Year
Billed Metered (MG)
Billed Unmetered (MG)
Unbilled Metered (MG)
Unbilled Unmetered (MG)
Water Loss (MG)


Historical Water Loss (Percentage)
18%
16%
14%
12%
10%
8%
6%
4%
Percentage Water Loss

Appendix E

Letters to Regional Water Planning Group and NTMWD

[Enter Date]

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

Dear Chair:

Enclosed please find a copy of the Water Conservation and Water Resource and Emergency Management Plan for the City of Wylie. 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 4/23/2024.

Sincerely,

Albert Garza

City of Wylie

[Enter Date]

North Texas Municipal Water District
501 East Brown St.
P.O. Box 2408
Wylie, TX 75098

Dear Ms. Fonnville:

Enclosed please find a copy of the Water Conservation and Water Resource and Emergency Management Plan for the City of Wylie. I am submitting a copy of this plan to the North Texas Municipal Water District in accordance with the Texas Water Development Board and Texas Commission on Environmental Quality rules. The plans were adopted on 4/23/2024.

Sincerely,

Albert Garza

City of Wylie

Appendix F

Adoption of Plans

Appendix G

Landscape Ordinance

Section 7.7 - Landscape Requirements.

A. *Purpose.* The process of urban development with its alteration of the natural topography, vegetation, and creation of impervious cover can have a negative effect on the ecological balance of an area by causing increases in air temperatures and accelerating the processes of runoff, erosion, and sedimentation. The economic base of the City can and should be protected through the preservation and enhancement of its unique natural beauty, environment, and vegetative space. This section has the following specific purposes:

1. To implement the Wylie Comprehensive Plan.
2. To aid in stabilizing the environment's ecological balance by contributing to the processes of air purification, oxygen regeneration, groundwater recharge, and (storm water) runoff retardation, while at the same time aiding in noise, glare and heat abatement.
3. To insure that landscaping is an integral part of development, not an afterthought.
4. To provide visual buffering between land uses of differing character to alleviate the harshness of urban life.
5. To enhance the beautification of the City.
6. To safeguard and enhance property values and to protect public and private investments.
7. To preserve and protect the unique identity and environment of the City of Wylie and preserve the economic base attracted to the City of Wylie because of these qualities.
8. To conserve energy.
9. To protect the public health, safety and general welfare.

B. *Applicability.*

1. Except as otherwise provided below, these landscape regulations shall apply to all land located in the City of Wylie. These landscaping requirements shall become applicable to each individual lot when a site plan is submitted for Commission review or an application for a building permit on the lot is made. The maintenance requirements in subsection G of this section shall apply to all applications for building permits.
2. This section does not apply to lots containing only single-family and/or duplex uses where only one single-family or two-family structure is constructed.
3. This section applies to the following:
    a. Multifamily Districts.
    b. Neighborhood Services Districts.
    c. Community Retail Districts.
    d. Commercial Corridor Districts.
    e. Business Center Districts.

f. Industrial Districts.

g. Planned Development Districts.

h. Specific Use Permits.

i. Applications for building permits or for certificates of occupancy for a change in use.

j. Applications for building permits for construction work that:

(1) Increases the number of stories in a building on the lot; or

(2) Increases by more than ten percent or 10,000 square feet, whichever is less, the combined floor areas of all buildings on the lot; or

(3) Increases the non-permeable lot coverage by more than 2,000 square feet.

k. Building permit applications for exterior remodeling with a value equal to or greater than $10,000.00 exclusive of maintenance and repair.

4. When the ordinance becomes applicable to a lot, its requirements are binding on all current and subsequent owners of the lot.

5. When establishing or amending a planned development district, or amending a special use permit, the Council shall, as a minimum, impose landscaping requirements as a part of any ordinance, that are reasonably consistent with the standards and purposes of this section. All landscaping requirements imposed by the Council must be reflected in landscape and irrigation plans that comply in form and content with the requirements of Subsection C. Submission Requirements.

6. The Board may grant a special exception to the landscaping requirements of this section upon making a special finding from the evidence presented that strict compliance with the requirements of this Article will result in substantial financial hardship or inequity to the applicant without sufficient corresponding benefit to the City and its citizens in accomplishing the objectives and purposes of this section. The applicant, to be considered for special exception, must submit a justification statement that describes:

a. Which of the requirements set forth in this section will be met with modifications,

b. Which project conditions justify using alternatives, and

c. How the proposed measures equal or exceed normal compliance.

C. *Submission Requirements.*

1. The landscape and irrigation plans submitted under this section shall:

a. Include 6 folded blue or black line copies for review.

b. Have a scale of one inch equals 100 feet or larger (e.g., one inch equals 50 feet, or one inch equals 40 feet, etc.) and be on a standard drawing sheet of a size not to exceed 24 inches by 36 inches. In the event a single sheet is not practicable, multiple sheets may be used if, on each sheet:

(1) Match lines are indicated; and

(2) A composite drawing is provided that shows the entire proposed development, location of the match lines, sheet numbers, and the location of the sheet within the proposed development by the shading in of the appropriate area on the composite.

2. Landscape and irrigation plans required under this section must contain the following information:

   a. Date, scale, north arrow, and the names, addresses, and telephone numbers of both the property owner and the person preparing the plan.

   b. Project name, street address, and lot and block description.

   c. Location of all buildings, parking areas, walks, and other improvements.

   d. Location, height, and material of proposed screening and fencing (with berm to be delineated by one-foot contours).

   e. The location, type and size of all existing trees on the lot must be specifically indicated.

   f. Complete description of proposed plant materials shown on the plan, including names (common and botanical name), locations, quantities, container or caliper sizes, heights, spread, and spacing.

   g. Complete description of landscaping and screening to be provided in or near off-street parking and loading areas, including information as to the amount (in square feet) of landscape area compared to gross site square feet.

   h. Size, height, location, and material of proposed seating, lighting, planters, sculptures, decorative paving, and water features.

   i. Cross section drawing of berms and grading plan showing berm contours.

   j. Location of sprinkler heads, valves, double-check valve, water meter, automatic controller and rain and freeze sensors.

   k. Landscape plans shall contain the certification and a stamp of a landscape architect licensed in the State of Texas that the plans have been reviewed by an architect and satisfy all requirements of these landscape regulations.

   l. Irrigation plans shall contain the certification and stamp of an irrigator licensed by the State of Texas Board of Irrigators that the plans were prepared by an irrigator and satisfy all requirements of these landscape regulations.

D. *General Requirements.*

1. Once landscaping is installed according to an approved plan, a landscape architect licensed in the State of Texas shall review the installation and certify that it is in accordance with the approved plan.

2.

Due to seasonal planting problems and a lack of plant availability, approved landscape plans may require minor revisions. Revised landscaping plans shall be accepted if:

a. there is no reduction in the quality of plant material,
b. no significant change in size or location of plant materials,
c. the new plants are of the same general category (i.e., shade, ornamental, or evergreen trees)
d. have the same general design characteristics (mature height, crown spread) as the materials being replaced.

3. All plant material (including street trees and planting within the public right-of-way) shall be watered with an automatic irrigation system subject to the following requirements.
   a. Irrigation sprinkler layouts shall be designed to minimize the amount of spray that will fall on sidewalks, neighboring properties, and adjacent buildings.
   b. Backflow prevention devices shall be placed in compliance with City of Wylie standards.
   c. The City encourages the use of water-conserving system design and materials including the use of drip irrigation where appropriate.
   d. Separate valves for turf and non-turf areas shall be installed to accommodate different water use requirements within the landscaped area.
   e. Rain sensors are encouraged to be installed and operational to reduce water use.
4. Landscaping in visibility triangles. No landscaping shall obstruct the view between access drives and dedicated streets, parking aisles, or access drives of parking lots. Landscaping within visibility triangles, as defined in subsection 7.8, shall comply with the following requirements:
   a. No plants with a height greater than 2.5 feet are allowed in the visibility triangle, except single trunk trees with a minimum branching clearance of seven feet from the ground to the first branch.
   b. Trees are to be of a size and so spaced that a visual obstruction that represents a traffic hazard is not created.
   c. Plants shall not reduce or limit visibility to such an extent that a safety hazard is presented. Plants normally considered as effective screens shall be unacceptable for use in the visibility triangle.

E. *Landscape Design Requirements.* Specific landscape requirements are provided in Article 3, Residential District Regulations and Article 4, Nonresidential District Regulations. Approved landscape plans shall comply with all base standards and shall meet the desirable design attributes required to gain approval of a site plan or building permit as specified in Article 3 and 4.

F. *Landscape Standards and Specifications.*

1. Plant Materials. All plant materials should be native or adapted to the north Texas region. The Director shall maintain and make available for distribution, a list of acceptable locally-adapted trees and shrubs to meet minimum planting requirements of these regulations.
2. Plant materials shall conform to the requirements described in the latest edition of American Standard For Nursery Stock, published by the American Association of Nurserymen.
3. Plants shall conform to the measurements and specifications listed below, with caliper measurements taken 12 inches above grade. Minimum branching height for all shade trees shall be six feet.
    a. Minimum size for shade trees shall be three inches in caliper and 14 to 16 feet in height. Tree heights shall be from tops of root balls to nominal tops of plants.
    b. Trees shall be healthy, vigorous, full-branched, well-shaped and symmetrical.
    c. Root balls shall be firm, neat, slightly tapered and well-burlapped.
    d. Trees shall be free of physical damage such as scrapes, bark abrasions, split branches, mistletoe or other parasitic growth.
    e. Minimum size for ornamental shade trees shall be three inches in diameter.
    f. Minimum size for ornamental flowering trees shall be eight to ten feet in height.
    g. Minimum size for evergreen trees shall be eight to ten feet in height.
    h. Minimum size for shrub containers shall be five gallon. Substitution of three gallon material meeting the height requirement of five gallon shrubs is acceptable. Shrubs shall be full bodied, well-shaped and symmetrical.
    i. Ground cover spacing shall be eight inches on center maximum for four-inch pots and 16 inches on center maximum for one-gallon containers.
4. The City shall reject any trees delivered and/or planted not meeting the minimum size and shape standards set forth above.
5. All shrub beds shall be edged using steel, concrete, masonry, or pre-cast concrete edging and all plant materials mulched with a two-inch layer of bark or shredded Cypress mulch.

G. *Landscape Maintenance.*

1. All landscaped areas must be kept in a healthy and growing condition. All seasonal plantings must be replaced at the appropriate time as indicated in the landscape plan. Any plant materials that die during a time of year where it is not feasible to replant, shall be replaced as soon as possible.
2. Landscape maintenance includes, but is not limited to, the following:
    a. Prompt removal of all litter, trash, refuse and waste;

b. Lawn mowing on a periodic basis during the growing season;

c. Shrub pruning according to accepted practices of landscape professionals to maintain plants in a healthy condition;

d. Tree pruning according to latest edition of the Tree-Pruning Guidelines published by the International Society of Arboriculture;

e. Watering of landscaped areas on a regular basis to maintain good plant health;

f. Keeping landscape lighting in working order;

g. Keeping lawn and garden areas alive, free of weeds, and attractive; cleaning of abutting waterways and landscaped areas lying between public right-of-way lines and the property unless the streets, waterways or landscaped areas are expressly designated to be maintained by applicable governmental authority.

3. All required landscaped areas shall be irrigated using one of the following methods:

a. Conventional automatic sprinkler system, installed underground, and using spray and/or bubble type heads;

b. Drip or leaky-pipe system using an automatic or manual underground system in conjunction with a water saving system such as drip heads, or leaky-pipes.

c. Landscaped areas using xeriscape plants and installation techniques, including native grasses and wildflowers may use a temporary above ground irrigation system.

H. *Enforcement.*

1. Any property owner or tenant that fails to meet any of the above maintenance requirements shall:

a. Be given a written notice of the failure by the City;

b. Within ten days after receiving the notice the property owner or tenants must correct any maintenance shortcomings.

c. Should any property owner fail to fulfill this duty and responsibility within the required period, the City may:

(1) Revoke any building permits, certificates of occupancy, or other approvals or permits previously issued for the premises; or,

(2) Withhold approval for building permits, certificates of occupancy, and other permits or approvals relating to the premises; or

(3) Have the right and power to enter onto the premises and perform care and maintenance. The property owner and tenants of any part of the premises on which the work is performed shall jointly and severally be liable for the costs of the work and shall promptly reimburse the City for the costs. If the property owner or tenant shall fail to reimburse the City within 30 days after receipt of a statement for the work from

the City, the said indebtedness shall be a debt of all of said persons jointly and severally, and shall constitute a lien against the premises on which the work was performed. The lien may be evidenced by an affidavit of costs filed in the real property records.

2. Any person violating any of the provisions of this section shall be deemed guilty of a misdemeanor and upon conviction thereof shall be fined in a sum not to exceed $2,000.00 and a separate offense shall be deemed committed upon each day during or on which a violation occurs or continues.