Greater Texoma Utility Authority

2024 Water Conservation and Water Resource and Emergency Management Plan

Adopted on 5/20/2024

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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 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, which 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 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.

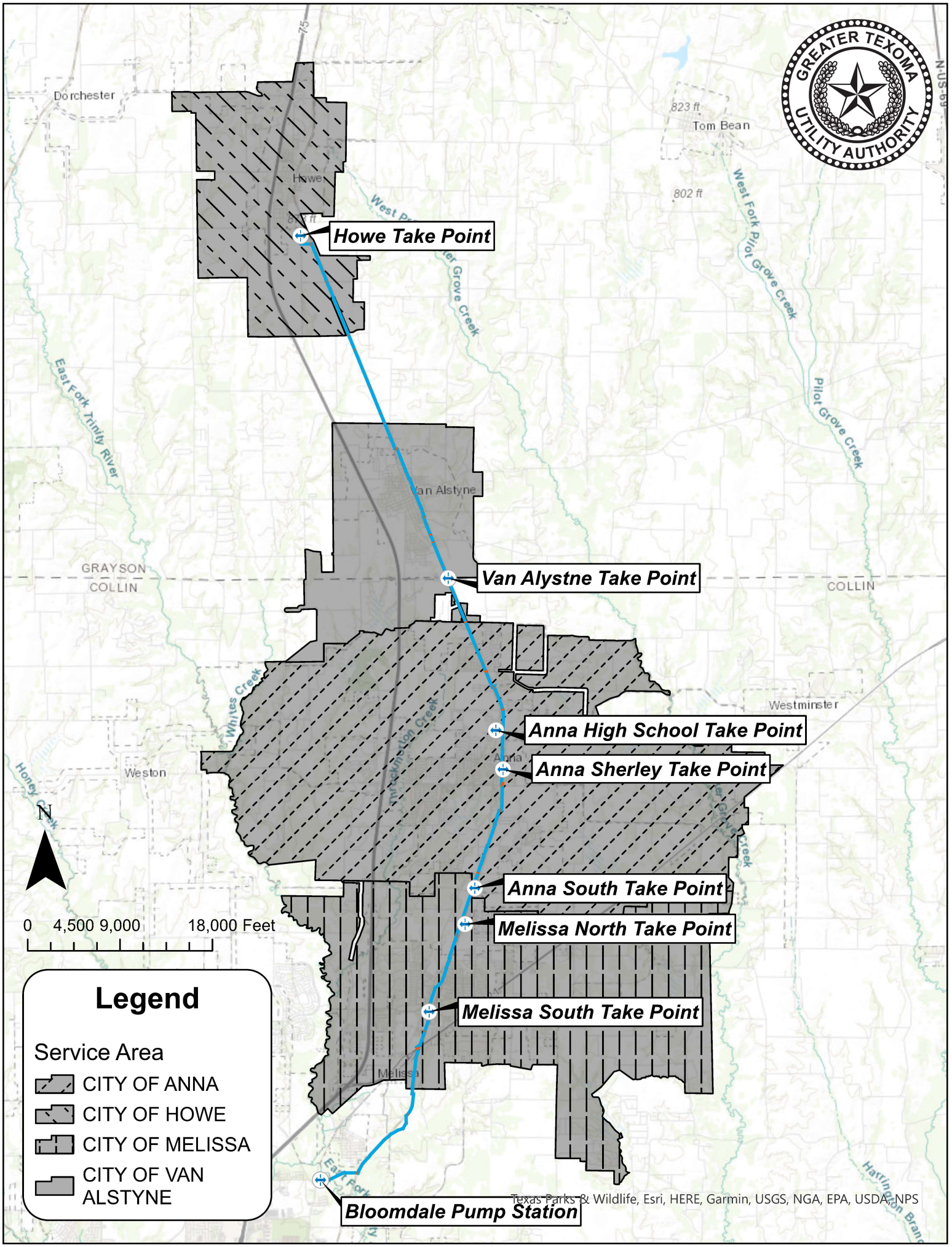
WATER RESOURCE AND EMERGENCY MANAGEMENT PLAN means a plan for temporary supply management and demand management responses to temporary and potentially recurring water supply shortages and other water supply emergencies required by Texas Administrative Code Title 30, Chapter 288, Subchapter B. This is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


GREATER TEXOMA UTILITY AUTHORITY
Howe Take Point
Van Alystne Take Point
Anna High School Take Point
Anna Sherley Take Point
Anna South Take Point
Melissa North Take Point
Melissa South Take Point
Bloomdale Pump Station
Dorchester
Howe
Van Alstyne
Tom Bean
Westminster
Weston
Anna
Melissa
GRAYSON
COLLIN
COLLIN
West Fork Pilot Grove Creek
Pilot Grove Creek
East Fork Trinity River
Whites Creek
Throckmorton Creek
Honey Creek
823 ft
802 ft
N
0 4,500 9,000 18,000 Feet
Legend
Service Area
CITY OF ANNA
CITY OF HOWE
CITY OF MELISSA
CITY OF VAN ALSTYNE
Texas Parks & Wildlife, Esri, HERE, Garmin, USGS, NGA, EPA, USDA, NPS

1.00 INTRODUCTION

Greater Texoma Utility Authority is a Customer 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, 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 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 Greater Texoma Utility Authority '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

GTUA's service area is located in Collin and Grayson Counties. GTUA provides wholesale water to the city of Sherman and the NTMWD. Sherman's Certificate of Convenience and Necessity covers approximately seventy square miles and is estimated to serve a population of 43,745. This area includes two rural water supply corporations, which are outside the city limits and the city of Knollwood as well as the town of Dorchester. GTUA also provides wholesale water to NTMWD, a regional wholesale supplier for thirteen member cities and numerous other customers in Collin, Dallas, Denton, Rockwall, Kaufman, Hunt, Hopkins, and Rains Counties. NTMWD currently provides water for over 1.3 million people. GTUA provides treated water obtained from NTMWD to the Collin-Grayson Municipal Alliance, which presently includes the cities of Anna, Howe, Melissa, and Van Alstyne.

The City of Sherman, a Member City of the GTUA obtains its raw water supplies from Lake Texoma. GTUA purchases treated water supplies from NTMWD.

2.02 WATER UTILITY PROFILE

Greater Texoma Utility Authority '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**.

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]	59	65	62	58
Residential (GPCD)[2]	*	*	*	*
ICIM (GPCD)[3]	*	*	*	*
Water Loss (GPCD)[4]	1	0	1	1
Water Loss (Percentage)[5]	2%	0%	2%	2%

[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
** GTUA is a water wholesaler and does not have any residential or ICIM connections.*

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 Greater Texoma Utility Authority 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 essential 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

As a wholesale water supplier, GTUA has instituted a program of careful monitoring and record management to assure that its customers are charged appropriately for their water use. The program includes the following elements:

- Deliveries to wholesale customers are metered by meters with accuracy of ±2%, which are read monthly. These readings are used to bill customers.
- Meters used to measure deliveries to wholesale customers are calibrated annually, and tested, as necessary.
- Treated drinking water is metered at the point of delivery from NTMWD and at each customer's delivery vault, metered by meters with accuracy of ±2%.
- Treated water meters are calibrated at least annually, and more frequently, if necessary.
- All meter readings are shared with customers so they can compare the readings against the operations of their system.
- GTUA monitors unaccounted water in its delivery system. (For GTUA, unaccounted water is defined as raw water diverted from Lake Texoma less metered sales to customers, or treated water received from NTMWD less metered sales to customers.)
- GTUA Uses Eastech and Simmons meters for our wholesale accounts.

One of the goals of GTUA's water conservation program is to maintain unaccounted water below 5% every year.

LEAK DETECTION, METER TESTING, REPAIR AND REPLACEMENT

All GTUA water transmission pipelines are reinforced concrete cylinder pipe or ductile iron pipe with an internal protective liner and external protective coating. Because of the multiple layers of material, these pipelines have very long service lives and are not subject to frequent development of leaks.

- Most joints in GTUA's pipeline are designed with bell and spigot joint construction including a rubber gasket. Some joints are welded. For larger lines, each joint is also sealed with concrete.
- All GTUA water pipelines are constructed in legally defined and identified rights-of-way, properly registered with authorities in each county.
- GTUA personnel routinely inspect GTUA facilities and pipelines for leaks or mechanical problems. Repairs are undertaken as soon as practicable in order to minimize waste.

- GTUA operates a program for right-of-way identification for construction projects adjacent to GTUA facilities and pipelines in order to minimize leaks caused by pipeline damage during construction.
- GTUA's metering program allows comparison of measured flows in the system and metered deliveries to customers, which can be used to identify leaks.
- GTUA's regular monitoring of unaccounted water (monthly basis) provides a further check for problems in the distribution system.
- GTUA personnel make regular inspections of its system to detect unauthorized connections.

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.

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 Greater Texoma Utility Authority 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 288.

6.00 RESERVOIR SYSTEM OPERATIONS PLAN

Greater Texoma Utility Authority 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

As a wholesale provider to cities, GTUA does not have any residential or ICIM connections and is unable to use any of the following enforcement measures for the water conservation plan but requires our member cities to enforce the Offenses in Section 8.00 in their own manner. Examples of enforcement measures include:

(a) Refusing to provide water service at sites of new construction or substantial remodeling for customers who do not meet requirements for water conservation fixtures as established by International Plumbing Code and Amendments

(b) Discontinuing service to customers who fail to pay their water bill

(c) analyzing water rates and adjusting them to eliminate conservation plan abuse

(d) Issuance of penalties or fines for users of water who do not comply with the provisions of the adopted Plans

(e) Discontinuing water service to irrigation meters and fire hydrant meters under described drought conditions.

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

GTUA makes use of the educational tools and support options available through NTMWD, as well as the following elements:

- Since 2004, GTUA has provided the "Learning to Be Water Wise" curriculum to area school districts at no cost. The "Learning to Be Water Wise" curriculum includes individual kits and activities to educate 5th grade students on the importance of water and the need for water conservation in their homes and communities.
- GTUA provides conservation brochures and information to interested civic groups and schools. Information includes brochures on water-saving measures and xeriscape landscaping.
- GTUA promotes the Texas Smartscape website (www.txsmartscape.com)
- Water conservation tips and techniques, shared via social media and our website.
- Staff directly interacts with and educates members of our service area who have questions.

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.

Greater Texoma Utility Authority 's Conservation Coordinator is identified below. Greater Texoma Utility Authority will notify NTMWD if this changes at any point before the water conservation plan is updated.

Nichole Murphy
903-786-4433
nichole@gtua.org

C. WATER CONSERVATION PRICING

Each Member City and Customer must adopt an increasing block rate water structure that is intended to encourage water conservation and to discourage excessive use and waste of water.

As a wholesale water provider, the Greater Texoma Utility Authority has a set rate of $4.658 per 1,000 gallons for all our Member cities.

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

Greater Texoma Utility Authority'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.

F. YEAR-ROUND OUTDOOR WATERING SCHEDULES

A mandatory weekly watering schedule has been gradually gaining acceptance in the region and the state. Per our contract with NTMWD, GTUA requires all Member Cities 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.
- **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.

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.

G. TIME OF DAY WATERING SCHEDULE

Per our contract with NTMWD, GTUA 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.

Per our contract with NTMWD, GTUA ***requires*** all Member Cities 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 an annual 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

Per our contract with NTMWD, GTUA requires all Member Cities 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.

Per our contract with NTMWD, GTUA ***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 ADDITIONAL CONSERVATION STRATEGIES

GTUA HAS IMPLEMENTED WATER CONSERVATION MEASURES INTENDED TO HELP CUSTOMERS WITH THEIR WATER CONSERVATION PLANNING, INCLUDING:

- Providing model water conservation and drought contingency plans for use by customers in developing their own plans.
- Requiring an annual report on water conservation efforts from customers and developing a water conservation report for all GTUA customers

GTUA *MODEL WATER CONSERVATION PLAN FOR GTUA CUSTOMERS* AND *MODEL DROUGHT CONTINGENCY AND WATER EMERGENCY RESPONSE PLAN FOR GTUA CUSTOMERS*

In order to assist its customers in the development of their own water conservation and drought contingency and water emergency response plans, GTUA has developed a *Model Water Conservation and Drought Contingency and Water Emergency Response Plans for*

GTUA Water Customers[3]. The model water conservation plans address the TCEQ requirements for water conservation plans for municipal use by public water suppliers [1] and includes several provisions that go beyond TCEQ requirements. GTUA will work with its customers to develop water conservation and drought contingency and water emergency response plans using the model plan as a guide.

The model water conservation plan includes the following elements addressing TCEQ requirements for water conservation plans for public water suppliers:

- 288.2(a)(1)(A) – Utility Profile
- 288.2(a)(1)(B) – Specification of Goals
- 288.2(a)(1)(C) – Specific, Quantified Goals
- 288.2(a)(1)(D) – Accurate Metering
- 288.2(a)(1)(E) – Universal Metering
- 288.2(a)(1)(F) – Determination and Control of Unaccounted Water
- 288.2(a)(1)(G) – Public Education and Information Program
- 288.2(a)(1)(H) – Non-Promotional Water Rate Structure
- 288.2(a)(1)(I) – Reservoir System Operation Plan
- 288.2(a)(1)(J) – Means of Implementation and Enforcement
- 288.2(a)(1)(K) – Coordination with Regional Water Planning Group
- 288.2(a)(2)(A) – Leak Detection, Repair and Water Loss Accounting
- 288.2(a)(2)(B) – Record Management System
- 288.2(a)(2)(C) – Requirement for Water Conservation Plans by Wholesale Customers
- 288.2(c) – Review and Update of Plan
- The TCEQ requires a water utility profile to be completed and submitted with the update to the water conservation plan. This is included as Appendix C in the model plan.
- The TCEQ requires that a water conservation implementation report be completed and submitted to them on an annual basis. This is included in Appendix I of the model plan.

In addition to the TCEQ requirements, the GTUA model plan for customers receiving treated water from NTMWD also requires the following strategy be included in the customer plans, pursuant to the NTMWD requirements:

- 288.2(a)(3)(F) – Considerations for Landscape Water Management Regulations

GTUA requires a water usage report to be submitted to the GTUA on an annual basis. This report is included as Appendix D in the model water conservation plan.

GTUA recommends the following strategies be included in customer plans:

- 288.2(a)(3)(A) – Conservation Oriented Water Rates
- 288.2(a)(3)(B) – Ordinances, Plumbing Codes or Rules on Water-Conserving Fixtures
- 288.2(a)(3)(D) – Reuse and Recycling of Wastewater
- 288.2(a)(3)(F) – Additional Considerations for Landscape Water Management Regulations
- 288.2(a)(3)(G) – Monitoring Method
- 288.2(a)(3)(H) – Additional Conservation Ordinance Provisions

The TCEQ lists the following optional strategy that GTUA also suggests as an optional strategy in the model water conservation plan:

- 288.2(a)(3)(C) – Replacement or Retrofit of Water-Conserving Plumbing Fixtures

GTUA's model drought contingency and water emergency response plan is consistent with Texas Commission on Environmental Quality ("TCEQ") guidelines and requirements for development of drought contingency and water emergency response plans by public drinking water suppliers, contained in Title 30, Part 1, Chapter 288, Subchapter B, Rule 288.20 of the Texas Administrative Code[1]. The model plan includes the following elements addressing TCEQ requirements for drought contingency plans for public water suppliers:

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

A. Annual Reports

One element of the GTUA *Model Water Conservation and Drought Contingency and Water Emergency Response Plans for GTUA Customers*[3] is a requirement that customers complete the TCEQ Utility Profile and Water Conservation Plan Requirements for Municipal Water Use by

Public Water Suppliers (Appendix D) by March 1 of the following year and submit them to GTUA. GTUA will use these to help generate its own annual water conservation report. GTUA's report will be used to review the effectiveness of its water conservation program.

9.0 LANDSCAPE WATER MANAGEMENT MEASURES

A. IN-HOUSE WATER CONSERVATION EFFORTS

GTUA has implemented an in-house water conservation program, including the following elements:

- Wherever possible, landscapes will use native or adapted drought tolerant plants, trees, and shrubs.
- Irrigation at GTUA facilities will occur between 8:00PM and 10:00AM in the peak consumption months (April 1 through October 31) to lower evaporation losses.
- Irrigation will be limited to the amount needed to promote survival and health of plants and lawns.
- Irrigation will be avoided on Saturday and Sunday, if possible, since these are periods of high water use by the public.

The following landscape management measures are included in the GTUA model water conservation plan for treated water customers. The minimum measures for treated water customers that should be implemented and enforced to irrigate the landscape appropriately are as follows:

- Prohibition of watering impervious surfaces (wind driven water drift will be taken into consideration)
- Prohibition of outdoor watering during precipitation or freeze events.
- Lawn and landscape irrigation is limited to twice per week.
- Prohibiting the use of treated water to fill or refill residential amenity, or any other natural or manmade ponds. A pond is considered to be a still body of water with a surface area of five hundred square feet or more.
- Rain and freeze sensors and/or ET or Smart controllers required on all new irrigation systems. Rain and freeze sensors and/or ET or Smart controllers must be maintained to function properly.
- "At home" car washing may be done only when using a water hose with a shut-off nozzle.
- GTUA customers are responsible for developing regulations, ordinances, policies, or procedures for enforcement of water conservation guidelines.

B. Additional Water Conservation Measures (Not Required in Model Water Conservation Plan)

The following water conservation measures are included in the model water conservation plan as options to be considered by GTUA customers:

- Consideration for additional landscape water management regulations
- Water audits
- Rebates

Appendix E of the model water conservation plan for treated water customers is a summary of considerations for landscape water management regulations adopted as part of the development of this water conservation and drought contingency and water emergency response plan. These regulations are intended to minimize waste in landscape irrigation. Appendix E of the model plan includes the required landscape water measures mentioned above, as well as the ones discussed below. GTUA recommends the following measures be included in customer water conservation plans, but they are not required:

- Requirement that all existing irrigation systems be retrofitted with rain and freeze sensors and/or ET or Smart controllers capable of multiple programming. Rain and freeze sensors and/or ET or Smart controllers must be maintained to function properly.
- Prohibition of use of poorly maintained sprinkler systems that waste water.
- Prohibition of planting cool season grasses (such as rye grass or other similar grasses) that intensify cool season water requirements, exception allowed for golf courses or public athletic fields.
- Requirement that all new athletic fields be irrigated by a separate irrigation system from surrounding areas.
- Implementation of other measures to encourage off-peak water use.

Customers develop landscape ordinances to guide developers in landscaping requirements for the customer. GTUA recommends that the following measures be included in the entity's landscape ordinance:

- Requirement that all new irrigation systems be in compliance with state design and installation regulations (TAC Title 30, Part 1, Chapter 344)
- Native, drought tolerant, or adaptive plants should be encouraged.
- Drip irrigation systems should be promoted.
- ET/Smart controllers that only allow sprinkler systems to irrigate, when necessary, should be promoted.

Water audits are useful in finding ways in which water can be used more efficiently at a specific location. GTUA recommends customers offer water audits to customers. This measure is recommended but not required.

In addition to the conservation measures described above, GTUA considers the following water conservation incentive programs as options to consider:

- 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,
- ET/Smart irrigation controller rebates,
- Water efficient clothes washer rebates,
- Pressure reducing valve installation programs or rebates,
- Rain barrel rebates,
- On-demand hot water heater rebates, or
- Other water conservation incentive programs.

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 TCEQ every five years.

1.00 INTRODUCTION

Greater Texoma Utility Authority is a Customer 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, 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

Greater Texoma Utility Authority 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 5/20/2024. Public notice of this meeting was provided on the community website and in local newspapers.
- Approving the Plan at a public Board meeting on 5/20/2024. 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

Greater Texoma Utility Authority 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, Greater Texoma Utility Authority 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 STAGE

A. INITITATION OF A WATER RESOURCE MANAGEMENT STAGE

The Official 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.)
- Emergency conditions such as a pump failure of water leak
- Special conditions including general maintenance or maintenance requiring a long shut-down of the system

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, Greater Texoma Utility Authority will notify TCEQ and the NTMWD Executive Director within five business days. Instructions to report drought contingency plan water use restrictions to TCEQ is available online at https://www.tceq.texas.gov/drinkingwater/homeland_security/security_pws.

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 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, Greater Texoma Utility Authority will notify TCEQ Executive Director and the NTMWD Executive Director within five business days. Instructions to report drought contingency plan water use restrictions to TCEQ is available online at https://www.tceq.texas.gov/drinkingwater/homeland_security/security_pws.

The 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 should be documented.

2.05 PROCEDURE FOR GRANTING VARIANCES TO THE PLAN

The 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 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.

As a wholesale supplier only, GTUA does not control how the Member Cities enforce the Mandatory Water Use restrictions. Entities should determine the best means of enforcement, be it tickets or administrative fees, that work bestAd for their community.

2.07 REVIEW AND UPDATE OF WATER RESOURCE AND EMERGENCY MANAGEMENT PLAN

As required by TCEQ rules, Greater Texoma Utility Authority 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 1** 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.

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

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.

- **Requires notification to TCEQ by NTMWD.** Require Member Cities and Customers (including indirect Customers) to initiate Stage 1 restrictions in their respective, independently adopted water resource management plans.
- 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 by Member Cities and Customers and/or NTMWD.** Initiate a rate surcharge for all water use over a certain level.
- **Requires notification to TCEQ by Member Cities and Customers.** 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.

Stage 2 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 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

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 by NTMWD.** Require Member Cities and Customers (including indirect Customers) to initiate Stage 2 restrictions in their respective, independently adopted water resource management plans.
- **Requires notification to TCEQ by NTMWD and/or Member Cities and Customers.** 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. 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 by Member Cities and Customers.** Prohibit overseeding, sodding, sprigging, broadcasting or plugging with or watering, except for golf courses and athletic fields.
- **Requires notification to TCEQ by NTMWD.** Institute a mandated reduction in water deliveries to all Member Cities and Customers. Such a reduction will be distributed as required by Texas Water Code Section 11.039 (**Appendix E**).
- **Requires notification to TCEQ by Member Cities and Customers and/or NTMWD.** Initiate a rate surcharge for all water use over a certain level.
- **Requires notification to TCEQ by Member Cities and Customers.** 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.

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

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 by NTMWD.** Require Member Cities and Customers (including indirect Customers) to initiate Stage 3 restrictions in their respective, independently adopted water resource management plans.
- **Requires notification to TCEQ by Member Cities and Customers.** 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 by Member Cities and Customers.** Prohibit new sod, overseeding, sodding, sprigging, broadcasting or plugging with or watering.

- **Requires notification to TCEQ by Member Cities and Customers.** Prohibit the use of potable water for the irrigation of new landscape.
- **Requires notification to TCEQ by NTMWD and/or Member Cities and Customers.** 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 not exempt from this requirement.
- **Requires notification to TCEQ by Member Cities and Customers.** Prohibit washing of vehicles except at a commercial vehicle wash facility.
- **Requires notification to TCEQ by Member Cities and Customers.** 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 by Member Cities and Customers.** 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 by Member Cities and Customers.** 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 by Member Cities and Customers.** Require all commercial water users to reduce water use by a set percentage.
- **Requires notification to TCEQ by NTMWD.** Institute a mandated reduction in deliveries to all Member Cities and Customers. Such a reduction will be distributed as required by Texas Water Code Section 11.039.
- **Requires notification to TCEQ by NTMWD and/or Member Cities and Customers.** 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

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 TCEQ water conservation rules that are covered in this water conservation plan are listed below.

Minimum Conservation Plan Requirements for Public Water Suppliers

- 288.2(a)(1)(A) – Utility Profile – Section 2
- 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*
- *288.2(a)(2)(B) – Requirement for Water Conservation Plans by Wholesale Customers – Section 5*

Minimum Conservation Plan Requirements for Wholesale Water Suppliers

- *288.5(1)(A) – Description of Service Area – Section 2*
- *288.5(1)(B) – Specific, Quantified Goals – Section 3*

- *288.5(1)(C) – Measure and Account for Water Diverted – Section 4*
- *288.5(1)(D) – Monitoring and Record Management Program – Section 4*
- *288.5(1)(E) – Program of Metering and Leak Detection and Repair – Section 4*
- *288.5(1)(F) – Requirement for Water Conservation Plans by Wholesale Customers – Section 5*
- *288.5(1)(G) – Reservoir System Operation Plan – Section 6*
- *288.5(1)(H) – Means of Implementation and Enforcement – Section 7*
- *288.5(1)(I) – Documentation of Coordination with Regional Water Planning Group – Section 7*
- *288.5(3) – Review and Update of Plan – Section 7*

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

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

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

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

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

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

(D) raising or keeping equine animals;

(E) wildlife management; and

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(i) residential;

(I) single family;

(II) multi-family;

(ii) commercial;

(iii) institutional;

(iv) industrial;

(v) agricultural; and,

(vi) wholesale.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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CHAPTER 288	WATER CONSERVATION PLANS, DROUGHT CONTINGENCY PLANS, GUIDELINES AND REQUIREMENTS
SUBCHAPTER A	WATER CONSERVATION PLANS
RULE §288.5	**Water Conservation Plans for Wholesale Water Suppliers**

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

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

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

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

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

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

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

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

that the contract for the resale of the water must have water conservation requirements so that each successive customer in the resale of the water will be required to implement water conservation measures in accordance with applicable provisions of this chapter;

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

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

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

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

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

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

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

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

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

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

APPENDIX B

TEXAS ADMINISTRATIVE CODE TITLE 30 CHAPTER 288

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 TCEQ water conservation 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

Minimum Drought Contingency Plan Requirements for Wholesale Water Suppliers

- ***288.22(a)(1)*** *– Provisions to Inform the Public and Provide Opportunity for Public Input – Section 2*
- ***288.22(a)(2)*** *– Coordination with the Regional Water Planning Groups – Section 2*
- ***288.22(a)(3)*** *– Criteria for Initiation and Termination of Drought Stages – Section 3*
- ***288.22(a)(4)*** *– Drought and Emergency Response Stages – Section 3*
- ***288.22(a)(5)*** *– Procedures for Initiation and Termination of Drought Stages – Section 2*
- ***288.22(a)(6)*** *– Specific, Quantified Targets for Water Use Reductions During Water Shortages – Section 3*
- ***288.22(a)(7)*** *– Specific Water Supply or Water Demand Management Measures to be Implemented during Each Drought Stage – Section 3*
- ***288.22(a)(8)*** *– Provision in Wholesale Contracts to Require Water Distribution According to Texas Water Code Section §11.039 – Sections 2 and 3*
- ***288.22(a)(9)*** *– Procedures for Granting Variances to the Plan - Section 2*
- ***288.22(a)(10)*** *- Procedures for Enforcement of Mandatory Restrictions – Section 2*
- ***288.22(b)*** *– TCEQ Notification of Implementation of Mandatory Measures – Sections 2 and 3*
- ***288.22(c)*** *– Review and Update of the Plan – 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

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 §288.22	**Drought Contingency Plans for Wholesale Water Suppliers**

(a) A drought contingency plan for a wholesale water supplier must include the following minimum elements.

(1) Preparation of the plan shall include provisions to actively inform the public and to affirmatively provide opportunity for user input in the preparation of the plan and for informing wholesale customers about the plan. 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.

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

(3) 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.

(4) The drought contingency plan must include a minimum of three drought or emergency response stages providing for the implementation of measures in response to water supply conditions during a repeat of the drought-of-record.

(5) The drought contingency plan must include the procedures to be followed for the initiation or termination of drought response stages, including procedures for notification of wholesale customers regarding the initiation or termination of drought response stages.

(6) 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 paragraph are not enforceable.

(7) 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:

(A) pro rata curtailment of water deliveries to or diversions by wholesale water customers as provided in Texas Water Code, §11.039; and

(B) utilization of alternative water sources 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.).

(8) The drought contingency plan must include a provision in every wholesale water contract entered into or renewed after adoption of the plan, including contract extensions, that in case of a shortage of water resulting from drought, the water to be distributed shall be divided in accordance with Texas Water Code, §11.039.

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

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

(b) The wholesale public 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 wholesale 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 adoption or revision of the regional water plan.

Source Note: The provisions of this §288.22 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-20162.

Texas Water Development Board

UTILITY PROFILE FOR WHOLESALE WATER SUPPLIER

CONTACT INFORMATION

Name of Utility: GREATER TEXOMA UTILITY AUTHORITY

Public Water Supply Identification Number (PWS ID): TX0910148

Certificate of Convenience and Necessity (CCN) Number:

Surface Water Right ID Number: 4301-C

Wastewater ID Number:

Contact: First Name: Nichole Last Name: Murphy

Title: Senior Project Manager

Address: 5100 Airport Drive City: Denison State: TX

Zip Code: 75020 Zip+4: Email: nichole@gtua.org

Telephone Number: 9037864433 Date:

Is this person the designated Conservation Coordinator? (•) Yes ( ) No

Regional Water Planning Group: C

Groundwater Conservation District:

Our records indicate that you:

☑ Received financial assistance of $500,000 or more from TWDB

☑ Have a surface water right with TCEQ

A. Population and Service Area Data

1. Current service area size in square miles: 87

Attached file(s):

File Name	File Description
CGMA Map.pdf	

UTILITY PROFILE FOR WHOLESALE WATER SUPPLIER

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

Year	Historical Population Served By Wholesale Water Service
2023	71,914
2022	62,953
2021	46,186
2020	45,496
2019	41,745

3. Projected service area population for the following decades.

Year	Projected Population Served By Wholesale Water Service
2030	143,985
2040	261,040
2050	356,405
2060	425,946
2070	555,788

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

Attached file(s):

File Name	File Description
CGMA pop-wtr W-O 289 proj2024 thru 2053_concept_12-31-23_rev.xlsx	

Texas Water Development Board

UTILITY PROFILE FOR WHOLESALE WATER SUPPLIER

B. System Input

System input data for the previous five years.

Total System Input = Self-supplied + Imported

Year	Water Produced in Gallons	Purchased/Imported Water in Gallons	Total System Input	Total GPD
2023	0	1,650,247,000	1,650,247,000	4,521,225
2022	0	1,469,040,000	1,469,040,000	4,024,767
2021	0	961,775,000	961,775,000	2,635,000
2020	0	949,150,000	949,150,000	2,600,411
2019	0	831,689,000	831,689,000	2,278,600
Historic Average	0	1,172,380,200	1,172,380,200	3,212,001

C. Water Supply System

Attached file(s):

File Name	File Description
Description of Water System.pdf	

1. Designed daily capacity of system in gallons: 13,500,000

2. Storage Capacity

   2a. Elevated storage in gallons: 0

   2b. Ground storage in gallons: 750,000

UTILITY PROFILE FOR WHOLESALE WATER SUPPLIER

D. Projected Demands

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

Year	Population	Water Demand (gallons)
2025	90,921	1,973,021,632
2026	100,630	2,254,514,138
2027	110,886	2,467,053,693
2028	121,189	2,900,954,978
2029	132,888	3,213,305,650
2030	143,985	3,525,710,790
2031	155,414	3,837,505,759
2032	167,801	4,177,498,539
2033	179,584	4,517,413,781
2034	193,173	5,089,524,958

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

Attached file(s):

File Name	File Description
CGMA pop-wtr W-O 289 proj2024 thru 2053_concept_12-31-23_rev.xlsx	

E. High Volume Customers

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

Customer	Water Use Category	Annual Water Use	Treated or Raw

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

Customer	Water Use Category	Annual Water Use	Treated or Raw
City of Anna	Municipal	736,644,000	Treated
City of Melissa	Municipal	617,288,000	Treated
City of Van Alstyne	Municipal	142,005,000	Treated
City of Howe	Municipal	62,325,000	Treated

UTILITY PROFILE FOR WHOLESALE WATER SUPPLIER

F. Utility Data Comment Section

Additional comments about utility data.

Section II: System Data

A. Wholesale Water Supplier Connections

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

Water Use Category Type	Total Wholesale Connections (Active + Inactive)	Percent of Total Connections
Municipal	7	100.00 %
Industrial	0	0.00 %
Commercial	0	0.00 %
Institutional	0	0.00 %
Agricultural	0	0.00 %
Total	7	100.00 %

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

	Net Number of New Wholesale Connections					
Year	**Municipal**	**Industrial**	**Commercial**	**Institutional**	**Agricultural**	**Total**
2023	1	0	0	0	0	1
2022	0	0	0	0	0	0
2021	0	0	0	0	0	0
2020	0	0	0	0	0	0
2019	0	0	0	0	0	0

Texas Water Development Board

UTILITY PROFILE FOR WHOLESALE WATER SUPPLIER

B. Accounting Data

For the previous five years, the number of gallons of WHOLESALE water exported (sold or transferred) to each major water use category.

Year	Municipal	Industrial	Commercial	Institutional	Agricultural	Total
2023	1,650,247,000	0	0	0	0	1,650,247,000
2022	1,320,938,000	0	0	0	0	1,320,938,000
2021	961,775,000	0	0	0	0	961,775,000
2020	949,150,000	0	0	0	0	949,150,000
2019	810,652,000	0	0	0	0	810,652,000

C. Annual and Seasonal Water Use

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

Month	Total Gallons of Treated Water				
	2023	**2022**	**2021**	**2020**	**2019**
January	95,062,000	48,434,000	56,171,000	41,566,000	56,652,000
February	78,678,000	50,523,000	54,148,000	40,291,000	62,882,000
March	100,225,000	63,404,000	37,148,000	40,802,000	55,723,000
April	108,455,000	80,391,000	62,195,000	52,611,000	47,455,000
May	137,816,000	92,893,000	52,384,000	61,025,000	55,061,000
June	149,464,000	106,532,000	65,731,000	72,563,000	53,199,000
July	164,673,000	216,438,000	95,634,000	83,880,000	96,348,000
August	232,398,000	178,086,000	109,699,000	89,424,000	110,673,000
September	197,693,000	154,418,000	112,454,000	79,464,000	94,670,000
October	128,987,000	129,485,000	89,475,000	76,209,000	84,754,000
November	83,520,000	98,109,000	62,464,000	61,843,000	49,257,000
December	81,291,000	102,225,000	63,036,000	58,326,000	43,978,000
Total	1,558,262,000	1,320,938,000	860,539,000	758,004,000	810,652,000

UTILITY PROFILE FOR WHOLESALE WATER SUPPLIER

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

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

3. Summary of seasonal and annual water use.

	Summer WHOLESALE (Treated + Raw)	Total WHOLESALE (Treated + Raw)
2023	546,535,000	1,558,262,000
2022	501,056,000	1,320,938,000
2021	271,064,000	860,539,000
2020	245,867,000	758,004,000
2019	260,220,000	810,652,000
Average in Gallons	364,948,400.00	1,061,679,000.00

UTILITY PROFILE FOR WHOLESALE WATER SUPPLIER

D. Water Loss

Water Loss data for the previous five years.

Year	Total Water Loss in Gallons	Water Loss in GPCD	Water Loss as a Percentage
2023	0	0	0.00 %
2022	148,102,000	6	10.00 %
2021	0	0	0.00 %
2020	0	0	0.00 %
2019	21,037,000	1	2.53 %
Average	33,827,800	1	2.51 %

E. Peak Day Use

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

Year	Average Daily Use (gal)	Peak Day Use (gal)	Ratio (peak/avg)
2023	4,269,210	5940597	1.3915
2022	3,619,008	5446260	1.5049
2021	2,357,641	2946347	1.2497
2020	2,076,723	2672467	1.2869
2019	2,220,964	2828478	1.2735

F. Summary of Historic Water Use

Water Use Category	Historic Average	Percent of Connections	Percent of Water Use
Municipal	1,138,552,400	100.00 %	100.00 %
Industrial	0	0.00 %	0.00 %
Commercial	0	0.00 %	0.00 %
Institutional	0	0.00 %	0.00 %
Agricultural	0	0.00 %	0.00 %

G. System Data Comment Section

UTILITY PROFILE FOR WHOLESALE WATER SUPPLIER

Section III: Wastewater System Data

A. Wastewater System Data

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

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

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

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

UTILITY PROFILE FOR WHOLESALE WATER SUPPLIER

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

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

5. Could treated wastewater be substituted for potable water?

○ Yes ○ No

B. Reuse Data

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

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

UTILITY PROFILE FOR WHOLESALE WATER SUPPLIER

Appendix D

GREATER TEXOMA UTILITY AUTHORITY Annual Water Conservation Report

Texas Water Development Board

Water Conservation Plan Annual Report
Wholesale Water Supplier

CONTACT INFORMATION

Name of Utility: GREATER TEXOMA UTILITY AUTHORITY

Public Water Supply Identification Number (PWS ID): TX0910148

Certification of Convenience and Necessity (CCN) Number:

Surface Water Right ID Number: 4301-C

Wastewater ID Number:

Check all that apply:

- ☐ Retail Water Supplier
- ☑ Wholesale Water Supplier
- ☐ Wastewater Treatment Utility

Address: 5100 Airport Drive City: Denison Zip Code: 75020

Email: nichole@gtua.org Telephone Number: 9037864433

Regional Water Planning Group: C

Groundwater Conservation District: Red River Groundwater Conservation District

Contact: First Name: Nichole Last Name: Murphy

Title: Senior Project Manager

Is this person the designated Conservation Coordinator? ◉ Yes ○ No

Regional Water Planning Group: C

Groundwater Conservation District: Red River Groundwater Conservation District

Reporting Period (Calendar year):

Period Begin (mm/yyyy): 01/2023 Period End (mm/yyyy): 12/2023

Check all that apply:

- ☑ Received financial assistance of $500,000 or more from TWDB
- ☑ Have a surface water right with TCEQ

SYSTEM DATA

1. For this reporting period, provide the total volume of wholesale water exported (transfered or sold): 1,650,247,000

2. For this reporting period, does your billing/accounting system have the capability to classify customer into the Wholesale Customer Categories?

   ○ Yes ◉ No

Wholesale Customers Categories*

- Municipal
- Industrial
- Commercial
- Institutional
- Agricultural

**Recommended Customer Categories for classifying customer water use. For definitions, refer to Guidance and Methodology on Water Conservation and Water Use.*

3. For this reporting period, select the category(s) used to calculate wholesale customer water usage:

- [x] Municipal
- [ ] Industrial
- [ ] Commercial
- [ ] Institutional
- [ ] Agricultural

4. For this reporting period, enter the gallons of **WHOLESALE water exported** (transfered or sold). Enter zero if a Customer Category does not apply.

Wholesale Customer Category	Gallons Exported[1] (transfered or sold)	Number of Customers
Municipal	1,650,247,000	7
Industrial	0	0
Commercial	0	0
Institutional	0	0
Agricultural	0	0
Total Gallons[1]	**1650247000**	**7**

[1]Municipal + Industrial + Commercial + Institutional + Agricultural = Wholesale Water Exported

Water Use Accounting

	Total Gallons During the Reporting Period
Water Produced: Water from permitted sources such as rivers, lakes, streams, and wells	**0**
Wholesale Water Imported: Purchased wholesale water transferred into the system.	**1,650,247,000**
System Input: Total water supplied to system and available for use. Produced + Imported = System Input	**1,650,247,000**
Wholesale Water Exported: Wholesale water sold or transferred out of the system.	**1,650,247,000**
Gallons Per Day: Wholesale Water Exported / 365 = Gallons Per Day	**4,521,225**
Population: Estimated total population for municipal customers.	**71,914**
Gallons Per Capita Per Day: Wholesale Exported / Population / 365 = Gallons Per Capita Per Day	**63**

Provide the breakdown of Wholesale Water Exported into Raw and Treated water volumes.

	Gallons
Raw Wholesale Water Exported	**0**
Treated Wholesale Water Exported	**1,650,247,000**

Provide the specific and quantified five and ten-year targets as listed in your most current Water Conservation Plan.

	Date to Achieve Target	Specified and Quantified Targets
Five-year target	**2024**	**55 total GPCD, 1 GPCD water loss, 2% water loss percentage**
Ten-year target	**2029**	**55 total GPCD, 1 GPCD water loss, 2% water loss percentage**

Texas Water Development Board

Water Conservation Programs and Activities

1. Water Conservation Plan.
What year did your entity adopt or revise their most recent Water Conservation Plan? **2019**

Does The Plan incorporate **Best Management Practices**? (•) Yes ( ) No

2. Water Conservation Programs
Has your entity implemented any type of water conservation activity or program?

(•) Yes ( ) No

If yes, select the type(s) of Best Management Practices or water conservation strategies implemented during this reporting period. Estimate the gallons saved from wholesale supplier conservation strategies implemented. Do not include volume reused. Please include reuse in 3 below.

	Wholesale Supplier Best Management Practices
	Conservation Planning
☑	Customer Contract Requirements to Develop and Implement Water Conservation and Drought Contingency Plans
☐	Technical Assistance and Outreach
	Resource Sharing
☐	Cost Share Program
☐	Wholesale Supplier Collective Purchase and Direct Distribution of Water Conservation Equipment

Wholesale Supplier Activities and Practices	Check if Implemented	Estimated Gallons Saved
Agricultural Conservation Programs	☐	
Conservation Analysis & Planning	☐	
Conservation Rate Structures	☐	
Conservation Technology	☐	
Education & Public Awareness	☑	0
Industrial Conservation Programs	☐	

Leak Detection/Water Loss Program	☑	0
Rebate, Retrofit, and Incentive Programs	☐	
Regulatory & Enforcement	☐	
System Operations	☐	
Water Efficient Landscape Programs	☑	0
Water Use Audits	☐	
Other	☐	
Totals		0

3. Recycle/Reuse (Water or Wastewater Effluent)
For this reporting period, provide direct and indirect reuse activities.

Reuse Activity	Estimated Volume (in gallons)
On-site irrigation	0
Plant wash down	0
Chlorination/de-chlorination	0
Industrial	0
Landscape irrigation (parks, golf courses)	0
Agricultural	0
Other	0
Estimated Volume of Reuse	0

4. Water Savings
For this reporting period, estimate the savings that resulted from water conversation activities and programs.

Estimated Gallons Saved/Conserved	Estimated Gallons Recycled/Reused	Total Volume of Water Saved[1]	Dollar Value of Water Saved[2]
0	0	0	

[1]Estimated Gallons Saved + Estimated Gallons Recycled/Reused = Total Volume Saved
[2]Estimated this value by taking into account water savings, the cost of treatment or purchase of water, and deferred capital cost due to conservation.

5. Program Effectiveness
In your opinion, how would you rank the overall effectiveness of your conservation programs and activities?

Less Than Effective	Somewhat Effective	Hightly Effective	Does Not Apply
○	○	○	◉

6. What might your entity do to improve the effectiveness of your water conservation program?

As a wholesale supplier only, GTUA has little authority over the residential customer. We will continue our education initiative for conserving water and promote conservation activities on our website and social media.

7. Select the areas for which you would like to receive more technical assistance.

	Technical Assitance Areas
☐	Agricultural Best Management Practices
☑	Wholesale Best Management Practices
☐	Industrial Best Management Practices
☐	Drought Contingency Plans
☐	Landscape Efficient Systems
☐	Leak Detection and Equipment
☐	Educational Resources
☐	Water Conservation Plans
☐	Water IQ: Know Your Water
☐	Water Loss Audits
☐	Rainwater Harvesting
☐	Recycling and Reuse

Appendix E

TCEQ Water Conservation Implementation Report

Texas Commission on Environmental Quality

Water Conservation Implementation Report

This report must be completed by entities that are required to submit a water conservation plan to the TCEQ in accordance with Title 30 Texas Administrative Code, Chapter 288 . Please complete this report and submit it to the TCEQ. If you need assistance in completing this form, please contact the Resource Protection Team in the Water Supply Division at (512) 239-4691.

Entity Name: **Greater Texoma Utility Authority**

Address: **5100 Airport Road, Denison, TX 75020**

Telephone Number: **(903) 786-4433** **Fax:**

Form Completed By: **Paul Sigle**

Title: **General Manager**

Signature: **Date:** 5/1/2024

I. WATER USES

Indicate the type(s) of water uses (example: municipal, industrial, or agricultural).

Municipal Use

Use

Use

II. WATER CONSERVATION MEASURES IMPLEMENTED

Provide the water conservation measures and the dates the measures were implemented.

Description of Water Conservation Measure: N o n e

Date Implemented:

Description of Water Conservation Measure:

Date Implemented:

Description of Water Conservation Measure:

Date Implemented:

Description of Water Conservation Measure:

Date Implemented:

Description of Water Conservation Measure:

Date Implemented: _____

Description of Water Conservation Measure: _____

Date Implemented: _____

Description of Water Conservation Measure: _____

Date Implemented: _____

Description of Water Conservation Measure: _____

Date Implemented: _____

Description of Water Conservation Measure: _____

Date Implemented: _____

Description of Water Conservation Measure: _____

Date Implemented: _____

III. TARGETS

A. Provide the **specific and quantified five and ten-year targets** as listed in water conservation plan for previous planning period.

5-Year Specific/Quantified Target: 55 Total GPD 2024

Date to achieve target: 12-30-2024

10-Year Specific/Quantified Target: 54 Total GPD 2034

Date to achieve target: 12-30-2034

B. State if these targets in the water conservation plan are being met.

Yes

C. List the **actual amount of water saved.**

2019 – 4,334,380

2020 – 16,718,470

2021 – 156,567,600

2022 - 0

2023 - 0

D. If the targets are not being met, provide an explanation as to why, including any progress on the targets.

Appendix F

Letters to Regional Water Planning Group and NTMWD

April 2, 2024

Region C Water Planning Group
North Texas Municipal Water District
P.O. Box 2408
Wylie TX 75098-2408

Re: Water Conservation and Drought Contingency and Water Emergency Response Plan

Dear Sir or Madam:

Enclosed please find a copy of the Water Conservation and Drought Contingency and Water Emergency Response Plan for the Greater Texoma Utility Authority. The Board of Directors of the Greater Texoma Utility Authority approved this Plan at their April 15, 2024 meeting. This copy is being submitted in accordance with the Texas Water Development Board and the Texas Commission on Environmental Quality rules.

Sincerely,

Paul Sigle
General Manager

PS:nm

Enclosure

Appendix G

Adoption of Plans

RESOLUTION NO. _____

A RESOLUTION BY THE BOARD OF DIRECTORS OF GREATER TEXOMA UTILITY AUTHORITY ADOPTING A WATER CONSERVATION AND DROUGHT CONTINGENCY AND WATER EMERGENCY RESPONSE PLAN TO PROMOTE THE RESPONSIBLE USE OF WATER AND TO PROVIDE FOR PENALITES AND/OR THE DISCONNECTION OF WATER SERVICE FOR NONCOMPLIANCE WITH THE PROVISIONS OF THE WATER CONSERVATION AND DROUGHT CONTINGENCY AND WATER EMERGENCY RESPONSE PLAN

WHEREAS, the Greater Texoma Utility Authority ("GTUA") has previously adopted a Water Conservation and Drought Contingency Plan; and

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

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

WHEREAS, the Water Code and the regulations of the Texas Commission on Environmental Quality ("TCEQ") require that GTUA adopt a Water Conservation Plan and Drought Contingency and Water Emergency Response Plan; and

WHEREAS, the GTUA has determined an urgent need in the best interest of the public to adopt a Water Conservation and Drought Contingency and Water Emergency Response Plan; and

WHEREAS, pursuant to Chapter 49 of the Water Code, GTUA is authorized to adopt such policies necessary to preserve and conserve its water resources;

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF GREATER TEXOMA UTILITY AUTHORITY THAT:

SECTION 1: The Water Conservation and Drought Contingency and Water Emergency Response Plan for GTUA dated _____, _____ attached hereto as Appendix A, is hereby adopted.

SECTION 2: This plan shall be used in conjunction with the previously adopted resolutions to implement and preserve GTUA Water Conservation and Drought Contingency and Water Emergency Response Plan.

SECTION 3: All resolutions that are in conflict with the provisions of this resolution be, and the same are hereby, repealed and all other resolutions of the GTUA not in conflict with the provisions of this resolution shall remain in full force and effect.

SECTION 4: It is hereby declared to be the intention of the Board of Directors of GTUA that the sections, paragraphs, sentences, clauses, and phrases of this resolution are severable and, if any phrase, clause, sentence, paragraph, or section of this resolution shall be declared unconstitutional by the valid judgment or decree of any court of competent jurisdiction, such unconstitutionality shall not affect any of the remaining phrases, clauses, sentences, paragraphs, and sections of the resolution, since the same would have been enacted by the Board of Directors without the incorporation of this resolution of such unconstitutional phrase, clause, sentence, paragraph, or section.

SECTION 5: This resolution shall take effect immediately from and after its passage.

SECTION 6: The Board of Directors does hereby find and declare that sufficient written notice of the date, hour, place and subject of the meeting adopting this Resolution was posted at a designated place convenient to the public for the time required by law preceding the meeting, that such place of posting was readily accessible at all times to the general public, and that all of the foregoing was done as required by law at all times during which this Resolution and the subject matter thereof has been discussed, considered and formally acted upon. The Board of Directors further ratifies, approves and confirms such written notice an the posting thereof.

SECTION 7: The General Manager or their designee is hereby directed to file a copy of the Plan and this Resolution with the TCEQ in accordance with Title 30, Chapter 288 of the Texas Administrative Code.

PASSED AND APPROVED this the 15 day of April 2024.

_____
President
Board of Directors
Greater Texoma Utility Authority

ATTEST:

_____
Secretary-Treasurer
Board of Directors
Greater Texoma Utility Authority

Appendix H

Illegal Water Connections and Theft of Water

Appendix H is included as an example for GTUA Member Cities who do not currently have a way to handle water theft or illegal connections.

APPENDIX H

ILLEGAL WATER CONNECTIONS AND THEFT OF WATER

MUNICIPAL ORDINANCE

PERTAINING TO ILLEGAL WATER CONNECTIONS AND THEFT OF WATER

Ordinance No. _____

AN ORDINANCE PERTAINING TO ILLEGAL WATER CONNECTIONS AND/OR THE THEFT OF WATER RELATED TO THE WATER SUPPLY FOR THE CITY OF _____.

WHEREAS, the City of ____, Texas (the "City") recognizes that the amount of water available to its water customers is limited; and

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

WHEREAS, the City seeks to adopt an ordinance pertaining to illegal water connections and theft of water.

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

Section 1. The City Council hereby approves and adopts this Ordinance as described herein.

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

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

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

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

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

Section 3. An offense under this Ordinance is a Class C misdemeanor punishable by a fine of up to two thousand dollars ($2,000.00) and/or discontinuance of water service by the City.

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

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

Section 6. The City Secretary is hereby authorized and directed to cause publication of the descriptive caption of this ordinance as an alternative method of publication provided by law.

Section 7. {If Applicable} Ordinance No. _____, adopted on _____, is hereby repealed.

Passed by the City Council on this ___ day of _____, ____.

_____

Mayor

Attest:

_____

City Secretary

Appendix I

Landscape Ordinance

This is an example of a basic landscape ordinance which can be adopted or modified for adoption by municipalities or other jurisdictions. Landscape ordinances with a wide variety of formats and levels of complexity have been adopted by the governments of NTMWD Member Cities and Customers to date.

1. PURPOSE

Landscaping is accepted as adding value to property and is in the interest of the general welfare of the City. The provision of landscaped areas also serves to increase the amount of a property that is devoted to pervious surface area which, in turn, helps to reduce the amount of impervious surface area, storm water runoff, and consequent nonpoint pollution in local waterways. Therefore, landscaping is hereafter required of new development, including single and two family uses. Single and two family use requirements are less in scope than those for other uses such as multi family, commercial, institutional, and industrial development. Landscape requirements for these uses are set forth herein.

2. SCOPE AND ENFORCEMENT

The standards and criteria contained within this Section are deemed to be minimum standards and shall apply to all new or altered construction occurring within the City exceeding thirty percent (30%) of the original floor and/or site area. Additionally, any use requiring a Conditional Use Provision (CUP) zoning designation must comply with these landscape standards unless special landscaping standards are otherwise provided for in the ordinance establishing the CUP district. The provisions of this Section shall be administered and enforced by the City Manager or his/her designee. If at any time after the issuance of a certificate of occupancy, the approved landscaping is found to be not in conformance with the standards and criteria of this Section, the City Manager (or his/her designee) shall issue notice to the owner, citing the violation and describing what action is required to comply with this Section. The owner, tenant or agent shall have thirty (30) calendar days from date of said notice to establish/restore the landscaping, as required. If the landscaping is not established/restored within the allotted time, then such person shall be in violation of this Ordinance.

3. PERMITS

No permits shall be issued for building, paving, grading or construction until a detailed landscape plan is submitted and approved by the City Manager or his/her designee, along with the site plan and engineering/construction plans. A landscape plan shall be required as part of the site plan submission, as required in Section __. The landscape plan may be shown on the site plan (provided the site plan remains clear and legible) or may be drawn on a separate sheet. Prior to the issuance of a certificate of occupancy for any building or structure, all screening and landscaping shall be in place in accordance with the landscape plan. In any case in which a certificate of occupancy is sought at a season of the year in which the City Manager, or his/her designee, determines that it would be impractical to plant trees, shrubs or groundcover, or to successfully establish turf areas, a temporary certificate of occupancy may be issued provided a letter of agreement from the property owner is submitted that states when the installation shall occur. All landscaping required by the landscaping plan shall be installed within six (6) months of the date of the issuance of the certificate of occupancy.

4. LANDSCAPE PLAN

Prior to the issuance of a building, paving, grading or construction permit for any use other than single family detached or two family dwellings, a landscape plan shall be submitted to the City Manager, or his/her designee. The City Manager, or his/her designee, shall review such plans and shall approve same if the plans are in accordance with the criteria of these regulations. If the plans are not in conformance, they shall be disapproved and shall be accompanied by a written statement setting forth the changes necessary for compliance. The landscape plan shall be prepared and by a person knowledgeable in plant material usage and landscape design (e.g., landscape architect, landscape contractor, landscape designer, etc.). For all uses other than single and two family uses, the landscape plan shall be sealed by a registered landscape architect and shall contain the following minimum information:

A. Minimum scale of one inch (1") equals fifty feet (50'); show scale in both written and graphic form.

B. Trunk location and caliper size, dripline location, and species of all trees to be preserved. Tree stamps or standard symbols shall not be used unless they indicate true size and location of trees and driplines.

C. Location of all plant and landscaping material to be used, including plants, paving, benches, screens, fountains, statues, earthen berms, ponds (to include depth of water), topography of site, or other landscape features.

D. Species and common names of all plant materials to be used.

E. Size of all plant material to be used (container size, planted height, etc.)

F. Spacing of plant material where appropriate.

G. Layout and description of irrigation, sprinkler, or water systems including location of water sources.

H. Name and address of the person(s) responsible for the preparation of the landscape plan.

I. North arrow/symbol, and a small map indicating location of the property.

J. Date of the landscape plan.

5. GENERAL STANDARDS

The following criteria and standards shall apply to landscape materials and installation:

A. All required landscaped open areas shall be completely covered with living plant material or landscape mulch materials such as shredded hardwood mulch or decomposed granite.

B. Plant materials shall conform to the standards of the approved plant list for the City and the current edition of the "American Standard for Nursery Stock" (as amended), published by the American Association of Nurserymen. Approved plant lists should Grass seed, sod and other material shall be clean and free of weeds and noxious pests and insects.

C. Large trees shall have an average spread of crown of greater than fifteen feet (15') at maturity. Trees having a lesser average mature crown of fifteen feet (15') may be substituted by grouping the same so as to create the equivalent of fifteen feet (15') of crown spread. Large trees shall be a minimum of three inches (3") in caliper measured six inches (6") above the ground and ten feet (10') in height at time of planting. Small trees shall be a minimum of two inches (2") in caliper measured six inches (6") above the ground and eight feet (8') In height at time of planting.

D. Shrubs not of a dwarf variety shall be a minimum of two feet (2') in height when measured immediately after planting. Hedges, where installed for screening purposes, shall be planted and maintained so as to form a continuous, unbroken, solid visual screen which will be six feet (6') high within three (3) years after time of planting (except for parking lot/headlight screens, which shall form a continuous, solid visual screen three feet high within two years after planting).

E. Vines not intended as ground cover shall be a minimum of two feet (2') in height immediately after planting and may be used in conjunction with fences, screens, or walls to meet landscape screening requirements as set forth.

F. Grass areas shall be sodded, plugged, sprigged, hydro mulched and/or seeded, except that solid sod shall be used in swales, earthen berms or other areas subject to erosion.

G. Ground covers used in lieu of grass in whole and in part shall be planted in such a manner as to present a finished appearance and complete coverage within one (1) year of planting.

H. All automatic, underground irrigation system shall have operational freeze and rain sensors to prevent watering at inappropriate times. Landscaped areas having less than four (4) feet in width shall be irrigated by underground tubing or other capillary system but not by aboveground spray. Irrigation equipment (except for controllers and weather stations) shall not be visible from public streets or walkways.

I. Earthen berms shall have side slopes not to exceed 33.3 percent (three feet (3') of horizontal distance for each one foot (1') of vertical height). All berms shall contain necessary drainage provisions as may be required by the City's Engineer.

6. MINIMUM LANDSCAPING REQUIREMENTS FOR ALL USES OTHER THAN SINGLE- AND TWO-FAMILY RESIDENTIAL DEVELOPMENTS

A. For all uses other than single and two-family uses, at least twenty percent (20%) of the street yard shall be permanently landscaped area. The street yard shall be defined as the area between the building front and the front property line. For gasoline service stations, the requirement is a minimum of fifteen percent (15%) landscaped area for the entire site, including a six hundred (600) square foot landscaped area at the street intersection corner (if any), which can be counted toward the fifteen percent (15%) requirement.

B. A minimum fifteen foot (15') landscape buffer adjacent to the right-of-way of any major thoroughfare is required. Corner lots fronting two (2) major thoroughfares shall provide the appropriate required landscape buffer on both street frontages. All other street frontages shall observe a minimum ten foot (10') landscape buffer. One (1) large shade tree shall be required per forty (40) linear feet (or portion thereof) of street frontage. Trees may be grouped or clustered to facilitate site design and to provide an aesthetically pleasing, natural looking planting arrangement. The landscaped buffer area may be included in the required street yard landscape area percentage.

C. Landscape areas within parking lots should generally be at least one parking space in size, with no landscape area less than fifty (50) square feet in area. Landscape areas shall be no less than five feet (5') wide and shall equal a total of at least sixteen (16) square feet per parking space. There shall be a landscaped area with at least one (1) large tree within sixty feet (60') of every parking space. There shall be a minimum of one (1) large tree planted in the parking area for every ten (10) parking spaces for parking lots having more than twenty (20) spaces. Within parking lots, landscape areas should be located to define parking areas and to assist In clarifying appropriate circulation patterns. A landscape island shall be located at the terminus of all parking rows, and shall contain at least one tree. All landscape areas shall be protected by a monolithic concrete curb or wheel stops, and shall remain free of trash, litter, and car bumper overhangs. The area of parking lot landscaping islands shall be In addition to the required street yard landscape area percentage.

D. All existing trees which are to be preserved shall be provided with undisturbed, permeable surface area under and extending outward to the existing dripline of the tree. All new trees shall be provided with a permeable surface under the dripline a minimum of five feet (5') by five feet (5').

E. A minimum of fifty percent (50%) of the total trees required for the property shall be large shade trees as specified on the City's approved plant list. Large trees shall not be used under existing or proposed overhead utility lines.

F. Necessary driveways from the public right-of-way shall be permitted through all required landscaping in accordance with City regulations.

7. MINIMUM LANDSCAPING REQUIREMENTS FOR SINGLE-FAMILY AND TWO- FAMILY DEVELOPMENTS

A. For all single family and two family developments, each residential lot shall be planted with at least one (1) large tree having a minimum caliper of three inches (3") in the front yard; and one (1) large tree having a minimum caliper of three inches (3") in the back yard; and one (1) small tree having a minimum caliper of two inches (2") in the front yard; and two (2) small trees having a minimum caliper of two inches (2") in the back yard. Trees shall be from the city's approved plant list.

B. Only small trees from the city's approved plant list shall be allowed to be planted between the street curb and the right-of-way, unless otherwise specifically approved as part of a Planned Development (PD).

8. SIGHT DISTANCE AND VISIBILITY

Rigid compliance with these landscaping requirements shall not be such as to cause visibility obstructions and/or blind corners at intersections. Whenever an intersection of two (2) or more public right-of-way occurs, a triangular visibility area, as described below, shall be created. Landscape planting within the triangular visibility area shall be designed to provide unobstructed cross visibility at a level between thirty inches (30") and seven feet (7') measured above top of curb. Trees may be permitted in this area provided they are trimmed in such that lateral limbs or foliage extend into the cross visibility area. The triangular areas are:

A. The areas of property on both sides of the intersection of an alley access way and public right-of-way shall have a triangular visibility area with two (2) sides of each triangle being a minimum of ten feet (10') in length from the point of intersection and the third side being a line connecting the ends of the other two (2) sides.

B. The areas of property located at a corner formed by the intersection of two (2) or more public right-of-ways (or a private driveway onto a public road) shall have a triangular visibility area with two (2) sides of each triangle being a minimum of twenty five feet (25') in length along the right-of-way lines (or along the driveway curb line and the road right-of-way line) from the point of the intersection and the third side being a line connecting the ends of the other two (2) sides. In the event other visibility obstructions are apparent in the proposed landscape plan, as determined by the City Manager or

his/her designee, the requirements set forth herein may be reduced to the extent to remove the conflict.

SAMPLE RECOMMENDED PLANT LIST

These native/adapted plants exhibit a combination of outstanding characteristics in low water use, low maintenance, disease and insect resistance, and appearance.

Large Trees
Bur Oak
Cedar Elm
Chinquapin Oak
Lacebark Elm
Live Oak
Shumard Oak
Texas Ash

Medium Trees
Lacey Oak
Little Gem Magnolia
Shantung Maple
Texas Pistache

Narrow-Leaf Trees
Arizona Cypress
Bald Cypress
Deodar Cedar
Eastern Red Cedar
Spartan Juniper

Small Trees
Crepe Myrtle
Desert Willow
Possumhaw Holly
Redbud
Savannah Holly
Texas Mountain Laurel
Texas Persimmon
Tree Yaupon Holly
Vitex/Chaste Tree

Tall Shrubs
Nellie R. Stevens Holly
Oleander
Wax Myrtle
Yew

Medium/Small Shrubs
Agave
Boxleaf Euonymus
Compact Eleagnus
Compact Texas Sage
Dwarf Burford Holly
Dwarf Yaupon Holly
Dwarf Oleander
Indian Hawthorne
Knock-Out Red/Pink Rose
Lorapetalum
Red Yucca
Sandankwa Viburnum
Softleaf Yucca
Spineless Prickly Pear
Upright Rosemary

Perennials
Autumn Pink/Maroon Sage
Black-Eyed Susan
Blue Plumbago
Gayfeather
Indian Blanket
Purple Coneflower
Russian Sage
Skeletonleaf Goldeneye
Texas Lantana

Ornamental Grasses
Big Muhly
Dwarf Fountain Grass
Mexican Feathergrass

Groundcover/Vines
Carolina Jessamine
Crossvine
Liriope/Giant Liriope
Trailing Rosemary

Turf
Bermuda Grass
Buffalo Grass
Zoysia