CITY OF CRANDALL, TEXAS

ORDINANCE NO. 05062024

AN ORDINANCE OF THE CITY OF CRANDALL, TEXAS, AMENDING ORDINANCE NO. 04152024 AND ADOPTING THE CURRENT AND UPDATED WATER CONSERVATION PLAN, DROUGHT CONTINGENCY PLAN, AND EMERGENCY RESPONSE PLAN, AND ALL RELATED APPENDICES; PROVIDING A REPEALING CLAUSE; PROVIDING A SAVINGS CLAUSE; PROVIDING A SEVERABILITY CLAUSE; PROVIDING FOR A PENALTY NOT TO EXCEED TWO THOUSAND DOLLARS ($2,000) FOR EACH OFFENSE; PROVIDING FOR THE DISCONNECTION OF WATER SERVICE FOR NONCOMPLIANCE WITH THE PROVISIONS OF THE WATER CONSERVATION AND DROUGHT CONTINGENCY PLAN, AND FOR ENFORCEMENT OF THE RESTRICTIONS; PROVIDING FOR NOTICE TO THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY OF THE UPDATED PLANS; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the City of Crandall, Texas ("City"), is a member of the North Texas Municipal Water District ("NTMWD") and receives water service from NTMWD; and

WHEREAS, the City recognizes that the amount of water available to its water customers is limited and subject to depletion during periods of extended drought; and

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

WHEREAS, on April 15, 2024, the City adopted Ordinance No. 04152024, adopting versions of the water conservation plan, drought contingency plan, and emergency response plan, and after receiving feedback from NTMWD, the City desires to adopt amended versions of the plans as provided herein; and

WHEREAS, the City Council of the City of Crandall, Texas ("City Council"), has determined it is in the best interest of the citizens of the City of Crandall, Texas, to adopt an updated water conservation plan, drought contingency plan, and emergency response plan consistent with NTMWD and Texas Commission on Environmental Quality ("TCEQ") guidance to promote the responsible use and conservation of water and the orderly and efficient management of limited water supplies during drought and other water supply emergencies.

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

SECTION 1. The recitals set forth above are hereby found to be true and correct and are incorporated into the body of this Ordinance for all purposes as if fully set forth herein.

SECTION 2. The water contingency plan, drought contingency plan, and emergency response plan, with appendices, attached hereto as **Exhibit A** and incorporated herein, are hereby adopted, in their entirety, as the plans for water conservation, drought contingency and water emergency response for the City of Crandall, Texas.

SECTION 3. Any provision of any prior ordinance of the City of Crandall, Texas, whether codified or uncodified, which is in conflict with any provision of this Ordinance is hereby repealed to the extent of the conflict; however, all other provisions of the ordinances of the City, whether codified or uncodified, which are not in conflict with the provisions of this Ordinance, shall remain in full force and effect.

SECTION 4. It is the intent of the City Council that each paragraph, sentence, subdivision, clause, phrase or section of this Ordinance be deemed severable, and should such paragraph, sentence, subdivision, clause, phrase or section be declared invalid or unconstitutional for any reason, such declaration of invalidity or unconstitutionality shall not be construed to affect the validity of those provisions of this Ordinance left standing, or the validity of any other ordinances of the City of Crandall.

SECTION 5. The City of Crandall Code of Ordinances remains in full force and effect, save as amended herein.

SECTION 6. Any customer, defined pursuant to 30 Tex. Admin. Code Chapter 291, failing to comply with the provisions of these plans shall be subject to a fine of up to two thousand dollars ($2,000.00) and/or discontinuance of water service by the City, and as otherwise provided in the plans. Failing to comply with the provisions of the plans shall be subject to a fine not to exceed the sum of two thousand dollars ($2,000.00) and/or discontinuance of water service by the City. Proof of a culpable mental state is not required for a conviction of an offense under this section when the fine imposed does not exceed $500. When the fine exceeds $500, proof of culpable mental state is required for a conviction of an offense under this section. Each day a customer fails to comply with these plans is a separate violation. The City's authority to seek injunctive or other civil relief available under the law is not limited by this Section.

SECTION 7. The City Manager and/or his designee is hereby authorized and directed to file a copy of the plans and this Ordinance with the TCEQ in accordance with Title 30, Chapter 288 of the Texas Administrative Code.

SECTION 8. This Ordinance shall take effect and shall be in full force from and after its adoption and publication as provided by law.

PASSED, APPROVED AND ADOPTED by the City Council of the City of Crandall, Texas, this 6th day of May 2024.

David Lindsey, Mayor

ATTEST:

Sabrina Del Bosque, City Secretary

CITY OF CRANDALL
TEXAS

Exhibit A
Water Conservation, Drought Contingency, and Emergency Response Plans

City of Crandall

2024 Water Conservation and Water Resource and Emergency Management Plan

Adopted on 5/6/2024

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Water Conservation Plan

APPENDICES

DEFINITIONS

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

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

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

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

COMMERCIAL FACILITY means business or industrial buildings and the associated landscaping, but does not include the fairways, greens, or tees of a golf course.

CONSERVATION includes those practices, techniques, and technologies that reduce the consumption of water, reduce the loss or waste of water, improve the efficiency in the use of water, or increase the recycling and reuse of water so that a water supply is made available for future or alternative uses.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

SPRINKLER/SPRAY IRRIGATION is the method of applying water in a controlled manner that is similar to rainfall. The water is distributed through a network that may consist of pumps, valves, pipes, and sprinklers.

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

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

TOTAL GALLONS PER CAPITA PER DAY (TOTAL GPCD) means the total amount of water diverted and/or pumped for potable use less wholesale sales divided by the total permanent population divided by the days of the year. Diversion volumes of reuse as defined in TAC §288.1 shall be credited against total diversion volumes for the purposes of calculating GPCD for targets and goals.

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

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

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

ABBREVIATIONS

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

2024 Water Conservation Plan

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

1.00 INTRODUCTION

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

2.01 DESCRIPTION OF THE SERVICE AREA

The City of Crandall is located in Kaufman County. In 2022 we had a population of 5,100 and 1,622 connections.

2.02 WATER UTILITY PROFILE

City of Crandall'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]	98	107	105	101
Residential (GPCD)[2]	64	60	64*	59
ICIM (GPCD)[3]	19	21	26*	20
Water Loss (GPCD)[4]	13	22	10	5
Water Loss (Percentage)[5]	12%	21%	15%	9%

[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*

** Crandall is in one of the fastest growing counties in Texas. We are expecting significant growth and development over the next 5 years.*

3.02 METHOD FOR TRACKING

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

The completion of this Annual Water Conservation Report allows City of Crandall to track the effectiveness of its water conservation programs over time and reassess those programs that are not providing water savings, ensuring maximum water use efficiency and greater levels of conservation.

4.00 METERING, RECORDS AND WATER LOSS CONTROL

4.01 METERING PROGRAM

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

ACCURATE METERING OF TREATED WATER DELIVERIES FROM NTMWD

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

METERING OF CUSTOMER AND PUBLIC USES

The City of Crandall uses AMR Master Meters for both customer and public accounts.

METER TESTING, REPAIR AND REPLACEMENT

Meters are tested each month. Any meter showing an error or high usage is manually inspected and replaced by City Staff if found defective.

4.02 MONITORING AND RECORD MANAGEMENT PROGRAM

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

4.03 WATER LOSS CONTROL PROGRAM

DETERMINATION AND CONTROL OF WATER LOSS

Total water loss is the difference between treated water pumped and authorized consumption or metered deliveries to customers. Authorized consumption includes billed metered uses, unbilled metered uses, and unbilled unmetered uses such as firefighting and releases for flushing of lines.

Water losses include two categories:

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

LEAK DETECTION AND REPAIR

The City of Crandall uses a SCADA system for monitoring the flow and pressure of water lines. If any section shows signs of a sudden drop in pressure of flow a City Staff member is sent to inspect and repair it. If a resident's meter is showing high water use or consumption a City Staff member speaks with the property owner.

5.00 CONTRACT REQUIREMENTS FOR WHOLESALE CUSTOMERS

Every water supply contract entered into or renewed after official adoption of this water conservation plan, including any contract extension, will include a requirement that each wholesale customer of City of Crandall 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

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

7.00 CONSERVATION PLAN ADOPTION AND ENFORCEMENT

7.01 MEANS OF IMPLEMENTATION AND ENFORCEMENT

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

The City of Crandall will be enforcing the Water Conservation Plan via Ordinance No. 11062023C, located in Appendix H.

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

8.00 WATER CONSERVATION PROGRAM

8.01 PUBLIC EDUCATION PROGRAM

A. NTMWD PUBLIC EDUCATION PROGRAM AND TECHNICAL ASSISTANCE

City of Crandall obtains water conservation support from the NTMWD. This includes several public education and outreach efforts.

B. PUBLIC EDUCATION PROGRAM

The City of Crandall includes educational materials on the City website and City Staff interact with residents with 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.

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

Brad Piland
972.427.3771 - city hall
469.820.1419 - Cell
bpiland@crandalltexas.com

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.

City of Crandall's water rate structure is as follows:

Residential Rates

Monthly current base rate based on meter size plus per 1,000 gallons. The City of Crandall is currently working on a tier rate for all customers within the CCN.

Commercial/Industrial Rates

Monthly current base rate based on meter size plus per 1,000 gallons. The City of Crandall is currently working on a tier rate for all customers within the CCN.

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

City of Crandall'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.

The City of Crandall currently allows the golf course to irrigate with treated effluent. According to the 2018 TWDB Effluent Water Report roughly 12.1 million gallons of treated effluent was used on the golf course.

F. YEAR-ROUND OUTDOOR WATERING SCHEDULES

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

- **Summer (April 1 – October 31)** –Spray irrigation with sprinklers or irrigation systems at each service address must be limited to no more than **two days per week**. Additionally, prohibit lawn irrigation watering from **10 a.m. to 6 p.m.** Education should be provided that irrigation **should only be used when needed**, which is often less than twice per week, even in the heat of summer.
- **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

NTMWD requires that during the summer months (April 1 – October 31) under normal conditions, spray irrigation with an irrigation system or sprinkler is only permitted on authorized watering days, before 10 a.m. or after 6 p.m. The primary purpose of this measure is to reduce wind drift and evaporation losses during the active growing season. The time-of-day watering schedule requirement increases watering efficiency by eliminating outdoor irrigation use when climatic factors negatively impact irrigation system efficiencies. Midday irrigation is not an optimal time to irrigate because evapotranspiration rates are higher, and plants are more susceptible to stress associated with factors such as higher temperatures and lower relative humidity.

H. IRRIGATION SYSTEM REQUIREMENTS FOR NEW AND COMMERCIAL SYSTEMS

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

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

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

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

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

4) Require the owner of a regulated irrigation property to obtain an evaluation of any permanently installed irrigation system on 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

NTMWD requires all Member Cities and Customers prohibit activities that waste water. The main purpose of a water waste ordinance is to provide for a means to enforce that water waste is prevented during lawn and landscape irrigation, that water resources are conserved for their most beneficial and vital uses, and that public health is protected. It provides a defined enforcement mechanism for exceptional neglect related to the proper maintenance and efficient use of water fixtures, pipes, and irrigation systems. The ordinance can provide additional assistance or enforcement actions if no corrective action has been taken after a certain number of correspondences.

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

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

2) Outdoor watering during precipitation or freeze events.

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

4) Excess water runoff or other obvious waste.

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

6) The use of potable water to fill or refill residential, amenity, and any other natural or manmade ponds. A pond is considered to be a still body of water with a surface area of 500 square feet or more. This does not include recreational swimming pools.

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

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

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

8.03 ADDITIONAL CONSERVATION STRATEGIES

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

Landscapes frequently require less watering than the year-round water schedule allows. Water providers in the Dallas-Fort Worth (DFW) area (including NTMWD) sponsor weather stations to collect daily weather data and provide the most accurate watering recommendations.

- Water My Yard – An online platform where homeowners can sign up to receive weekly watering recommendations based on their location and a few specifications about their sprinkler system. Users can then choose to accept the recommendations by email, text, or both. Recommendations are available for select cities in Collin, Dallas, Denton, Fannin, Hunt, Kaufman, and Rockwall Counties. Sponsored by NTMWD and Texas A&M AgriLife Extension Service (WaterMyYard.org).

- Water Is Awesome Weekly Watering Advice – Weekly watering recommendations for most of North Texas based on data from weather stations scattered throughout the DFW area. The recommendations are distributed by email and text every week and are provided in inches of water needed and the number of minutes necessary to apply that amount of water for spray, rotor, and multi-stream sprinklers. Advice service is available for all of North Central Texas and sponsored by DWU and TRWD. (https://waterisawesome.com/weekly-watering-advice).

Providing evapotranspiration (ET)-based weekly watering recommendations can reduce the amount of water applied for outdoor watering if customers follow the guidance.

B. WATER EFFICIENT LANDSCAPE INITIATIVES

A water efficient landscape is a landscape that is designed and maintained according to basic good horticultural principles that allow for a beautiful healthy landscape with minimal or no supplemental irrigation and no adverse runoff from the landscape property. Water efficient landscapes limit or exclude non-functional turf where possible. Examples of nonfunctional turf include streetscape turf and turf that is purely ornamental. As an alternative to non-functional

turf grasses, water efficient landscapes use appropriate plants or other landscaping materials that require little or no supplemental irrigation. Appropriate plants are those selected based on their adaptability to the region's soil and climate. NTMWD's #PledgeToPlantSmart initiative seeks to inspire positive change in water conservation by encouraging North Texas residents to do their part and plant smart by selecting native or adaptive plants for their garden and landscaping. Member Cities and Customers should adopt a native and adaptive recommended plant list for water efficient landscaping. Water efficient landscapes can be an alternative to non-functional turf grasses and may be appropriate for application in new development or retrofits of existing landscapes for both commercial and residential areas.

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

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

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

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

C. WATER CONSERVATION INCENTIVE PROGRAMS

In addition to the conservation measures described above, NTMWD also recommends the following water conservation incentive programs for consideration by Member Cities and Customers:

- Commercial clothes washer rebates for the purchase and installation of high efficiency
- card- or coin -operated commercial clothes washers;
- Low-flow toilet replacement and rebate programs;
- Rebates for rain/freeze sensors and/or ET or Smart controllers;
- Low-flow showerhead and sink aerators replacement programs or rebates;
- Residential water efficient clothes washer rebates;
- Pressure reducing valve installation programs or rebates;

- Rain barrel rebates;
- Pool covers;
- On-demand hot water heater rebates; and/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

City of Crandall 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

City of Crandall 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 5/6/2024. Public notice of this meeting was provided on the community website.
- Approving the Plan at a public Board meeting on 5/6/2024. Public notices of this meeting were provided on the community website and live audio was available during the meeting.
-

2.02 PROGRAM FOR CONTINUING PUBLIC EDUCATION AND INFORMATION

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

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

2.03 COORDINATION WITH THE REGIONAL WATER PLANNING GROUPS AND NTMWD

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

2.04 INITIATION AND TERMINATION OF WATER RESOURCE MANAGEMENT STATGES

A. INITITATION OF A WATER RESOURCE MANAGEMENT STAGE

The City Manager 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.)

- The City of Crandall may implement restrictions at any time as required due to emergencies experienced with the water system operations when storage of water for pumping capacity is restricted such that normal demand cannot be met.
- The City of Crandall may implement restrictions at any time if the Texas State Governor has issued a drought disaster declaration for Collin, Rockwall, or the neighboring counties.

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

- The public will be notified through local media and the supplier's website.
- Wholesale customers and NTMWD will be notified by email that provides details of the reasons for initiation of the water resource management stage.
- If any mandatory provisions of the Plan are activated, City of Crandall 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 City Manager, 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, City of Crandall 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 City Manager 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 City Manager may grant temporary variances for existing water uses otherwise prohibited under this Plan if one or more of the following conditions are met:

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

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

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

2.06 PROCEDURES FOR ENFORCING MANDATORY WATER USE RESTRICTIONS

Mandatory water use restrictions may be imposed in Stage 1, Stage 2 and Stage 3.

The City of Crandall will be enforcing the Water Resource and Emergency Management Plan via Ordinance No. 11062023C, located in Appendix H.

2.07 REVIEW AND UPDATE OF WATER RESOURCE AND EMERGENCY MANAGEMENT PLAN

As required by TCEQ rules, City of Crandall 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*

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

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 §288.5	**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

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-10218 and/or TCEQ-20162.

Texas Commission on Environmental Quality

Water Availability Division
MC-160, P.O. Box 13087 Austin, Texas 78711-3087
Telephone (512) 239-4600, FAX (512) 239-2214

Utility Profile and Water Conservation Plan Requirements for Municipal Water Use by Retail Public Water Suppliers

This form is provided to assist retail public water suppliers in water conservation plan assistance in completing this form or in developing your plan, please contact the Conservation staff of the Resource Protection Team in the Water Availability Division at (512) 239-4600.

Water users can find best management practices (BMPs) at the Texas Water Development Board's website http://www.twdb.texas.gov/conservation/BMPs/index.asp. The practices are broken out into sectors such as Agriculture, Commercial and Institutional, Industrial, Municipal and Wholesale. BMPs are voluntary measures that water users use to develop the required components of Title 30, Texas Administrative Code, Chapter 288. BMPs can also be implemented in addition to the rule requirements to achieve water conservation goals.

Contact Information

Name of Water Supplier:	Crandall	
Address:	110 S, Main Street	
Telephone Number:	(972) 427-3771	Fax: (972) 472-6601
Water Right No.(s):	1200097	
Regional Water Planning Group:	Region C	
Water Conservation Coordinator (or person responsible for implementing conservation program):	David Lindsey, Mayor	Phone: (972) 427-3771
Form Completed by:	Brad Piland	
Title:	Public Works Director	
Signature:		Date:04/15/2024

A water conservation plan for municipal use by retail public water suppliers must include the following requirements (as detailed in 30 TAC Section 288.2). If the plan does not provide information for each requirement, you must include in the plan an explanation of why the requirement is not applicable.

Utility Profile

I. POPULATION AND CUSTOMER DATA

A. Population and Service Area Data

1. Attach a copy of your service-area map and, if applicable, a copy of your Certificate of Convenience and Necessity (CCN).

2. Service area size (in square miles): 5 SQ. MILES

   (Please attach a copy of service-area map)

3. Current population of service area: 5,486

4. Current population served for:

   a. Water 5486

   b. Wastewater 5082

5. Population served for previous five years:

Year	*Population*
2019	3,500
2020	3,520
2021	3,650
2022	4,080
2023	5,000

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

Year	*Population*
2020	5,000
2030	12,000
2040	31,000
2050	95,000
2060	

7. List source or method for the calculation of current and projected population size.

   Data from water/wastewater impact study and hand use assumptions.

B. Customer Data

Senate Bill 181 requires that uniform consistent methodologies for calculating water use and conservation be developed and available to retail water providers and certain other water use sectors as a guide for preparation of water use reports, water conservation plans, and reports on water conservation efforts. A water system must provide the most detailed level of customer and water use data available to it, however, any new billing system purchased must be capable of reporting data for each of the sectors listed below. More guidance can be found at:
http://www.twdb.texas.gov/conservation/doc/SB181Guidance.pdf

1. Quantified 5-year and 10-year goals for water savings:

	Historic 5-year Average	*Baseline*	*5-year goal for year 2023*	*10-year goal for year 2028*
Total GPCD	98	107	105	101
Residential GPCD	64	60	64	59
Water Loss GPCD	13	22%	10%	5%
Water Loss Percentage	12	21%	15%	9%

Notes:
Total GPCD = (Total Gallons in System ÷ Permanent Population) ÷ 365
Residential GPCD = (Gallons Used for Residential Use ÷ Residential Population) ÷ 365
Water Loss GPCD = (Total Water Loss ÷ Permanent Population) ÷ 365
Water Loss Percentage = (Total Water Loss ÷ Total Gallons in System) x 100; or (Water Loss GPCD ÷ Total GPCD) x 100

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

Treated Water Users	*Metered*	*Non-Metered*	*Totals*
Residential			
Single-Family	1675		
Multi-Family	6		
Commercial	107		
Industrial/Mining			
Institutional			
Agriculture			
Other/Wholesale	44		

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

Year			
Treated Water Users			
Residential			
Single-Family			
Multi-Family			
Commercial			
Industrial/Mining			
Institutional			
Agriculture			
Other/Wholesale			

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

Customer	*Use (1,000 gal/year)*	*Treated or Raw Water*
15 Rivers	48,052,460	Treated
Crandall ISD	1,913,170	Treated
Park Place	578,710	Treated
Bluffview Senior	1,508,082	Treated
Rusted Rail Golf Club	449,646	Treated

II. WATER USE DATA FOR SERVICE AREA

A. Water Accounting Data

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

Indicate whether this is ☐ diverted or ● treated water.

Year	2019	2020	2021	2022	2023
Month					
January	1931000	9962000	15146000	12565000	12851000
February	2067000	9393000	13200000	12653000	12170000
March	1660000	10429000	12552000	11623000	14522000
April	3671000	11904000	14418000	13444000	10735000
May	7601000	15000000	12832000	11993000	16021000
June	7417000	18331000	14769000	10266000	20286000
July	16289000	18280000	17171000	32732000	25620000
August	27899000	25578000	17963000	27379000	38404000
September	19589000	13170000	23714000	14556000	33853000
October	16352000	15397000	22425000	16728000	20303000
November	9737000	14200000	14380000	13171000	15533000
December	10254000	15121000	14089000	14399000	15820000
Totals	124,467,000	176,765,000	192,659,000	191,507,000	236,118,000

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

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

Year					
Account Types					
Residential					
Single-Family					
Multi-Family					
Commercial					
Industrial/Mining					
Institutional					
Agriculture					
Other/Wholesale					

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

Year	*Amount (gallons)*	*Percent %*
2019		
2020		
2021	16,629,293	8.6%
2022	17,357,631	8.8%
2023	37,976,791	16%

B. Projected Water Demands

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

III. WATER SUPPLY SYSTEM DATA

A. Water Supply Sources

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

Water Type	*Source*	*Amount Authorized*
Surface Water	NTMWD	1.5 mgd.
Groundwater		
Other	City of Mesquite	2.5 mgd.

B. Treatment and Distribution System (if providing treated water)

1. Design daily capacity of system (MGD): 3 mgd.
2. Storage capacity (MGD):
   a. Elevated 500,000
   b. Ground 850,000
3. If surface water, do you recycle filter backwash to the head of the plant?

   ☐ Yes ● No If yes, approximate amount (MGD):

IV. WASTEWATER SYSTEM DATA

A. Wastewater System Data (if applicable)

1. Design capacity of wastewater treatment plant(s) (MGD):
2. Treated effluent is used for ☐ on-site irrigation, ● off-site irrigation, for ☐ plant wash-down, and/or for ☐ chlorination/dechlorination.

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

B. Wastewater Data for Service Area (if applicable)

1. Percent of water service area served by wastewater system: 95%
2. Monthly volume treated for previous five years (in 1,000 gallons):

Year	2019	2020	2021	2022	2023
Month					
January	13031	11408	9982	10970	10583
February	10934	13089	10828	8988	13340
March	10584	15323	11036	9517	11541
April	13753	10628	10792	10485	11314
May	15247	11423	18185	10757	9848
June	14068	8339	10084	8718	7969
July	8967	8082	9443	9437	8177
August	8922	8199	10199	11803	8200
September	8533	8202	8571	11056	8262
October	10089	8378	9338	9988	13965
November	8932	7679	9296	12764	9310
December	8397	9789	9027	10970	12346
Totals	131457	121539	126781	125453	124855

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Appendix D

NTMWD Member City and Customer Annual Water Conservation Report

The following appendix contains a copy of the NTMWD Member City and Customer Annual Water Conservation Report. This is updated and reviewed by NTMWD on an annual basis.

APPENDIX D

NTMWD MEMBER CITY AND CUSTOMER WATER CONSERVATION REPORT

Due: March 31 of every year

Contact Information

TWDB Survey Number:	189000
Name of System:	Crandall
PWS ID:	
Contact Name:	
Title:	
Email Address:	
Telephone Number:	
Year Covered:	2023

Water System Information

Estimated Water Service Area Population:		***Source:***	
# of Backflow Preventers:			
Billed Unmetered (MG):		***Description:***	
Unbilled Metered (MG):		***Description:***	
Unbilled Unmetered (MG):		***Description:***	

Water System Information by Delivery Point

Delivery Point	**Total System**
Peak Day (MG)	
Firm Pumping Capacity (MGD)	
Storage Volume (MG)	

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

	5-Year Goal	**10-Year Goal**	
Total GPCD			*Total GPCD = (Total Gallons in System + Permanent Population) / 365*
Residential GPCD			*Residential GPCD = (Gallons Used for Residential Use / Residential Population) / 365*
Water Loss (GPCD)			*Water Loss GPCD = (Total Water Loss / Permanent Population) / 365*
Water Loss (Percentage)			*Water Loss Percentage = (Total Water Loss / Total Gallons in System) x 100; or (Water Loss GPCD / Total GPCD) x 100*

Retail Water Metered by Month (in Million Gallons):

Month	Sales by Category							
	Residential Single Family	Residential Multi-Family	Public/ Institutional	Commercial	Industrial	Agriculture	Metered Irrigation	Direct Reuse
January	7,632,325.000	122,056.000	299,550.000	6,109,270.000			98,330.000	
February	5,880,175.000	84,325.000	352,230.000	2,947,160.000			66,270.000	
March	5,617,323.000	68,144.000	340,470.000	5,160,460.000			101,950.000	
April	7,855,490.000	107,846.000	276,800.000	6,855,470.000			130,870.000	
May	6,684,155.000	102,800.000	287,870.000	7,003,122.000			175,430.000	
June	9,477,257.000	97,915.000	168,540.000	7,144,720.000			476,510.000	
July	12,797,770.000	120,124.000	52,630.000	7,459,270.000			762,340.000	
August	15,677,420.000	127,624.000	146,450.000	2,203,056.000			926,990.000	
September	16,792,630.000	188,521.000	600,340.000	11,144,468.000			1,139,770.000	
October	10,825,250.000	199,571.000	295,640.000	7,199,547.000			593,190.000	
November	8,030,820.000	140,784.000	294,150.000	7,783,938.000			176,060.000	
December	6,671,066.000	110,882.000	226,640.000	2,522,855.000			88,580.000	
# of Connections (or Units)								

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

	Source 1	Source 2	Source 3	Source 4	Source 5	Source 6	Source 7	Source 8
Name of Water Provider								
Type of Water								
Name of Source								
January								
February								
March								
April								
May								
June								
July								
August								
September								
October								
November								
December								

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

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

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

	Sale 1	Sale 2	Sale 3	Sale 4	Sale 5	Sale 6	Sale 7	Sale 8
Buyer Name								
Type of Water								
Name of Source								
January								
February								
March								
April								
May								
June								
July								
August								
September								
October								
November								
December								

Additional Information

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

Describe any Unusual Circumstances

Provide an Update on Progress in Implementation of Conservation Plan

What Conservation Measures are Planned for Next Year?

Do City Limits Differ Significantly from Water Service Area? If so, explain.
Is there any Assistance Requested from the North Texas Municipal Water District?
Other?

Appendix E

TCEQ Water Conservation Implementation Report

Appendix F

Letters to Regional Water Planning Group and NTMWD

5/6/2024

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

Dear Chair:

Enclosed please find a copy of the Water Conservation and Water Resource and Emergency Management Plan for City of Crandall. I am submitting a copy of this plan to the Region C Water Planning Group in accordance with the Texas Water Development Board and Texas Commission on Environmental Quality rules. The plans were adopted on 5/6/2024.

Sincerely,

Jerry Dean, City Manager

City of Crandall

5/6/2024

Region D Water Planning Group
c/o Riverbend Water Resources District
228 Texas Avenue Suite A
New Boston, TX 75570

Dear Chair:

Enclosed please find a copy of the Water Conservation and Water Resource and Emergency Management Plan for City of Crandall. I am submitting a copy of this plan to the Region D Water Planning Group in accordance with the Texas Water Development Board and Texas Commission on Environmental Quality rules. The plans were adopted on 5/6/2024.

Sincerely,

Jerry Dean, City Manager

City of Crandall

Appendix G

Adoption of Plans

Municipal Ordinance
Adopting Water Conservation Plan

Ordinance No. _____

AN ORDINANCE ADOPTING A WATER CONSERVATION PLAN FOR THE CITY OF Crandall **TO PROMOTE RESPONSIBLE USE OF WATER AND TO PROVIDE FOR PENALTIES AND/OR THE DISCONNECTION OF WATER SERVICE FOR NONCOMPLIANCE WITH THE PROVISIONS OF THE WATER CONSERVATION PLAN.**

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

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

WHEREAS, the Water Code and the regulations of the Texas Commission on Environmental Quality (the "Commission") require that the City adopt a Water Conservation Plan; and

WHEREAS, the City has determined an urgent need in the best interest of the public to adopt a Water Conservation Plan; and

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

WHEREAS, the City Council of the City of **Crandall** desires to adopt the North Texas Municipal Water District (the "NTMWD") Model Water Conservation Plan as official City policy for the conservation of water.

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

Section 1. The City Council hereby approves and adopts the NTMWD Model Water Conservation Plan (the "Plan"), attached hereto as Addendum A, as if recited verbatim herein. The City commits to implement the requirements and procedures set forth in the adopted Plan.

Section 2. Any customer, defined pursuant to 30 Tex. Admin. Code Chapter 291, failing to comply with the provisions of the Plan shall be subject to a fine of up to two thousand dollars ($2,000.00) and/or discontinuance of water service by the City. Proof of a culpable mental

state is not required for a conviction of an offense under this section. Each day a customer fails to comply with the Plan is a separate violation. The City's authority to seek injunctive or other civil relief available under the law is not limited by this section.

Section 3. The City Council does hereby find and declare that sufficient written notice of the date, hour, place and subject of the meeting adopting this Ordinance was posted at a designated place convenient to the public for the time required by law preceding the meeting, that such place of posting was readily accessible at all times to the general public, and that all of the foregoing was done as required by law at all times during which this Ordinance and the subject matter thereof has been discussed, considered and formally acted upon. The City Council further ratifies, approves and confirms such written notice and the posting thereof.

Section 4. 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 5. The City Manager or his designee is hereby directed to file a copy of the Plan and this Ordinance with the Commission in accordance with Title 30, Chapter 288 of the Texas Administrative Code.

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. Ordinance No. [Enter Ordinance Number], adopted on [Date of Ordinance], is hereby repealed.

Passed by the City Council on this [Day] day of [Month], [Year].

_____

Mayor

Attest:

_____

City Secretary

CITY OF CRANDALL, TEXAS

ORDINANCE NO. 05062024

AN ORDINANCE OF THE CITY OF CRANDALL, TEXAS, AMENDING ORDINANCE NO. 04152024 AND ADOPTING THE CURRENT AND UPDATED WATER CONSERVATION PLAN, DROUGHT CONTINGENCY PLAN, AND EMERGENCY RESPONSE PLAN, AND ALL RELATED APPENDICES; PROVIDING A REPEALING CLAUSE; PROVIDING A SAVINGS CLAUSE; PROVIDING A SEVERABILITY CLAUSE; PROVIDING FOR A PENALTY NOT TO EXCEED TWO THOUSAND DOLLARS ($2,000) FOR EACH OFFENSE; PROVIDING FOR THE DISCONNECTION OF WATER SERVICE FOR NONCOMPLIANCE WITH THE PROVISIONS OF THE WATER CONSERVATION AND DROUGHT CONTINGENCY PLAN, AND FOR ENFORCEMENT OF THE RESTRICTIONS; PROVIDING FOR NOTICE TO THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY OF THE UPDATED PLANS; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the City of Crandall, Texas ("City"), is a member of the North Texas Municipal Water District ("NTMWD") and receives water service from NTMWD; and

WHEREAS, the City recognizes that the amount of water available to its water customers is limited and subject to depletion during periods of extended drought; and

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

WHEREAS, on April 15, 2024, the City adopted Ordinance No. 04152024, adopting versions of the water conservation plan, drought contingency plan, and emergency response plan, and after receiving feedback from NTMWD, the City desires to adopt amended versions of the plans as provided herein; and

WHEREAS, the City Council of the City of Crandall, Texas ("City Council"), has determined it is in the best interest of the citizens of the City of Crandall, Texas, to adopt an updated water conservation plan, drought contingency plan, and emergency response plan consistent with NTMWD and Texas Commission on Environmental Quality ("TCEQ") guidance to promote the responsible use and conservation of water and the orderly and efficient management of limited water supplies during drought and other water supply emergencies.

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

SECTION 1. The recitals set forth above are hereby found to be true and correct and are incorporated into the body of this Ordinance for all purposes as if fully set forth herein.

SECTION 2. The water contingency plan, drought contingency plan, and emergency response plan, with appendices, attached hereto as **Exhibit A** and incorporated herein, are hereby adopted, in their entirety, as the plans for water conservation, drought contingency and water emergency response for the City of Crandall, Texas.

SECTION 3. Any provision of any prior ordinance of the City of Crandall, Texas, whether codified or uncodified, which is in conflict with any provision of this Ordinance is hereby repealed to the extent of the conflict; however, all other provisions of the ordinances of the City, whether codified or uncodified, which are not in conflict with the provisions of this Ordinance, shall remain in full force and effect.

SECTION 4. It is the intent of the City Council that each paragraph, sentence, subdivision, clause, phrase or section of this Ordinance be deemed severable, and should such paragraph, sentence, subdivision, clause, phrase or section be declared invalid or unconstitutional for any reason, such declaration of invalidity or unconstitutionality shall not be construed to affect the validity of those provisions of this Ordinance left standing, or the validity of any other ordinances of the City of Crandall.

SECTION 5. The City of Crandall Code of Ordinances remains in full force and effect, save as amended herein.

SECTION 6. Any customer, defined pursuant to 30 Tex. Admin. Code Chapter 291, failing to comply with the provisions of these plans shall be subject to a fine of up to two thousand dollars ($2,000.00) and/or discontinuance of water service by the City, and as otherwise provided in the plans. Failing to comply with the provisions of the plans shall be subject to a fine not to exceed the sum of two thousand dollars ($2,000.00) and/or discontinuance of water service by the City. Proof of a culpable mental state is not required for a conviction of an offense under this section when the fine imposed does not exceed $500. When the fine exceeds $500, proof of culpable mental state is required for a conviction of an offense under this section. Each day a customer fails to comply with these plans is a separate violation. The City's authority to seek injunctive or other civil relief available under the law is not limited by this Section.

SECTION 7. The City Manager and/or his designee is hereby authorized and directed to file a copy of the plans and this Ordinance with the TCEQ in accordance with Title 30, Chapter 288 of the Texas Administrative Code.

SECTION 8. This Ordinance shall take effect and shall be in full force from and after its adoption and publication as provided by law.

PASSED, APPROVED AND ADOPTED by the City Council of the City of Crandall, Texas, this 6th day of May 2024.

David Lindsey, Mayor

ATTEST:

Sabrina Del Bosque, City Secretary

CITY OF CRANDALL
TEXAS

Exhibit A
Water Conservation, Drought Contingency, and Emergency Response Plans

Appendix H

Illegal Water Connections and Theft of Water

ORDINANCE NO. 11062023C

AN ORDINANCE OF THE CITY OF CRANDALL, TEXAS AMENDING CHAPTER 13, "UTILITIES," OF THE CODE OF ORDINANCES OF THE CITY BY AMENDING SEWER RATES AND WATER RATES FOR ALL CUSTOMER CLASSIFICATIONS (RESIDENTIAL AND COMMERCIAL, IN-CITY AND OUT-OF-CITY); BY AMENDING OTHER WATER AND SEWER FEES APPLICABLE TO RATEPAYERS; PROVIDING THAT THE CHANGES TO THE WATER RATES MADE HEREIN SHALL BE APPLIED TO MONTHLY CUSTOMER BILLS BEGINNING WITH THE JANUARY 2024 BILLING CYCLE; PROVIDING A SAVINGS CLAUSE; A PUBLICATION CLAUSE; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the City of Crandall, Texas (the "City" or "Crandall") is a Type A General- Law municipality, and the City Council thereof is authorized by law (including, without limitation, Sections 552.001 and 552.015 of the Texas Local Gov't Code) to own, construct and operate a water and sewer system and to prescribe rates therefore; and

WHEREAS, the City Council has investigated and determined that it would be advantageous and beneficial to the citizens of the Crandall to amend update its current ordinances regarding the charges and fees for service for the City's Water and Sewer (Wastewater) Services with the new charges and fees as set forth herein; and

WHEREAS, the City Council recognizes that the City's water and sewer system serves customers both within and without the City's corporate limits, and

WHEREAS, the City has not increased its water or sewer rates since 2019; and

WHEREAS, since that time, the cost of procuring water for use in both the water and sewer systems has significantly increased;

WHEREAS, the City has conducted a review and evaluation of the City's water and sewer utility rates and has determined therefrom that the rates need to be adjusted as set forth herein to support the operating, maintenance, and capital needs of the City's water and sewer utility system; and

WHEREAS, the City is working to provide a long term supply of water for the community, to provide a high quality of water for use by citizens, and to replace and put into good condition all of the Water and Wastewater Service Infrastructure; and

WHEREAS, the City Council recognizes the need to differentiate the types of customers and users in order to fairly and effectively allocate the costs of service; and

WHEREAS, notice shall be provided under Texas Water Code Section 13.043 for citizens outside the city limits.

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

SECTION 1. Findings Incorporated. The findings set forth above are incorporated into the body of this Ordinance as if fully set forth herein.

SECTION 2. Amendments. The Code of Ordinances (the "Code") of the City of Crandall, Texas (the "City") is hereby amended as follows:

A. Chapter 13 (Utilities), Section 13.03.003 ("Rates and charges."), of the Code is hereby amended to read in its entirety as follows:

"§ 13.03.003 Rates and charges.

The monthly water and sewer rates to be charged and collected by the city from all customers obtaining service from the utilities system of the city shall be and are hereby fixed as set forth below:

5.00 WATER RATES.

5.01 DEFINITIONS.

1. *Residential.* Residential rates shall apply to single-family and multi- family dwellings, churches, and mobile home parks; rates for multi- family dwellings and mobile home parks shall be for each unit.

2. *Commercial.* Commercial rates shall apply to retail, school, light- industrial, office, and all users who do not qualify as Residential as defined in above.

3. *In-City.* Ratepayers located within the corporate limits of the City of Crandall, as may be amended from time to time.

4. *Out-of-City.* Ratepayers located outside of the corporate limits of the City of Crandall.

5. *Irrigation.* Water meters designated for use in irrigating land.

6. *Construction.* Water meters designated for use during the construction of improvements on real property.

(B) In-City Water Rates.

(I) **BASE RATES**

a. 3/4" meter (residential): $41.29

b. 3/4" meter (commercial): $63.73

c. 3/4" meter (residential irrigation): $0

d. 3/4" meter (commercial irrigation): $0

e. 1" meter (residential): $67.79

f. 1" meter (commercial): $71.02

g. 1" meter (residential irrigation): $0

h. 1" meter (commercial irrigation): $0

i. 2" meter (commercial): $81.93

j. 2" meter (commercial irrigation): $0

k. 2" meter (construction): $81.93

l. 3" meter (commercial): $100.12

m. 3" meter (construction): $100.12

n. 4" meter (commercial): $118.32

o. 6" meter (commercial): $154.69

(ii) Usage charge per 1,000 gallons or portion thereof for residential non- irrigation meters: $5.46.

(iii) Usage charge per 1,000 gallons or portion thereof for residential irrigation meters: $6.20.

(iv) Usage charge per 1,000 gallons or portion thereof for commercial non- irrigation meters: $6.01.

(v) Usage charge per 1,000 gallons or portion thereof for commercial irrigation meters: $6.82.

(C) Out-of-City Water Rates

(I) **BASE RATES**

a. 3/4" meter (residential): $45.41

b. 3/4" meter (commercial): $63.73

c. 1" meter (residential): $74.57

d. 1" meter (commercial): $71.02

e. 2" meter (commercial): $90.12

f. 3" meter (commercial): $110.13

g. 4" meter (commercial): $118.32

h. 6" meter (commercial): $154.69

(ii) Usage charge per 1,000 gallons or portion thereof for residential meters:
$5.46

(iii) Usage charge per 1,000 gallons or portion thereof for commercial meters: $6.61

(2) Sewer Rates.

{A) Definitions.

(i) *Residential.* Residential rates shall apply to single-family and multi- family dwellings, churches, and mobile home parks; rates for multi- family dwellings and mobile home parks shall be for each unit.

(ii) *Commercial.* Commercial rates shall apply to retail, school, light- industrial, office, and all users who do not qualify as Residential as defined in above.

(iii) *Senior.* Residential users with the primary household member aged 65 or older who have registered with the City as senior ratepayers.

(iv) *Summer Billing Months.* The months of June, July, August, and September

(B) Base Rates.

(i) 3/4" meter (residential): $44.37

(ii) 3/4" meter (senior): $27.54

(iii) 3/4" meter (commercial): $61.30

(iv) 1" meter(residential): $65.51

(v) 1" meter (commercial): $68.63

(vi) 2" meter (commercial): $74.28

(vii) 4" meter (commercial): $83.53

(viii) 6" meter (commercial): $96.40

(C) Usage charge per 1,000 gallons or portion thereof exceeding 2,000 gallons for all ratepayers outside the Summer Billing Months: $3.97.

(D) Usage charge per 1,000 gallons or portion thereof exceeding 2,000 gallons for residential ratepayers during the Summer Billing Months: $3.63.

(E) Usage charge per 1,000 gallons or portion thereof for commercial ratepayers for usage between 2,000 and 75,000 gallons during the Summer Billing Months:$ 4.37.

(F) Usage charge per 1,000 gallons or portion thereof for commercial ratepayers for usage exceeding 75,000 gallons during the Summer Billing Months: $3.18.

(3) Meter change and meter test fees. No charge will be made for the first meter change or meter test requested by a customer at a single service connection within any twenty-four-month period. For each additional meter change or meter test requested by a customer within a twenty-four-month period that does not result in a finding that the meter over-registered in excess of 1%, a fee shall be charged to the customer according to the following schedule:

Meter Size	**Fee**
5/8'' to 1"	$15.00
1 1/2" to 2"	$30.00

Larger than 2"	Actual cost of change & test

(4) Meter Relocation fee. The fee to relocate a meter of any size shall be $1,000.00.

(5) Tampering fee. If the City determines that a ratepayer's water meter has been tampered with, the fee for recalibrating the meter shall be $1,000.00. If the City determines the ratepayer has improperly connected to the City's sewer system, the fee for correcting the issue shall be $500.00 or the actual cost incurred to resolve the issue, whichever is greater.

(6) Inspection fee for meter verification. If a customer contends that a discrepancy appears in a bill or meter reading, the superintendent will inspect the meter and verify the reading. An inspection is free if the superintendent verifies a gross discrepancy or a customer requests not more than one (1) inspection during any twelve-month period; otherwise the charge is four dollars and fifty cents ($4.50) for inspection.

(7) Builders, developers and contractors; standby service. All builders, developers and contractors shall submit a request for service connections to the city. Connections are to be made by the City. See section **13.03.006** of this article for fee. When connection is complete each property owner shall pay a minimum monthly rate for standby service for water usage only. The rate shall be the same as specified in subsection (1) of this section."

B. Chapter 13 (Utilities), Section 13.03.006 ("Tap Fees."), of the Code is hereby amended to read in its entirety as follows:

"§ 13.03.006 Tap fees.

(a) Water tap connections.

(1) The water tap connection fee shall be based upon meter size, as follows:

Meter Size	Fee
3/4"	$1,250.00
l"	$1,850.00
2"	$6,650.00
3"	$16,250.00
4"	$25,850.00

6"	$57,850.00

(2) The water tap connection fee includes all administrative costs for establishing the customer's account, the cost of the water meter (and tail piece) equipment, the cost of the labor, material and equipment for installing the meter and tying into the city's distribution system, and related, necessary expenses as determined by the director of public works. It is the customer's responsibility to have the building line tied into the meter.

(3) Any extraordinary costs associated with the installation of a meter larger than 3/4", e.g., pavement cuts, pavement replacement, road bores, etc., shall be paid for by the customer prior to the customer's connection to the water distribution system, in accordance with a schedule of pricing and rates approved by the city council. Service will not be let until all fees and related construction costs charged to the customer have been paid in full.

(b) Sewer tap connections.

(1) The sewer tap connection fee shall be based upon meter size, as follows:

Meter Size	**Fee**
3/4"	$1,250.00
1"	$1,850.00
2"	$6,650.00
3"	$16,250.00
4"	$25,850.00
6"	$57,850.00

(2) The sewer tap connection fee includes all administrative costs for establishing the customer's account, the cost of the sewer tap equipment, the cost of the labor, material and equipment for installing the tap and tying into the city's collection system, and related, necessary expenses as determined by the director of public works. It is the customer's responsibility to have the house line tied into the tap.

(3) Any extraordinary costs associated with the installation of a tap larger than 3/4", e.g., pavement cuts, pavement replacement, road bores, etc., shall be paid for by the customer prior to the customer's connection to the collection system, in accordance with a schedule of pricing and rates approved by the city council. Service will not be let until all fees

and related construction costs charged to the customer have been paid in full."

C. Chapter 13 (Utilities), Section 13.03.015 ("Other fees and deposits."), of the Code is hereby added to read in its entirety as follows:

"§ 13.03.015 Other fees and deposits.

(1) Other fees

a. A fee shall be established for any call to service a water or sewer meter or tap outside of regular City business hours, as may be defined by the City Council, of $75.00.

b. A fee shall be established for a check made payable to the City for the payment of a City utility bill, including the water and sewer tap fees, which is returned "NSF" or otherwise for insufficient funds in the amount of $30.00.

c. A fee shall be established for any re-read of a water or sewer meter of $15.00.

d. A fee shall be established for an inspection of a water or sewer meter of $4.50.

e. A fee shall be established for any late payment of a utility bill of $15.00.

f. A fee shall be established for the connection of water or sewer service of $30.00.

g. A fee shall be established for the disconnection of water or sewer service of $30.00.

h. A fee shall be established for the reconnection of water or sewer service of $60.00.

i. A fee shall be established for the transfer of water or sewer service to a new address as a result of a relocation of $100.00.

J. An administrative fee shall be established for residence or occupant verification of $2.50.

(2) Deposits

a. The utility deposit for an owner-occupied residential account shall be $125.00.

b. The utility deposit for a residential account for a leased premises shall be $200.00.

c. The utility deposit for a commercial account shall be $250.00.

d. The utility deposit for a construction account shall be $500.00."

D. Chapter 13 (Utilities), Section 13.02.010 ("Collection Fees."), of the Code is hereby amended to read in its entirety as follows:

"§ 13.02.010 Collection fees.

(a) The fees for collection of garbage shall be paid monthly and shall be as follows:

RESIDENTIAL

		TAX	FRANCHISE	TOTAL
1 CART	$15.89	$1.31	$1.27	$ 18.47
2CARTS	$20.42	$1.68	$1.70	$23.81
3 CARTS	$24.96	$2.06	$2.11	$29.13

COMMERCIAL

		TAX	FRANCHISE	TOTAL
1 CART	$32.55	$2.69	$2.44	$37.68
2 CARTS	$45.11	$3.72	$3.45	$52.28
3 CARTS	$55.20	$4.55	$4.46	$64.21

(b) Whenever the collection of garbage from any establishment or place shall exceed the normal amounts for such a place so that the fee prescribed for such

collection is not fair and reasonable as applied to that particular place, the water and sewer superintendent, or other designated officer, shall recommend to the city council the establishment of a special rate for such place.

(c) The fees for collection of garbage shall be included with water and sewer services. Failure to pay any one or all fees shall be cause for discontinuance of all city-supplied services until such fees and penalties, if any, are paid in full.

SECTION 3. Savings; Repealer. This Ordinance shall be cumulative of all other ordinances of the City and shall not repeal any of the provisions of those ordinances except in those instances where the provisions of those Ordinances are in direct conflict with the provisions of this Ordinance. Provided, however, that the repeal of such ordinances or parts of such ordinances, and the amendments and changes made by this Ordinance, shall not affect any right, property or claim which was or is vested in the City, or any act done, or right accruing or accrued, or established, or any suit, action or proceeding had or commenced before the time when this Ordinance shall take effect; nor shall said repeals, amendments or changes affect any offense committed, or any penalty or forfeiture incurred, or any suit or prosecution pending at the time when this Ordinance shall take effect under any of the ordinances or sections thereof so repealed, amended or changed; and to that extent and for that purpose the provisions of such ordinances or parts of such ordinances shall be deemed to remain and continue in full force and effect.

SECTION 4. Severability. The sections, paragraphs, sentences, phrases, clauses and words of this Ordinance are severable, and if any section, paragraph, sentence, phrase, clause or word in this Ordinance or application thereof to any person or circumstance is held invalid or unconstitutional by a Court of competent jurisdiction, such holding shall not affect the validity of the remaining portions of this Ordinance, and the City Council hereby declares that it would have passed such remaining portions of this Ordinance despite such invalidity, which remaining portions shall remain in full force and effect.

SECTION 5. Penalty. Any person, firm, or corporation who violates any provision of this Ordinance shall be deemed guilty of a Class C Misdemeanor and upon conviction therefore shall be fined not less than One Dollar ($1.00) and not more than Two Thousand Dollars ($2,000.00) in accordance with Section 13.03.001 of the Code. Each and every day that such violation continues shall be construed to be a separate offense; provided, however, that nothing contained herein shall preclude the municipality

of bringing suit for injunction for the prevention of any threatened violation or the removal of any structure in violation of this ordinance.

SECTION 6. Effective Date. This Ordinance shall become effective November 6, 2023 and be applied to monthly customer bills beginning with the January 2024 billing cycle.

SECTION 7. Publication Clause. The City Administrator/Secretary of the City is hereby directed to publish in the Official Newspaper of the City the Caption and Effective Date clause of this ordinance as required by Section 52.011 of the Texas Local Government Code.

PASSED AND APPROVED by the City Council of the City of Crandall, Texas this the 6th day of November, 2023.

David Lindsey, Mayor

ATTEST:

By: _____
Sabrina Del Bosque, City Secretary

CITY OF CRANDALL TEXAS

APPROVED AS TO FORM:

By: _____
Timothy A. Dunn, City Attorney

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