

**City of Mesquite**  
**2024 Water Conservation and**  
**Water Resource and Emergency**  
**Management Plan**

*Adopted on May 6, 2024*

**2024 Water Conservation and Water Resource and Emergency Management Plans****City of Mesquite**

## TABLE OF CONTENTS

## Water Conservation Plan

1.00	Introduction .....	1
1.01	Minimum Regulatory Requirements Checklist.....	1
1.02	Additional Requirements and Guidance.....	1
2.00	Water Utility Profile .....	3
2.01	Description of the Service Area .....	3
2.02	Water Utility Profile .....	3
3.00	Water Conservation Goals .....	3
3.01	5- and 10-Year Goals .....	4
3.02	Method for Tracking .....	4
4.00	Metering, Records and Water Loss Control .....	4
4.01	Metering Program .....	4
4.02	Monitoring and Record Management Program .....	5
4.03	Water Loss Control Program.....	5
5.00	Contract Requirements for Wholesale Customers .....	6
6.00	Reservoir System Operations Plan .....	6
7.00	Conservation Plan Adoption and Enforcement .....	6
7.01	Means of Implementation and Enforcement .....	6
7.02	Review and Update of Water Conservation Plan .....	7
7.03	Regional Water Planning Group and NTMWD Notification.....	7
8.00	Water Conservation Program .....	7
8.01	Public Education Program .....	7
A.	NTMWD Public Education Program and Technical Assistance .....	7
B.	Public Education Program .....	10
8.02	Required Conservation Strategies .....	11
A.	TCEQ Conservation Plan Requirements.....	11
B.	Conservation Coordinator .....	11
C.	Water Conservation Pricing .....	12
D.	Ordinances, Plumbing Codes, or Rules on Water-Conserving Fixtures .....	13
E.	Reuse and Recycling of Wastewater .....	13
F.	Year-Round Outdoor Watering Schedules.....	14

**2024 Water Conservation and Water Resource and Emergency Management Plans**

**City of Mesquite**

---

G.	Time of Day Watering Schedule .....	14
H.	Irrigation System Requirements for New and Commercial Systems .....	15
I.	Water Waste Provisions .....	15
8.03	Additional Conservation Strategies .....	16
A.	Use of ET-Based Weekly Watering Advice/Recommendations ....	16
B.	Water Efficient Landscape Initiatives.....	16
C.	Additional Water Saving Measures for New Irrigation System Requirements...	16
D.	Additional Water Waste Provisions .....	16
E.	Park/Athletic Field Conservation .....	16
F.	Golf Course Conservation and Reuse .....	16
G.	Use of Licensed Irrigators to Inspect and Review All Irrigation Permits and Plans.....	16
H.	Offer Free or Discounted Irrigation System Check-Ups for Residential Customers.....	16
I.	Rebates .....	16
J.	ICIM Recommendations .....	16
K.	Water Efficiency Outreach Program .....	16

---

**2024 Water Conservation and Water Resource and Emergency Management Plans**

**City of Mesquite**

Water Resource and Emergency Management Plan

1.00 Introduction ..... 1

    1.01 Minimum Regulatory Requirements ..... 1

2.00 Implementation and Enforcement..... 1

    2.01 Provisions to Inform the Public and Opportunity for Input ..... 1

    2.02 Program for Continuing Public Education and Information..... 2

    2.03 Coordination with the Regional Water Planning Groups and NTMWD ..... 2

    2.04 Initiation and Termination of Water Resource Management Statges ..... 2

        A. Initiation of a Water Resource Management Stage ..... 2

        B. Termination of a Water Resource Management Stage ..... 3

    2.05 Procedure for Granting Variances to the Plan ..... 4

    2.06 Procedures for Enforcing Mandatory Water use Restrictions ..... 5

    2.07 Review and Update of Water Resource and Emergency Management Plan ..... 5

3.00 Water Resource and Emergency Management Plan..... 5

    3.01 Water Resource Management – Stage 1 ..... 6

        A. Initiation and Termination Criteria for Stage 1 ..... 6

        B. Goal for Use Reduction Under Stage 1 ..... 7

        C. Water Management Measures Available Under Stage 1 ..... 7

    3.02 Water Resource ManagemEnt – Stage 2 ..... 8

        A. Initiation and Termination Criteria for Stage 2 ..... 8

        B. Goal for Use Reduction Under Stage 2 ..... 9

        C. Water Management Measures Available Under Stage 2..... 9

    3.03 Water Resource Management – Stage 3 ..... 11

        A. Initiation and Termination Criteria for Stage 3 ..... 11

        B. Goal for Use Reduction Under Stage 3 ..... 12

        C. Water Management Measures Available Under Stage 3..... 12

**2024 Water Conservation and Water Resource and Emergency Management Plans**

---

**City of Mesquite**

APPENDICES

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

## **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.**

---

**2024 Water Conservation and Water Resource and Emergency Management Plans**

---

*City of Mesquite*

**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.**

---

**2024 Water Conservation and Water Resource and Emergency Management Plans**

---

*City of Mesquite*

**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.**

---

**2024 Water Conservation and Water Resource and Emergency Management Plans**

---

*City of Mesquite*

**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.**

**2024 Water Conservation and Water Resource and Emergency Management Plans**

**City of Mesquite**

**ABBREVIATIONS**

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



# 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 Mesquite is a Member City of the North Texas Municipal Water District (NTMWD). This Plan was developed following TCEQ guidelines and requirements governing the development of water conservation plans.**

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

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

### 1.01 MINIMUM REGULATORY REQUIREMENTS CHECKLIST

**A water conservation plan is defined as “[a] strategy or combination of strategies for reducing the volume of water withdrawn from a water supply source, for reducing the loss or waste of water, for maintaining or improving the efficiency in the use of water, for increasing the recycling and reuse of water, and for preventing the pollution of water. A water conservation plan may be a separate document identified as such or may be contained within another water management document”. Recognizing the need for efficient use of existing water supplies, 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 82<sup>nd</sup> 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 Mesquite'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 Mesquite is located on the eastern edge of Dallas County and is bordered by the cities of Dallas, Garland, Sunnyvale, and Balch Springs. As of May 2023, the City's current population is 152,020 with a total of 58,322 metered water utility connections. The City currently operates four pumping facilities at Barnes Bridge (North), Hailey (Central), Southeast Mesquite (South), and Markout (Kaufman County). The ground storage capacity is 25 million gallons. The City also utilizes elevated storage tanks to meet peak-day water demands, replenishing the storage when the demand is lower. Five towers, located at Town East, Big Town, McKenzie, Peachtree, and Markout (Kaufman County) have a total storage capacity of 9.65 million gallons. The total combined system has a pumping capacity of approximately 64.5 million gallons. By the end of 2024 there will be a 3 million gallon ground storage tank added to the system and a 2 million elevated storage tank being proposed for 2025-2026.**

**The City purchases treated water from the North Texas Municipal Water District (NTMWD). The NTMWD is a regional wholesale supplier for 13 Member Cities and numerous other customers in Collin, Dallas, Denton, Rockwall, Kaufman, Hunt, Hopkins, Fannin and Rains Counties in North Central Texas. The City provides wholesale water to Kaufman County MUD 9-12. This Plan has been developed in concert with the model plans for the NTMWD Member Cities and Customers and contains best management practices intended to meet the targets and goals identified in the plan.**

### **2.02 WATER UTILITY PROFILE**

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

- Purchased Treated Water from NTMWD**
- Purchased Treated Water from City of Forney**

## **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
<b>Total (GPCD)<sup>1</sup></b>	<b>112</b>	<b>112</b>	<b>114</b>	<b>110</b>
<b>Residential (GPCD)<sup>2</sup></b>	<b>58</b>	<b>58</b>	<b>59</b>	<b>55</b>
<b>ICIM (GPCD)<sup>3</sup></b>	<b>28</b>	<b>28</b>	<b>27</b>	<b>26</b>
<b>Water Loss (GPCD)<sup>4</sup></b>	<b>19</b>	<b>19</b>	<b>18</b>	<b>15</b>
<b>Water Loss (Percentage)<sup>5</sup></b>	<b>13%</b>	<b>13%</b>	<b>14%</b>	<b>12%</b>

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

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

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

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

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

### 3.02 METHOD FOR TRACKING

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

The completion of this Annual Water Conservation Report allows City of Mesquite 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  $\pm 2\%$ . These meters are calibrated on an annual basis by NTMWD to maintain the required accuracy.**

#### METERING OF CUSTOMER AND PUBLIC USES

**The provision of water to all customers, including private, public and governmental users, will continue to be metered in the City of Mesquite.**

#### METER TESTING, REPAIR AND REPLACEMENT

**In September of 2022, the City of Mesquite entered a complete city change out program. The City hired Ameresco to have all 43,000+ meters changed out and be on an AMI (Advanced Metering Infrastructure) system. The City went from the Neptune T-10 positive displacement meters to a Neptune Mach 10 R900i Ultrasonic meter for all meters going forward.**

### 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 currently has a continuous leak detection, location and repair program that includes an annual water audit. When a source of unaccounted-for water loss is located, corrective repairs or other actions are taken. Implementation of fire hydrant metering, along with the meter-replacement program, aids in reducing unaccounted-for water losses. In addition, Meter Technicians and all utility personnel are instructed to watch for possible leaks and misuses of water while performing their daily tasks.

## **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 The City of Mesquite 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**

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

## **7.00 CONSERVATION PLAN ADOPTION AND ENFORCEMENT**

### **7.01 MEANS OF IMPLEMENTATION AND ENFORCEMENT**

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

Procedures for the enforcement of mandatory water use restrictions, notice of violations, fines and penalties are outlined in [Section 16-13, Chapter 16](#) of the Code of the City of Mesquite, Texas. The City Manager is authorized to implement the applicable provisions of this Plan to protect public health, safety, and welfare. The City Manager shall have the authority to initiate or terminate drought or other emergency response measures as described in this Plan. The authority to implement and enforce this Plan is established in [Chapter 16](#) of the Code of the City of Mesquite, Texas.

---

## **7.02 REVIEW AND UPDATE OF WATER CONSERVATION PLAN**

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

## **7.03 REGIONAL WATER PLANNING GROUP AND NTMWD NOTIFICATION**

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

## **8.00 WATER CONSERVATION PROGRAM**

### **8.01 PUBLIC EDUCATION PROGRAM**

#### **A. NTMWD PUBLIC EDUCATION PROGRAM AND TECHNICAL ASSISTANCE**

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

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

- **“Water4Otter” is a water conservation campaign for kids launched by NTMWD in 2014. It is based on the insight that most parents agree they would listen if their kids asked them to conserve water. The TWDB awarded the NTMWD a conservation grant to develop Water4Otter as a model program that could be used throughout the state. The 2023 program included 22 performances at 11 schools in eight different ISDs including stops at elementary schools in Wylie, Garland, Mesquite, Plano, Princeton, Richardson, and Royse City.**
- **“Love Lavon Lake” is a water conservation campaign designed to help North Texans know their primary water source. The campaign launched in 2018 with a call to action to, “Conserve your water source. Love Lavon Lake”. The campaign was based on market research showing the more people know the source of their drinking water, the more likely they are to use it wisely and efficiently.**
- **NTMWD implemented the “#PledgetoPlantSmart” initiative that seeks to inspire positive change in water conservation by encouraging North Texas residents to do their part and plant smart by selecting native or adapted plants for their garden and landscaping.**

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

- **In 2019, an additional tagline, “Keep Texas Water on Tap”, was incorporated to promote the Water is Awesome brand and direct traffic to [waterisawesome.com](http://waterisawesome.com).**
  - **In 2020, a “customer city toolkit” provided customizable resources allowing cities to incorporate their logos with the campaign brand for their website, social media, and print. Cities are encouraged to use campaign resources to advance conservation efforts.**
  - **In 2021, the regional water providers collaborated to create the Regional Landscape Initiatives. This document was developed as a resource of best management practices for municipal staff to help reduce water waste and encourage long-term water conservation in the North Texas region. Information consists of the background, importance, and benefits of each BMP and key talking points to consider when implementing the strategy. Several of the optional water management measures included in this Plan are from this collaborative initiative.**
  - **The 2023 campaign will include a focus on short HGTV-style web series about converting yards into drought-resistant, water-conservative yardscapes.**
-

**Conservation materials and more are made available to Member Cities and Customers through an online portal that is hosted by NTMWD. In addition to the portal the NTMWD actively provides technical assistance through the following:**

- **NTMWD holds Regularly Scheduled Meetings with Member Cities and Customers for water supply updates, public campaign strategies, and legislative activities related to water and water conservation.**
  - **NTMWD purchases American Water Works Association Research Foundation Publications for use by Member Cities and Customers to further enhance resources for water efficiency, water rate structures, etc. Additionally, NTMWD pays for Member City and Customer membership to the Alliance for Water Efficiency.**
  - **To assist its Member Cities and Customers in the development of their own water conservation plans, NTMWD has developed a Model Water Conservation Plan for NTMWD Member Cities and Customers. The Model Water Conservation Plan addresses TCEQ requirements for water conservation plans for municipal use by public water suppliers and includes advanced water conservation strategies beyond TCEQ requirements that mirror the NTMWD plan. This is available online at <https://www.ntmwd.com/login/portal/>.**
  - **Since 2003, NTMWD has held Water Conservation Workshops for staff of its Member Cities and Customers. These workshops have covered several conservation-related topics, including TCEQ requirements for water conservation and drought contingency plans, advanced water conservation strategies, current NTMWD water conservation efforts, water conservation programs of the cities, current drought status, progress on future water supplies, and related topics. These workshops also provide training and education regarding water use accounting, irrigation evaluations, industrial, commercial, and institutional audits, and other procedures. Additional examples include workshops on Water Loss Audit Training as well as on the TWDB Water Conservation Planning Tool.**
  - **Based on the annual reporting data collected from Member Cities and Customers from 2022, approximately 24% of the District's treated water sales went to supply ICIM users within their service area. To target programs for this customer base, the District hired Plummer Associates, Inc. to create the Industrial, Commercial, Institutional and Multifamily Program. The ICIM program provides NTMWD Member City and Customer staff with the knowledge and tools necessary to identify ICIM customers with high water usage. This program was created to categorize water use data to find outliers and identify areas to concentrate water conservation efforts. This program can help Member Cities and Customers' ICIM water customers develop targeted methods for**
-

**increasing water efficiency as an alternative to a traditional voluntary approach for water consumption improvement.**

- **As part of the ICIM program, the District is currently engaging with the Member and Customer Cities to encourage their ICIM customers to participate in Water Efficiency Opportunity Surveys. These surveys encompass a building audit that recommends various water conservation measures that can be implemented to save both money and water. Items addressed include toilet retrofits, urinal retrofits, showerhead retrofits, lavatory retrofits, non-lavatory faucet retrofits, leak repair, water cooled ice machine retrofit, commercial disposer, food steam, cooling tower efficiency and irrigation system efficiency. As of June 2023, NTMWD has utilized the ICIM program to audit four buildings resulting in an estimated annual water savings of 87.4 million gallons.**
- **As part of its wastewater system, NTMWD has developed Industrial Pretreatment Programs for the cities of Allen, Forney, Frisco, McKinney, Mesquite, Murphy, Plano, Richardson, Rockwall, Terrell, and Wylie. The pretreatment programs developed by NTMWD are adopted and implemented by the cities, which are also responsible for enforcement of the programs. By reducing allowable volumes of specific pollutants and encouraging pretreatment of industrial wastes, this joint effort by NTMWD and the cities has improved water quality in the region's streams and reservoirs. NTMWD industrial pretreatment personnel are also available to assist cities on request in the review or design of systems to allow industrial recycling and reuse of wastewater. Such systems have reduced water use by some industries, while also reducing wastewater volumes and saving money for the industries.**
- **NTMWD encourages its Member Cities and Customers to develop and implement Rebate and Bulk Purchasing Programs that help the Member Cities and Customers achieve overall water savings. Further, NTMWD provides technical assistance to those Member Cities and Customers who wish to implement rebate and bulk purchasing programs.**

## **B. PUBLIC EDUCATION PROGRAM**

- **Designated Water Conservation Coordinator to develop water conservation programs, materials, presentations, exhibits, and educational workshops**
  - **Dedicated water conservation webpage to educate residents on both indoor and outdoor conservation, efficient watering practices, irrigation videos, and links to other resources ([www.cityofmesquite.com/utilities](http://www.cityofmesquite.com/utilities))**
  - **Periodic notices and articles dedicated to water conservation in the City's newsletter.**
-

- **The City of Mesquite is member of the Alliance for Water Efficiency.**
- **The City provides Waterwise Landscaping and Irrigation Workshops for residents on best management practices for lawns, landscapes, and irrigation systems to promote efficient water use**
- **Public outreach of K-12 level water conservation education to Mesquite Independent School District**
- **Public outreach to HOA's and other speaking opportunities within the City and region**
- **The City provides periodic water conservation messages on the utility bill**
- **The City promotes water conservation at public events, city-sponsored events and more.**

## **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.**

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

**Jonathan Raphael  
(972) 216-8111  
JRaphael@CityofMesquite.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.**

**The City of Mesquite’s water rate structure is as follows:**

**Residential Rates**

**Monthly water bills are calculated based on a customer’s actual water usage and consists of two charges – a minimum bill and a consumption charge. The customer’s meter size determines the amount of the minimum bill (most residential water meters are 0.625 inches). The minimum bill includes the first 1,000 gallons of water usage. Consumption in excess of 1,000 is billed at a tiered rate depending on the gallons used.**

<b>BY METER TYPE</b>	<b>RATE PER 1,000 GALLONS</b>
<b>0.625 inch meter .....\$17.68</b>	<b>0-1,000 gallons .....\$0.00</b>
<b>1.000 inch meter .....\$24.57</b>	<b>1,001 – 5,000 gallons .....\$7.67</b>
<b>1.500 inch meter .....\$32.73</b>	<b>5,001 – 10,000 gallons .....\$8.26</b>
<b>2.000 inch meter .....\$40.90</b>	<b>10,001 – 50,000 gallons .....\$8.67</b>
<b>3.000 inch meter .....\$49.06</b>	<b>50,001 – 70,000 gallons .....\$9.07</b>

---

4.000 inch meter .....\$57.22

70,001 – 500,000 gallons .....\$9.49

6.000 inch meter .....\$64.03

Over 500,000 gallons .....\$7.85

**Commercial/Industrial Rates**

**Monthly water bills are calculated based on a customer's actual water usage and consists of two charges – a minimum bill and a consumption charge. The customer's meter size determines the amount of the minimum bill (most residential water meters are 0.625 inches). The minimum bill includes the first 1,000 gallons of water usage. Consumption in excess of 1,000 is billed at a tiered rate depending on the gallons used.**

**BY METER TYPE****RATE PER 1,000 GALLONS**

0.625 inch meter .....\$17.68

0-1,000 gallons .....\$0.00

1.000 inch meter .....\$24.57

1,001 – 5,000 gallons .....\$7.67

1.500 inch meter .....\$32.73

5,001 – 10,000 gallons .....\$8.26

2.000 inch meter .....\$40.90

10,001 – 50,000 gallons .....\$8.67

3.000 inch meter .....\$49.06

50,001 – 70,000 gallons .....\$9.07

4.000 inch meter .....\$57.22

70,001 – 500,000 gallons .....\$9.49

6.000 inch meter .....\$64.03

Over 500,000 gallons .....\$7.85

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

**The City of Mesquite's plumbing code standards encourages water conservation and meets the minimum statutory requirements. The state has required water-conserving fixtures in new construction and renovations since 1992. The state standards call for flows of no more than 2.5 gallons per minute (gpm) for faucets, 2.5 gpm for showerheads. As of January 1, 2014, the state requires maximum average flow rates of 1.28 gallons per flush (gpf) for toilets and 0.5 gpf for urinals. Similar standards are now required under federal law. These state and federal standards assure that all new construction and renovations will use water-conserving fixtures.**

**E. REUSE AND RECYCLING OF WASTEWATER**

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

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

#### **F. YEAR-ROUND OUTDOOR WATERING SCHEDULES**

**A mandatory weekly watering schedule has been gradually gaining acceptance in the region and the state. 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 80<sup>th</sup> Texas Legislature passed House Bill 1656, Senate Bill 3, and House Bill 4 related to regulating irrigation systems and irrigators by adopting minimum standards and specifications for designing, installing, and operating irrigation systems. The Texas legislation required cities with a population over 20,000 to develop a landscape irrigation program that includes permitting, inspection, and enforcement of water conservation for new irrigation systems.**

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

- 1) Require that all new irrigation systems be in compliance with state design and installation regulations (Texas Administrative Code Title 30, Chapter 344).**
- 2) Require operational rain and freeze sensors and/or ET or Smart controllers on all new irrigation systems. Rain and freeze sensors and/or ET or Smart controllers must be properly maintained to function properly.**
- 3) Require that irrigation systems be inspected at the same time as initial backflow preventer inspection.**
- 4) Require the owner of a regulated irrigation property to obtain an evaluation of any permanently installed irrigation system on a commercial property on a yearly 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.**
-