City of Plano

Water Management Plan

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APPENDICES

1. INTRODUCTION AND OBJECTIVES

Water supply has always been a key issue in the development of Texas. In recent years, the growing population and economic development of North Central Texas has led to increasing demands for water supplies. At the same time, local and less expensive sources of water supply are largely developed. Additional supplies to meet higher demands will be expensive and difficult to develop. It is therefore important that the North Texas Municipal Water District (NTMWD) and its Member Cities and Customers make the most efficient use of existing supplies. This will delay the need for new supplies, minimize the environmental impacts associated with developing new supplies, and delay the high cost of additional water supply development.

Recognizing the need for efficient use of existing water supplies, the Texas Commission on Environmental Quality (TCEQ) has developed guidelines and requirements governing the development of water conservation and drought contingency plans for public water suppliers. The TCEQ established guidelines and requirements are in Texas Administrative Code Title 30, Part 1, Chapter 288 Subchapter A, Rule §288.2 and Texas Administrative Code Title 30, Part 1, Chapter 288 Subchapter B, Rule §288.20. The best management practices established by the Water Conservation Implementation Task Force, established pursuant to SB1094 by the 78th Legislature, were also considered in the development of the water conservation measures. The Water Management Plan for the City of Plano was developed in concert with the NTMWD's water conservation and drought contingency and water emergency response plans.

The water conservation sections of this plan are intended as a year-round water efficiency plan and include measures that are designed to result in ongoing, long-term water savings. The objectives of this water conservation plan are as follows:

- To reduce water consumption from the levels that would prevail without conservation efforts.
- To reduce the loss and waste of water.
- To improve efficiency in the use of water.
- To document the level of recycling and reuse in the water supply.
- To extend the life of current water supplies by reducing the rate of growth in demand.

The drought contingency and water emergency response sections of this plan address strategies designed to temporarily reduce water use in response to specific conditions. The purpose of this drought contingency and water emergency response plan is as follows:

- To conserve the available water supply in times of drought and emergency
- To maintain supplies for domestic water use, sanitation, and fire protection
- To protect and preserve public health, welfare, and safety
- To minimize the adverse impacts of water supply shortages
- To minimize the adverse impacts of emergency water supply conditions.

The NTMWD supplies treated water to its Member Cities and Customers. The water conservation and drought contingency sections of this document were modeled after plans developed by NTMWD in consultation with its Member Cities. In concert with the adoption of this plan, the City of Plano is required to do the following:

- Complete the Water Conservation Utility Profile (TWDB Form - 1965R).
- Complete the Water Conservation Implementation Report (TWDB Form - 1969).
- Set five-year and ten-year goals for per capita water use (Section 4).
- Adopt a resolution approving the plan

This plan includes all elements required by TCEQ. The final adopted version of the Water Management Plan, including appendices will also be provided to NTMWD, as well as TCEQ and Region C Planning Group.

This Water Management Plan applies to all users of the City of Plano water supply.

Definitions:

Athletic Field means a public sports competition field, the essential feature of which is turf grass, used primarily for organized sports practice, competition or exhibition events for schools, professional sports, or sanctioned league play.

Central Controlled Irrigation Systems means large scale, technically advanced systems used to water large or multiple sites from a central location. This advanced technology can monitor and adapt system operation and irrigation run times in response to conditions in the system or surrounding areas (weather conditions, pipe breaks, etc.). These systems may also be easily programmed (individually or globally) to reduce flow rates or the amount of water applied to meet conservation needs; required reduction percentages; and provide historical data or reports. The City central irrigation system uses multiple weather stations throughout the city to collect real-time climatological data. This data is then available to the computer to automatically shut down the system when weather conditions warrant.

Cool Season Grasses refers to the varieties of turf grass that grow best in cool climates primarily in northern and central regions of the U.S. Cool season grasses include perennial and annual rye grass, Kentucky blue grass and fescues.

Customer means a person, company or other entity connected to the City's water system and contracting with the City of Plano to receive potable water service.

Drip Irrigation means micro-irrigation with low volume (measured in gallons per hour) and low-pressure release of water to a specific root zone through point source emitters or pressure compensating in-line drippers. This does not include micro-sprayers or misters.

Foundation means area that includes first 24" of soil from foundation slab.

Fugitive water means the pumping, flow, release, escape, or leakage of any water from any pipe, valve, faucet, connection, diversion, well, from any water supply, transport, storage disposal or delivery system of a facility onto adjacent property or the public right-of-way.

Irrigation System means a site-specific system of delivering water, generally for landscape irrigation, via a system of pipes or other conduits installed below ground.

Landscape means natural plant materials around buildings or on grounds (i.e., trees, shrubbery, grasses and flowers) but excludes athletic fields and high use areas.

Potable water means any public water supply that has been investigated and approved by the TCEQ as satisfactory for drinking, culinary and domestic purposes.

Public Health and Safety means such amount of water as necessary to sustain human life, reasonable standards of hygiene and sanitation, and fire suppression.

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

Sprinkler means an above ground irrigation device that may be attached to a garden hose or in-ground irrigation system. This includes spray heads, rotor heads, and oscillating devices.

Wholesale customers purchase water at a discounted rate either directly from NTMWD or from a NTMWD water system Member City. Plano is a wholesale customer of NTMWD.

Responsibilities:

(a) The Director of Public Works is responsible for:

- ❖ Advising the City Manager in issues related to water conservation and drought and water emergency issues.
- ❖ Developing and maintaining the Water Management Plan and Drought and Emergency Response Plan in conformance with the most current NTMWD Model Plan and TCEQ guidelines and policies.
- ❖ Implementing programs to reduce and control water loss, calculating and reporting unaccounted for water, and keeping water loss under 12%. When water loss exceeds state standards, the City will intensify water loss control programs.
- ❖ Assuring that City ordinances are maintained to continue to support future revisions to the NTMWD Model Plan, City Plan, TCEQ guidelines, and legislative mandate.
- ❖ Preparing and submitting all required reports, water utility profiles, and tabular materials related to water conservation in the formats and media required by the City Plan and/or NTMWD, TCEQ, and/or the Texas Water Development Board (TWDB).
- ❖ Continuing the City's Water and Sewer Fund financial programming to support a residential meter replacement cycle of no more than 10 years and conducting a regular large meter testing program on no less than a 5-year cycle.

- ❖ Supporting the City's goal of reducing municipal gallons per capita per day (gpcd) to 185 gpcd within a 10-year period.
- ❖ Providing NTMWD and the Chair of the Region C water planning group the City's adopted resolution and drought contingency ordinance.
- ❖ Managing the administrative processing and follow-up associated with City customer variance requests.
- ❖ Managing the administrative processing and follow-up associated with enforcement of all water conservation and drought contingency and water emergency response provisions of the drought contingency ordinance.
- ❖ Managing the program that allows the pursuit of administrative remedies for violations of water conservation and drought water use restrictions by non-single family water account holders.

(b) The Director of Environmental Health and Sustainability is responsible for:

- ❖ Developing and presenting water conservation educational and informational programs.
- ❖ Developing water conservation promotional activities including a water conservation incentive program.
- ❖ Developing and distributing the Consumer Confidence Report (CCR) to meet federal and state requirements.
- ❖ Notifying the public of the initiation of any drought and emergency response stage.
- ❖ Assuring that education materials are maintained to continue to support future revisions to the NTMWD Model Plan, City Plan, TCEQ guidelines, and legislative mandate.

(c) The Director of Finance is responsible for:

- ❖ Assuring the City continues its program of universal metering and billing.
- ❖ Assuring that the City water billing/records management system includes water usage classes and capabilities to sort/separate differing classes and categories of water usage as required by the NTMWD Model Plan and Texas Administrative Code (TAC) Title 30, Part I, Chapter 288, Subchapter A, Rule 288.2(a)(2)(b).

(d) The Chief Building Official is responsible for:

- ❖ Enforcing the requirements of the International Plumbing Code (IPC) in residential and commercial facilities.
- ❖ As part of the building permit and building inspection programs, enforcing requirements for landscape irrigation system design in accordance with state design and installation standards and the inclusion of freeze and rain sensors on all new irrigation systems (City of Plano Code of Ordinances §6-561). This requires irrigation system design submission by builders for review by the building official staff and inspection of the irrigation systems as part of the building inspection program.

(e) Planning Department is responsible for:

- ❖ Maintaining and enforcing the Zoning Ordinance's landscape and irrigation plan requirements through the development review process.
- ❖ Implementing procedures to allow developers to delay the installation of landscaping during drought contingency watering restrictions.

(f) Parks and Recreation Department is responsible for:

- ❖ Operating and maintaining a central controlled irrigation system, other city irrigation systems to ensure conservation of water, and efficient use of irrigation to meet the needs of city site users. Safety and usability for recreational users of irrigated city sites shall be considered a priority.
- ❖ Installing and maintaining landscapes and managing natural and man-made park resources in a sustainable manner suitable for the scope and scale of the assets. Demonstration of conservation measures meaningful to residential scale shall be incorporated into sites and practices when feasible.

2. TEXAS COMMISSION ON ENVIRONMENTAL QUALITY RULES

2.1 Conservation Plans

The TCEQ rules governing development of water conservation plans for public water suppliers are contained in Title 30, Part 1, Chapter 288, Subchapter A, Rule 288.2 of the Texas Administrative Code. For the purpose of these rules, 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." The elements in the TCEQ water conservation rules covered in this conservation plan are listed below.

Minimum Conservation Plan Requirements

The minimum requirements in the Texas Administrative Code for Water Conservation Plans for Public Water Suppliers are covered in this report as follows:

- 288.2(a)(1)(A) – Utility Profile – Section 3
- 288.2(a)(1)(B) – Record Management System – Section 5.2
- 288.2(a)(1)(C) – Specific, Quantified Goals – Section 4
- 288.2(a)(1)(D) – Accurate Metering – Sections 5.1 and 5.2
- 288.2(a)(1)(E) – Universal Metering – Section 5.2
- 288.2(a)(1)(F) – Determination and Control of Unaccounted Water – Section 5.4
- 288.2(a)(1)(G) – Public Education and Information Program – Section 6
- 288.2(a)(1)(H) – Non-Promotional Water Rate Structure – Section 7
- 288.2(a)(1)(I) – Reservoir System Operation Plan – Section 8.1
- 288.2(a)(1)(J) – Means of Implementation and Enforcement – Section 12
- 288.2(a)(1)(K) – Coordination with Regional Water Planning Group – Section 10
- 288.2(c) – Review and Update of Plan – Section 11

Conservation Additional Requirements (Population over 5,000)

The Texas Administrative Code includes additional requirements for water conservation plans for drinking water supplies serving a population over 5,000:

- 288.2(a)(2)(A) – Leak Detection, Repair, and Water Loss Accounting – Sections 5.1 through 5.4
- 288.2(a)(2)(B) – Requirement for Water Conservation Plans by Wholesale Customers – Section 8.7

Additional Conservation Strategies

The TCEQ requires that a water conservation implementation report be completed and submitted on an annual basis.

In addition to the TCEQ required water conservation strategies, the NTMWD also requires the following strategy be included in the Member City and Customer plans:

- 288.2(a)(3)(F) – Considerations for Landscape Water Management Regulations – Section 8.4 and enacting a resolution and/or ordinance(s)

TCEQ rules also include optional, but not required, conservation strategies, which may be adopted by suppliers. The NTMWD recommends that the following strategies be included in the Member City and Customer water conservation plans:

- 288.2(a)(3)(A) – Conservation Oriented Water Rates – Section 7
- 288.2(a)(3)(B) – Ordinances, Plumbing Codes or Rules on Water-Conserving Fixtures – Section 8.3
- 288.2(a)(3)(C) – Replacement or Retrofit of Water-Conserving Plumbing Fixtures – Section 8.6
- 288.2(a)(3)(D) – Reuse and Recycling of Wastewater – Section 8.2
- 288.2(a)(3)(G) – Monitoring Method – Section 5.5
- 288.2(a)(3)(H) – Additional Conservation Ordinance Provisions – Section 8.5 and 8.6

2.2 Drought Contingency Plans

The TCEQ rules governing development of drought contingency plans for public water suppliers are contained in Title 30, Part 1, Chapter 288, Subchapter B, Rule 288.20 of the Texas Administrative Code. For the purpose of these rules, a drought contingency and water emergency response 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." The elements in the TCEQ drought contingency rules covered in this conservation plan are listed below.

Minimum Requirements

TCEQ's minimum requirements for drought contingency plans are addressed in the adopted Drought and Emergency Response Plan in the City of Plano Municipal Code §21-53 through §21-60.2:

- 288.20(a)(1)(A) – Provisions to Inform the Public and Provide Opportunity for Public Input
- 288.20(a)(1)(B) – Provisions for Continuing Public Education and Information
- 288.20(a)(1)(C) – Coordination with the Regional Water Planning Group – Section 10
- 288.20(a)(1)(D) – Criteria for Initiation and Termination of Drought Stages
- 288.20(a)(1)(E) – Drought and Emergency Response Stages
- 288.20(a)(1)(F) – Specific, Quantified Targets for Water Use Reductions
- 288.20(a)(1)(G) – Water Supply and Demand Management Measures for Each Stage
- 288.20(a)(1)(H) – Procedures for Initiation and Termination of Drought Stages

- 288.20(a)(1)(I) - Procedures for Granting Variances
- 288.20(a)(1)(J) - Procedures for Enforcement of Mandatory Restrictions
- 288.20(a)(3) – Consultation with Wholesale Supplier
- 288.20(b) – Notification of Implementation of Mandatory Measures
- 288.20(c) – Review and Update of Plan – Section 11

3. WATER CONSERVATION UTILITY PROFILE

The Water Conservation Utility Profile must be completed as a requirement of the Water Management Plan. The completed Utility Profile for Retail Water Supplier (TWDB Form No.1965-R) is included in **Appendix B.**

4. SPECIFICATION OF WATER CONSERVATION GOALS

TCEQ rules require the adoption of specific water conservation goals for a water conservation plan. As part of plan adoption, the City of Plano must develop 5-year and 10-year goals for per capita municipal use. These goals should be submitted to NTMWD. The goals for this water management plan include the following:

- Maintain the per capita municipal water use below the specified amount in gallons per capita per day in a dry year, as shown in the completed Table 4.1.
- Maintain the level of unaccounted water in the system below 12%, as discussed in Section 5.4.
- Implement and maintain a program of universal metering and meter replacement and repair, as discussed in Section 5.2.
- Decrease waste in lawn irrigation by implementation and enforcement of landscape water management regulations, as discussed in Section 8.4 and City of Plano Zoning Ordinance Article 3.1200: Landscaping Requirements.
- Increase efficient water usage as discussed in Sections 8.5 and 8.6.
- Raise public awareness of water conservation and encourage responsible public behavior by a public education and information program, as discussed in Section 6.
- Develop a system specific strategy to conserve water during peak demands, thereby reducing the peak use.

Table 4.1
Five-Year and Ten-Year Municipal Per Capita Water Use Goals (gpcd)

Description	Historic 5-Year Average[1]	Baseline[2]	5-Year Goal for year 2029	10-Year Goal for year 2034
Total GPCD[3]	201	219	190	185
Residential GPCD[4]	92	95	88	86
Water Loss (GPCD)[5]	31	24	21	19
Water Loss (Percentage)[6]	16%	11%	11%	10%

1. The Historic 5-yr Average includes water consumption from 2019 through 2023.
2. The goals and guidance established in the Texas Water Development Board – Region C 2021 Water Plan were used to determine the Baseline GPCD and Water Loss percentage.
3. Total GPCD = (Total Gallons in System ÷ Permanent Population) ÷ 365
4. Residential GPCD = (Gallons Used for Residential Use ÷ Residential Population) ÷ 365
5. Water Loss GPCD = (Total Water Loss ÷ Permanent Population) ÷ 365
6. Water Loss Percentage = (Total Water Loss ÷ Total Gallons in System) x 100; or (Water Loss GPCD ÷ Total GPCD) x 100

5. METERING, WATER USE RECORDS, CONTROL OF WATER LOSS, AND LEAK DETECTION AND REPAIR

One of the key elements of water conservation is tracking water use and controlling losses through illegal diversions and leaks. It is important to carefully meter water use, detect and repair leaks in the distribution system and provide regular monitoring of unaccounted water.

5.1 Accurate Metering of Treated Water Deliveries from NTMWD

Water deliveries from NTMWD are metered by NTMWD using meters with an accuracy of ± 2%. These meters are calibrated on an annual basis by NTMWD to maintain the required accuracy.

5.2 Metering of Customer and Public Uses and Meter Testing, Repair, and Replacement

The provision of water to all customers, including public and governmental users, will be metered in the City of Plano. The City of Plano tests and/or replaces their residential customer meters in accordance with Sec. 4.2.8 of AWWA C700-95 and M-6, Water Meters – Selection, Installation, Testing and Maintenance Record Management System. All residential customer meters will be budgeted to be replaced on a minimum of a 10 to15-year cycle. Additionally, large meters will be regularly tested on no less than a 5-year interval and either maintained or replaced when their test flow is outside standards established by AWWA.

As required by TAC Title 30, Part 1, Chapter 288, Subchapter A, Rule 288.2(a)(1)(B), the City of Plano will maintain a customer billing and record management system that allows for the separation of water sales and uses into residential, commercial, public/institutional, and industrial categories. This information will be included in an annual water conservation report, as described in Section 5.6 below.

5.3 Determination and Control of Water Loss

The Texas Water Development Board utilizes a methodology derived from the American Water Works Association (AWWA) and the International Water Association (IWA). This new standard uses terminology such as authorized consumption, real loss, apparent loss, and non-revenue water. Total water loss, as reported to TCEQ, includes two categories:

- Apparent Losses – Water that has been consumed but not properly measured or billed. These losses represent under-registered or under-billed water that occurs via customer meter inaccuracies, systematic data handling errors in the customer billing system, and unauthorized consumption due to illegal connections and theft.
- Real Losses – These are physical losses from the pressurized water distribution system, including water mains and all appurtenances (for example, valves and hydrants) and customer service connection piping. Real losses represent water that is lost from the distribution system prior to reaching the customer destination.

Measures to control apparent and real water losses will be part of the routine operations of the City of Plano. Maintenance crews and personnel will look for and report evidence of leaks in the water distribution system. A leak detection and repair program is described in

Section 5.4 below. Meter service technicians, building inspectors, and all City crews will watch for and report signs of illegal connections, so they can be quickly addressed.

The Water Audit Worksheet, provided by TCEQ, is a "top down" audit of a utility's system using existing estimations and records. This audit will be completed annually using the Water Loss Audit Worksheets available from the Texas Water Development Board online at https://www.twdb.texas.gov/conservation/municipal/waterloss/index.asp. With the measures described in this plan, the City of Plano should maintain unaccounted water below 12%. If unaccounted water exceeds this goal, the City of Plano will implement a more intensive audit to determine the source(s) of and reduce the unaccounted water. The annual conservation report described below is the primary tool that should be used to monitor unaccounted water.

5.4 Leak Detection and Repair

As described above, city crews and personnel should look for and report evidence of leaks in the water distribution system. Areas of the water distribution system, in which numerous leaks and line breaks occur, should be targeted for replacement, as funds are available. The Parks and Recreation Department's central irrigation system uses sub-metering and real-time data collection to monitor for leaks, line breaks, and malfunctions. The system automatically shuts down when leaks are detected, then automatically generates reports for these occurrences so they may be followed up by field technicians.

5.5 Monitoring of Effectiveness and Efficiency – NTMWD Member City and Customer Annual Water Conservation Report

The City of Plano will complete the NTMWD Member City and Customer Annual Water Conservation Report (**Appendix D)** by March 31 each year and will use this report to monitor the effectiveness and efficiency of the water conservation program and to plan conservation-related activities for the next year. The form records the water use by category, per capita municipal use, and unaccounted water for the current year and compares them to historical values. The annual water conservation report should be sent to NTMWD, which will monitor NTMWD Member Cities' and Customers' water conservation trends.

The City of Plano will consider using the Texas Water Development Board's Water Conservation Tracking Tool to assess existing water conservation initiatives and potential future initiatives.

5.6 Water Conservation Implementation Report

The TCEQ-required Water Conservation Plan Annual Implementation Report (TWDB Form No. 1966) is due to the TCEQ by May 1 of every year. This report lists the various water conservation strategies that have been implemented, including the date the strategy was implemented. The report also calls for the five-year and ten-year per capita water use goals from the previous water conservation plan. The reporting entity must answer whether or not these goals have been met and if not, why not. The amount of water saved is also requested

6. CONTINUING PUBLIC EDUCATION AND INFORMATION CAMPAIGN

The public education and information campaign on water conservation is carried out primarily by the Water Education Coordinator, a full-time staff member within the Sustainability and Environmental Education Division (SEED) of the Environmental Health and Sustainability Department. SEED's mission is to educate and engage the community in sustainable practices and environmental stewardship.

The Water Education Coordinator works with SEED staff and other City of Plano staff to develop classes, workshops, events, presentations, exhibits, communications campaigns, rebate programs and other resources that promote efficient water use. SEED notifies local organizations, schools, and civic groups that its staff and NTMWD's staff are available to provide presentations on the importance of water conservation and ways to save water.

The Water Education Coordinator develops and maintains a website designed to educate residents on the importance of water conservation and ways to save water. This includes access to real-time water use data through the Customer & Utility Services online portal, recommended seasonal watering guidelines and schedules and links to other helpful resources, including the TWDB, TCEQ, EPA WaterSense and others.

The Water Education Coordinator develops utility bill inserts, electronic and print newsletter articles and social media campaigns to share water conservation information, garner trust and encourage interaction. These include material developed by the Environmental Health and Sustainability Department, Communication and Media Relations Departments, and material obtained from the TWDB, the TCEQ, EPA WaterSense, and other sources. The City of Plano encourages local media coverage of water conservation issues and the importance of water conservation.

The Water Education Coordinator utilizes "Water IQ: Know Your Water", "Water4Otter" "Water My Yard" and other public education materials produced by the NTMWD as appropriate for targeted audiences. The following websites Texas Smartscape (www.txsmartscape.com), Water Is Awesome (www.waterisawesome.com., Texas A&M AgriLife (Water – Texas A&M Agrilife Extension Service (tamu.edu) as well as other regional resources, are used to as professional references to make water conservation brochures and other materials available to the public.

The Water Education Coordinator and the SEED staff actively promote water conservation with the use of evapotranspiration (ET)-based weekly watering advice and recommendations. Landscapes frequently require less watering than the year-round water schedule allows. This measure can be particularly useful for customers using automated landscape irrigation systems. Services used include but are not limited to:

- Water My Yard – Water my Yard is 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. Sponsored by NTMWD and Texas A&M AgriLife Extension Service (WaterMyYard.org).

- Water Is Awesome Weekly Watering Advice – Weekly provides 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. Irrigation recommendations are sent out via email and text on a weekly basis, detailing the required inches of water and the corresponding

duration in minutes for applying that volume of water through spray, rotor, and multi-stream sprinklers. Advice service is available for all of North Central Texas and sponsored by DWU (Dallas Water Utilities) and TRWD. (https://waterisawesome.com/weekly-watering-advice).

The Water Education Coordinator develops and maintains partnerships with regional and national like-minded entities. These include the Water Efficiency Network of North Texas (WENNT), Texas A&M AgriLife, the Dallas Irrigation Association, the North Central Texas Council of Governments (NCTCOG), EPA WaterSense, American Water Works Association (AWWA), and others.

SEED offers free classes and workshops, including Sprinkler Spruce Up workshops, Fix-a-Leak workshops, and additional seasonal classes on water-efficient gardening and other topics. The Water Education Coordinator and SEED staff will host “pop-up” water education events. These events aim to encourage water-efficient practices, distribute literature on water conservation, and raise awareness and maintenance through promotional items.

SEED maintains a set of online learning modules, which allow users to work through interactive online courses at their convenience. One of these focuses on DIY residential sprinkler repairs. SEED is piloting additional online learning options, including webinars and video clips.

SEED hosts an annual WaterWise Landscape Tour. Residents can visit beautiful, sustainable Plano landscapes that thrived in the summer heat with minimal irrigation. This event introduces attendees to plants and practices that are suitable for North Texas as well as resources to help them incorporate those plants and practices into their own yards.

SEED promotes and participates in the National Wildlife Habitat Garden for WildlifeTM program. This campaign advocates sustainable gardening techniques such as eliminating the use of chemical pesticides and fertilizers, conservation of water, and the planting of native species. This program is open to homeowners, schools, and private and public institutions.

The City of Plano is a multi-year award-winning EPA WaterSense partner. SEED continues to strive for award-worthy excellence by promoting EPA WaterSense campaigns, resources, and products.

The Water Education Coordinator oversees the Water Conservation Incentive Program. This includes free conservation items for City of Plano residents and the Water Rebate Program. See Appendix C for details and guidelines.

In addition, trained water meter technicians provide face-to-face communication with residents concerning proper irrigation system design and operation and other conservation practices.

7. WATER RATE STRUCTURE

The City of Plano will bill customers using a water rate structure intended to encourage water conservation and discourage excessive water use. See City of Plano Code of Ordinances §21-147 establishing an increasing block tier rate for domestic and irrigation water use.

8. OTHER WATER CONSERVATION MEASURES

8.1 NTMWD System Operation Plan

Member Cities and Customers of NTMWD purchase treated water from NTMWD and do not have surface water supplies requiring implementation of a system operation plan. NTMWD's permits do allow some coordinated operation of its water supply sources, and NTMWD is seeking additional water rights for coordinated operation to optimize its available water supplies.

8.2 Reuse and Recycling of Wastewater

The City of Plano does not own or operate its own wastewater treatment plants. The wastewater is treated by NTMWD. NTMWD currently has the largest wastewater reuse program in the state. NTMWD also provides treated effluent from its wastewater treatment plants available for direct reuse for landscape irrigation and industrial use. In Plano, Pecan Hollow Golf Course, Los Rios Park (currently not active but is in place for future opportunity), and the PIT Soccer Complex use or can use wastewater effluent for irrigation.

8.3 Ordinances, Plumbing Codes, or Rules on Water-Conserving Fixtures

State and federal standards have 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, and 3.0 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. These state and federal standards assure that all new construction and renovations will use water-conserving fixtures. As it deems appropriate, the City of Plano will continue to implement ordinances, plumbing codes, and rules for water conserving fixtures as they evolve through relevant building codes and State of Texas requirements. The current plumbing code is adopted in the City of Plano Code of Ordinances §§ 6-236 - 6-239.

8.4 Landscape Water Management Measures

The City of Plano adopts the following basic landscape water conservation measures as required by NTMWD:

- Per the Water Waste; Excess Flow Ordinance, the City of Plano restricts irrigation with sprinklers between the hours of 10 am to 6 pm from April 1 to October 31 of each year. To protect public safety during a freeze event, the City of Plano restricts irrigation with sprinklers any time other than between the hours of 10 am to 6 pm from November 1 to March 31 of each year.

- The City of Plano encourages limiting irrigation with sprinklers to a maximum of twice per week between April 1 and October 31 when not in a drought stage that further limits watering days.

- The City of Plano encourages limiting irrigation with sprinklers to no more than one day per week between November 1 and March 31.

- The City of Plano encourages customers to adhere to designated watering days based on the last digit of their service address.

Service Address	Spring/Summer (April 1 to October 31)	Fall/Winter (November 1 to March 31)
Even (Ends in 0,2,4,6, or 8)	Mondays and Thursdays	Thursdays
Odd (Ends in 1,3,5,7, or 9)	Tuesdays and Fridays	Tuesdays

No person or operation shall cause or permit the flow of excess or fugitive water onto any adjacent property or public right-of-way. This includes watering impervious surfaces and watering during a precipitation or freeze event as stated in the City of Plano Code of Ordinances §21-52.

- The City of Plano discourages the planting of cool season grasses.
- The City of Plano discourages the planting of new landscapes or replacement of existing landscapes during summer months.

Soaker hoses should be utilized only within a tree's dripline or within 24" of a foundation. The City has adopted landscape regulations as part of its Zoning Ordinance in Article 3.1200 (Landscaping Requirements). The requirements are intended to minimize waste in landscape irrigation by requiring:

- Submission of a water budget with landscape plans for new commercial development
- Rain sensors on irrigation systems
- Irrigation system zones to water plants based on similar water needs
- Trees and plants suitable for local soil and climate conditions
- Landscape designs that conserve water through creative design and that comply with the following principles:
    - Soil protection and improvement
    - Careful selection and design of turf areas
    - Use of site-appropriate plan materials with water conservation in mind
    - Use of mulch around all plant materials and areas that are not turf or hardscape

In addition, the adopted plumbing codes in the City of Plano Code of Ordinances §6-561 require:

- New irrigation systems meeting detailed requirements of use of drip and low flow irrigation, distribution uniformity (75 percent), low-angle spray heads, designs in accordance with TCEQ
- No spray heads allowed between street and sidewalk planting areas of both residential and commercial properties

- Installation and inspection for irrigation systems that include an evaluation of the system for the distribution uniformity
- Rain and freeze sensors are required on all new irrigation systems. Rain and freeze sensors must be maintained to function properly

8.5 Additional Water Conservation Measures

- Promote proper maintenance of irrigation systems and sprinklers
- Promote the use of drip irrigation that is properly designed, installed and scheduled.
- Encourage customers to only seek the services of TCEQ licensed irrigators when they pursue contracted irrigation system design or repair. Partner with the Dallas Irrigation Association to promote vetted resources and contractors.
- “At home” car washing can be done only when using a water hose with a shut-off nozzle.
- Charity car washes are allowed only if they use hoses with shut-off nozzles.
- Promote outdoor water efficiency on website, including water conserving irrigation systems.
- Customer & Utility Services, a division of the Finance department, reads water meters using advanced metering infrastructure (AMI) technology. This system can provide hourly water usage data that customers can view through their online portal account. The City has continuous outreach programs and resources designed to educate customers how to use their data to reduce water waste and identify leaks.
- The Water Education Coordinator will continue working in conjunction with the Finance Department to create educational materials to inform customers about utilizing online meter data for monitoring and minimizing water usage, addressing typical plumbing leaks, and adopting more effective outdoor irrigation techniques. Additionally, efforts will be made by the Water Education Coordinator to reach out to residential customers with excessively high water consumption to inform them of their water usage and offer prompt education and solutions to mitigate their water consumption.
- The City of Plano will consider adding ordinances that regulate water use for splash pads, car washes and ponds. Splash pads and car washes will require recirculating systems, and ponds will be prohibited from using potable water.

8.6 Rebates and Free Distribution of Water Conserving Devices

The Water Conservation Incentive Program is described in **Appendix C**. The items may change from time to time as the program evolves. The appendix will be modified as these changes occur.
The City offers partial credit for leak repair with sufficient documentation.

8.7 Requirement for Water Conservation Plans by Wholesale Customers

The NTMWD Model Plan requires that every contract for the wholesale sale of water by Member Cities and/or Customers that is entered into, renewed, or extended after the adoption of this water conservation plan include a requirement that the wholesale customer and any wholesale customers of that wholesale customer develop and implement a water conservation plan meeting the requirements of Title 30, Part 1, Chapter 288, Subchapter A, Rule 288.2 of the Texas Administrative Code. The requirement will also extend to each successive wholesale customer in the resale of the water. The Colony is the only active wholesale customers of Plano’s water system.

9. IMPLEMENTATION OF THE DROUGHT CONTINGENCY & WATER EMERGENCY RESPONSE PLAN

A drought is defined as 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. In the absence of drought response measures, water demands tend to increase during a drought due to the need for additional outdoor irrigation. The severity of a drought depends on the degree of depletion of supplies and on the relationship of demand to available supplies. The NTMWD considers a drought to end when all of its supply reservoirs refill to the conservation storage pool.

City of Plano Code of Ordinances §§ 21-53 - 21-60.2 establish procedures and criteria for declaring a water emergency and implementing and terminating drought response stages, procedures for requesting variances, and establishing administrative remedies and fees and criminal penalties for violating the restrictions.

10. COORDINATION WITH THE REGIONAL WATER PLANNING GROUP AND NTMWD

The City of Plano will send a copy of this water management plan, the resolution adopting the plan, and the water utility profile to the NTMWD and the Chair of the Region C Water Planning Group.

11. REVIEW AND UPDATE OF WATER MANAGEMENT PLAN

As required by TCEQ rules, the City of Plano will review the Water Management Plan, including the Drought Contingency and Water Emergency Response Ordinance, every five years. The plan will be updated as appropriate based on new or updated information.

12. IMPLEMENTATION AND ENFORCEMENT OF THE WATER MANAGEMENT PLAN

A resolution adopted by the City Council regarding the Water Management Plan on April 22, 2024. The following ordinances are also included as part of the Water Management Plan:

Landscape Water Management Regulation – City of Plano Zoning Ordinance Article 17: Landscaping and Tree Preservation

Illegal Water Connections and Theft of Water – City of Plano Code of Ordinances §21-17 and §21-18

Water Rates - City of Plano Code of Ordinances §21-147

Drought Contingency & Water Emergency Response - City of Plano Code of Ordinances §§21-53 -21-60.2

Plumbing Code - City of Plano Code of Ordinances §§6-236 - 6-239 and §6-561

Water Waste; Excess Flow - City of Plano Code of Ordinances §21-47 through §21-52

APPENDIX A
LIST OF REFERENCES

(1) Texas Commission on Environmental Quality Water Conservation Implementation Report. https://www.tceq.texas.gov/permitting/water_rights/wr_technical-resources/conserve.html

(2) Title 30 of the Texas Administrative Code, Part 1, Chapter 288, Subchapter A, Rules 288.20, 288.2, and 288.5, downloaded from https://texreg.sos.state.tx.us/public/readtac$ext.ViewTAC?tac_view=4&ti=30&pt=1&ch=288, April 2023

(3) 2024 North Texas Municipal Water District Water Conservation Plan https://www.ntmwd.com/documents/2024-ntmwd-water-conservation-plan-pdf/ January 2024

(4) 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

(5) Texas Water Development Board, Texas Commission on Environmental Quality, Water Conservation Advisory Council: Guidance and Methodology for Reporting on Water Conservation and Water Use, December 2012

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

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

APPENDIX B
WATER CONSERVATION UTILITY PROFILE

Texas Water Development Board

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

CONTACT INFORMATION

Name of Utility: CITY OF PLANO

Public Water Supply Identification Number (PWS ID): TX0430007

Certificate of Convenience and Necessity (CCN) Number: 10191

Surface Water Right ID Number:

Wastewater ID Number: 20070

Contact: First Name: Genesis Last Name: Sturm

Title: Public Works Business Manager

Address: 4120 W. Plano Pkwy City: Plano State: TX

Zip Code: 75093 Zip+4: Email: gsturm@plano.gov

Telephone Number: 9727694490 Date:

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

Coordinator: First Name: Andrea Last Name: Chick

Title: Sr. Water Conservation Coordinator

Address: 4200 W. Plano Pkwy City: Plano Zip Code: 75093

Email: achick@plano.gov Telephone Number: 972-769-4381

Regional Water Planning Group: C

Groundwater Conservation District:

Our records indicate that you:

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

☑ Have 3,300 or more retail connections

☐ Have a surface water right with TCEQ

A. Population and Service Area Data

1. Current service area size in square miles: 72

Texas Water Development Board

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

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

Year	Historical Population Served By Retail Water Service	Historical Population Served By Wholesale Water Service	Historical Population Served By Wastewater Water Service
2023	287,492	5,708	287,492
2022	285,150	5,700	285,150
2021	286,980	5,700	286,980
2020	288,800	5,700	288,800
2019	286,400	8,142	286,400

3. Projected service area population for the following decades.

Year	Projected Population Served By Retail Water Service	Projected Population Served By Wholesale Water Service	Projected Population Served By Wastewater Water Service
2030	310,900	5,708	310,900
2040	321,000	5,708	321,000
2050	331,000	5,708	331,000
2060	340,000	5,708	340,000
2070	348,000	5,708	348,000

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

Population projected by the City of Plano Planning Department. Using the 2020 Census count as a baseline, the 2030 figure is based on known housing projects that we expect to be completed by the end of the decade. Subsequent years are forecasted with a more or less steady level of housing construction, but expecting a slight decline over time due to limited space for development/redevelopment.

Texas Water Development Board

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

B. System Input

System input data for the previous five years.

Total System Input = Self-supplied + Imported– Exported

Year	Water Produced in Gallons	Purchased/Imported Water in Gallons	Exported Water in Gallons	Total System Input	Total GPCD
2023	0	23,042,186,000	224,152,600	22,818,033,400	217
2022	0	22,057,250,450	173,493,270	21,883,757,180	210
2021	0	20,502,063,587	222,802,920	20,279,260,667	194
2020	0	20,799,951,952	151,478,980	20,648,472,972	196
2019	0	20,521,849,151	159,695,700	20,362,153,451	195
Historic Average	0	21,384,660,228	186,324,694	21,198,335,534	202

C. Water Supply System

1. Designed daily capacity of system in gallons: 239,590,000

2. Storage Capacity

   2a. Elevated storage in gallons: 17,500,000

   2b. Ground storage in gallons: 68,000,000

Texas Water Development Board

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

D. Projected Demands

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

Year	Population	Water Demand (gallons)
2025	305,762	21,571,965,584
2026	307,972	21,497,415,019
2027	310,182	21,419,404,067
2028	312,392	21,337,932,727
2029	314,602	21,253,001,000
2030	319,042	21,453,110,425
2031	320,052	21,415,189,689
2032	321,062	21,377,111,833
2033	322,072	21,338,879,375
2034	323,082	21,300,494,814

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

Population estimates and consumption include the total service population including The Colony. Estimated Plano population is assumed to grow 2,210 people each year using the 2020 actual of 288,800 and the 2030 estimate of 310,900. For estimates beyond 2030, the population is assumed to grow by 1,010 people each year to reach the estimated 2040 population of 321,000.

Texas Water Development Board

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

E. High Volume Customers

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

Customer	Water Use Category	Annual Water Use	Treated or Raw
Plano Independent School District	Institutional	305,956,400	Treated
Stack Infrastructure USA LLC	Commercial	75,883,800	Treated
Legacy West Investors LP	Commercial	74,123,000	Treated
5765 Bozeman TX Owner LP	Commercial	71,307,500	Treated
Lurin Real Estate Holdings LXI	Institutional	66,519,100	Treated

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

Customer	Water Use Category	Annual Water Use	Treated or Raw
The Colony	Municipal	224,000,000	Treated

F. Utility Data Comment Section

Additional comments about utility data.

Texas Water Development Board

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

Section II: System Data

A. Retail Water Supplier Connections

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

Water Use Category Type	Total Retail Connections (Active + Inactive)	Percent of Total Connections
Residential - Single Family	73,642	57.01 %
Residential - Multi-Family	44,245	34.25 %
Industrial	25	0.02 %
Commercial	9,765	7.56 %
Institutional	1,488	1.15 %
Agricultural	0	0.00 %
Total	129,165	100.00 %

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

	Net Number of New Retail Connections						
Year	**Residential - Single Family**	**Residential - Multi-Family**	**Industrial**	**Commercial**	**Institutional**	**Agricultural**	**Total**
2023	78	52	0	120	19	0	269
2022	243	0	2	116	13	0	374
2021	250	3	0	92	38	0	383
2020	306	0	0	39	9	0	354
2019	186	0	0	0	184	0	370

Texas Water Development Board

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

B. Accounting Data

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

Year	Residential - Single Family	Residential - Multi-Family	Industrial	Commercial	Institutional	Agricultural	Total
2023	10,441,379,400	144,610,180	18,993,010	6,920,444,460	1,431,404,440	0	18,956,831,490
2022	10,283,145,640	145,624,900	18,997,220	6,621,336,740	939,705,570	0	18,008,810,070
2021	8,887,920,450	138,937,710	15,151,630	5,859,807,900	599,186,460	0	15,501,004,150
2020	9,803,872,460	150,096,380	17,318,800	5,928,881,690	643,707,690	0	16,543,877,020
2019	9,242,984,930	145,351,820	21,652,330	6,089,821,110	704,478,950	0	16,204,289,140

C. Residential Water Use

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

Year	Total Residential GPCD
2023	101
2022	100
2021	86
2020	94
2019	90
Historic Average	94

Texas Water Development Board

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

D. Annual and Seasonal Water Use

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

Month	Total Gallons of Treated Water				
	2023	2022	2021	2020	2019
January	994,586,970	1,004,392,090	917,548,160	912,056,470	849,123,350
February	865,889,850	882,873,210	844,815,290	835,176,300	826,138,490
March	890,406,540	897,959,980	912,859,370	827,196,130	800,415,320
April	1,093,495,860	1,060,613,380	1,075,054,040	893,605,970	1,008,693,950
May	1,357,426,220	1,436,384,460	1,062,627,780	1,188,939,140	1,062,939,640
June	1,564,573,350	1,639,626,120	1,083,690,110	1,609,270,210	1,244,226,140
July	2,022,797,060	2,337,556,380	1,543,304,320	2,039,950,710	1,614,344,590
August	2,470,069,740	2,544,485,270	1,808,946,480	2,238,339,210	2,230,277,370
September	2,629,288,560	1,995,174,630	1,914,746,810	1,865,367,960	2,372,888,870
October	2,102,846,460	1,907,947,440	1,734,831,480	1,590,190,300	2,126,523,600
November	1,348,653,990	1,322,404,530	1,331,279,570	1,306,387,200	1,177,084,780
December	1,054,887,790	979,392,580	1,109,894,240	1,071,542,240	922,180,740
Total	18,394,922,390	18,008,810,070	15,339,597,650	16,378,021,840	16,234,836,840

Texas Water Development Board

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

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

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

3. Summary of seasonal and annual water use.

	Summer RETAIL (Treated + Raw)	Total RETAIL (Treated + Raw)
2023	6,057,440,150	18,394,922,390
2022	6,521,667,770	18,008,810,070
2021	4,435,940,910	15,339,597,650
2020	5,887,560,130	16,378,021,840
2019	5,088,848,100	16,234,836,840
Average in Gallons	5,598,291,412.00	16,871,237,758.00

Texas Water Development Board

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

E. Water Loss

Water Loss data for the previous five years.

Year	Total Water Loss in Gallons	Water Loss in GPCD	Water Loss as a Percentage
2023	3,303,728,428	31	13.44 %
2022	3,358,142,652	33	15.48 %
2021	3,562,792,431	34	17.76 %
2020	3,025,456,781	29	14.72 %
2019	3,278,089,366	32	16.21 %
Average	3,305,641,932	32	15.52 %

F. Peak Day Use

Average Daily Water Use and Peak Day Water Use for theprevious five years.

Year	Average Daily Use (gal)	Peak Day Use (gal)	Ratio (peak/avg)
2023	50,397,047	65841740	1.3065
2022	49,339,205	70887693	1.4367
2021	42,026,294	48216749	1.1473
2020	44,871,292	63995218	1.4262
2019	44,479,005	55313566	1.2436

G. Summary of Historic Water Use

Water Use Category	Historic Average	Percent of Connections	Percent of Water Use
Residential - Single Family	9,731,860,576	57.01 %	57.10 %
Residential - Multi-Family	144,924,198	34.25 %	0.85 %
Industrial	18,422,598	0.02 %	0.11 %
Commercial	6,284,058,380	7.56 %	36.87 %
Institutional	863,696,622	1.15 %	5.07 %
Agricultural	0	0.00 %	0.00 %

Texas Water Development Board

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

H. System Data Comment Section

Section III: Wastewater System Data

A. Wastewater System Data

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

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

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

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

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Texas Water Development Board

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

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

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

5. Could treated wastewater be substituted for potable water?

○ Yes ○ No

B. Reuse Data

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

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

Texas Water Development Board

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

C. Wastewater System Data Comment

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

APPENDIX C
WATER CONSERVATION INCENTIVE PROGRAM

The Water Conservation Incentive Program includes two components, as outlined below:

1. Free Water Conservation Items

The City of Plano offers residents free water conservation and quality items. These items are available at the Customer and Utility Service counter at the Municipal Center and at the Sustainability and Environmental Education office from 8am to 5pm, Monday through Friday. The following list is an example of items offered, contingent upon their availability, seasonality, and ongoing events or promotions held throughout the year.

- Toilet Leak Detection Tablets: These dye tablets are used to check for a leak between the toilet tank and bowl.
- Drain Snake: A thin, flexible cable that you insert in an opening to break up or remove a clog in pipes.
- Shower/Drain Covers: Used to prevent hair or other debris from entering sewer and causing pluming problems.
- Shower Timer: A simple and effective tool to help customers shorten showers, reduce water usage and save money.
- Dish/Pan Squeegee Scraper: Used to remove FOG from pans and dishes prior to rising – keeps FOG from entering sewer and clogging pipes.
- FOG Bags: Storage bags for FOG – keeps FOG from entering sewer and clogging pipes.
- Pet Waste Dispenser and Refill Bags: Protects Stormwater runoff and water quality.

Other items are available seasonally, such as soil moisture meters, faucet covers for winter, and garden kneeling pads embossed with water-efficient landscaping practices.

2. Water Conservation Rebate Program

Program Eligibility and Guidelines

Eligibility:

- Participant must currently own their home and have a City of Plano water
- utility account in good standing for the property where installation of
- qualifying item occurred.
- Eligibility is limited to residential homes only; commercial buildings are not
- eligible.
- To meet eligibility guidelines, items should be purchased from a retailer
- located within the City of Plano.
- The City of Plano reserves the right to terminate or modify the water
- conservation rebate program at any time.

Process:

- Resident may apply online or mail the receipt and application to City of Plano Water Conservation Rebate Program located at 4200 W. Plano Parkway, Plano, TX 75093.

- Completed applications must be received by the City of Plano within 120 days of purchase of eligible water conserving item.
- Utility credits will be processed in the order they are received on a first-come first-served basis.
- The City issues a credit on resident's utility bill within 30 days of receipt of completed application.

WaterSense Approved, High Efficiency Toilets (HET's)

Eligibility:

- Only homes built in 1994 or earlier are eligible for the program.
- Only new, EPA WaterSense labeled high efficiency models of toilets (HET) will be eligible for utility credit.
- New high efficiency qualifying toilet (average of 1.28 gallons per flush) must replace an older, inefficient toilet (using greater than 1.6 gallons per flush). Residence must not already have low-flow or high efficiency toilets (HET's) installed.

Process:

- Resident must first purchase and install qualified toilet from local retailer.
- Rebate Applications are available online at www.livegreeninplano.com or www.plano.gov/waterrebates.
- Once installed, the resident must submit a copy of the receipt and application within 120 days of purchase date.
- Complete application will be sent to City of Plano Water Conservation Rebate Program by mail, email, fax, or hand delivery.
- Credits will be issued to the utility bill for the following amounts:
  - $100 for the first toilet
  - $75 for the second toilet
  - $50 for the third toilet
- If required documentation has not been provided, rebate will be denied.

Rain/Freeze Sensor and EPA WaterSense Labled Smart/ET Controllers

Eligibility:

- New irrigation systems are not eligible for this program.
- Irrigation system must not already have a rain and freeze sensor device installed.
- Only new rain and freeze sensors and controllers purchased from a retailer located within the City of Plano will be eligible for rebate. The City of Plano does not require an irrigation permit to retrofit an irrigation system for a rain and freeze sensor or a controller.

Process:

- Resident must select, purchase, and install rain/freeze sensor or controller from a retailer within Plano.
- Rebate Applications are available online at www.livegreeninplano.com or www.plano.gov/waterrebates.
- Resident must mail in rebate application and proof of purchase no later than 120 days from date of purchase.
- If installed by a licensed irrigation professional, resident must submit proof of installation, including license number of irrigation professional.
- Complete application will be sent to City of Plano Water Conservation Rebate Program by mail, e-mail, fax or hand delivery.

- The City of Plano will issue a $50 water utility credit to resident's utility bill for the purchase and installation of a rain freeze sensor or controller.
- If a licensed irrigation profession installed the device and proof of the installation including the irrigator's license number, then a total of $75 water utility credit will be issued to the resident's utility bill.
- If required documentation has not been provided, rebate will be denied.

Pressure Reducing Valve (PRV)

Eligibility:

- Eligibility is limited to single-family detached homes, townhomes, duplexes and condos that were built before January 1, 2013.
- Apartments and commercial properties are not eligible at this time.
- Applicant must currently own the dwelling and have a City of Plano water utility account in good financial standing for the property where the PRV is installed.
- Water Pressure must exceed 80 psi according to the PRV Eligibility Map at plano.gov/PRVMap.
- PRV should reduce pressure below 80 psi at residence. If it is not possible to reduce water pressure below 80 psi, PRV should be installed according to manufacturer's guidelines for maximum pressure reduction.
- PRV must reduce pressure to the house. PRVs that reduce pressure only to irrigation systems are not eligible for rebate.
- Limit one PRV rebate per residential address.
- PRV must be installed by a licensed plumber that is registered in the City of Plano.
- PRV should be purchased from a retailer located within the City of Plano.
- If the installation of the valve includes installing expansion tanks at the water heaters, then a Miscellaneous Simple Permit Application should be submitted to the City of Plano Building Inspections Department prior to installation. If the installation of the PRV does not include installation of expansion tanks, then no permit is necessary. Miscellaneous Simple Permit Application can be downloaded from www.buildinginspections.org.

Process:

- The City of Plano will issue a rebate for 50% of the PRV, associated parts, and installation costs. The maximum PRV rebate is $500. Tax is not included.
- Rebate Applications are available online at www.livegreeninplano.com or www.plano.gov/waterrebates.
- Completed applications and itemized invoice for PRV, associated parts, and installation must be received by the City of Plano within 120 days of the installation of the PRV. Plumber's license number and installation date must be on the invoice.
- Complete application will be sent to City of Plano Water Conservation Rebate Program by mail, e-mail, fax or hand delivery.

APPENDIX D
NTMWD MEMBER CITY AND CUSTOMER ANNUAL WATER CONSERVATION REPORT

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

Contact Information

TWDB Survey Number:	**685400**
Name of System:	**City of Plano**
PWS ID:	**TX0430007**
Contact Name:	**Genesis Sturm**
Title:	**Public Works Business Manager**
Email Address:	**gsturm@plano.gov**
Telephone Number:	**972-769-4490**
Year Covered:	**2023**
Days in Year	**365**

Water System Information

Estimated Water Service Area Population:	293,208	***Source:***	*City of Plano Planning Department*
# of Backflow Preventers:	35,745		

Peak Day Usage

Delivery Point	**Total System**	**1**	**2**	**3**	**4**	**5**
Peak Day (MG)	126.1	OOS	10.0	12.9	37.1	76.9
Average Day (MG)	63.1		6.0	4.8	14.7	37.7
Peak/Average Day Ratio	2.0		1.7	2.7	2.5	2.0
Firm Pumping Capacity (MGD)	249.8	OOS	9.3	36.4	54.6	132.4
Storage Volume (MG)	68.0	OOS	2.5	7.5	16.0	42.0

Authorized Consumption and Water Loss

Total System Input Volume:	22,818		
Billed Metered:	18,396		
Billed Unmetered (MG):		***Description:***	*All billed connections are metered.*
Unbilled Metered (MG):	510	***Description:***	*Majority of water quality flushing, fire department use, dead end main flushing,cip use.*
Unbilled Unmetered (MG):	285	***Description:***	*1.25% of total system input volume minus wholesale*
Total Authorized Consumption:	19,191		
Water Loss (MG):	3,627		
Water Loss (gpcd):	34		
Water Loss (percent):	16%		

Per Capita Use (Gallons per person per day)

Total Use (MG)	22,818
Residential Use (MG)	10,373
Municipal Use (MG)	22,805
ICIM Use (MG)	4,717
Total Per Capita Use (gpcd)	213
Residential Per Capita Use (gpcd)	97
Municipal Per Capita Use (gpcd)	213
ICIM Per Capita Use (gpcd)	44

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

	5-Year Goal	10-Year Goal	
Total GPCD	195	190	*Total GPCD = (Total Gallons in System / Permanent Population) / 365*
Residential GPCD	90	88	*Residential GPCD = (Gallons Used for Residential Use / Residential Population) / 365*
Water Loss (GPCD)	24	21	*Water Loss GPCD = (Total Water Loss / Permanent Population) / 365*
Water Loss (Percentage)	12%	11%	*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	Wholesale	Direct Reuse
January	536.06	11.19	13.87	345.97	0.62	-	86.89	48.15	-
February	453.87	10.00	15.11	325.45	0.67	-	60.83	14.09	-
March	453.73	9.99	20.58	335.85	0.70	-	69.62	14.63	-
April	603.08	10.02	15.61	334.71	0.77	-	129.35	14.07	-
May	756.31	11.13	17.90	344.87	1.01	-	226.26	15.66	-
June	876.04	11.91	16.67	364.58	1.31	-	294.14	15.33	-
July	1,157.77	13.22	17.55	405.89	1.89	-	426.58	17.27	-
August	1,461.31	15.66	25.54	423.32	1.84	-	542.51	17.22	-
September	1,521.78	15.81	29.75	418.04	1.61	-	642.41	18.07	-
October	1,151.21	13.96	25.99	383.40	1.00	-	527.41	17.89	-
November	697.07	11.71	18.88	335.44	0.73	-	284.93	15.72	-
December	559.74	10.00	14.97	309.92	0.68	-	159.67	16.05	-
TOTAL	**10,227.96**	**144.61**	**232.42**	**4,327.42**	**12.83**	**-**	**3,450.60**	**224.15**	**-**
# of Connections (or Units)	***73,130.00***	***1,943.00***	***572.00***	***6,728.00***	***20.00***	**-**	***4,470.00***		**-**

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

Month	Deliveries from NTMWD	Other Sources							Total Supplies
January	1,285.28								1,285.28
February	1,040.51								1,040.51
March	1,319.52								1,319.52
April	1,548.71								1,548.71
May	1,808.00								1,808.00
June	2,101.89								2,101.89
July	2,580.73								2,580.73
August	3,210.59								3,210.59
September	2,763.51								2,763.51
October	2,311.46								2,311.46
November	1,655.83								1,655.83
December	1,416.17								1,416.17
TOTAL	**23,042.19**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**23,042.19**

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

Month	NTMWD Delivery Point								Total System
	1	2	3	4	5				
January	-	129.73	119.57	325.43	710.54				1,285.28
February	-	108.16	117.55	264.44	550.36				1,040.51

March	-	151.62	123.10	325.11	719.69				1,319.52
April	-	151.04	134.32	382.36	880.99				1,548.71
May	-	138.65	139.61	419.60	1,110.13				1,808.00
June	-	182.55	168.95	506.62	1,243.77				2,101.89
July	-	201.77	219.32	629.15	1,530.50				2,580.73
August	-	265.01	240.60	848.92	1,856.07				3,210.59
September	-	249.88	129.74	641.42	1,742.47				2,763.51
October	-	232.08	119.88	468.58	1,490.93				2,311.46
November	-	199.99	112.82	311.10	1,031.93				1,655.83
December	-	166.68	126.44	242.12	880.93				1,416.17
TOTAL	**-**	**2,177.15**	**1,751.88**	**5,364.85**	**13,748.30**	**-**	**-**	**-**	**23,042.19**

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

	Sale 1	Sale 2	Sale 3	Sale 4	Sale 5	Sale 6	Sale 7	Sale 8	Total Wholesale Sales
Buyer Name	***The Colony***								
Type of Water	***Surface Water***								
Name of Source	***Lavon Lake/Resevoir***								
Estimated Water Service Area Population	***5,700.00***								**5700**
January	48.15	-	-	-	-	-	-	-	**48.15**
February	14.09	-	-	-	-	-	-	-	**14.09**
March	14.63	-	-	-	-	-	-	-	**14.63**
April	14.07	-	-	-	-	-	-	-	**14.07**
May	15.66	-	-	-	-	-	-	-	**15.66**
June	15.33	-	-	-	-	-	-	-	**15.33**
July	17.27	-	-	-	-	-	-	-	**17.27**
August	17.22	-	-	-	-	-	-	-	**17.22**
September	18.07	-	-	-	-	-	-	-	**18.07**
October	17.89	-	-	-	-	-	-	-	**17.89**
November	15.72	-	-	-	-	-	-	-	**15.72**
December	16.05	-	-	-	-	-	-	-	**16.05**
TOTAL	**224.15**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**224.15**

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

	Sale 1	Sale 2	Sale 3	Sale 4	Sale 5	Sale 6	Sale 7	Sale 8	Total Industrial Production Facilities Sales
Buyer Name	***Stewart Systems***	***1331 LTD***	***Regal Research***	***Dallas Morning News***	***LSC4 Texas***				
Type of Water	***Surface Water***	***Surface Water***	***Surface Water***	***Surface Water***	***Surface Water***				
Name of Source	***Lavon Lake/Resevoir***	***Lavon Lake/Resevoir***	***Lavon Lake/Resevoir***	***Lavon Lake/Resevoir***	***Lavon Lake/Resevoir***				
January	0.02	0.00	0.05	0.51	0.06				**0.64**
February	0.03	0.00	0.04	0.55	0.09				**0.71**
March	0.04	0.02	0.04	0.56	0.13				**0.80**
April	0.03	0.04	0.10	0.67	0.09				**0.94**
May	0.03	0.04	0.13	0.93	0.10				**1.23**
June	0.03	0.04	0.14	1.51	0.10				**1.83**
July	0.03	0.05	0.55	2.22	0.10				**2.94**
August	0.04	0.05	0.37	2.28	0.15				**2.89**
September	0.03	0.04	0.55	2.05	0.15				**2.82**

October	0.03	0.00	0.50	1.43	0.17				**2.14**
November	0.13	0.00	0.22	0.81	0.04				**1.21**
December	0.17	0.04	0.04	0.53	0.07				**0.85**
TOTAL	**0.62**	**0.33**	**2.72**	**14.08**	**1.24**	-	-	-	**18.99**

Additional Information

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

• SEED continued to oversee the Corporate Sustainability Forum (CSF). It provides networking, information sharing, collaboration and support for staff tasked with oversight of sustainability initiatives and programs at Plano's large corporate campuses. The CSF met three times in 2023 and included approximately 30 individuals representing 15 corporations.
• The Commercial Waste and Recycling Division continued to oversee the Green Business Certification Program. It includes water efficiency as one of the five areas that small local businesses must demonstrate as part of their commitment to sustainable operations. There are currently 37 certified businesses.
• SEED continued to oversee the Green School Program, which was revitalized and thriving just before the pandemic. It recognizes PISD and private schools for their efforts to promote sustainable practices on their campuses. Participation picked back up in 2022, with 16 schools participating at the end of 2023.
• SEED partners with the Neighborhood Services Department when possible to do water-focused outreach for multi-family properties, particularly for lower-income and underserved audiences.
•SEED and the Water Education Coordinator work with NTMWD to connect ICIMs with Plummer,a contractor supplied by NTMWD, in order to initiate their services at the to reduce their water use.

Describe any Unusual Circumstances

The SEED Division transitioned to a new Water Education Coordinator in May of 2023.

Provide an Update on Progress in Implementation of Conservation Plan

Overview
The Water Education Coordinator, a full-time staff member within the Sustainability and Environmental Education Division (SEED) of the Environmental Health and Sustainability Department, is the City of Plano's designated Conservation Coordinator. SEED's mission is to educate and engage the community in sustainable behaviors and environmental stewardship. The Water Education Coordinator works with SEED staff and other City of Plano staff to develop and oversee webinars, classes, workshops, events, videos, lesson plans, communications campaigns, rebates, incentives and other resources that promote water quality, conservation and efficiency. SEED is known publicly as Live Green in Plano.

In 2023, the City of Plano once again earned recognition from EPA WaterSense, securing its fourth consecutive Sustained Excellence Award. This accolade follows previous wins in 2022, 2021, and 2020, adding to the city's impressive track record, which includes being named Promotional Partner of the Year in 2019 and 2018, as well as receiving the Excellence in Strategic Collaboration Award in 2017. Additionally, SEED, the city's environmental initiative, was honored with the 2023 Texas Environmental Excellence Award by the Texas Commission on Environmental Quality, the highest environmental honor in the state. SEED

What Conservation Measures are Planned for Next Year?

In 2024 and beyond SEED will:
• Continue to develop and improve webinars, classes, workshops, events, videos, lesson plans, communications campaigns and other resources that promote water quality, conservation and efficiency.
• Continue to provide and possibly expand water conservation rebates for qualifying residents.
• Partern with EnviroWorld to hold its tenth annual discounted rain barrel and compost bin sale.
• Bill customers using an increasing block rate structure intended to encourage conservation and discourage excessive water use and waste.
• Actively promote EPA WaterSense labeled products and campaigns, including "Fix-a-Leak Week," "Sprinkler Spruce Up Month," "Your Better Yard" and others.

• Tentatively host its twelfth annual WaterWise Landscape Tour with elements to promote region-appropriate, water conserving plants and landscaping practices.
• Promote the online learning module, “Water, Water Everywhere: A Guide to Sprinkler Repair,” and possibly budget to develop a new water-focused online learning module.
• Promote WaterMyYard.org and other resources that help residents improve irrigation efficiency.
• Encourage visits to the Environmental Education Center and the Nature Explore Trail, an interactive exhibit in the riparian habitat adjacent to the Environmental Education Center with educational signage on watershed protection. Both sites model sustainable behaviors.
• Work with HOAs, corporate and institutional partners to encourage water quality, conservation and efficiency on their properties and campuses.
• Increase efforts to work alongside the Neighborhood Services Department on outreach to multi-family properties and HOAs.
• Strive for excellence with the intent to receive further recognition through the Watermark Awards, EPA WaterSense Awards and other industry leaders.
• Share best practices and lessons learned at local, regional and national conferences.
• Partner with the NTMWD and others to offer water quality, conservation and efficiency resources and learning opportunities for all ages.
• Add pop-up events to educate residents on water quality and conservation and provide water conservation and quality items and literature.

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

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

Not at this time.

Other?

Historical Water Use Data for City of Plano

Year	Days in Year	Connections	Estimated Population	Deliveries from NTMWD (MG)	Other Supplies (MG)	Metered Sales by Category (Million Gallons)									
						Residential Single Family	Residential Multi-Family	Public/ Institutional	Commercial	Industrial	Agriculture	Metered Irrigation	Wholesale	Direct Reuse	Total
1990	365	41,017	127,885	10,814	0	6,197	0	133	3,462	34	0	0	9	0	9,835
1991	365	42,750	135,558	10,578	0	5,821	0	125	3,253	32	0	0	9	0	9,240
1992	366	45,454	143,692	10,631	0	6,363	0	136	3,557	35	0	0	10	0	10,101
1993	365	48,156	152,313	12,393	0	7,171	0	154	4,008	39	0	0	11	0	11,383
1994	365	51,152	161,452	12,397	0	7,250	0	155	4,052	39	0	0	11	0	11,507
1995	365	53,767	171,139	13,770	0	7,975	0	171	4,457	43	0	0	12	0	12,658
1996	366	57,047	180,552	15,341	0	9,083	0	194	5,077	49	0	0	14	0	14,417
1997	365	60,421	190,482	15,685	0	10,250	0	219	5,729	56	0	0	15	0	16,269
1998	365	64,769	200,958	20,380	0	12,408	0	266	6,935	67	0	0	19	0	19,695
1999	365	68,156	212,011	22,298	0	12,936	0	277	7,230	70	0	0	20	0	20,533
2000	366	70,782	222,030	23,823	0	12,837	0	375	7,169	32	0	0	73	0	20,487
2001	365	72,745	227,200	26,720	0	13,262	0	346	7,767	23	0	0	92	0	21,490
2002	365	74,002	233,700	22,459	0	11,636	0	253	7,034	42	0	0	82	0	19,047
2003	365	75,132	237,925	22,745	0	11,895	0	442	7,256	35	0	0	73	0	19,701
2004	366	76,108	243,500	22,149	0	10,734	0	292	7,397	40	0	0	98	0	18,561
2005	365	77,400	247,000	22,432	0	12,856	0	183	8,196	37	0	0	82	0	21,354
2006	365	78,600	252,950	23,524	0	12,837	0	375	7,153	32	0	0	73	0	20,470
2007	365	79,429	255,700	19,182	0	9,433	0	224	6,455	23	0	0	89	0	16,224
2008	366	79,990	263,900	23,024	0	11,605	0	376	7,553	33	0	0	106	0	19,674
2009	365	80,293	264,600	21,313	0	10,435	0	356	6,838	25	0	0	111	0	17,765
2010	365	80,685	266,600	23,110	0	11,591	0	493	7,308	34	0	0	118	0	19,544
2011	365	81,061	262,800	23,256	0	12,953	0	577	7,332	29	0	0	134	0	21,025
2012	366	81,612	265,400	21,273	0	11,728	0	393	6,638	21	0	0	135	0	18,914
2013	365	82,085	266,600	19,338	0	10,580	0	505	5,800	16	0	0	140	0	17,040
2014	365	82,700	270,900	17,518	0	8,988	0	446	5,190	20	0	0	142	0	14,786
2015	365	83,286	274,000	20,275	0	10,138	0	557	6,081	21	0	0	151	0	16,949
2016	366	84,081	277,400	21,707	0	9,650	0	340	6,264	21	0	0	147	0	16,422
2017	365	84,693	279,700	20,553	0	9,630	0	549	6,348	19	0	2,860	138	0	19,545
2018	365	85,256	283,700	20,814	0	9,575	0	683	6,250	20	0	2,850	151	0	19,530
2019	365	85,491	286,400	20,542	0	9,388	0	704	6,120	22	0	2,715	160	0	19,110
2020	366	85,842	288,800	20,779	0	9,954	0	644	5,929	17	0	2,860	151	0	19,556
2021	365	86,219	286,980	20,506	0	8,594	139	180	3,917	12	0	2,498	223	0	15,564
2022	365	86,594	290,850	22,053	0	10,069	146	215	4,169	15	0	3,396	173	0	18,183
2023	365	86,863	293,208	23,042	0	10,228	145	232	4,327	13	0	3,451	224	0	18,620

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

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

Year	Estimated Population	Total Use			Residential Use			Municipal Per Capita Use (gpcd)	ICIM Per Capita Use (gpcd)	Authorized Consumption				Water Loss						
		Total Per Capita Use (gpcd)	Total 5-Year Per Capita Goal	Total 10-Year Per Capita Goal	Residential Per Capita Use (gpcd)	Residential 5-Year Per Capita Goal	Residential 10-Year Per Capita Goal			Billed Metered (MG)	Billed Unmetered (MG)	Unbilled Metered (MG)	Unbilled Unmetered (MG)	Water Loss (MG)	Water Loss (gpcd)	Water Loss 5-Year Per Capita Goal	Water Loss 10-Year Per Capita Goal	Water Loss (percentage)	Water Loss (percentage) 5-Year Goal	Water Loss (percentage) 10-Year Goal
1995	171,139	220			128			220	75	12,658	0	460	323	329	5			2%		
1996	180,552	232			137			231	81	14,417	0	485	341	98	1			1%		
1997	190,482	225			147			225	86	16,269	0	512	360	-1,455	-21			-9%		
1998	200,958	278			169			277	99	19,695	0	540	379	-234	-3			-1%		
1999	212,011	288			167			287	98	20,533	0	570	400	795	10			4%		
2000	222,030	292			158			292	93	20,487	0	597	419	2,320	29			10%		
2001	227,200	321			160			321	98	21,490	0	610	429	4,191	51			16%		
2002	233,700	262			136			262	86	19,047	0	628	441	2,343	27			10%		
2003	237,925	261			137			261	89	19,701	0	639	449	1,956	23			9%		
2004	243,500	247			120			247	87	18,561	0	654	460	2,474	28			11%		
2005	247,000	248			143			247	93	21,354	0	664	466	-52	-1			0%		
2006	252,950	254			139			254	82	20,470	0	680	477	1,897	21			8%		
2007	255,700	205			101			204	72	16,224	0	767	392	1,799	19			9%		
2008	263,900	237			120			237	82	19,674	0	0	467	2,883	30			13%		
2009	264,600	220			108			219	75	17,765	0	0	387	3,161	33			15%		
2010	266,600	236			119			236	81	19,544	0	1	380	3,185	33			14%		
2011	262,800	241			135			241	83	21,025	0	1	34	2,197	23			9%		
2012	265,400	218			121			217	73	18,914	0	1	40	2,318	24			11%		
2013	266,600	197			109			197	65	17,040	0	0	33	2,265	23			12%		
2014	270,900	176			91			176	57	14,786	0	0	355	2,377	24			14%		
2015	274,000	201			101			201	67	16,949	0	1	233	3,092	31			15%		
2016	277,400	212			95			212	65	16,422	0	2	1,514	3,768	37			17%		
2017	279,700	200			94			200	68	16,546	0	145	255	3,469	34			17%		
2018	283,700	200			92			199	67	16,528	0	228	258	3,648	35			18%		
2019	286,400	195	195	190	90	90	88	195	65	16,235	0	592	255	3,301	32	24	21	16%	12%	11%
2020	288,800	195	195	190	94	90	88	195	62	16,544	0	790	258	3,035	29	24	21	15%	12%	11%
2021	286,980	194	195	190	83	90	88	194	41	15,341	0	926	254	3,763	36	24	21	19%	12%	11%
2022	290,850	206	195	190	96	90	88	206	43	18,010	0	438	273	3,158	30	24	21	14%	12%	11%
2023	293,208	213	195	190	97	90	88	213	44	18,396	0	510	285	3,627	34	24	21	16%	12%	11%

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