

To: Honorable Mayor Bürger and Council Members

Cc: Michael Kovacs, City Manager; Brenda McDonald, City Attorney; Justin Weiss, Asst. City Manager

From: Scott Monaghan, Public Works Director

Date: July 15,2019

Agenda Item & Caption: Discuss, consider, and take any necessary action regarding Resolution - Approval of The Water Conservation plan. This ordinance is required to meet the Texas Commission on Environmental Quality Conservation requirement for Municipal Public water suppliers.

Action Requested: Approval of Resolution No.

Overview and Background:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Financial Considerations: The city shall be responsible for enforcement of the ordinance and have the authority to issue notice of violation as required.

Supporting Documents:

- Resolution-Water Conservation Plan

RESOLUTION NO. _____

A RESOLUTION OF THE CITY OF FATE, TEXAS, ADOPTING THE WATER CONSERVATION PLAN FOR THE CITY OF FATE, TEXAS, TO PROMOTE RESPONSIBLE USE OF WATER AND TO PROVIDE BEST MANAGEMENT PRACTICES RESULTING IN ON-GOING, LONG TERM WATER SAVINGS; AUTHORIZING ITS EXECUTION BY THE CITY MANAGER OR HIS DESIGNEE; AND PROVIDING AN EFFECTIVE DATE

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

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

WHEREAS, the Texas Commission on Environmental Quality (“TCEQ”) has established guidelines and requirements which require that the City adopt a water conservation plan; and

WHEREAS, the City of Fate, Texas is a customer city of the North Texas Municipal Water District (“NTMWD”); and

WHEREAS, the NTMWD has developed a water conservation plan intended for adoption by its member cities and customer cities; and

WHEREAS, the NTMWD water conservation plan was developed pursuant to TCEQ guidelines and requirements; and

WHEREAS, the best management practices established by the Water Conservation Implementation Task Force were also considered in the development of the water conservation measures; and

WHEREAS, the NTMWD’s water conservation plan includes measures that are intended to result in ongoing, long-term water savings; and

WHEREAS, the City Council has determined that adopting the Water Conservation Plan, attached hereto as Exhibit A (the “Water Conservation Plan”), is in the best interest of the citizens of the City.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF FATE, TEXAS, THAT:

Section 1. That the recitals set forth above are incorporated as if fully set forth herein.

Section 2. The City Council hereby adopts the Water Conservation Plan attached as Exhibit A.

Section 3. The City Manager or his designee is authorized to execute any and all documents or take any action necessary to maintain the Water Conservation Plan.

Section 4. This resolution shall become effective immediately upon its passage.

AND IT IS SO RESOLVED.

PASSED AND APPROVED by the City Council of Fate, Texas, on this, the 15th day of July, 2019.

APPROVED:

Joe Burger, Mayor

ATTEST:

Victoria Raduechel, TRMC
City Secretary

2019 WATER CONSERVATION PLAN

MAY 2019



1900 CD Boren Parkway, Fate, TX 7508

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APPENDICES

APPENDIX A List of References

APPENDIX B Texas Commission on Environmental Quality Rules on Municipal Water Conservation Plans

- Texas Administrative Code Title 30, Part 1, Chapter 288, Subchapter A, Rule §288.1 – Definitions (Page B-1)
- Texas Administrative Code Title 30, Part 1, Chapter 288, Subchapter A, Rule §288.2 – Water Conservation Plans for Municipal Uses by Public Water Suppliers (Page B-4)

APPENDIX C TCEQ Water Utility Profile

APPENDIX D Letters to Region C and Region D Water Planning Groups

APPENDIX E Adoption of Water Conservation Plan

- Municipal Ordinance Adopting Water Conservation Plan

APPENDIX F Illegal Water Connections and Theft of Water

- Municipal Ordinance Pertaining to Illegal Water Connections and Theft of Water

APPENDIX G TCEQ Water Conservation Implementation Report

APPENDIX H Fate's Rate Schedule

1. INTRODUCTION AND OBJECTIVES

Water supply has always been a key issue in the development of Texas. In recent years, the increasing population and economic development of North Central Texas have led to growing demands for water supplies. At the same time, local and less expensive sources of water supply are largely already developed. Additional supplies to meet future demands will be expensive and difficult to secure. Severe drought conditions in recent years have highlighted the importance of efficient use of our existing supplies to make them last as long as possible. 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 wholesale water suppliers². The TCEQ guidelines and requirements for wholesale suppliers are included in Appendix B. The North Texas Municipal Water District (NTMWD) has developed this water conservation plan pursuant to TCEQ guidelines and requirements. The best management practices established by the Water Conservation Implementation Task Force³ were also considered in the development of the water conservation measures.

This water conservation plan includes measures that are intended to result in ongoing, long-term water savings. This plan replaces the previous plans dated August 2004, April 2006, March 2008 and April 2014⁴.

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.
- Encourage efficient outdoor water use.
- 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 water conservation plan presented in this document is a water conservation plan intended for adoption by the NTMWD Member Cities and Customers. In order to adopt this plan, each Member City and Customer will need to do the following:

- Complete the water utility profile (provided in Appendix C).
- Complete the annual water conservation implementation report (in Appendix G).
- Set five-year and ten-year goals for per capita water use.
- Adopt ordinance(s) or regulation(s) approving the plan.

The water utility profile, goals, and ordinance(s) or regulations should be provided to NTMWD in draft form for review and comments. Final adopted versions should also be provided to NTMWD, as well as TCEQ. This plan includes all of the elements required by TCEQ. Some elements of this plan go beyond TCEQ requirements. Any water supplier wishing to adjust elements of the plan should coordinate with NTMWD.

*Superscripted numbers match references listed in Appendix A.

2. DEFINITIONS

1. 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.
2. 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 perennial and annual rye grass, Kentucky blue grass and fescues.
3. CUSTOMERS include those entities to whom NTMWD provides wholesale water on a customer basis that are not members of NTMWD.
4. EVAPOTRANSPIRATION (abbreviated as 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.
5. 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.
6. EXECUTIVE DIRECTOR means the Executive Director of the North Texas Municipal Water District and includes a person the 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.
7. INSTITUTIONAL USE means the use of water by an establishment dedicated to public service, such as a school, university, church, hospital, nursing home, prison or government facility. All facilities dedicated to public service are considered institutional regardless of ownership.
8. MEMBER CITIES include the cities of Allen, Farmersville, Forney, Frisco, Garland, McKinney, Mesquite, Plano, Princeton, Richardson, Rockwall, Royse City, and Wylie, Texas.
9. MULTI-FAMILY PROPERTY means a property containing five or more dwelling units.
10. 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.

11. RECLAIMED WATER means reclaimed municipal wastewater that has been treated to a quality that meets or exceeds the minimum standards of the 30 Texas Administrative Code, Chapter 210 and is used for lawn irrigation, industry, or other non-potable purposes.
12. REGULATED IRRIGATION PROPERTY means any property that uses 1 million gallons of water or more for irrigation purposes in a single calendar year or is greater than 1 acre in size.
13. RESIDENTIAL GALLONS PER CAPITA PER DAY (Residential GPCD) the total gallons sold for residential use by a public water supplier divided by the residential population served and then divided by the number of days in the year.
14. RETAIL CUSTOMERS include those customers to whom NTMWD provides retail water from a residential meter.
15. TOTAL GALLONS PER CAPITA PER DAY (Total GPCD) The total amount of water diverted and/or pumped for potable use divided by the total permanent population divided by the days of the year. Diversion volumes of reuse as defined in TAC 288.1 shall be credited against total diversion volumes for the purposes of calculating GPCD for targets and goals.
16. WATER CONSERVATION PLAN means this water conservation plan approved and adopted by the NTMWD Board of Directors on January 24, 2019.

3. REGULATORY BASIS FOR WATER CONSERVATION PLAN

3.1 TCEQ Rules Governing 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, which is included in Appendix B. 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 water².” 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 4 and Appendix C
- 288.2(a)(1)(B) – Record Management System – Section 6.1
- 288.2(a)(1)(C) – Specific, Quantified Goals – Section 5
- 288.2(a)(1)(D) – Accurate Metering – Section 6.1.1
- 288.2(a)(1)(E) – Universal Metering – Section 6.1.2
- 288.2(a)(1)(F) – Determination and Control of Water Loss – Section 6.1.3
- 288.2(a)(1)(G) – Public Education and Information Program – Section 6.2
- 288.2(a)(1)(H) – Non-Promotional Water Rate Structure – Section 7.1
- 288.2(a)(1)(I) – Reservoir System Operation Plan – Section 6.3
- 288.2(a)(1)(J) – Means of Implementation and Enforcement – Section 8
- 288.2(a)(1)(K) – Coordination with Regional Water Planning Group – Section 6.4
- 288.2(c) – Review and Update of Plan – Section 9

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 6.1.4
- 288.2(a)(2)(B) – Requirement for Water Conservation Plans by Wholesale Customers – Section 6.5

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 to be included in this plan:

- 288.2(a)(3)(A) – Conservation Oriented Water Rates – Section 7.1
- 288.2(a)(3)(F) – Considerations for Landscape Water Management Regulations – Section 7.5

TCEQ rules also include optional, but not required, conservation may be adopted by suppliers. The City of Fate may consider the following plans:

- 288.2(a)(3)(B) – Ordinances, Plumbing Codes or Rules on Water-Conserving Fixtures – Section 7.2
- 288.2(a)(3)(C) – Replacement or Retrofit of Water-Conserving Plumbing Fixtures – Section 7.6
- 288.2(a)(3)(D) – Reuse and Recycling of Wastewater – Section 7.3
- 288.2(a)(3)(F) – Considerations for Landscape Water Management Regulations – Section 7.4, 7.5
- 288.2(a)(3)(G) – Monitoring Method – Section 7.7
- 288.2(a)(3)(H) – Additional Conservation Ordinance Provisions – Section 7.6

3.2 Guidance and Methodology for Reporting on Water Conservation and Water Use

In addition to TCEQ rules regarding water conservation, this plan also incorporates elements of the Guidance and Methodology for Reporting on Water Conservation and Water Use developed by TWDB and TCEQ, in consultation with the Water Conservation Advisory Council (the “Guidance”). The Guidance was developed in response to a charge by the 82nd Texas Legislature to develop water use and calculation methodology and guidance for preparation of water use reports and water conservation plans in accordance with TCEQ rules. The City of Fate may consider this guidance.

3.3 Texas Water Development Board Water Conservation Planning Tool

The Texas Water Development Board is currently developing a water conservation planning tool to be utilized by utilities to evaluate various best management practices. The tool will come pre-loaded with data submitted by utilities as part of the water use surveys and will have a library of best management practices with water savings and associated cost. NTMWD encourages each of their Member Cities and Customers to utilize the tool to the extent practical for water conservation planning. The TWDB is offering a training in December 2018 and the tool should be available after the training to be utilized by utilities. The District is also hosting a training in January 2019 for their Member Cities and Customers. The City of Fate may consider this tool.

4. WATER UTILITY PROFILE

Appendix C to this water conservation plan is a template water utility profile based on the format recommended by the TCEQ. In adopting this water conservation plan, the City of Fate will provide a draft water utility profile to NTMWD for review and comment. A final water utility profile will be provided to NTMWD.

5. 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 Fate will develop 5-year and 10-year goals for per capita municipal use. These goals should be submitted to NTMWD in draft form for review. The goals for this water conservation plan include the following:

- Maintain the total and residential per capita water use below the specified amount in gallons per capita per day in a dry year, as shown in the completed Table 5-1.
- Maintain the nonrevenue water percentage in the system below 12 percent annually in 2018 and subsequent years, as discussed in Section 6.1.3. (The 12 percent goal for nonrevenue water is recommended but is not required. Systems with long distances between customers, such as rural systems, may adopt a higher percent nonrevenue water goal.)
- Implement and maintain a program of universal metering and meter replacement and repair, as discussed in Section 6.1.2.
- Increase efficient water usage through a water conservation ordinance, order or resolution as discussed in Section 7.5 and Appendix E. (This ordinance is required by the NTMWD.)
- Decrease waste in lawn irrigation by implementation and enforcement of landscape water management regulations, as discussed in Section 7.6. (These landscape water management regulations are recommended but are not required.)
- Raise public awareness of water conservation and encourage responsible public behavior by a public education and information program, as discussed in Section 6.2.
- Develop a system specific strategy to conserve water during peak demands, thereby reducing the peak use.

Table 5-1 Five-Year and Ten-Year Per Capita Water Use Goals (gpcd)

Description	Current Average (gpcd)	5-Year Goal (gpcd)	10-Year Goal (gpcd)
Current 5-Year Average Total Per Capita Use with Credit for Reuse			
Current 5-Year Average Residential Per Capita Use			
Water Loss (GPCD) ¹			
Water Loss (Percentage) ²			
Expected Reduction due to Low-Flow Plumbing Fixtures			
Projected Reduction Due to Elements in this Plan			
Water Conservation Goals (with credit for reuse)			

1. Water Loss GPCD = (Total Water Loss ÷ Permanent Population) ÷ 365

2. Water Loss Percentage = (Total Water Loss ÷ Total Gallons in System) x 100; or (Water Loss GPCD ÷ Total GPCD) x 100

6. BASIC WATER CONSERVATION STRATEGIES

6.1 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 real losses.

6.1.1 Accurate Metering of Treated Water Deliveries from NTMWD

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.

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

The provision of water to all customers, including public and governmental users, should be metered. In many cases, the City of Fate already meters retail and wholesale water users.

The City of Fate does test and replace their customer meters on a regular basis. All customer meters should be replaced on a minimum of a 15-year cycle.

6.1.3 Determination and Control of Water Loss

Total water loss is the difference between water delivered to the City of Fate from NTMWD (and other supplies, if applicable) and metered water sales to customers plus authorized for use but not sold. (Authorized for use but not sold would include use for fire fighting, releases for flushing of lines, uses associated with new construction, etc.)

Total water loss includes two categories:

- Apparent Losses – including inaccuracies in customer meters. (Customer meters tend to run more slowly as they age and under-report actual use.) Losses due to illegal connections and theft. Accounts which are being used but have not yet been added to the billing system.
- Real Losses – includes physical losses from the system or mains, reported breaks and leaks, storage overflow and unreported losses.

Measures to control water loss should be part of the routine operations of the City of Fate's maintenance crews and personnel should look for and report evidence of leaks in the water distribution system. A leak detection and repair program is described in Section 6.1.4 below. Meter readers should watch for and report signs of illegal connections, so they can be quickly addressed.

With the measures described in this plan, the City of Fate will maintain nonrevenue water percentage below 12 percent in 2018 and subsequent years. If total water loss exceeds this goal, the City of Fate will implement a more intensive audit to determine the source(s) of and reduce the water loss. The annual conservation report described below is the primary tool that should be used to monitor water loss.

6.1.4 Leak Detection and Repair

As described above, water utility 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.

6.1.5 Record Management System

As required by TAC Title 30, Part 1, Chapter 288, Subchapter A, Rule 288.2(a)(2)(B), a record management system should allow for the separation of water sales and uses into residential, commercial, public/institutional, and industrial categories. This information should be included in an annual water conservation report, as described in Section 7.7 below. Those entities whose record management systems do not currently comply with this requirement should move to implement such a system within the next five years.

6.2 Continuing Public Education and Information Campaign

The continuing public education and information campaign on water conservation may include the following elements:

- Utilize the "Water IQ: Know Your Water" and other public education materials produced by the NTMWD.
- Utilize the "Water4Otter" campaign for students.

- Insert water conservation information with water bills. Inserts will include material developed by Member Cities' and Customers' staff and material obtained from the TWDB, the TCEQ, and other sources.
- Encourage local media coverage of water conservation issues and the importance of water conservation.
- Notify local organizations, schools, and civic groups that Member City or Customer staff and staff of the NTMWD are available to make presentations on the importance of water conservation and ways to save water.
- Promote the *Texas Smartscape* web site (www.txsmartscape.com) and provide water conservation brochures and other water conservation materials available to the public at City Hall and other public places.
- Make information on water conservation available on its website (if applicable) and include links to the "Water IQ: Know Your Water" website, *Texas Smartscape* website and to information on water conservation on the TWDB and TCEQ web sites and other resources.
- NTMWD is an EPA Water Sense Partner and participates in the EPA Water Sense sponsored "Fix a Leak Week." NTMWD encourages all member cities and customers to become EPA Water Sense Partners.
- Utilize the Water My Yard website and encourage customers to sign-up to receive weekly watering advice.

6.3 NTMWD System Operation Plan

The City of Fate purchases treated water from NTMWD and do not have surface water supplies for which to implement a system operation 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.

6.4 Coordination with Regional Water Planning Group and NTMWD

The Appendix D includes a letter sent to the Chair of the Region C and Region D water planning group with this water conservation plan. The City of Fate will send a copy of their draft

ordinance(s) implementing the plan and their water utility profile to NTMWD for review and comment. The adopted ordinance(s) and the adopted water utility profile will be sent to the Chair of the appropriate Water Planning Group and to NTMWD.

6.5 Requirement for Water Conservation Plans by Wholesale Customers

Every contract for the wholesale sale of water by the City of Fate that is entered into, renewed, or extended after the adoption of this water conservation plan will 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.

7. ENHANCED WATER CONSERVATION STRATEGIES

7.1 Increasing Block Water Rate Structure

The City of Fate has an increasing block rate water structure that is intended to encourage water conservation and discourage excessive use and waste of water upon completion of their next rate study or within five years. The rate structure is included in the Appendix H.

Water Rates

Base Rates- Rates effective 08/06/2018

The base rate is the rate that will be charged monthly, even if there is no consumption.

Meter Size	Residential Water Rates		Commercial Water Rates	
	Inside City	Outside City	Inside City	Outside City
00.625 inch	\$21.32	\$26.65	\$21.32	\$26.65
00.750 inch	\$21.32	\$26.65	\$21.32	\$26.65
01.000 inch	\$53.29	\$66.61	\$53.29	\$66.61
01.500 inch	\$106.58	\$133.23	\$106.58	\$133.23
02.000 inch	\$170.53	\$213.16	\$170.53	\$213.16
03.000 inch	\$319.80	\$399.75	\$319.80	\$399.75
04.000 inch	\$533.00	\$666.25	\$533.00	\$666.25
06.000 inch	\$1,066.00	\$1,332.50	\$1,066.00	\$1,332.50
08.000 inch	\$1,705.60	\$2,132.00	\$1,705.60	\$2,132.00
10.000 inch	\$2,451.80	\$3,064.75	\$2,451.80	\$3,064.75

Consumption Rates- Rates effective 08/06/2018

Consumption rates are structured as tiered rates to encourage conservation and discourage waste. The lower rates are designed to provide for basic household needs and provide a reasonable allowance for irrigation. The higher rates are intended to charge heavier users more to accommodate the additional costs associated with peak demand. Consumption rates are per 1,000 gallons.

	Residential Water Consumption Rates		Commercial Water Consumption Rates	
0-5,000 gallons	\$4.90	\$6.13	\$5.14	\$6.43
5,001-10,000	\$6.62	\$8.28	\$6.94	\$8.68
10,001-100,000 gallons	\$8.93	\$11.16	\$9.37	\$11.71
Over 100,000 gallons	\$12.51	\$15.64	\$12.65	\$15.81

The rates we charge are influenced by the rates we are charged by our water supplier. These costs have been passed on to our customers.

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

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, and 1.6 gallons per flush for toilets. Similar standards are now required nationally under federal law. These state and federal standards assure that all new construction and renovations will use water-conserving fixtures. Rebate programs to encourage replacement of older fixtures with water conservation programs are discussed in Section 7.6.

7.3 Reuse and Recycling of Wastewater

The City of Fate does not own and operate their own wastewater treatment plants. Their wastewater is treated by NTMWD. 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 of this treated wastewater through Lavon Lake for municipal purposes. In addition, NTMWD has also developed the East Fork Reuse Project which can divert up to 157,393 acre-feet per year based on treated wastewater discharges by the NTMWD. With the addition of the Main Stem Pump station the District will be able to increase flows through the East Fork Reuse Project up to an additional 56,100 acre-feet per year. When fully developed, these three reuse projects will provide up to 42 percent of the NTMWD's currently permitted water supplies. NTMWD also provides treated effluent from its wastewater treatment plants available for direct reuse for landscape irrigation and industrial use.

7.4 Interactive Weather Stations / Water My Yard Program

NTMWD has developed the Water My Yard program to install weather stations throughout its service area to provide consumers with a weekly e-mail and information through the Water My Yard website in determining an 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 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 is provided that will determine 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. This innovative program has been available to those within the NTMWD service area since May 2013. The District currently has over 39,000 subscribers within their service area receiving weekly watering advice.

Table 0-1 Weekly Water Advice Subscribers

Station	Subscriptions
Allen	745
Cash	4
Farmersville	178
Forney	294
Frisco*	27,990
Garland	721
McKinney	1,759
Melissa	225
Mesquite	434
Murphy	298
Plano	3,164
Princeton	333
Richardson	1,253
Rockwall	562
Royse City	231
Sachse	197
Seagoville	18
Tawakoni	7
Wylie	687
Total	39,100

*Frisco owns and operates their own system of weather stations and provides a weekly newsletter to subscribers

7.5 Compulsory Landscape and Water Management Measures

The following landscape water management measures are required by the NTMWD for this plan. These measures represent minimum measures to be implemented and enforced in order to irrigate the landscape appropriately, and are to remain in effect on a permanent basis unless water resource management stages are declared.

1. Landscape Water Management Measures

- Limit landscape watering with sprinklers or irrigation systems at each service address to no more than two days per week (April 1 – October 31), with education that less than twice per week is usually adequate. Additional watering of landscape may be

provided by hand-held hose with shutoff nozzle, use of dedicated irrigation drip zones, and/or soaker hose provided no runoff occurs.

- Limit landscape watering with sprinklers or irrigation systems at each service address to no more than one day per week beginning November 1 and ending March 31 of each year, with education that less than once per week is usually adequate.
- Estimated savings from the year-round watering restrictions, mentioned above, since the District terminated drought stages in 2015 is approximately 2.5 to 3.5 percent on an average annualized basis.
- Prohibit lawn irrigation watering from 10 AM to 6 PM (April 1 – October 31).
- Prohibit the use of irrigation systems that water impervious surfaces. (Wind driven water drift will be taken into consideration.)
- Prohibit outdoor watering during precipitation or freeze events.
- Prohibition of use of poorly maintained sprinkler systems that waste water.
- Prohibit excess water runoff or other obvious waste.
- Require 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 maintained to function properly.
- Prohibit overseeding, sodding, sprigging, broadcasting or plugging with cool season grasses or watering cool season grasses, except for golf courses and athletic fields.
- Require that irrigation systems be inspected at the same time as initial backflow preventer inspection.
- Requirement that all new irrigation systems be in compliance with state design and installation regulations (TAC Title 30, Part 1, Chapter 344).
- Require the owner of a regulated irrigation property to obtain an evaluation of any permanently installed irrigation system on a periodic basis. The irrigation evaluation shall be conducted by an licensed irrigator in the state of Texas and be submitted to your local water provider (i.e., city, water supply corporation).

2. Additional Water Management Measures-may be considered, but not required

- Prohibit 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.
- Non-commercial car washing can be done only when using a water hose with a shut-off nozzle.
- Hotels and motels shall offer a linen reuse water conservation option to customers.
- Restaurants, bars, and other commercial food or beverage establishments may not provide drinking water to customers unless a specific request is made by the customer for drinking water.
- Commercial clothes washer rebates for the purchase and installation of high efficiency card- or coin -operated commercial clothes washers.
- Adoption of an increasing block water rate structure if not already in place

7.6 Additional Water Conservation Measures (Not Required)

NTMWD also urges the City of Fate to consider including the following additional water conservation measures from the NTMWD Water Conservation Plan in their plans. If the City of Fate chooses to implement these measures, Fate will be responsible for developing regulations, ordinances, policies, or procedures for enforcement of water conservation guidelines if the. This is not required.

1. Landscape Water Management Regulations

- Requirement that all existing irrigation systems be retrofitted with rain and freeze sensors and/or ET or Smart controllers capable of multiple programming. Rain and freeze sensors and/or ET or Smart controllers must be maintained to function properly.
- Requirement that all new athletic fields be irrigated by a separate irrigation system from surrounding areas.
- Implementation of other measures to encourage off-peak water use.

2. Landscape Ordinance

- Landscape ordinances are developed by cities to guide developers in landscaping requirements for the city.

- Native, drought tolerant or adaptive plants should be encouraged.
- Drip irrigation systems should be promoted.
- ET/Smart controllers that only allow sprinkler systems to irrigate when necessary should be promoted.

3. Water Audits

- Water audits are useful in finding ways in which water can be used more efficiently at a specific location. NTMWD recommends that Member Cities and Customers offer water audits to customers.

4. Industrial, Commercial, and Institutional Customers

In order to target programs towards this customer base, the District hired Alan Plummer Associates to conduct the “North Texas Municipal Water District Industrial, Commercial, and Institutional Water Use Efficiency Study.” The primary scope items in the study are as follows:

- Develop ICI Customer Database
- Calculate per Capita Consumptions
- Identify, Define and Categorize
- Establish Base Use Estimates
- Identify Trends
- Select sectors for detailed analysis
- Benchmarking
- Identify Potential for Reduction
- Estimate Potential Demand Reduction by Strategy
- Program Development

The kick-off meeting was held on September 10, 2018 and the project is currently in the process of data collection. It is not anticipated that any recommended programs will be identified prior to the publication of this plan. Once the results are published, the District will develop, in cooperation with the District’s Member Cities and Customers and in collaboration with ICI water users within the District’s service area, a program to reduce the per unit or per capita ICI water use within the District.

5. Rebates

• In addition to the conservation measures described above, the NTMWD also recommends the following water conservation incentive programs for consideration by the City of Fate (for consideration only):

- Low-flow toilet replacement and rebate programs,
- Rebates for rain/freeze sensors and/or ET or Smart controllers,
- Low-flow showerhead and sink aerators replacement programs or rebates,
- Water efficient clothes washer rebates,
- Pressure reducing valve installation programs or rebates,
- Rain barrel rebates,
- Pool covers,
- On-demand hot water heater rebates, and/or
- Other water conservation incentive programs.

7.7 Monitoring of Effectiveness and Efficiency - Annual Water Conservation Report

The annual water conservation report should be completed by March 31 of the following year and used 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 total water loss for the current year and compares them to historical values. As part of the development, the City of Fate will attempt to complete the tracking tool by March 31 of the following year and submit them to NTWMD. The annual water conservation report should be sent to NTMWD, which will monitor the City of Fate's water conservation trends.

7.8 Water Conservation Implementation Report (Not Applicable)

The City of Fate is not a water rights holder, therefore, a Water Conservation Implementation Report is not required to be submitted to TCEQ.

8. IMPLEMENTATION AND ENFORCEMENT OF THE WATER CONSERVATION PLAN

The Appendix contains a draft ordinance, order and will be adopted by the City Council. The ordinance designates responsible officials to implement and enforce the water conservation plan.

9. REVIEW AND UPDATE OF WATER CONSERVATION PLAN

TCEQ requires that the water conservation plans be updated prior to May 1, 2019. The plans are required to be updated every five years thereafter. The plan will be updated as required and as appropriate based on new or updated information.