WATER CONSERVATION PLAN
FOR THE
SEIS LAGOS UTILITY DISTRICT

AUGUST 2019

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1. INTRODUCTION AND OBJECTIVES

This 2019 Seis Lagos Utility District (SLUD) Water Conservation Plan was modeled after plans prepared by the North Texas Municipal Water District (NTMWD) Water Conservation Plan for North Texas Municipal Water District (NTMWD) Member Cities and Customers, prepared by Freese and Nichols, Inc. for NTMWD.[1]

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 TCEQ has developed guidelines and requirements governing the development of water conservation and drought contingency plans for municipal uses by public water suppliers.[2] The TCEQ guidelines and requirements for wholesale suppliers are included in Appendix B. The SLUD has developed this Water Conservation Plan to be consistent with TCEQ guidelines and requirements. The best management practices established by the Water Conservation Implementation Task Force[3] 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 plan dated November 2014.

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 maximize 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.

*Superscripted numbers match references listed in Appendix A.

2. DEFINITIONS AND ABBREVIATIONS

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 and league play sanctioned by the utility providing retail water supply.

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

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

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

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

8. 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.

9. NORTH TEXAS MUNICIPAL WATER DISTRICT means the wholesale water supplier of water to Greater Texoma Utility Authority.

10. REGULATED IRRIGATION PROPERTY means any (customer class, i.e. commercial) property that uses (over a certain amount) of water or more for irrigation purposes in a single calendar year or is greater than (certain size).

11. RESIDENTIAL GALLONS PER CAPITA PER DAY means (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.

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

13. TOTAL GALLONS PER CAPITA PER DAY (Total GPCD) means 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.

14. WATER CONSERVATION PLAN means the Customer water conservation plan approved and adopted by the utility.

Abbreviations

Abbreviation	Full Nomenclature
BMP	Best Management Practices
NTMWD or District	North Texas Municipal Water District
TCEQ	Texas Commission on Environmental Quality
TWDB	Texas Water Development Board
WCAC	Water Conservation Advisory Council
WCP	Water Conservation Plan

3. REGULATORY BASIS FOR WATER CONSERVATION PLAN

3.1 TCEQ Rules Governing Conservation Plans

The TCEQ rules governing development of water conservation plans for municipal uses by public water suppliers are contained in Title 30, Chapter 288, Subchapter A, Section 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 water." [2] The water conservation plan elements required by the TCEQ water conservation rules that are covered in this Water Conservation Plan are listed below.

Minimum Conservation Plan Requirements

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

- 288.2(a)(1)(A) – Utility Profile – Section 4 and Appendix C
- 288.2(a)(1)(B) – Record Management System – Section 6.1.5
- 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 – Sections 6.1.3 and 6.1.4
- 288.2(a)(1)(G) – Public Education and Information Program – Section 6.2
- 288.2(a)(1)(H) – Non-Promotional Water Rate Structure – Section 6.6
- 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 and Appendix F
- 288.2(c) – Review and Update of Plan – Section 9

Additional Conservation Strategies

In addition to the TCEQ required elements of a water conservation plan the following water conservation strategies are included in the SLUD Water Conservation Plan, as required by NTMWD:

- 288.2(a)(3)(A) – Conservation Oriented Water Rates – Section 6.6
- 288.2(a)(3)(F) – Considerations for Landscape Water Management Regulations – Section 7.4 and Appendix E

TCEQ rules also include options of conservation measures that may be adopted by public water suppliers but are not required. The following strategies are included in the SLUD Water Conservation Plan:

- 288.2(a)(3)(B) – Ordinances, Plumbing Codes or Rules on Water-Conserving Fixtures – Section 7.1
- 288.2(a)(3)(D) – Reuse and Recycling of Wastewater – Section 7.2
- 288.2(a)(3)(F) – Considerations for Landscape Water Management Regulations – Section 7.3, 7.4
- 288.2(a)(3)(G) – Monitoring Method – Section 7.6
- 288.2(a)(3)(H) – Additional Conservation Practices – Section 7.5

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[3], in consultation with the WCAC (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.

4. WATER UTILITY PROFILE

Appendix C to this Model Water Conservation Plan is a template water utility profile based on the format recommended by the TCEQ. In adopting this Model Water Conservation Plan, the SLUD will provide a water utility profile to NTMWD as well as to TCEQ.

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 SLUD has developed 5-year and 10-year goals for water savings, including goals for per capita municipal use and for water loss programs. 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 water loss percentage in the system below 12 percent annually in 2019 and subsequent years, as discussed in Section 6.1.3.
- 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 7.4 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 7.5. (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.
- Development of a system specific strategy to conserve water during peak demands, thereby reducing the peak use.

Water Conservation Plan Goals Table
TWDB Form No 1954
Revised 12/14/2012 1:53 PM

WATER CONSERVATION PLAN
5- AND 10-YR GOALS FOR WATER SAVINGS

Facility Name: City of Van Alstyne

Water Conservation Plan Year: 2019

	Historic 5yr Average	Baseline	5-yr Goal for year 2024	10-yr Goal for year 2029
Total GPCD[1]	200	200	160	150
Residential GPCD[2]	75	75	75	75
Water Loss (GPCD)[3]	26	26	20	18
Water Loss (Percentage)[4]	13 %	13 %	13 %	12 %

1. Total GPCD = (Total Gallons in System ÷ Permanent Population) ÷ 365
2. Residential GPCD = (Gallons Used for Residential Use ÷ Residential Population) ÷ 365
3. Water Loss GPCD = (Total Water Loss ÷ Permanent Population) ÷ 365
4. 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. The SLUD carefully meters water use, detects and repairs leaks in the distribution system and provides for regular monitoring of real losses.

6.1.1 Accurate Metering of Treated Water Deliveries

Water deliveries from the SLUD are metered by the City using meters with accuracy of ±3%. These meters are calibrated on an annual basis by the SLUD 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, is metered by the SLUD.

All customer meters are 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 the water delivered from the NTMWD and the metered water sales to customers plus water 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 – Includes 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. (included in Appendix H); accounts that 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 are part of the routine operations of the SLUD. SLUD maintenance crews and personnel 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 watch for and report signs of illegal connections so that they can be quickly addressed.

With the measures described in this plan, the SLUD maintains a water loss percentage below 3.4 percent each year. If total water loss exceeds this goal, the SLUD will implement a more intensive audit to determine the source(s) of loss and to reduce the water loss. The annual conservation report described below is the primary tool that is used to monitor water loss.

6.1.4 Leak Detection and Repair

Water utility crews and personnel 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 are targeted for replacement as funds are available.

6.1.5 Record Management System

The SLUD record management system allows for the determination of water sales for uses in residential and public/institutional categories. This information is included in an annual water conservation report, as described in Section 7.6 below.

6.2 Continuing Public Education and Information Campaign

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

- Utilize the "Water IQ: Know Your Water" and other public education materials produced by NTMWD.
- Utilize the NTMWD "Water4Otter" campaign for students.
- Insert water conservation information with water bills. Inserts will include material developed by the SLUD staff and material obtained from the TWDB, 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 City staff is available to make presentations on the importance of water conservation and ways to save water.
- Promote the *Texas Smartscape* website (www.txsmartscape.com) and provide water conservation brochures and other water conservation materials available to the public at SLUD Headquarters and other public places.
- Make information on water conservation available on the SLUD website 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.
- Utilize the NTMWD Water My Yard website and encourage customers to sign-up to receive weekly watering advice.

6.3 Reservoir System Operation Plan

The SLUD does not operate a reservoir system.

6.4 Coordination with Regional Water Planning Group and NTMWD

Appendix F includes letters to be forwarded to the Chair of the Region C Water Planning Group and the NTMWD accompanied by this Water Conservation Plan. The adopted ordinance(s) and the adopted water conservation plan will be sent to the Chair of the regional water planning group and the NTMWD.

6.5 Requirement for Water Conservation Plans by Wholesale Customers

Every contract for the wholesale sale of water by the SLUD 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, Chapter 288, of the Texas Administrative Code. This requirement extends to each successive wholesale customer in the resale of the water. NOTE: The SLUD does not have contracts with wholesale customers.

6.6 Increasing Block Water Rate Structure

The SLUD has adopted the following water rate structure:

Residential Service Rates

Monthly Minimum Water Charge:	$40.00
Monthly Sewer Charge:	$42.36
Monthly Fire Charge:	$55.00

Tier (gal.):	**$/1,000 gal.:**
0-5,000	$3.50
5,001-10,000	$4.00
10,001-35,000	$4.75
35,001-50,000	$5.25
50,001 & over	$7.00

Construction Service Rates 1" Meter

Monthly Minimum Water Charge:	$60.00
Monthly Sewer Charge	$42.36
Monthly Fire Charge:	$55.00

Tier (gal.):	**$/1,000 gal.:**
0-10,000	$5.50
10,001-20,000	$6.50
20,001-40,000	$7.00
40,001 & over	$7.50

Commercial and

Construction Service Rates 2" Meter	
Monthly Minimum Water Charge	$150.00
Monthly Sewer Charge	$42.36
Monthly Fire Charge	$55.00

Tier (gal.):	**$/1,000 gal.:**
0-25,000	$5.50
25,001-50,000	$7.00
50,001-75,000	$8.00
75,001 & over	$8.75

7. ENHANCED WATER CONSERVATION STRATEGIES

7.1 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. As of January 1, 2014, the state requires maximum average flow rates of 1.28 gallons per flush (gpf) for toilets and 0.5 gpf for urinals. Similar standards are now required under federal law. These state and federal standards assure that all new construction and renovations will use water-conserving fixtures. Rebate programs to encourage replacement of older fixtures with water conservation programs are discussed in Section 7.5. The SLUD does not participate in rebate programs for its customers.

7.2 Reuse and Recycling of Wastewater

Currently the SLUD does not currently recycle wastewater. Research regarding reuse of treated effluent for multiple purposes at the plant site will be conducted with the development of the use of recycled water implemented. Other alternatives for reuse of recycled wastewater effluent will also be researched, if practical.

7.3 Interactive Weather Stations / "Water My Yard" Program

NTMWD has developed the Water My Yard program to install weather stations throughout its service area in order to provide consumers with a weekly e-mail and information through the "Water My Yard" website to assist consumers in determining an adequate amount of supplemental water to maintain healthy grass in a specific location. 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) 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 SLUD will encourage customers to subscribe to weekly watering updates through Water My Yard or other similar program in an effort to reduce outdoor water consumption. All customers of the SLUD water system have installed smart irrigation control devices to provide optimum times for landscape irrigation.

7.4 Compulsory Landscape and Water Management Measures

The following landscape water management measures are required by 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. **NOTE: The SLUD customers, because all have smart irrigation controllers, are deemed exempt from water restrictions.**

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.
    - **Lawn irrigation schedule (two times per week April 1 through October 31)**
        - Last digit of address Allowed landscape water day
            - 0,2,4,6,8 (Even) Wednesday and Saturday each week (irrigation prohibited between 10 a.m. to 6 p.m.)
            - 1,3,5,7,9 (Odd) Thursday and Sunday each week (irrigation prohibited between 10 a.m. to 6 p.m.)

  Additional watering of landscape may be provided by hand-held hose with shutoff nozzle, use of dedicated irrigation drip zones. An exception is allowed for landscape associated with new construction that may be watered as necessary for 30 days from the installation of new landscape features.

- 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. Landscape watering days between November 1 and ending March 31 for each address shall be the first day of the summer schedule (April 1 through October 31) for each address as listed above.
- Estimated savings from the year-round watering restrictions, mentioned above, since NTMWD 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 or irrigation systems that water impervious surfaces. (Wind-driven water drift will be taken into consideration.)
- Prohibit outdoor watering during precipitation or freeze events.
- Prohibit 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 (Texas Administrative Code Title 30, 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 the local water provider (i.e., city, water supply corporation).

2. Additional Water Management Measures

- 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.

Appendix E is a summary of considerations for landscape water management regulations adopted as part of the development of this water conservation plan. These regulations are intended to minimize waste in landscape irrigation. Appendix E includes the required landscape water measures laid out in this section.

7.5 Additional Water Conservation Measures (Not Required)

In addition, the SLUD has adopted the following additional water conservation measures **NOTE* THE SLUD HAS IMPLEMENTED THE ADDITIONAL MEASURES BELOW THAT ARE NOT MARKED "NOT IMPLEMENTED BY SLUD" AT THIS TIME**:

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 – NOT IMPLEMENTED BY SLUD**
   - Landscape ordinances are developed by a city to guide developers in landscaping requirements for the city. A sample landscape ordinance is provided in Appendix I and is intended as a guideline for adopting a landscape ordinance to promote water-efficient landscape design.
   - 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. NOTE: SLUD has implemented this for all connections to their water distribution system.
3. **Water Audits – NOT IMPLEMENTED BY SLUD**
   - Water audits are useful in finding ways in which water can be used more efficiently at a specific location. NTMWD recommends that NTMWD Customers offer water audits to their customers.
4. **Rebates – NOT IMPLEMENTED BY SLUD**

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

- Commercial clothes washer rebates for the purchase and installation of high efficiency card- or coin -operated commercial clothes washers;
- Low-flow toilet replacement and rebate programs;
- Rebates for rain/freeze sensors and/or ET or Smart controllers;
- Low-flow showerhead and sink aerators replacement programs or rebates;
- Residential water efficient clothes washer rebates;
- Pressure reducing valve installation programs or rebates;
- Rain barrel rebates;
- Pool covers;
- On-demand hot water heater rebates; and/or
- Other water conservation incentive programs.

7.6 Monitoring of Effectiveness and Efficiency - NTMWD Annual Water Conservation Report

Appendix D is a form that the SLUD uses to develop its annual water conservation report. This form 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 of Appendix D, the SLUD will complete the tracking tool by March 31 of the following year and submit them to the NTMWD.

7.7 TWDB Annual Water Conservation Report

Appendix J includes the TWDB-required water conservation implementation report. The report is due to the TWDB by May 1 of every year.

8. IMPLEMENTATION AND ENFORCEMENT OF THE WATER CONSERVATION PLAN

Appendix G contains the ordinance adopted by the Board of Directors approving the SLUD Water Conservation Plan. Appendix E, the considerations for landscape water management regulations, also

includes information about enforcement. Appendix H includes a copy of an ordinance adopted related to illegal connections and water theft.

9. REVIEW AND UPDATE OF WATER CONSERVATION PLAN

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

APPENDIX A

LIST OF REFERENCES

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

2. Title 30 of the Texas Administrative Code, Part 1, Chapter 288, Subchapter A, Rules 288.1 and 288.2

3. Water Conservation Implementation Task Force: "Texas Water Development Board Report 362, Water Conservation Best Management Practices Guide," prepared for the Texas Water Development Board, Austin, November 2004.

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

APPENDIX B
Texas Administrative Code

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

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

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

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

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

(i) residential;

(I) single family;

(II) multi-family;

(ii) commercial;

(iii) institutional;

(iv) industrial;

(v) agricultural; and,

(vi) wholesale.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

APPENDIX C

TCEQ WATER UTILITY PROFILE

The TCEQ requires all utilities to publish a Utility Profile as part of their Water Conservation Plan. The following pages include the completed Utility Profile for the Seis Lagos Utility District.

Texas Commission on Environmental Quality

Water Availability Division
MC-160, P.O. Box 13087 Austin, Texas 78711-3087
Telephone (512) 239-4691, FAX (512) 239-2214

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

This form is provided to assist retail public water suppliers in water conservation plan assistance in completing this form or in developing your plan, please contact the Conservation staff of the Resource Protection Team in the Water Availability Division at (512) 239-4691.

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

Contact Information

Name of Water Supplier:	Seis Lagos Utility District
Address:	2730 Country Club, Suite E1, Lucas, TX 75002
Telephone Number:	972-442-6875 Fax: ( )
Water Right No.(s):	N/A
Regional Water Planning Group:	Region "C"
Water Conservation Coordinator (or person responsible for implementing conservation program):	Dewane Clark Phone: (972) 442-6875
Form Completed by:	Bob Johnson, P.E.
Title:	District Engineer by Contract
Signature:	Date:8/22/2019

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

Utility Profile

I. POPULATION AND CUSTOMER DATA

A. Population and Service Area Data

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

2. Service area size (in square miles): 1.01

   (Please attach a copy of service-area map)

3. Current population of service area: 1701

4. Current population served for:

   a. Water 1701

   b. Wastewater 1701

5. Population served for previous five years:

Year	Population
2018	1701
2017	1617
2016	1599
2015	1392
2014	1362

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

Year	Population
2020	1750
2030	2150
2040	2150
2050	2150
2060	2150

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

   Population is estimated as 3.1 persons per water service connection for both historic and future population projections.

B. Customer Data

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

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

	Historic 5-year Average	Baseline	5-year goal for year 2024	10-year goal for year 2029
Total GPCD	211.1	210	200	190
Residential GPCD	211.1	210	200	190
Water Loss GPCD	12.7	12.7	10	9
Water Loss Percentage	6.0	6.0	5.8	5.7
6				

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

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

Treated Water Users	Metered	Non-Metered	Totals
Residential	581	0	581
Single-Family	581	0	581
Multi-Family			
Commercial			
Industrial/Mining			
Institutional			
Agriculture			
Other/Wholesale			

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

Year	2018	2017	2016
Treated Water Users	7	41	47
Residential	7	41	47
Single-Family	7	41	47
Multi-Family			
Commercial			
Industrial/Mining			
Institutional			
Agriculture			
Other/Wholesale			

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

Customer	Use (1,000 gal/year)	Treated or Raw Water
North Texas Equestrian Center	1451	Treated
Glenn Thurman (Construction Meter)	884	Treated
Parker Keane	675	Treated
Erica Erickson	669	Treated
Mandi & David Goins	580	Treated

II. WATER USE DATA FOR SERVICE AREA

A. Water Accounting Data

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

Indicate whether this is ☒ diverted or ☐ treated water.

Year	2018	2017	2016	2015	2014
Month					
January	4272	4813	5351	4723	4162
February	3680	3319	4597	3875	4563
March	7554	5823	4461	6021	5979
April	8959	8327	6175	5595	6616
May	14363	9660	5168	6156	9324
June	16884	10619	9292	12891	10116
July	19851	10263	17421	13542	12135
August	22083	13564	17073	23777	12078
September	9263	14195	12393	18559	14493
October	5791	9468	9467	12720	9464
November	5027	7546	7035	5616	5617
December	3914	5568	4149	3961	4251
Totals	121641	103165	102582	117436	98798

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

   The numbers were based on records kept by the District for total water billed to customers.

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

Year	2018	2017	2016	2015	2014
Account Types					
Residential	122,948	99,403	100,880	117,543	111,867
Single-Family	122,948	99,403	100,880	117,543	111,867
Multi-Family					
Commercial					
Industrial/Mining					
Institutional					
Agriculture					
Other/Wholesale					

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

Year	Amount (gallons)	Percent %
2018	2839469	3.28
2017	2298346	2.25
2016	2353325	2.0
2015	2704938	2.21
2014	2562651	2.29

B. Projected Water Demands

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

III. WATER SUPPLY SYSTEM DATA

A. Water Supply Sources

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

Water Type	Source	Amount Authorized
Surface Water	NTMWD	377.6 AF/ Year
Groundwater		
Other		

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

1. Design daily capacity of system (MGD): 1.4

2. Storage capacity (MGD):

   a. Elevated 0.35

   b. Ground 0.7

3. If surface water, do you recycle filter backwash to the head of the plant?

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

IV. WASTEWATER SYSTEM DATA

A. Wastewater System Data (if applicable)

1. Design capacity of wastewater treatment plant(s) (MGD): 0.25

2. Treated effluent is used for ☐ on-site irrigation, ☐ off-site irrigation, for ☐ plant wash-down, and/or for ☐ chlorination/dechlorination.

   If yes, approximate amount (in gallons per month):

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

   The wastewater system consists of sanitary sewer pipelines in public streets and easements that provide service to all lots. There are a total of 3 lift stations that provide service to the multiple topographical areas. All sanitary sewer flows are transported to a single wastewater treatment plant located in the District. The treated wastewater effluent is discharged into an unnamed stream that flows for less than 1 mile into Lake Lavon. The Seis Lagos Utility District is the owner of the wastewater treatment facility. The plant is operated by the North Texas Municipal Utility District through a contract with the District. The WWTP Permit issued by TCEQ lists the name of the treatment plant as "Seis Lagos Utility District and North Texas Municipal Water District" with a permit number of "TPDES Permit No. WQQ011451001 (CN600630636, CN601365448; RN102093879)." The WWTP is located at 1007 Riva Ridge, Wylie, in Collin County, Texas 75098.

B. Wastewater Data for Service Area (if applicable)

1. Percent of water service area served by wastewater system: 100%

2. Monthly volume treated for previous five years (in 1,000 gallons):

Year	2018	2017	2016	2015	2014
Month					
January	3840	4040	5230	5590	3950
February	6050	3460	4350	4880	3460
March	5060	3270	5260	6710	4060
April	4140	3710	5220	5850	4320
May	3900	3150	5000	7870	4490
June	4020	4200	3880	4990	3480
July	3570	4030	2980	3410	3790
August	3330	4190	3060	3150	3660
September	5300	2920	2760	3090	2880
October	7370	3300	2790	5320	3430
November	4630	3340	3610	7620	3750
December	5320	4280	3600	5960	4620
Totals	56530	43890	47740	64440	45890

V.

Water Conservation Plan

In addition to the utility profile, please attach the following as required by Title 30, Texas Administrative Code, §288.2. Note: If the water conservation plan does not provide information for each requirement, an explanation must be included as to why the requirement is not applicable.

A. Record Management System

The water conservation plan must include a record management system which allows for the classification of water sales and uses in to the most detailed level of water use data currently available to it, including if possible, the following sectors: residential (single and multi-family), commercial.

B. Specific, Quantified 5 & 10-Year Targets

The water conservation plan must include specific, quantified five-year and ten-year targets for water savings to include goals for water loss programs and goals for municipal use in gallons per capita per day. Note that the goals established by a public water supplier under this subparagraph are not enforceable. These goals must be updated during the five-year review and submittal.

C. Measuring and Accounting for Diversions

The water conservation plan must include a statement about the water suppliers 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.

D. Universal Metering

The water conservation plan must include and a program for universal metering of both customer and public uses of water, for meter testing and repair, and for periodic meter replacement.

E. Measures to Determine and Control Water Loss

The water conservation plan must include 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.).

F. Continuing Public Education & Information

The water conservation plan must include a description of the program of continuing public education and information regarding water conservation by the water supplier.

G. Non-Promotional Water Rate Structure

The water supplier must have 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. This rate structure must be listed in the water conservation plan.

H. Reservoir Systems Operations Plan

The water conservation plan must include 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.

I. Enforcement Procedure and Plan Adoption

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

J. Coordination with the Regional Water Planning Group(s)

The water conservation plan must include 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.

K. Plan Review and Update

A public water supplier for municipal use shall review and update its water conservation plan, as appropriate, based on an assessment of previous five-year and ten-year targets and any other new or updated information. The public water supplier for municipal use shall review and update the next revision of its water conservation plan not later than May 1, 2009, and every five years after that date to coincide with the regional water planning group. The revised plan must also include an implementation report.

VI. ADDITIONAL REQUIREMENTS FOR LARGE SUPPLIERS

Required of suppliers serving population of 5,000 or more or a projected population of 5,000 or more within the next ten years:

A. Leak Detection and Repair

The plan must include a description of the program of leak detection, repair, and water loss accounting for the water transmission, delivery, and distribution system in order to control unaccounted for uses of water.

B. Contract Requirements

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

VII. ADDITIONAL CONSERVATION STRATEGIES

Any combination of the following strategies shall be selected by the water supplier, in addition to the minimum requirements of 30 TAC §288.2(1), if they are necessary in order to achieve the stated water conservation goals of the plan. The commission may require by commission order that any of the following strategies be implemented by the water supplier if the commission determines that the strategies are necessary in order for the conservation plan to be achieved:

1. Conservation-oriented water rates and water rate structures such as uniform or increasing block rate schedules, and/or seasonal rates, but not flat rate or decreasing block rates;

2. Adoption of ordinances, plumbing codes, and/or rules requiring water conserving plumbing fixtures to be installed in new structures and existing structures undergoing substantial modification or addition;

3. A program for the replacement or retrofit of water-conserving plumbing fixtures in existing structures;

4. A program for reuse and/or recycling of wastewater and/or graywater;

5. A program for pressure control and/or reduction in the distribution system and/or for customer connections;

6. A program and/or ordinance(s) for landscape water management;

7. A method for monitoring the effectiveness and efficiency of the water conservation plan; and

8. Any other water conservation practice, method, or technique which the water supplier shows to be appropriate for achieving the stated goal or goals of the water conservation plan.

VIII. WATER CONSERVATION PLANS SUBMITTED WITH A WATER RIGHT APPLICATION FOR NEW OR ADDITIONAL STATE WATER

Water Conservation Plans submitted with a water right application for New or Additional State Water must include data and information which:

1. support the applicant's proposed use of water with consideration of the water conservation goals of the water conservation plan;

2. evaluates conservation as an alternative to the proposed appropriation; and

3. evaluates any other feasible alternative to new water development including, but not limited to, waste prevention, recycling and reuse, water transfer and marketing, regionalization, and optimum water management practices and procedures.

Additionally, it shall be the burden of proof of the applicant to demonstrate that no feasible alternative to the proposed appropriation exists and that the requested amount of appropriation is necessary and reasonable for the proposed use.

APPENDIX F

August 27, 2019

Kevin Ward
Region C Water Planning Group
Trinity River Authority
P.O. Box 60
Arlington, Texas 76004

Re: Water Conservation Plan

Dear Kevin:

Enclosed please find a copy of the recently updated Water Conservation Plan for the SLUD. I am submitting a copy of this plan to the Region C Water Planning Group in accordance with the Texas Water Development Board and Texas Commission on Environmental Quality rules. The SLUD Board of Directors adopted the Water Conservation Plan on August 20, 2019.

Sincerely,

Brett Anderson
President

cc: Operations Manager