

LAKEWAY MUNICIPAL UTILITY DISTRICT WATER CONSERVATION PLAN

MARCH 2020



BACKGROUND

PURPOSE AND POLICY

The Lakeway Municipal Utility District (LMUD), a political subdivision of the State of Texas, was formed in 1972 to provide water and wastewater services and other authorized services to the area within LMUD. LMUD also provides reclaimed water services. LMUD was created by the authority of the Texas Constitution, Articles III, Section 52 and XVI, Section 59, and must comply with - Chapters 49 and 54 of the Texas Water Code applicable rules of the Texas Commission on Environmental Quality (TCEQ) and other state and federal laws. Under Chapters 49 and 54 of the Texas Water Code, LMUD is authorized to provide these services which are financed by the property taxes of those living within LMUD's boundaries and by utility fees paid by LMUD's customers.

LMUD is governed by a Board of Directors (Board) consisting of five (5) members. The Directors are elected in May of each even numbered year to serve a four (4) year term. The terms are staggered so that at most three (3) Director positions are filled at any one time. The Board is responsible for the management of all affairs of LMUD, setting policy and service rates, approving major operating expenditures and approving all capital expenditures. The Board typically meets on the second Wednesday of each month for regular Board meetings and as needed for special Board meetings.

LMUD is empowered, among other things, to purchase, construct, operate, and maintain all works, improvements, facilities, and treatment plants necessary for the supply and distribution of water; the collection, transportation, and treatment of wastewater; and the distribution and land application of all recycled reclaimed water. LMUD is a taxing authority, and may issue bonds and other forms of indebtedness to purchase or construct such facilities.

The TCEQ adopted revisions to Title 30, Texas Administrative Code (TAC), Chapter 288-Water Conservation Plans, Drought Contingency Plans, Guidelines and Requirements in 2004. The TCEQ regulations require retail public water suppliers with 3,300 or more connections to submit a conservation plan to include specific, quantified targets for water use savings to be achieved at all times to protect and preserve freshwater supplies for periods of water shortage and drought. This Plan, adopted March 11, 2020, supersedes LMUD's Water Conservation, which was approved by LMUD's Board of Directors October 2014.

In order to conserve and protect the integrity of the available water supply, with particular regard for domestic water use, sanitation, fire protection, and protection of public health, welfare, and safety and minimize the adverse impacts of water shortage or other water supply emergency conditions, LMUD has formulated these policies, regulations and restrictions on the delivery and consumption of water.

The policies and strategies to reduce water consumption, water loss and improve or maintain the efficient use of water and increase application of recycled water for beneficial use presented in this

plan are needed to efficiently manage the water available to LMUD for the benefit of all customers.

Continued use of water in a manner not in compliance with this plan during times of water shortage or other emergency water supply conditions is deemed to constitute a violation of LMUD ordinance which subjects the offender(s) to penalties as defined herein.

DESCRIPTION OF THE PLANNING AREA AND UTILITY SYSTEM

LMUD

LMUD's Certificate of Convenience and Necessity (CCN) authorizes LMUD to provide water service to those living within LMUD, in addition to an adjacent area outside LMUD boundaries currently located within approximately 2.9 square miles in the City of Lakeway. The Texas Water Development Board (TWDB) 2019 Retail Water Supplier Utility Profile for LMUD details the utility system and is included as Exhibit A.

Water System

LMUD obtains water from Lake Travis pursuant to a contract with the Lower Colorado River Authority (LCRA) extending to the year 2048, which authorizes withdrawal of up to 3,069 acre-feet per year, or an average of 2.74 million gallons per day. Raw Lake Travis water is treated using micro-floc and solids contact units and disinfected with chloramines. LMUD's existing water treatment facilities are sufficient to treat approximately 7.2 million gallons per day or serve approximately 6,750 living unit equivalents (LUE's). LMUD is currently serving approximately 4,205 connections, and growth is estimated at less than a percent per year for the next several years. The remaining capacity in the water supply facilities is available to all potential customers within the service area on a first come, first served, basis. The water distribution system includes roughly 68 miles of piping and five water tank sites, with a combined capacity of approximately over 2.968 million gallons storage. LMUD's water production and distribution system, sanitary sewer collection, and treatment systems have been designed and constructed in accordance with the criteria of various regulatory agencies including Travis County, City of Austin, and the TCEQ.

Wastewater Systems

LMUD currently operates two water recycling (wastewater treatment) plants that services wastewater from approximately 3,144 connections. The S-4 Water Recycling Plant located on the eastern side of the service area is permitted for an annual average flow of 0.810 million gallons per day. The S-5 Water Recycling Plant located on the west side of the LMUD service area can process up to 400,000 gallons per day.

Recycled water (treated reclaimed water) from the plants is used to irrigate two 18-hole golf courses, adjacent land tracts, medians, various irrigation sites throughout the community of Lakeway by the City of Lakeway and other commercial entities, as well as other Chapter 210 beneficial reuse customers.

OVERALL PLAN GOALS

The Purpose of the Water Conservation Plan is to establish general policy and identify overall strategies to meet specific five-year and ten-year goals for reducing water consumption, reducing water loss and waste, and improving the efficient use of LMUD's water supply. LMUD's general goals to this effect include:

1. Conserve the overall water supply in Lake Travis.
2. Reduce peak demand - ensure that demand for water does not exceed the amount of treated water available.
3. Provide the public with information to encourage water conservation and decrease waste.
 - a. Ensure that conservation information and incentives are available for customers across demographic sectors and geographic areas.
 - b. Make every customer aware of how he or she uses water.
 - c. Communicate steps taken by LMUD to use water more efficiently.
 - d. Be active in local and national organizations which promote water efficiency and water research.
4. Decrease the average water usage per connection.
5. Limit unaccounted-for water use of finished treated water pumped.
6. Provide for increased use of recycled and raw water for non-potable applications.

REGIONAL WATER PLANNING AND OTHER LOCAL ENTITIES COORDINATION

The service area of LMUD is located within state regional water planning area Region K and LMUD has ongoing representation at Region K planning meetings. LMUD provides water information and ensures that copies of this plan are available to the Region K Board, the Texas Water Development Board (TWDB), TCEQ, and the Lower Colorado River Authority (LCRA). LMUD consults with and coordinates conservation and drought planning implementation with all local entities including Travis County Water Control & Improvement District (WCID) #17, Hurst Creek Municipal Utility District, and the cities of Bee Cave, Lakeway, the City of Austin and Cedar Park.

WATER CONSERVATION PLAN ELEMENTS

The plan has numerous elements, all of which are equal in importance and the implementation of which will be periodically reviewed to ensure progress is being made in each area:

EDUCATION AND INFORMATION

The single most effective means of educating the water consumer on the consequences of wasting water is providing relevant, timely information on the benefits of conservation and the means by which it can be accomplished. LMUD obtains excellent educational literature from the TWDB, LCRA, and Austin Water, as well as from sources such as the TCEQ, Texas Municipal Utility Association, and the American Water Works Association. LMUD regularly utilizes large community roadside banners to promote water conservation. Literature is periodically included in billing envelopes, as well as a graphic of individual customer usage on

every bill. A wide variety of printed information is also available at all times at LMUD's office. Articles concerning conservation are published regularly in the local newspaper and on LMUD's website. In addition, a direct mailing of conservation reminders is conducted annually.

CONSERVATION ORIENTED RATE STRUCTURE

LMUD has always used an increasing block rate structure for all customers, however, in 2006, LMUD revised rates to encourage water conservation. The revised rate structure has more blocks with the price increasing the highest for residential customers using over 100,000 gallons per billing cycle. The revised rate structure is included as Exhibit B.

METER REPAIR AND REPLACEMENT

Inaccurate metering is one possible cause for unaccounted for water, and since meter readings form the basis for data gathering on production, usage and sales, maintaining accurate meters is a high priority. LMUD currently has approximately 4,205 metered accounts with the vast majority of accounts using 5/8" or 3/4" meters. While residential meters are made to last 15-20 years, they will be changed out every 15 years or less or approximately every two million metered gallons. Meters are read bi-monthly, and every effort is made to identify malfunctions resulting in abnormally high or low readings.

Master meters are checked monthly and changed out every five years. Customer meters are also tested at their request. LMUD has converted all meters in the system to electronic "radio read" meters, increasing accuracy and accessibility of water usage information. The software associated with these meters allows the operator to create usage graphs over a historical time period of several months. These graphs are invaluable in showing customers what their typical usage is at any given day and/or time and are also used as a basis for all water audits.

PERIODIC REVIEW AND EVALUATION OF DATA

LMUD routinely monitors production rates and consumption. This monitoring is not only used for billing purposes to calculate raw water purchases from LCRA, but also to satisfy TCEQ regulatory requirements to account for production quantities and individual customer usage on a bi-monthly basis. The results of water meter readings are prepared and analyzed to determine trends of usage, water accountability, and production requirements both near-term and future. From this information, an evaluation of system operations is made and appropriate action is taken to correct system deficiencies, when necessary.

LEAK DETECTION, PREVENTION, AND REPAIR

An important element in the operation of an efficient water system is the reduction of water loss. It is the goal of this program to minimize water loss values. In the past, LMUD had held fairly steady on unaccounted-for water due to an aggressive program of fire hydrant repair and refurbishment, leak detection and repair, and master meter calibration and comparison. However, recent past years have seen an increase in unaccounted-for water and losses exceeding 15 percent has triggered investigations for the causes. Previously, leaks had been detected by visual inspections, but LMUD has recently undergone a program to utilize leak detection equipment. The program includes the use of acoustic loggers and accompanying software to detect and evaluate water flow anomaly areas to help locate system water loss areas.

PRESSURE CONTROL

Located in the Hill Country west of Austin, LMUD has numerous significant elevation differences between storage facilities and customers. These pressure differentials can result in very high pressure in some areas; and pressures exceeding 120 psi can occur in the distribution system. This high pressure may cause a small opening in a main to leak a large amount of water in a short time. LMUD uses in-line pressure reducing valves (PRVs) to isolate key areas of LMUD and eliminate excessive pipeline pressures in those areas. PRVs are routinely checked for proper operation and immediately repaired if malfunctioning. In addition, LMUD requires that customers install individual pressure regulating valves to back up the large system pressure reducers and further reduce the in-home pressures to less than 80 psi.

RECYCLING AND REUSE

LMUD supports and encourages water recycling and reclaimed water use to the greatest extent possible because these practices are good for the environment, help conserve water, lower irrigation costs for customers, and extend the capacity of potable water treatment plants by reducing demand. Several projects have been implemented which will maximize LMUD's ability to use reclaimed water for landscaping purposes, including recent plans underway to extend and expand the wastewater collection (and treatment) system to roughly 1,000 Out-of-District customers previously on septic systems. This project, anticipated for implementation over the next few years, will also extend the reaches of the reclaimed water system, expanding the use of reclaimed water in lieu of potable water irrigation.

Description of Water Reuse Program and Conservation Practices

LMUD's reuse program encompasses not only reclaimed water permitted through the water recycling plants intended for irrigation application on community golf courses, but also irrigation of extensive landscaping on medians and rights-of-way as well as common areas for businesses, homeowners associations (HOAs), parks and other irrigable areas throughout the Lakeway community.

LMUD has obtained a Chapter 210 Reclaimed Water Authorization permit that is applicable for the entire greater Lakeway area, allowing for many opportunities to make use of recycled water wherever possible. LMUD's two water recycling plants, currently permitted for a total average annual flow of 1.21 million gallons per day, contribute to a connected reclaimed water piping system.

Large homeowner association's common areas and other large commercial users of recycled water from LMUD include:

- Arbolago Neighborhood (LMUD partners with District 17 to allow District 17 water customers to use the closer LMUD effluent for irrigation)
- La Cima Garden Homes
- CVS Pharmacy (LMUD partners with District 17 to allow District 17 water customers to use the closer LMUD effluent for irrigation)
- Interra Hospital (a.k.a. Vibra Rehabilitation Hospital of Lake Travis; LMUD partners with District 17 to allow District 17 water customers to use the closer LMUD effluent for irrigation)
- Retama Gardens
- Lakeway Church
- World of Tennis Condos

- World of Tennis Club Corp
- Estates of Lakeway
- Airpark Hangars
- Villas of Lakeway 1 & 2
- Market Place
- The Boulevard
- The Airpark
- The Entrance
- G&P Dawlett Clock Tower
- Tres Vistas Garden Homes
- Lakeway Commons Center
- Lakeway Church
- Hill Country Storage (LMUD partners with District 17 to allow District 17 water customers to use the closer LMUD effluent for irrigation)

Recycled water is used for beneficial irrigation of the Yaupon and Live Oak Golf Courses, City areas such as Lakeway Boulevard and Lohmans Crossing Road medians and Porpoise Park, on-site LMUD facilities, and other miscellaneous areas in the Lakeway area.

STANDARD CONSERVATION PRACTICES

LMUD practices the following conservation practices:

1. Control of Landscape Irrigation Practices
 - a. Mandating 2-day per week maximum outdoor watering schedule for commercial and residential customers.
 - b. Requiring irrigation in off-peak hours during the night and early morning when demand and evaporation rates are lower. No irrigation watering is allowed between 10:00 A.M. and 7:00 P.M.
 - c. Encouraging landscape irrigation audits for high users by making contact and notifications to users individually and offering free audits to customers.
2. Other Water Saving Practices
 - a. Encouraging retrofit of existing fixtures to water saving fixture types.
 - b. Promoting and encouraging customers to utilize LCRA's smart irrigation controller and rainwater harvesting/barrel rebates.
 - c. Adopting and enforcing the Uniform Plumbing Code which includes pertinent sections of state law restricting the use of non-water saving fixtures in new construction. LMUD uses the plumbing code to regulate and conduct plumbing inspections on all residential and commercial installations.
 - d. Recommending water-wise and alternative native landscaping to use less water.

- e. Participating in the most cost-effective rebate and free equipment programs such as high efficiency toilet distribution, low flow showerhead distribution, and rain gauge distribution.
- f. Provide customers information on individual water use in comparison to the average user.
- g. Monitoring and contacting customers with high usage spikes.
- h. Sponsoring and participating in community conservation events.
- i. Continuing expansion of LMUD's recycled water program to decrease the amount of potable water used for irrigation.
- j. Encouraging rainwater harvesting and other alternative source systems.
- k. Requiring regular irrigation audits for large commercial and multi-family properties.

BEST MANAGEMENT PRACTICES

After review of LMUD's water usage patterns and annual consumption, the following Best Management Practices (BMP's) have been identified by LMUD to help conserve water. Goals for these BMP's have set five-year and ten-year targets as listed below in the *Water Savings Goals* section. These goals and BMP's have been set up in accordance with the guidelines of TWDB.

BMP #1

Continue to refine customer awareness of individual usage. Continue the conservation-oriented incremental block rate structure to discourage the inefficient use or waste of water.

- 1. Near – Term
 - a. LMUD will continue utilizing and enhance current billing software that allows customers to compare water use on their bill with average water use and show their home report of individual water use for the last 12 months.
 - b. Offer water audits at no charge to residential and commercial customers.
- 2. Long – Term
 - a. Update and review rate structure and adjust billing software as needed.
 - b. Utilize software to expand capability for instantaneous interactive viewing of usage by customers.
 - c. Utilize software which automatically e-mails customers when a certain water volume has been used.

BMP #2

Enforce measures that prohibit specific wasteful activities related to landscape irrigation.

- 1. Near – Term

Encourage our customers to conserve and implement the following where feasible:

 - a. Landscape Irrigation
 - i. Landscape irrigation systems are not mandatory.
 - ii. Landscape irrigation systems, if installed, are encouraged to include the following water conservation features:
 - 1. Rain and/or moisture sensors (required).

2. Backflow prevention device installed in accordance with applicable state laws.
3. Pressure reducing valve and/or remote control valves for each station with flow control.
4. Pressure reducing valve where supply pressure exceeds 60 psi, for which pressure reducing valve installed in-line at the meter and serving house as well as irrigation system.
5. Zoning of irrigation system based on plant water requirements.
6. Multiple cycle controllers with an irrigation water budget feature.
7. Minimization of overspray onto hardscapes by design, maintenance and scheduling practices. Due to overspray, subsurface drip irrigation is encouraged but not required.
8. Low volume irrigation should be installed in areas less than 10 feet wide, such as median strips, and parking islands.
9. Contractors installing irrigation systems should provide system design plans to the homeowner. Scheduling recommendations should be posted in or near the irrigation controller box.

2. Near – Term

- a. Continue to enforce and review irrigation ordinance. Perform irrigation audits for customers, as requested.

3. Long – Term

- a. Continue implementation and outreach programs to educate customers on and gain support from the City, landscapers, developers and builders to institute water saving landscape regulations.

BMP #3

Continue to review water usage by businesses and encourage programs which promote water conservation such as indoor water audits, use of high efficiency and low water usage equipment, and use of reclaimed water.

1. Near – Term

- a. Conduct complete indoor water use audits of all large businesses.
- b. Encourage business to implement audit recommendations as budgets allow.
- c. Encourage businesses to xeriscape and reduce irrigation as much as possible.

BMP #4

Encourage water wise landscape design.

1. Near – Term

- a. Provide builders and commercial developers with information about water wise landscaping.
- b. Landscape Design
 - i. All irrigated and newly planted turf areas should have a minimum soil depth of 6 inches. Builders and owners will import soil if needed to achieve sufficient soil depth. Soil in these areas may be either native soil from the site or imported, improved soil.

Improved soil will be a mix of no less than twenty percent compost blended with sand and loam. Caliche shall not be considered as soil.

- ii. Builders are encouraged to provide homeowners a conservation landscape option using only native or adapted trees, shrubs and flowers. The use of invasive plants will be avoided.
- iii. Maintain a minimum of two inches of mulch in all shrub and bed areas.
- c. Other Landscape Specifications
 - i. The homeowners or property owners' association documents (including declaration of covenants, articles of incorporation, bylaws, or any other document of the association which binds members of the association) shall not restrict the property owner from:
 - 1. implementing measures promoting solid-waste composting of vegetation, including grass clippings, leaves or brush, or leaving grass clippings uncollected on grass;
 - 2. installing rain barrels or a rainwater harvesting system; or
 - 3. Implementing efficient irrigation systems, including underground drip or other drip systems.
 - ii. The homeowners or property owners' association documents (including declaration of covenants, articles of incorporation, bylaws, or any other document of the association which binds members of the association) shall not require:
 - 1. A defined irrigation schedule specified by the association unless defined irrigation schedule is mandated by technical requirements of the supply.
 - 2. Maintenance of the landscape to a specified level that requires the property owner to irrigate his or her landscape.
 - 3. Installation or maintenance any specific variety or limited choice of varieties of turf grass.
 - 4. Installation of a minimum percentage of turf in the landscape.
- d. Encourage reuse/rain water/storm water systems to meet certain irrigation water needs, including common areas.

2. Long – Term

- a. Develop awards programs to motivate community acceptance and conversion to low water use landscapes.

BMP #5

Develop outreach programs which can help to promote water conservation in the community.

1. Near – Term

- a. Continue to provide builders with information which advises water conservation within the home and landscape.
- b. Identify and coordinate speakers to talk with community organizations on water conservation.
- c. Expand LMUD's web site to include links to water conservation sites.
- d. Continue use of community roadside banners to promote water conservation.

- e. Send out outdoor conservation information pamphlets annually.
- 2. Long – Term
 - a. Set-up awards programs to promote water conservation by residential customers.
 - b. Continue to update customer packets and web site.

WATER SAVINGS GOALS

LMUD has reviewed and developed quantifiable five-year and ten-year targets for water savings as required by the TCEQ in Title 30, Chapter 288 of the TAC. LMUD will use 2016 as the baseline year with five-year goals to be achieved by 2024. The ten-year goals are to be achieved by 2029 (See Exhibit C).

The key elements of these targets are reduction in water loss and conservation as measured by water usage per person per day.

- 1. Reduce real water losses in the distribution system by performance of proactive procedures to include improved response time and efficient leakage management.
 - a. Five –Year Target (2024)

To have unaccounted for water at 13 percent or less.
 - b. Ten –Year Target (2029)

To reduce unaccounted for water at 10 percent or less.
- 2. Promote individual and residential water conservation to decrease residential per capita, and per living unit equivalent (LUE), and commercial per account potable water usage of water to the following levels:
 - a. Five –Year Target (2024)
 - i. Residential
 - 1. Present baseline equals 137 gallons/day/capita.
Target: Reduce five year average to 123 gallons/day/capita.
 - ii. Commercial
 - 1. Present use equals 55,674,000 gallons/year.
Target: Reduce (2024) five-year average to 46,791,000 gallons/year.
 - b. Ten –Year Target (2029)
 - i. Residential
Target: Reduce five-year average to 122 gallons/day/capita.
 - ii. Commercial
Target: Reduce five year average to 44,643,000 gallons/year.

CONSERVATION PLAN IMPLEMENTATION

The Board of Directors of LMUD will adopt this Plan and implement it through direction of the General Manager who is designated as the Conservation and Drought Contingency Coordinator, staff and consultants. Enforcement will be provided by temporary discontinuation of service to those persons not in compliance and fines, as listed in LMUD rates list.

LMUD will require through contractual arrangements that any other political subdivision or utility obtaining water from LMUD adopt a conservation plan approved by the TCEQ equal to or more restrictive than this plan.

ANNUAL REPORTING AND REVIEW

An annual report describing the implementation, status, and effectiveness of the water conservation plan will be submitted as required to the TWDB (Exhibit D). LMUD's General Manager and engineer will review this plan annually, and make recommendations to the Board of Directors on any updates or amendments which may be required.

PASSED AND APPROVED this 17th day of March, 2020

ATTEST: -



Secretary, Board of Directors



Vice President, Board of Directors

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