

APPENDIX A

LOWER COLORADO RIVER AUTHORITY
WATER CONSERVATION PLAN RULES FOR WATER SALE CONTRACTS
(October 2015)

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FORWARD

LCRA was created by the Texas Legislature in 1934 as a conservation and reclamation district. One of LCRA's primary responsibilities is to conserve and protect the soil and water resources of the Colorado River basin within LCRA's statutory district. The LCRA Board policy on Water Conservation directs LCRA staff and management to exercise leadership in promoting and, where appropriate, requiring the conservation of ground and surface waters within LCRA's water service area.

The water conservation rules are promulgated pursuant to LCRA policy and in compliance with the requirements of Texas Administrative Code, Title 30, Environmental Quality, Chapter 288, Subchapter A: Water Conservation Plans.

CHAPTER 1: PURPOSE AND AUTHORITY

1.1. Purpose. The purpose of these rules is to extend existing surface water supplies through water conservation and help to assure an adequate supply of water within the LCRA water service area. These rules apply to all LCRA water sale contracts except those expressly excluded below. These rules do not apply to: i) water sale contracts for domestic use up to ten (10) acre-feet per year; ii) water sale contracts for uses other than municipal use that have a Maximum Annual Quantity of ten (10) acre-feet per year or less and a term of three (3) years or less; or iii) interruptible agricultural contracts for a term of one year or less.

1.2. Authority. These requirements are promulgated in accordance with Chapters 11, 152, and 222 of the Texas Water Code; Title 30, Chapter 288 of the Texas Administrative Code; and the LCRA Board policy on Water Resources.

CHAPTER 2: DEFINITIONS

The definitions herein are in addition to the definitions found in LCRA Water Contract Rules, Article III.

2.1 Commercial Use. The use of water by a place of business, such as a hotel, restaurant, or office building. This does not include multi-family residences or agricultural, industrial, or institutional users.

2.2. Institutional Use. 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.

2.3. Regional Water Planning Group. A group established by the Texas Water Development Board to prepare a regional water plan under Texas Water Code, §16.053.

2.4. Residential Use. The use of water that is billed to single and multi-family residences, which applies to indoor and outdoor water uses.

2.5. Residential Gallons Per Capita Per Day. 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.

2.6. Retail Public Water Supplier. An individual or entity that, for compensation, supplies water to the public for human consumption. The term does not include an individual or entity that supplies water to itself or its employees or tenants when that water is not resold to or used by others.

2.7. Total Gallons Per Capita Per Day. 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 shall be credited against total diversion volumes for the purposes of calculating GPCD for targets and goals.

2.8. Wholesale Public Water Supplier. An individual or entity that, for compensation, supplies water to another for resale to the public for human consumption. The term does not include an individual or entity that supplies water to itself or its employees or tenants as an incident of that employee service or tenancy when that water is not resold to or used by others, or an individual or entity that conveys water to another individual or entity, but does not own the right to the water which is conveyed, whether or not for a delivery fee.

CHAPTER 3: MUNICIPAL USES BY RETAIL PUBLIC WATER SUPPLIERS

3.1. General. The water conservation plan (plan) shall effectively address all appropriate methods for reducing water consumption and water waste, methods for improving water use efficiency, and methods for increasing the beneficial reuse and recycling of water. It is recommended that the baseline water utility profile be used to develop the components of the water conservation program. A customer shall explain reasons for not including a required measure in the plan. Implementation of this plan must begin not later than the commencement of diversion of water pursuant to the water sale contract. The required information may be given in either narrative or outline format.

3.2. Minimum Requirements. All municipal plans must include the following elements:

- (a) Utility profile. Including, but not limited to, information regarding population and customer data, water use data (including Total Gallons Per Capita Per Day (Total GPCD) and Residential GPCD), water supply system data, and wastewater system data. The plan should include estimated population, number of connections, and average daily water use at build-out or the end of the contract term.
- (b) Specification of conservation goals. 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 the customer are not enforceable.
- (c) A records management system which allows for the classification of water sales and uses into the most detailed level of water use data available to it, including, if possible, the following sectors: residential single family, residential multi-family, commercial, institutional, industrial, agricultural and wholesale. Any new billing system acquired by a public water supplier must be capable of reporting detailed water use data by these

- sectors.
- (d) Metering devices, within the accuracy of plus or minus 5%, in order to measure and account for the amount of water diverted from the source of supply. The plan must provide for testing and calibration of the meter by the customer at periods not greater than once a year.
 - (e) Universal Metering. A program for universal metering of both customer and public uses of water, for meter testing and repair, and for periodic meter replacement. Meter replacement should follow recommended meter manufacturer guidelines.
 - (f) Water loss. Measures to determine and control water loss (for example, periodic visual inspections along distribution lines, annual audit of the water system to determine illegal connections, use of forms, and accounting for loss due to flushing, fire fighting, etc.). The customer shall conduct water loss audits in accordance with Texas Water Development Board rules (Texas Administrative Code, Title 31, Chapter 358).
 - (g) Education and public information programs. A program of continuing public education and information.
 - (h) Water rates. A Retail Public Water Supplier that has not previously adopted a tariff or rates must provide those rates to LCRA within one year of adoption. Water rate structures must not be “promotional,” i.e. the structure is cost-based and does not encourage the excessive use of water. Such a rate usually takes the form of an increasing block rate, a seasonal load rate, or an excess use rate. Rate structures in which the unit cost of water decreases as consumption increases and flat rates are not acceptable. It is recommended that rates be set so that they impact discretionary use.
 - (i) Reservoir systems operations plan. If applicable, customer shall include a reservoir systems operations plan providing for the coordinated operation of reservoirs owned by the customer within a common watershed or river basin in order to optimize available water supplies.
 - (j) Implementation and Enforcement. A means of implementation and enforcement which shall be evidenced by:
 - (1) A copy of the ordinance, resolution, or tariff, indicating official adoption of the water conservation plan by the customer; and
 - (2) A description of the authority by which the customers will implement and enforce the water conservation plan.
 - (k) Alternative water supplies. Customer shall consider the use of alternative water supplies and/or wastewater reuse to supplement water supply needs and state whether or not it is an appropriate water supply option.
 - (l) Regional planning group. Customer must document that they are coordinating with the utility’s regional water planning group in order to ensure consistency with the appropriate approved regional water plans.

3.3. Additional Mandatory Requirements. Water conservation plans must include the following additional elements if the customer serves, or plans to serve in the next ten (10) years, a population of 5,000 or greater:

- (a) A program of leak detection, repair, and water loss accounting for the water transmission, delivery, and distribution system;
- (b) Wholesale Water Customer Requirement. Customer shall include a provision in their water conservation plans that every wholesale water supply contract entered into, extended, or renewed after official adoption of the customer’s water conservation plan, shall require each successive wholesale customer to develop and implement a water

conservation plan or water conservation measures using the applicable elements in these Rules. If the customer's wholesale customer intends to resell the water, then the contract between the initial supplier and wholesale 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 measures in accordance with these Rules.

3.4. Additional Conservation Strategies. Other measures recommended for adoption include, but are not limited to:

- (a) A permanent landscape watering schedule for spray irrigation that limits water use to no more than twice per week and only between the hours of midnight to 10 a.m. and 7 p.m. to midnight.
- (b) Adoption through ordinance, deed restriction or covenant – where feasible and allowed by federal, state, and local law and regulations – those conservation measures that are contained in Attachment 1, "*Landscape Conservation Standards.*" Adoption through ordinance, deed restriction or covenant – where feasible and allowed by federal, state, and local law and regulations – those conservation measures that are contained in Attachment 2, "*Pool Construction Standards.*"
- (c) Other measures that may be applicable, such as landscape irrigation evaluations, plumbing fixture replacement programs, and the use of on-site alternative water sources, such as graywater, air conditioning condensate or rainwater harvesting systems. A method for monitoring and evaluating the effectiveness of the conservation measures; and
- (d) Other measures as may be applicable.

3.5. Other Approved Water Conservation Plans. A water conservation plan prepared and approved in the last five (5) years by LCRA, the Texas Commission of Environmental Quality or the Texas Water Development Board and substantially meeting the requirements of these rules as determined by LCRA may be substituted for development of a plan to meet LCRA rules.

3.6. Plan Update. The customer shall review and update its water conservation plan, in accordance with these rules, including the specification of five (5) and ten (10) year GPCD and water loss goals.

CHAPTER 4: MUNICIPAL WATER USE BY WHOLESALE WATER SUPPLIER

4.1. General. The water conservation plan (plan) shall effectively address all appropriate methods for reducing water consumption and water waste, methods for improving water use efficiency, and methods for increasing the beneficial reuse and recycling of water. A Customer shall explain reasons for not including a required measure in the plan. The required information may be given in either narrative or outline format. Implementation of this plan must begin when the contract is signed or when water is diverted.

4.2. Minimum Requirements. All plans must include the following:

- (a) A description of the wholesaler's service area, including population and customer data, water use data, water supply system data, and wastewater data;
- (b) Specification of conservation goals. Specific, quantified five-year and ten-year targets for water savings including , where appropriate, target goals for municipal use in gallons

per capita per day for the wholesaler's service area, maximum acceptable water loss, and the basis for the development of said goals. The goals established by the customer are not enforceable.

- (c) A description as to which practice(s) and/or device(s) will be utilized to measure and account for the amount of water diverted from the source(s) of supply;
- (d) A monitoring and record management program for determining water deliveries, sales, and losses;
- (e) A program of metering, leak detection, and repair for the wholesaler's water storage, delivery, and distribution system;
- (f) A requirement in every wholesale water supply contract entered into, extended, or renewed after official adoption of the water conservation plan, that each successive wholesale customer develop and implement a water conservation plan or water conservation measures using the applicable elements of the LCRA rules. If the customer intends to resell the water, then 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 LCRA rules;
- (g) A reservoir systems operations plan, if applicable, providing for the coordinated operations of reservoirs owned by the customer within a common watershed or river basin in order to optimize available water supplies;
- (h) 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; and
- (i) Documentation of coordination with the Regional Water Planning Groups for the service area of the wholesale water supplier in order to insure consistency with the appropriate approved regional water plans.
- (j) Additional conservation strategies. In addition to the minimum requirements above, the water wholesaler shall select any combination of the following strategies, if they are necessary in order to achieve the stated water conservation goals of the plan.
 - (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) A program to assist customers in the development of conservation pollution prevention and abatement plans;
 - (3) A program for reuse and/or recycling of wastewater and/or gray water; and
 - (4) Any other water conservation practice, method, or technique, which the wholesaler shows to be appropriate for achieving the stated goal or goals of the water conservation plan.

4.3. Other Approved Water Conservation Plans. A water conservation plan prepared and approved in the last five (5) years by LCRA, the Texas Commission of Environmental Quality or the Texas Water Development Board and substantially meeting the requirements of these rules as determined by LCRA may be substituted for development of a plan to meet LCRA rules.

4.4. Plan Update. The customer shall review and update its water conservation plan, in accordance with these rules, including the specification of five (5) and ten (10) year GPCD and water loss goals.

CHAPTER 5: INDUSTRIAL OR MINING WATER USE

5.1. General. The water conservation plan (plan) shall effectively address all appropriate methods for reducing water consumption and water waste, methods for improving water use efficiency, and methods for increasing the beneficial reuse and recycling of water. A customer shall explain reasons for not including a required measure in the plan. The required information may be given in either narrative or outline format. Implementation of this plan must begin not later than the commencement of diversion of water pursuant to the water sale contract.

5.2. Minimum Requirements. All plans must include the following:

- (a) **Description of Production Process.** A baseline profile that includes a description of the use of the water in the production process, including how the water is diverted and transported from the source(s) of supply, how the water is utilized in the production process, and the estimated quantity of water consumed in the production process and therefore unavailable for reuse, discharge, or other means of disposal;
- (b) **Conservation Goals.** Specification of specific, quantified five-year and ten-year targets for water savings and the basis for the development of such goals. The goals set by the customer are not enforceable;
- (c) **Measuring Device.** A description of the device(s) and/or method(s), within an accuracy of plus or minus 5% to be used in order to measure and account for the amount of water diverted from the source of supply. The plan must provide for testing and calibration of the meter by the customer at periods not greater than once a year;
- (d) **Leak Detection.** Leak-detection, repair, and water loss accounting for water transmission, delivery, and distribution system;
- (e) **Alternative Water Supplies.** Customers must consider the use of alternative water supplies and/or wastewater reuse to supplement water supply needs and state whether or not it is an appropriate water supply option.
- (f) **State-of-the-Art.** Application of state-of-the-art equipment and/or process modifications to improve water use efficiency; and
- (g) **Other Practices.** Any other water conservation practice, method, or technique which the user shows to be appropriate for achieving the stated goal or goals of the water conservation plan, including employee education and awareness.

5.3. Other Approved Water Conservation Plans. A water conservation plan prepared and approved in the last five (5) years by LCRA, the Texas Commission of Environmental Quality or the Texas Water Development Board and substantially meeting the requirements of these rules as determined by LCRA may be substituted for development of a plan to meet LCRA rules.

CHAPTER 6: AGRICULTURAL WATER USE

6.1. General. The requirements of this chapter apply to Agricultural Use by an individual customer. This chapter, however, does not apply to Recreation or Irrigation Use that is unrelated to Agricultural Use. The water conservation plan (plan) shall effectively address all appropriate methods for reducing water consumption and water waste, methods for improving water use

efficiency, and methods for increasing the beneficial reuse and recycling of water. A customer shall explain reasons for not including a required measure in the plan. The required information may be given in either narrative or outline format. Implementation of this plan must begin not later than the commencement of diversion of water pursuant to the water sale contract.

6.2. For Agricultural Water User Not Receiving Water from a System. (see Sec. 6.3 for provisions applicable to a customer supplying multiple end-users)

(a) Minimum Requirements. All plans must include the following:

- (1) Baseline Profile. A description of the agricultural production process which shall include, but is not limited to: i) the types of crop or landscape use; ii) approximate acreage irrigated; iii) estimated annual water usage; iv) any seasonal or annual crop rotation; and v) soil types of the land to be irrigated. The description should include how the water is diverted and transported from the source(s) of supply, how the water is utilized in the production process, and the estimated quantity of water consumed in the production process and therefore unavailable for reuse, discharge, or other means of disposal.
- (2) Goals. Specific, quantified five-year and ten-year targets for water savings and the basis for the development of such goals. The goals established by agricultural water users under this subparagraph are not enforceable.
- (3) A description of the device(s) and/or method(s) within an accuracy of plus or minus 5.0% to be used in order to measure and account for the amount of water diverted from the source of supply.
- (4) Leak-detection, repair, and accounting for water loss in the water distribution system.
- (5) Application of state-of-the-art equipment and/or process modifications to improve water use efficiency; these may include: 1) land improvements for retaining or reducing runoff, and increasing the infiltration of rain and irrigation water including, but not limited to, land leveling, furrow diking, terracing, and weed control; and, 2) tailwater recovery and reuse.
- (6) Any other water conservation practice, method, or technique which the user shows to be appropriate for achieving the stated goal or goals of the water conservation plan.

6.3. Agricultural Systems Serving Multiple Users.

(a) The requirements of this section apply to Agricultural Use in a system providing agricultural water to more than one user. The water conservation plan (plan) shall effectively address all appropriate methods for reducing water consumption and water waste, methods for improving water use efficiency and methods for increasing the beneficial reuse and recycling of water. A customer shall explain reasons for not including a required measure in the plan. The required information may be given in either narrative or outline format. Implementation of this plan must begin not later than the commencement of diversion of water pursuant to the water sale contract.

(b) Minimum Requirements. All plans must include the following:

- (1) A system inventory for the supplier's: (i) structural facilities including the supplier's water storage, conveyance, and delivery structures; (ii) management practices, including the supplier's operating rules and regulations, water pricing policy, and a description of practices and/or devices used to account for water deliveries; and (iii) a user profile including square miles of the service area, the

number of customers taking delivery of water by the system, the types of crops, the types of irrigation systems, the types of drainage systems, and total acreage under irrigation, both historical and projected.

- (2) Specific, quantified five-year and ten-year targets for water savings including maximum allowable losses for the storage and distribution system. The goals established by a system providing agricultural water to more than one user under this subparagraph are not enforceable.
 - (3) A description of the practice(s) and/or device(s) which will be utilized to measure and account for the amount of water diverted from the source(s) of supply.
 - (4) A monitoring and record management program of water deliveries, sales, and losses.
 - (5) A leak-detection, repair, and water loss control program.
 - (6) A program to assist customers in the development of on-farm water conservation and pollution prevention plans and/or measures.
 - (7) A requirement in every wholesale water supply contract entered into, extended, or renewed after official adoption of the plan (by either ordinance, resolution, or tariff) that each successive wholesale customer develop and implement a water conservation plan or water conservation measures using the applicable elements in LCRA rules. If the successive wholesale customer intends to resell the water, the contract between the LCRA customer (i.e., the initial supplier) and the successive 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 applicable provisions of the LCRA rules.
 - (8) Official adoption of the water conservation plan and goals, by ordinance, rule, resolution, or tariff, indicating that the plan reflects official policy of the supplier.
 - (9) Any other water conservation practice, method, or technique which the supplier shows to be appropriate for achieving conservation.
 - (10) Documentation of coordination with the regional water planning groups in order to ensure consistency with appropriate approved regional water plans.
- (c) Plan update. The customer (i.e., an Agricultural Use system providing water to more than one user) shall review and update its water conservation plan, in accordance with these rules, including the specification of five (5) and ten (10) year targets for water saving.

6.4. Other Approved Water Conservation Plans. A water conservation plan prepared and approved in the last five (5) years by LCRA, the Texas Commission of Environmental Quality or the Texas Water Development Board and substantially meeting the requirements of these rules as determined by LCRA may be substituted for development of a plan to meet LCRA rules.

CHAPTER 7: RECREATIONAL OR IRRIGATION WATER USE

7.1. General. The requirements of this chapter apply to Recreational Use and Irrigation Use unrelated to Agricultural Use. The water conservation plan (plan) shall effectively address all appropriate methods for reducing water consumption and water waste, methods for improving water use efficiency, and methods for increasing the beneficial reuse and recycling of water. A customer shall explain reasons for not including a required measure in the plan. The required

information may be given in either narrative or outline format. Implementation of this plan must begin not later than the commencement of diversion of water pursuant to the water sale contract.

7.2. Minimum Requirements. All plans must include the following:

- (a) A description of the recreational or irrigation use process, which shall include, but is not limited to: i) specification of the amount of turf, landscape or crops to be irrigated; ii) monthly use diversions; iii) any seasonal or annual turf, landscape or crop rotation; and iv) soil types of the land to be irrigated.
- (b) A description of the irrigation method or system and equipment. This could include pumps, flow rates, plans, and/or sketches of the system layout.
- (c) A description of the device(s) and/or methods to be used in order to measure and account, within an accuracy of plus or minus 5.0%, for the amount of water diverted from the source of supply. The plan must provide for testing and calibration of the measuring device by the customer at periods not greater than once a year for contracts of greater than 20 acre-feet per year and at periods not greater than once every two years for contracts up to 20 acre-feet per year.
- (d) Specific, quantified five-year and ten-year targets for water savings including, where appropriate, quantitative goals for recreational and/or irrigation water use efficiency and a pollution abatement and prevention plan. The goals established by a customer under this subparagraph are not enforceable.
- (e) Water conserving irrigation equipment and application systems or methods will be used. Examples include the use of controllers with water budget features, utilizing the appropriate spray heads, surge irrigation, low pressure sprinkler, drip irrigation, non-leaking pipe, etc.
- (f) Leak-detection, repair and water-loss control. Irrigation system inspections should be done periodically and necessary adjustments/repairs made to eliminate leaks, overspray or clogging. The irrigation system should be tested for uniformity of spray as well as the application rate. Irrigation testing should be conducted for each area capable of independent control.
- (g) Irrigation Testing and Scheduling. Maintenance zones shall be identified, and irrigation schedules including frequency and duration should be developed for these zones. Irrigation scheduling will be adjusted, at minimum, quarterly, to reflect changes in seasonal irrigation requirements.
- (h) Equipment Upgrades. Equipment upgrades should be implemented where technically and economically feasible. Examples of upgrades include automatic controllers, rain shut-off devices, soil moisture monitors, and installation of water conserving irrigation equipment (e.g. drip systems, bubblers).
- (i) Future Conversions. Where feasible, landscape areas should be converted to low maintenance, low water use plantings. In addition, customer should identify and evaluate opportunities for land improvements for retaining or reducing runoff, and increasing the infiltration of rain and irrigation water including, but not limited to, land leveling, terracing, and weed control.
- (j) Alternative Water Supplies. Customers must consider the use of alternative water supplies and/or wastewater reuse to supplement water supply needs and state whether or not it is an appropriate water supply option.
- (k) Water Direct Reuse and Recycling. Where appropriate, the customer should identify and evaluate opportunities for tailwater recovery and reuse.

7.3. Irrigation Water Use for Resale by Customer. This section applies to customers that sell water for irrigation use to ultimate consumers for compensation. Customers shall develop a plan that includes water conservation measures using the applicable elements of these rules. These measures include, but are not limited to, development of a baseline profile and implementing a non-promotional water use rate, a metering and leak detection program for the irrigation system, and a customer education program.

7.4. Other Approved Water Conservation Plans. A water conservation plan prepared and approved in the last five (5) years by LCRA, the Texas Commission of Environmental Quality or the Texas Water Development Board and substantially meeting the requirements of these rules as determined by LCRA may be substituted for development of a plan to meet LCRA rules.

CHAPTER 8: OTHER WATER USES

8.1. General. A water conservation plan for any other purpose or use not covered in these rules shall provide information where applicable about those practices, techniques, and technologies that will be used to reduce the consumption of water, prevent or reduce the loss or waste of water, maintain or improve the efficiency in the use of water, increase the recycling and reuse of water, or prevent the pollution of water.

CHAPTER 9: REPORTING REQUIREMENTS AND IMPLEMENTATION

9.1. Water Conservation Coordinator. All customers must designate a water conservation coordinator who will be responsible for implementing the customer's approved water conservation plan, completing progress reports, and coordinating conservation activities with LCRA.

9.2. Progress Report Schedule.

- (a) **Progress Reports.** All customers must complete progress forms distributed by the LCRA that will assess overall progress and success of customer conservation programs. The surveys will be distributed in January and LCRA will use this information in its annual reports to the TCEQ.
- (b) **Plan Updates and Amendments.** Water Conservation Plans should be updated every five years at a minimum, to reflect conditions associated with the use of water that have changed since the plan was first adopted or as otherwise required in the previous chapters. Any amendments to these rules that occurred after the customer's plan was adopted shall be included in the updated plan.

9.3. Content of Progress Reports. LCRA will develop a report form for customers to complete. This report shall include the following:

- (a) **Measures Implemented.** A description of specific measures implemented. These measures will match measures included in customer's water conservation plan.
- (b) **Results of Conservation Measures.** Customers should report on any observed change in water use and water demand, economic savings, and public response that occurred as a result of implementing these measures.

9.4. Implementation of Plans. The customer agrees to commence implementation of the water conservation programs listed in the water conservation plan not later than the commencement of diversion of water pursuant to the water sale contract. The customer agrees to continue these programs for the duration of the contract, and/or utility service agreement, with LCRA. Failure of the customer to implement said water conservation plan may result in LCRA taking legal action to require compliance.

9.5. Amendment to Rules. LCRA may, from time to time, amend these rules to reflect advances in water conservation measures or changes in state or federal regulations. LCRA will notify customers of proposed amendments to these rules, and customer input will be solicited for any and all proposed amendments. Any proposed amendments will be presented to the LCRA Board of Directors and will be subject to approval by the Board.

Attachment 1: Landscape Conservation Standards

These standards are similar to the Greater Austin Homebuilder “Sensible Landscaping for Central Texas” guidelines developed with significant input from the LCRA. The standards are meant to provide builders and homeowners with a well designed, water efficient landscape. The standards can be adopted through ordinance, deed restriction or covenant where economically feasible and allowed by federal, state and local law.

Design

- A. No more than 50% or up to 7,000 square feet of the landscape shall be planted in turf. Longer leafed native grasses and wildflowers that use low amounts of water are not considered turf grass when determining how much turf grass is allowed.
- B. Automatic spray irrigation for each home/business shall be limited to 2.5 times the foundation footprint, with a 12,000 sq foot maximum. The footprint may include both the house and the garage, but not the driveway or patio.

Soil

- A. There shall be no less than **6 inches** of high quality topsoil in planted areas.
- B. Topsoil shall be native soil from the site, or fertile, friable, blended soil/compost blend. Topsoil shall not be of any admixture of subsoil or slag and shall be free of stones over 1 ½ inches in diameter, lumps, refuse, plants or their roots, sticks, noxious weeds, salts, soil sterilants or other material that is detrimental to plant growth. If topsoil is delivered, it shall be obtained from a well-drained site that is free of flooding. Topsoil shall not be delivered or spread while in a muddy condition.
- C. Non-native topsoil shall contain not less than 25 percent organic matter (compost) that is blended through the soil.
- D. Topsoil that is added to the site shall be incorporated into the existing surface in a two to three-inch scarified transition layer to enable water to drain adequately through the different types of soil. Do not scarify within the drip line of existing trees that are to be retained.

Irrigation

- A. Automated irrigation systems shall not be required in any new landscape. However, if irrigation is installed it shall meet the guidelines outlined in this section.
- B. All irrigation systems shall be installed in accordance with state law, Title 2 Texas Water Code, Chapter 34 and Title 30 Texas Administrative Code, Chapter 344 rules, as regulated and enforced by the Texas Commission on Environmental Quality (TCEQ). Irrigation contractors who install the irrigation systems must be TCEQ Licensed Irrigators.

- C. Drip irrigation shall be used for all irrigated landscaped areas, excluding turf. Turf can be irrigated with drip, but drip irrigation is not required.
- D. Areas planted with turf shall be on separate zones from areas planted with shrubs, trees or perennials
- E. Hydrozoning of all areas that are irrigated automatically will be scheduled with plants with similar watering needs
- F. All automatic irrigation systems are required to have a rain sensor, a soil moisture sensor and/or a weather sensor connected to an irrigation controller in order to stop the irrigation cycle during and after a rainfall event. Rain sensors are to be installed in a location where rainfall is unobstructed. Rain sensors should be adjusted at the ¼ inch setting.
- G. Sprinkler irrigation is prohibited in median strips, parking islands and all landscape areas less than 10 feet from curb to curb or 10 feet in width. Areas less than 10 feet curb-to-curb or 10 feet in width can be irrigated with low volume irrigation. Low-volume irrigation (subsurface drip irrigation or drip irrigation) shall be installed in long landscape strips less than 10 feet in width to avoid runoff and overspray onto the hardscape.
- H. All new residential irrigation systems are required to have pressure regulation where static operating pressure exceeds the sprinkler manufacturer's recommended operating range to eliminate extensive misting. These may include in-line pressure regulators, flow control valves, or sprinkler devices equipped with pressure regulation stems or nozzles.
- I. Irrigation systems are to have a controller that features multiple start times, rain sensor capability, a water budget feature, and a non-volatile memory in case of power outage.
- J. Scheduling recommendations shall be posted inside or immediately near the controller enclosure box for easy reference.
- K. Homeowners shall be provided with a complete irrigation plan (or as-built drawing) that describes the location of each irrigation zone, control valves, and sprinkler devices.
- L. Sprinkler systems shall be designed with no overspray onto the hardscape.
- M. Sprinkler zones located at the bottom of sloped terrain along curbs, sidewalks, driveways, and other hardscapes should be equipped with devices that prevent low-head drainage after the sprinkler zone is turned off. In-line check valves and sprinkler heads with check valves already installed will help prevent low-head drainage.

Plant Choice

- A. Plants used must be native and drought tolerant.
- B. Turf grasses should be limited to low water use turfs. St. Augustine grasses should not be planted.

- C. Invasive Plants. Invasive plants shall not be used.

Plant Prepping

- A. A hole dug for the plant or tree should be 2-3 times wider than the container or root ball that the plant is being stored in, insuring water is able to be absorbed by the plant's roots.
- B. Make sure that the existing soil has been blended with compost before the sodding or seeding with the recommended turfgrass.

Plant Placement and Spacing

Proper plant placement and spacing is critical to plant health and long-term landscape quality. Plant placement too close to buildings can cause problems with plant disease, as well as insect and structural problems. Proper plant spacing ensures good air flow and room for plants to mature without crowding. Consider the mature height and width of plants before planting them.

Mulch

- A. All areas planted with trees, perennials and shrubs shall be finished with a **2 to 4 inch deep** layer of high quality 50/50 blend of organic mulch and compost blend.
- B. Wood chip mulch shall be clean wood chips free of man-made debris, shredded into coarse pieces ranging in size from 1 inch to 3 inches.
- C. Rock mulch shall be used in planting beds only as temporary mulch until full plant coverage is achieved, or as permanent mulch in areas with native shrubs and perennials.

Maintenance

- A. Replenish mulch/compost blend in non-turf areas every two years at a minimum. Doing so during the fall and spring is recommended.
- B. Aerate turfgrass within the first year of construction and twice a year after that (October 1 and March 1).
- C. Topdress turfgrass areas with quality compost twice a year (October 1 and March 1) at a depth of ¼ inch to 1/2 inch following the aeration and drag or rake it into the canopy and aeration holes.
- D. Set the automatic irrigation system back to a normal schedule after the establishment period

Attachment 2: New Pool Construction Standards

- A. Private residential swimming pools shall not be installed with sand media filters.
- B. Pool water features installed with public swimming pools or private residential swimming pools must be designed so that the water feature can be turned off without affecting the filtering capabilities of the pool. Automatic pool fill features must be designed so that they may be turned off (for both public swimming pools and private residential swimming pools).
- C. Pools with shared water between the pool and spa shall be designed so that water can be shared without the necessity of an above ground water feature that cannot be turned off. If a water feature between the spa and the pool exists, the default setting will be for it to be turned off.
- D. Automatic pool fill features must include an automatic pool shut-off feature.
- E. Vanishing or negative edge pools must be designed with catch basins large enough to prevent splashing that leads to increased water use.
- F. Backwash systems must be designed so they may be turned off.
- G. Pool skimmers should be managed in such a way as to minimize water consumption. The range of allowable water within the skimmer fill range should allow for several inches of evaporative loss prior to filling.
- H. All residential swimming pools shall have a hose end timer installed at the nearest hose bib location. In addition, a hose bib back-flow prevention device will be connected to the hose bib fixtures nearest to the pool.
- I. All residential swimming pools shall be installed with a permanent automatic pool cover to minimize evaporative loss when not in use.