TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

AN ORDER granting an emergency authorization to the Lower Colorado River Authority to amend its Water Management Plan, Permit No. 5838, pursuant to Section 11.139 of the Texas Water Code

On July 24, 2014, the Executive Director of the Texas Commission on Environmental Quality considered a request from the Lower Colorado River Authority (LCRA) for an emergency order to amend its 2010 Water Management Plan (WMP), Permit No. 5838, under Texas Water Code Sections 5.501, 11.138, and 11.139, and the Governor's Emergency Disaster Proclamation relating to drought.

The Executive Director has jurisdiction to consider this matter and makes the following Findings of Fact and Conclusions of Law:

I. FINDINGS OF FACT

On July 3, 2014, LCRA filed a request for an emergency order suspending any obligation LCRA might have under the 2010 WMP to release interruptible stored water to customers in the Gulfcoast, Lakeside, and Pierce Ranch irrigation operations through the remainder of the irrigation season due to persistent drought conditions in and around LCRA's five Highland Lakes (Lakes Buchanan, Inks, LBJ, Marble Falls, and Travis). LCRA's request is attached hereto as Attachment A and incorporated herein by reference.

LCRA'S Water Rights and 2010 Water Management Plan

1. LCRA has the right to divert and use up to 1.5 million acre-feet (AF) from Lakes Buchanan and Travis under Certificates of Adjudication Nos. 14-5478 and 14-5482. By court order, LCRA has developed a WMP, Permit No. 5838, currently dated 2010, which is part of these certificates.

2. The Certificates of Adjudication and the 2010 WMP govern LCRA's operation of Lakes Buchanan and Travis and dictate how LCRA makes water available from these lakes to help meet "firm" water customer needs, downstream interruptible irrigation demands, and environmental flow needs of the lower Colorado River and Matagorda Bay.

3. Certificates of Adjudication 14-5478 and 14-5482 state that "LCRA shall interrupt or curtail the supply of water . . . pursuant to commitments that are specifically subject to interruption or curtailment, to the extent necessary to allow LCRA to satisfy all demand for water under such certificate pursuant to all firm, uninterruptible water commitments." The WMP further describes how LCRA will manage and curtail supplies from the lakes during times of drought including through a repeat of the Drought of Record.

4. As established in the 2010 WMP, the combined firm yield of Lakes Buchanan and Travis is 535,812 acre-feet per year (AFY). Of this amount, 90,546 AFY is committed to O.H. Ivie Reservoir, making 445,266 AFY of firm water supply available from Lakes Buchanan and Travis for LCRA's firm water customers.

5. As established in the 2010 WMP, so long as firm demand for water equals the combined firm yield, LCRA can supply water for irrigated agriculture on an interruptible basis. To manage the supply, LCRA's 2010 WMP imposes several trigger points keyed to the total combined storage capacity of Lakes Buchanan and Travis that are intended to ensure the firm water supply is protected during droughts. The most relevant trigger points are set out in the following table:

Combined Storage of Lakes Buchanan and Travis	Date on Which Trigger is Decided	Action Taken
1.4 million acre feet	At any time	Request firm customers to implement voluntary drought response measures.
1.4 million acre feet	On Jan. 1	Environmental releases for instream flows reduced to meet critical needs for ecosystems for following year. Begin gradual curtailment of interruptible supply to four major irrigation operations.
900,000 acre feet	At any time	Request firm customers to implement mandatory water restrictions; develop firm customer curtailment plan.
600,000 acre feet	At any time	If criteria indicate a drought worse than the Drought of Record, then cease interruptible supply and begin curtailment of firm supply.

6. LCRA's 2010 WMP defines "Drought of Record" as "the drought that occurred during the critical drought period." "The Critical Drought Period" is defined as

"the period of time during which the reservoir was last full and refilled, and the storage content was at its lowest minimum value."

7. Under the 2010 WMP, the LCRA Board may declare a Drought Worse than the Drought of Record (DWDR) if it finds that the following three conditions are simultaneously met:

   a. Duration of drought is more than 24 months, which is determined by counting the number of consecutive months since both Lakes Buchanan and Travis were last full;

   b. Inflows to the lakes are less than inflows during the drought of record; and

   c. Lakes Buchanan and Travis combined storage has less than 600,000 AF of water.

8. Under the 2010 WMP, once a drought has lasted more than 36 months and a DWDR has been declared by the LCRA Board, the interruptible stored water would be fully and immediately curtailed – making no stored water available for agricultural irrigation or other interruptible uses until lake levels recover or the inflows into the lakes increase substantially. Moreover, LCRA will implement pro rata curtailment of its firm water users once a DWDR is declared and after interruptible stored water (agriculture) uses have been curtailed.

9. Prior to a declaration of a DWDR, LCRA is obligated by the 2010 WMP to provide at least some interruptible water to its four major irrigation operations. Under the WMP, LCRA is to make a preliminary determination in November of its interruptible water releases based on projections of storage on January 1 of the upcoming year.

10. The first and second criteria for a DWDR have been met. The drought has lasted for more than 24 months. Duration of drought is determined by counting the number of consecutive months since both Lakes Buchanan and Travis were last full, which was February 13, 2005. The cumulative inflow deficit has also been met. The last criteria, storage below 600,000 AF has not yet occurred, but could occur in the next few months.

Current Conditions

11. The combined storage of Lakes Buchanan and Travis on July 21, 2014, was 778,180 AF, or 39% full. The combined storage fell to the lowest level in the current drought on September 19, 2013, which was 637,123 AF or 31.7% full.

12. The inflows in to the lakes are at record lows. Annual inflows into Lakes Buchanan and Travis in four of the last five years are among the ten lowest years of inflow on record. Inflows into the lakes in 2011 were the lowest annual inflows on record,

about 10% of average inflows. Inflows in 2012 were the sixth lowest on record, and inflows in 2013 were the second lowest on record.

13. Extraordinary drought conditions have existed in much of Texas, including the Colorado River Basin for more than three years, dating back to October 2010. State Climatologist, Dr. John Nielsen-Gammon, recognized 2011 as the worst one year statewide drought on record dating back to 1895. Inflows in the first four months of 2014 were lower than inflows in the record low year of 2011. Statewide rainfall for the three-year period from January 2011 through December 2013 was well below normal, totaling 64.84 inches, which is 16.57 inches below normal or 80% of normal.

14. Annual inflows into Lakes Buchanan and Travis in six of the last nine years are among the ten lowest years of inflow on record. Inflows into the lakes in 2011 were the lowest annual inflows on record, about 10% of average inflows. Inflows in 2012 were the sixth lowest on record, and inflows in 2013 were the second lowest on record.

15. Inflows in the first six months of 2014 are 18.9% of the historical average inflows to Lakes Buchanan and Travis. This is the fifth lowest January through June six month total recorded for Lakes Buchanan and Travis and the inflows for this period are lower than any January through June period in the 1950s.

16. The inflows into Lakes Buchanan and Travis during the current drought have been lower for time periods ranging from 12 months to 72 months than the lowest inflows for periods of similar duration during the historic Drought of Record, including the 1950's. The total inflows for the 72 months ending in April 2014 were only about half of the lowest 72 month inflow period in the Drought of Record.

17. The maximum historical annual amount of reported firm water use from the firm supplies of Lakes Buchanan and Travis during 2000 through 2013 was 247,000 AF in 2011. The maximum interruptible water released from Lakes Buchanan and Travis during this same period occurred in 2011 and totaled about 433,000 AF. The maximum total amount released or used from the Highland Lakes, about 714,000 AF, occurred in 2011.

18. The firm water use in 2012 from Lakes Buchanan and Travis was about 148,000 AF. An amount of 31,000 AF was supplied for the environment, and 9,000 AF of water was supplied to farmers in the Garwood Irrigation Division. The total use for 2012 was about 188,000 AF. In 2013, firm use from the lakes was about 173,000 AF, 33,500 AF was supplied for environmental flow needs, and about 22,000 AF of water was supplied to Garwood Irrigation Division. Total use of water from the lakes in 2013 was about 229,000 AF.

19. High temperatures have been unprecedented. The summer of 2011 was the hottest on record in Texas, and 2011 was also the hottest in Austin. Year 2012 tied with

1921 as the hottest on record statewide. Summer temperatures for Austin in 2013 were the fifth hottest on record.

20. The lakes have not been able to recover in any significant manner even with an emergency suspension of nearly all water supply for downstream irrigation in 2012, 2013, and the first half of 2014.

21. Rainfall in the first four months of 2014 was extremely low across the Texas Hill Country, with many locations failing to record even one inch of rain.

22. Despite some generous rains in May and June of 2014, the long-term drought pattern will likely persist and possibly intensify during the hot months of summer. The National Weather Service precipitation outlook calls for below normal precipitation across roughly the eastern half of Texas from July to September, and near to below normal rainfall in Central Texas.

23. Recent weather forecasts provide some hope for relief during the period covered by this emergency order, including an El Niño developing in the September to November period, carrying on through March of 2015. There is at least a 70% chance that an El Niño will develop in the next six months. El Niños often cause a pattern of above-normal rainfall across Texas, mainly during the fall and winter months. The impacts of El Niño can vary significantly.

24. The current drought conditions are outside the range of hydrologic conditions that were considered during formulation of the 2010 WMP.

25. The conditions are similar or worse than conditions in place when TCEQ issued its earlier emergency orders for the 2012, 2013, and 2014 irrigation seasons.

26. As of July 2014, much of the Texas Hill Country was designated as being in a moderate or severe drought with parts in extreme drought.

27. The Governor of Texas issued an Emergency Disaster Proclamation on July 5, 2011, certifying that exceptional drought conditions posed a threat of imminent disaster in specified counties in Texas. This proclamation has been renewed monthly, most recently on July 3, 2014, and includes nearly every county bordering or that contributes inflow to the Highland Lakes.

LCRA's Firm Customers

28. LCRA provides raw water out of the combined firm yield of Lakes Buchanan and Travis to over 60 retail and wholesale potable water suppliers that together serve over one million people. In addition, LCRA provides water to several electric utilities from the firm water supply of Lakes Buchanan and Travis. These electric utilities provide electricity into the electrical grid in Texas operated by the Electric

Reliability Council of Texas (ERCOT) and provide electricity to customers in Texas. LCRA also provides firm raw water to several industries located downstream.

29. The 2010 WMP requires that firm customers (mainly cities and industries) be curtailed on a pro rata basis and that LCRA cease all releases for interruptible stored water (regardless of the impact on the crops) when a DWDR is declared.

30. LCRA-adopted water use reduction targets including mandatory pro rata curtailment of firm water supplies for customers of 20% or more will be implemented when combined storage levels fall below 600,000 AF and other criteria are met for a DWDR.

31. If the 20% reduction in water use is required, many municipal customers plan to eliminate all outdoor spray irrigation. Some customers, such as the City Austin, have already seen significant water savings through reductions in outdoor water use. Industrial customer will have to implement the full 20% reduction more quickly and these reductions, especially for power plants, could impact production.

32. If LCRA is required to follow the 2010 WMP and the drought continues, LCRA and its firm customers may need to acquire or develop large quantities of alternative water supplies to meet essential needs of their respective potable water systems. LCRA's firm customers are working on plans to implement curtailment and secure alternate supplies; however many of LCRA's firm customers do not have any readily available alternative sources of water supply that could substitute for their reliance on the Colorado River, and these projects could take years to develop. Following the 2010 WMP under current drought conditions could pose an imminent threat to firm customers served by LCRA from Lakes Buchanan and Travis.

33. Based on recent lake levels and the forecast, there is a chance of reaching conditions triggering a declaration of a DWDR in October 2014.

34. Currently, LCRA owns four systems that take raw water from Lakes Buchanan and Travis. LCRA also has 15 customers that actively take raw water for municipal purposes from Lake Travis that are not a part of LCRA's utility facilities. The lowest pumping elevations of the intakes range from 605 feet mean sea level (msl) to 645 feet msl on Lake Travis. As lake levels drop, retail water suppliers are unable to pump water from the lakes. This causes wholesale raw water customers to either move intakes to reach the water, or obtain alternate sources. Smaller systems will likely have to haul water from a water utility with a viable source. If the lake levels drop more quickly than arrangements for alternative intakes or supplies can be implemented, the situation presents an imminent threat to public health and safety for the LCRA water systems and for its customers' water systems.

35. At the time of this order, the public water systems that rely on the Highland Lakes or that draw from the tributaries that typically contribute significant inflow to the

Highland Lakes are already in some form of drought restrictions and are at risk of water supply shortages.

36. Without this emergency order, there may be uncertainty as to what obligations LCRA would have to provide interruptible stored water. In August, some crops could still be planted and other crops that were started with groundwater could be switched to surface water. Later in the season, LCRA may receive requests for water for supplemental uses such as wildlife management.

37. If LCRA had followed the 2010 Water Management Plan this year, it would have had to release as much as 214,300 AF of water to downstream irrigators. Allowing any additional release of interruptible stored water would only amplify the risk and shorten the timeframe that LCRA and its firm customers have to prepare for a DWDR.

Conservation and Drought Contingency Plan

38. LCRA's water conservation plan complies with TCEQ rules. LCRA has required its municipal customers to adopt conservation plans before there was a state requirement.

39. LCRA provides conservation program planning support for its customers. In 2012, LCRA began a rebate program for certain irrigation technologies and a wholesale customer cost-share program focused on conservation. LCRA has supported significant improvements in water use efficiency in rice irrigation systems, including volumetric pricing and canal rehabilitation.

40. LCRA was originally required to develop a Drought Contingency Plan (DCP) as a direct result of the court order adjudicating LCRA's water rights and the Texas Water Commission 1989 WMP Order.

41. When TCEQ adopted the Chapter 288 rules for DCPs, LCRA adopted separate stand-alone DCPs relating to irrigation, municipal, and industrial operations that more specifically addressed the requirements of the Chapter 288 rules. LCRA incorporated all of the same triggers and criteria from the WMP into its Chapter 288 DCP. These DCPs were incorporated into Chapter 4 of the WMP.

42. In August 2011, LCRA called on its firm water customers to voluntarily implement mandatory water use restrictions under their DCPs to reduce water use by 10 to 20%.

43. LCRA-adopted water use reduction targets including the following: water use reduction goals for firm water supply customers of 5% by asking firm customers to implement their voluntary water use reduction measures when the combined storage of Lakes Buchanan and Travis is less than 1.4 million AF; 10 to 20% reduction goals by asking firm customers to implement their own mandatory water

use reduction measures when combined storage levels fall below 900,000 AF; and a mandatory pro rata curtailment of firm water supplies for customers of 20% or more will be implemented when combined storage levels fall below 600,000 AF and other criteria are met for a DWDR.

44. As of July 1, 2014, LCRA has pending or final pro rata plans for all of its firm water customers who are actively diverting water. LCRA is continuing to work with some of these customers to finalize the plans.

45. LCRA has adopted additional changes to LCRA's raw water contract rules that include the procedures for implementing a pro rata curtailment of firm water customers. The rules also provide a surcharge to be set by the LCRA Board for unauthorized use of water (taking more water than authorized under a mandated curtailment of firm water supplies) and clarifying the drought contingency requirements related to golf course irrigation and recreational use.

46. LCRA's WMP requires LCRA to develop a firm water curtailment plan to be approved by the LCRA Board and TCEQ in response to combined storage dropping below 600,000 AF. TCEQ approved that plan for LCRA's firm customers in December of 2011.

47. LCRA has fully implemented its DCP. All of LCRA's firm customers that currently divert and purchase water from LCRA have a DCP. Most of these firm customers have stayed in some form of mandatory water restrictions, significantly limiting landscape irrigation. LCRA's industrial customers have worked to reduce non-essential water uses. Also, LCRA has had several meetings with firm customers in preparation for pro rata curtailment.

48. Except for a six-week period in the summer of 2012, the City of Austin customers have had once a week outdoor watering restriction for the past two years.

49. The LCRA Board approved a no more than once per week watering restriction that took effect in March 2014. The restriction applies if combined storage is below 1.1 million AF and interruptible stored water has been cut off.

Alternatives

50. LCRA has evaluated many alternatives to address the emergency conditions that the drought presents. Alternatives explored include: Utilizing water from LCRA's other lakes, aggressive conservation, interbasin transfers, an off-channel reservoir, and trucking in water from other sources. LCRA has evaluated many other alternatives to address the emergency conditions that the drought presents.

51. None of the alternatives LCRA has identified would avert the projected water supply shortage because most of the supplies identified would produce insufficient or uncertain quantities of supply, would create other operational issues for

customers, may involve a lengthy permitting process (if not implemented on an emergency basis), or would take years to develop. None of the alternatives identified are feasible or practicable alternatives to the emergency authorization.

52. Amending downstream run of the river rights to allow diversion for new uses and at new locations would provide some supply, but the use of these rights alone is not – by itself – a feasible and practicable alternative to the emergency relief related to the 2010 WMP. All of the rights would require amendments to add diversion points, additional places of use, and possible storage. Also, the downstream run-of-river water rights are highly variable in terms of availability and quantity, and do not provide by themselves a sufficient quantity of water to eliminate the need for the emergency relief from the 2010 WMP as requested herein. At best, using the downstream water rights to supply the downstream industrial and municipal users will keep up to about 10,000 AF of water in the reservoirs.

53. In 2012, 2013, and the first six months of 2014, LCRA supplied about 4,000 AF, 1,000 AF, and 3,200 AF, respectively, to firm customers downstream of Austin under temporary permits. This water would otherwise have been released from Lakes Buchanan and Travis. While this was beneficial, temporary permits are not sufficient replacement for water lost if releases are required.

54. Conservation incentives will not yield significant water. Reductions in water use will not result in preventing the emergency that would be created by falling reservoir levels due to the releases of stored water to irrigators under the 2010 WMP. Implementing reduced water use will likely take considerable time before the water savings identified in LCRA's DCP would be seen. Aggressive municipal conservation requires solid partnerships with customers, a good method for calculating water savings and a strong education and enforcement program; measures that are costly and take time. And, the result would be only a small amount of water supply.

55. Although groundwater appears to be available in many areas, the uncertainty associated with the long-term availability of groundwater supplies makes this a high-risk alternative for water supply. Many areas have Groundwater Conservation Districts (GCD) that regulate use and permitting of groundwater. Obtaining written agreements with landowners takes approximately 9 to 12 months and obtaining permits often takes several years.

56. LCRA has a permit for an off-channel reservoir in the lower basin that will add 90,000 AF of firm water for the region. LCRA is moving forward with constructing this reservoir, but it is not expected to be on-line until 2017.

57. The use of other LCRA lakes is not a viable option at this time. Lakes Inks, LBJ and Marble Falls are not currently authorized for municipal use. If LCRA quit refilling these lakes but allowed the lakes to be maintained at levels that would not have significant impacts to cities and industries around them, it estimates that perhaps a one-time supply of about 34,000 AF could be made available. However,

lowering the storage of these lakes could also significantly impact hydroelectric generation capabilities.

58. Several LCRA-managed lakes are cooling water reservoirs with operational constraints. Any released surface water from Lake Bastrop would need to be replenished with either surface water (including releases from Lakes Travis and Buchanan) if there is no rain, or from a limited supply of groundwater. There are operational and timing issues related to releasing and replenishing water in the lake on a schedule needed for generation reliability. Releases from other intervening lakes could raise operational issues for LCRA's firm customers over a timeframe that cannot be readily addressed.

59. LCRA is pursuing a formal amendment to its 2010 WMP but that process will not be completed in time to address LCRA's requested relief. LCRA filed an application to amend its 2010 WMP on March 12, 2012. TCEQ prepared a draft permit for LCRA comment on October 12, 2012. Notice of the application was sent to all water right holders in the Colorado River Basin and published in local newspapers in April 2013. May 28, 2013 was the last date to request a public meeting or a contested case hearing, or comment on the application. On June 3, 2013, the TCEQ Executive Director advised LCRA that he would not be forwarding the application to the Commission at this time, and that his staff would be conducting further review on the application. Staff issued a draft report with recommendations on curtailments of interruptible water on May 16, 2014, and LCRA is currently reviewing the draft report.

60. This emergency order is the only means by which LCRA can obtain timely relief to make a significant impact on its remaining storage in a workable manner.

Relief Requested

61. LCRA seeks an emergency order to suspend any obligation LCRA might have under the 2010 WMP to provide interruptible stored water to any landowners or customers within the Gulf Coast, Lakeside, and Pierce Ranch irrigation operations during the remainder of the irrigation season.

Notice

62. Notice was provided to the Governor of Texas regarding the Executive Director's consideration of this emergency order by letter dated July 23, 2014. The date and time of the hearing at which the Commission will consider whether to affirm, modify, or set aside this order is included in this emergency order under the Ordering Provisions. Notice of this emergency order and of the Commission hearing will be mailed to all water right holders in the basin.

II. CONCLUSIONS OF LAW

1. The Executive Director may issue an emergency order under Texas Water Code Section 11.139 to amend a certificate of adjudication after notice to the Governor if the Executive Director finds that emergency conditions exist which present an imminent threat to the public health and safety which requires emergency action before the Commission can take action and there are no feasible practicable alternatives to the emergency authorization.

2. The Findings of Fact show that the requirements of Conclusion of Law No. 1 have been met. Following the 2010 WMP with the ongoing drought and its effect on the water supply constitute an emergency that presents an imminent threat to the public health and safety and there are no feasible, practicable alternatives to this action. The Executive Director of the Commission has the authority to issue this emergency order.

3. The Commission must consider whether to affirm, modify, or set aside an emergency order issued by the Executive Director under Section 11.139 of the Texas Water Code no later than 20 days after the Executive Director issues the order.

NOW, THEREFORE, BE IT ORDERED BY THE EXECUTIVE DIRECTOR OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY THAT:

1. LCRA's 2010 WMP is amended to alleviate LCRA from any obligation to provide interruptible stored water to customers within the Gulf Coast, Lakeside, and Pierce Ranch irrigation operations for the duration of the emergency order.

2. This emergency order is final and effective on July 24, 2014.

3. This emergency order terminates in 120 days, November 20, 2014.

4. This emergency order may be renewed once for no more than 60 days.

5. This order only addresses the specific relief requested from LCRA and is not meant as precedent for amendments to LCRA's WMP or future emergency relief.

6. The Commission will consider whether to affirm, modify, or set aside this emergency order on August 6, 2014 at 9:30 a.m. at:

Texas Commission on Environmental Quality
12100 Park 35 Circle
Building E, Room 201S
Austin, Texas

7. If any provision, sentence, clause, or phrase of this emergency order is for any reason held to be invalid, the invalidity of any portion shall not affect the validity of the remaining portions of this emergency order.

Issue Date:

July 24, 2014

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Richard A. Hyde, P.E.
Executive Director

ATTACHMENT A