

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
INTEROFFICE MEMORANDUM

TO: Chief Clerk

DATE: February 20, 2015

THRU: Caroline Sweeney, Deputy
Office of Legal Services

Robert Martinez, Director
Environmental Law Division

FROM: Ruth Takeda, Staff Attorney
Environmental Law Division

SUBJECT: Lower Colorado River Authority
Docket No. 2015-0219-WR
CN600253637; RN104252267
Consideration of a request from the Lower Colorado River Authority for an emergency order partially suspending releases of stored water for instream flows for the Blue Sucker under its 2010 Water Management Plan, Permit No. 5838

The Commission received an application on December 23, 2014, from the Lower Colorado River Authority (LCRA) for an emergency order to reduce the higher instream flows required under its 2010 Water Management Plan (WMP) for a six-week continuous period in between March and May to support spawning habitat for the Blue Sucker fish. LCRA requests the authority to reduce the higher instream flows of 500 cubic feet per second (cfs) to 300 cfs instead for this period of time. The application was filed under Texas Water Code §§ 5.501, 11.139 or 11.148 and the Governor's Emergency Disaster Proclamation related to drought. LCRA filed a separate application on December 23, 2014, seeking an emergency order to suspend its obligation under the WMP to release interruptible stored water to customers in the Gulf Coast, Lakeside, and Pierce Ranch irrigation operations for the duration of the order.

Texas Water Code § 11.148 provides that the Commission can grant an emergency order suspending beneficial inflows to affected bays and estuaries and instream uses if the Commission finds that an emergency exists and cannot practically be resolved in other ways.

The Commission timely provided written notice to the Texas Parks and Wildlife Department (TPWD) and the Commissions Office of Public Interest Counsel (OPIC) of the proposed action and an opportunity to comment on it. Notice of the proposed action was published in all counties in the affected area, from the Highland Lakes

downstream to Matagorda Bay. TPWD submitted written comments on February 10, 2015, indicating that it did not oppose LCRA's emergency request.

The Commission's Executive Director issued an Emergency Order on February 18, 2015. Mailed notice of the Executive Director's Emergency Order was sent to all water right holders in the affected area.

The Executive Director finds that the requirements for an emergency order in § 11.148 have been met.

An emergency exists. Inflows to LCRA's Highland Lakes have been extremely low for the past few years and weather forecasts for the next three months do not show the chance of significant improvement. LCRA already meets two of the three requirements in its WMP for declaring a Drought Worse than the Drought of Record (DWDR). First, the current drought has lasted longer than 24 months. Second, inflows to the lakes have been less than inflows during the Drought of Record. The third and only outstanding requirement is combined storage in Lakes Buchanan and Travis being less than 600,000 acre feet (AF). LCRA's declaration of a DWDR would trigger mandatory curtailment of firm customers on a pro rata basis, and complete cessation of releases of interruptible stored water.

The emergency cannot be practically resolved in other ways. If stored water for instream flows beginning in March is released at 500 cfs, the chance is high that the combined storage in Lakes Buchanan and Travis would reach 600,000 AF sooner because 21,000 AF would need to be released over the course of the six-week period to maintain that rate. By reducing the instream flow rate to 300 cfs, LCRA will be able to conserve about 17,000 AF of water in storage for other beneficial use. The reduction in rate is expected to have little to no adverse effect on the Blue Sucker. The many alternatives identified by LCRA are not feasible or practicable because they produce an insufficient quantity of water or take too long.

The Executive Director's Emergency Order provides that LCRA may reduce the instream flow rate to 300 cfs instead of 500 cfs during the six-week continuous period from March to May. That Order is attached to this Executive Summary as Exhibit A. LCRA's application and attached affidavits, which are Attachment A to the Order, may be found at:

<http://www.tceq.texas.gov/agency/lcra-emergency-order>

Staff's technical summary recommending issuance of the order is attached as Exhibit B.

cc: Kellye Rila, TCEQ; Ron Ellis, TCEQ; Kathy Alexander, TCEQ

EXHIBIT A

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



AN EMERGENCY ORDER issued to the Lower Colorado River Authority partially suspending releases of stored water for instream flows for the Blue Sucker under its Water Management Plan, Permit No. 5838, pursuant to Sections 5.506 and 11.148 of the Texas Water Code

On February 18, 2015, the Executive Director of the Texas Commission on Environmental Quality (Commission) considered an application from the Lower Colorado River Authority (LCRA) for an Emergency Order to amend its Water Management Plan (WMP), Permit No. 5838. The application requests to reduce the higher instream flows required for a six-week continuous period to support spawning habitat for the Blue Sucker fish.

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

I. FINDINGS OF FACT

1. On December 23, 2014, LCRA filed an application for an emergency order to amend its WMP to reduce the requirement to maintain a minimum streamflow of 500 cubic feet per second (cfs) for six weeks in between March and May from Bastrop to Eagle Lake for the Blue Sucker. LCRA requests that the application be processed under Texas Water Code Sections 5.506, 11.139, or 11.148, as appropriate, and the Governor's Emergency Disaster Proclamation related to drought. Without an amendment, this requirement would necessitate a release of stored water of approximately 21,000 acre feet (AF) by the end of May 2015. LCRA's requested relief would reduce the release requirement from 500 cfs to 300 cfs, which would prevent approximately 17,000 AF from being released from Lakes Buchanan and Travis. LCRA's application is attached hereto as Attachment A and incorporated herein by reference.

LCRA's Water Rights and 2010 Water Management Plan

2. 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 Water Management Plan (WMP), currently dated 2010, which is part of LCRA's water rights and has its own number, Permit No. 5838.

3. 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. Environmental flow needs include instream flows for the river, and bay and estuary freshwater inflows.
4. 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." LCRA's 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.
5. 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. LCRA has reserved 33,400 AF of firm supply to meet its instream flow and bay inflow obligations under the WMP.
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. 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 acre feet of water.
8. LCRA's environmental flow obligations in the 2010 WMP are generally tied to the amount of water LCRA has in storage on January 1 each year. Under a

declaration of a DWDR, water for instream flows and bay inflows is subject to a pro rata reduction along with other firm users of water. These triggers are:

Combined Storage of Lakes Buchanan and Travis	Date on Which Trigger is Decided	Action Taken
1.7 MAF	On Jan. 1	Environmental releases for bay and estuary inflows reduced to meet intermediate needs for the following year
1.4 MAF	At any time	Request firm customers to implement voluntary drought response measures.
1.4 MAF	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.
1.1 MAF	On Jan. 1	Environmental releases for bay and estuary inflows reduced to meet critical needs for following year.
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.

9. Under the 2010 WMP, once a drought has lasted more than 36 months and a DWDR has been declared by the LCRA Board, 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. LCRA will also implement pro rata curtailment of its firm water users once a DWDR is declared and after interruptible stored water uses have been curtailed. Under a DWDR, water for

instream flows and bay inflows is subject to a pro rata reduction along with other firm uses of water.

10. Criteria prompting LCRA to make a DWDR declaration could be met as soon as March 2015. Two of the three criteria, the 24 month criteria and the cumulative inflow deficit criteria, have been met. Releasing this stored water could cause the DWDR to occur sooner and water should be reserved to ensure LCRA can continue to meet critical needs.
11. This year, under the 2010 WMP, LCRA is required to maintain critical instream flows, including maintaining a minimum continuous instream flow of 120 cfs from Bastrop to Eagle Lake at all times, and a minimum flow of 500 cfs for a continuous six weeks from Bastrop to Eagle Lake in between March and May to provide higher flows to support habitat for Blue Sucker spawning. If the river is not supplying this amount from March to May, stored water must be released under the 2010 WMP. In 2012, the amount released from the lakes to meet this instream flow requirement was 22,991 AF, and in 2013, it was 15,678 AF. In 2014, the LCRA operated under an Emergency Order that reduced the LCRA's obligation to provide stored water for the Blue Sucker. The amount released from the lakes to meet this instream flow requirement from January through November 2014 was approximately 4,600 acre feet under a minimum flow of 300 cfs. If the minimum flow had remained at 500 cfs, approximately 17,000 AF of additional water would have had to be released.

Current Conditions

12. As of February 17, 2015, the combined storage of Lakes Buchanan and Travis was about 717,368 AF or 36 percent of capacity.
13. In May 2012, the lakes refilled to an amount close to 1.1 million AF (to 1.033 million AF on May 22, 2012) and yet without any release to Lakeside, Gulf Coast and Pierce Ranch, the lakes dropped to 637,123 AF on September 19, 2013, the second lowest level on record and also the lowest level in the current drought – 637,123 AF, nearing 31.7 percent capacity.
14. On December 1, 2014, the combined storage of 691,132 AF was the lowest combined storage on December 1 since the reservoirs were built.
15. The inflows to the Highland Lakes are at record lows. The deficit has been as much as 90% more than the inflow deficit for a similar period of inflows experienced during the Drought of Record for the lower Colorado River Basin, which occurred from 1947 to 1957.
16. Annual inflows into Lakes Buchanan and Travis in five of the last six years are among the ten lowest years of inflow on record. Only one year in the historical

Drought of Record for the lower Colorado River Basin is in the list of ten lowest annual inflows.

17. Inflows in 2011 were the lowest on record. Calendar years 2008, 2009, 2011, 2012, and 2013 are all among the lowest ten years of inflows for the Highland Lakes. Inflows in 2014 from January through November were the second lowest inflows on record.
18. The inflows into Lakes Buchanan and Travis during the current drought have been lower for time periods ranging from 12 months to 84 months than the lowest inflows for periods of similar duration during the historic Drought of Record. When inflows are adjusted to account for the fact that O.H. Ivie Reservoir was not in place in the 1950s, recent inflows are still lower than the Drought of Record, with inflows since 2008 at only about half of the inflows for the first six years of the Drought of Record.
19. The inflow conditions experienced in the last several years present an extreme drought situation that was not contemplated when the special conditions related to freshwater inflows and instream flows were incorporated into the 2010 WMP.
20. The 2010 WMP was developed using simulations of a repetition of the hydrologic period from 1940 to 1965. While that period includes the 1950s Drought of Record, the recent severe low inflows of 2011 and 2013 are less than half of the lowest annual inflow in the 1950s and the multi-year inflows are also worse than any multi-year inflows which were simulated during the development of the WMP. This trend continued in 2014.
21. LCRA has reserved 33,400 AF of firm supply to meet its instream flow and bay inflow obligations under the 2010 WMP. This reservation is for the average amount of firm water needed for the environment over a repeat of the Drought of Record and includes 6,060 AF for bay inflows. In any year, the amount can exceed that number.
22. In 2012, 2013, and 2014, LCRA operated under TCEQ-issued emergency orders that modified the amount of water supplied from Lakes Buchanan and Travis for irrigated agriculture in the lower basin. In 2014, LCRA operated under a TCEQ-issued emergency order that reduced LCRA's obligation to provide stored water for the Blue Sucker from March to May. In 2012, total water use from the lakes was approximately 188,000 AF. Firm water use was approximately 148,000 AF, 31,285 AF was supplied to help meet environmental flow needs consisting of 28,235 AF for instream flows (22,991 AF of which was for the 500 cfs requirement) and 3,050 AF for bay inflows. In 2013, total water use from the lakes was approximately 228,959 AF. Firm water use was approximately 173,148 AF, a total of 33,465 AF was supplied to help meet environmental flow needs consisting of 18,779 AF for instream flow (15,678 of which was for the 500 cfs requirement) and 14,686 AF for bay inflows; and 22,346 AF was released to

supply farmers in the Garwood irrigation division. LCRA expects water use in 2014 to be similar to 2013, except for the approximate 17,000 AF preserved in storage due to the 2014 Blue Sucker Emergency Order, which reduced the instream flow requirement to 300 cfs.

23. On September 19 and 20, 2013, the watershed upstream of Lakes Buchanan and Travis experienced a widespread rain event with rain totals averaging two to three inches, with some rain gages reporting as much as seven inches. Although the rainfall amounts were significant, the resulting inflows to Lakes Buchanan and Travis were very limited, totaling only about 24,000 AF. Two large rain events occurred in the lower Colorado River Basin watershed in October 2013, but the majority of rainfall and runoff occurred below the watersheds of Lakes Buchanan and Travis. A widespread, light to moderate intensity rain on November 4, 5, and 6, 2014 included rainfall totals averaging two to three inches above the Highland Lakes but only yielded about 4,000 acre-feet of inflow to the lakes. A rain event on November 21 and 22, 2014 included rainfall totals averaging one to three inches above the Highland Lakes but only yielded about 17,000 acre-feet of inflow to the lakes. The limited amount of inflows is indicative of the severity of the ongoing drought and the extremely dry soil conditions that have yet to be overcome.
24. The Texas State Climatologist, Dr. John Nielsen-Gammon, has recognized the period from October 2010 to September 2011 as the worst one-year statewide drought on record dating back to 1895. Although 2012, 2013, and 2014 have included some periods with near-normal or normal rainfall totals, rainfall has been very sporadic, often with several weeks of dry weather between significant rainfall events such that the soils have not remained saturated enough to allow runoff to occur in any substantial amount. The rain events in November 2014 discussed above are the most recent example of this pattern.
25. High temperatures have also been unprecedented. For Texas, the summer of 2011 was the hottest summer ever recorded in Texas and the hottest summer on record for Austin. Statewide, calendar year 2011 was the second hottest year ever recorded and the hottest year on record for Austin. The summer of 2012 was the tenth hottest summer on record statewide and the 11th hottest summer on record for Austin. Statewide, 2012 tied with 1921 as the hottest year on record. Summer temperatures recorded for Austin in 2013 were the fifth hottest on record. While the summer of 2014 brought milder temperatures in comparison, the high temperatures in prior years exacerbated the water situation.
26. These conditions have created a circumstance where the lakes have been unable to recover in any significant manner, even with an emergency cutoff of nearly all water supply for downstream irrigation in 2012, 2013, and 2014, as well as the emergency relief for Blue Sucker streamflow requirements in the spring of 2014.
27. Recent weather forecasts provide some hope for relief during the period covered by this emergency order, including an El Niño developing this winter and

continuing into early spring. For that period, forecasters expect a pattern of above normal rainfall in Central and South Texas. After early spring the forecast is uncertain. Even if normal to above normal rainfall materializes in the near term, significant drought improvement is not expected.

28. The U.S. Drought monitor (February 10, 2015) shows that most of the Texas Hill Country within the "moderate drought" or "abnormally dry" category. Central Texas and coastal plains region are either in "moderate drought" or "abnormally dry." However, some portions of the Texas Hill Country are in worse drought conditions ranging from "severe" to "exceptional" in areas that contribute inflows to Lakes Buchanan and Travis. The Drought Monitor does not specifically show hydrologic drought, which is worse than the depicted conditions.
29. 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 January 18, 2015, and includes counties that contribute inflow to the Highland Lakes.

Effect of Emergency Order

30. LCRA's requested relief would partially suspend the instream flow requirement from 500 cfs to 300 cfs, which LCRA states could prevent approximately 17,000 AF from being released from Lakes Buchanan and Travis.
31. As of December 1, 2014, if LCRA obtains emergency relief that suspends the supply of interruptible stored water to the Gulf Coast, Lakeside and Pierce Ranch irrigation operations and LCRA obtains emergency relief that reduces the instream flow requirement for the Blue Sucker from 500 cfs to 300 cfs, the chance of triggering a DWDR declaration by the end of 2015 is reduced to about 8 percent. As of December 1, 2014, if LCRA does not obtain either emergency relief it requests, the chance of triggering a DWDR declaration by the end of 2015 is about 33 percent.

LCRA's Firm Customers

32. LCRA provides raw water to over 60 retail and wholesale potable water suppliers that together serve over one million people throughout the lower Colorado River Basin. LCRA's municipal raw water customers include Austin, Cedar Park, Leander, Burnet, Marble Falls, Pflugerville, Lakeway, Bee Cave, Horseshoe Bay, other Highland Lakes municipalities; water supply corporations, special districts; and investor-owned utilities.
33. In addition, LCRA provides water to several electric utilities-LCRA, Bastrop Energy Partners, Austin Energy, Gen-Tex Corporation, and South Texas Project Nuclear Operating Company-from the firm water supply of Lakes Buchanan and

Travis. These utilities provide power into the electrical grid in Texas operated by the Electric Reliability Council of Texas (ERCOT) to meet the electrical needs of customers in Texas. LCRA also provides firm raw water to several industries located downstream.

34. Over 40 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 in some form of drought restriction and are at risk of water supply shortages.
35. 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 crops) when a DWDR is declared.
36. This emergency order request, which is expected to have little to no adverse effect on the Blue Sucker, would help meet the clearly identified water needs of LCRA's firm water customers and thus constitutes a benefit to the public welfare.
37. 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 alternative 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.
38. If LCRA is required to follow the 2010 WMP and the drought continues, LCRA will be required to release approximately 21,000 AF to maintain a flow rate of 500 cfs and the third criteria for DWDR conditions will likely be reached sooner than if a reduced amount of water is released. If a DWDR is declared, LCRA will have to curtail cities' and industries' water use by 20% or more.
39. Curtailments that would occur will result in reduced water supply to power plants, threatening their ability to generate electricity. Because LCRA's firm water customers would be required to cut back substantially if the drought persists under a DWDR declaration, municipal customers are likely to be forced to institute drought response measures that would include restrictions on indoor water use, resulting in threats to public health, safety and welfare.
40. LCRA has 18 firm water customers that actively take raw water for municipal purposes from Lake Travis. The lowest pumping elevations of the intakes range from 545 feet mean sea level (msl) to 645 feet msl on Lake Travis.
41. 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 alternative 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 current drought presents an imminent threat to public health and safety for the water systems of those customers.

Water Conservation and Drought Contingency Plans

42. LCRA's Raw Water Conservation Plan (WCP) and Drought Contingency Plan (DCP) comply with TCEQ rules and are contained in Chapter 4 of the 2010 WMP. LCRA was originally required to develop this part of the WMP as a direct result of the court order adjudicating LCRA's water rights and the Texas Water Commission's 1989 WMP Order, giving initial approval to LCRA of an earlier version of the plan.
43. When TCEQ adopted the 30 Texas Administrative Code (TAC) Chapter 288 rules for DCPs, LCRA adopted separate stand-alone DCPs related 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.
44. LCRA 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. The 2010 WMP includes a requirement that LCRA develop a stored water curtailment plan to be approved by the LCRA Board and TCEQ in response to combined storage dropping below 900,000 AF. TCEQ approved LCRA's water curtailment plan for its firm customers in December 2011.
45. LCRA's WCP complies with TCEQ rules. LCRA has required its municipal customers to adopt conservation plans since before there was a state requirement.
46. 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.
47. In its DCP, LCRA has adopted water use reduction targets for its firm customers that include the following: when the combined storage of Lakes Buchanan and Travis is at or below 1.4 MAF, LCRA encourages its customers to implement voluntary water conservation measures; when combined storage levels at or below 900,000 AF, LCRA asks its customers to implement mandatory water restrictions, with a goal of reduction in use by 10 to 20 percent; and when combined storage levels reaches 600,000 AF and the LCRA board declares a drought worse than the Drought of Record, LCRA will implement a mandatory

pro rata curtailment of its customers' water use, with an initial goal of reducing water use by 20 percent.

48. 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 percent.
49. LCRA has fully implemented its DCP. It requires all of its customers that currently divert and purchase water from LCRA to have a DCP. Currently, all customers have an approved 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.
50. In November 2013, the LCRA Board approved a no-more-than-once-per-week watering restriction that took effect in March 2014. The Board re-affirmed this watering restriction in November 2014. The restriction applies if combined storage is below 1.1 million AF and interruptible stored water has been cut off. The Executive Director has not been asked to approve this restriction and expresses no opinion on this restriction.

Alternatives

51. There are no immediate feasible or practicable alternatives to the emergency authorization LCRA seeks. LCRA is currently evaluating a number of short and long-term alternatives to address the emergency conditions, but they will take time to implement. Alternatives explored include: utilizing water from LCRA's other lakes, conservation, off-channel reservoir storage, interbasin transfers and trucking in water from other sources. LCRA has evaluated many other alternatives to address the emergency conditions that the drought presents.
52. 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, are constrained by existing contractual commitments, would create other operational issues for customers, and/or are subject to a high level of regulatory uncertainty and involve a lengthy permitting process (if not obtained on an emergency basis). In most cases, the alternatives would take years to develop and transport to the area of use. None of the alternatives identified are feasible or practicable alternatives to the emergency authorization.
53. 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.

54. In 2012 and 2013, LCRA supplied about 7,000 AF and 1,000 AF respectively to firm customers downstream of Austin under temporary permits that 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.
55. On August 23, 2011, combined storage in the Highland Lakes dropped below 900,000 AF and LCRA asked firm customers to implement their mandatory drought contingency measures, with a goal of a 10 to 20 percent reduction in water use. Some LCRA customers have reported their estimated savings from drought restrictions imposed over the past two years at 15 percent or greater annually.
56. Amendment of the WMP to reduce these streamflow requirements is not a feasible or practicable alternative because the WMP must be amended using regular procedures for amending a water right, which require basin-wide 30 day notice and an opportunity for a hearing. LCRA has applied for a formal amendment to its 2010 WMP. TCEQ is currently reviewing that application, which was amended in October 2014, but the process will not be completed in time to address LCRA's requested emergency relief. Releases for the Blue Sucker at 500 cfs are required to be in effect for a continuous six-week period between March and May 2015.
57. LCRA is also seeking an Emergency Order under Tex. Water Code Section 11.139 in an application filed on December 23, 2014, to suspend its obligation under the 2010 WMP to release interruptible stored water to customers in the Gulf Coast, Lakeside, and Pierce Ranch irrigation operations for the duration of the order.

Water Quality and High Interest Species/Protecting Environmental Flow Needs

58. Section 35.101(m) of 30 Tex. Admin. Code provides that when issuing an emergency order, all existing instream flows shall be passed, up to the amount necessary to maintain water quality standards for the affected stream. Section 35.101(m) states that additional flows necessary to protect an endangered species under federal law or "other species that are considered to be of high interest" may be required.
59. LCRA monitoring has shown that water quality standards are consistently met if the flow levels have been near or lower than 300 cfs, with few exceptions. Texas Parks and Wildlife Department (TPWD) provided additional information on LCRA's application. TPWD does not oppose LCRA's request for emergency relief based on current river conditions. TPWD indicates that a four-year study in the lower Colorado River to provide information to assess the effects of streamflow on habitat use and reproductive and recruitment success of the Blue Sucker is

ongoing, with the most recent collection and tagging efforts occurring in mid-December 2014. These efforts resulted in the collection of juvenile Blue Suckers in the lower Colorado River – the first juveniles collected in this area.

60. The Blue Sucker is a state-listed threatened species in Texas which is uniquely adapted to life in swift current. When spawning, adults utilize high velocity flow areas over hard substrate such as bedrock outcrop, boulders, and cobble riffles. These habitat types are abundant between Bastrop and Eagle Lake.
61. An instream flow study in 1992 established critical and target instream flow criteria for several locations in the lower Colorado River. The study also recommended the requirement for the 500 cfs for a continuous six week period in March, April and May to provide spawning habitat for the Blue Sucker. The 2010 WMP used these critical instream flow criteria.
62. LCRA's WMP includes "target" and "critical" requirements for instream flows based on the amount of water LCRA has in storage on January 1 each year. At the present time, LCRA must meet critical instream flow requirements, including the 500 cfs instream flow requirement for a continuous six week period between March and May.
63. Based on instream flow studies evaluating the habitat of the Blue Sucker, LCRA states that at 500 cfs, the flow provides for 93% to 100% of the maximum available spawning habitat for the Blue Sucker, while at 300 cfs, at least 86% of the habitat will be supported.
64. Although emergency conditions override the need to maintain a balance between protecting environmental flows and other public interests, environmental flow needs would continue to be protected under the requested relief.
65. The release of additional stored water from the lakes to maintain 500 cfs would only provide a small incremental benefit to the Blue Sucker spawning habitat.

Relief Requested

66. LCRA requests an emergency order amending the 2010 WMP to reduce the required continuous streamflow for a six consecutive week period from March to May for the Blue Sucker from Bastrop to Eagle Lake. The reduction would be from 500 cfs continuous flow to 300 cfs. LCRA requests a duration of 120 days for the emergency order.
67. LCRA states that this emergency order will not reduce the overall firm commitment of water for instream flows included in LCRA's 2010 WMP. The requirement to release a minimum continuous flow of 120 cfs from Bastrop to Eagle Lake at all times would remain.

Notice

68. Notice of the date of the Executive Director's consideration of this order was provided to Texas Parks of Wildlife and the Public Interest Counsel of the TCEQ. Texas Parks and Wildlife was provided more than 72 hours notice for submitting comments, which it did on February 10, 2015. These comments were considered by the Executive Director.
69. Notice that the Executive Director may issue this emergency order and the Commission's hearing to affirm, modify or set aside the order is scheduled for March 4, 2015, will be provided by publication by February 20, 2015, in a newspaper or newspapers of general circulation in the affected area, and provided by notice mailed by February 20, 2015, to affected persons. The affected area to receive notice by newspaper publication is the counties in the Colorado River Basin from the Highland Lakes downstream to the Gulf of Mexico. Affected persons who will receive notice of this emergency order are those water right holders in the Colorado River Basin from the Highland Lakes downstream to the Gulf of Mexico.

Specific Statute and Rule Requirements

70. The Commission may issue an emergency order under Tex. Water Code Sections 5.506 and 11.148 to suspend permit conditions relating to beneficial inflows to affected bays and estuaries and instream uses if the Commission finds that an emergency exists and cannot practically be resolved in other ways. Section 35.101 of 30 TAC sets forth the procedures and criteria to be used by the Commission or the Executive Director in acting under Tex. Water Code Section 5.506 and 11.148.
71. Under 30 TAC Section 35.101(a), the Commission or the Executive Director must find that: (1) Emergency conditions exist that present an imminent threat to public health, safety, and welfare, and that: (A) override the necessity to comply with general procedures and criteria for changing the conditions in a water right; or (B) override the need to maintain the balance between protecting environmental flow needs and other public interests and relevant factors; and, (2) There are no feasible, practicable alternatives to the emergency authorization.
72. Under 30 TAC Section 35.101(b), an emergency is a condition where water supplies available to the applicant have been reduced or impaired to such an extent that an imminent peril to the public health, safety, or welfare exists. An emergency may include:
 - a. The reduction of public water supplies to critical levels as a result of a severe and sustained drought;
 - b. The failure of a dam for a public water supply reservoir;
 - c. The significant contamination of a public water supply; or

- d. The failure or destruction of public water supply pipelines or other distribution systems.
73. Under 30 TAC Section 35.101(k), in determining whether feasible, practicable alternatives exist to the suspension of water right conditions, the Commission or Executive Director shall examine:
- a. The amount and purposes of use for water currently being used by the applicant;
 - b. All evidence relating to the availability of alternative, supplemental water supplies to the applicant; and
 - c. The applicant's efforts to curtail water use not essential for the protection of the public health, safety, and welfare.
74. An applicant for an emergency order must file the specific information described under Tex. Water Code Section 35.101(c).
75. Staff reviewed LCRA's application, supporting materials and affidavits and determined that the application included all of the information and documents required by Tex. Water Code Section 35.101(c).

II. CONCLUSIONS OF LAW

- 1. Findings of Fact Nos. 1 through 75 show that the requirements of Tex. Water Code Sections 5.506 and 11.148, and applicable subsections of 30 TAC Section 35.101 have been met.
- 2. The Executive Director has the authority to issue this emergency order. A Commission hearing to affirm, modify, or set aside this order will be held on March 4, 2015.

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

- 1. The requirement in LCRA's WMP, Permit No. 5838, to maintain a continuous streamflow of 500 cfs for six consecutive weeks in between March and May from Bastrop to Eagle Lake for Blue Sucker habitat for spawning is partially suspended by reducing the streamflow requirement to 300 cfs.
- 2. The emergency order becomes effective upon issuance.

3. The emergency order terminates in 120 days, which is June 18, 2015. It may be renewed once for 60 days.
4. This emergency order was issued without a hearing. A hearing to affirm, modify, or set aside this order will be held before the Commission on March 4, 2015, at 9:30 a.m. at the following location:

Texas Commission on Environmental Quality
12100 Park 35 Circle
Building E, Room 201S
Austin Texas 78753

5. The Chief Clerk of the Commission shall forward a copy of this emergency order to all affected persons.
6. 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 order.

Issue Date:

February 18, 2015

**TEXAS COMMISSION ON
ENVIRONMENTAL QUALITY**



Richard A. Hyde, P.E.
Executive Director

Attachment A



December 22, 2014

Mr. Richard Hyde, Executive Director
Texas Commission on Environmental Quality
P.O. Box 13087, MC-109
Austin, TX 78711-3087

Ms. Bridget Bohac, Chief Clerk
Texas Commission on Environmental Quality
P.O. Box 13087, MC-105
Austin, Texas 78711-3087

Dear Mr. Hyde and Ms. Bohac:

On November 19, 2014, the Lower Colorado River Authority's (LCRA) Board of Directors approved a resolution directing the General Manager to prepare and file an application for the emergency modification of certain instream flow requirements under its 2010 Water Management Plan (WMP) for lakes Buchanan and Travis (Permit No. 5838). The requested relief is identical to relief granted for the Spring of 2014.

LCRA urges that this relief be granted notwithstanding anything to the contrary in the 2010 WMP, and has included in its application the information needed to support TCEQ's processing of this application under any or all of TCEQ's emergency authorities it may deem most appropriate, including Texas Water Code §§ 5.506, 11.139, 11.148, and the Governor's Emergency Disaster Proclamation related to drought.

To the extent the Commission deems appropriate, and consistent with the Governor's Proclamation, LCRA requests that procedural requirements associated with this request, or any portion thereof, be waived to expedite the processing of this request. LCRA also requests that TCEQ process this request under whatever authority it deems most appropriate in light of the exceptional drought and in a manner that allows LCRA to gain the benefit of the authorization as soon as practicable.

A check to cover the application and filing fees has been submitted with LCRA's application. Please advise if additional fees are required.

In addition, one original and seven copies of the Lower Colorado River Authority's (LCRA's) Application for Emergency Modification of Certain Instream Flow Requirements Under Its Water Management Plan for lakes Buchanan and Travis (Permit No. 5838) have been filed with the Chief Clerk, pursuant to Texas Water Code § 11.148.

Letter to R. Hyde and B. Bohac
December 22, 2014
Page 2

As required by Commission rules, one copy of this Application has also been filed with the Texas Parks and Wildlife Department (TPWD) simultaneous with the filing of this application with your office.

To the extent that TCEQ has questions or concerns, we stand ready to promptly respond and are willing, of course, to meet with you and your staff to review the application materials and address any questions. For questions or a meeting, please contact David Wheelock, Manager of Water Supply and Conservation, at (512) 730-6822 or Lyn Clancy, Managing Associate General Counsel and Senior Policy Advisor, at (512) 578-3378.

Sincerely,

A handwritten signature in black ink that reads "Phil Wilson". The signature is written in a cursive, slightly slanted style.

Phil Wilson
General Manager

cc: Carter Smith, Executive Director, TPWD

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

P.O. Box 13087 MC-160, Austin, Texas 78711-3087
Telephone (512) 239-4691, FAX (512) 239-4770

APPLICATION FOR EMERGENCY MODIFICATION OF PERMIT CONDITIONS AND EMERGENCY AUTHORITY TO MAKE AVAILABLE WATER SET ASIDE FOR ENVIRONMENTAL FLOWS

Notice: This form will not be processed until all delinquent fees and/or penalties owed to the TCEQ or the Office of the Attorney General on behalf of the TCEQ are paid in accordance with the Delinquent Fee and Penalty Protocol.

1. Data on Applicant and Project: Social Security or Federal ID No. CN 600253637
- A. Name: Lower Colorado River Authority (LCRA); Attn: David Wheelock, P.E., Manager, Water Supply and Conservation
- B. Mailing Address: P.O. Box 220, L200, Austin, TX 78767
- C. Telephone Number: 512-730-6822 Fax Number: 512-473-3529 E-mail Address: david.wheelock@lcra.org
- D. Applicant owes fees or penalties? Yes No
If yes, provide the amount and the nature of the fee or penalty as well as any identifying number:
N/A
- E. Describe Use of Water: Temporary emergency authorization to allow LCRA to deviate from the 2010 Water Management Plan as it relates to the modification of the instream flow requirement related to the Blue Sucker contained in LCRA's Water Management Plan (WMP) for lakes Buchanan and Travis, as described more fully in LCRA's Attachments provided with this application.
- F. Description of Project (TDH Project No. if applicable) N/A
- G. Highway Designation No. N/A Counties Llano, Burnet, Travis, Bastrop, Fayette, Colorado, Wharton, and Matagorda

2. Type of Diversion (check one): From Stream From Reservoir
3. Rate of Diversion:
A. Maximum _____ gpm
(capacity of pump)

4. Amount and Source of Water:
See Attachments provided with this application.
_____ acre-feet of water within a period of _____ (specify term period not to exceed a three year term). The water is to be obtained from _____, tributary of _____, tributary of _____, tributary of _____, _____ Basin.

5. Location of Diversion Point: Provide Latitude and Longitude in decimal degrees to at least six decimal places, and indicate the method used to calculate the diversion point location.
At Latitude _____°N, Longitude _____°W, ((at) or (near) the stream crossing of), (at a reservoir in the vicinity of) _____ (R-O-W) (Highway), located in Zip Code _____, located _____ miles in a _____ direction from _____ (County Seat), _____ County, and _____ miles in a _____ direction from _____, a nearby town shown on County road map. Note: Distance in straight line miles.

Enclose a USGS 7.5 minute topographic map with the diversion point and/or the return water discharge points labeled. Owner's written consent is required for water used from any private reservoir, or private access to diversion point.

- | | | | | |
|---|--|-----------|-----------|--|
| 6. Access to Diversion Point (check one): | 7. Fees Enclosed: | | | |
| <input type="checkbox"/> Public right-of-way | Filing | \$ 100.00 | \$ 250.00 | |
| <input type="checkbox"/> Private property | Recording..... | \$ 1.25 | \$ 1.25 | |
| (A letter of permission from landowner is attached) | Use (\$1.00 per ac-ft or fraction thereof) | \$ _____ | \$ 500.00 | |
| <input type="checkbox"/> Other (Explain) | (Note: 1 ac-ft = 325,851 gals. Total | \$ _____ | \$ 751.25 | |
| | 1 ac-ft = 7758.35 bbls.) | | | |

Upon completion of any project for which a temporary water permit is granted, the Permittee is required by law to report the amount of water used. This document must be properly signed and duly notarized before it can be accepted or considered by the Texas Commission on Environmental Quality.

CERTIFICATION (30 Tex. Admin. Code §35.24(e)(5))

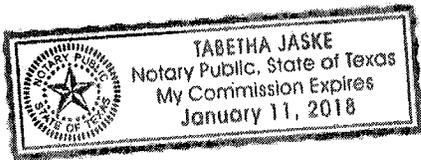
"I, Phil Wilson, General Manager the Lower Colorado River Authority, certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

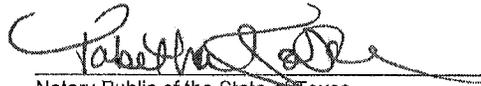


Phil Wilson, General Manager
Lower Colorado River Authority

Date: 12/22/14

Subscribed and sworn to as being true and correct before me on this the 22nd day of December, 2014.





Notary Public of the State of Texas

The attachments to LCRA's Emergency Order application can be found at <https://www.tceq.texas.gov/agency/lcra/lcra-emergency-order>

EXHIBIT B

TCEQ Interoffice Memorandum

To: Commissioners

Date: February 16, 2015

Thru: Bridget Bohac, Chief Clerk
Richard A. Hyde, P.E., Executive Director
L'Oreal W. Stepney, P.E., Deputy Director, Office of Water
Kellye Rila, Director, Water Availability Division

From: Kathy Alexander, Ph.D., Technical Specialist, Water Availability Division

Background

On December 23, 2014, LCRA filed an application for an emergency order to amend its WMP to reduce the requirement to maintain a minimum streamflow of 500 cubic feet per second (cfs) for six weeks in between March and May from Bastrop to Eagle Lake for the Blue Sucker. LCRA requested that the application be processed under Texas Water Code §§ 5.506, 11.139, or 11.148, as appropriate, and the Governor's Emergency Disaster Proclamation related to drought. Without an amendment, this requirement would necessitate a release of stored water of approximately 21,000 acre-feet (AF) by the end of May 2015. LCRA's requested relief would reduce the release requirement from 500 cfs to 300 cfs, which would prevent approximately 17,000 AF from being released from Lakes Buchanan and Travis. LCRA states that this emergency order will not reduce the overall firm commitment of water for instream flows included in LCRA's 2010 WMP. The requirement to release a minimum continuous flow of 120 cfs from Bastrop to Eagle Lake at all times would remain. LCRA requests a duration of 120 days.

The Commission or ED may issue an emergency order under Tex. Water Code § 11.148 and 30 Tex. Admin. Code (TAC) Section 35.101 to temporarily suspend conditions in a water right relating to beneficial inflows to bays and estuaries and instream uses during an emergency. The Commission or ED must find that: a) emergency conditions exist that present an imminent threat to public health, safety, and welfare, and that: 1) override the necessity to comply with general procedures and criteria for changing the conditions in a water right; or 2) override the need to maintain the balance between protecting environmental flow need and other public interests and relevant factors; and, b) there are no feasible, practicable alternatives to the emergency authorization. 30 TAC Section 35.101(a).

LCRA's Certificates of Adjudication and WMP

LCRA has the right to divert and use up to 1.5 million acre-feet (MAF) from Lakes Buchanan and Travis under Certificates of Adjudication Nos. 14-5478 and 14-5482. By court order, LCRA has developed a Water Management Plan (WMP), currently dated

2010, which is part of LCRA’s water rights and has its own number, Permit No. 5838. 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. Environmental flow needs include instream flows for the river, and bay and estuary freshwater inflows.

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.” LCRA’s 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.

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.” 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.

LCRA’s environmental flow obligations in the 2010WMP are generally tied to the amount of water LCRA has in storage on January 1 each year. Under a declaration of a DWDR, water for instream flows and bay inflows is subject to a pro rata reduction along with other firm users of water. These triggers are shown below:

Combined Storage of Lakes Buchanan and Travis	Date on Which Trigger is Decided	Action Taken
1.7 MAF	On Jan. 1	Environmental releases for bay and estuary inflows reduced to meet intermediate needs for the following year
1.4 MAF	At any time	Request firm customers to implement voluntary drought response measures.

Combined Storage of Lakes Buchanan and Travis	Date on Which Trigger is Decided	Action Taken
1.4 MAF	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.
1.1 MAF	On Jan. 1	Environmental releases for bay and estuary inflows reduced to meet critical needs for following year.
900,000 AF	At any time	Request firm customers to implement mandatory water restrictions; develop firm customer curtailment plan.
600,000 AF	At any time	If LCRA's criteria indicate a drought worse than the Drought of Record, then cease interruptible supply and begin curtailment of firm supply.

Under the 2010 WMP, once a drought has lasted more than 36 months and a DWDR has been declared by the LCRA Board, 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. LCRA will also implement pro rata curtailment of its firm water users once a DWDR is declared and after interruptible stored water uses have been curtailed. Under a DWDR, water for instream flows and bay inflows is subject to a pro rata reduction along with other firm uses of water.

Under the 2010 WMP, the combined firm yield of Lakes Buchanan and Travis is 535,812 AFY. Of this amount, 90,546 AFY is committed to O.H. Ivie Reservoir, making 442,350 AFY of firm water supply available from Lakes Buchanan and Travis for LCRA to help meet the firm water needs of its customers. LCRA has reserved 33,400 AF of firm supply to meet its instream flow and bay inflow obligations under the WMP (See LCRA's December 23, 2015 Application, Attachment C). This reservation is for the average amount of firm water needed for the environment over a repeat of the Drought of Record and includes 6,060 AF for bay inflows. In any year, the amount can exceed that number.

During 2015, LCRA is required to maintain critical instream flows under its 2010 WMP, based on the combined storage on January 1, 2015. This includes maintaining a minimum continuous flow of 120 cfs from Bastrop to Eagle Lake at all times, and a minimum flow of 500 cfs for a continuous six week period between March and May from Bastrop to Eagle Lake to provide higher flows to support habitat for Blue Sucker

spawning. If the river is not supplying this amount from March to May, LCRA must release stored water under the 2010 WMP. In 2012, LCRA released 22,991 AF, in 2013 LCRA released 15,678 AF to meet the 500 cfs instream flow requirement, and from January through November 2014 LCRA released approximately 4,400 cfs to meet an instream flow obligation of 300 cfs (See LCRA's December 23, 2015 Application, Attachment F, pp. 10-11).

Current Conditions in the Colorado Basin

As of February 16, 2015, the combined storage of Lakes Buchanan and Travis is 717,663 AF or 36% of capacity. On September 19, 2013, the combined storage of these reservoirs fell to the second lowest point in the history of these lakes, 637,123 AF, or 31.7% capacity (See LCRA's December 23, 2015 Application, Attachment F, pg. 9). The total combined storage in Lakes Buchanan and Travis was the lowest combined storage on December 1 since the reservoirs were constructed (See LCRA's December 23, 2015 Application, Attachment F, pp. 6-7).

In 2012, 2013, and 2014 LCRA operated under TCEQ-issued emergency orders that modified the amount of water supplied from Lakes Buchanan and Travis for irrigated agriculture in the lower basin. In 2012, the total use of water from the lakes was about 188,000 AF. Firm water use was approximately 148,000 AF, 31,285 AF was supplied to help meet environmental flow needs of 28,235 AF for instream flows (22,991 AF of which was for the 500 cfs requirement) and 3,050 AF for bay inflows, and 9,000 AF was released to supply farmers in the Garwood irrigation division. In 2013, total use of water from the lakes was 228,959. Firm water use was around 173,148 AF, a total of 33,465 AF was supplied to help meet environmental flow needs consisting of 18,779 AF for instream flow (15,678 of which was for the 500 cfs requirement) and 14,686 AF for bay inflows, and 22,346 AF was released to supply farmers in the Garwood irrigation division. In 2014, the LCRA operated under a TCEQ-issued emergency order that reduced the instream flow requirement from 500 cfs to 300 cfs for four months for the Blue Sucker. LCRA expects water use for 2014 to be similar to 2013, except for the approximate 17,000 AF preserved in storage due to the Blue Sucker emergency order (See LCRA's December 23, 2015 Application, Attachment F, pp. 4, 10-11).

LCRA's application and supporting affidavits state that inflows to Lakes Buchanan and Travis are at record lows:

- The cumulative inflow deficit has been as much as 90% more than the inflow deficit for a similar period of inflows experienced during the drought of record for the lower Colorado River Basin, which occurred from 1947 to 1957 (See LCRA's December 23, 2015 Application, Attachment G, pg. 2);
- Annual inflows into Lakes Buchanan and Travis in five of the last six years are among the ten lowest years of inflow on record. Only one year in the historical Drought of Record for the lower Colorado River Basin was in the list of ten lowest annual inflows (See LCRA's December 23, 2015 Application, Attachment A, pg. 8);
- Five of the top ten lowest calendar year historical inflows since the reservoirs went into operation in the early 1940's—2008, 2009, 2011, 2012 and 2013 occur

in the current drought, and the top three years for lowest inflows—2011, 2013, and 2008 are all from the current drought. Based on inflows from January through November 2014, 2014 could be among the three lowest inflow years on record (See LCRA’s December 23, 2014 Application, Attachment F, pg. 6);

- Inflows into Lakes Travis and Buchanan during the current drought have been lower for time periods ranging from 12 months to 84 months than the lowest inflows during similar periods within the historical Drought of Record. A comparison of inflows in the current drought to inflows during the historical Drought of Record is shown below; (See LCRA’s December 23, 2014 Application, Attachment F, Table 5)

Time Period (months)	Lowest Inflows in Current Drought		Lowest Inflows in Historical Drought of Record	
	Period Ending	Inflows (AF)	Period Ending	Inflows (AF)
12	September 2011	120,160	April 1951	408,784
24	May 2014	393,337	March 1952	1,006,681
36	September 2013	695,920	August 1952	1,636,088
48	October 2014	940,789	August 1952	3,035,846
60	November 2014	1,952,879	August 1952	4,128,806
72	April 2014	2,374,126	April 1955	5,193,016
84	November 2014	2,738,953	August 1952	6,050,084

The Texas State Climatologist, Dr. John Nielsen-Gammon, has recognized that rainfall during the period from October 2010 to September 2011 was the lowest recorded dating back to 1895 (See LCRA’s December 23, 2014 Application, Attachment H, pg. 2). On September 19 and 20, 2013, the watershed upstream of Lakes Buchanan and Travis experienced a widespread event with rain totals averaging two to three inches, with some rain gages reporting as much as seven inches. Although the rainfall amounts were significant, the resulting inflows to lakes Buchanan and Travis were very limited, totaling only about 24,000 AF. A rainfall event on November 4-6, 2014 included rainfall totals up to two to three inches but only resulted in about 4,000 AF of inflows to the lakes. A rainfall event above the lakes on November 21-22, 2014 only resulted in about 17,000 AF of inflows (See LCRA’s December 23, 2014 Application, Attachment F, pg. 9-10). Although 2013 and 2014 have included some periods with near-normal or normal rainfall totals, rainfall has been sporadic, often with several weeks of dry weather between significant rainfall events such that the soils have not remained saturated enough to allow runoff to occur in any substantial amount. Rainfall for the Hill Country and Central Texas Regions from October 2010 to November 2014 ranked in the 2.1 to 5.0 percentile for precipitation (See LCRA’s December 23, 2014 Application, Attachment H, pg. 2). The limited inflows are indicative of the severity of the ongoing drought and extremely dry soil conditions (See LCRA’s December 23, 2014 Application, Attachment F, pg. 9).

High temperatures have also been unprecedented. For Texas, the summer of 2011 was the hottest summer ever recorded in Texas and the hottest summer on record for Austin (See LCRA’s December 23, 2014 Application, Attachment H, pg. 4). Statewide, calendar

year 2011 was the second hottest year ever recorded and the hottest year on record for Austin (See LCRA's December 23, 2014 Application, Attachment H, pg. 4). The summer of 2012 was the tenth hottest summer on record statewide and the 11th hottest summer on record for Austin. Statewide, 2012 tied with 1921 as the warmest year on record. Summer temperatures recorded for Austin in 2013 were the fifth warmest on record and those for 2014 were the 34th warmest on record (See LCRA's December 23, 2014 Application, Attachment H, pg. 4). The U.S. Drought monitor (February 10, 2015) for shows that most of the Texas Hill Country is within the "moderate drought" or "abnormally dry" category and Central Texas and the coastal plains are either in "moderate drought" or "abnormally dry". However, some portions of the Texas Hill Country are in worse drought conditions ranging from "severe" to "exceptional" in areas that contribute inflows to Lakes Buchanan and Travis. The Drought Monitor does not specifically show hydrologic drought, which is worse than the depicted conditions.

LCRA's application and supporting affidavits indicate that these conditions created a circumstance where the lakes have been unable to recover in any significant manner, even with an emergency cutoff of nearly all water supply for downstream irrigation in 2012, 2013, and 2014. Recent weather forecasts do not include any clear signs of relief. The National Weather Service's 3-month outlook calls for above normal precipitation across Central and South Texas this winter with conditions becoming more uncertain in late winter through early spring (See LCRA's December 23, 2014 Application, Attachment G, pg. 6). Most long range climate forecast models indicate sea surface temperatures will remain above the threshold for El Niño through late spring and possibly through summer; however, the National Weather Service has not declared the arrival of El Niño conditions (See LCRA's December 23, 2014 Application, Attachment G, pg. 7). A pattern of above normal rainfall this winter and early spring should lead to drought improvement across much of Texas but the pattern is not expected to be in place long enough to eliminate the long-term effects of the ongoing drought (See LCRA's December 23, 2014 Application, Attachment H, pg. 9).

Criteria prompting LCRA to make a DWDR declaration could be met as soon as March 2015 (See LCRA's December 23, 2014 Application, Attachment G, pg. 3). If LCRA receives the emergency relief requested, the chance of triggering a DWDR is reduced to about 8%. Two of the three criteria, the 24 month criteria and the cumulative inflow deficit criteria, have been met (See LCRA's December 23, 2014 Application, Attachment G, Tab 2 and Attachment F, pg. 9). In May 2012 the lakes refilled to 1.033 million AF and even with no releases to Lakeside, Gulf Coast and Pierce Ranch, the lakes dropped to the second lowest level on record, 637,123 AF on September 19, 2013.

The inflow conditions experienced in the last several years are an extreme drought situation that was not contemplated when the special conditions related to freshwater inflows and instream flows were incorporated into the 2010 WMP (See LCRA's December 23, 2014 Application, Attachment A, pg. 9). The 2010 WMP was developed using simulations of a repetition of the hydrologic period from 1940 to 1965. While that period includes the 1950s Drought of Record, the recent severe low inflows of 2011, 2013 and 2014 were lower than inflows in the 1950s and the multi-year inflows are also worse than any multi-year inflows which were simulated during the development of the WMP

(See LCRA's December 23, 2014 Application, Attachment A, pg. 9 and See also TEX. COMM'N ENVTL. QUAL., Docket No. 2014-0124-WR, Order affirming, with modification, the Executive Director's emergency order issued to the Lower Colorado River Authority partially suspending releases of stored water for instream flows for the Blue Sucker under its Water Management Plan, Permit No. 5838, pursuant to Sections 5.506 and 11.148 of the Texas Water Code (April 15, 2014)).

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 January 18, 2015, and includes counties that contribute inflow to the Highland Lakes.

LCRA's Firm Customers

LCRA provides raw water from the firm supply of Lakes Buchanan and Travis to over 60 retail and wholesale potable water suppliers that together serve over one million people throughout the lower Colorado River Basin and LCRA's water service area. LCRA's municipal raw water customers include, but are not limited to, Austin, Cedar Park, Leander, Burnet, Marble Falls, Pflugerville, Lakeway, Bee Cave, Horseshoe Bay, other Highland Lakes municipalities; water supply corporations, special districts; and investor-owned utilities. In addition, LCRA provides water to several electric utilities—LCRA, Bastrop Energy Partners, Austin Energy, Gen-Tex Corporation, and South Texas Project Nuclear Operating Company—from the firm water supply of Lakes Buchanan and Travis. These utilities provide power into the electrical grid in Texas operated by the Electric Reliability Council of Texas (ERCOT) to meet the electrical needs of customers in Texas. LCRA also provides firm raw water to several industries located downstream, including Oxea Chemical and Underground Services Markham (See LCRA's December 23, 2014 Application, Attachment D, pg. 2).

Over 40 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 in some form of drought restriction and are at risk of water supply shortages (See LCRA's December 23, 2014 Application, Attachment A, pg. 12). Currently, LCRA has 18 customers that actively take raw water for municipal purposes from Lake Travis. The lowest pumping elevations of the intakes range from 545 feet mean sea level (msl) to 645 feet msl on Lake Travis (See LCRA's December 23, 2014 Application, Attachment F, pg. 5 and Attachment A, pg. 12).

The commission's February 2014 Emergency Order found that 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 alternative 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, LCRA's customers' water systems will have difficulty in meeting firm customers' water needs. (See TEX. COMM'N ENVTL. QUAL., Docket No. 2014-0124-WR, Order affirming in part and modifying in part the Executive Director's emergency order authorizing the Lower Colorado River Authority to amend its Water

Management Plan, Permit 5838, pursuant to section 11.139 of the Texas Water Code (Feb. 27, 2014) and See also LCRA's December 23, 2014 Application, Attachment A, pg. 12).

Further, the February 2014 Order found that low lake levels in Lake Travis have a direct impact on the ability of local emergency services personnel to fight structure fires and wildfires that may occur. In 2011, the Pedernales Fire Department, which serves western Travis County and relies primarily upon water from Lake Travis, was able to draft water from Lake Travis at multiple locations on the lake. As of February 17, 2014, the Fire Department had access to only one reliable water source at the lake. With these limitations, the Fire Department has experienced 45-minute turnaround times for trucks to bring water to a fire, and it has had to stop fighting a fire due lack of water in its trucks or helicopters. These circumstances constitute a current threat to the public health, safety, and welfare of residents served by the Pedernales Fire Department (See TEX. COMM'N ENVTL. QUAL., Docket No. 2014-0124-WR, Order affirming in part and modifying in part the Executive Director's emergency order authorizing the Lower Colorado River Authority to amend its Water Management Plan, Permit 5838, pursuant to section 11.139 of the Texas Water Code (Feb. 27, 2014)).

Water Conservation Plans, Drought Contingency Plans, and Alternatives

LCRA's Raw Water Conservation Plan (WCP) and Drought Contingency Plan (DCP) comply with TCEQ rules and are contained in Chapter 4 of the 2010 WMP. LCRA was originally required to develop this part of the WMP as a direct result of the court order adjudicating LCRA's water rights and the Texas Water Commission's 1989 WMP Order, giving initial approval to LCRA of an earlier version of the plan. When LCRA was required under the TCEQ's Chapter 288 rules to develop and implement a DCP, LCRA incorporated all of the same triggers and criteria from the approved WMP into its DCP. The 2010 WMP includes a requirement that LCRA develop a stored water curtailment plan to be approved by the LCRA Board and TCEQ in response to combined storage dropping below 900,000 AF. TCEQ approved LCRA's water curtailment plan for its firm customers in December 2011 (See TEX. COMM'N ENVTL. QUAL., Docket No. 2014-0124-WR, Order affirming in part and modifying in part the Executive Director's emergency order authorizing the Lower Colorado River Authority to amend its Water Management Plan, Permit 5838, pursuant to section 11.139 of the Texas Water Code (Feb. 27, 2014)).

LCRA's DCP establishes the measures LCRA will take in times of drought. LCRA's DCP includes the following: when the combined storage of Lakes Buchanan and Travis is less than 1.4 MAF, LCRA encourages its customers to implement voluntary water conservation measures; when combined storage levels fall below 900,000 AF, LCRA asks firm customers to implement their mandatory water use reduction measures, with a goal of reducing water use by 10-20%; 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 drought more severe than the Drought of Record (See LCRA's December 23, 2014 Application, Attachment L).

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%. 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 (See TEX. COMM'N ENVTL. QUAL., Docket No. 2014-0124-WR, Order affirming in part and modifying in part the Executive Director's emergency order authorizing the Lower Colorado River Authority to amend its Water Management Plan, Permit 5838, pursuant to section 11.139 of the Texas Water Code (Feb. 27, 2014)).

LCRA has fully implemented its DCP. It requires all of its customers that currently divert and purchase water from LCRA to have a DCP. Currently, all customers have an approved DCP (See LCRA's December 23, 2014 Application, Attachment L, pg. 2). Most of these firm customers have stayed in some form of mandatory water restrictions, significantly limiting landscape irrigation. LCRA industrial customers, who consist of power plants and a few large industries along the Gulf Coast, have cut back on non-essential water uses, such as outdoor watering. However these cutbacks likely have resulted in a very minimal savings. Any further cutbacks will result in a decrease in production (See LCRA's December 23, 2014 Application, Attachment L).

LCRA has had several meetings with firm customers in preparation for pro rata curtailment. The LCRA Board approved a no more than once per week watering restriction that took effect in March 2014 and applies if combined storage is below 1.1 MAF and interruptible stored water to the Gulf Coast and Lakeside irrigation divisions and Pierce Ranch has been cut off (See TEX. COMM'N ENVTL. QUAL., Docket No. 2014-0124-WR, Order affirming in part and modifying in part the Executive Director's emergency order authorizing the Lower Colorado River Authority to amend its Water Management Plan, Permit 5838, pursuant to section 11.139 of the Texas Water Code (Feb. 27, 2014)).

LCRA evaluated the following alternatives to address current drought conditions: utilizing water from LCRA's other lakes, conservation, groundwater, off-channel storage, interbasin transfers, and trucking in water from other sources. LCRA also evaluated several other alternatives to address the emergency conditions resulting from the current drought (See LCRA's December 23, 2014 Application, Attachment D, Tab 3).

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. In 2012, LCRA supplied about 7,000 AF to firm customers downstream of Austin under temporary permits that would otherwise have been released from Lakes Buchanan and Travis. In 2013, LCRA supplied about 1,000 AF to such customers under such temporary permits. While this was beneficial, use under the temporary permits is limited when compared to the amount of interruptible stored water that might be released under the 2010 WMP without an emergency order in place and the potential savings from a reduction in the streamflow requirement for the Blue Sucker. (See LCRA's December 23, 2014 Application, Attachment D, pg. 4).

There is no feasible practicable alternative for Austin on short order to replace its water supply should it be depleted to the point of drastic shortages. Although Austin has made very earnest efforts to identify alternative water supplies, a replacement water supply for 1 million people cannot be identified and developed in a few years. Austin has identified only very small amounts of water that may be able to be purchased for exorbitantly expensive prices. The small amounts do not sufficiently address the public health, safety, and welfare risks and the exorbitant prices do not make these practicable alternatives (See TEX. COMM'N ENVTL. QUAL., Docket No. 2014-0124-WR, Order affirming in part and modifying in part the Executive Director's emergency order authorizing the Lower Colorado River Authority to amend its Water Management Plan, Permit 5838, pursuant to section 11.139 of the Texas Water Code (Feb. 27, 2014)).

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 amended application to amend its 2010 WMP on October 31, 2014. TCEQ is currently reviewing that application.

Amending the WMP to reduce the instream flow requirements is not a viable alternative because the WMP would have to be amended using regular procedures for amending a water right, which would require basin-wide 30 day notice and an opportunity for a hearing. LCRA has applied for formal amendment to its 2010 WMP. TCEQ is currently reviewing that application, which was amended in October 2014, but the process will not be completed in time to address LCRA's requested emergency relief. Releases for the Blue Sucker in 2015 are required to be in effect for a continuous six week period between March and May 2015.

Water Quality and High Interest Species/Protecting Environmental Flow Needs

The Blue Sucker is a state-listed threatened species in Texas which is uniquely adapted to life in swift current. When spawning, adults utilize high velocity flow areas over hard substrate such as bedrock outcrop, boulders, and cobble riffles. These habitat types are abundant between Bastrop and Eagle Lake (See LCRA's December 23, 2014 Application, Attachment K, pg. 2). An instream flow study in 1992 established critical and target instream flow criteria for several locations in the lower Colorado River. The study also recommended the requirement for the 500 cfs for a continuous six week period in March, April and May to provide spawning habitat for the Blue Sucker. The 2010 WMP used these critical instream flow criteria (See LCRA's December 23, 2014 Application, Attachment K, Tab 4). LCRA's WMP includes "target" and "critical" requirements for

instream flows based on the amount of water LCRA has in storage on January 1 each year. At the present time, LCRA must meet critical instream flow requirements, including the 500 cfs instream flow requirement for a continuous six week period between March and May.

Based on instream flow studies evaluating the habitat of the Blue Sucker, LCRA states that at 500 cfs, the flow provides for 93 to 100% of the maximum available spawning habitat for the Blue Sucker, while at 300 cfs, at least 86% of the habitat will be supported (See LCRA's December 23, 2014 Application, Attachment K, pg. 4). Water quality standards are consistently met (with few exceptions) when streamflow is at or near 300 cfs. (See LCRA's December 23, 2014 Application, Attachment K, pg. 4).

Review

An applicant for an emergency order must file the specific information described under 30 Texas Administrative Code Section 35.101(c). Staff reviewed LCRA's application, supporting materials and affidavits and determined that the application included all of the information and documents required by Tex. Water Code Section 35.101(c). Under 30 TAC Section 35.101(b), an emergency is a condition where water supplies available to the applicant have been reduced or impaired to such an extent that an imminent peril to the public health, safety, or welfare exists. 30 TAC Section 35.101(b)(1) describes one such condition as the reduction of public water supplies to critical levels as a result of a severe and sustained drought. LCRA's application and supporting affidavits provided extensive information on the severity of the ongoing drought and the current and projected impacts on its firm customers.

Under Section 35.101(k), to determine whether feasible, practicable alternatives exist to the requested relief, the Executive Director shall examine the amount and purposes of use for water currently being used by the applicant, all evidence relating to the availability of alternative, supplemental water supplies to the applicant, and the applicant's efforts to curtail water use not essential for the protection of public health, safety and welfare. LCRA has fully implemented its DCP. A 20% reduction in water use by firm customers will require difficult measures. However, none of these measures will occur quickly enough to help lake levels. Some LCRA customers, such as Austin, have achieved water savings through reductions in water use. Most industrial customers would have to implement the full 20% reduction more immediately and this likely means a decrease in annual production.

LCRA has taken steps to preserve its water supply for firm customers during this drought, including emergency orders in 2012, 2013, and 2014, and implementation of mandatory water use restrictions for its firm water customers in February 2014. None of the additional alternatives LCRA identified in its application are feasible or practicable alternatives to the emergency authorization because they could not be implemented before mid-April, 2014, which is when LCRA would need to begin releases to meet the 500 cfs requirement for a continuous six week period before the end of May 2014.

LCRA's requested relief would reduce the instream flow requirement for the Blue Sucker from 500 cfs to 300 cfs, which LCRA states would prevent approximately 21,000 AF from being released from lakes Buchanan and Travis. LCRA's application states that, as of December 1, 2014, even with no releases of interruptible stored water to the Gulf Coast, Lakeside and Pierce Ranch irrigation operations in 2014, the criteria for DWDR declaration could be met as early as March 2015. If LCRA receives the emergency relief it requested, the chance of triggering a DWDR is reduced to about 8%.

Section 35.101(m) provides that when issuing an emergency order, all existing instream flows shall be passed up to the amount necessary to maintain water quality standards for the affected stream. Section 35.101(m) states that additional flows necessary to protect an endangered species under federal law or "other species that are considered to be of high interest" may be required. LCRA's supporting affidavits state that water quality standards are maintained in the river segments between Bastrop and Eagle Lake if the flow levels have been near or lower than 300 cfs with few exceptions.

Texas Parks and Wildlife Department (TPWD) provided additional information on LCRA's application. TPWD states that it does not oppose LCRA's request based on current river conditions. TPWD indicates that a four year study in the lower Colorado River to provide information to assess the effects of streamflow on habitat use and reproductive and recruitment success of the Blue Sucker is ongoing with the most recent collection and tagging efforts occurring in mid-December 2014. This recent effort resulted in the collection of juvenile Blue Suckers, which are the first juveniles collected in the lower Colorado River.

Conclusion

Based on staff review of LCRA's application and supporting affidavits, current and forecasted hydrologic conditions and information from Texas Parks and Wildlife Department, staff concludes that:

- Inflows to LCRA's Highland Lakes have been extremely low for the past few years and weather forecasts do not show significant improvement above these lakes. The extraordinary magnitude of the reduction in inflows, as compared to the inflows in the drought of record, which is the basis of the 2010 WMP, signals the need for great caution to be taken with regard to decisions concerning large releases because these large releases could make it more probable that lake levels will not quickly recover once such releases occur;
- If water supply for LCRA's firm customers is reduced before arrangements for alternative supplies can be developed, LCRA will have difficulty in meeting its firm customers' water needs; hence the need for emergency relief;
- This emergency order request would help meet the clearly identified water needs of the LCRA's firm water customers and thus constitutes a benefit to the public welfare;
- If LCRA is required to follow the 2010 WMP and the drought continues, LCRA will be required to release around 21,000 AF to maintain an instream flow rate of 500 cfs at Bastrop over a period of six weeks beginning mid-April and probably reach the third criteria for DWDR conditions. If a DWDR is declared, LCRA will

have to curtail cities' and industries' water use by 20% or more. Releasing this stored water could cause the DWDR to occur sooner;

- Curtailments that would occur will result in reduced water supply to power plants, threatening their ability to generate electricity. Because LCRA's firm water customers would be required to cut back substantially if the drought persists under a DWDR declaration, municipal customers are likely to be forced to institute drought response measures that would include restrictions on indoor water use, resulting in threats to public health and safety; and
- Release of additional stored water from the lakes to maintain a 500 cfs instream flow requirement, would only provide a small incremental benefit to the Blue Sucker spawning habitat.

Because of the lingering extreme drought conditions the possible impact to public health, safety, and welfare overrides the need to maintain the balance between protecting environmental flow needs and other public interests and relevant factors and there are no feasible and practicable alternatives to the emergency order.