| | | |
|---|---|---|
| **APPLICATION OF THE** | § | **BEFORE THE** |
| **LOWER COLORADO RIVER** | § | |
| **AUTHORITY FOR EMERGENCY** | § | **TEXAS COMMISSION ON** |
| **AUTHORIZATION RELATED TO** | § | |
| **WATER MANAGEMENT PLAN** | § | **ENVIRONMENTAL QUALITY** |

# LOWER COLORADO RIVER AUTHORITY'S BRIEF AND ATTACHMENTS IN SUPPORT OF APPLICATION FOR EMERGENCY AUTHORIZATION RELATED TO WATER MANAGEMENT PLAN UNDER TEXAS WATER CODE §§ 5.501, 11.138 & 11.139 AND THE GOVERNOR'S EMERGENCY DISASTER PROCLAMATION RELATED TO DROUGHT

## TABLE OF CONTENTS

| | | |
|---|---|---|
| **APPLICATION OF THE LOWER COLORADO RIVER AUTHORITY FOR EMERGENCY AUTHORIZATION RELATED TO WATER MANAGEMENT PLAN** | § § § § § | **BEFORE THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY** |

**LOWER COLORADO RIVER AUTHORITY'S BRIEF AND ATTACHMENTS IN SUPPORT OF APPLICATION FOR EMERGENCY AUTHORIZATION RELATED TO WATER MANAGEMENT PLAN**



## I. Introduction.

The lower Colorado River basin, and much of the State of Texas, continues to suffer from exceptional drought. Over the last three years, the Lower Colorado River Authority (LCRA) has sought and obtained emergency relief from the Texas Commission on Environmental Quality (TCEQ) related to the LCRA Water Management Plan (WMP), which orders have provided for alternative procedures for the curtailment of interruptible stored water from lakes Buchanan and Travis.[1] Most recently, on June 17, 2014, TCEQ affirmed the Executive Director's May 22, 2014 decision to extend by sixty days (through July 25, 2014) the order it granted earlier this year.[2] Consistent with these Emergency Orders, with the exception of the Garwood division, LCRA has not provided interruptible stored water for agricultural use.

The combined storage of Lakes Buchanan and Travis on July 1, 2014 of 795,400 acre-feet was less than two percent higher than storage on February 26 when the TCEQ first approved emergency relief from the 2010 WMP's provisions for the supply of interruptible water for the 2014 irrigation season. From a water supply perspective, despite an uptick in inflows in May, the drought has not let up. Without further relief, the 2010 WMP will once again become effective. Just as in 2013, LCRA requests TCEQ to issue a new emergency order suspending any obligation LCRA might have under the 2010 WMP to release interruptible stored water through the remainder of the irrigation season outside of the Garwood division consistent with the prior emergency orders. This relief is needed because severe drought conditions continue to



[1] Attachment A, TEX. COMM'N ENVTL. QUAL., Docket No. 2013-0225-WR, *Order Granting an Emergency Authorization to the Lower Colorado River Authority* (July 26, 2013) (herein "July 2013 Emergency Order"); 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* (Feb. 27, 2014) (herein "2014 Emergency Order"); TEX. COMM'N ENVTL. QUAL., Docket No. 2014-0124-WR, *Order Affirming an Order issued by the Executive Director that grants a renewal of the Emergency Order issued to the Lower Colorado River Authority* (June 17, 2014) (herein "2014 Emergency Order Extension").
*See also* TEX. COMM'N ENVTL. QUAL., Docket No. 2011-2096-WR, *Order Affirming an Emergency Order Granted by the Executive Director to the Lower Colorado River Authority* (Dec. 12, 2011) (herein "2011 Emergency Order"); TEX. COMM'N ENVTL. QUAL., Docket No. 2013-0225-WR, *Order Affirming, with Modification, an Emergency Order Granted by the Executive Director to the Lower Colorado River Authority* (Feb. 19, 2013) (herein "2013 Emergency Order"); TEX. COMM'N ENVTL. QUAL., Docket No. 2013-0225-WR, *Order Affirming, with Modification, an Emergency Order Granted by the Executive Director to the Lower Colorado River Authority* (June 10, 2013) (herein "2013 Emergency Order Extension");

[2] *See* Attachment A, 2014 Emergency Order Extension.

threaten LCRA's water supply, and reversion to the 2010 WMP – even in late Summer – could otherwise obligate LCRA to provide interruptible stored water for second crop rice that was initially planted using groundwater or for supplemental uses (such as row crops or wildlife management).

Except as specifically set forth in this Application, LCRA requests consideration of and incorporates by reference as if set forth fully herein all supporting information and arguments filed with TCEQ on December 10, 2013, January 23, 2014, February 10, 2014, May 5, 2014, and June 3, 2014 in support of LCRA's original application for emergency relief for the 2014 irrigation season.

## II. Relief Requested – Overview.

Pursuant to LCRA Board Action,[3] LCRA requests TCEQ to issue a new emergency order suspending any obligation LCRA might have under the 2010 WMP to release interruptible stored water through the remainder of the 2014 irrigation season. Specifically, LCRA seeks an emergency order confirming that LCRA does not have to provide interruptible stored water to any landowners or customers within the Gulf Coast, Lakeside, or Pierce Ranch irrigation operations, including those who might seek to use stored water for irrigating rice that has to date been watered with groundwater, or for any other purposes such as row crops, pasture or wildlife management.

## III. Background: LCRA's Water Management Plan and Drought Contingency Plan.

### *A. Overview of LCRA's 2010 Water Management Plan.*

LCRA holds several water rights, including the water rights for lakes Buchanan and Travis under Certificates of Adjudication 14-5478 and 14-5482 (Attachments C and D), which are further subject to the conditions and criteria set forth in the 2010 WMP (Attachment E). The original Water Management Plan was required by court order[4] and is incorporated into LCRA's Certificates of Adjudication 14-5478 and 14-5482.[5] The Certificates of Adjudication and the TCEQ-approved 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. (Firm water refers to water that would be available on a consistent or firm basis through a repeat of the historic Drought of Record from 1947 to 1957 while honoring all

---

[3] Attachment B, June 18, 2014 LCRA Board agenda item 7, Drought Emergency Relief.

[4] *See* Attachment F, Excerpts from *In re The Exceptions of the Lower Colorado River Authority and the City of Austin to the Adjudication of Water Rights in the Lower Colorado River Segment of the Colorado River Basin*, No. 115, 414-A-1 (264th Dist. Ct., Bell County, Tex. April 20, 1988) (herein "Adjudication of Water Rights in the Lower Colorado River Segment"), Lake Buchanan Conclusion of Law 4 and Lake Travis Conclusion of Law 6.

[5] *See* Attachment C, Certificate of Adjudication 14-5478 at p. 4 (2.B.(1)); and Attachment D, Certificate of Adjudication 14-5482 at p. 4 (2.B.(1)).

downstream senior water rights.) 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."[6] The TCEQ-approved WMP further describes how LCRA will manage and curtail supplies from the lakes during times of drought including through a repeat of the historic Drought of Record.[7] The WMP also sets forth criteria for declaring a Drought Worse than the Drought of Record (DWDR).[8]

As established in the 2010 WMP, the combined firm yield of lakes Buchanan and Travis, while honoring downstream senior water rights, 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 to help meet the firm water needs of its customers.[9] Until firm demand for water from lakes Buchanan and Travis equals the combined firm yield, LCRA can supply stored water from these lakes for irrigated agriculture on an interruptible basis.[10] The maximum historical annual amount of reported firm water use by LCRA customers from the firm supplies of lakes Buchanan and Travis during 2000 through 2013 was about 247,000 acre-feet in 2011. In addition, about 33,000 acre-feet of water was supplied in 2011 to help meet environmental flow needs. The maximum amount of interruptible water released from lakes Buchanan and Travis during this same period occurred in 2011 and totaled about 433,000 acre-feet. The maximum total amount released or used from lakes Buchanan and Travis, about 714,000 acre-feet, occurred in 2011. In 2012, firm water use from lakes Buchanan and Travis by LCRA customers was about 148,000 acre-feet; about 31,000 acre-feet was supplied to help meet environmental flow needs; and about 9,000 acre-feet of interruptible water was supplied for farmers in the Garwood irrigation division. Total use of water from lakes Buchanan and Travis in 2012 was about 188,000 acre-feet. In 2013, firm water use from lakes Buchanan and Travis by LCRA customers was about 173,000 acre-feet; about 33,000 acre-feet was supplied to help meet environmental flow needs; and about 22,000 acre-feet of interruptible water was supplied for farmers in the Garwood irrigation division. Total use of water from lakes Buchanan and Travis in 2013 was about 229,000 acre-feet. *See* Affidavit of Ryan Rowney (Attachment G).

To manage the supply, the 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

---

6 *See* Attachment C, Certificate of Adjudication 14-5478 at p. 4 (2.B.(7)); and Attachment D, Certificate of Adjudication 14-5482 at p. 4 (2.B.(7)).

7 Drought of Record refers to the worst hydrologic drought that has occurred since detailed records have been kept. This drought for the lower Colorado River basin is the drought that occurred from 1947-1957. The WMP states that the Drought of Record occurred between 1947 and 1956. The reservoirs, however, did not recover until mid-1957. See Attachment E – 2010 WMP at p. 4-19.

8 Attachment E – 2010 WMP at 4-34.

9 Attachment E – 2010 WMP at 5-31.

10 *See* Attachment F, Adjudication of Water Rights in the Lower Colorado River Segment, Lake Buchanan Finding of Fact No. 19(e) and Lake Travis Finding of Fact No. 26(e).

supply is protected during droughts.[11] For purposes of this application, 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 MAF | At any time | Request firm customers to implement voluntary drought response measures.[12] |
| 1.4 MAF | On Jan. 1 | Environmental releases for instream flows reduced to meet critical needs for ecosystems for following year.<br>Begin gradual curtailment of interruptible supply to four major irrigation operations.[13] |
| 900,000 acre-feet | At any time | Request firm customers to implement mandatory water restrictions; develop firm customer curtailment plan.[14] |
| 600,000 acre-feet | At any time | If criteria indicates a drought worse than the Drought of Record, then cease interruptible supply and begin curtailment of firm supply.[15] |

The 2010 WMP also includes conditions under which the LCRA Board of Directors may declare a Drought Worse than the Drought of Record (DWDR). To declare a DWDR, the Board must find that the following three conditions are simultaneously met:

1. 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;[16]

2. Inflows to the lakes are less than inflows during the historic Drought of Record;[17] and

3. Lakes Buchanan and Travis combined storage has less than 600,000 acre-feet of water.[18]

---

[11] Attachment E – 2010 WMP at 4-5.

[12] *Id.* at 4-32.

[13] Attachment E – 2010 WMP at 4-32; 2010 WMP Order at FOF 9, 10 and 11.

[14] Attachment E – 2010 WMP at 4-32.

[15] *Id.*

[16] *Id.* at 4-34. For purposes of the 2010 WMP, the duration of a drought is the time period since both Lakes Buchanan and Travis were at their maximum allowable water conservation storage levels.

[17] The cumulative inflow deficit since the beginning of the drought must exceed the envelope curve for cumulative inflow deficits by at least 5 percent for six consecutive months. Attachment E – 2010 WMP at 4-34.

[18] *Id.* at 4-34.

Under the 2010 WMP, once a drought has lasted more than 36 months and a DWDR has been declared, 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.[19] 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 cut off.[20]

Prior to a declaration of a DWDR, however, LCRA is obligated by the 2010 WMP to provide at least some interruptible water to its four major irrigation operations. Under the 2010 WMP, the LCRA Board is to make a preliminary determination in November based on projections of storage on January 1 of the upcoming year.[21] Using January 1 storage, the amounts available under the 2010 WMP follow a sliding scale.[22] Thus, the decision regarding curtailment of interruptible supplies to the four major irrigation operations during the entire year is keyed to the January 1 storage levels.[23] Nevertheless, total curtailment of interruptible water does not occur until a declaration of a DWDR.

### *B. Overview of LCRA's Drought Contingency Plan and relationship to the Water Management Plan.*

Prior to adoption of state law in 1997 and TCEQ's subsequent adoption of the Chapter 288 rules in 1999 that require all major water rights holders to develop and implement a drought contingency plan (DCP), LCRA already had a plan for managing its water supplies in lakes Buchanan and Travis through a repeat of the historic Drought of Record. This plan (referred to as the "Drought Management Plan") is 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. Specifically, the Commission ordered LCRA to submit a drought management plan to the Commission for its review and approval, which was filed with the Texas Water Commission on October 19, 1990.[24] The Drought Management Plan is subject to the continuing supervision of the TCEQ and LCRA is required to provide an annual report documenting compliance with the approved plan and any special conditions.[25]

When LCRA was required under the TCEQ's Chapter 288 rules to develop and implement a DCP, LCRA simply incorporated all of the same triggers and criteria from the approved WMP into its DCP, and elaborated on the details of how pro rata curtailment of interruptible customers might occur to comply with the additional requirements of the TCEQ's

---

19 *Id.* at 4-34.

20 *Id.*

21 *Id.* at 3-7 and 4-21.

22 *Id.* at 4-24.

23 *Id.* at 3-7 and 4-21.

24 Attachment E – 1989 WMP Order, Ordering Provision 1.g.; 1990 WMP Order Finding of Fact No. 4.

25 Attachment E – 1990 WMP Order, Ordering Provision 1.b., 1.e.

Chapter 288 rules. Because the curtailment provisions of the DCP related to interruptible supplies are one of the most fundamental principles underlying the WMP, LCRA cannot unilaterally alter through changes to the DCP that which it cannot alter under the WMP without TCEQ's permission. LCRA's current WMP incorporates the Chapter 288-required DCP in Chapter 4.

This plan also includes water use reduction targets for firm water supplies to comply with TCEQ's DCP rules adopted in 2004. These include:

- water use reduction goals for firm water supply customers of 5 percent by asking customers to implement their voluntary water use reduction measures when the combined storage of lakes Buchanan and Travis is less than 1.4 million acre-feet;

- a 10 to 20 percent reduction goal by asking firm customers to implement their own mandatory water use reduction measures when combined storage levels fall below 900,000 acre-feet; and

- pursuant to Texas Water Code § 11.039, a mandatory pro rata curtailment of firm water supplies for customers of 20 percent or more will be implemented when combined storage levels fall below 600,000 acre-feet and other criteria in the WMP are met that correspond to a drought more severe than the historic Drought of Record.

In April 2007, LCRA adopted changes to LCRA's raw water contract rules to improve implementation of LCRA's DCP. These included:

- clarifying how LCRA will, in accordance with Texas Water Code § 11.039, impose a pro rata curtailment during an emergency shortage of firm water as a result of a drought, accident, or other cause;

- providing that a customer must pay a surcharge to be set by the LCRA Board for the unauthorized use of water, if the customer takes 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.

In June 2010, 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. Additional changes were made to the rules related to pro rata curtailment in December 2013. 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 acre-feet.[26] TCEQ approved LCRA's water curtailment plan for its firm customers in

[26] Attachment E – 2010 WMP at 4-32 & 2010 WMP Order, Ordering Provision No. 1(g).

December 2011.[27] Under this curtailment plan, in the event that combined storage drops below 600,000 acre-feet and a DWDR is declared, firm customers will be subject to an initial 20 percent mandatory reduction in use as compared to a recent baseline demand.

In response to the ongoing drought conditions, the LCRA Board has amended the firm customer drought contingency plan to require that, if combined storage on March 1, 2014 is below 1.1 million acre-feet and interruptible stored water supply to the Gulf Coast, Lakeside and Pierce Ranch irrigation operations is cut off, LCRA's customers will be required to implement a landscape irrigation watering schedule of no more than once per week.[28] This requirement would stay in effect until such time that combined storage increased to above 1.1 million acre-feet or the supply of interruptible stored water to the Gulf Coast, Lakeside and Pierce Ranch irrigation operations resumed.

## IV. There is an Emergency.

Continued prompt action is needed to allow LCRA to address the exceptional drought conditions that have persisted in the areas that contribute inflows to lakes Buchanan and Travis and preserve water to meet the needs of LCRA's municipal and industrial customers. As discussed below, this drought is unprecedented in many respects, particularly with regard to inflows into the primary water supply for this region, lakes Buchanan and Travis. At times, this drought has been more intense than the region's historic Drought of Record that occurred between 1947 and 1957. On June 6, 2014, the Governor re-issued his Emergency Disaster Proclamation regarding drought for many areas of the state, including the counties in the lower Colorado River basin that border on and contribute inflows into lakes Buchanan and Travis.[29] The Governor's declaration recognizes that "significantly low rainfall, has resulted in declining reservoir and aquifer levels, threatening water supplies and delivery systems in many parts of the state" and that the "drought conditions have reached historic levels and continue to pose an imminent threat to public health, property, and the economy."[30]

### *A. The lakes have not recovered, despite nearly three years of emergency orders.*

#### 1. Record-low inflows into lakes Buchanan and Travis have continued.

By almost every measure, the inflows to the Highland Lakes remain at record lows. At times, the inflow deficit has been as much as 90% more than the inflow deficit for a similar

---

[27] Attachment H, TEX. COMM'N ENVTL. QUAL., Docket No. 2011-2097-WR, *Order Approving the Lower Colorado River Authority's Water Curtailment Plan for its Firm Water Customers* (Dec. 12, 2011).

[28] *See* Attachment I, November 2013 LCRA Board Resolution.

[29] Attachment J, *available at*: http://governor.state.tx.us/news/proclamation/19771/ (last visited June 24, 2014). Counties included in the Governor's declaration that contribute flows into or contain LCRA's Highland lakes include: Blanco, Brown, Burnet, Coleman, Concho, Edwards, Gillespie, Hays, Kendall, Kerr, Kimble, Lampasas, Llano, Mason, McCulloch, Menard, Mills, Real, San Saba, Schleicher, Sutton, and Travis.

[30] *Id.*

period of inflows experienced during the historic Drought of Record for the lower Colorado River Basin, which occurred from 1947 to 1957. Affidavit of Ron Anderson (Attachment K, Tab 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. By contrast, only one year during the historic 1950s Drought of Record makes the list of ten lowest annual inflows. Inflows in 2011 were the lowest on record; inflows in 2012 were the sixth lowest on record; and inflows in 2013 were the second lowest on record. Inflows for the first four months of 2014 were the lowest on record for that period and, despite some rain, May and June 2014 inflows were still well below average such that inflows for the first six months of 2014 were the fifth lowest on record. *See* Affidavit of Ryan Rowney (Attachment G).

Inflows into lakes Buchanan and Travis in the current drought include the lowest inflows over a various time periods ranging from 12 months to 72 months, lower than for any similar time periods in the historic record, including the 1950s. In fact, the inflows in the 72-month period through April 2014 were less than half of the lowest inflows in any 72-month period in the historic Drought of Record. Affidavit of Ryan Rowney (Attachment G).

**Lowest Annual Inflows into the Highland Lakes (acre-feet)**

| **Year** | **Amount** |
|---|---|
| 2011 | 127,802 |
| 2013 | 215,138 |
| 2008 | 284,462 |
| 2006 | 285,229 |
| 1963 | 392,589 |
| 2012 | 393,426 |
| 1983 | 433,312 |
| 1999 | 448,162 |
| 2009 | 499,732 |
| 1950 | 501,926 |
| Average (1942-2012) | 1.24 million |

**Comparison of inflows in current drought to Drought of Record**

| | Lowest inflows for time period in ongoing drought | | Lowest inflows for time period in 1950s Drought of Record | |
|---|---|---|---|---|
| Time Period | Period ending | Inflows (acre-feet) | Period ending | Inflows (acre-feet) |
| 12 months | Sept. 2011 | 120,160 | Apr. 1951 | 408,784 |
| 24 months | May 2014 | 393,300 | Mar. 1952 | 1,006,681 |
| 36 months | Sept. 2013 | 695,099 | Aug. 1952 | 1,636,088 |
| 48 months | June 2014 | 1,073,158 | Aug. 1952 | 3,035,846 |
| 60 months | April 2014 | 2,129,132 | Aug. 1952 | 4,128,806 |
| 72 months | April 2014 | 2,374,126 | Apr. 1955 | 5,193,016 |

**2. Recordbreaking conditions are followed by a forecast that does not guarantee improvement.**

Extraordinary drought conditions have gripped much of Texas, including the Colorado River basin for nearly four years, dating back to October of 2010. 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. *See* Affidavit of Bob Rose (Attachment L). Inflows in the first four months of this year were lower than inflows in the record-low year of 2011. Although the last two months have included rainfall that in some areas was closer to normal, the inflows into lakes Buchanan and Travis have still been below normal. *See* Affidavit of Bob Rose (Attachment L); affidavit of Ryan Rowney (Attachment G).

High temperatures have also been unprecedented. For Texas, the summer of 2011 was the hottest summer ever recorded in Texas. Summer 2011 was also by far, 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 10$^{th}$ hottest summer on record statewide and the 11$^{th}$ hottest summer on record for Austin. Statewide, 2012 tied with 1921 as the hottest year on record. Summer temperatures for Austin in 2013 were the 5$^{th}$ hottest on record. *See* Affidavit of Bob Rose (Attachment L).

These conditions have created a circumstance where the lakes have been unable 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. Despite some generous rains during May and June, the long-term drought pattern will be hard to break during the hot months of summer. As a result, current drought conditions will likely persist and possibly intensify. As noted above, by many measures, the recent low inflows are already as bad as or worse than the 1950s. Recent weather forecasts provide some hope for relief from the drought in the time period covered by the requested emergency order. Whether such conditions materialize remains to be seen, as well as any resulting impacts to LCRA's water supply. This hope for relief is not enough

to eliminate the need for relief under the conditions as they exist right now. To wit, in 2012, a predicted El Niño failed to materialize and was followed by 2013, the second-lowest inflow year on record. And the impacts of El Niños can vary significantly. *See* Affidavit of Bob Rose (Attachment L). Furthermore, although an El Niño may develop over the summer, any effects won't likely be felt across Texas until September or October, towards the end of any order that might be issued in response to this application.

### *B. Reverting to the 2010 Water Management Plan creates the potential of releasing water that should be conserved for later use if the drought persists.*

If LCRA were to revert to the 2010 WMP for the remainder of the irrigation season, farmers who have started crops on groundwater or run-of-river water may seek to compel LCRA to make interruptible stored water available—at a time when the possibility of triggering a mandatory curtailment of firm water customers is less than four months away even if the emergency relief sought herein is granted. Releasing more interruptible stored water would only increase the likelihood of combined storage falling below 600,000 acre-feet, the third and final criterion for a Drought Worse than Drought of Record declaration. In fact, based on the most recent lake levels and forecast, even with emergency drought relief in place, there is a chance of reaching conditions triggering a declaration of Drought Worse than Drought of Record as soon as October. *See* Affidavit of Ron Anderson (Attachment K). At that point all interruptible stored water would be cut off; potentially jeopardizing any crops that were not yet harvested and firm customers would be subject to a 20 percent reduction in supply. Furthermore, any water previously released would no longer be in storage to help meet the needs of LCRA's firm customers through a prolonged drought. Simply put, 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 such an occurrence.

**This approach is unacceptable.**

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.[31] As discussed above, to declare a DWDR under the WMP, the Board must find that the following three conditions are simultaneously met:

1. 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;[32]

2. Inflows to the lakes are less than inflows during the historic Drought of Record;[33]

[31] Attachment E – 2010 WMP at 4-32.

[32] Attachment E – 2010 WMP at 4-34. For purposes of the WMP, the duration of a drought is the time period since both Lakes Buchanan and Travis were at their maximum allowable water conservation storage levels.

[33] The cumulative inflow deficit since the beginning of the drought must exceed the envelope curve for cumulative inflow deficits by at least 5 percent for six consecutive months. Attachment E – 2010 WMP at 4-34.

and

3. Lakes Buchanan and Travis combined storage has less than 600,000 acre-feet of water.[34]

The first criterion has been met. The drought has lasted more than 24 months. In fact, despite significant rains in 2007 and 2010, the last time that both lakes Buchanan and Travis were simultaneously at their maximum allowable water conservation storage levels was February 13, 2005. *See* Affidavit of Ryan Rowney (Attachment G). In addition, the cumulative inflow deficit criteria has been met. *See* Affidavit of Ron Anderson (Attachment K). Despite the emergency relief implemented in 2012, 2013, and the first half of 2014, the combined storage in the lakes has failed to substantially recover. The combined storage in lakes Buchanan and Travis was about 795,400 acre-feet on July 1, 2014, or about 39.6 percent full. *See* Affidavit of Ryan Rowney (Attachment G).

Reverting to the 2010 WMP is an unacceptable option that would add to the already significant risk that a DWDR will be declared during the next few months. The 2010 WMP employs a "curtailment curve" that determines the amount of interruptible stored water to be made available based on the combined storage in lakes Buchanan and Travis on January 1 of any year. Based on January 1, 2014 combined storage, the 2010 WMP would have required LCRA to release up to about 214,300 acre-feet of interruptible stored water for irrigation use in the lower basin for the 2014 crop year.[35] *See* Affidavit of Ryan Rowney (Attachment G). Even without any releases of interruptible stored water other than to Garwood, combined storage could drop to 600,000 acre-feet in October, 2014. *See* Affidavit of Ron Anderson (Attachment K). Any additional releases of interruptible stored water for Gulf Coast, Lakeside, and Pierce Ranch would amplify that risk.

Continuing with the prior orders—which cut off interruptible stored water other than to Garwood—is the only meaningful action that can be taken to conserve LCRA's firm supplies in the face of the potential for a mandatory curtailment of LCRA's firm customers.

## V. The Emergency Conditions Present an Imminent Threat to the Public Health and Safety.

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. LCRA's municipal raw water customers include, but are not limited to, the Cities of Austin, Cedar Park, Leander, Burnet, Marble Falls, Pflugerville, Lakeway, Bee Cave, Horseshoe Bay, other Highland Lakes cities, water supply corporations, special districts (including LCRA's own water utility systems), 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 electric utilities provide electricity into the electrical grid in Texas

[34] Attachment E – 2010 WMP at 4-34.

[35] Attachment E – 2010 WMP at 4-24 & 4-26.

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, including Oxea Chemical and Underground Services Markham. *See* Affidavit of David Wheelock (Attachment M).

As discussed above, if LCRA had followed the 2010 WMP this year, LCRA would have been obligated to release significant quantities of water from lakes Buchanan and Travis for interruptible agriculture—as much as 214,300 acre-feet. *See* Affidavit of Ryan Rowney (Attachment G). Such a release could have resulted in combined storage dropping to 600,000 acre-feet and prompted LCRA to declare a DWDR and any releases of interruptible stored water would have amounted to an irreversible reduction of the water supply available for firm customers. The emergency conditions still exist. Combined storage in lakes Buchanan and Travis on July 1, 2014 of 795,400 acre-feet is less than 2 percent higher than the combined storage on February 26, 2014 when TCEQ first approved relief from the WMP for 2014. Recent inflows have only slightly delayed the possibility of reaching DWDR conditions, which could occur in as little as four months.

Thus, 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. These conditions once again support the conclusion that following the 2010 WMP under these conditions poses an imminent threat to firm customers served by LCRA.[36] As the drought has continued, LCRA and its firm customers are actively exploring ways to acquire or develop alternative water supplies to meet essential needs of their respective potable water systems. However, it takes many years to develop significant additional new water supplies. As the Commission recognized in prior emergency orders, the sheer length of time that it takes to develop or conserve significant quantities of water supply mean that a water supply emergency arises well before a reservoir goes dry.[37] Reversion to the 2010 WMP and release of interruptible stored water further increases the amount of water for essential needs that will need to be acquired elsewhere should the drought continue. For the most part, although LCRA's firm customers are working on plans to implement curtailment and secure alternate supplies (such as local groundwater), most have not been able to secure any readily available sources of water supply that could substitute for their reliance on the Colorado River. *See* Affidavit of Ryan Rowney (Attachment G); Affidavit of David Wheelock (Attachment M).

Moreover, as the lake levels drop, it becomes more difficult and expensive for the retail water suppliers to pump water from lakes Buchanan and Travis. Currently, LCRA owns four systems that take water from lakes Buchanan and Travis plus the Spicewood System which recently began taking surface water. LCRA has 15 customers that actively take water for municipal purposes from Lake Travis that are not a part of LCRA's utility facilities. The lowest

---

[36] Attachment A, July 2013 Emergency Order Findings of Fact Nos. 22-29; 2014 Emergency Order Findings of Fact Nos. 32-38, 40-45, 47, 60. *See also* 2011 Emergency Order, Findings of Fact Nos. 20, 25-28; 2013 Emergency Order, Findings of Fact Nos. 20, 26, 27; and 2013 Emergency Order Extension Findings of Fact Nos. 9, 17.

[37] *Id.* July 2013 Emergency Order Finding of Fact No. 28; 2014 Emergency Order Findings of Fact Nos. 60, 61; *See also* 2011 Emergency Order Findings of Fact Nos. 30-31; 2013 Emergency Order Findings of Fact Nos. 31-33; and 2013 Emergency Order Extension Findings of Fact Nos. 15,16.

pumping elevations of the intakes range from 545 feet mean sea level (msl) to 645 feet msl on Lake Travis. If the levels in Lake Travis or Lake Buchanan drop below the current lowest pumping elevations, LCRA and its wholesale raw water customers must take action to either lower their pumping elevation or find alternative supplies. For smaller systems such as Paradise Point, Smithwick Mills, or Ridge Harbor, the alternative is likely hauling water from a water utility with a viable source. For larger systems, temporary measures must be implemented to extend the intake capabilities to reach lower water levels. LCRA's raw water customers that have their own intake facilities would likely require similar measures. Firm customers have indicated that they are spending or planning to spend funds to allow their intakes to operate at lower elevations, or making plans to haul water. *See* Affidavit of Ryan Rowney (Attachment G). Overall, well 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 already in some form of drought restriction and are at risk of water supply shortages.[38] 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 LCRA water systems and for its customers' water systems. Any emergency relief that helps LCRA retain supply in lakes Buchanan and Travis mitigates some of the impacts described above. Finally, much of the lower Colorado River watershed is included in the Governor's drought proclamation, which recognizes that "exceptional drought conditions pose(d) a threat of imminent disaster."[39]

## VI. The Threat to Public Health and Safety Override the Necessity to Comply with the Established Statutory Procedures.

Once again, allowing LCRA the flexibility to deviate from the requirements of the 2010 WMP, as requested by this application, provides LCRA with one of the very few opportunities it has to make a substantial difference in the amount of water available in the combined storage of the two lakes. *See* Affidavit of David Wheelock (Attachment M, Tab 3).[40]

Because the WMP is required by, and incorporated into, LCRA's Certificates of Adjudication 14-5478 and 14-5482, the WMP may only be amended in the same manner and following the same procedures as one would amend any state-issued water right, which procedures for this type of amendment would require basin-wide 30-day public notice, likely public meetings, significant staff review, and presents the potential for a lengthy contested case hearing.

The time period in which LCRA must make decisions regarding its commitments of interruptible water occur long before there could be any decision on any amendments to the 2010 WMP if the regular TCEQ water rights permitting procedures are followed. Once interruptible

---

[38] *See* Tex. Comm'n Envtl. Qual., *List of Texas PWSs Limiting Water Use to Avoid Shortages* at: http://www.tceq.texas.gov/drinkingwater/trot/droughtw.html (last updated on June 25, 2014) (last visited July 2, 2014).

[39] *See* Attachment J.

[40] *See also* Attachment A, July 2013 Emergency Order, Findings of Fact Nos. 26, 36-37, 39; 2014 Emergency Order Findings of Fact Nos. 65-71; *see also* 2011 Emergency Order, Finding of Fact No. 33; and 2013 Emergency Order Finding of Fact No. 35.

stored water is released, the water cannot be brought back. Thus, the emergency authorization is the only means by which LCRA can obtain timely approval to make a significant impact on its supply remaining in storage.

## VII. There are No Feasible Alternatives to the Emergency Authorization.

### *A. LCRA has implemented and will continue to implement its water conservation and drought plans.*

LCRA has, to this point, fully implemented its Drought Contingency Plan. LCRA requires all of its customers that currently divert and purchase water from LCRA to have a drought contingency plan (DCPs). As of July 1, 2014, 100 percent of customers who are actively diverting water have plans on file with LCRA. *See* Affidavit of Nora Mullarkey Miller (Attachment N). In August 2011, the combined storage of lakes Buchanan and Travis dropped below 900,000 acre-feet. LCRA called on its firm water customers to voluntarily implement mandatory water use restrictions under their individual DCPs to reduce their water use by 10 to 20 percent.[41] *See* Affidavit of Nora Mullarkey Miller (Attachment N). As lake conditions continued to deteriorate, LCRA's firm customers stepped up their efforts to extend the water supply. Since that time, most of LCRA's municipal 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 also worked to reduce non-essential water uses. *See* Affidavit of Nora Mullarkey Miller (Attachment N, Tab 2). Furthermore, LCRA has had several meetings with its firm customers in preparation for pro rata curtailment. Most recently, meetings were held in January and June of 2014.

While water conservation is in the forefront of everyone's minds during times of drought, LCRA has on-going water conservation efforts that it has been implementing for many years. As detailed in the Affidavit of Nora Mullarkey Miller (Attachment N, Tab 2), LCRA's commitment to water conservation is unwavering, and spans all user groups. Prior to any state requirement for water conservation plans, LCRA required its municipal customers to adopt such plans and has continued to strengthen the minimum requirements of those plans to further encourage wise water use. LCRA developed the Major Rivers fourth-grade curriculum in 1988, which has reached more than 1 million school children in Texas through a partnership with the Texas Water Development Board (TWDB). LCRA provides significant conservation program planning support for its customers. *See* Affidavit of Nora Mullarkey Miller (Attachment N, Tab 2). In 2012, LCRA began a rebate program for certain irrigation technologies, and a wholesale customer cost-share program focused on conservation. *See* Affidavit of Nora Mullarkey Miller (Attachment N, Tab 2).

LCRA's conservation efforts have also supported significant improvements in irrigation water use efficiency in rice irrigation systems. Since the 1990s, volumetric pricing and canal rehabilitation are estimated to have saved approximately 13 percent, or about 41,500 acre-feet annually, of the projected water use that would have occurred without conservation practices in

[41] The WMP does not allow LCRA to impose mandatory restrictions on its firm water customers until a drought worse than the Drought of Record is declared.

place. Over the past six years, LCRA has provided up to 30 percent of the costs to the farmers for the implementation of precision laser land leveling on over 30,000 acres of land. *See* Affidavit of Nora Mullarkey Miller (Attachment N). Additional efforts implemented by LCRA to use water more efficiently in the irrigation operations are described in LCRA's Water Conservation Plan.

### *B. Requiring the firm water customers to curtail water use by up to 20 percent will take time and have a significant impact on these customers.*

When LCRA declares a DWDR and releases of interruptible stored water cease, LCRA's DCP requires firm customers to implement measures to try to immediately reduce their water consumption by twenty-percent (20%), unless those customers have already received an adjustment based on previous water savings or other limited factors.[42] In December 2011, LCRA obtained approval from the TCEQ of its Water Curtailment Plan for firm water customers.[43] Since that time, LCRA has worked with its firm customers on the development of their plans for drought response under a pro rata curtailment. *See* Affidavit of Nora Mullarkey Miller (Attachment N).

To achieve a 20 percent reduction in water use will require firm customers to implement fairly dramatic measures. Many municipal customers plan to eliminate all outdoor spray irrigation as a drought response measure under pro rata curtailment. Some of LCRA's customers, such as the City of Austin, have already achieved significant water savings through dramatic reductions in outdoor water use. While this could mean required reductions under pro rata curtailment for these customers may be a smaller incremental step initially, the practical matter is that, if water supplies continue to decline, customers will likely have to adopt water reductions that are more stringent than the initial 20 percent. Moreover, most industrial customers would have to implement the full 20 percent reduction more immediately. Reductions in use by industrial customers, including power plants, could impact in annual production. *See* Affidavit of Nora Mullarkey Miller (Attachment N, and Tab 2).

Reductions in water use by firm customers cannot prevent the emergency created by falling reservoir levels that would result from the level of irrigation releases required by the 2010 WMP. Firm customer water use reductions simply cannot be implemented fast enough once such a reduction is mandated by LCRA.[44] National benchmarking research shows that these savings are achievable but that it will likely take water suppliers considerable time (up to a year) to implement drought restrictions that result in the level of water savings identified in LCRA's DCP. *See* Affidavit of Nora Mullarkey Miller (Attachment N, Tabs 3 and 4).

---

42 Attachment E – 2010 WMP at p. 4-32.

43 Attachment H, *Order Approving the Lower Colorado River Authority's Water Curtailment Plan for its Firm Water Customers*.

44 *See* Attachment A, July 2013 Emergency Order, Finding of Fact No. 40; 2014 Emergency Order, Finding of Fact No. 69; *see also* 2011 Emergency Order, Finding of Fact No. 39; 2013 Emergency Order Finding of Fact No. 44.

### *C. The use of LCRA's downstream run-of-river water rights to meet firm customer needs provides an additional supply, but not a sufficient or predictable supply.*

In evaluating options to address the firm water needs of its customers, LCRA evaluated the possibility of using its downstream run-of-river rights to meet the needs of the firm water customers located downstream of Lake Travis. LCRA has obtained temporary permits in 2012, 2013 and 2014 to use water under Certificate of Adjudication 14-5476 at diversion points along the river downstream of Lady Bird Lake. These permits have allowed LCRA to meet some firm demands with run-of-river water.

By their very nature, the downstream run-of-river water rights are highly variable in terms of availability and quantity. LCRA's firm customers need to have certainty as to the quantity of water that will be available and when the water will be available for their operations. To make these rights sufficiently predictable without backup supply from lakes Buchanan and Travis, especially in times of severe drought, LCRA would need to construct small reservoirs for storage beyond those existing reservoirs that some of LCRA's customers own and operate. The normal permitting process for such facilities, at best, takes up to two years with approvals or permits required from, at a minimum, TCEQ and the United States Army Corps of Engineers. *See* Affidavit of David Wheelock (Attachment M).

Finally, the downstream run-of-river water rights 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 at diversion points for which LCRA does not have permanent authorizations will keep up to about 10,000 acre-feet of water in the reservoirs. These rights would only serve to offset the amount of stored water required to be released for the downstream firm customers. This alone, as compared to the emergency relief from the 2010 WMP requested herein, does not significantly impact the available firm water supply. *See* Affidavit of David Wheelock (Attachment M). Nevertheless, it is highly prudent to make beneficial use of these downstream water rights during this severe drought, instead of allowing these supplies to go unused.

In 2012, 2013 and the first six months of 2014, LCRA supplied about 4,000 acre-feet, 1,000 acre-feet, and 3,200 acre-feet respectively, under temporary permits that would otherwise had to have been released from lakes Buchanan and Travis. *See* Affidavit of David Wheelock (Attachment M); Affidavit of Ryan Rowney (Attachment G). While clearly beneficial, it is equally as clear that these types of options are not a sufficient replacement for the water that could be lost if LCRA were required to revert to following the 2010 WMP.

### *D. LCRA obtained relief related to the Blue Sucker requirement but the savings achieved do not remove the need for the emergency authorization.*

Emergency relief approved by TCEQ in April 2014 reduced the instream flow requirement associated with the Blue Sucker from 500 cubic feet per second (cfs) to 300 cfs for a

six-week period. LCRA previously estimated that without the emergency relief, up to about 21,000 acre-feet might be released from Lakes Buchanan and Travis to meet the requirement. As a result of the emergency relief and inflows from rain events below Lake Travis during the six-week period, LCRA released only about 4,000 acre-feet from storage for the requirement. *See* Affidavit of Ryan Rowney (Attachment G). While the release for the Blue Sucker requirement was reduced, the water savings do not remove the need for the emergency authorization sought herein.

### *E. LCRA has explored other alternatives, but they are not feasible or practicable alternatives to the emergency authorization.*

LCRA has evaluated many other alternatives to address the emergency conditions that the drought presents. As was the case when LCRA previously obtained emergency relief, none of the alternatives 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, involve a lengthy permitting process (if not implemented on an emergency basis), or would take years to develop.[45] None of the alternatives identified are feasible or practicable alternatives to the emergency authorization. *See* Affidavit of David Wheelock (Attachment M, Tab 3).

## VIII. The Emergency Relief.

The most recent TCEQ order extending emergency relief from the WMP will expire on July 25, 2014. The absence of an effective TCEQ order would create uncertainty as to what obligations LCRA may 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. Furthermore, later in the season LCRA may receive requests for water for supplemental uses such as wildlife management. Those uses are secondary to rice and, during a curtailment, requests for such uses are only considered to the extent that water is already available in the canal system. Thus, LCRA seeks this additional TCEQ order to make clear that no interruptible stored water would be supplied for any purpose during the remainder of the irrigation season within LCRA's Lakeside and Gulf Coast operations, nor to Pierce Ranch under its contract. Interruptible stored water would be made available to the Garwood operations to the extent provided in an existing contract. Further, LCRA would continue to make available run-of-river water originating downstream of the Highland Lakes that may be available from time to time under its Gulf Coast, Lakeside and Pierce Ranch water rights.

### *A. Proposed Relief – Allow curtailment of interruptible stored water to deviate from the TCEQ-approved 2010 WMP.*

LCRA seeks this additional TCEQ order to make clear that the 2010 WMP will not be effective and no interruptible stored water would be provided outside of the Garwood irrigation

[45] *See also* Attachment A, July 2013 Emergency Order Finding of Fact No. 37; 2014 Emergency Order Finding of Fact No. 66; *see also* 2011 Emergency Order, Findings of Fact Nos. 41-42; 2013 Emergency Order Findings of Fact Nos. 47-48.

division for any purpose during the remainder of the irrigation season. This deviation from the 2010 WMP would apply notwithstanding anything to the contrary in the 2010 WMP. LCRA requests that relief be granted pursuant to Texas Water Code §§ 5.501, 11.138, 11.139 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.

### *B. Proposed dates the authorization should begin and end.*

LCRA requests that TCEQ process this request in a manner that allows LCRA to gain the benefit of the authorization for as long as may be needed to address this exceptional drought. To that end, LCRA requests that:

1) The emergency authorization become effective upon expiration of the existing order (July 25, 2014); and

2) The emergency authorization continue through the initial 120 day period allowed by Texas Water Code § 11.139, and any extension thereof as allowed by Section 11.139.

Should these exceptional drought conditions persist through the fall of 2014, LCRA will evaluate at that time whether any further relief from the Water Management Plan for the remainder of 2014 or for 2015 may be needed and seek such relief as the LCRA Board may deem necessary and appropriate at that time.

### *C. The requested relief will be effective preserving stored water for firm customers.*

Continuing to deviate from the 2010 WMP avoids the possibility of interruptible releases amplifying the risk of triggering a DWDR declaration in the next few months. *See* Affidavit of David Wheelock (Attachment M); Affidavit of Ron Anderson (Attachment K). If additional interruptible stored water were to be released, that water would be lost from the system, and no longer available to help meet the needs of LCRA's firm water customers in a prolonged drought.

## IX. Conclusion.

It is clear the 2010 WMP puts at risk a significant quantity of stored water that may be needed to meet firm water commitments in this unprecedented drought. The ongoing drought and its effect on the water supply is an emergency that presents an imminent threat to the public health and safety. Authorizing a continuing deviation from the 2010 WMP will help preserve the water supply to help meet the critical needs of LCRA firm water customers in this prolonged drought. This application, in combination with actions LCRA has already taken related to use of its downstream water rights, present the only feasible and practicable alternatives to addressing this exceptional drought in a timely manner. For these reasons, LCRA respectfully requests that its application for an emergency authorization under Texas Water Code §§ 5.501, 11.138, 11.139, and consistent with the Governor's Emergency Disaster Proclamation be granted.

## X. Certification.

"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: 7-2-14

Subscribed and sworn to as being true and correct before me on this the 2nd day of July 2014.

TABETHA JASKE
Notary Public, State of Texas
My Commission Expires
January 11, 2018

Notary Public of the State of Texas

## XI. Attachments

Attachment A – TEX. COMM'N ENVTL. QUAL., Docket No. 2013-0225-WR, *Order Granting an Emergency Authorization to the Lower Colorado River Authority* (July 26, 2013) (herein "July 2013 Emergency Order"); 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* (Feb. 27, 2014) (herein "2014 Emergency Order"); TEX. COMM'N ENVTL. QUAL., Docket No. 2014-0124-WR, *Order Affirming an Order issued by the Executive Director that grants a renewal of the Emergency Order issued to the Lower Colorado River Authority* (June 17, 2014) (herein "2014 Emergency Order Extension").

Attachment B – Lower Colorado River Authority Board Agenda Item 7, Drought Emergency Relief (June 18, 2014).

Attachment C – Certificate of Adjudication 14-5478, as amended

Attachment D – Certificate of Adjudication 14-5482, as amended

Attachment E – Excerpts from the 2010 Water Management Plan (2010 WMP) including:

Table of Contents and Preface;

Chapter 1 – Introduction to the Water Management Plan;

Chapter 3.C. – Annual Allocation of Firm and Interruptible Water;

Chapter 4 – Development of the Drought Management Plan;

September 20, 1989 Texas Water Commission Order approving LCRA's Water Management Plan (1989 WMP Order");

December 23, 1991 Texas Water Commission Order approving LCRA's Drought Management Plan (1991 WMP Order");

December 18, 1992 Texas Water Commission Order approving amendments to LCRA's Water Management Plan and Drought Management Plan (1992 WMP Order"); and

March 1, 1999 Texas Natural Resource Conservation Commission Order approving amendments to LCRA's Water Management Plan and Drought Contingency Plan (1999 WMP Order").

January 27, 2010 Texas Commission on Environmental Quality Agreed Order Approving Amendments to Lower Colorado River Authority's Water Management Plan (2010 WMP Order).

Attachment F – Excerpts from Order Adjudication LCRA's Water Rights for Lakes Buchanan and Travis, *In re The Exceptions of the Lower Colorado River Authority and the City of Austin to the Adjudication of Water Rights in the Lower Colorado River Segment of the Colorado River Basin*, No. 115, 414-A-1 (264th Dist. Ct., Bell County, Tex. April 20, 1988).

Attachment G – Affidavit of Ryan Rowney

Tab 1 – Resume of Ryan Rowney

Tab 2 – LCRA Water Utility Intake Drought Response Summary

Tab 3 – Combined Storage in lakes Buchanan and Travis since Jan. 1, 2008

Attachment H – TEX. COMM'N ENVTL. QUAL., Docket No. 2011-2097-WR, *Order Approving the Lower Colorado River Authority's Water Curtailment Plan for its Firm Water Customers* (Dec. 12, 2011).

Attachment I – November 2013 LCRA Board Resolution

Attachment J – Proclamation by the Governor of State of Texas (June 6, 2014)

Attachment K – Affidavit of Ron Anderson

Tab 1 – Resume of Ron Anderson

Tab 2 – Summary of Inflow Deficit for lakes Buchanan and Travis

Tab 3 – Cumulative Inflows in Current Drought and Historic Drought of Record

Tab 4 – Description of Stochastic Modeling

Tab 5 – Likelihood of Triggering Drought Worse than Drought of Record Declaration

Tab 6 – Comparison of Recent Inflows to 99th Percent Exceedance

Attachment L – Affidavit of Bob Rose

Attachment M – Affidavit of David Wheelock

Tab 1 – Resume of David Wheelock

Tab 2 – Map of LCRA Water Service Area

Tab 3 – Summary of Water Supply Alternatives

Attachment N – Affidavit of Nora Mullarkey Miller

Tab 1 – Resume of Nora Mullarkey Miller

Tab 2 – LCRA's Ongoing Water Conservation Initiatives and Drought Response Efforts

Tab 3 – Benchmarking Research on Drought Restrictions (2011)

Tab 4 – Benchmarking Research on Drought Restrictions (2013)

Attachment O – LCRA Policies Regarding Delegation of Authority and Organizational Chart