

**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 UNDER
TEXAS WATER CODE §§ 5.501, 11.138 & 11.139 AND THE GOVERNOR'S
EMERGENCY DISASTER PROCLAMATION RELATED TO DROUGHT**

TABLE OF CONTENTS

I. Introduction..... 1

II. Relief Requested – Overview. 2

III. Background: LCRA’s Water Management Plan and Drought Contingency Plan..... 3

 A. Overview of LCRA’s 2010 Water Management Plan. 3

 B. Overview of LCRA’s Drought Contingency Plan and relationship to the Water Management Plan..... 7

IV. There is an Emergency..... 9

 A. The lakes have not recovered, despite the emergency orders in place in 2012, 2013 and 2014..... 10

 1. Record-low inflows into lakes Buchanan and Travis have continued..... 10

 2. High temperatures and sporadic rainfall have contributed to the low inflows and low lake levels..... 11

 3. Recent forecasts lack clear signs pointing to significant recovery. 12

 B. Following the 2010 Water Management Plan creates the potential of losing water that should be preserved for later use if the drought persists. 12

V. The Emergency Conditions Present an Imminent Threat to the Public Health and Safety. 15

VI. The Threat to Public Health and Safety Override the Necessity to Comply with the Established Statutory Procedures..... 17

VII. There are No Feasible Alternatives to the Emergency Authorization. 17

 A. LCRA has implemented and will continue to implement its water conservation and drought plans. 17

 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. 19

 C. Implementation of the 2010 WMP is not sufficient..... 19

 D. 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. 20

 E. Relief related to the Blue Sucker helps preserve supply in the Highland Lakes, but is not an alterantive to the requested relief..... 20

 F. LCRA has explored other alternatives for protecting firm supply, but they are not feasible or practicable alternatives to the emergency authorization. 21

VIII. The Emergency Relief. 21

 A. Proposed Relief – Allow curtailment of interruptible stored water to deviate from the TCEQ-approved 2010 WMP. 21

B.	Proposed dates the authorization should begin and end.	22
C.	The requested relief will be effective by preserving stored water for firm customers and avoiding waste.	22
IX.	Conclusion.	22
X.	Certification.	24
XI.	Attachments	25

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 continues to suffer from a prolonged and exceptional drought. After suffering from the worst single year drought in recorded history, the Lower Colorado River Authority (LCRA) has, three years in a row, 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 August 15, 2014, TCEQ issued a new emergency order for 120 days, continuing LCRA’s rights to restrict releases of interruptible stored water for irrigated agriculture in the lower basin through the end of the 2014 irrigation season.² Consistent with these Emergency Orders, with the exception of the Garwood division, LCRA has not provided interruptible stored water for agricultural use for the last two years.

Unfortunately, although LCRA has eliminated nearly all releases of interruptible stored water for agriculture for the past three years, the drought continues to plague the upper basin. Notwithstanding some periods with normal rainfall amounts, the lakes have not recovered, and

¹ Attachment A – TEX. COMM’N ENVTL. QUAL., Docket No. 2014-1044-WR, *Order Affirming an Order Granted by the Executive Director that Grants an Emergency Order Requested by the Lower Colorado River Authority* (August 15, 2014) (herein “August 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”); 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”).

See also 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. 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”); 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. 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”).

² *See* Attachment A, August 2014 Emergency Order.

the combined storage in lakes Buchanan and Travis on December 1, 2014 of 691,000 acre-feet is the lowest December 1 level in LCRA's history.

This drought is unprecedented in many respects, particularly with regard to inflows into lakes Buchanan and Travis, the primary water supply for this region. The Governor's Emergency Disaster Proclamation has consistently included the watershed contributing inflows to lakes Buchanan and Travis since July 2011. The reason for this inclusion is clear: annual inflows in 2011 to 2013 were all among the ten lowest on record—and if 2014 inflows follow the year-to-date trend, 2011, 2013 and 2014 will represent the three lowest inflow years on record. As discussed further herein, by many metrics, inflows are significantly lower than inflows in the 1950s Drought of Record.

Without a new emergency order in place before the growing season begins in March 2015, LCRA will once again be obligated under the 2010 Water Management Plan to release substantial amounts of water for irrigated agriculture. With persistent drought conditions, such releases could cause storage levels to fall to 600,000 acre-feet or lower, which would prompt LCRA to declare a Drought Worse than Drought of Record (DWDR). Such a declaration would occur based upon indicator criteria including drought duration, drought intensity, and combined storage levels that suggest the basin may be experiencing a drought worse than the 1950s. At such time, LCRA would immediately cease releases of water for agriculture, thus potentially burning up crops mid-season and wasting water supply that cannot be recaptured, while at the same time imposing mandatory water use reductions of 20% on municipal and industrial customers.

As the Commission has previously recognized, these conditions pose an imminent threat to human health and safety. Accordingly, the LCRA Board has again concluded that it must seek permission to deviate from the 2010 WMP with respect to the supply of interruptible water for agricultural purposes. Because of the persistence of this exceptional drought, the lack of any significant recovery in over three years, and the lack of a clear weather signal pointing to a significant recovery in 2015, LCRA seeks relief to suspend any obligation to release interruptible stored water to LCRA's Gulf Coast and Lakeside agricultural divisions and Pierce Ranch if TCEQ determines that the water supply conditions have not changed substantially by March 1, 2015 as compared to conditions in mid-November 2014. If TCEQ determines that water supply conditions *have* changed substantially, reversion to the 2010 WMP may still present an emergency, warranting an order that sets forth more restrictive conditions under which LCRA may supply some interruptible stored water under more limited circumstances in 2015 than provided by the 2010 WMP. This relief is the most practicable alternative to addressing the emergency conditions faced by the lower Colorado River basin by better ensuring that firm customer demands are not curtailed while the drought continues because of releases of interruptible water for irrigated agriculture.

II. Relief Requested – Overview.

Pursuant to LCRA Board Action,³ LCRA requests that TCEQ issue a new emergency order suspending LCRA's obligations under the 2010 WMP related to interruptible stored water

³ Attachment B-2, November 19, 2014 Resolution of the Board of Directors of the Lower Colorado River

for downstream irrigation purposes in 2015. Specifically, LCRA seeks an emergency order pursuant to Texas Water Code § 11.139, and any other applicable law, to allow LCRA to deviate from the 2010 WMP as it pertains to the determination of interruptible supply for 2015. LCRA requests that TCEQ suspend any obligation to release interruptible stored water to LCRA's Gulf Coast and Lakeside agricultural divisions and Pierce Ranch if TCEQ determines that the water supply conditions have not changed substantially as compared to conditions in mid-November 2014. If TCEQ determines that water supply conditions *have* changed substantially, reversion to the 2010 WMP may still present an emergency warranting an order that sets forth more restrictive conditions under which LCRA may supply some interruptible stored water under more limited circumstances in 2015 than provided by the 2010 WMP. This relief is necessary in light of the prolonged and uncertain duration of the ongoing exceptional drought emergency that grips the lower Colorado River basin. Without substantial improvement in the water supply conditions presented by this drought, the water supply for over a million people is at risk of substantial curtailments if the drought continues. LCRA would provide interruptible stored water to the Garwood irrigation division and Pierce Ranch,⁴ to the extent required by their contracts.

LCRA requests this relief 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.

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 order⁵ and is a condition of LCRA's Certificates of Adjudication 14-5478 and 14-5482.⁶ 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" water⁷ customer needs,

Authority Regarding Drought Management Actions in Response to Current Drought Conditions (herein "November 2014 LCRA Board Resolution").

⁴ LCRA's agreement with Pierce Ranch provides that it is subject to curtailment in accordance with the Water Management Plan, as amended, which would include any emergency order issued by the Commission.

⁵ 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), Lake Buchanan Conclusion of Law 4 and Lake Travis Conclusion of Law 6.

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 Firm water refers to the amount of water that LCRA has determined would be available on a consistent or firm basis through the 1950s Drought of Record water availability analysis after honoring all senior water rights.

downstream interruptible irrigation demands, and environmental flow needs of the lower Colorado River and Matagorda Bay. 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.”⁸ 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 1950s Drought of Record.⁹ The WMP also sets forth criteria for triggering various drought response measures for customers upon declaration of a Drought Worse than the Drought of Record (DWDR).¹⁰

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.¹¹ 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.¹² 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 the Highland Lakes, 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 to 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. Use of water in 2014 is expected to

⁸ 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)).

⁹ 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.

¹⁰ Attachment E – 2010 WMP at 4-34. The WMP criteria for declaring a DWDR are indicator criteria that can be evaluated in real time to assess whether an ongoing drought might be worse than the 1950s Drought of Record. One of these criteria – combined storage – is also affected by demands. Therefore, it is possible that a drought may actually be worse than the Drought of Record *even if* storage content is held above the triggering criteria through the implementation of demand management strategies.

¹¹ Attachment E – 2010 WMP at 5-31.

¹² 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), Finding of Fact No. 19(e) (Lake Buchanan) and Finding of Fact No. 26(e) (Lake Travis).

be similar to 2012 and 2013 with the exception of a reduction in the amount of water supplied to help meet environmental flow needs. *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 that reasonable firm water demands can be met during droughts.¹³ For purposes of this application, the most relevant trigger points are set out in Table 1.

Table 1. 2010 WMP Triggers

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. ¹⁴
1.4 MAF	On Jan. 1	Begin gradual curtailment of interruptible supply to four major irrigation operations. Environmental releases for instream flows reduced to meet critical needs for ecosystems for following year. ¹⁵
900,000 acre-feet	At any time	Request firm customers to implement mandatory water restrictions; develop firm customer curtailment plan. ¹⁶
600,000 acre-feet	At any time	If criteria indicate a drought worse than the Drought of Record, then cease interruptible supply and begin mandatory pro rata curtailment of firm supply. ¹⁷

The 2010 WMP also includes conditions under which the LCRA Board of Directors may declare a Drought Worse than the Drought of Record (DWDR).¹⁸ 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;¹⁹

¹³ Attachment E – 2010 WMP at 4-5.

¹⁴ *Id.* at 4-32.

¹⁵ Attachment E – 2010 WMP at 4-32; 2010 WMP Order at FOF 9, 10 and 11.

¹⁶ Attachment E – 2010 WMP at 4-32.

¹⁷ *Id.*

¹⁸ As noted above, these criteria are real-time indicators that a drought *might* be worse than the 1950s Drought of Record. It is possible that although the criteria are all met, once the full hydrologic dataset is evaluated, the drought might not be worse than the 1950s Drought of Record. Conversely, in a drought that is later shown to hydrologically be worse than the 1950s Drought of Record, because of demand management during the drought, the combined storage might remain above 600,000 acre-feet, such that all three criteria for the declaration of DWDR are not satisfied.

¹⁹ *Id.* 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.

2. Inflows to the lakes are less than inflows during the Drought of Record;²⁰ and
3. Combined storage of lakes Buchanan and Travis is less than 600,000 acre-feet of water.²¹

Under the 2010 WMP, once a drought has lasted more than 36 months and a DWDR has been declared, interruptible stored water must 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.²² 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.²³

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.²⁴ Using January 1 storage, the amounts available under the 2010 WMP follow a sliding scale.²⁵ 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.²⁶ The 2010 WMP includes a relatively shallow slope of how much stored water would be available for diversion by the four downstream irrigation operations: if combined storage is 1,150,000 acre-feet, the 2010 WMP provides 195,000 acre-feet for diversion, and if storage was just over 600,000 acre-feet, the plan would provide about 172,000 acre-feet for diversion.²⁷ (See Figure 1, Curtailment Curve from 2010 WMP.) Total curtailment of interruptible water does not occur until a declaration of a DWDR.

²⁰ 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.

²¹ *Id.* at 4-34.

²² *Id.* at 4-34.

²³ *Id.*

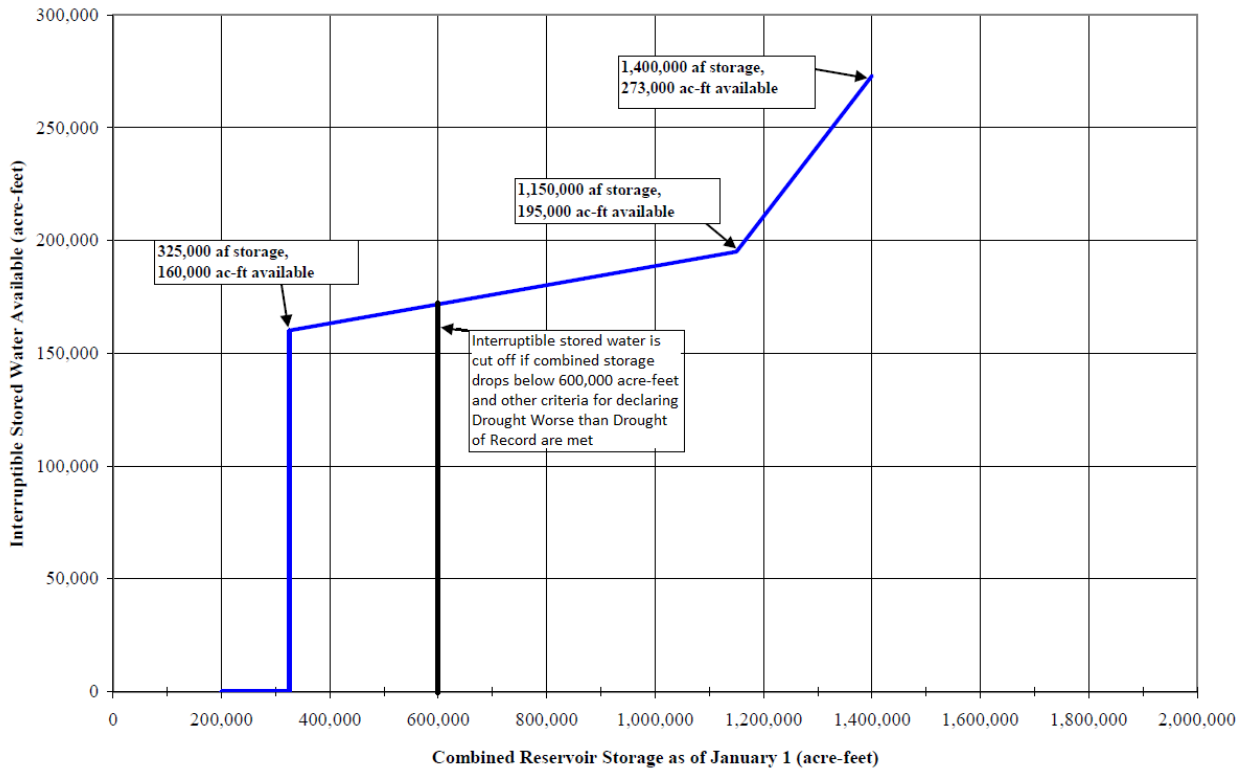
²⁴ *Id.* at 3-7 and 4-21.

²⁵ *Id.* at 4-24.

²⁶ *Id.* at 3-7 and 4-21.

²⁷ *Id.* at 4-24 and 4-26.

Figure 1. Interruptible Stored Water Available for Diversion by the Four Downstream Irrigation Operations under the 2010 WMP



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 “Drought Management Plan” for managing its water supplies in lakes Buchanan and Travis through a repeat of the 1950s Drought of Record. The “Drought Management Plan” was incorporated in the WMP and when TCEQ adopted its rules for DCPs, LCRA adopted separate stand-alone DCPs for its irrigation, municipal and industrial operations that more specifically addressed the requirements of the Chapter 288 rules. Then, although the DCP addressed things not specifically required of the original court or TCEQ orders on the WMP, LCRA incorporated the DCPs into Chapter 4 of the 2010 WMP, largely for customer ease of reference. LCRA was originally required to develop the Drought Management Plan 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, 1990.²⁸ 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.²⁹

²⁸ Attachment E – 1989 WMP Order, Ordering Provision 1.g.; 1990 WMP Order FOF 4.

²⁹ Attachment E – 1990 WMP Order, Ordering Provision 1.b., 1.e.

When LCRA was required under 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 TCEQ's Chapter 288 rules. The Drought Management Plan included elements that go beyond what is required of a DCP, particularly the allocation of supply between firm and interruptible customers. 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. However, TCEQ has recognized that LCRA *can* and, indeed, LCRA has modified other elements of its DCP that do not affect the allocation of supply between firm and interruptible customers, such as the water use reduction goals for firm water use.³⁰

The water use reduction targets in LCRA's DCP for firm water supplies 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 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.

³⁰ Attachment E – 2010 WMP Order, Ordering Provision 1.g.

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.³¹ 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.³² TCEQ approved LCRA's water curtailment plan for its firm customers in December 2011.³³ Under this curtailment plan and LCRA's DCP, 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 was below 1.1 million acre-feet and interruptible stored water supply to the Gulf Coast, Lakeside and Pierce Ranch irrigation operations was cut off, LCRA's customers would be required to implement a landscape irrigation watering schedule of no more than once per week.³⁴ The Board reaffirmed this action in November 2014.³⁵ The criteria for this restriction to take effect have been met and the restriction will be in effect until storage increases to above 1.1 million acre-feet or the supply of interruptible stored water to the Gulf Coast, Lakeside and Pierce Ranch irrigation operations resumes. LCRA has also adopted measures that would take effect in the event that combined storage falls below 600,000 acre-feet and is preparing for possible further declines in storage. *See* Affidavit of Nora Mullarkey Miller (Attachment I).

IV. There is an Emergency.

LCRA requests the Commission to promptly act on its request to address the exceptional drought that has persisted in the areas that contribute inflows to lakes Buchanan and Travis and preserve water to meet the essential needs of LCRA's municipal and industrial customers if the drought continues. 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 Drought of Record that occurred between 1947 and 1957. The Governor on December 22, 2014, re-issued his Emergency Disaster Proclamation regarding drought for many areas of the state, including nearly all the counties in the lower Colorado River basin that border on and contribute inflows into lakes Buchanan and Travis.³⁶ 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

³¹ *See* LCRA Water Contract Rules, Article 11, Pro Rata Curtailment of Water Use by Firm Water Customers, available at: <http://lcra.org/water/water-supply/water-supply-contracts/> (last visited Dec. 18, 2014).

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

³³ 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).

³⁴ *See* Attachment B-1, November 2013 LCRA Board Resolution.

³⁵ *See* Attachment B-2, November 2014 LCRA Board Resolution.

³⁶ Attachment J, available at: <http://www.tceq.texas.gov/assets/public/response/drought/proclamation.pdf> (last visited Dec. 22, 2014). Counties included in the Governor's declaration that contribute flows into or contain LCRA's Highland lakes include: Burnet, Edwards, Gillespie, Kendall, Kerr, Llano, Real, and Travis.

historic levels and continue to pose an imminent threat to public health, property, and the economy.”³⁷

A. The lakes have not recovered, despite the emergency orders in place in 2012, 2013 and 2014.

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

By almost every measure, the inflows to the Highland Lakes are at record lows. At times, the deficit has been as much as 90% more than the inflow deficit for a similar 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 as shown in Table 2. 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; inflows in 2013 were the second lowest; and inflows in 2014 are on pace to be among the three lowest on record. See Affidavit of Ryan Rowney (Attachment G).

Table 2. Lowest Annual Inflows into the Highland Lakes (acre-feet)

Year	Amount
2014 Jan-Nov	197,339
2011	127,802
2013	215,138
2008	284,462
2006	285,229
1963	392,589
2012	393,163
1983	433,312
1999	448,162
2009	499,732
1950	501,926
Average (1942-2012)	1.23 million

Inflows into lakes Buchanan and Travis during the current drought have been the lowest for time periods ranging from 12 months up to 84 months, and are significantly lower for periods of similar duration during the historic Drought of Record. See Table 3. In fact, the total inflows for the past 84 months were only about half of the lowest 72-month inflow period in the Drought of Record. Affidavit of Ryan Rowney (Attachment G).

³⁷ *Id.*

Table 3. Comparison of inflows in current drought to Drought of Record

Time Period	Lowest inflows for time period in ongoing drought		Lowest inflows for time period in 1950s Drought of Record	
	Period ending	Inflows (acre-feet)	Period ending	Inflows (acre-feet)
12 months	Sept. 2011	120,160	Apr. 1951	408,784
24 months	May 2014	393,337	Mar. 1952	1,006,681
36 months	Sept. 2013	695,920	Aug. 1952	1,636,088
48 months	Oct. 2014	940,789	Aug. 1952	3,035,846
60 months	Nov. 2014	1,952,879	Aug. 1952	4,128,806
72 months	Apr. 2014	2,374,126	Apr. 1955	5,193,016
84 months	Nov. 2014	2,738,953	Aug. 1952	6,050,804

When inflows are adjusted to account for the fact that O.H. Ivie Reservoir was not in place in the 1950s, the comparison of the current drought to the Drought of Record still shows the recent inflows are dramatically lower than the 1950s Drought of Record, with inflows since 2008 at about half of the inflows for the first six years of the Drought of Record. *See* Affidavit of Ron Anderson (Attachment K, Tab 3).

2. High temperatures and sporadic rainfall have contributed to the low inflows and low lake levels.

In addition to the record-low inflow conditions affecting lakes Buchanan and Travis noted above, drought conditions have been recognized throughout the state in the form of rainfall and extreme heat. Year 2011 was recognized by Texas State Climatologist, Dr. John Nielsen-Gammon, as the worst one-year statewide drought on record. The summer of 2011 was the hottest on record in Texas. Year 2011 was the hottest on record for Austin, and the second hottest statewide. Year 2012 tied with 1921 as the hottest on record statewide. Summer temperatures for Austin in 2013 were the 5th hottest on record. Although summer 2014 was not as extreme in Austin, it was still above normal, ranking the 34th warmest since 1895. *See* Affidavit of Bob Rose (Attachment L).

Since 2011, there have been some periods with closer to normal rainfall totals, but the rainfall has generally been sporadic, often with several weeks between significant rain events. Rain events in the contributing watershed of lakes Buchanan and Travis 2014 failed to provide the type of inflows needed for the lake levels to improve. For example, a rain event in early November 2014 included rain totals averaging two to three inches above the Highland Lakes but produced only about 4,000 acre-feet of inflow to the lakes; another event later in November with rain totals averaging one to three inches yielded about 17,000 acre-feet of inflow. *See* Affidavit of Bob Rose (Attachment L); Affidavit of Ryan Rowney (Attachment G). While these events lacked prolonged, heavy rainfall intensity, the limited amount of inflows are indicative of the severity of the ongoing drought and the dry soil conditions that have yet to be overcome. By comparison, an event in March 2007 with similar rainfall totals (but more intensity) produced

almost 100,000 acre-feet of inflows to lakes Buchanan and Travis. *See* Affidavit of Bob Rose (Attachment L); Affidavit of Ryan Rowney (Attachment G). Similar rain events in 2013 were equally as unproductive from a water supply standpoint. *See* Affidavit of Ryan Rowney (Attachment G).

The drought 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 in the Spring of 2014. As noted above, by many measures, the recent low inflows are already as bad as or worse than the 1950s.

3. Recent forecasts lack clear signs pointing to significant recovery.

As of December 2014, the sea surface temperatures in the tropical Pacific were above the threshold for El Niño. An El Niño condition has not been declared because the ocean has yet to fully couple with and influence the atmosphere. However, forecasters do expect El Niño to develop this winter and persist into early spring. For that period, a pattern of above normal rainfall is expected in Central and South Texas. *See* Affidavit of Bob Rose (Attachment L). But beyond that period, the forecast is uncertain. *See* Affidavit of Bob Rose (Attachment L). And even if normal to above normal rainfall materializes in the near term, the likelihood of significant drought improvement is slight. *See* Affidavit of Ron Anderson (Attachment K).

B. Following the 2010 Water Management Plan creates the potential of losing water that should be preserved for later use if the drought persists.

Unless an unexpected change in the weather occurs that contributes significant water to storage in lakes Buchanan and Travis, following the 2010 WMP will almost certainly require LCRA to:

1. Make a substantial quantity of stored water available for interruptible use and enter into contracts for interruptible water, based on January 1, 2015 combined storage;
2. Begin releases of interruptible stored water to meet demands in the four irrigation operations for the 2015 crop;
3. Suffer a significant likelihood of reaching the third (and final) criteria for Drought Worse than Drought of Record (DWDR) conditions;
4. Declare a DWDR;
5. Cut off stored water for interruptible contracts, jeopardizing the crop already planted and potentially wasting the water already released and diverted; and
6. Curtail cities' and industries' water use by 20% or more.

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.³⁸ As discussed above, to declare a DWDR under the WMP, the Board must find that the following three criteria indicating conditions may be worse than the 1950s Drought of Record 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;³⁹
2. Inflows to the lakes are less than inflows during the Drought of Record;⁴⁰ and
3. Combined storage of lakes Buchanan and Travis is less than 600,000 acre-feet of water.⁴¹

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 2014, the combined storage in the lakes has failed to substantially recover. In fact, combined storage fell from a high of 1,032,000 acre-feet (51 percent full) on May 22, 2012 to a low of 637,000 acre-feet (31 percent full) on September 19, 2013. The combined storage in lakes Buchanan and Travis was about 691,000 acre-feet on December 1, 2014, or about 34 percent full. Affidavit of Ryan Rowney (Attachment G).

Following the 2010 WMP creates an unacceptable risk that a DWDR will be declared during 2015, possibly during the growing season. 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. However, as explained above, interruptible stored water can be completely curtailed at any time during the irrigation season if the combined storage of lakes Buchanan and Travis drops to 600,000 acre-feet. For a January 1, 2015 combined storage in the range of current conditions (about 690,000 acre-feet), the 2010 WMP requires LCRA to make available around about 175,000 acre-feet for diversion for interruptible irrigation use in the lower basin for the 2015 crop year.⁴² *See* Affidavit of David Wheelock (Attachment M). To account for delivery losses, this equates to as much as about 210,000 acre-feet in releases from lakes Buchanan and Travis. *See* Affidavit of Ryan Rowney (Attachment G).

Including the amount of water needed for firm water users and evaporation, it is easy to reach the conclusion that the combined storage could easily drop to 600,000 acre-feet well before irrigators could finish their crop in mid to late August. In fact, based on the most recent lake levels

³⁸ Attachment E – 2010 WMP at 4-32.

³⁹ 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.

⁴⁰ 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.

⁴¹ Attachment E – 2010 WMP at 4-34.

⁴² Attachment E – 2010 WMP at 4-24 & 4-26.

and forecast, there is a chance of reaching conditions triggering a declaration of Drought Worse than Drought of Record as soon as March 2015 and nearly a one in three chance by July 2015. *See* Affidavit of Ron Anderson (Attachment K, Tab 5). At that point, all interruptible stored water would be cutoff, 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.

Deviating from the 2010 WMP as requested by LCRA in this application, provides LCRA with the only opportunity to take meaningful action to preserve (and hopefully recover) the water supply, and avoid the potential of wasting water. *See* Affidavit of Ron Anderson (Attachment K); Affidavit of David Wheelock (Attachment M).

LCRA seeks emergency relief similar to that provided under the February 2014 TCEQ Emergency Order wherein the TCEQ determined that the conditions at that time warranted a suspension of most releases of interruptible stored water. Similar to that order, LCRA requests the Commission to evaluate the water supply conditions at the time it issues any order responding to this request. This includes an evaluation of not only combined storage conditions of lakes Travis and Buchanan, but also the inflows, weather conditions and forecast, water demands, and any other factor the Commission deems relevant and appropriate at the time.

Although storage is not the only factor to consider, LCRA has developed analyses in support of its application indicating that, as of December 2014, it is very unlikely that combined storage of lakes Buchanan and Travis will recover to a level that would eliminate the need for some sort of emergency order. Table 4 presents the likelihood of the combined storage being at or above various levels as of March 1, 2015. For example, there is only a 12 percent change of storage increasing above 1.0 million acre-feet by March 1, 2015. *See* Affidavit of Ron Anderson (Attachment K).

Table 4. Likelihood of combined storage in Lakes Buchanan and Travis being at or above various storage levels on March 1, 2015.

Combined storage level	Likelihood of being at or above the specified storage level on March 1, 2015
1.0 million acre-feet	12%
1.1 million acre-feet	7%
1.2 million acre-feet	5%
1.3 million acre-feet	4%
1.4 million acre-feet	3%
1.5 million acre-feet	3%

Moreover, to support the Commission in its assessment of this request, LCRA has evaluated the impacts of reverting to the 2010 WMP under various combined storage levels by March 1, 2015. Table 5 below provides information regarding the likelihood that combined

storage could fall to 600,000 acre-feet within the next six to 18 months. *See* Affidavit of Ron Anderson (Attachment K).

Table 5. Likelihood of combined storage in lakes Buchanan and Travis falling below 600,000 acre-feet for various March 1, 2015 storage levels.

Combined storage level on March 1, 2015	Likelihood of storage falling to 600,000 AF by the end of 2015	Date of reaching 600,000 AF following 99% exceedance trace
1.0 million acre-feet	4%	September 2015
1.1 million acre-feet	>1%	November 2015
1.2 million acre-feet	<1%	May 2016
1.3 million acre-feet	0%	June 2016
1.4 million acre-feet	0%	July 2016
1.5 million acre-feet	0%	August 2016

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, 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 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 follows the 2010 WMP, LCRA would be obligated to release significant quantities of water from lakes Buchanan and Travis for interruptible agriculture next spring with a significant risk of reaching a combined storage of 600,000 acre-feet in lakes Buchanan and Travis during agricultural users’ first crop of rice, which is the predominant crop grown by LCRA irrigation customers. *See* Affidavit of Ron Anderson (Attachment K). This would prompt LCRA to make a declaration of DWDR in the middle of the first crop and all releases of interruptible stored water would cease. Curtailment of the interruptible stored water supply in the middle of the growing season could cause the farmers to lose their crops and the investment made to grow the crops. *See* Affidavit of Ryan Rowney (Attachment G). At that point, such releases would also amount to an irreversible reduction of the water supply available for firm customers.

The conditions are similar or worse than conditions in place when TCEQ issued its earlier orders for the 2012, 2013 and 2014 seasons. In fact, the December 1, 2014 combined storage level of about 691,000 acre-feet is the lowest recorded storage on that date since the lakes were built – and lower than on December 1 of the past three years. *See* Affidavit of Ryan Rowney (Attachment G). The conditions once again support the conclusion that following the 2010 WMP under these conditions poses an imminent threat to firm customers served by LCRA.⁴³ 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 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.⁴⁴ Releasing interruptible stored water based on the 2010 WMP 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 secured 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. LCRA has over 15 customers that actively take raw water for municipal purposes from Lake Travis. The lowest pumping elevations of the intakes range from about 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, 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 elevation water. Similar measures would likely be needed by LCRA’s raw water customers that have their own intake facilities. Firm customers have indicated that they are actively 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, 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.⁴⁵ If the lake levels drop more quickly than arrangements for alternative intakes

⁴³ Attachment A - August 2014 Emergency Order, Finding of Fact Nos. 14-16, 20, 24-29, 32, 34-35, Conclusion of Law No. 2; 2014 Emergency Order Extension, Finding of Fact No. 3, 12, Conclusion of Law No. 4; 2014 Emergency Order, Finding of Fact Nos. 18-25, 28, 30, 31, 33-36, 45, 60, 61, Conclusion of Law 4; *see also* 2013 Emergency Order, Finding of Fact Nos. 18, 20, 22, 26, 27, 31-33, Conclusion of Law 2; 2013 Emergency Order Extension, Finding of Fact Nos. 9, 10, 16, 17, Conclusion of Law 4; July 2013 Emergency Order, Finding of Fact Nos. 21, 23, 26, 28, Conclusion of Law 2; 2011 Emergency Order, Finding of Fact Nos. 20, 21, 25, 30, 31, Conclusion of Law 2.

⁴⁴ Attachment A - August 2014 Emergency Order, Findings of Fact Nos. 32, 34; 2014 Emergency Order, Finding of Fact Nos. 45, 60, 61; *see also* 2013 Emergency Order, Findings of Fact Nos. 32-33; 2013 Emergency Order Extension, Finding of Fact No. 16; July 2013 Emergency Order, Finding of Fact No. 28; 2011 Emergency Order, Findings of Fact Nos. 30-31.

⁴⁵ *See* Tex. Comm’n Envtl. Qual., *List of Texas PWSs Limiting Water Use to Avoid Shortages* at:

or supplies can be implemented, the current drought presents an imminent threat to public health and safety for the water systems of those customers.

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).⁴⁶

The 2010 WMP requires LCRA to make a preliminary determination about how much interruptible stored water is available in November based on projections of combined storage capacity for January 1. The actual supply to be made available under the 2010 WMP is based on actual January 1 storage, with releases of the water beginning in March. *See* Affidavit of Ryan Rowney (Attachment G). Thus, LCRA must make a decision in the very near future regarding interruptible water availability in time for these customers to make decisions and investments in preparing their fields for planting. This short decision-making window is not compatible with the more lengthy WMP amendment process.⁴⁷ 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 and significant staff review.

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 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

<http://www.tceq.texas.gov/drinkingwater/trot/droughtw.html> (last updated on December 17, 2014) (last visited December 18, 2014).

⁴⁶ *See also* Attachment A, August 2014 Emergency Order, Findings of Fact 51-54, 57; 2014 Emergency Order Findings of Fact Nos. 66-69; July 2013 Emergency Order, Findings of Fact Nos. 26, 36-37, 39; 2013 Emergency Order Finding of Fact No. 44, 46; 2011 Emergency Order, Finding of Fact No. 46.

⁴⁷ *See* Attachment A, August 2014 Emergency Order, Finding of Fact No. 59-60; 2014 Emergency Order, Finding of Fact No. 70; *see also* 2013 Emergency Order, Finding of Fact Nos. 34-35; July 2013 Emergency Order, Finding of Fact No. 41; 2011 Emergency Order, Findings of Fact Nos. 32-33.

drought contingency plan (DCP). As of December 1, 2014, 100 percent of those customers are covered by a DCP that is on file. *See* Affidavit of Nora Mullarkey Miller (Attachment I). 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.⁴⁸ *See* Affidavit of Nora Mullarkey Miller (Attachment I). 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 I, Tab 2). As noted above, in November 2013 (and reaffirmed in November 2014), as part of LCRA's drought response, the LCRA Board approved a no more than once-per-week watering restriction that took effect in March 2014 and remains in effect as long as combined storage is below 1.1 million acre-feet and interruptible stored water for Gulf Coast, Lakeside and Pierce Ranch is cut off.⁴⁹ While many customers were already implementing once or twice per week watering restrictions, the LCRA Board action makes the once per week restriction applicable across all LCRA customers.

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 I, 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 also provides significant conservation program planning support for its customers. *See* Affidavit of Nora Mullarkey Miller (Attachment I, 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 I, 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 place. Between 2006 and 2013, LCRA provided up to 30 percent of the costs to the farmers for the implementation of precision laser land leveling on more than 30,000 acres of land. *See* Affidavit of Nora Mullarkey Miller (Attachment I, and Tab 2). Additional efforts implemented by LCRA to use water more efficiently in the irrigation operations are described in LCRA's Water Conservation Plan.

⁴⁸ The WMP does not allow LCRA to impose mandatory curtailments on its firm water customers until a drought worse than the Drought of Record is declared.

⁴⁹ *See* Attachments B-1 and B-2, November 2013 and November 2014 LCRA Board Resolutions.

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.⁵⁰ In December 2011, LCRA obtained approval from the TCEQ of its Water Curtailment Plan for firm water customers.⁵¹ 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 I).

Achievement of a twenty 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 twenty percent. Moreover, most industrial customers would have to implement the full twenty percent reduction more immediately. Reductions in use by industrial customers, including power plants, likely means a curtailment in annual production. *See* Affidavit of Nora Mullarkey Miller (Attachment I, 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.⁵² Extensive 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 I, Tab 3 and Tab 4).

C. Implementation of the 2010 WMP is not sufficient.

LCRA's 2010 WMP helps better protect firm customers through a repeat of the 1950s Drought of Record than prior versions of the Water Management Plan. However, as discussed above, significant amounts of interruptible stored water would be made available under that plan—even if combined storage were just above 600,000 acre-feet. In light of current projected storage levels, following the 2010 WMP for purposes of determining the amount of interruptible stored water available for downstream irrigation operations presents an unacceptable risk of

⁵⁰ Attachment E – 2010 WMP at p. 4-32.

⁵¹ 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).

⁵² *See* Attachment A – August 2014 Emergency Order, Finding of Fact No. 54; 2014 Emergency Order, Finding of Fact No. 69; *see also* 2013 Emergency Order, Finding of Fact No. 44; July 2013 Emergency Order, Finding of Fact No. 40; 2011 Emergency Order, Finding of Fact No. 39.

reaching DWDR conditions. *See* Affidavit of David Wheelock (Attachment M); Affidavit of Ron Anderson (Attachment K). In fact, DWDR could be reached early in the first crop irrigation season in 2015, cutting off the supply of interruptible water and risking the crop not maturing to harvest. *See* Affidavit of Ron Anderson (Attachment K); Affidavit of Ryan Rowney (Attachment G).

D. 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. LCRA is seeking similar authority to use Certificate of Adjudication 14-5475 in this manner in 2015. 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. LCRA using the downstream water rights to supply the downstream industrial and municipal users at diversion points for which LCRA does not have permanent authorizations kept about 7,000 and 1,000 acre-feet of water in the reservoirs in 2012 and 2013 respectively. These rights would only serve to offset the amount of stored water required to be released for the downstream firm customers. While clearly beneficial, it is equally as clear that temporary permits to supply these firm customers are not a sufficient replacement for the water that could be lost if LCRA were required to follow the 2010 WMP. *See* Affidavit of David Wheelock (Attachment M).

E. Relief related to the Blue Sucker helps preserve supply in the Highland Lakes, but is not an alternative to the requested relief.

LCRA is also seeking relief for 2015 that would reduce the release requirement for the Blue Sucker fish under the 2010 WMP identical to the relief granted in the Spring of 2014. In 2014, the relief preserved in lakes Buchanan and Travis about 17,000 acre-feet of water that would otherwise have been released. *See* Affidavit of Ryan Rowney (Attachment G). As with the use of downstream water rights, the Blue Sucker relief, while clearly beneficial, is not a

replacement for water that could be lost if LCRA were to provide water for downstream agricultural customers pursuant to the 2010 WMP.

F. LCRA has explored other alternatives for protecting firm supply, 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 sought emergency relief over the past two years, 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.⁵³ 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.

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

To mitigate the continued and devastating effects this exceptional drought is having on the water supply, avoid waste, and to ensure that the water supply of LCRA's firm customers is preserved for essential needs, LCRA requests that TCEQ suspend LCRA's obligation to release interruptible stored water to LCRA's Gulf Coast and Lakeside agricultural divisions and Pierce Ranch if TCEQ determines that the water supply conditions have not changed substantially by March 1, 2015 as compared to conditions in mid-November 2014. If TCEQ determines that water supply conditions *have* changed substantially, reversion to the 2010 WMP may still present an emergency warranting an order that sets forth more restrictive conditions under which LCRA may supply some interruptible stored water under more limited circumstances in 2015 than provided by the 2010 WMP. This relief is necessary in light of the prolonged and uncertain duration of the ongoing exceptional drought emergency that grips the lower Colorado River basin. Without substantial improvement in the water supply conditions presented by this drought, the water supply for over a million people is at risk of substantial curtailments if the drought continues. LCRA would provide interruptible stored water to the Garwood irrigation division and Pierce Ranch, to the extent required by their contracts.

The relief granted may be of limited duration. As such, LCRA may seek additional relief later in 2015.

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

⁵³ *See* Attachment A – August 2014 Emergency Order, Finding of Fact No. 51; 2014 Emergency Order, Finding of Fact No. 66; *see also* 2013 Emergency Order Findings of Fact Nos. 47-48; 2013 Emergency Order Extension, Finding of Fact No. 15; July 2013 Emergency Order, Finding of Fact No. 37; 2011 Emergency Order, Findings of Fact Nos. 41-42.

§§ 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 prior to March 1, 2015 (and preferably no earlier than February 12, 2015, *i.e.* 20 days prior to the Commission's March 4, 2015 Agenda, so as to allow the most meaningful use of the 120 days of initial relief); 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 this exceptional drought persist, LCRA will evaluate at the appropriate time whether any further relief from the Water Management Plan 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 by preserving stored water for firm customers and avoiding waste.

Deviating from the 2010 WMP to suspend releases interruptible stored water to LCRA's Gulf Coast and Lakeside agricultural divisions and Pierce Ranch would preserve significant quantities of stored water for the essential needs of firm water customers. *See* Affidavit of David Wheelock (Attachment M). This relief would also reduce the possibility that interruptible stored water would be released and then cut off during a crop, jeopardizing the ability to finish the crop, and potentially wasting that amount of supply. In LCRA's prior experience, it is apparent that the farmers can wait until March 1 to make final planting decisions. *See* Affidavit of Ryan Rowney (Attachment G).

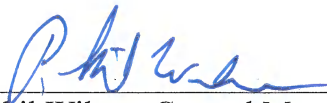
IX. Conclusion.

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 temporary 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, presents 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.

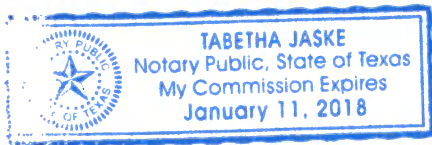
"I, Phil Wilson, General Manager, the Lower Colorado River Authority, certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information 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: 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

XI. Attachments

Attachment A – TEX. COMM’N ENVTL. QUAL., Docket No. 2014-1044-WR, *Order Affirming an Order Granted by the Executive Director that Grants an Emergency Order Requested by the Lower Colorado River Authority* (August 15, 2014) (herein “August 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”); 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”).

See also 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. 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”); 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. 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”).

Attachment B LCRA Board Resolutions Regarding Drought Management Actions

B-1: November 19, 2013 Resolution of the Board of Directors of the Lower Colorado River Authority Regarding Drought Management Actions in Response to Current Drought Conditions.

B-2: November 19, 2014 Resolution of the Board of Directors of the Lower Colorado River Authority Regarding Drought Management Actions in Response to Current Drought Conditions.

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 – 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 – 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 implemented in other Communities (2011).

Tab 4 – Benchmarking Research on Mandatory Drought Restrictions implemented in other Communities (2013).

Attachment J – Proclamation by the Governor of the State of Texas (Dec. 22, 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 Historical Inflows to Lakes Travis and Buchanan

Tab 4 – Description of Stochastic Modeling

Tab 5 – Likelihood of Reaching All 3 DWDR Criteria following the 2010 WMP

Attachment L – Affidavit of Bob Rose

Tab 1 – Resume 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 – LCRA Policies Regarding Delegation of Authority and Organizational Chart