

**TCEQ DOCKET NO. 2015-1444-WR  
APPLICATION NO. 5838A**

**APPLICATION OF LOWER COLORADO RIVER AUTHORITY TO AMEND WATER MANAGEMENT PLAN**      §  
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§      **BEFORE THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY**

**EXECUTIVE DIRECTOR'S RESPONSE TO COMMENTS**

The Executive Director (ED) files this response to comments filed or made at the July 20, 2015, public meeting in Austin, Texas on the Lower Colorado River Authority's (LCRA) application to amend its water management plan (WMP).

**BACKGROUND**

LCRA's Application No. 5838A to amend the WMP was received by the Commission on March 12, 2012, and was declared administratively complete on April 19, 2012. Technical review was completed in November 2012, the application was sent to notice and the comment period ended on May 28, 2013. On June 3, 2013, based on public comment and the ongoing drought conditions, the Executive Director determined that further evaluation of LCRA's application was necessary. In May 2014, after review of more recent severe drought data, the Executive Director's staff issued a draft report with recommendations related to the curtailment of interruptible stored water. On October 31, 2014, LCRA submitted a revised and supplemental application to amend its WMP that was intended to replace the 2012 WMP application. By statute, the technical review must be complete within one year of the administrative complete date. Technical review of LCRA's October 31, 2014 amended application was completed on June 11, 2015. LCRA filed another revision to its application on May 21, 2015 to include its Firm Raw Water Drought Contingency Plan (Firm Customer DCP) in the WMP.

**APPLICATION**

LCRA seeks an amendment to its WMP pursuant to Texas Water Code § 11.122 and Texas Commission on Environmental Quality Rules 30 Texas Administrative Code (TAC) §§ 295.1, et seq. Pursuant to 30 TAC § 295.158, mailed and published notice was issued to water holders of record in the Colorado River Basin.

The WMP for the Lower Colorado Basin defines LCRA's water management programs and policies in accordance with the Final Order of Adjudication of the water rights for the Lower Colorado River Authority; the Enabling Act of the Lower Colorado River Authority; General Law of the State of Texas, particularly the Texas Water Code; LCRA's Certificates of Adjudication Nos. 14-5478 and 14-5482, as amended; the Commission's Orders concerning the WMP; and the policies of the Lower Colorado River Authority's Board of Directors. TCEQ considers the WMP to be part of LCRA's water rights. Amendments to the WMP were last approved by the Texas Commission on Environmental Quality (TCEQ) on January 27, 2010.

LCRA engaged in an extensive stakeholder process to develop proposed amendments to the WMP. LCRA's proposed substantive revisions to the WMP under this amendment fall within three areas: 1) interruptible stored water availability; 2) new environmental flow criteria based on the most recent scientific studies and implementation of those criteria; and 3) a new determination of the combined firm yield.

## 1. Interruptible Stored Water Availability

Firm demands take precedence over all other uses; therefore, the proposed amendment to the WMP requests a reduction in interruptible supplies to offset the increase in firm water demand. The reduction is achieved by revising the annual interruptible water supply curtailment policy. Under the 2014 WMP, LCRA will determine availability of Interruptible Stored Water for its Gulf Coast, Lakeside operations and Pierce Ranch separately for First and Second Crop and apply volumetric limits on the availability of Interruptible Stored Water for each Crop Season. The amount of water available for these irrigation operations will be based on a Water Supply Condition: "Normal", "Less Severe", or "Extraordinary Drought" combined with a look-ahead test. Under the requirements in the WMP for the look-ahead test, if the LCRA Board determines that the Combined Storage would drop below 900,000 acre-feet in the upcoming Crop Season or below 600,000 acre-feet within twelve months, LCRA will not begin releasing water for non-Garwood irrigation operations for that Crop Season.

## 2. Environmental Flow Criteria

LCRA's amendment to the WMP includes a change in the procedure for supplying water to help meet instream flow needs at certain locations downstream of Lady Bird Lake and incorporates specific instream flow values based on the most recent scientific studies, as set out in WMP Section 4.4.2. The 2014 WMP includes three levels of instream flows: 1) subsistence; 2) base-dry; and 3) base-average and the amount of water provided will be determined based on combined storage on March 1st and July 1st. The WMP also includes specific trigger levels at which the three levels of instream flows apply. Under the 2014 WMP, LCRA will make releases from Lakes Buchanan and Travis limited to the daily storable inflows to help meet base-average and base-dry instream flows. In addition to storable inflows, previously stored water will be released as necessary to maintain subsistence flows.

LCRA will not manage water in the lower Colorado River to specifically provide for pulse flows under the 2014 WMP. However, LCRA will monitor pulse flows during the time period that this amendment to the WMP is in effect to assess whether pulse flows are occurring at the frequency recommended in the 2008 instream flow study of the lower Colorado River. (WMP Section 4.4.3)

LCRA's amendment to the WMP also includes a change in the procedures for supplying water to help meet freshwater inflow needs. The freshwater inflow criteria are based on the most recent scientific studies as set out in Section 4.4.3 of the WMP. The WMP freshwater inflow criteria include five levels of inflow to help meet freshwater inflow needs and are defined using two-month operational criteria. The 2014 WMP also

includes three month spring and fall freshet requirements and a combined storage trigger at which specific freshwater inflow levels apply.

At the end of each month, to the extent storable inflows are available, LCRA will provide storable inflows, if available, as necessary to meet the two-month operational criteria. In all months, LCRA will release storable inflows to help meet the Threshold level of 15,000 acre-feet per month, to the extent of storable inflows. The WMP also includes additional limitations, which may reduce the amount of water LCRA provides to help meet freshwater inflow needs.

In the event of a pro rata curtailment of firm supplies, the applicable instream flow and freshwater inflow criteria will be subject to the same percentage curtailment as imposed on LCRA's firm water customers. The WMP includes annual and multi-year caps on water for environmental flows in Section 4.4.4 of the WMP.

### 3. Combined Firm Yield

LCRA requests a change to the combined firm yield of Lakes Buchanan and Travis. Under the 1988 Adjudication Order, LCRA's firm commitments shall not exceed the combined firm yield. The Combined Firm Yield represents the maximum amount of water LCRA can commit from Lakes Buchanan and Travis for firm water supply. Based on updated modeling using a modified version of the TCEQ's water availability model (WAM) for the Colorado River Basin, the combined firm yield of Lakes Travis and Buchanan is reduced from 535,812 acre-feet (which includes 90,546 acre-feet of water associated with O.H. Ivie Reservoir) to 434,154 acre-feet (which does not include an amount for O.H. Ivie Reservoir). The combined firm yield was determined based on the average annual amount of water supplied during the critical period. The new combined firm yield is a net reduction of 11,112 acre-feet from the previously calculated combined firm yield. The combined firm yield is subject to change in future WMP revisions. (WMP Section 3.2.)

## COMMENTERS

**The following individuals and entities provided comments at the public meeting (written or oral):**

Ronald Gertson

Central Texas Water Coalition

Highland Lakes Firm Water Customer Cooperative

Earl Foster

City of Austin

Dennis Werchan

## **RESPONSE TO COMMENTS**

### **FIRM CUSTOMER DROUGHT CONTINGENCY PLAN**

Comment No. 1: Highland Lakes Firm Water Customer Cooperative (Highland) comments that the Draft Order should specifically state that LCRA's Firm Customer DCP is incorporated into Chapter 4 of the WMP and made a part of the WMP for all purposes as if set forth in Chapter 4 of the WMP in full. Highland argues that the 1988 Adjudication Order requires LCRA to interrupt or curtail supplies of stored water to interruptible customers to satisfy all demand of firm customers 100% of the time without shortage through a repeat of DOR conditions, and that firm customers cannot be curtailed unless a DWDR has been declared and all interruptible water customers have been cut off. If the Firm Customer DCP is taken out of the WMP the DCP will be stripped of its proper context. Removal of the Firm Customer DCP from the WMP diminishes firm water customers' due process rights, and handicaps firm customers' ability to engage in effective water management. The 1988 Adjudication Order requires meaningful TCEQ oversight of the terms of the Firm Customer DCP. They request that Findings of Fact Nos. 1, 29, and 30 and Conclusion of Law No. 1.b. in the Draft Order unequivocally state that the Firm Customer DCP is incorporated into Chapter 4 of the WMP for all purposes as if set forth in full.

Comment No. 2: The City of Austin (City) comments that it needs to be clear that LCRA's recently submitted firm customer Drought Contingency Plan is fully incorporated into the WMP. The City recommends modifying language in the draft Order and/or WMP as needed to indicate that the firm customer Drought Contingency Plan is fully incorporated into the Water Management Plan.

**Response to Comments Nos. 1 and 2: In its August 17, 2015 letter, LCRA proposed clarifying language to Findings of Fact 1 and 29. The Executive Director accepts the LCRA's proposed language and has made changes to the draft order incorporating these modifications to Finding of Fact 1 and renumbered Finding of Fact 31 to clarify that the DCP is part of the WMP. In addition, Ordering Provision 1.d. in the Executive Director's revised draft order, attached to this RTC, requires the text of the WMP to be consistent with Finding of Fact No. 31. The ED believes that these changes address Highland's and the City's concerns.**

### **DETERMINATION OF WATER SUPPLY CONDITIONS**

Comment No. 3: Highland comments that Finding of Fact No. 15 and the corresponding provisions of the WMP pertaining to when and how a Water Supply Condition will be determined contain ambiguous terms that must be clarified. Highland argues that Finding of Fact No. 15(d), (e), (g), and (i) are unclear relating to the length of the period before the evaluation date that should be reviewed for deciding when a water supply condition applies. In (d) and (e), "for the period prior to the Evaluation Date," in (e) there is no time period mentioned, and in (g) and (i) the language is "for one or more days during the period preceding the Evaluation Date."

**Response to Comment No. 3: The length of the period Highland is questioning is described in the WMP in section 4.2. This section of the WMP describes how the water supply condition is determined. As reflected in Ordering Provision 1.d., in the ED's revised order attached to this RTC, in the event of a conflict the specific language in the WMP document text will control over the more general language in the Findings of Fact. Therefore, the ED did not make changes to the revised proposed order in response to this comment.**

### **UPDATES TO THE WMP**

Comment No. 4: Highland argues that Ordering Provision No. 1.f. is vague on the timelines for when the WMP must be updated, and that the timelines are too long. Ordering Provision No. 1.f. is not clear on whether LCRA has to initiate the update process on December 31, 2018, or one year after the occurrence of listed events. Highland believes that it should be the earliest to occur.

**Response to Comment No. 4: The ED agrees with Highland that the intent of the language is that the earliest occurrence begins initiation of the update process. In its August 17, 2015 letter, LCRA proposed clarifying language to Ordering Provision 1.f. The ED notes that LCRA has agreed to change the December 31, 2018 deadline in Ordering Provision No. 1.f. to January 1, 2018 and replaces the phrase "no later than" with "on the earlier of". The ED accepts LCRA's change and has incorporated it into the attached revised draft order. The ED believes that this change should address Highland's concerns.**

Comment No. 5: Highland comments that it is unclear what is meant by the word "initiate" related to the update process in Ordering Provision No. 1.f.

**Response to Comment No. 5: The ED believes that this language is sufficiently clear. LCRA must begin the process of updating the WMP according to the timelines in Ordering Provision 1.f. The ED declines to change this language in the draft order.**

Comment No. 6: Highland comments that the December 31, 2018 deadline for a WMP update is too long and not consistent with some of the Findings of Fact. The naturalized streamflow data could change everything. The events listed in Ordering Provision 1.f. form some of the most important assumptions on which the current WMP is based. There should not be a three year period before LCRA does anything after there is data demonstrating that the firm demand has increased to levels not modeled for this WMP.

**Response to Comment No. 6: The ED does not agree that LCRA would be doing nothing for 3 years after data is received showing firm demand has increased. LCRA will be operating under the 2014 WMP during this time and establishing a baseline to inform future updates to the plan. Ordering Provision 1.f.ii. in the ED's revised draft order requires LCRA to initiate a**

**process to amend its WMP if firm demands reach 90% or greater of the demands considered in modeling of the 2014 WMP amendment for two years. Under this provision, the process to amend the plan could begin before firm demands exceed the actual level considered in the 2014 WMP.**

**The ED notes that LCRA has proposed to change the December 31, 2018 deadline in Ordering Provision No. 1.f. to January 1, 2018. LCRA also proposes to add a new Ordering Provision No. 1.h., concerning how updates to naturalized flow data will be incorporated into any new plan. The ED accepts these changes and has incorporated the changes into the attached revised draft order. The ED believes that these changes should address Highland's concerns.**

Comment No. 7: Highland also comments about Ordering Provision 1.f.iv. This provision allows LCRA to demonstrate that modeling of operations related to use of one or more of its downstream water rights based on non-temporary amendments to those rights obtained after the effective date of this Order will not cause the combined storage to drop below 600,000 AF in a repeat of the hydrology considered in the WMP. Highland argues that notice and opportunity to review and comment should be provided to the WMP stakeholders because this review bears directly on a fundamental aspect of the WMP. If LCRA does anything operationally that might cause the combined storage to go below 600,000 AF, this should be treated as a major amendment to the WMP.

**Response to Comment No. 7: This demonstration and review by the Executive Director is the type of technical review that the Executive Director performs that does not require notice and opportunity for a hearing if it does not change the Certificate of Adjudication or the WMP in a substantive way. Notice would be required if the occurrence causes the storage to drop below the 600,000 AF combined storage level in a repeat of the hydrology considered in this WMP.**

Comment No. 8: Highland further comments that Ordering Provision 1.g., requiring LCRA to submit an application to amend its WMP no later than two years from the date it initiates a process to update the WMP, is too long. LCRA has shown that it is capable of submitting WMP applications in a much shorter time period. Further, the delay in submitting an application leads to multiple emergency orders. The provision should also be revised to state that the requirement is for LCRA to submit a technically complete application on or before the deadline.

**Response to Comment No. 8: The ED anticipates that LCRA's process would include substantial stakeholder input, which requires additional time. LCRA also proposed a new Ordering Provision 1.h., which was accepted by the ED. This new ordering provision would require LCRA to revise naturalized flow data which is a detailed and intensive process. Therefore, the ED believes that the time limit in the Draft Order is reasonable.**

Comment No. 9: Highland comments that the determination of the critical period, the DOR, and combined storage required to avoid declaration of a DWDR, needs to be clarified. It is concerned that the 600,000 acre feet (AF) level for the DWDR is not in the WMP. Highland urges amendment of the Draft Order to include references to the 600,000 AF level so that it is clear going forward what the assumed conditions were for this amendment in order to ensure that firm customers' demands are met 100% of the time without shortage through a repeat of the DOR. Highland also requests that the Draft Order make it clear that this WMP was prepared using the assumption that the DOR was the drought of the 1940's and 50's.

**Response to Comment No. 9: LCRA has proposed to amend the Draft Order to include the 600,000 AF level in renumbered Findings of Fact 16 and 19. The ED believes that these changes should satisfy Highland's concerns. Renumbered Finding of Fact 19 states that the DOR is "the drought of the 1940s and 50's" and LCRA has proposed to add to this definition of the DOR that it is for "this WMP and combined storage in Lakes Travis and Buchanan is maintained above 600,000 acre feet." The ED accepts this change and has incorporated this change into the attached revised draft order. The ED believes that this change should address Highland's concerns.**

Comment No. 10: The Central Texas Water Coalition (CTWC) comments that the draft Order's proposed timelines for revising the WMP will result in a WMP that is so out-of-date that it no longer satisfies one of its primary purposes: to ensure that LCRA's operation of Lakes Buchanan and Travis is in accordance with governing water rights. CTWC further comments that:

1. TCEQ should revise the Order to set a date certain by which LCRA must file its next amendment application;
2. 2014 inflow data, which is not included in the proposed WMP, will impact modeling as such time as the model's period of record is extended to include 2014;
3. WMP should be revised within a timeframe that enables it to stay up to date with hydrological data; and
4. LCRA should be required to submit an administratively complete application to revise its WMP no later than December 31, 2016.

**Response to Comment No. 10: LCRA has proposed to change the December 31, 2018 deadline in Ordering Provision No. 1.f. to January 1, 2018. This is the latest possible date that LCRA will initiate their process. LCRA also proposes to add a new Ordering Provision 1.h., concerning how updates to naturalized flow data will be incorporated into any new plan. Adding the new naturalized flow will allow the WMP to stay up to date with hydrological data. The ED accepts these changes and has incorporated them into the attached revised draft order. The ED believes that these changes should address CTWC's concerns.**

Comment No. 11: CTWC asks whether Ordering Provision 1.f. is intended to require the initiation of the process at the earliest of the five possibilities described.

**Response to Comment No. 11: Yes, Ordering Provision 1.f. is intended to require the initiation of the process at the earliest of the five possibilities described, if those possibilities occur. The ED also notes that LCRA has proposed to change the December 31, 2018 deadline in ordering provision 1.f. to January 1, 2018. The ED accepts this change and has incorporated this change into the attached revised order.**

Comment No. 12: City made the following comments relating to updating the next WMP:

- a. The timelines for updating the next WMP with new hydrology have the potential of leaving firm water supplies inadequately protected for a decade or longer. The City recommends revising Ordering Provision 1.f. to state that LCRA shall initiate a process to update the WMP no later than January 1, 2017 instead of December 31, 2018.

**Response to Comment 12.a.: LCRA has proposed to change the December 31, 2018 deadline in Ordering Provision No. 1.f. to January 1, 2018. This is the latest possible date that LCRA will initiate their process. The ED accepts LCRA's change, and has incorporated it into the revised draft order attached to this Response to Comments (RTC). The ED believes that this change should address the City's concerns.**

- b. The City also recommends removing language in Ordering Provision 1.f.iv., which allows LCRA to demonstrate that once LCRA has begun using one or more of its downstream water rights based on a non-temporary amendment, modeling of such operations in combination with the WMP does not result in combined storage dropping below 600,000 AF in a repeat of the hydrology considered in this WMP.

**Response to Comment 12.b.: The models used to support LCRA's 2014 WMP assumed that LCRA's downstream water rights are operated in the same way that they are operated today. Any changes to LCRA's operation of these water rights resulting from future amendments of those rights are not taken into account in the model used to develop the curtailment curves in the 2014 WMP. Ordering Provision 1.f.iv. is designed to address this situation. LCRA would need to submit the information required in Ordering Provision 1.f.iv. with any future applications to amend its downstream water rights. The type of notice will be determined in accordance with TCEQ rules applicable to that application. The ED declines to remove this language from the Draft Order.**

- c. The City further recommends that a WMP update initiated January 1, 2017 must, at a minimum, incorporate the 2014 and 2015 naturalized hydrology data into the

WMP simulations and make adjustments to interruptible curtailment triggers to maintain combined storage in the WMP simulations above the DWDR storage trigger (600,000 AF in this WMP) through the period of record. All other updates must include the naturalized hydrology from the years prior to year in which the update process is triggered and any necessary adjustments to interruptible curtailment triggers to maintain combined storage in the WMP simulations above the DWDR storage trigger through the period of record.

**Response to Comment 12.c.: The process to extend the naturalized flows is detailed and intensive just as it was when the TCEQ extended the flows through 2013. In addition, the lakes have not refilled, so although the 2014 and 2015 naturalized hydrology data might provide additional data, it may not answer the question about whether or not there was a new drought of record. LCRA also proposes to add a new Ordering Provision No. 1.h., concerning how updates to naturalized flow data will be incorporated into any new plan. The ED accepts this change and has incorporated this change into the attached revised draft order. The ED believes that this change should address the City's concerns.**

- d. The City recommends modifying Ordering Provision 1.g. to require LCRA to submit an application to amend its WMP by July 1, 2017 if the revision process is initiated January 1, 2017.

**Response to Comment 12.d.: The ED anticipates that LCRA's process would include substantial stakeholder input, which requires additional time. LCRA has proposed new Ordering Provision 1.h., which is accepted by the ED. This new ordering provision would require LCRA to revise naturalized flow data, which is a detailed and intensive process. The ED declines to make the City's recommended change.**

Comment No. 13: The City comments that assuming the lakes do not entirely refill to 98% combined capacity on the near term horizon, then an analysis of the only date-certain timelines for updates show these provisions would not result in a plan update until sometime into the next decade. A new WMP would not be expected before the year 2022 and could possibly be as long as 2024 to 2026. The City further comments that even under the best case scenario for a shorter time frame under Ordering Provision 1.f.i. (update triggered by reaching 98% combined capacity) the clock on the timeline for revision would not start until March 1, 2016, and the earliest an adopted plan incorporating the 2014-2015 drought data could be expected would be sometime in 2020, to be first implemented in 2021. The City comments that under Ordering Provision 1.f.ii.-iv. that an update under any of these scenarios can be expected after an even longer timeframe.

**Response to Comment No. 13: LCRA has proposed to change the December 31, 2018 deadline in Ordering Provision No. 1.f. to January 1, 2018. The ED accepts this change and has incorporated this change into the attached revised draft order. The ED believes that the timelines in the Draft Order**

**are reasonable considering that LCRA will update the naturalized flows and have a stakeholder process.**

Comment No. 14: The City comments that a simulation of proposed WMP including synthesized 2014 data shows combined storage falls far below the 600,000 AF emergency level in a repeat of the period of record. The City comments and explains that the accuracy of the approach the City used to approximate the 2014 naturalized flow data is supported because the City calibrated the model closely with the actual naturalized flows for the past 10 years and the City used the model to also compute the Combined Firm Yield and the results are essentially the same as the results LCRA has indicated their CFY model shows using preliminary 2014 data. The City comments that with the inclusion of the 2014-early 2015 drought data, the protection of essential firm water supplies are basically the same as those proposed more than 3 years ago, well before TCEQ issued their report in May 2014, which prompted LCRA to develop a plan using a 600,000 AF minimum combined storage.

**Response to Comment No. 14: The City's data is synthesized rather than actual data. In evaluating a water rights application, the ED must base his decision on an extension of the naturalized flows that includes actual gage flows and evaporation data. New Ordering Provision 1.h. requires LCRA to revise naturalized flow data in their future application to amend the WMP.**

Comment No. 15: The City comments that updating the WMP with hydrological data subsequent to 2013 can be accomplished in a short time frame; there is no need for several years of process to make this basic update.

**Response to Comment No. 15: The process to extend the naturalized flows is detailed and intensive just as it was when the TCEQ extended the flows through 2013.**

Comment No. 16: The City comments that allowing for water supply to be compromised in a return of extraordinary drought and then attempting to manage through Emergency Orders or other means is not a workable or acceptable approach.

**Response to Comment No. 16: The ED agrees that trying to manage through EOs is not the best approach, and therefore the ED is recommending the approval of the application for the 2014 WMP. The ED believes that the more comprehensive drought management regime in the 2014 WMP should protect firm water customers.**

Comment No. 17: The City comments that the basin is not out of the woods with regard to this historic drought; there was a pattern in the 1950s drought of dry periods, punctuated with numerous instances of wet periods some lasting for several months. The City comments that LCRA's recent application for emergency relief and TCEQ's Emergency Order confirm that multiyear drought may continue and that increases in combined storage do not equate to an end of multi-year drought and that after such increases hydrological conditions can revert to long-term severe drought.

**Response to Comment No. 17: The ED acknowledges this comment. The pattern of the 1950s drought is incorporated into the modeling for the WMP.**

Comment No. 18: CTWC comments that Finding of Fact No. 12 is misleading as to the fundamental reasoning driving proposed changes to interruptible release triggers and it should be revised. CTWC further comments that the WMP triggers have been designed to ensure that in a hydrological model incorporating the entire period of record, releases of interruptible water do not cause the combined storage of the Highland Lakes to fall below the trigger level for a DWDR laid out in the WMP.

**Response to Comment No. 18: The ED believes that Finding of Fact 12 is not misleading; however, LCRA has proposed to amend the draft order to include the 600,000 AF level in renumbered Findings of Fact 16 and 19. The ED also has added renumbered Findings of Fact 16 and 19 to Ordering Provision 1.d., which requires conforming changes in the WMP. The ED believes that these changes should address CTWC's concerns.**

Comment No. 19: The City also comments that there needs to be a clearer articulation of a key principle in revisions of the WMP, which is maintaining the minimum combined storage in simulations of the period of record above the DWDR storage trigger (600,000 AF in this plan update) through adjustments in curtailment triggers. This will continue to provide critically needed guidance for future revisions as well. The City recommends modifying the last sentence of Finding of Fact 12 to state that the reduction in interruptible supplies is intended to offset the increase in firm demands, as well as account for a higher minimum storage level. The City further recommends modifying Finding of Fact 14 by adding the following underlined statements and removing the following struck through statements:

LCRA 's proposed revisions to its curtailment policies and procedures are intended to ensure that LCRA can satisfy all current firm demands during drought conditions, in part by maintaining in simulations of the plan a higher minimum storage level through repeat of the ~~drought period~~ of record that assures the minimum combined storage is maintained above the Drought Worse than a Drought of Record (DWDR) storage trigger such that a declaration of a DWDR, and resulting firm customer curtailment, will not be triggered due to providing interruptible water supply, consistent with LCRA's permit conditions in Certificates of Adjudication Nos. 14-5478 and 14-5482, as amended. LCRA's permit conditions require that LCRA shall interrupt or curtail the supply of water under these Certificates of Adjudication pursuant to commitments that are specifically subject to interruption or curtailment, to the extent necessary to allow LCRA to satisfy all demands for water under such certificates pursuant to all firm, uninterrupted commitments. For this amendment of the WMP the higher minimum combined storage is the DWDR storage trigger of 600,000 AF (one of three criteria for declaring a DWDR.) ~~than was maintained in previous WMPs.~~ LCRA's curtailment policy has been found to be an acceptable approach in earlier Commission orders. The use of various rule curves and procedures continues to be an acceptable approach for addressing the allocation of interruptible stored water because this approach will allow

LCRA to be responsive to changes in water supply conditions throughout the year while protecting firm demands. (WMP Section ES. E.)

The City comments that the requested changes to Finding of Fact 14 are consistent with TCEQ's prior Emergency Orders and LCRA's proposed Water Management Plan, and that it is critical to clearly establish this principle of maintaining a minimum combined storage above the DWDR storage.

The City comments that a key principle in water planning under the WMP is that an interruptible stored water curtailment trigger should be set to avert, rather than create, conditions that could require declaration of a DWDR.

The City notes that in its proposed modification of the draft Order Finding of Fact 14, the City recommends using the terminology "period of record" rather than "drought of record" as maintenance of combined storage above the DWDR storage trigger should be for the entire period of record in simulations. Because the intensity of the current drought which has exceeded the intensity of the 1950s drought for several years, simulations of the period of record may show combined storage above the DWDR storage trigger in the 1950s drought, but combined storage may fall well below this level in a repeat of the current drought. The same protection should be maintained throughout the period of record and there should not be a lack of proper protection through a repeat of the current drought due to the use of nomenclature such as "drought of record" as the period for measuring whether storage has remained above the DWDR trigger.

**Response to Comment No. 19: LCRA has proposed to amend the draft order to include the 600,000 AF level in renumbered Findings of Fact 16 and 19. Renumbered Finding of Fact 19 states that the DOR is “the drought of the 1940s and ‘50s”, and LCRA has proposed to add to this definition of the DOR that it is for “this WMP and combined storage in Lakes Travis and Buchanan is maintained above 600,000 acre feet.” The ED also added renumbered Findings of Fact 16 and 19 to Ordering Provision 1.d., which requires conforming changes in the WMP. The ED believes that these changes should address the City’s concerns.**

### **GARWOOD IRRIGATION COMPANY**

Comment No. 20: Highland also comments that Garwood is not entitled to special treatment under the WMP, and the parts of Finding of Fact No. 15(j) – (n) stating “except for Garwood irrigation operation consistent with prior contracts between Garwood and LCRA” should be deleted. It also requests that Finding of Fact no. 15(r) be completely deleted.

Comment No 21: CTWC asks whether the WMP or Order include a curtailment curve or similar protocol that dictates when interruptible supplies will be curtailed or cut off for the Garwood irrigation operation.

**Response to Comment Nos. 20 and 21: Under prior WMPs, EOs, and this WMP, LCRA has requested that Garwood operations be provided interruptible stored water consistent with these agreements, and this provision is reflected in the 2014 WMP.**

**In a letter dated September 3, 2015, LCRA proposes to add an additional Finding of Fact and Conclusion of Law recognizing the agreements between LCRA and Garwood Irrigation Company. To be consistent with prior WMPs, EOs, and this WMP, the ED has incorporated these changes to the attached draft order in new Finding of Fact No. 36 and Conclusion of Law No. 2, with the exception of the last sentence in the suggested conclusion of law. This last sentence is not included in the WMP; therefore, the ED has changed this sentence to a sentence that is in the WMP to be consistent with the WMP.**

Comment No. 22: CTWC asks how releases of interruptible stored water to Garwood were included in the modeling to predict whether those releases will cause the Highland Lakes to drop below the combined storage level trigger for a DWDR.

**Response to Comment No. 22: In the modeling, Garwood operations were provided interruptible stored water consistent with the Garwood purchase agreement. The modeling did not show that the combined storage level dropped below 600,000 AF.**

### **USE OF 99 PERCENT EXCEEDANCE PROBABILITY FOR LOOK AHEAD TEST**

Comment No. 23: Highland comments that Finding of Fact Nos. 15 (t) should be amended to take out the quoted language in the following sentence. LCRA shall use the 99 percent exceedance probability “unless a different trend for inflows and combined storage is being observed. However in no case shall LCRA’s determination rely on less than a 95 percent exceedance probability.” Highland argues that LCRA has used the 99 percentile exceedance probability factor and its customers rely on those forecasts for their own planning. Introducing a new 95% exceedance probability factor is inappropriate.

Comment No. 24: CTWC asks for an explanation of the change from 99% to 95% exceedance probability in the Look-Ahead Test found in Finding of Fact 15(t).

Comment No. 25: The City comments that a change in the criteria used for the Look-Ahead Test could result in combined storage falling below the DWDR storage level of 600,000 AF in a repeat of the current drought. The City recommends modifying Finding of Fact 15.t. by removing the following struck language:

In making its determination under the Look-Ahead Test, LCRA shall use the 99 percent exceedance probability, ~~unless a different trend for inflows and combined storage is being observed. However, in no case shall LCRA's determination rely on less than a 95~~

~~percent exceedance probability.~~ Exceedance probability refers to the likelihood that a future outcome will be better than the specified value.

The City comments that the protections to firm water supply achieved by using the 99% exceedance line are not assured when using the 95% exceedance line. The City recommends that the TCEQ should require the Look-Ahead to be operated in the manner that was modeled during the stakeholder process, as this assures that the plan works according to the new framework of maintaining combined storage above 600,000 AF. The City is concerned that there is no longer an assurance that this framework principle of maintaining 600,000 AF combined storage can be met.

**Response to Comment Nos. 23-25: The ED agrees that the 99% exceedance level is consistent with the modeling for the WMP. The ED also recognizes a different trend for inflows and combined storage could be observed in a very wet year, i.e. high storage and a wet forecast. In this scenario, LCRA's determination could rely on a different exceedance level; however, in no instance could it be less than a 95% exceedance level. LCRA has proposed to amend the draft order to include the 600,000 AF level in renumbered Findings of Fact 16 and 19. The ED also added renumbered Findings of Fact 16 and 19 to Ordering Provision 1.d. The ED believes that these changes should address Highland's, CTWC's, and the City's concerns.**

## **ORDERING PROVISIONS**

Comment No. 26: Highland comments that there are double negatives and vague standards in the Ordering Provisions. Ordering Provision 1.a. and 1.b. provide that the WMP is subject to prior Commission's Orders approving and amending the WMP "except to the extent not inconsistent with this order." Highland would change the quoted language to "except to the extent this order expressly provides otherwise."

**Response to Comment No. 26: LCRA has proposed striking the word "except" in these provisions. This takes out the double negative and is clearer. The ED accepts this change and has incorporated this change into the attached revised draft order. The ED believes that this change should address Highland's concerns.**

Comment No. 27: Highland also comments that Ordering Provision 1.d. contains an incomplete list of the changes to the WMP that are needed to conform to the Order. It would add Findings of Fact 11, 12, 14, 17, and 29. It also comments that Ordering Provision 1.d. provides that in case of conflict the WMP will prevail over the Findings of Fact, which Highland believes is inappropriate. This would make something the Commissions have not reviewed prevail over the Order, which the Commission has issued.

**Response to Comment No. 27: The ED has proposed changes to renumbered Finding of Facts 16 and 19 to include the 600,000 AF storage level. The ED has also agreed to a change to renumbered Finding of Fact 31**

**as discussed above. LCRA has proposed to amend Ordering Provision 1.d. to add renumbered Finding of Fact No. 31. The Executive Director agrees that renumbered Findings of Fact 16, 19, and 31 should be included in Ordering Provision 1.d. The ED has also agreed to add Finding of Fact 23.b. to Ordering Provision 1.d. The other findings Highland lists are already included in the WMP. Concerning whether the WMP will prevail over the Findings of Fact in case of inconsistency, the Executive Director believes that it should. As stated in Ordering Provision No. 1.d., the Findings of Fact are summaries of what is provided in more detail in the WMP. The ED therefore disagrees that the Findings of Fact should prevail over the WMP. Additionally, the entire WMP is filed with the draft order for the Commission's consideration.**

Comment No. 28: Highland comments that Ordering Provision 1.e. in the Draft Order is similar to Ordering Provision 1.g. in the 2010 Order, but does not provide the process if changes to the DCP change the triggers, amount of curtailment of interruptible stored water supply, or the triggers or criteria related to bay and estuary inflows or instream flows. Highland also requests that a sentence at the end of Ordering Provision 1.g. in the 2010 Order be placed in Ordering Provision 1.e. That provision requires LCRA to work with firm customers to develop a specific water curtailment plan prior to implementing any mandatory firm water customer curtailment allowed under Texas Water Code Section 11.039.

**Response to Comment No. 28: The Executive Director agrees that if changes to the DCP change the triggers, amount of curtailment of interruptible stored water supply, or the triggers or criteria related to bay and estuary inflows or instream flows, this would most likely require an amendment to the Order and WMP. However, the type of notice for this amendment would be decided at that time.**

**Concerning adding the last sentence of Ordering Provision 1.g. in the 2010 Order to Ordering Provision 1.e., the Executive Director believes that LCRA will work with its firm customers in this manner and that the provision is unnecessary.**

Comment No. 29: CTWC asks what process will be followed to show that “modeling of such operations in combination with this WMP does not result in combined storage dropping below 600,000 AF for the 1940-2013 period of record” found in Ordering provision 1.f.iv.

**Response to Comment No. 29: LCRA would need to submit the information required in 1.f.iv. with any future applications to amend its downstream water rights. The type of notice will be determined in accordance with TCEQ rules relating to that type of application.**

Comment No. 30: CTWC asks what scenario Ordering Provision 1.f.iv. is designed to address.

**Response to Comment No. 30: The models used to support LCRA’s 2014 WMP assumed that LCRA’s downstream water rights are operated the way that they are today. Any changes to LCRA’s operation of these water rights resulting from future amendments of those rights are not taken into account in the model used to develop the curtailment curves in the 2014 WMP. Ordering Provision 1.f.iv. is designed to address this situation.**

## **DEFINITIONS**

Comment No. 31: Highland comments that the definitions of “Combined Firm Yield,” “Firm Water,” and “Drought of Record,” in the WMP should be the same definitions that were included in the 2010 WMP. It contends that the 2010 WMP definitions were more consistent with the 1988 Adjudication Order. Highland also asserts that the definition of “Critical Period” as set forth in the 2010 WMP needs to be added to the WMP.

**Response to Comment No. 31: This WMP is different from previous WMPs. This WMP incorporates a 600,000 AF drought trigger level and imposes curtailment triggers to help prevent the lakes falling below 600,000 AF. LCRA has proposed adding the 600,000 AF storage level in renumbered Finding of Facts 16 and 19, and the ED agrees with these proposed changes. The ED also believes that these changes should be incorporated into the WMP under Ordering Provision 1.d. The ED has also modified Ordering Provision 1.d. to include renumbered Findings of Fact 16 and 19. The WMP will prevail over the Findings of Fact in cases of inconsistency. Therefore, the ED does not believe that these terms need to be changed.**

Comment No. 32: Highland comments that “Combined Managed Conservation Storage” should be defined in the Glossary in Section 4.7 in the WMP.

**Response to Comment No. 32: The term “Combined Managed Conservation Storage” is described in Technical Paper A-7, which is referenced in 4.7 of the WMP and is considered part of the WMP. Therefore, the ED does not believe adding the term to the Glossary is necessary.**

## **TRANSPARENCY**

Comment No. 33: CTWC comments that LCRA should ensure transparency in the critical decisions LCRA makes affecting people’s water supplies, and all data, models, and formulas used by LCRA for its decision making analyses should be readily available to the public.

**Response to Comment No. 33: The TCEQ encourages transparency in this process.**

## **MODELING AND MODELING DATA**

Comment No. 34: CTWC asks whether it is possible for the TCEQ to run the models used for the revised WMP using 2014 data inputs by the end of 2015, and if not, why not.

**Response to Comment No. 34: The process to extend the naturalized flows is detailed and intensive just as it was when the TCEQ extended the flows through 2013. Such a detailed and intensive process will not be completed by the end of 2015.**

Comment No. 35: CTWC asks what the reasoning is behind revising the WMP one year after the OCR comes online.

**Response to Comment No. 35: The models used to support LCRA's 2014 WMP assumed that LCRA's water rights are operated the way they are today. Although, the OCR is permitted, construction has not been completed. The ED believes an additional year of data with the OCR in place would provide sufficient data to inform development of a future WMP.**

Comment No. 36: The City comments that any prospective benefit to combined storage from an off-channel reservoir is unproven under the proposed plan.

**Response to Comment No. 36: The prospective benefit to combined storage from an OCR is not included in the proposed plan. An additional year of data with the OCR in place could inform development of a future WMP. This is addressed in Ordering Provision 1.f.iii.**

### **COMBINED FIRM YIELD**

Comment No. 37: CTWC comments that concerns remain regarding the calculation of the combined firm yield of the Highland Lakes. It is hard to see how the combined firm yield of the lakes has only decreased by 11,112 acre-feet/year since the 2002-2003 timeframe.

**Response to Comment No. 37: Section 3.2 of the WMP discusses the combined firm yield computation. Additional information can be found in technical paper A-6. The ED performed a technical review of LCRA's calculation. The Combined Firm Yield was determined based on the average annual amount of water supplied during the critical period. The calculation of this firm yield is reasonable and consistent with that used for the previous estimate of the combined firm yield recognized in the commission's 1989 order.**

### **CONSERVATION**

Comment No. 38: CTWC comments that the proposed WMP lacks incentives for water conservation throughout the basin. CTWC states that the WMP should include a

method by which water saved through conservation efforts of a user group is reserved for the use of those who saved it.

**Response to Comment No. 38: The ED reviewed LCRA's water conservation plan and found it to meet the requirements of TCEQ's rules.**

#### **WHEN WILL THE WMP BE IN PLACE AND IN OPERATION**

Comment No. 39: CTWC asks if all the hearing requests on this application are withdrawn, does the TCEQ expect that the revised WMP will be in place and operating by January 1, 2016.

**Response to Comment No. 39: The ED believes that this is possible if all the hearing requests are unconditionally withdrawn.**

#### **NOTICE**

Comment No. 40: The City comments that the City's proposed changes should not require any re-notice of the application. The City comments that after review of relevant law, and in particular the Chocolate Bayou decision, the City concludes that none of the changes requested herein should in any manner require renote of the application. *Chocolate Bayou Water Co. & Sand Supply v. Texas Natural Res. Conservation Comm'n*, 124 S.W.3d 844, 851 (Tex. App. 2003). The City further comments that none of the specifics about timeframes for updating the WMP and modeling criteria for implementing the Look-Ahead Test are included in application notice, so modifying these provisions would not modify the notice.

**Response to Comment No. 40: The ED agrees that further notice will not be required.**

#### **MOVE FORWARD WITH THE WMP**

Comment No. 41: Mr. Gertson comments that it is time to move on with this application, which is a better product than the 2010 WMP, and that he hopes that hearing requestors will withdraw their hearing requests.

Comment No. 42: Mr. Foster also expresses that he wishes to move forward with the WMP.

Comment No. 43: The City and CTWC comment that they want to move forward with the application, but also had changes to the draft Order.

**Response to Comment Nos. 41-43: The ED acknowledges the comments.**

#### **DESALINATION**

Comment No. 44: Mr. Werchan comments that Freeport, Texas is building a Desalination Plant, which is about 34 miles along on the coast from Matagorda. Mr. Werchan asks whether it could be possible to pump fresh water to Matagorda for the rice farmers.

**Response to Comment No. 44: The ED has not evaluated this possibility because we do not have an application pending related to this project.**

Comment No. 45: Mr. Werchan asks whether the rice farmers are using some way to retain runoff water when severe storms are in the area. Mr. Werchan comments that LCRA is building 3 reservoirs to catch runoff water and suggests that farmers do the same. Mr. Werchan asks what the cost of these 3 reservoirs would be and what it would cost to pump the desalinated water to Matagorda instead.

**Response to Comment No. 46: The ED does not know whether rice farmers are using runoff water when there are severe storms or if they have reservoirs to catch runoff water. LCRA is not required to have these alternatives for an application to amend its WMP. The ED also does not know what the cost for this would be.**

Comment No. 47: Mr. Werchan comments that with the current changes in weather, that Matagorda may not be the best place to grow rice. Mr. Werchan asks whether there are other locations with water where rice can grow. Mr. Werchan suggests Buchanan Dam, Lake Travis, or Brushy Creek if the water could be retained into holding areas. Mr. Werchan suggests that a better location can be found to grow rice where much needed water is not being released half way across the state.

**Response to Comment No. 47: The ED acknowledges the comment. However, these issues are outside of the TCEQ's review of the WMP.**

Comment No. 48: Mr. Werchan comments that Governor Abbot signed a bill to begin using Desalination as a way to obtain more water sources in Texas. Mr. Werchan suggests that desalination is a wise choice; since Matagorda is so close to the coast and another plant this would be a wise choice to work out the problem. Mr. Werchan states that like other farmers in Texas, rice farmers have to depend on the weather for a crop and in some cases their crops have been lost. Maybe it is time if you so choose not to use Desalination water for Matagorda to not have rice farming in that area.

**Response to Comment No. 48: The ED acknowledges the comment. Desalination is not included in LCRA's application to amend its WMP.**

**This is the end of the ED's Response to Comments.**

The ED's amended proposed Draft Order is attached to this RTC. This amended order incorporates the changes to the proposed Draft Order discussed in the ED's Responses to Comments above. This amended order also includes changes to the proposed Draft Order that the ED made in response to LCRA's letters of August 17, 2015 and September

3, 2015. In those letters, LCRA proposed changes to the proposed Draft Order to reflect agreements LCRA had made with some of the hearing requestors. The ED has approved these changes, with one exception that is discussed above in Response to Comments Nos. 20 and 21.

The ED also adds Finding of Fact No. 37 and Ordering Provision No. 2 based on LCRA's request, in a letter dated October 1, 2015, to clarify which Water Management Plan's environmental flow requirements apply during a transition period from the effective date of the Order to February 29, 2016, for purposes of determining the applicable environmental flow criteria.

Changes made to the ED's proposed Draft Order that are not discussed in the ED's Responses to Comments above, are: Finding of Fact 8; new Findings of Fact 9, 10, and 37; Renumbered Findings of Fact 25(b), 25(i), 27, and 33-35; Conclusion of Law 1; new Conclusion of Law 3, and new Ordering Provision 2.

Respectfully submitted,

TEXAS COMMISSION ON  
ENVIRONMENTAL QUALITY

Richard A. Hyde, P.E.  
Executive Director

Caroline Sweeney, Deputy Director  
Office of Legal Services

Robert Martinez, Director  
Environmental Law Division

By   
Robin Smith, Staff Attorney  
State Bar of Texas No. 18645600

By:   
Dinniah C. Tadema, Staff Attorney  
State Bar No. 24050400

Environmental Law Division, MC 173  
P.O. Box 13087  
Austin, Texas 78711-3087  
(512) 239-0600  
(512) 239-0606 (FAX)  
robin.smith@tceq.texas.gov  
dinniah.tadema@tceq.texas.gov  
Phone: 512.239.0600  
Fax: 512.239.0626

ATTORNEYS FOR THE  
EXECUTIVE DIRECTOR

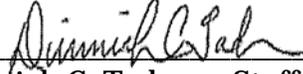
**CERTIFICATE OF SERVICE**

I certify that on the 1St day of October 2015, a true and correct copy of the foregoing *Executive Director's Response to Comments* was filed with the Chief Clerk of the Texas Commission on Environmental Quality in Austin, Texas.



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Robin Smith, Attorney  
Environmental Law Division  
Texas Commission on Environmental Quality



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Dinniah C. Tadema, Staff Attorney  
Environmental Law Division  
Texas Commission on Environmental Quality

# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



## ORDER APPROVING AMENDMENTS TO LOWER COLORADO RIVER AUTHORITY'S WATER MANAGEMENT PLAN

On the \_\_\_ day of \_\_\_, 2015, the Texas Commission on Environmental Quality ("Commission") considered the Lower Colorado River Authority's ("LCRA") application (Application No. 5838A) to amend its Water Management Plan (WMP) and having heard evidence and arguments concerning Application No. 5838A and the proposed order, the Commission makes the following Findings of Fact and Conclusions of Law:

### FINDINGS OF FACT

- 1) LCRA's Application No. 5838A to amend the WMP was received by the Commission on March 12, 2012, and was declared administratively complete on April 19, 2012. Technical review was completed in November 2012 and the application was sent to notice and the comment period ended on May 28, 2013. On June 3, 2013, based on public comment and the ongoing drought conditions, the Executive Director determined that further evaluation of LCRA's application was necessary. In May 2014, after review of more recent severe drought data, the Executive Director's staff issued a draft report with recommendations related to the curtailment of interruptible stored water. On October 31, 2014, LCRA submitted a revised and supplemental application to amend its WMP that was intended to replace the 2012 WMP application. By statute, the technical review must be complete within one year of the administrative complete date. Technical review of LCRA's October 31, 2014 amended application was completed on June 11, 2015.

LCRA filed another revision to its application on May 21, 2015 to ~~amend the part of its application related to removing from the WMP those elements of LCRA's Raw Water Drought Contingency Plans that are required by TCEQ's rules in 30 Tex. Admin. Code Chapter 288 but not required by prior WMP orders~~ **include its Firm Raw Water Drought Contingency Plan (Firm Customer DCP) in the WMP.**

- 2) The WMP for the Lower Colorado River Basin defines LCRA's water management program and policies in accordance with the 1988 Final Judgment and Decree, *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*; the Enabling Act of the Lower Colorado River Authority; general Law of the State of Texas, particular the Texas Water Code; LCRA's Certificates of Adjudication Nos. 14-5478 and 14-5482, as amended; the Commission's Orders concerning the WMP; and the **water** policies of the Lower Colorado River Authority's

Board of Directors. The LCRA's original and amended and supplemental applications were filed as allowed by these authorities.

- 3) Notices of the original and revised and supplemental applications to amend the WMP were each published in newspapers regularly published and generally circulated in Mason, San Saba, Lampasas, Llano, Burnet, Travis, Bastrop, Gillespie, Williamson, Fayette, Colorado, Wharton and Matagorda Counties, Texas. These counties are the only counties in which persons reside who may be affected by action taken by the Commission on the proposed amendments.
- 4) Notices of the original and revised and supplemental applications to amend the WMP were sent by first-class mail to the water right holders of record in the Colorado River Basin as required by law.
- 5) The Executive Director's technical review of the revised and supplemental application evaluated the impacts of this amendment to the Water Management Plan on existing water rights and the environment. Because this application did not change any authorizations in LCRA's Certificates of Adjudication, a complete technical review under TWC Section 11.134 was not necessary or appropriate. However, the Executive Director's technical review did include examination of LCRA's model simulations, LCRA's water use and demand projections, and LCRA's recalculation of the combined firm yield of Lakes Buchanan and Travis.
- 6) The Executive Director also determined that the amendments to the WMP requested in the revised and supplemental application do not impair existing water rights, do consider applicable environmental flow standards for the environment, are not detrimental to the public welfare, comply with TCEQ rules regarding water conservation and drought contingency plans; and are consistent with the Regional Water Plan.
- 7) The January 27, 2010 TCEQ order approving the previous amendment to the WMP required LCRA to file another amendment to address the following:
  - a. Interruptible curtailment procedures to ensure LCRA can satisfy projected firm customer demands during intense drought conditions such as those experienced over the past several decades;
  - b. Evaluation of the criteria for determining a drought worse than the Drought of Record;
  - c. Evaluation of the minimum combined storage in Lake Travis and Buchanan that would be necessary or appropriate to protect firm water customers either during a repeat of the Drought of Record or under worse conditions;
  - d. Incorporation of changes to address LCRA's agreements with STP Nuclear Operating Company (STPNOC);
  - e. LCRA's 2007 agreement with the City of Austin regarding return flows in the lower Colorado River;
  - f. Revisions to LCRA's procedures for providing water for environmental flows using the best scientific data available including provisions to accommodate

changing conditions within a year, limiting harmful intra-daily fluctuations in streamflows, and, to the maximum extent reasonable, specification of an overall instream flow regime.

- 8) LCRA's application to amend its WMP addresses items ~~5~~-(a) through ~~5~~-(f) in Finding of Fact No. 7.
- 9) In addition to receiving firm water provided by LCRA under the agreements with STPNOC described in Finding of Fact 7.d, STPNOC has rights to divert water downstream of the Highland Lakes for use at the South Texas Project pursuant to such agreements and certificate of adjudication No. 14-5437, as amended.
- 10) In the process of incorporating changes to address LCRA's agreements with STPNOC as required by the previous order, LCRA included assumptions about its supply of water to STPNOC, and STPNOC's diversion and use of water. LCRA's actual supply of water to STPNOC, and STPNOC's actual diversion and use of water pursuant to its agreements with LCRA and pursuant to certificate of adjudication No. 14-5437, may vary from the assumptions that LCRA used.
- ~~9~~11) LCRA engaged an advisory committee consisting of basin stakeholders prior to its initial application filed in 2012. The advisory committee process was required by the January 27, 2010 order to allow meaningful participation by interested basin stakeholder groups and achieve regional consensus, where possible, during the WMP revision process. Following TCEQ's draft report in May 2014, LCRA held meetings with stakeholders throughout the summer of 2014, prior to filing the revised and supplemental application. The stakeholder input process is documented in materials submitted by LCRA in support of its original and revised and supplemental applications, filed on March 12, 2012 and October 31, 2014.
- ~~10~~12) LCRA requested changes to the WMP based on the stakeholder process and the Executive Director's May 2014 draft report. These requested changes are designed to address protection of firm water demands, and to incorporate updated environmental flow studies and LCRA's agreements with STP Nuclear Operating Company and the City of Austin. All of these proposed amendments to the WMP are detailed in submissions filed with the Executive Director by LCRA on October 31, 2014, November 18, 2014, March 5, 2015, April 13, 2015 and May 21, 2015.
- ~~11~~13) LCRA's proposed substantive revisions to the WMP under this amendment fall within three areas: 1) Interruptible Stored Water Availability; 2) a new determination of the combined firm yield; and 3) new environmental flow criteria based on the most recent scientific studies and implementation of those criteria.
- ~~12~~14) Under the WMP, firm demands take precedence over all other uses; therefore, LCRA's proposed amendment to the WMP requests a reduction in interruptible supplies to compensate for an increase in firm demands. The reduction in interruptible supplies is intended to offset the increase in firm demands.

~~13)~~15) LCRA's projected firm demands used to develop this WMP are approximately 350,086 acre-feet per year and reflect anticipated demands between 2010 and 2020.

~~14)~~16) LCRA's proposed revisions to its curtailment policies and procedures are intended to ensure that LCRA can satisfy current and projected firm demands during drought conditions, ~~in part by maintaining a higher minimum storage level through a repeat of the drought of record than was maintained in previous WMPs,~~ and to ensure that, in simulations of this WMP, LCRA's release of interruptible stored water does not result in combined storage dropping to the Drought Worse than Drought of Record (DWDR) storage trigger (currently 600,000 acre feet). LCRA's curtailment methods have been found to be an acceptable approach in earlier Commission orders. The use of various rule curves and procedures continues to be an acceptable approach for addressing the allocation of interruptible stored water because this approach will allow LCRA to be responsive to changes in water supply conditions throughout the year while protecting firm demands.

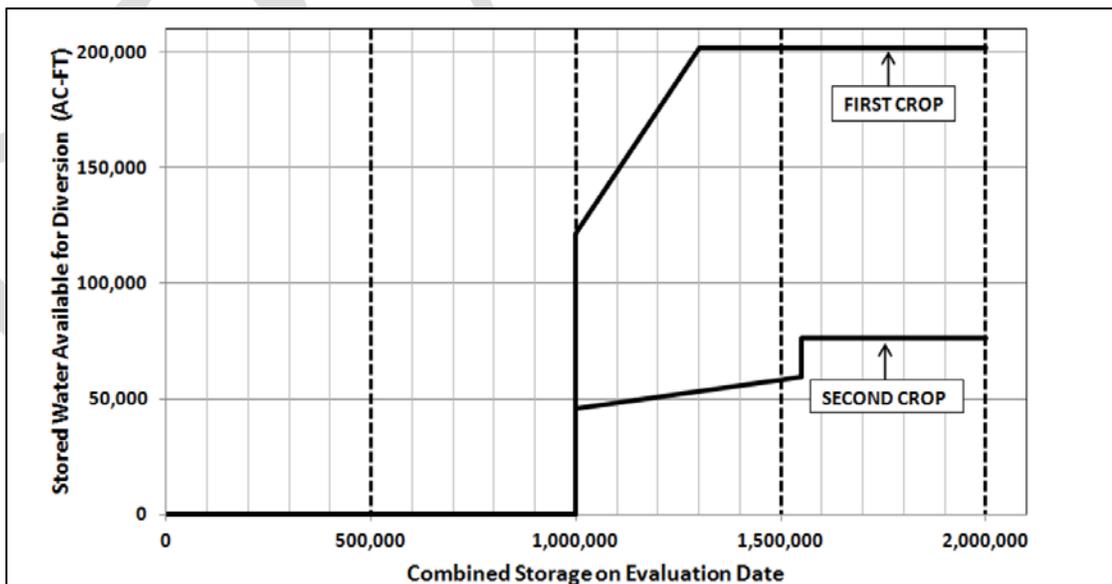
~~15)~~17) LCRA proposes to revise the annual interruptible water supply curtailment policy described in Chapter 4 of the WMP. The curtailment policy includes the following:

- a. LCRA will determine availability of Interruptible Stored Water for its Gulf Coast, Lakeside operations and Pierce Ranch separately for the first and second (ratoon) crops and apply volumetric limits on the availability of Interruptible Stored Water for each crop season. (WMP Section 4.3.2.)
- b. The amounts of Interruptible Stored Water for LCRA's Gulf Coast and Lakeside agricultural operations, and Pierce Ranch will be determined taking into consideration what Water Supply Condition is in effect: "Normal", "Less Severe Drought", or "Extraordinary Drought". (WMP Section 4.3.2.)
- c. The Water Supply Condition will be evaluated on March 1 and July 1 (Evaluation Dates), taking into account inflows and the combined storage of Lakes Buchanan and Travis. (WMP Section 4.2.)
- d. The Normal condition will be in effect if:
  - i. Neither the Less Severe Drought condition nor the Extraordinary Drought condition were in effect for the period prior to the Evaluation Date, and, on the Evaluation Date neither the criteria for entering Less Severe Drought or Extraordinary Drought are met; or
  - ii. The Less Severe Drought or Extraordinary Drought condition was in effect for the period prior to the Evaluation Date and the criteria for lifting Less Severe Drought is met on the Evaluation Date. (WMP Section 4.2.2.)
- e. The Less Severe Drought conditions will be in effect if:

- i. Combined storage in Lakes Buchanan and Travis is below 1,600,000 acre-feet and cumulative inflows into the lakes for the three months preceding the Evaluation Date are less than 50,000 acre-feet; or
  - ii. Combined storage in Lakes Buchanan and Travis is below 1,400,000 acre-feet and cumulative inflows into the lakes for the three months preceding the Evaluation Date are less than the 33<sup>rd</sup> percentile of inflows to the lakes for that three month period. The 33<sup>rd</sup> percentile will be based on United States Geological Survey streamflow data. (WMP Section 4.2.3.1.)
- f. The Less Severe Drought condition is also entered upon exiting the Extraordinary Drought condition, unless, the criteria for exiting Less Severe Drought condition is also met on the Evaluation Date. (WMP Section 4.2.3.1.)
- g. The Less Severe Drought condition will no longer be in effect if:
  - i. Combined storage in Lakes Buchanan and Travis has been above 1,600,000 acre-feet for one or more days during the period preceding the Evaluation Date and neither of the criteria for entering a Less Severe Drought condition is met on the Evaluation Date; or
  - ii. Combined storage in Lakes Buchanan and Travis has been above 1,400,000 acre-feet for one or more days during the period preceding the Evaluation Date, cumulative inflows to the lakes for the preceding three months are at or above the 50<sup>th</sup> percentile of inflows for that three month period, and neither of the criteria for entering Less Severe Drought are met on the Evaluation Date. The 50<sup>th</sup> percentile will be based on United States Geological Survey streamflow data. (WMP Section 4.2.3.2.)
- h. Extraordinary Drought will be in effect if:
  - i. Combined storage in Lakes Buchanan and Travis is below 1,300,000 acre-feet on the Evaluation Date; and
  - ii. Drought duration is at least 24 months; and
  - iii. The inflow intensity test for a declaration of a Drought Worse than the Drought of Record is met. (WMP Section 4.2.4.1.)
- i. Extraordinary Drought remains in effect until:
  - i. Combined storage in Lakes Buchanan and Travis has been above 1,300,000 acre-feet for one or more days during the period preceding the Evaluation Date; and
  - ii. The criteria for entering Extraordinary Drought are not met on the Evaluation Date. (WMP Section 4.2.4.2.)

j. Under Normal conditions, the total amount of interruptible stored water to be made available for diversion at the Gulf Coast, Lakeside and Pierce Ranch irrigation operations is as follows:

- i. First Crop
  - a. For combined storage of 1,300,000 acre-feet or more – 202,000 acre-feet;
  - b. For combined storage between 1,299,999 and 1,000,000 acre-feet – a sliding scale from 202,000 acre-feet at 1,299,999 acre-feet of combined storage to 121,500 acre-feet at 1,000,000 acre-feet of combined storage; and
  - c. Below 1,000,000 acre-feet, no water except for Garwood irrigation operation consistent with prior contracts between Garwood and LCRA.
- ii. Second Crop
  - a. For combined storage of 1,550,000 or more – 76,500 acre-feet;
  - b. For combined storage between 1,549,999 acre-feet and 1,000,000 acre-feet – a sliding scale from 59,500 acre-feet at 1,549,999 acre-feet of combined storage to 46,000 acre-feet at 1,000,000 acre-feet of combined storage; and
  - c. Below 1,000,000 acre-feet no water except for Garwood irrigation operation consistent with prior contracts between Garwood and LCRA. (WMP Section 4.3.2.1.)



k. During Normal conditions, if the combined storage in Lakes Buchanan and Travis falls below 900,000 acre-feet at any time during either the first or second crop season, all releases of Interruptible Stored Water to Gulf Coast,

Lakeside and Pierce Ranch will be cut off for the remainder of the crop season. (WMP Section 4.2.3.1.)

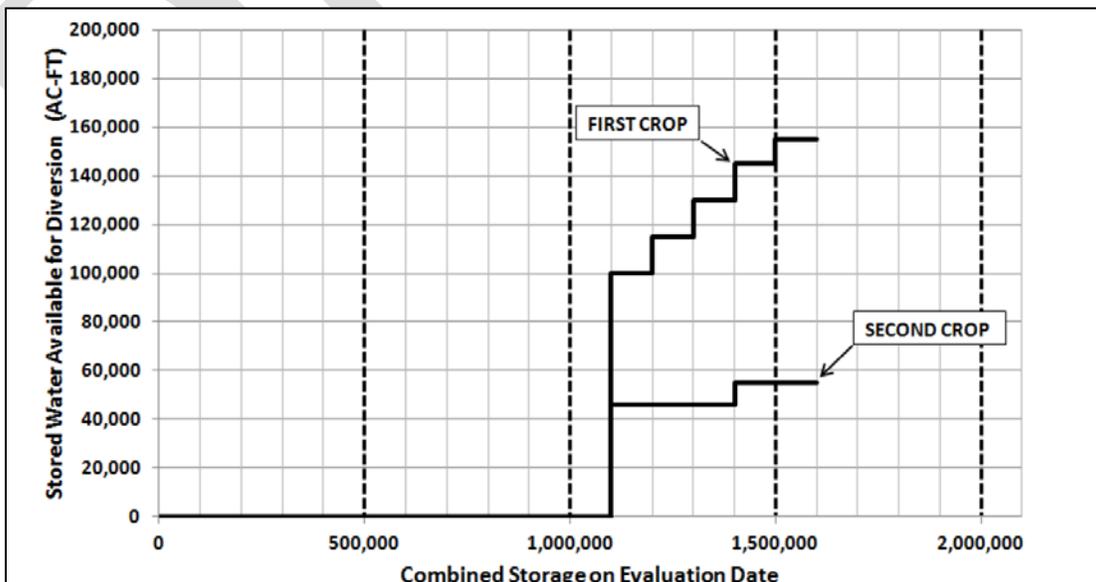
1. Under Less Severe conditions, the total amount of interruptible stored water to be made available for diversion at the Gulf Coast, Lakeside and Pierce Ranch irrigation operations is as follows:

i. First Crop

- a. For combined storage of 1,500,000 to 1,599,999 acre-feet – 155,000 acre-feet;
- b. For combined storage between 1,400,000 and 1,499,999 acre-feet – 145,000 acre-feet;
- c. For combined storage between 1,300,000 and 1,399,999 acre-feet – 130,000 acre-feet;
- d. For combined storage between 1,200,000 and 1,299,999 acre-feet – 115,000 acre-feet;
- e. For combined storage between 1,100,000 and 1,199,999 acre-feet – 100,000 acre-feet; and
- f. Below 1,100,000 acre-feet, no water except for Garwood irrigation operation consistent with prior contracts between Garwood and LCRA.

ii. Second Crop

- a. For combined storage of 1,400,000 to 1,599,999 acre-feet – 55,000 acre-feet;
- b. For combined storage between 1,100,000 acre-feet and 1,399,999 acre-feet – 46,000; and
- c. Below 1,100,000 acre-feet no water except for Garwood irrigation operation consistent with prior contracts between Garwood and LCRA. (WMP Section 4.3.2.2.)



- m. During Less Severe Drought conditions, if the combined storage in Lakes Buchanan and Travis falls below 950,000 acre-feet at any time during either the first or second crop season, all releases of Interruptible Stored Water to Gulf Coast, Lakeside and Pierce Ranch will be cut off for the remainder of the crop season. (WMP Section 4.3.2.2.)
- n. If releases of Interruptible Stored Water to Gulf Coast, Lakeside and Pierce Ranch are cut off in the middle of a crop season, LCRA will not provide any pass-through run-of-river water that originates upstream of Lake Travis under LCRA's water rights that were historically associated with the Gulf Coast, Lakeside, and Pierce Ranch operations unless and until the combined storage in Lakes Buchanan and Travis is above 1,300,000 acre-feet. If combined storage remains above 1,300,000 acre-feet during the remainder of the crop season, LCRA will make these Pass-Through run-of-river supplies available limited to the amount needed to finish the crop. (WMP Sections 4.3.2.1 and 4.3.2.2.)
- o. If releases of Interruptible Stored Water to Gulf Coast, Lakeside and Pierce Ranch for the first crop are cut off for the entire season, releases of interruptible stored water are also cut off for the second crop season. (WMP Sections 4.3.2.1 and 4.3.2.2.)
- p. If all available Interruptible Stored Water for Gulf Coast, Lakeside and Pierce Ranch has been diverted for the first crop season, but Interruptible Stored Water for these operations is available for the second crop season, all or part of the Interruptible Stored Water available for the second crop season can be used to finish the first crop season. (WMP Sections 4.3.2.1 and 4.3.2.2.)
- q. If Extraordinary Drought conditions are in effect, no Interruptible Stored Water or Pass-Through run-of-river water under LCRA's water rights historically associated with the Gulf Coast, Lakeside and Pierce Ranch operations will be made available for diversion within those operations. (WMP Section 4.3.2.3.)
- r. Interruptible stored water may be available in the Garwood irrigation operation for storage levels lower than indicated in the curtailment curves based on prior contracts between Garwood and LCRA. (WMP Sections 4.3.2.1, 4.3.2.2 and 4.3.2.3.)
- s. The amount of water available for Gulf Coast, Lakeside and Pierce Ranch will be based on the water supply condition combined with a Look-Ahead test. If the LCRA Board determines, under the Look-Ahead test, that the release of Interruptible Stored Water under either the Normal condition or Less Severe Drought condition (whichever is in effect) in the upcoming crop season would result in the combined storage in Lakes Buchanan and Travis falling below 600,000 acre-feet in the next twelve months or below 900,000 acre-feet in the upcoming crop season then no Interruptible Stored Water or Pass-Through

run-of-river water will be released for Gulf Coast, Lakeside and Pierce Ranch for the upcoming crop season. (WMP Section 4.3.2.4.)

- t. In making its determination under the Look-Ahead Test, the LCRA Board will consider antecedent conditions, current storage and forecasted conditions. LCRA shall use the 99 percent exceedance probability, unless a different trend for inflows and combined storage is being observed. However, in no case shall LCRA's determination rely on less than a 95 percent exceedance probability. Exceedance probability refers to the likelihood that a future outcome will be better than the specified value. (WMP Section 4.3.2.4.)
- u. A Drought Worse than Drought of Record is a drought condition identified by the LCRA Board of Directors pursuant to criteria in the Water Management Plan where an ongoing drought has a real likelihood of becoming a new Drought of Record. A DWDR declaration would trigger action to cut off Interruptible Stored Water and implement mandatory pro rata curtailment of Firm Water demands. The Drought of Record is defined as the worst hydrologic drought for which streamflow records are available and is considered to be the period of time during recorded history with natural hydrologic conditions provided the least amount of water supply. For the Water Management Plan, the Drought of Record is the drought of the 1940s and 50s. (WMP Sections ES-G and 4.7.)
- v. The amount of water to be allocated to the individual downstream interruptible agricultural operations and to individual customers within the operations will be determined in accordance with LCRA's Drought Contingency Plan for interruptible water (Interruptible DCP) and applicable agreements and contracts.

~~16)~~18) If LCRA operates Lakes Buchanan and Travis in accordance with the basic goals and guidelines included in Section 1.2 of the WMP, there should be no impact to water rights in the Colorado River Basin as a result of LCRA's requested amendments to its WMP greater than if the water rights for Lakes Buchanan and Travis were fully exercised.

~~17)~~19) The modeled simulations of the proposed curtailment procedures demonstrate that firm customer demands can be met through a repeat of the entire period of record, 1940-2013, including through a repeat of the Drought of Record, which is defined as the drought of the 1940s and 50s for the 2014 this WMP- **and combined storage in Lakes Travis and Buchanan is maintained above 600,000 acre feet.**

~~18)~~20) In 2011, 2013, 2014 and 2015, LCRA applied for, and TCEQ granted, emergency orders allowing LCRA to deviate from the existing WMP with respect to curtailment procedures for interruptible stored water as a result of severe drought conditions. Further, in 2014 and 2015, LCRA applied for, and TCEQ granted, emergency orders allowing LCRA to deviate from the existing WMP with respect to providing stored water for environmental flows. This WMP amendment includes additional protections for LCRA's firm water customers and changed curtailment procedures for

supplying interruptible stored water, which should mitigate the impacts of future severe conditions. If severe dry weather conditions occur in the future, beyond those considered in this WMP that cannot be addressed through curtailment procedures in the WMP (WMP Section 4.3 and Section 4.4), LCRA can apply for an Emergency Order to allow deviations from the WMP curtailment procedures for interruptible stored water or environmental flow conditions.

~~19)~~21) This WMP amendment reduces the amount of interruptible stored water available for customers outside of the four downstream irrigation operations, and eliminates provision of water to such customers after 2018. (WMP Section 4.5.)

~~20)~~22) Based on updated modeling using a modified version of the TCEQ's water availability model (WAM) for the Colorado River Basin, the combined firm yield of Lakes Travis and Buchanan is reduced from 535,812 acre-feet (which includes 90,546 acre-feet of water associated with O.H. Ivie Reservoir) to 434,154 acre-feet (which does not include an amount for O.H. Ivie Reservoir). The combined firm yield was determined based on the average annual amount of water supplied during the critical period. The calculation of this firm yield is reasonable and consistent with that used for the previous estimate of the combined firm yield recognized in the commission's 1989 order. The new combined firm yield is a net reduction of 11,112 acre-feet from the previously calculated combined firm yield. The combined firm yield is subject to change in future WMP revisions. (WMP Section 3.2.)

~~21)~~23) LCRA's amendment to the WMP includes a change in the procedure for supplying water to help meet instream flow needs at certain locations downstream of Lady Bird Lake and incorporates specific instream flow values based on the most recent scientific studies, and summarized as follows (and included in WMP Section 4.4.2):

- a. Three levels of instream flows: 1) subsistence; 2) base-dry; and 3) base-average.
- b. The amount of water provided for instream flows, i.e. whether subsistence, base-dry, or base-average flow levels would apply, will be determined based on combined storage on March 1<sup>st</sup> and July 1<sup>st</sup>.
- c. The specific trigger levels for determining which instream flow levels apply on each Evaluation Date are:
  - i. When the combined storage in Lakes Travis and Buchanan is above 1,960,000 acre-feet, base-average conditions apply;
  - ii. When the combined storage in Lakes Travis and Buchanan is between 1,900,000 and 1,960,000 acre-feet, base-dry conditions apply; and
  - iii. When the combined storage in Lakes Travis and Buchanan is less than 1,900,000 acre-feet, subsistence conditions apply.
- d. LCRA will make releases from Lakes Buchanan and Travis limited to the daily storable inflows to help meet base-average and base-dry instream flows. In addition to storable inflows, previously stored water will be released as necessary to maintain Subsistence flows at the four streamflow gauging locations identified in Table 4-3 of the WMP.

- e. In the event of a pro rata curtailment of firm supplies, the applicable instream flow criteria will be subject to the same percentage curtailment as imposed on LCRA's firm water customers.
- f. For purposes of this amendment to the WMP, the subsistence and base flow criteria for gauges other than the Austin gauge, are daily (or daily average) flow values. The subsistence criteria at Austin represent minimum (or instantaneous) flow requirements.
- g. LCRA's ability to meet the instream flow requirements set forth in the WMP may, in rare instances, be impaired by certain unavoidable constraints such as the capacity of its hydro-generation units and hydro-generation scheduling mandates as well as unforeseen diversions, unforeseen changes in flow conditions downstream, unforeseen or unscheduled operations at Longhorn Dam, and adjustments to the ratings of the applicable gages.
- h. For the Bastrop gauge, the following minimum flow requirements apply:
  - i. During those times when base-average criteria are in effect, the minimum (or instantaneous) flow requirements, subject to availability of storable inflows, shall be 70 percent of the base-average criteria for the given month.
  - ii. During those times when base-dry criteria are in effect, the minimum (or instantaneous) flow requirements, subject to availability of storable inflows, shall be 70 percent of the base-dry criteria for the given month.
  - iii. During those times that subsistence criteria are in effect, releases shall be scheduled such that the minimum flow does not drop below:
    - 1. 90 percent of the subsistence criteria when the combined storage in Lakes Travis and Buchanan is equal to or greater than 1,400,000 acre-feet; or
    - 2. 80 percent of the subsistence criteria when the combined storage in Lakes Travis and Buchanan is less than 1,400,000 acre-feet.

~~22)~~24) LCRA is not required to manage water in the lower Colorado River to specifically provide for pulse flows under this amendment to the WMP. However, LCRA will monitor pulse flows during the time period that this amendment to the WMP is in effect to assess whether pulse flows are occurring at the frequency recommended in the 2008 instream flow study of the lower Colorado River. (WMP Section 4.4.2.)

~~23)~~25) LCRA's amendment to the WMP includes a change in the procedures for supplying water to help meet freshwater inflow needs and the freshwater inflow criteria are based on the most recent scientific studies. (WMP Section 4.4.3.)

- a. The freshwater inflow criteria are based upon recent studies as described in Section 2.4.2 of the WMP.
- b. The WMP freshwater inflow criteria include five levels of inflow to help meet freshwater inflow needs and, **with the exception of threshold criteria**, are

defined using two-month operational criteria, as described in Table 4-6 of the WMP.

- c. At the end of each month, to the extent storable inflows are available, LCRA will provide storable inflows, if available, as necessary to meet the two-month operational criteria.
- d. In May and June, LCRA will determine if the three month spring freshet requirement as described in Table 4-5 of the WMP has been met within the spring period, and, if so, the two-month operational criteria will be reduced to the corresponding amount for the intervening period.
- e. In September and October, LCRA will determine if the three month fall freshet requirement as described in Table 4-5 of the WMP has been met within the fall period, and, if so, the two-month operational criteria will be reduced to the corresponding amount for the intervening period.
- f. In all months, LCRA will release storable inflows to help meet the Threshold level of 15,000 acre-feet per month, to the extent of storable inflows.
- g. The combined storage trigger at which specific freshwater inflow levels apply can be found in Table 4-7 of the WMP.
- h. In the event of a pro rata curtailment of firm supplies, the applicable freshwater inflow criteria will be subject to the same percentage curtailment as imposed on LCRA's firm water customers.
- i. **Except as provided in Finding of Fact 25.j**, any time releases of Interruptible Stored Water for Gulf Coast, Lakeside and Pierce Ranch are cut off, only the Threshold requirement will be in effect.
- j. If releases for Gulf Coast, Lakeside and Pierce Ranch are cut off for the second crop but combined storage in Lakes Buchanan and Travis are above 1,300,000 acre-feet on July 1<sup>st</sup>, the two-month operational criteria shall be in effect; however, LCRA's releases of storable inflows to meet the operational criteria will be limited to no more than 50% of the storable inflows remaining after the release of storable inflows for instream flows or Threshold inflow levels, with a maximum release in a single month of 82,000 acre-feet.
- k. If combined storage in Lakes Buchanan and Travis falls below 1,000,000 acre-feet at any time, the only criteria in effect from that month through the next Evaluation Date is Threshold.
- l. If combined storage in Lakes Buchanan and Travis is below 1,300,000 acre-feet at the end of a month, the maximum release of storable inflows to help meet freshwater inflow criteria is 25,000 acre-feet.
- m. When Less Severe Drought conditions are in effect, releases of storable inflows to meet the operational criteria are limited to no more than 50% of the storable inflows remaining after the release of storable inflows for instream flows or Threshold inflow levels, with a maximum release in a single month of 82,000 acre-feet if storage is above 1,300,000 acre-feet at the end of the month and a maximum release for all freshwater inflow criteria of 25,000 acre-feet if storage is below 1,300,000 acre-feet.
- n. In certain instances, up to 5,000 acre-feet of storable inflows that are not released in a given month will be carried forward to help meet the Threshold criteria in the immediately following month.

- ~~24)~~26) The amount of water available to help meet environmental flow needs is subject to limits to ensure that the actual amounts made available do not exceed the amounts simulated in the development of the 2014 WMP revision for periods when combined storage in Lakes Buchanan and Travis was below 1,300,000 acre-feet on the Evaluation Date. The WMP includes annual and multi-year caps on water for environmental flows in Section 4.4.4 of the WMP.
- ~~25)~~27) These instream flow and freshwater inflow criteria, **exclusive of pulse flows and attainment frequencies**, are consistent with those recommended by the Colorado-Lavaca Senate Bill 3 science team and stakeholder groups that were adopted as environmental flow standards by TCEQ on August 8, 2012.
- ~~26)~~28) LCRA committed 33,440 acre-feet of firm water to environmental needs under the 2010 WMP. That amount is not changed in this amendment.
- ~~27)~~29) If LCRA operates Lakes Buchanan and Travis in accordance with Section 4.4 of the WMP, there should be no impact to the instream flows of the lower Colorado River or freshwater inflows to Matagorda Bay greater than if the water rights for Lakes Buchanan and Travis were fully exercised.
- ~~28)~~30) LCRA's amendment to the WMP includes changes to the criteria and procedures for the declaration and cancellation of a Drought Worse than the Drought of Record as specified in Section 4.7 of the WMP.
- ~~29)~~31) LCRA's DCP, as required by commission rules (30 Texas Administrative Code §§ 288.20 *et seq.*), was approved by the LCRA Board of Directors and submitted to the commission in June 2010. In December of 2011, the commission approved LCRA's Water Curtailment Plan for its firm customers. Under current commission rules, the DCP must be reviewed and updated as necessary every five years. Consistent with the requirements of Chapter 288, in February, 2012 and May, 2015, the LCRA Board approved modifications to the DCP including changes in drought response measures for firm water customers and changes in the allocation procedures for interruptible water customers. Changes to the LCRA Firm Customer DCP adopted by the Board in May 2015 **and included in Appendix F of the WMP are incorporated into Chapter 4 of the WMP by reference for all purposes as if set forth in Chapter 4 in full and will** become effective upon adoption of this WMP. Further revisions to the Interruptible DCP will be needed to ensure consistency with the amended WMP and prior to LCRA supplying interruptible stored water under the amended WMP. LCRA intends to publish its Interruptible DCP as a stand-alone document, once revised.
- ~~30)~~32) The WMP contains six appendices: 1) Appendix A, which include technical papers addressing projections of demands, assumptions of water availability models (WAMs), methodology of drought identification, and development of the combined firm yields of Lakes Buchanan and Travis, and WAMs; 2) Appendix B, which contains flood control regulation information; 3) Appendix C, which includes previous amendments and orders related to the WMP; 4) Appendix D, which includes the 1988 Final Judgment and Decree; 5) Appendix E, which contains relevant LCRA Board

policies, and 6) Appendix F, which contains LCRA's Firm Customer Drought Contingency Plan.

- ~~31)~~33) The naturalized flows in the Colorado WAM were updated through 2013 for this WMP. At this time Lakes Buchanan and Travis have not refilled. Updating the WAMs to include additional years of naturalized flows could **result in the calculation of different** affect the trigger levels and curtailment curves **than those** included in the 2014 WMP amendment or **of a different** the combined firm yield of Lakes Buchanan and Travis.
- ~~32)~~34) The models used to support LCRA's 2014 WMP include certain assumptions about LCRA's use of its downstream water rights that, if changed, could **result in the calculation of different** affect the trigger levels or curtailment curves **than those** included in the 2014 WMP amendment.
- ~~33)~~35) Actual water use by firm customers could increase in the future above the levels considered in the models used to support LCRA's 2014 WMP amendment in a way that could **result in the calculation of different** affect the trigger levels or curtailment curves.
- 36). **LCRA and Garwood Irrigation Company are parties to a 1987 Agreement and a 1998 Purchase Agreement, which agreements relate to the supply of water by LCRA in the Garwood irrigation division.**
- 37). **Because accounting for environmental flows under the 2010 Water Management Plan and the Water Management Plan approved by this Order is month to month, it is reasonable that provisions of the Water Management Plan approved by this Order relating to environmental flow requirements be effective at the beginning of the month after this Order is issued. March 1, 2016 is the first date under the Water Management Plan approved by this Order that the storage and inflow conditions will be used to determine the supply of interruptible water for agricultural customers and the criteria in effect to help meet environmental flow needs. Therefore, in order to transition between the Water Management Plans, the applicable Water Management Plan environmental flow criteria for the time between the effective date of this Order and February 29, 2016 should be described in the Ordering Provisions of this Order.**

#### CONCLUSIONS OF LAW

- 1) The commission considered this order under the authority and in accordance with Chapter 11 of the Texas Water Code, as amended and 30 Texas Administrative Code ("TAC") Chapter 295; the 1988 Final Judgment and Decree, *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*; the Enabling Act of the Lower Colorado River Authority; LCRA's Certificates of Adjudication Nos. 14-5478 and 14-5482, as amended; the Commission's Orders concerning the WMP; and the **water** policies of the Lower Colorado River Authority's Board of Directors.

- 2) By entering this order, the Commission is not construing in any way either the 1987 Agreement or the 1998 Purchase Agreement between LCRA and Garwood Irrigation Company. Nothing in this Order or the WMP approved by this Order shall be considered or construed in any way to support one construction or another of the 1987 Agreement and the 1988 Purchase Agreement between LCRA and Garwood Irrigation Company. Garwood Operations will be provided Interruptible Stored Water consistent with the Garwood Purchase Agreement. Proposed Water Management Plan, p. 4-8.
- 3) This order does not alter or construe LCRA's obligation to provide water to STPNOC, to the extent required by their agreements, or STPNOC's right to divert and use water pursuant to certificate of adjudication No. 14-5437, as amended. Nothing in this order or the Water Management Plan shall be considered to support one construction or another of such obligations and rights.
- 2)4) The commission has jurisdiction to consider and take action on LCRA's application to amend the WMP.

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

- 1) LCRA's amended Water Management Plan is approved with the following conditions:
  - a. LCRA's amended Water Management Plan is subject to all findings, conclusions, and conditions contained in the Commission's Orders dated September 20, 1989, December 23, 1991, December 18, 1992, March 1, 1999, and January 27, 2010 approving and amending the WMP, ~~except~~ to the extent not inconsistent with this order.
  - b. LCRA's amended Drought Management Plan including LCRA's amended Drought Contingency Plan is subject to all findings, conclusions, and conditions, contained in the commissions' September 20, 1989, December 23, 1991, December 18, 1992, March 1, 1999, and January 27, 2010 Orders and the LCRA's December 7, 2011 commission approved Water Curtailment Plan, ~~except~~ to the extent not inconsistent with this order.
  - c. LCRA agrees to be bound by the terms, conditions and provisions contained herein and such agreement is a condition precedent to the approval of the proposed amendments.
  - d. LCRA shall conform the text of the Water Management Plan to be consistent with the provisions of this Order, specifically to conform to Findings of Fact numbers ~~16., 175.s., and 175.t., 19., 23.b., and 31.~~ The Findings of Fact provide a summary of many of the provisions in LCRA's revised and supplemental WMP application. The Findings of Fact provide a summary of many of the provisions in the **WMP document** in LCRA's revised and supplemental WMP

application. With the exception of the Findings of Fact noted above, in the event of a conflict between the more general language in the Findings of Fact and the specific language in the WMP **document text in LCRA's application, the document text in LCRA's application** ~~language~~—controls.

- e. Consistent with 30 Texas Administrative Code Chapter 288, LCRA shall review and update, as appropriate, in accordance with the schedule required by such rules, those portions of its Drought Contingency Plan (for firm and interruptible customers) that do not change the triggers, amount of curtailment of interruptible stored water supply, or the triggers or criteria related to bay and estuary inflows or instream flows. Such changes do not constitute an amendment to the WMP requiring notice and opportunity for contested case hearing, but must otherwise comply with the public notice requirements of Chapter 288 of the Commission's rules.
- f. LCRA shall initiate a process to update the Water Management Plan **on the earlier of January 1 no later than December 31**, 2018 or one year from any of the following occurrences:
  - i. The March 1, when water use reports are filed, following the calendar year in which Lakes Travis and Buchanan reach a combined capacity of 98%;
  - ii. Firm water use, as reported in LCRA's annual water use reports and annual Water Management Plan report filed with the TCEQ, reaches a level that is 90% or greater of the demands considered in the modeling for the 2014 WMP amendment for a period of two consecutive years;
  - iii. LCRA has begun operating the off-channel reservoir authorized under certificate of adjudication no. 14-5476C;
  - iv. LCRA has begun using one or more of its downstream water rights based on non-temporary amendments to those rights obtained after the effective date of this Order, unless LCRA has demonstrated, and the executive director agrees, that modeling of such operations in combination with this Water Management Plan does not result in combined storage dropping below 600,000 acre-feet in a repeat of the hydrology considered in this WMP.
- g. LCRA shall submit an application to amend its WMP no later than two years from the date it initiates a process to update the WMP under Ordering Provision 1.f. If one or more of the events described in Ordering Provision 1.f occurs after a revision process has been initiated, and upon written request by LCRA, the time period to submit an application may be extended by a maximum of six months per occurrence by the Executive Director to allow those changed circumstances to be included in the revision process.

h. LCRA's application to amend the WMP required by this Order must include naturalized streamflow data as follows:

- i) an update initiated prior to January 1, 2018 shall use data updated through 2015; or
- ii) an update initiated on January 1, 2018 shall use data updated through 2016.

2) For the period between the effective date of this order and the next Evaluation Date under the Water Management Plan for environmental flow criteria (March 1, 2016), the following environmental flow criteria shall apply:

- i. For the period from the effective date of this order to the end of the month in which this order is issued, LCRA shall comply with the environmental flow criteria in the Water Management Plan as approved on January 27, 2010.
- ii. For the period from the first day of the month following issuance of this order until February 29, 2016, the environmental flow criteria shall be determined consistent with the revised Water Management Plan approved by this order, relying on the July 1, 2015 combined storage in lakes Buchanan and Travis, and in accordance with item 1 on page 4-17, Section 4.4.3, of LCRA's proposed Water Management Plan document submitted in May 2015, which provides:

Any time releases of Interruptible Stored Water for agricultural operations in Gulf Coast, Lakeside, and Pierce Ranch are cut off, the only freshwater inflow criteria in effect is Threshold. However, if releases of Interruptible Stored Water for agricultural operations in Gulf Coast, Lakeside, and Pierce Ranch are cut off from the Second Crop Season but Combined Storage is greater than 1.3 million acre-feet on July 1, the Operational Criteria shall be in effect pursuant to Table 4-6. In that instance, LCRA's releases of Storable Inflows to meet the Operational Criteria will be limited to no more than 50 percent of the Storable Inflows for the month remaining after the release of Storable Inflows for instream flow criteria and/or Threshold inflow needs, with a maximum release for the Operational Criteria in a single month of 82,000 acre-feet. (LCRA's releases of Storable Inflows to Meet Threshold will not be subject to this limitation).

23) The Chief Clerk of the Texas Commission on Environmental Quality shall forward a copy of this Order, to all parties.

34) If any part of this Order held to be invalid, the invalidity of any portion shall not affect the validity of the remainder of the Order.

- 45) Nothing in LCRA's Water Management Plan, as amended, or this Order shall be construed to impair, or to authorize LCRA or any other person or entity to impair, senior or superior water rights in the Colorado River Basin.

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For the Commission

DATE ISSUED

DRAFT