



**COMMENTS OF THE CENTRAL TEXAS WATER COALITION
RELATING TO LCRA'S PROPOSED UPDATES TO
ITS 2015 WATER MANAGEMENT PLAN**

SUBMITTED VIA EMAIL TO LCRAWMP@lcra.org
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The Central Texas Water Coalition (CTWC) appreciates the continuing opportunity to submit comments, questions, and items for discussion with respect to LCRA's ongoing efforts to develop an updated Water Management Plan (WMP) for the operation of Lakes Buchanan and Travis. These comments include responses to matters raised during or after the most recent LCRA-hosted informational meeting on September 6, 2018.

Proposed Timeline of Activities. As several attendees noted in the WMP Participant Meeting on September 6th, the LCRA's presentation of information on the Firm Yield modeling and calculations is a very important aspect of the WMP update, and we join the others in requesting information on Firm Yield at the October 4 Participant Meeting (rather than at a November meeting). Under LCRA's timeline, if the proposed new WMP goes before the LCRA Board in December, there will be little time to evaluate the WMP if the key components are only provided a few weeks before the Board meeting. We are hopeful that these Firm Yield calculations will be revealed as soon as possible.

Determination of Naturalized Flows. We would appreciate further explanation of how LCRA calculates "naturalized flows" and how those calculations utilize stream gauges to make those calculations. More specifically, there seems to be a large deviation between LCRA's reported gauged inflows for 2015 and 2016 and the naturalized flows that are being used in the latest WMP modeling. Please explain the process for translating gauged inflow data into naturalized flows, including the major factors contributing to the differences between the naturalized and gauged flows. In addition, please explain how LCRA accounts for evaporation from the Highland Lakes in its development of naturalized flows and explain whether lake evaporation is one of the factors causing the deviations between the gauged and naturalized flows.

Developing a WMP that Assures Satisfaction of Firm Demands. As we have discussed, recent hydrology and the statistical evaluation of the historical data have demonstrated that the inflows to the Highland Lakes have declined so much that there is a "new normal." A noted statistical expert has determined that this shift in data is so substantial that inflow data prior to and including 2007 are no longer useful or valid as predictors for the future.¹ Instead, data from 2008 to the present is the most relevant and valuable dataset. Another example of the use of this statistical analysis to examine a natural system is presented in the work of Dr. Don Wheeler, who applied these methods to better understand major floods. Copies of these references are attached.

¹ Conversation with Dr. William McNeese on Sept. 4, 2018.

By including the 2008 to 2015 time period as the Drought of Record in its WMP modeling of Firm Yield, LCRA is acknowledging some aspects of this shift to a new normal. The obvious declines in stormwater runoff to the lakes, apparently associated with changes in land use, warmer temperatures, extended drought periods, the pumping of alluvial wells, the depletion of groundwater resources, and the proliferation of small upstream ponds, are all factors that justify more cautious decision making in the development of the next WMP. We should not gamble on the ability of the Highland Lakes to refill or to quickly regain storage volumes when the drinking water supplies for millions of residents is at stake. CTWC urges LCRA to choose the most protective and conservative options throughout its development of the new WMP.

Addressing Released but Unused Orders for Interruptible Stored Water. CTWC believes that the financial value of the stored water released for LCRA's Interruptible customers should be recovered by LCRA, and LCRA's determinations of available stored water for use by Interruptible customers should not identify that "ordered but not diverted" water as a new supply merely because it has moved from the Highland Lakes to the Arbuckle Reservoir. LCRA should assess fees for the water released for downstream irrigation customers, and LCRA should benefit from the release of stored water for Interruptible customers, whether or not the downstream customer diverts the ordered water. It seems appropriate to assess a fee to those customers who choose not to take the water released for them (similar to LCRA's assessment of reservation fees on its Firm customers) AND to recalculate the allocation of stored water available for such customers by deducting the volumes of water that were released but not diverted by that customer. Please explain how Interruptible stored water that is released but not diverted by a downstream Interruptible customer will bring revenue to LCRA. Also, please explain how LCRA plans to quantify such water for purposes of meeting but not exceeding the Interruptible water allocations included in the WMP.

Modeling to Include the Operations of the New Arbuckle Reservoir. In view of the likelihood that water stored in the Arbuckle Reservoir will be used to capture stored water from Lakes Buchanan and Travis that was ordered by an Interruptible customer **but not used**, CTWC suggests the development of a water accounting system that includes the volumes of water that were released from storage and captured in the downstream Arbuckle Reservoir as part of the total volume of Interruptible Stored water available for LCRA's Interruptible customers. In other words, water stored and released from the Highland Lakes and then re-captured in the Arbuckle Reservoir would continue to be recognized as "Highland Lakes stored water" for potential purchase by Interruptible customers, but the water would not be counted as a new supply upon its arrival in the Arbuckle Reservoir. Water that is released from Lakes Buchanan or Travis **but not used** to meet an Interruptible customer's demands would be counted against the total amount of stored water that is allocated for that customer for that season.

Clarifications on Water Used in Hydroelectric Generation Operations. The adjudication decree and LCRA's water rights contain specific provisions regarding the use of water in hydroelectric generation activities. More specifically, LCRA's rights to use water for hydroelectric generation "should include conditions that generally subordinate such rights to all present and future upstream rights to use the waters of the Colorado River and its tributaries for municipal, domestic, irrigation or industrial purposes." These conditions "should specifically prohibit the release of water through its dams solely for the purpose of hydroelectric generation, except

during emergency shortages of electricity, and during other times to the extent that such releases will not impair LCRA's ability to satisfy all existing and projected demands for water from Lakes Travis and Buchanan ... pursuant to all firm, uninterruptible commitments and all non-firm, interruptible commitments.”²

The existing WMP includes a discussion on Hydroelectric Power Generation in the chapter on Demands – in Section 2.5. This discussion indicates that LCRA employs a definition of “emergency shortage of electricity” that allows LCRA to release water for hydroelectric generation absent a downstream water demand in four situations. One listed way is Responsive Reserve Service (RRS), which is not recognized by ERCOT as "emergency", but rather an "Ancillary Service". Furthermore, RRS releases by LCRA are authorized ahead of time, because LCRA makes this capacity available in ERCOT's Day Ahead Market. (Please explain how these situations satisfy the criteria in LCRA's water rights regarding the limitations on releases of stored water except in the case of emergencies.

Recent Releases from Storage. It appears that LCRA plans to continue its current daily operating philosophy in the next version of the WMP. This is a concern, since this operating philosophy seems to allow massive discharges of stored water from the lakes even when the entire river basin is experiencing significant rains. Please explain the basis for this philosophy and for the recent decision to release water from lake storage rather than use it to refill Lakes Buchanan and Travis.

Accounting for Emergency Hydroelectric Releases. In a prior comment, CTWC asked how LCRA accounts for potential Emergency Hydroelectric Releases in its water modeling. In an online response to this question, LCRA stated that “Emergency hydroelectric releases are factored into the model as part of a simulated demand that represents conveyance adjustments and other releases amounting to an average of about 30 cubic feet per second on a daily basis.” (Note: 30 cfs daily average represents about 21,700 acre feet per year.) CTWC does not believe in having two sets of units in the WMP. Acre-feet is the preferred unit of capacity, and acre-feet / year the preferred unit for rate.

Releases made for emergency hydroelectric generation are reported in LCRA's annual water use summaries. "Over the past five years, releases have averaged 164 acre-feet per year. The maximum release in one year was 490 acre-feet in 2014.” Please explain the meaning of “conveyance adjustments and other releases” in the response. Also explain where the daily 30 cfs release (or 21,700 acre-feet per year) appears in the water modeling. Since a 30 cfs daily flow is a significant quantity (21,700 acre feet per year), we would like to understand where it is shown and accounted for within LCRA's water modeling and water availability calculations.

Attachments: “Analysis of Highland Lakes Inflows” by Dr. William McNeese (September 2018)
“Why We Keep Having 100-Year Floods” by Dr. Don Wheeler (June 2013)

² Attachment No. 2 to Final Judgment and Decree; Adjudication of Water Rights in the Lower Colorado River; April 1988