CENTRAL TEXAS WATER COALITION

October 12, 2021

VIA EMAIL TO administrative@RegionK.org

Lower Colorado River Authority, Administrative Agent for Region K
Attention: Annette Keaveny, For Region K
P.O. Box 220
Austin, TX 78767-0220

Re: Comments from the Central Texas Water Coalition (CTWC) regarding the Development of the 2026 Region K Regional Water Plan and the 2027 State Water Plan

Dear Ms. Keaveny:

The Central Texas Water Coalition ("CTWC"), a nonprofit organization advocating for responsible water management and conservation policies, appreciates the opportunity to submit the following comments on the development of the 2026 Regional Water Plan and the 2027 State Water Plan. We recognize the enormity of this task, and we appreciate the hard work expected from Region K members, the consultants, and the Texas Water Development Board ("TWDB") in the development of the 2026 Regional Water Plan ("RWP") by the Lower Colorado Regional Water Planning Group ("RWPG" or "Region K"). The following comments are submitted for consideration and response:

General Comments

CTWC's primary goal is to assure the sustainability of the Highland Lakes – lakes that provide most of the water supply and serve as vibrant economic engines for the Central Texas region. As CTWC has gained knowledge of the major components that drive and affect the health of the Highland Lakes, it has grown increasingly concerned that a combination of factors are converging in a negative way to put the sustainability of the Highland Lakes at risk during periods of prolonged drought. CTWC also has concerns regarding whether the TCEQ-approved 2020 Water Management Plan ("WMP"), which governs the Lower Colorado River Authority's ("LCRA's") operation of Lakes Travis and Buchanan under state-issued water rights held by the LCRA, is fully considered and accounted for during all aspects of Region K's water planning activities. We believe that this will be a very important five-year planning cycle for Region K, as the Central Texas portion of this regional planning area continues to experience major population growth, increasing water demand, and significant changes in water supply and management. Water planning is serving an increasingly critical function, and needs to be comprehensive, relevant, practical, and successful in creating a sustainable water supply to avoid the disastrous consequences of inadequate or absent water supplies for a state with such significant population growth. This will require a strong emphasis on improved understanding and modeling of upper and lower basin water availability, incorporation of all current and future demands, and on more effective water conservation strategies.

CTWC understands that there are several hydrologic variances and variance assumptions that may be available for use along the path toward development of the next Region K Plan. According to the 2022 State Water Plan (Page A-172), such variances include: the use of Safe Yield for surface water availability analysis; extension of the hydrology beyond the water availability model ("WAM") period of record; modifications to WAMs to more accurately reflect operational or contract agreements, subordination agreements, correct known errors in the models, or remove canceled water rights; modifications to a WAM to utilize return flows; and hydrologic variances associated with run-of-river sources. **We ask that Region K's consultant take an active role in identifying and describing the availability and potential implications of the use of all such hydrologic variances and variance assumptions, as well as all other options that may be relevant to this Region, as the next Region K Plan is developed. Bringing these options and technical details to the RWPG members for discussion should facilitate the preparation of a Plan that more appropriately recognizes and addresses the unique characteristics and needs of this Planning Area.**

Specific Comments

1. Attention to Groundwater and Surface Water Interactions

As Region K has developed and captured its body of knowledge regarding water supplies in its Planning Area, it has become clear that descriptions and quantifications of groundwater and surface water supplies are often overly simplified, as if they have no interactions, while reality tells us otherwise. Within Region K, streams may recharge aquifers, and groundwater may supply water to streams. Pumping from alluvial wells near lakes and watercourses may decrease surface water availability. Although CTWC recognizes that the science of these interactions is not well-understood or readily available on a detailed, local level, **we encourage Region K to acknowledge, study, evaluate, and address stream-aquifer interactions within its Planning Area whenever such work would improve the accuracy and usefulness of the overall water planning effort**. In other words, it is better to acknowledge than to ignore the fact that surface and ground water supplies are often interrelated.

2. Planning Area Description

TWDB's "Scope of Work" guidance for RWPGs (dated June 2021) outlines several topics to be addressed within the chapter describing a region's planning area. **CTWC requests additional attention and discussion of the following element of the Planning Area description in Chapter 1 of the next Plan (from Task 1, section 4.a. of the Scope of Work guidance document) by expanding upon "social and economic aspects of a region such as information on current population, economic activity and economic sectors heavily dependent on water resources."** Business sectors that are heavily dependent on water resources in Central Texas include the multimillion-dollar tourism industry, as well as marinas, fishing, lodging, boat sales, and associated service sectors. These business sectors are profoundly impacted by extended periods of low lake levels, and the regional and state economies reflect such impacts. As lake levels decline, state and local tax revenues may also decline, and the consequences may be devastating. **CTWC encourages Region K to incorporate Appendix 1B of the 2021 Plan into the body of the 2026 Plan, after updating and expanding upon it as feasible**. This information should be included in the planning area description for Region K.

3. Non-Municipal Water Demand Projections

Unlike most other regions, Region K's water planning activities are directly impacted by a Water Management Plan held by the LCRA. This WMP forms the basis for LCRA's operation and management of Lakes Buchanan and Travis, and the provisions in this document have significant impacts on river flows, reservoir storage, and many other aspects of surface water management throughout the Lower Colorado River Basin. **CTWC requests that all possibilities for surface water management under the terms of the 2020 WMP be considered by Region K in its planning**. As an example, the 2020 WMP authorizes significant volumes of water to be released from upstream reservoir storage to satisfy environmental flow requirements. In 2020, LCRA reported that approximately 115,000 acre-feet of water was released for this purpose. CTWC's review of the magnitude of potential releases for environmental flows indicates that over 200,000 acre-feet/year could be required to be released from stored and storable water under the terms of LCRA's 2020 WMP. This enormous volume is especially alarming when it appears that environmental flow commitments are not curtailed or cut-off as combined storage in the Highland Lakes drops below minimum storage thresholds.

CTWC requests that Region K carefully study the new environmental flow demand requirements in LCRA's 2020 WMP and develop modeling under a range of scenarios that includes these environmental flows as a Non-Municipal Water Demand. We also request Region K's consideration of whether the biological studies that served as the basis for these environmental flow demands should be updated and/or re-examined.

4. Water Availability and Existing Supplies

CTWC is concerned that surface water availability is significantly overstated in the 2021 Region K Plan and the 2022 State Water Plan. These concerns originate with the surface water supply and modeling assumptions, and the data on the declining inflows to Region K's storage reservoirs. LCRA data on inflows to the Highland Lakes shows statistically significant decreases in average annual inflows over the 1942-2020 period, with an average rate of decrease that is dramatically larger since the construction of the O.H. Ivie Reservoir in 1991 (with the corresponding reduction in contributing watershed area). For reference, average annual inflows reported by the LCRA from 2008-2020 are only about 50% of the averages from 1942-2007. While significant year-to-year annual variability continues to be prevalent in inflows to the Highland Lakes, the overall decreasing trend appears to be consistent and large enough to pose a serious “stationarity” issue with the continued use of the “raw unadjusted” historical inflow data and the naturalized flows currently being used for future prediction purposes in the Region K Water Availability Model.

This is a major issue, as water management practices by the LCRA assume that historical inflows and inflow patterns to its storage reservoirs will repeat themselves in the future, relying on historical data to model and manage future water supplies. The CTWC is concerned that this approach is no longer practical for several reasons. First, LCRA’s approach does not reflect the general consensus in the scientific community that Central Texas is likely to experience longer, more severe droughts in the future that will adversely affect inflows. Second, these concerns are compounded by recent studies on the watershed of the Colorado River Basin from the Texas Water Development Board (Furnans et al, 2019) and Slade (Slade, 2020), noting the proliferation of a very large number of unpermitted or permit-exempt stock ponds in the watershed, the vast

majority of which are not included in the naturalized flows of the Water Availability Modeling.[1] [2] Other factors identified as contributors to the decline in surface water inflows to the Highland Lakes include: the large number of unmonitored alluvial wells; the proliferation of noxious brush in the watershed; and higher ambient air temperatures. These factors create a problem with reliance on historical data and naturalized flows in the Water Availability Models that are so fundamental to the planning process. As acknowledged on Page A-68, Chapter 5 of the 2022 State Water Plan, "changes over time to reservoir inflows" are "not presently accounted for in the methodology for assessing surface water availability." This is a compelling reason to question the wisdom of reliance on past inflows when planning for future droughts, and a compelling reason for Region K to take a hard look at the need for adjustments to its water availability assessment methodologies.

CTWC requests Region K to study and acknowledge the declining inflows issue and develop tools and adjustments during this planning cycle that incorporate and account for the observed declining inflow trends into water availability modeling and projections. This analysis should also extend to improving understanding and projections of inflows into the lower basin, as low run-of-river levels in the lower basin can currently require stored and storable water releases to meet the current very large 2-month "Operational Criteria" regarding inflows to Matagorda Bay, per the LCRA 2020 WMP. Run-of-river flows in the lower basin are important water sources for downstream agricultural irrigation users, and a declining trend in inflows to the lower basin can directly increase demands on reservoirs in the upper basin.

5. Replacement of Firm Yield with Safe Yield in 2026 Region K Plan

Given the serious water availability and demand concerns described above, CTWC believes that the time has come to shift to a more protective "Safe Yield" approach to water management, particularly in view of Region K's reliance on surface water reservoirs to provide water for a significant and rapidly growing Central Texas population. The current calculation of the "Firm Yield" for Region K's storage reservoirs appears to allow storage within those reservoirs to be drawn down to ZERO without providing a reasonable water reserve to cover the situation when future droughts are more severe than droughts observed during the period of record. Relying primarily on the "Firm Yield" of Lakes Buchanan and Travis in today's water planning evaluations carries unacceptably high risks associated with rapid drawdown of the lakes in times of drought, particularly given the lower inflows and the potentially very large interruptible and environmental flow releases prescribed by LCRA's WMP. We believe the continuing reliance on a reservoir's Firm Yield for water planning in this Region is dangerous and akin to ERCOT's poor risk management practices (as revealed during the winter storm in February 2021 and its devastating physical and economic impacts). Employing a "Safe Yield" approach would add a prudent safety margin to protect against dangerously low water supplies within times of prolonged drought. The 2022 State Water Plan reports that six (6) Regions are already using "Safe Yield" for surface water availability analyses in their plan development. *See* Page A-172, 2022 State Water Plan.

[1] Furnans, Jordan, Keester, Michael, and Kennedy, Kirk (2019). "Final Report: Evaluation of Rainfall-Runoff Trends in the Upper Colorado River Basin (Phase Two)" – Texas Water Development Board Contracted Report #1800012283.

[2] Slade Jr., Raymond M. (2020) "Runoff Inflow Volumes to the Highland Lakes in Central Texas: Temporal Trends in Volumes and Relations between Volumes and Selected Climatic Indices" Texas Water Journal, Volume 11, Number 1. Pages 32-60.

We believe that Region K should join those six regions in employing this hydrologic variance from the use of Firm Yield.

CTWC respectfully requests that Region K pursue the use of the Safe Yield approach for its analyses of surface water availability. CTWC also supports the development of forward-looking water planning processes and management that incorporate climatology.

6. Considering All Provisions of 2020 LCRA WMP When Calculating Water Availability Numbers for Use in Region K

In Region K, the LCRA operates large water storage reservoirs under the terms of a TCEQ-approved WMP, which includes water management directives that may not be incorporated into the Region K Plan (such as the large volumes of water released from reservoir storage for environmental flows or for specific downstream interruptible customers). As we understand it, the surface water availability numbers used by Region K in its Region K Plan do not incorporate the details of LCRA's WMP, and therefore, the water availability numbers presented by Region K may be substantially larger than the water that is actually present and available for use in the Highland Lakes.

LCRA is bound to operate according to the terms of its WMP, which include terms for releasing water for satisfying environmental flow requirements. These required releases are NOT included within water availability analyses used by Region K. We understand that LCRA justifies this exclusion by saying that water not diverted by its firm water contract holders becomes available for use to satisfy environmental flow requirements. LCRA may also say that the WMP will be revised in the future to require less stored water for environmental flow purposes as firm contract holders use more of their contracted quantities. These justifications, however, seem meaningless because LCRA's WMP does not link required environmental flow releases to any quantity of past water supplies unused by firm customers, and LCRA does not have the authority to limit environmental flows in contradiction to the provisions established by its 2020 WMP. As currently structured, the LCRA WMP allows LCRA to over-draft from the Highland Lakes by providing water to firm customers, interruptible customers, and for environmental flow purposes. LCRA is not prohibited from making total annual releases for these three use categories that exceed the combined firm yield or LCRA system yield.

CTWC research, conducted by LRE Water, indicates that under the terms of LCRA's TCEQ-issued WMP, the allowable interruptible customer releases and required environmental flow releases are estimated to reduce the water available to firm water customers served by LCRA in Region K by up to 100,000 acre-feet per year. This reduction was computed using a firm yield calculation with 100% usage from all water right holders and comparing the result with a firm yield simulation combining demands from all water right holders (at 100% usage) and incorporating allowable releases for interruptible users and required releases for environmental flows as per the rules stipulated in LCRA's 2020 WMP. It should also be noted that the State rule for calculation of Firm Yield expects that all required environmental releases will be included in the calculation (*see* TWDB's "Firm Yield" definition in 31 Texas Administrative Code Section 357.10(14)).

CTWC recommends that Region K evaluate and calculate a more complete and accurate value for the "effective" Firm Yield of the Highland Lakes that incorporates the applicable factors and provisions that are required in the LCRA WMP, to improve the accuracy of the water availability calculations by Region K. This should include the required environmental

flow releases and the allowable Interruptible flow releases, as they collectively are estimated to reduce the firm and system yields by approximately 100,000 acre-feet per year. **A means to account for and incorporate the currently allowed and potentially large "Ordered but not Diverted" releases for LCRA's downstream interruptible customers is also needed.**

7. Physical Proximity of Water Users in Determining Water Availability

CTWC believes that a more comprehensive approach is needed for water availability analysis and risk management that considers the physical location of the major water users in the Planning Area with respect to the location of the water supplies. More specifically, since LCRA is the largest surface water provider, the Region K Plan should consider the location of LCRA's firm customer diversion points and the ability of the water supply to meet emergency services requirements. The water that is purportedly available for use in significantly populated areas of Central Texas should be located within reach of the LCRA customers serving those populations (and not miles downstream). LCRA has made firm water delivery commitments based on its Firm Yield calculations. Please assure that those calculations are reasonable and that the water is truly available at a firm water customer's point of diversion.

The location of firm customers on the reservoir lakes is also important in the ability of LCRA to serve these customers when lake levels are drawn down to levels that may hinder a water provider's ability to obtain water when its intake pipe can no longer reach the water body. This appears to be a growing issue given the rapid development around the reservoir lakes in areas such as northwest Travis County and Burnet and Llano Counties.

According to the Texas Wildfire Risk Explorer, a project of the Texas A&M Forest Service, the vast territory encompassed by Region K's Planning Area includes areas of very low or minimal wildfire risk (in the lower basin counties from Bastrop to Matagorda), as well as areas of known wildfire vulnerability, such as those in "moderate" to "very high" wildfire risk that surround the Highland Lakes and extend upstream from Travis County to the upper reaches of Region K's Planning Area. *See* https://wrap.texaswildfirerisk.com/Map/Public/#whats-your-risk. In view of the very high risks of wildfire in the highly populated areas of Central Texas, and the dependence of those populations on surface water supplies in the Highland Lakes, **Region K should consider water supplies for firefighting in its planning document. At a minimum, Region K should acknowledge the need for minimum water levels in Lake Travis so that firefighters can access water to draft from the lake during a wildfire emergency.** Travis County Emergency Services District No. 8 may be helpful in providing this information.

CTWC requests Region K to broaden its scope of water availability and risk management analyses to consider the real-time availability and adequacy of stored surface water at the location of the significant population centers, so that the assumptions regarding water supplies in the upper basin of the river are truly meaningful. In other words, Region K's modeling and conclusions regarding the river's ability to meet the demands of Municipal Water User Groups in the upper basin should confirm that the water supply is actually present in the upper basin – and not located at an inaccessible downstream location. Region K should assure that municipal water users in Central Texas can obtain the water they need – it must be physically accessible to them within a storage reservoir, which means that the storage reservoirs must maintain water elevations sufficient for intake pipes to reach the water (and sufficient to allow firefighters to draft from the lakes in the case of wildfires).

8. Downstream Reservoirs on Colorado River

Regarding the Arbuckle Reservoir - LCRA has indicated that incorporating the Arbuckle Reservoir into its system operations will increase its total "system yield" by 90,000 acre-feet/year. CTWC is concerned that this predicted volume of water may be overly optimistic. Unknowns regarding the future operation of this downstream reservoir continue to bring uncertainties into this equation. If Region K expects to incorporate LCRA's predictions regarding higher surface water availability resulting from the future operations of the Arbuckle Reservoir, CTWC requests that Region K conduct an independent evaluation of this assertion during its water availability modeling for the 2026 Region K Plan. **Region K should re-assess the water availability assumptions and increased yield projections under various scenarios around the Arbuckle Reservoir, as well as any other downstream reservoirs proposed for the Colorado River.**

9. Water Management Strategies and Projects

The CTWC appreciates the work that has gone into the identification of water management strategies described in the newest regional and state water plans. Conservation is one of the key strategy types included in Region K's planning, and we strongly recommend that this strategy be expanded to include water pricing. CTWC requests that Region K utilize water pricing as a component of the conservation water management strategy for all water user groups. Water prices are known to have impacts on water conservation efforts, and water sales may provide funding for the development of new water supplies or more efficient water management practices. In addition, pricing water below the cost of managing and delivering said water promotes waste and should be highly discouraged. The 2022 State Water Plan states that "Municipal conservation strategies include a variety of activities, such as … stronger water conservation pricing structures that discourage waste (included by 11 regions) …" (*See* Page A-127, Chapter 8, 2022 State Water Plan)

CTWC respectfully requests a specific review and discussion on water pricing as a conservation strategy for both Municipal and Non-Municipal water users as part of the 2026 Region K Plan.

The CTWC wholeheartedly supports conservation as an essential strategy for sustaining water supplies throughout Texas and all of its water user groups. We support the conservation strategies presented for agricultural irrigation in Region K but are concerned that those strategies may not be implemented without incentives such as higher water rates and outside funding for conservation projects. Water rates can incentivize water conservation, and revenues from appropriately priced water can help to fund water conservation and supply projects.

In addition to describing the benefits of conservation and the various conservation-based strategies, CTWC requests that Region K collect data that allows an accounting of the results of the conservation strategies implemented by all water user groups. Collecting data and verifying the savings associated with a conservation method or practice would assist Region K in making better decisions in future plans. With additional data on water savings, water user groups can identify their successes or deficiencies with respect to different conservation practices.

10. Conservation Metrics

CTWC applauds the fact that RWPGs are now required to set specific per capita per day water use goals for each municipal water user group for each decade of the 2022 Plan. This information, presented in Chapter 8 of the Regional Plans, will be useful for measuring conservation progress and successes.

CTWC respectfully requests the inclusion of comparable metrics and goals for every water user group in these plans. Establishing water conservation metrics and goals for groups such as agricultural water users is a logical and reasonable next step toward achieving water savings through conservation, especially since agricultural water users have historically used the largest volumes of water in this river basin.

11. Policy Recommendations

CTWC requests Region K to evaluate proactive methods and recommendations to the Legislature that are needed to dramatically reduce and potentially reverse the trend to lower inflows in the Colorado River Basin.

All of these efforts are needed as Region K strives to better understand current data and trends and develops its plan to meet future water needs throughout the Planning Area. Thank you for your consideration of our comments, and please let us know how we can be of assistance in this important work.

Sincerely,

Jo Karr Tedder

Jo Karr Tedder, President
Central Texas Water Coalition