CENTRAL TEXAS WATER COALITION

February 18, 2017

VIA EMAIL TO: temple.mckinnon@twdb.texas.gov

Ms. Temple McKinnon, Director, Water Use, Projections & Planning
Texas Water Development Board
1700 North Congress Avenue
P.O. Box 13231
Austin, Texas 78711-3231

Re: Comments on Draft General Guidelines for Regional Water Planning Groups in Fifth Cycle of Regional Water Plan Development

Dear Ms. McKinnon:

Please accept the attached Comments of the Central Texas Water Coalition on the Draft General Guidelines for Regional Water Planning Groups in Fifth Cycle of Regional Water Plan Development.

Thank you for attending the meeting with TWDB Board member Peter Lake and our Board member, David Lindsay and giving us the opportunity to provide these suggestions. Since we were unsure of how to submit, you seem to be the logical person, please forward to appropriate person for us.

We're happy to answer any questions and to assist in any way that may be helpful as the Agency continues its important work.

Sincerely,

Jo Karr Tedder

Jo Karr Tedder
President
jokarrtedder.ctwc@gmail.com

Attachment: Comments of CTWC on Draft General Guidelines for Regional Water Planning Groups in Fifth Cycle of Regional Water Plan Development

Comments of Central Texas Water Coalition on Draft General Guidelines for Regional Water Planning Groups in Fifth Cycle of Regional Water Plan Development

The Central Texas Water Coalition (CTWC), a non-profit stakeholder organization advocating for responsible water management policies and practices, appreciates the opportunity to offer these comments on the Texas Water Development Board's (TWDB's) November 2016 draft "First Amended General Guidelines for Fifth Cycle of Regional Water Plan Development."

1.0 Planning Area Description

> In the Draft General Guidelines, Regional Water Planning Groups (RWPGs) are directed to describe a number of important topics regarding their Regional Water Planning Area (RWPA), including a description of the social and economic aspects of a region such as information on current population, economic activity and economic sectors heavily dependent on water resources. In addition, RWPGs shall describe identified threats to agricultural and natural resources due to water quantity problems or water quality problems related to water supply; and to identify each threat to agricultural and natural resources and discuss how that threat shall be addressed or affected by the Water Management Strategies (WMSs) evaluated in the Regional Water Plan (RWP).

Recommendation: Consistent with the list of topics above, and in order to provide a more comprehensive and accurate description of the RWPA, we recommend expanding the list of topics beyond agricultural and natural resources in the Planning Area Description to include the identification of other major economic activities and sectors, such as businesses, jobs, property values and associated tax bases that are heavily dependent on water resources in the region. A discussion should also be included of how that threat shall be addressed or affected by the Water Management Strategies (WMSs) evaluated in the Plan.

Rationale: Adverse economic impacts related to water resources, such as low lake levels, can be very significant. For example, according to data provided by the Travis County Appraisal District, the 2010 appraised value for lake-related properties was $4.353 billion. However, Lake Travis lake levels fell to and remained at very low levels from 2011 until May of 2015, which severely impacted the lake-related real estate sector of the economy through losses in value and appreciation. In contrast, during the same time period, the property values in the Austin metropolitan area were increasing. An analysis compiled by the real estate industry for the 2009-2014 timeframe found that the combined losses in value ($400 million to over $1 billion range) and the loss of taxable appreciation ($1.5 to 2 billion) on these lake-related properties created an estimated total adverse property value impact from very low lake levels of $2-3 billion for homeowners. It should be also be noted that this represents a major associated loss of annual property tax revenues that support schools and county services, including the loss of Robin Hood school revenues for the State. The sustained very low lake levels also caused very adverse impacts to lake-related businesses and jobs, as estimated by several economic impact studies for

Travis and Burnet and Llano counties completed in 2011 and 2012, respectively. Copies of these studies are available at https://centraltexaswatercoalition.org/wp-content/uploads/Lake-Travis-Economic-Impact-Report-Lake-Travis-Coalition-09-29-11.pdf

and at: https://centraltexaswatercoalition.org/wp-content/uploads/The-Economic-Impact-of-the-Upper-Highland-Lakes-of-the-Colorado-River-Fall-2012.pdf

2.0 Population and Water Demand Projections

2.1.2.3 Steam-Electric Power Generation Water Demand Projections

We recommend a more extensive review of all aspects of power plant water usage and demands, to assure that the best numbers are used for total water demand associated with power generation at a particular facility, and to assure that intake structures for the plants are sufficiently protected from dropping lake levels in times of extreme drought, including consideration of potential needs in WAM Run #3. Concerns have been raised in ERCOT studies, published in 2012 and 2013, that stated that multi-year droughts (with a severity of 2011) result in more susceptibility to capacity reduction" (power curtailments), and as drought conditions worsen the "risk for total outages increases". For example – see: http://www.ercot.com/content/committees/other/lts/keydocs/2013/ERCOT_Water_Use_and_Availablility_-_DrtRpt_1DF.pdf

2.1.2.5 Irrigation Water Demand Projections

It appears that this version of the draft General Guidelines does not include the TWDB's proposed methodology for Irrigation Demand Projections, which was separately issued in draft dated November 4, 2016. We are assuming that an updated version of the proposed methodology will be included in the General Guidelines, and our comments have focused on the text of TWDB's November 4, 2016 draft. The following summary describes the proposed methodology for Irrigation Demand:

> ***1.1 Irrigation water demand projection methodology summary***
> The baseline methodology for draft irrigation water demand projections is the most recent five-year water use estimates held constant between 2020 and 2070. In counties in which the total groundwater availability over the planning period is projected to be less than the groundwater-portion of the baseline water demand projection methodology, the irrigation water demand will begin to decline in 2030 or later, commensurate with the groundwater availability.

In the proposed methodology document, TWDB notes that Irrigation water use accounts for 58% of the most recent water use estimates, and, as such, represents a critical component of the State's water usage. However, while gross historical demand may provide a simplistic gross basis for what was actually used, it does not explain the components of the water use, and does not provide any information on the magnitude of normal conveyance system losses or other unexplained "uses" that are essential parts of the water delivery and distribution system.

Recommendation 1: Utilize a more robust and comprehensive approach that would include an analysis in sufficient detail to generate a clear understanding of current water uses and losses as well as a baseline that can be utilized to provide an understandable basis for improvement by each key component area of water usage. In essence, this would provide a much more accurate baseline to assess supply and demand, and help focus water planning and management on areas of greatest need for conservation, efficiency and supply projects, consistent with approaches utilized for municipal demand.

Key components of a comprehensive validation analysis could include:

- Demonstration that the historical water use data is reasonably accurate
- Identification of water uses by major water user groups, supported by an associated build-up of demand based upon the major demand factors, i.e. cultivated acres by crop, on-farm water use metrics by crop, such as the on-farm water use per acre for various crops,
- Incorporation of appropriate water use standards, particularly waste, including identified overages versus waste standards in historical use data utilized in the baseline analysis
- Estimates of conveyance loss numbers in rivers, canals and other distribution systems, as these losses are a very large component of the total water usage
- Estimates of other undefined and/or unexplained usages or losses to help provide a baseline for "unaccountables", that can be tracked for improvement, typical of approaches utilized in business and industry to better manage key raw materials
- Incorporation of demands of total irrigation water usage, including both surface and groundwater, into the analysis to address overall usage, particularly when surface water supplies may be restricted

Recommendation 2: Current water pricing assumptions, current and projected price increases, and their effect on demand could also be considered in the planning scenarios versus holding them constant between 2020 and 2070, as demand will likely decrease as the real price increases, particularly where there are surcharges for high usage.

Recommendation 3: The demand analysis document could include the major external factors and assumptions that are driving the demand projections, such as commodity prices, subsidies, weather, etc. In the case of weather variations, water demand may also be influenced by available water sources such as rainfall, which could also influence water availability and differences in cost between surface water and groundwater sources. As such, these assumptions should also be included to better understand the requirement and help in adjusting planning as the situation changes.

3.0 Water Availability and Existing Water Supplies
3.2 Evaluation of Surface Water Availability

CTWC is concerned that there are significant risks associated with the process for determining available water estimates utilizing only the unmodified WAM Run #3 approach. These risks may be magnified in cases where RWPGs utilize the Firm Yield approach that has a zero reserve for Firm Sales to determine surface water availability, and does not account for all uses of available water in the calculations.

Recommendation 1: Guidelines and suggested processes could be added into the General Guidelines to help define when it is prudent to utilize a Safe Yield approach, which provides for a sufficient Reserve to adequately manage through an extreme and prolonged drought periods.

As examples: Stress tests should be conducted that would evaluate alternative more severe scenarios than the current Drought of Record planning basis, and validate that historical hydrology data is still representative. This would help better understand the need to utilize alternative surface water availability approaches, such as Safe Yield; help gauge the size of a reasonably protective Reserve; and help access the potential need for back-up plans for sourcing water, which may be very relevant for regions experiencing high growth rates,

Rationale:

- Droughts worse than the Drought of Record have historically occurred in Texas. But those droughts are not considered in the current General Guidelines along with climatology factors and known long-term cycles. If a more extreme drought that is worse than the Drought of Record actually occurred, the Firm Yield approach, which currently has no Reserve at all, could lead to a scenario where the Region's water supply is actually depleted. This catastrophic situation would be magnified in areas of high population and limited alternative water supply sources, such as Austin and other metropolitan areas.
- Potential adverse changes in historical hydrology are not taken into account in unmodified WAM Run #3. This can result in far lower inflows to reservoirs than reflected in the historical modeling. CTWC research (which is available upon request) has shown a long-term "drying" trend moving across Texas. Several factors, such as higher temperatures/evaporation, the proliferation of stock tanks, and growth of non-permitted alluvial wells are likely having an adverse impact on inflows in some Regions. As an example, and in recognition of these concerns, the 2016 Region K Plan recommends hydrology studies of the watershed to help in evaluating the situation and the potential impacts on inflows into the Highland Lakes. It is our understanding that this recommended study is underway, and its' findings should be incorporated into all planning cycles.

Recommendation 2: Firm yield or safe yield calculations should not only include environmental flow standards, as prescribed in Section 3.2.1.3, but also incorporate a criterion for permitted and contracted water commitments, such as deliveries to annual interruptible water contracts.

Rationale: During an early stage of a new Drought of Record (DoR) situation, it would be impossible to know with perfect foresight that the new DoR had begun. As such, "available" interruptible water allowed under a TCEQ permitted Water Management Plan (WMP), such as LCRA's 2015 WMP, could very likely be contracted and released from reservoir storage before it becomes evident that a drought is occurring. These large releases would be over and above the Firm Water uses that are currently included in the Firm Yield calculations. CTWC has significant concerns with this approach and commissioned a comprehensive study to analyze this situation by Dr. Jordan Furnans, Vice President & Manager, TX Operations with LRE Water and peer-reviewed by Dr. Barney Austin, President & CEO of Aqua Strategies (study available upon request). It demonstrates that the release of interruptible water, consistent with the 2015 LCRA WMP guidelines, has a major impact during a DoR scenario. More specifically, it results in a major reduction in the Firm Yield, when allowable interruptible water releases are considered. This situation was highlighted during the recent 2008-2015 extreme drought period, which our research shows should now be reflected as the new Drought of Record for the Lower Colorado River Basin. In the case of this recent drought, the very large interruptible releases in 2011 caused the Highland Lakes to fall precipitously and remain at dangerously low combined storage levels until 2015, even though the actual firm demands were still well below the demands in the "defined" Firm Yield. This necessitated extended curtailments of Firm Sales and four years of Emergency Orders to cut off interruptible releases, which highlights the vulnerabilities of the current approaches.

3.6 Hydrologic Variance Requests for Water Availability Determination

CTWC acknowledges and appreciates the additional guidance regarding hydrologic variances for water availability determinations as an extremely important addition to these draft Guidelines. To further advance the TWDB's efforts to protect against the devastating impacts of future droughts with more conservative water planning, we respectfully request that some of the potential alternative assumptions listed under Section 3.6.2 be listed instead under the required hydrologic assumptions for surface water availability modeling assumptions. In other words, these assumptions would be routinely included in a RWPG's surface water availability and supply analyses. They would not require the TWDB Executive Administrator's (EA's) prior written approval to utilize them when determining water availability for a region.

Recommendation: Revise the text of Section 3.6.2 to:

- Require the use of the most current, updated naturalized flow data, which is reflective of current hydrology, as input to the WAM runs that form the basis for the region's Initially Prepared Plan (and Final Adopted Plan).

- Require RWPGs to employ the "potentially appropriate surface water modeling assumptions" listed on Pages 31 to 33 as Nos. 3, 4, 8, 13, and 14 as <u>standard</u> assumptions in the WAM run – not as optional assumptions.

- Clarify the description of potential alternate assumption No. 11 on Page 33 (relating to "Reservoir System Operations") to state that before the EA may

consider approval of a variance for Reservoir System Operations, the RWPG must demonstrate that water is universally and readily available and accessible throughout the proposed reservoir "system."

5.0 Water Management Strategies and Water Management Strategy Projects
5.10 Water Conservation Recommendations

Clarify that water conservation evaluations and recommendations apply to all Water User Groups, not just municipal water users.

6.0 Impacts of the Regional Water Plan
6.1 Impacts of Water Management Strategies on Key Water Quality Parameters in the State and Impacts of Moving Water from Agricultural and Rural Areas

Since WMSs and WMS projects are included in a RWP for all Water User Groups, not just municipal water users, we request that this Section be revised and expanded to assure that a RWP includes a broader discussion of the potential impacts resulting from changes in local water resources, not just the impacts of "moving water from rural and agricultural areas." As currently written, this section implies that the impacts of WMSs are limited to agricultural and rural areas. Please revise the Guidelines to clarify that potential impacts on a wide variety of entities should be identified and described. For example, as described in more detail above, the potential impacts of changes in storage volumes within reservoirs may include serious, perhaps devastating, harm to a local economy.

11.0 Implementation and Comparison to the Previous Regional Water Plan
11.1 Implementation of Previous Regional Water Plan

Section 11.1 requires the RWPGs to report the level of implementation of previously recommended WMSs and WMSPs that have "affected progress" in meeting water needs. Please clarify the meaning of the phrase "affected progress" for purposes of this requirement. This section also states that "RWPG members are strongly encouraged to directly participate in eliciting and gathering responses regarding implementation of projects that are associated with the category of entities that they represent on the RWPG." Despite this guidance, the proposed General Guidelines in Section 11 do not ask for the RWPGs or their RWPG members to investigate and ask why previously recommended WMSs are not being implemented or to help facilitate implementation of worthy WMSs.

Recommendation: Incorporate a requirement for the RWPGs to investigate why previously recommended WMSs are not being implemented, with a focus on identifying barriers to implementation. A suggested area of emphasis is in identifying the adverse impacts on project economics related to low water pricing.

Rationale: Identifying barriers can provide opportunities to better understand and identify underlying issues that can hopefully be addressed to facilitate implementation of worthy WMSs.

Furthermore, CTWC expects that a key barrier to implementation of new water conservation, efficiency and supply projects is low water pricing, which makes it very difficult to economically justify and secure funding for these projects, particularly in agriculture. This effect appears to already be surfacing with the low utilization of SWIFT funds in agricultural applications, as the economics of water savings at current artificially low water prices do not justify project costs.

Suggest adding a Section 14.0 in the General Guidelines to address Statewide Integration, Transparency and Responsibilities for Implementation

At the beginning of the Guidelines, the purpose is stated as follows: "These guidelines provide additional information on the required methods, content, and format of information to be contained in each RWP." As such, it appears that the General Guidelines are limited to individual RWPGs, without provisions for integration across RWPs or for identifying and promoting best practices, transparency and increased public involvement. And, potentially most important, it is also unclear as to who has responsibility to actually oversee and facilitate implementation, to ensure that barriers are being identified and addressed and that real progress is being made on the RWPs. These will ensure that the State Water Plan will drive the creation of the necessary processes and infrastructure required to meet the State's ever growing water needs.

Recommendation 1: Improve integration and alignment across RWPAs and state agencies via:

- Providing a process that facilitates scheduling of more formal joint meetings with RWPGs (like recent structural review at TWDB) to identify best practices; identify common barriers to implementation of worthwhile WMSs; and identify potential needs and opportunities for integration into a statewide plan.

- Consider formation of a cross-functional group of water-related agencies and stakeholders to consider overall ownership responsibilities and processes within and across regions to address key issues such as: major identified system issues that may require cross-agency coordination; barriers to implementation of important WMSs; and vulnerabilities identified from new proposed stress tests. Another major role of this group would be to develop an overall State strategy and set priorities.

Recommendation 2: Improve transparency and public involvement by reminding RWPGs that committee meetings are open to the public and look for practical ways to promote more effective education and participation by the public.

- Encourage RWPGs to post meeting notices and meeting agendas for the RWPG, as well as meetings of its committees/sub-committees, on a frequent, easily

located basis. Meetings should be held at reasonably convenient meeting locations and times

- Encourage RWPGs to draw upon the expertise and abilities of interested stakeholders to help in addressing and resolving complex issues.

Editorial Suggestions:

Pages 43, 44 and 45 – in references to environmental flows, please clarify or specify the environmental flow standards that the RWPGs are expected to utilize for their analyses. Please use consistent terminology for the reference, and consider using a more current reference than the reference to "Senate Bill 3."

Page 64 – the reference to "30" TAC §357.22(b) should be revised to "31" TAC §357. 22(b).

Page 70 – there is a reference to "Texas Administrative Code Chapters 206 and 213," but the Title number for the Administrative Code is missing.