

LLANO ESTACADO REGIONAL WATER PLANNING GROUP

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Region O Project Manager
Texas Water Development Board
PO Box 13231
Austin, Texas 78711

Re: Procedures for determining surface water availability and water supplies for the 2021 Llano Estacado Regional Water Plan (Region O)

The Llano Estacado Regional Water Planning Group (Region O) met on January 23, 2018 and discussed the process to determine the amount of surface water available from existing water rights and future water management strategies. During this meeting, Region O discussed specific deviations from the standard Texas Water Development Board (TWDB) guidance that will be employed to develop the 2021 Llano Estacado Regional Water Plan.

As you know, the guidance provided by the TWDB in the base scope of work for the Fifth Cycle of Regional Water Planning requires the use of the Run 3 (full authorization) version of Water Availability Models (WAMs) maintained by the Texas Commission on Environmental Quality (TCEQ). These river-basin-scale models are used by the TCEQ for evaluating legal water available to applications for new or amended water rights, and as such, include some aspects that are not appropriate for water planning.

Region O requests that the TWDB allow specific variations from the base TCEQ WAMs for analyses that determine surface water available to existing rights.

1. Brazos WAM. Region O requests permission to conduct analyses using the TCEQ Brazos River Basin WAM as modified by the Brazos G Regional Water Planning Group (Brazos G WAM) for determining surface water reliabilities for the sake of inter-regional consistency. This model includes limited return flows for its reliability evaluations.
2. Canadian WAM. Also to promote inter-regional consistency, Region O requests permission to use yield values developed by the Panhandle Regional Water Planning Group using the TCEQ Canadian River Basin WAM for determining firm yield in that basin for water supplies supporting Region O Water User Groups (WUGs), specifically Lake Meredith.
3. Colorado WAM. Region O requests permission to use surface water reliability values developed by the Region F Regional Water Planning Group using the TCEQ Colorado River Basin WAM for determining reliability and yield

in that basin for water supplies supporting Region O Water User Groups (WUGs) to promote inter-regional consistency.

4. Red River WAM. Region O requests permission to use surface water reliability values developed by the Panhandle Regional Water Planning Group using the TCEQ Red River Basin WAM for determining reliability and yield in that basin for water supplies supporting Region O Water User Groups (WUGs), specifically Mackenzie Reservoir.
5. Lake Alan Henry Analysis. Region O requests permission to conduct analyses using a stand-alone WAM developed specifically for Lake Alan Henry. In response to the ongoing drought in the mid-2000s, the City of Lubbock requested that HDR perform a yield analysis of Lake Alan Henry (LAH) that extended through 2006 in order to better account for the impacts of that drought cycle. Additionally, a recent (2005) hydrographic survey of LAH by the TWDB indicates that the capacity of LAH has been reduced from its permitted capacity of 115,937 to 94,808 acre-feet (acft). This is due to sedimentation in the reservoir pool and inaccuracies in the determination of the storage capacity during initial construction. Both the drought extending through 2006 and the reduced storage capacity could substantially reduce the computed yield of the reservoir.

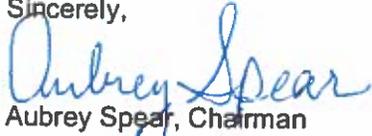
The model developed for Lubbock uses WAM naturalized flows through 1997 and then extends the period of record through 2006 using relationships consistent with the WAM methodology. The benefit to using this subset of the Brazos WAM is that it will provide a better estimate of the yield of Lake Alan Henry.

6. Utilize the same water supply model for strategy evaluations as is used to determine supplies available to existing water rights.
TWDB guidance requires that evaluations of new water management strategies utilize a strict application of the TCEQ Run 3 WAM. The rationale for this guidance is to ensure that the supply from a water management strategy is consistent with what might actually be permitted by the TCEQ. However, TCEQ takes into account more information than a simple application of the WAM when making water right permitting decisions. Additionally, many water management strategies utilize or are intended to supplement existing supplies, and therefore should be evaluated consistent with the existing supplies they are intended to supplement. The existing supply and the supplementing water management strategy need to be evaluated consistently. Furthermore, the same aspects of the Run 3 WAM that limit its usefulness for determining supplies available to existing rights also limit its ability to determine supplies to new water management strategies. The TCEQ Run 3 WAM is a legal permitting tool that has only limited utility for water supply planning. Region O requests that the Brazos G WAM be utilized to evaluate water management strategies instead of the base TCEQ Run 3 WAM.
The benefit to this methodology is that it will provide a consistent basis of evaluation between existing supplies and new water management strategies.

Region O thanks the TWDB for considering these alternative technical approaches for determining surface water supplies to existing water rights and new water management strategies. We welcome any questions you may have regarding this hydrologic variance request for surface water supplies.

Please direct any questions to the Region O technical consultant, Paula Jo Lemonds of HDR at paula.lemonds@hdrinc.com or (512) 912-5127.

Sincerely,



Aubrey Spear, Chairman

Llano Estacado Regional Water Planning Group – Region O