

REGION H WATER PLANNING GROUP

Senate Bill 1 - Texas Water Development Board

c/o San Jacinto River Authority P. O. Box 329, Conroe, Texas 77305 Telephone 936-588-1111 Facsimile 936-588-3043

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TWDB Liaison Lann Bookout May 29, 2018

Mr. Jeff Walker Executive Administrator Texas Water Development Board 1700 North Congress Avenue Austin, Texas 78701

Re: Request for Modifications to TCEQ Water Availability Models

Dear Mr. Walker:

The Region H Water Planning Group (RHWPG) considered and took action recommending the use of alternatives to the unmodified TCEQ WAM Run 3 models as a basis for determining firm water supplies for the 2021 Regional Water Plan (RWP) at its April 4, 2018 meeting. After consideration of TWDB guidance and the results of review of the TCEQ WAM Run 3 models by the Region H Consultant Team, the RHWPG requests TWDB's approval for exceptions to modeling requirements for the Trinity, San Jacinto, Brazos/San Jacinto-Brazos, and Colorado/Brazos-Colorado WAMS. The proposed exceptions build upon the existing TCEQ WAM Run 3 with modifications to better reflect right or basin-specific factors for Regional Planning purposes. In brief, the requested exceptions include the following.

- Trinity River Basin Use of the modified Region C WAM as a base model to promote greater inter-regional consistency and incorporation of a limited quantity of return flows.
- San Jacinto Basin Application of alternate reservoir conservation pool capacities to reflect water right holder operational procedures.
- Brazos River Basin / San Jacinto-Brazos Coastal Basin Use of the modified Brazos G WAM as a base model to promote greater inter-regional consistency.
- Brazos-Colorado Coastal Basin Adjustment of modeling procedures for multiple rights to better reflect permit conditions.

The requested exceptions are described in greater detail in *Attachment A* to this letter. Please feel free to contact myself or Philip Taucer of Freese and Nichols at 713-600-6835 with any questions regarding this request. Thank you for your consideration on this matter.

Sincerely,

Mark Evans, Chair Region H Water Planning Group

Attachment A

Proposed Region H Modifications to the TCEQ WAMs

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Overview

At its April 4, 2018 meeting, the Region H Water Planning Group (RHWPG) considered and took action recommending the use of alternatives to the unmodified TCEQ WAM Run 3 models as a basis for determining firm water supplies for the 2021 Regional Water Plan (RWP). The proposed exceptions, which are discussed by basin in the following sections, build upon the existing TCEQ WAM Run 3 with modifications to reflect right or basin-specific factors for Regional Planning purposes.

Trinity River Basin WAM

In order to promote inter-regional consistency, the RHWPG is seeking an exception from TWDB surface water modeling requirements to utilize the modified Region C WAM for the Trinity River Basin as a base model for analyses of surface water supply availability in Region H. This model, as noted in the April 10, 2018 letter from Region C to TWDB, is based upon a draft version of the TCEQ WAM Run 3 provided by TCEQ to Region C in December of 2017, which incorporates major water right amendments granted by TCEQ but not yet available on the TCEQ website at that time. The proposed model, as indicated in the Region C letter, also includes further modifications to reflect operation of groups of reservoirs as systems, adjustment of pool elevations where appropriate, adjustment of complex reservoir code to facilitate firm yield determination where applicable, as well as other changes.

The RHWPG has adopted the use of a modified Run 3 model for determining firm yield in the lower Trinity River Basin in the 2001, 2006, 2011, and 2016 RWPs. These models included a limited quantity of return flows in the upper basin expected to be available for future conditions as determined through correspondence with the Region C Planning Group. The RHWPG therefore requests an exception to conduct firm yield analysis to include a limited quantity of return flows in the Trinity River Basin.

San Jacinto River Basin WAM

Changes in reservoir conservation pool elevation operations have been discussed for the San Jacinto Basin. Region H therefore requests an exception to allow modification to the WAM Run 3 for the San Jacinto River Basin to reflect applicable adjustments to reservoir conservation pool levels.

Brazos River Basin / San Jacinto-Brazos Coastal Basin WAM

In order to promote inter-regional consistency, the RHWPG is seeking an exception from TWDB surface water modeling requirements to utilize the modified Brazos G WAM for the Brazos River Basin as a base model for analyses of surface water supply availability in Region H. This model is inclusive of the San Jacinto-Brazos Coastal Basin. This model, as noted in the February 23, 2018 letter from HDR on behalf of the Brazos G RWPG to TWDB, is based upon the TCEQ WAM Run 3. The proposed Brazos G model, as indicated in the letter, includes modifications to extend the modeled period of record, reflect existing subordination agreements, and incorporate some return flows, as well as other changes. Region H has similarly utilized the Brazos G WAM for prior RWPs.

Colorado River Basin / Brazos-Colorado Coastal Basin WAM

The Region H Water Planning Area includes the Brazos-Colorado Coastal Basin in the western portions of Austin, Fort Bend, and Brazoria Counties, with the remainder of the coastal basin within the Region K Water Planning Area. There are a number of surface water rights for various permitted uses in the

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basin, including multiple authorizations for irrigation diversions as well as several larger permits for industrial use. In reviewing the WAM for the basin (included within the TCEQ Run 3 WAM for the Colorado River Basin), the RHWPG identified opportunities to adjust model code to facilitate determination of firm yield and reflect annual streamflow diversion limits as specified in water right permits.

Certificate of Adjudication (CoA) 13-3421, as amended, authorizes diversion of 20,000 ac-ft/yr of water from the San Bernard River by multiple water rights holders and storage in several off-channel reservoirs in the Region K Water Planning Area, with the various right holders granted access to differing storage volumes in the reservoirs. A portion of the diversion is also able to be taken as a run of river diversion at a downstream point within Region H if certain flow conditions are met or through releases of stored water to the downstream point. The WAM Run 3 represents this complex situation with composite reservoirs for each right holder's share of storage and an attempted downstream diversion of a portion of the permit. The following modifications to the WAM Run 3 are proposed for RWP supply determination for Region H:

- Modeling of all diversions for the CoA occurring at the upstream reservoirs and diversion point on the San Bernard River to facilitate evaluation of reliable supply from the right.
- Applying limits to river diversions to prevent excess diversions from off-channel reservoir refilling.
- Application of a firm yield approach to determine the reliable supply from this portion of the run-of-river availability of the San Bernard River.

Certificate of Adjudication (CoA) 13-3423, as amended, authorizes diversion of 32,000 ac-ft/yr of water from the San Bernard River and storage in four off-channel reservoirs. The following modifications to the WAM Run 3 are proposed for RWP supply determination for Region H:

- Modeling of the off-channel reservoirs as a single composite reservoir to better reflect actual interconnectivity and use of storage by the right holder.
- Applying limits to river diversions to prevent excess diversions from off-channel reservoir refilling.
- Application of a firm yield approach to determine the reliable supply from this portion of the run-of-river availability of the San Bernard River.