

BRAZOS G

WATER PLANNING GROUP

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BRAZOS RIVER AUTHORITY, Administrative Agent
P.O. Box 7555 ◊ Waco, Texas 76714-7555
(254) 761-3100 ◊ Fax (254) 761-3204

September 29, 2011

Mr. Lann Bookout
Texas Water Development Board
P.O. Box 13231
Austin, Texas 78711-3231

Re: Procedures for Determining Water Availability and Water Supplies for
the 2016 Brazos G Regional Water Plan

Dear Mr. Bookout:

The Brazos G Regional Water Planning Group (Brazos G) met on September 29, 2011 and discussed the process to determine the amount of surface water available from existing and future water management strategies using the guidance provided by the Texas Water Development Board (TWDB) in the base scope of work for the Fourth Cycle of Regional Water Planning. During this meeting, Brazos G discussed specific deviations from, or clarifications of, the standard TWDB guidance that will be employed to develop the 2016 Brazos G Regional Water Plan consisting of specific items that are either not specified in the TWDB rules, or deviations from the standard TWDB methodologies.

By this letter, Brazos G requests that the TWDB allow Brazos G to use these alternative assumptions outlined in the following paragraphs throughout the regional planning process for analyses that determine surface water availability to existing rights, and also for analyses to determine the potential supplies available from new water management strategies. These assumptions will require the approval of the TWDB in order to be incorporated into the Texas Commission on Environmental Quality (TCEQ) Brazos River Basin WAM (Brazos WAM) to formulate the 2016 Brazos G WAM (as defined below).

The TWDB has mandated that the Water Availability Models (WAMs) maintained by the TCEQ be used for determining surface water supplies for regional water plans. The TCEQ WAMs, which have been developed for all river basins in Texas, simulate the management and use of streamflow and reservoirs over a historical period of record, adhering to the prior

appropriation doctrine, which governs Texas' water right priority system. The TCEQ WAMs are the fundamental tools used to determine surface water availability for water rights permitting, and contain information about water rights in each respective river basin.

The TCEQ Brazos WAM contains information on all water rights in the Brazos Basin. Embedded within this model are certain assumptions that the TCEQ specifies when analyzing water right reliabilities. There are several versions of the TCEQ Brazos WAM, and the TWDB guidance stipulates that regional water planning groups use the version that TCEQ uses to analyze applications for perpetual water rights. This is often referred to as the WAM "Run 3". The assumptions in the TCEQ Brazos WAM Run 3 are not necessarily the most appropriate to apply to the regional water planning process, and can be changed by modifying model parameters when the model is used for water planning purposes.

The Brazos G Regional Water Planning Group requests that the TWDB approve the following assumptions for use in developing the 2016 Brazos G Regional Water Plan. The WAM containing the necessary modifications to the TCEQ WAM incorporating these assumptions will be referred to as the "Brazos G WAM." These assumptions include the following items and are consistent with the assumptions used in the development of both the 2006 and 2011 Brazos G Plans.

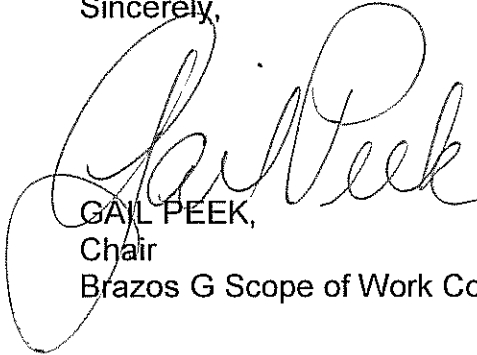
- The latest version of the TCEQ Brazos WAM will be obtained from the TCEQ. It is anticipated that the model will contain the latest approved water rights through September 2011. This is to ensure that the latest version of the Brazos WAM is being utilized during the analysis.
- The Brazos G WAM will include a certain level of current and future return flows (wastewater treatment plant effluent) discharged by entities located throughout the basin that are permitted to discharge in excess of 0.9 million gallons per day (MGD). These return flows are based on historical discharges and projected future discharges assuming an aggressive plan for future reuse of each entity's effluent. These return flow amounts were reviewed and acknowledged by each entity during the development of the 2006 Plan and were used during the development of the 2006 and 2011 Plans following approval of the TWDB. These return flow amounts will be revisited for the 2016 Plan and will be adjusted for any changes including new discharges or new reuse permits.
- The TCEQ WAM assumes all diversions from storage occur lakeside and does not take into account BRA contracts located throughout the basin. Therefore the Brazos G WAM will be modified to include all BRA contracts located and modeled at their actual diversion locations and able to receive releases from multiple reservoirs, if applicable. This will provide a better estimate of streamflows at various points in the basin.

- The Brazos G WAM will be updated with Year 2020 and Year 2070 elevation-area-capacity information for all reservoirs greater than 5,000 acft storage capacity.
- The Brazos G WAM will be modified to include additional subordination agreements between entities in the Brazos Basin not included in the TCEQ Brazos WAM Run 3.
- Water supply determination for municipal and industrial users will be calculated using the results from the Brazos G WAM in the following ways:
 - Run of the river rights will use minimum annual diversion as their reliable supply.
 - Reservoirs will use either a firm or safe yield depending on the location of the reservoir and the preferred operations of the reservoir owner. In the upper Brazos Basin, the concept of a 2-year safe yield was used in the 2011 Plan for some reservoirs. The same safe and firm yield assumptions employed in the 2011 Plan will be used in the 2016 Plan, unless a change is specifically requested by a reservoir owner.
 - These supplies will be compared against existing infrastructure (water treatment plants, pipelines, intakes, etc.) and will be constrained if the existing infrastructure is not sufficient to facilitate full utilization of the supply.
- Water supply for irrigation rights will be determined using the 75/75 concept. This means that the reliable supply for irrigation will be that annual supply for which 75% of the water is available 75% of the time. This concept is based on historical practices by TCEQ on issuing irrigation rights. This methodology assumes that during critical drought periods, farmers will tend not to irrigate crops because of extreme dry conditions.
- The period of record for the Brazos WAM is 1940 – 1997. An extended period of record will be used for portions of the upper basin to better account for the drought beginning around year 1997. This recent drought is more severe than the 14-year drought of record that occurred in the mid-1940's to mid-1950's. During the 2011 planning cycle, Brazos G's technical consultant, HDR Engineering, developed a subset of the Brazos WAM that extends the period of record through June 2008 for a portion of the upper Brazos Basin including the Clear Fork of the Brazos River. This version of the Brazos G WAM will be used to determine surface water supplies for that portion of the upper Brazos Basin. This is consistent with the methodology used during the 2006 Plan, when a similar subset model was used to extend hydrology through June 2004 for this portion of the basin.

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9/29/2011

If you have any questions regarding this request, please contact David Dunn at 512-912-5136 or Trey Buzbee at 254-761-3168. We appreciate the TWDB's consideration of this request.

Sincerely,

A handwritten signature in black ink, appearing to read "Gail Peek". The signature is fluid and cursive, with a large loop at the end of the last name.

GAIL PEEK,
Chair
Brazos G Scope of Work Committee