

# REGION C WATER PLANNING GROUP

Senate Bill One Fifth Round of Regional Water Planning - Texas Water Development Board

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March 4, 2019

Jeff Walker  
Executive Administrator  
Texas Water Development Board  
1700 North Congress  
Austin, Texas 78711-3231

Re: Hydrologic Variance Requests for Water Availability Determination of Surface Water Supplies from Water Management Strategies for Region C

Dear Mr. Walker:

As required by rule, surface water strategies must be evaluated using the TCEQ-approved water availability models (WAMs). These models are used by TCEQ for water right permitting. For regional water planning purposes, it is important to accurately assess the reliable supply from a future new water source. In some cases, this assessment requires modification to the TCEQ WAMs or the use of a different model. This letter requests the approval of the hydrologic variances to the TCEQ WAMs for specific water management strategies for Region C. These requests are outlined below.

### **Trinity River Basin**

The only strategy for new surface water in the Trinity River Basin is the Lake Tehuacana project for Tarrant Regional Water District (TRWD). TRWD operates its raw water system in accordance with its Management Plan, which is based on the safe yield of the system. Safe yield is defined as the water that could have been supplied from a reservoir or reservoir system during a repeat of drought-of-record conditions, leaving one year's supply in reserve at the minimum content. Lake Tehuacana, if built, would become part of TRWD's raw water system. Therefore, Region C requests the use of safe yield for Lake Tehuacana.

In addition to safe yield, Region C requests to use the Region C Trinity WAM, with permitted capacities, to evaluate the yield of the lake. The Region C WAM includes corrections to the TCEQ WAM that are necessary to accurately evaluate supplies (see hydrologic variance request approval for existing water supplies). This WAM includes adopted SB3 environmental flows. To better assess the potential environmental flow requirements for Lake Tehuacana, Region C intends to develop SB3 environmental flows at the reservoir following the TCEQ protocols.

### **Red River Basin**

There are two potentially feasible new surface water strategies in the Red River Basin: Bois d'Arc Lake and an off-channel reservoir for Dallas Water Utilities. Bois d'Arc Lake was granted a Texas water right in 2015. As part of the permitting process, updated hydrology for Bois d'Arc Creek watershed and project-specific environmental flows were developed for the Red River WAM. These changes were accepted by TCEQ and used to assess the firm yield of the project. Region C proposes to use the firm yield reported by TCEQ for the water right for Bois d'Arc Lake.

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For the off-channel reservoir, there are no hydrologic variance requests. This strategy proposes to divert water from the Red River downstream of Lake Texoma. While there are no environmental flows defined for the Red River Basin, there are minimum flow requirements for the Red River in the Red River Compact. These flow requirements were respected for this project.

***Neches River Basin***

There is one new surface water project proposed in the Neches River Basin: Neches Run-of-the-River strategy for Dallas Water Utilities. There are no hydrologic variance requests for this strategy.

***Sulphur River Basin***

There are several new surface water projects identified for Region C water providers from the Sulphur River Basin. These projects are currently being studied by the Sulphur Basin Group (a collection of Region C and Region D water providers). As part of these studies, a new water availability model was developed using the software Riverware. This model allows evaluations of combinations of multiple sources, as well as individual projects. The model also extends the hydrology through 2014 to capture the new drought of record recorded in the Sulphur River Basin. (Note: the TCEQ Sulphur WAM hydrology ends in 1996.)

Environmental flows as specified under the Texas Instream Flow Program (SB3) have not been developed for the Sulphur Basin. To account for the impact to yield associated with environmental flows, the Lyons Method was used for the Riverware modeling of the Sulphur River Basin.

Hydrologic variance requests for Sulphur River Basin projects include:

- Use of the Sulphur River Basin Riverware model to assess yields for non-permitted projects.
- Similar to Bois d'Arc Lake, a water right was granted to Lake Ralph Hall in 2013. Region C proposes to use the firm yield assessed by the TCEQ as part of the permitting process.
- Evaluate environmental flows for new reservoirs, Wright Patman reallocation, and the system operation of these strategies (Sulphur basin supplies) using the environmental flows developed in the Sulphur Basin Group studies. These environmental flows use the Lyons Method.

The RCWPG approved these variances at their February 25, 2019 meeting. Please call me if you have any questions regarding our request.

Sincerely,



Kevin Ward  
Region C Chair