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August 17, 2018

Jeff Walker,
Executive Administrator
Texas Water Development Board
1700 North Congress
Austin, TX 78711-3234

Re: Hydrologic Variance Request for the 2021 Rio Grande Regional Water Plan (Region M)

Mr. Walker,
The Rio Grande Planning Region intends to rely on current Water Availability Model (WAM) Run 3 estimates of Firm Yield and Modeled Available Groundwater to establish availabilities in the 2021 Rio Grande Regional Water Plan. The following assumptions **have been approved by the Rio Grande Regional Water Planning Group at the August 1, 2018 scheduled Board Meeting** and are submitted here for your review.

Surface Water

1. The most current WAM Run 3 will be used for all Surface Water Rights Modeling for existing supplies and future WMS, which includes:
    a. Full exercise of existing surface water rights;
    b. Zero effluent discharges unless specifically required by a surface water right (hydropower, industrial rights, etc.); and
    c. Best available water rights information as of June 2018.
    d. In the evaluation of the cumulative effects of water management strategies, the Rio Grande WAM Run 3 may be used to estimate the impacts of future urbanization (and the resulting reclassification of water rights) on the firm yield of the system. The results of these analyses will be limited to the discussion of cumulative effects.
2. Reservoir capacities for Amistad and Falcon will be based on the current estimates for sedimentation in 2020 and 2070, and a linear interpolation will be used to determine capacity for the decades between.
    a. Existing supplies will be based on the 2020 Firm Yield; and
    b. Projected supplies and WMS will rely on estimated decadal averages of Firm Yield.

3. Period of record for simulations:
    a. Rio Grande WAM: 1940 – 2000
    b. Nueces-Rio Grande WAM: 1948 – 1998
4. The Rio Grande WAM will be run to be consistent with the variance submitted by Region E and approved April 18, 2018 with respect to the following:
    a. Irrigation demand patterns above Fort Quitman will be modified so that diversions only occur March through October, which is consistent with the operations of the Rio Grande Project. This demand pattern change does not have a discernible impact on the firm yield of the Amistad-Falcon system in Region M.

Reuse/Recycle Water

1. Source water available for a reuse water management strategy will be determined based on the estimated amount of water returned to a utility's WWTPs for each decade, less the amount of reuse water already being utilized as existing supply.
    a. The amount of water returned to a utility's WWTP will be estimated at 50% of the utility's projected water demands, adjusted for water conservation and drought management strategies, unless site-specific information is available

    Example: [50% * (projected water demands for a utility - conservation WMS volumes - drought management WMS volumes)] – existing reuse supply

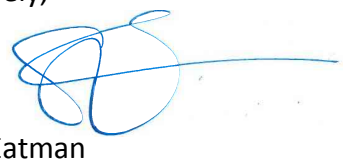
        i. For Direct Reuse, this calculation will set an upper limit to the volume of reuse water available, and will not require any WAM modeling, since Run 3 assumes no return flows.
        ii. For Indirect reuse, treated effluent discharge volumes returned to the Rio Grande would be limited by this calculation, and the effluent could be entered as a return flow in the WAM to assess downstream availability. There are no current or proposed future indirect reuse project in Region M.
2. Existing and future non-potable reuse supplies will be shown to meet no more than **10%** of municipal demands. Manufacturing and steam-electric use of non-potable water will be considered on a case-by-case basis.

Hydrologic Models

- Rio Grande WAM (downloaded from TCEQ 8/15/18, may be updated as TCEQ posts additional updates)
- Nueces – Rio Grande WAM (downloaded from TCEQ 6/21/18)
- Southern Carrizo-Wilcox-Queen City-Sparta GAM
- Gulf Coast Aquifer System (southern portion) GAM
- Yegua-Jackson Aquifer GAM
- Any additional currently-approved WAM or GAM necessary

Please contact me if you have any questions.

Sincerely,



Sara Eatman
Technical Consultant, Rio Grande Regional Water Planning Group

Cc: Tomas Rodriguez, Chairman, Rio Grande Regional Water Planning Group
Ron Garza, Lower Rio Grande Development Council
William Alfaro, TWDB Project Manager