Surface Water Hydrologic Variance Request Checklist

Texas Water Development Board (TWDB) rules[1] require that regional water planning groups (RWPG) use most current Water Availability Models (WAM) from the Texas Commission on Environmental Quality (TCEQ) and assume full utilization of existing water rights and no return flows for surface water supply analysis. Additionally, evaluation of existing stored surface water available during Drought of Record conditions must be based on Firm Yield using anticipated sedimentation rates. However, the TWDB rules also allow, and **we encourage**, RWPGs to use more representative, water availability modeling assumptions; better site-specific information; or justified operational procedures other than Firm Yield with written approval (via a Hydrologic Variance) from the Executive Administrator in order to better represent and therefore prepare for expected drought conditions.

RWPGs must use this checklist, which is intended to save time and reduce effort, to request a Hydrologic Variance for estimating the availability of surface water sources. For Questions 4 – 10, please indicate whether the requested variance is for determining Existing Supply, Strategy Supply, or both. Please complete a separate checklist for each river basin in which variances are being requested.

Water Planning Region: B

1. Which major river basin does the request apply to? Please specify if the request only applies part of the basin or only to certain reservoirs.

   Red River WAM, as applicable to Region B

2. Please give a brief, bulleted, description of the requested hydrologic variances including how the alternative availability assumptions vary from rule requirements, how the modifications will affect the associated annual availability volume(s) in the regional water plan, and why the variance is necessary or provides a better basis for planning. You must provide more-detailed descriptions in the subsequent checklist questions. Attach any available documentation supporting the request.

   To best represent how local supplies are managed the following modifications will be needed to a better basis for planning.

   - Subordinate senior water rights in Lake Texoma to Lake Arrowhead and Lake Ringgold (see attached)
   - Include 20 percent reserve for reliable supply (20% of conservation storage remaining in the reservoir at all times) for the following reservoirs:
     - Arrowhead
     - Kickapoo
     - Kemp/Diversion system
   - Include a one-year safe yield for reservoirs where a 20% reserve supply at all times is not attainable:

[1] 31 Texas Administrative Code (TAC) §§ 357.10(14) and 357.32(c)

- Santa Rosa
- Electra
- North Fork Buffalo Creek
- Olney/Cooper System

3. Was this request submitted in a previous planning cycle? If yes, please indicate which cycle and note how it is different, if at all, from the previous request?

   No

   The Red River WAM was updated in 2021. Changes made in this update resulted in significant increases in pass throughs to downstream water right holders in Lake Texoma, which are not consistent with current operations. (see attached)

4. Are you requesting to extend the period of record beyond the current applicable WAM hydrologic period? If yes, please describe the proposed methodology. Indicate whether you believe there is a new drought of record in the basin.

   No

   Choose an item.

5. Are you requesting to use a reservoir safe yield? If yes, please describe in detail how the safe yield would be calculated and defined, which reservoir(s) it would apply to, and why the modification is needed or preferrable for drought planning purposes.

   Yes

   Existing and Strategy Supply

   To maintain reservoir supply operations during a repeat of drought-of-record conditions, a minimum reserve supply equal to 20 percent of the conservation storage will be maintained in each of the following Region B supply reservoirs in the Red River Basin:

   - Arrowhead
   - Kickapoo
   - Kemp/Diversion system

   A one-year safe yield reserve supply will be maintained in the following Region B supply reservoirs in the Red River Basin:

   - Santa Rosa
   - Electra
   - North Fork Buffalo Creek
   - Olney/Cooper System

6. Are you requesting to use a reservoir yield other than firm yield or safe yield? If yes, please describe, in a bulleted list, each modification requested including how the alternative yield was

calculated, which reservoir(s) it applies to, and why the modification is needed or preferrable for drought planning purposes. Examples of alternative reservoir yield analyses may include using an alternative reservoir level, conditional reliability, or other special reservoir operations.

Yes

We are requesting the use of a safe yield that maintains a minimum 20 percent reserve capacity as noted above.

7. Are you requesting to use a different model (such as a RiverWare or Excel-based models) than RUN 3 of the applicable TCEQ WAM? If yes, please describe the model being considered including how it incorporates water rights and prior appropriation and how it is more conservative than RUN 3 of the applicable TCEQ WAM.

   No

   Choose an item.
   Click or tap here to enter text.

8. Are you requesting to use a modified TCEQ WAM? If yes, please describe in a bulleted list all modifications in detail including all specific changes to the WAM and whether the modified WAM is more conservative than the TCEQ WAM RUN 3. Examples of WAM modifications may include adding subordination agreements, contracts, updated water rights, modified spring flows, updated lake evaporation, updated sedimentation[2], system or reservoir operations, or special operational procedures into the WAM.

   Yes

   Existing and Strategy Supply

   - Subordinate senior water right from Lake Texoma to water rights in the Little Wichita River basin. This includes the existing Lake Arrowhead and future Lake Ringgold.
   - Modeling Kemp and Diversion reservoirs as a system rather than as individual reservoirs
   - Updating sedimentation for reservoirs based on TWDB volumetric surveys for 2030 and 2080 conditions.

9. Are you requesting to include return flows in the modeling? If yes, are you doing so to model an indirect reuse water management strategy (WMS)? Please provide complete details regarding the proposed methodology for determining reuse WMS availability.

   No

[2] Updating anticipated sedimentation rates does not require a hydrologic variance under 31 TAC § 357.10(14). The Technical Memorandum will require providing details regarding the sedimentation methodology utilized. Please consider providing that information with this request.

Choose an item.
Click or tap here to enter text.

10. Are any of the requested Hydrologic Variances also planned to be used by another region for the same basin? If yes, please indicate the other Region. Please indicate if unknown.

    No

    Click or tap here to enter text.

11. Please describe any other variance requests not captured on this checklist or add any other information regarding the variance requests on this checklist.

    Click or tap here to enter text.