

November 15, 2023

B&V Project 411170

Mr. Jeff Walker
Executive Administrator
Texas Water Development Board
P.O. Box 13231
1700 North Congress Avenue
Austin, Texas 78711-3231

Transmitted Via Email

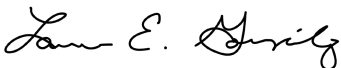
RE: Submittal of Hydrologic Variance Request Checklists on behalf of the
South Central Texas (Region L) Regional Water Planning Group
2026 Regional Water Planning Cycle

Dear Mr. Walker,

The South Central Texas (Region L) Regional Water Planning Group (SCTRWPG) approved hydrologic assumptions and needed hydrologic variances for submittal to the Texas Water Development Board (TWDB) at the November 2, 2023, SCTRWP meeting. On behalf of the SCTRWP, Black & Veatch submits this transmittal letter and enclosed hydrologic variance checklists for the Guadalupe-San Antonio River Basin and Nueces River Basin for your consideration for the 2026 Region L Regional Water Planning Cycle.

We appreciate your consideration of this request. Please let me know if you need any additional information or if you have any questions. Thank you.

Sincerely,



Lauren E. Gonzalez
Planning and Regulatory Permitting Lead
BLACK & VEATCH

Enclosures (2)

cc: Michele Foss, Texas Water Development Board
Tim Andrus, Victoria County Groundwater Conservation District
Vanessa Puig-Williams, Environmental Defense Fund
Steve Graham, San Antonio River Authority
Cayethania Castillo, San Antonio River Authority
Jaime Burke, Black & Veatch



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ENCLOSURE 1

Hydrologic Variance Checklist for the Guadalupe-San Antonio River Basin

Surface Water Hydrologic Variance Request Checklist

Texas Water Development Board (TWDB) rules¹ 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: **L**

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.

Guadalupe-San Antonio Basin

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.
 - A. The unmodified (other than reservoir sedimentation) Guadalupe-San Antonio Water Availability Model (WAM) from Texas Commission on Environmental Quality (TCEQ) will be used for surface water supply evaluations, except as described below.**
 - B. The Region L WAM will be used to establish existing supply for Canyon Reservoir and power plant reservoirs of Braunig Lake, Calaveras Lake, and Coletto Creek Reservoir. This is the same model approved by the Texas Water Development Board (TWDB) and used in the currently approved 2021 Region L Regional Water Plan. The model uses a daily time step simulation with no use of effluent or other changes to water rights. The Region L WAM more accurately considers reservoir operations in its analysis, including operation of the power plant reservoirs subject to authorized consumptive uses, with makeup diversions as needed to maintain full conservation storage to the extent possible, subject to senior water rights, instream flow**

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

considerations, and/or applicable contractual provisions. The associated annual availability of the reservoirs is expected to increase with use of the Region L WAM.

C. The Flow Regime Application Tool (FRAT) will be used, in conjunction with the TCEQ WAM Run 3, to evaluate environmental flows for new surface water management strategies (WMSs). FRAT converts between monthly time step simulations and daily time step simulations.

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?

Yes

The same hydrologic assumptions and variances were used in the 2016 and 2021 Regional Water Plan.

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.

No, Region L does not request to extend the period of record beyond the current applicable WAM hydrologic period.

No, Region L does not believe there is a new drought of record in the basin.

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 preferable for drought planning purposes.

No

Choose an item.

No, Region L does not request to use a reservoir safe yield.

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 preferable for drought planning purposes. Examples of alternative reservoir yield analyses may include using an alternative reservoir level, conditional reliability, or other special reservoir operations.

No

Choose an item.

No, Region L will use firm yield to determine reservoir yield.

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.

Yes

Existing Supply

The Region L Water Availability Model (WAM) will be used to establish existing supply for Canyon Reservoir and power plant reservoirs of Braunig Lake, Calaveras Lake, and Coletto Creek Reservoir. This model simulates Federal Energy Regulatory Commission (FERC) requirements, a drought contingency trigger at the Spring Branch stream gauge, an agreement with Guadalupe River Trout Unlimited, and various water rights and daily operations dependent on Canyon Reservoir. The model uses a daily time step simulation with no use of effluent or other changes to water rights. The Region L WAM more accurately considers reservoir operations in its analysis, including operation of the power plant reservoirs subject to authorized consumptive uses, with makeup diversions as needed to maintain full conservation storage to the extent possible, subject to senior water rights, instream flow considerations, and/or applicable contractual provisions.

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 sedimentation², system or reservoir operations, or special operational procedures into the WAM.

Yes

Existing Supply

The Region L WAM more accurately considers reservoir operations in its analysis. The Region L WAM includes the following considerations:

- **Simulates Federal Energy Regulatory Commission (FERC) requirements, a drought contingency trigger at the Spring Branch stream gauge, an agreement with Guadalupe**

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.

River Trout Unlimited, and various water rights, including special conditions, and daily operations dependent on Canyon Reservoir.

- **The model uses a daily time step simulation with no use of effluent or other changes to water rights.**
- **Operation of the power plant reservoirs subject to authorized consumptive uses, with makeup diversions as needed to maintain full conservation storage to the extent possible, subject to senior water rights, instream flow considerations, and/or applicable contractual provisions.**

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.

Yes

Existing and Strategy Supply

For Existing Supply, return flows will be included in the WAM when specifically required by a surface water right. For example, the Region L WAM includes a detailed simulation of Calaveras Reservoir, which incorporates effluent from the San Antonio Water System (SAWS), subject to downstream senior water rights and CPS Energy's diversion operations.

Additionally, return flows will be included for Water Management Strategies (WMSs) if an entity requests inclusion of a project that includes a bed and banks permit. For example, the 2021 Regional Water Plan included the Canyon Regional Water Authority (CRWA) Siesta Project, which modeled firm yield based on return flows from a wastewater treatment facility.

Source water available for reuse WMSs 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. The upper limit of source water available for reuse WMSs will be determined based on the amount of water returned to a utility's wastewater treatment plants, estimated at 50% of the utility's projected water demands, adjusted for water conservation and drought management strategies, unless site specific information is available. Indirect reuse WMSs are evaluated using TCEQ WAM Run 3. Direct reuse WMSs do not require WAM modeling.

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.

Not Applicable - No additional variances are requested.

ENCLOSURE 2
Hydrologic Variance Checklist for the Nueces River Basin

Surface Water Hydrologic Variance Request Checklist

Texas Water Development Board (TWDB) rules¹ 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: **L**

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.

Nueces Basin

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.

Return flows will be included for Water Management Strategies (WMSs) if an entity requests inclusion of a project that includes a bed and banks permit.

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?

Yes

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

The same hydrologic assumptions and variances were used in the 2016 and 2021 Regional Water Plan.

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.

No, Region L does not request to extend the period of record beyond the current applicable WAM hydrologic period.

No, Region L does not believe there is a new drought of record in the basin.

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 preferable for drought planning purposes.

No

Choose an item.

No, Region L does not request to use a reservoir safe yield for existing supplies or for WMSs.

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 preferable for drought planning purposes. Examples of alternative reservoir yield analyses may include using an alternative reservoir level, conditional reliability, or other special reservoir operations.

No

Choose an item.

No, Region L will use firm yield to determine reservoir yield.

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.

No, Region L does not request to use a different model than RUN 3 of the applicable TCEQ WAM.

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 sedimentation², system or reservoir operations, or special operational procedures into the WAM.

No

Choose an item.

No, Region L does not request to use a modified TCEQ WAM for the Nueces Basin.

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.

Yes

Strategy Supply

Return flows will not be included in the modeling for the Nueces Basin for existing supply.

Return flows will be included for Water Management Strategies (WMSs) if an entity requests inclusion of a project that includes a bed and banks permit.

Source water available for reuse WMSs 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. The upper limit of source water available for reuse WMSs will be determined based on the amount of water returned to a utility's wastewater treatment plants, estimated at 50% of the utility's projected water demands, adjusted for water conservation and drought management strategies, unless site specific information is available. Indirect reuse WMSs are evaluated using TCEQ WAM Run 3. Direct reuse WMSs do not require WAM modeling.

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.

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.

Unknown

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.

N/A - None.