

July 20, 2023

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

Re: Hydrologic Variance Requests for Water Availability Determination of Current Surface Water Supplies in Region F

Dear Mr. Walker:

Region F is one of the largest regions in the state, encompassing 32 counties in west Texas. Surface water supplies are obtained from the upper Colorado River Basin and Pecos River Basin, which is a tributary of the Rio Grande River Basin. A small portion of the region lies in the Brazos River Basin but there is little to no surface water supplied to Region F from this river basin.

In accordance with regional planning rules and guidelines, Region F intends to use the Full Authorization Run (Run 3) of the TCEQ-approved WAMs to determine surface water availability in the region. However, to more accurately reflect the current conditions and operations of the region, some following modifications to WAM Run 3 are requested. In accordance with *Exhibit C First Amended General Guidelines for Development of the 2026 Regional Water Plans*, the Region has completed the Hydrologic Variance Checklist for each of the three river basins partially lie within the boundaries of Region F and the checklists are attached to this letter. These requests were reviewed and approved by the Region F Water Planning Group at a public meeting held on July 20, 2023.

Please call me or our consultant Lissa Gregg (817-946-2058) if you have any questions regarding our request.

Sincerely,



Cole Walker
Region F Chairman

Attachments:

Upper Colorado River Basin Surface Water Hydrologic Variance Checklist
Rio Grande River Basin Surface Water Hydrologic Variance Checklist
Brazos River Basin Surface Water Hydrologic Variance Checklist

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: F

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.

Brazos River 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.

- **Safe Yield.** Region F requests the use of safe yield for the allocation and distribution of surface water supplies from all reservoirs within the region. Safe yield is the amount of water that can be used during the critical drought while leaving a minimum one-year supply in reserve. Safe yield is consistent with the current operations of surface water in the region and previous regional water planning. In accordance with the TWDB planning rules, firm yields will also be determined and reported in the plan.
- **Adoption of Region G Modifications.** The Brazos basin is largely located in Region G, with some areas extending into Region F. Region F proposes to adopt the version of the Brazos WAM (including any hydrologic variances) that Region G requests and is approved to use.

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

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

Modification request is the same as in the previous cycle of planning.

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

Existing and Strategy Supply

[Click or tap here to enter text.](#)

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.

Yes

Existing and Strategy Supply

Region F requests the use of safe yield for the allocation and distribution of surface water supplies from all reservoirs within the region. Safe yield is the amount of water that can be used during the critical drought while leaving a minimum one-year supply in reserve. Safe yield is consistent with the current operations of surface water in the region and previous regional water planning. In accordance with the TWDB planning rules, firm yields will also be determined and reported in the plan.

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

Existing and Strategy Supply

[Click or tap here to enter text.](#)

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

Existing and Strategy Supply

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

Yes

Existing and Strategy Supply

Adoption of Region G Modifications. The Brazos basin is largely located in Region G, with some areas extending into Region F. Region F proposes to adopt the version of the Brazos WAM (including any hydrologic variances) that Region G requests and is approved to use.

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

Existing and Strategy Supply

[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.

Yes

Region G

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.

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

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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: F

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.

Upper Colorado River 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.

- **Safe Yield.** Region F requests the use of safe yield for the allocation and distribution of surface water supplies from all reservoirs within the region. Safe yield is the amount of water that can be used during the critical drought while leaving a minimum one-year supply in reserve. Safe yield is consistent with the current operations of surface water in the region and previous regional water planning. In accordance with the TWDB planning rules, firm yields will also be determined and reported in the plan.
- **Subordination WMS Variance Requests.** In Region F, a major water management strategy is the subordination of downstream senior water rights in the lower Colorado basin (Region K) to junior water rights in the upper Colorado basin (Region F). For the subordination strategy, Region F requests to use the Region K Colorado WAM “cutoff model” (including any hydrologic variances) that Region K requests and is approved to use. The Region K cutoff model modifies the priority dates for all water rights at and

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

above Lakes Ivie and Brownwood by making them senior to water rights below those locations. The cutoff model does not change the relative seniority within the upper Colorado River Basin. In addition to the Region K hydrologic variances, Region F requests the following:

- Include the City of Junction run-of-river right and Brady Creek Reservoir's water right as senior to those downstream in Region K. These water rights are in the upper Colorado River Basin within Region F.
- Consistent with previous regional planning efforts, Region F requests to coordinate with reservoir owners in the Pecan Bayou watershed to establish mutually agreeable terms for priority calls within the Pecan Bayou watershed.
- Region F also requests the use of safe yield for all reservoirs under the subordination strategy.

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

This request is consistent with previous planning cycle requests.

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

Existing and Strategy Supply

[Click or tap here to enter text.](#)

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.

Yes

Existing and Strategy Supply

Region F requests the use of safe yield for the allocation and distribution of surface water supplies from all reservoirs within the region. Safe yield is the amount of water that can be used during the critical drought while leaving a minimum one-year supply in reserve. Safe yield is consistent with the current operations of surface water in the region and previous regional water planning. In accordance with the TWDB planning rules, firm yields will also be determined and reported in the plan.

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

Existing and Strategy Supply

[Click or tap here to enter text.](#)

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

Existing and Strategy Supply

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

Yes

Strategy Supply

In Region F, a major water management strategy is the subordination of downstream senior water rights in the lower Colorado basin (Region K) to junior water rights in the upper Colorado basin (Region F). For the subordination strategy, Region F requests to use the Region K Colorado WAM “cutoff model” (including any hydrologic variances) that Region K requests and is approved to use. The Region K cutoff model modifies the priority dates for all water rights at and above Lakes Ivie and Brownwood by making them senior to water rights below those

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locations. The cutoff model does not change the relative seniority within the upper Colorado River Basin. In addition to the Region K hydrologic variances, Region F requests the following:

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- Consistent with previous regional planning efforts, Region F requests to coordinate with reservoir owners in the Pecan Bayou watershed to establish mutually agreeable terms for priority calls within the Pecan Bayou watershed.
- Region F also requests the use of safe yield for all reservoirs under the subordination strategy.

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

Existing and Strategy Supply

[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.

Yes

Region K.

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

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Surface Water Hydrologic Variance Request Checklist

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Water Planning Region: F

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.

Rio Grande River 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.

- **Safe Yield.** Region F requests the use of safe yield for the allocation and distribution of surface water supplies from all reservoirs within the region. Safe yield is the amount of water that can be used during the critical drought while leaving a minimum one-year supply in reserve. Safe yield is consistent with the current operations of surface water in the region and previous regional water planning. In accordance with the TWDB planning rules, firm yields will also be determined and reported in the plan.
- **Adjust calls on spring flows by water rights on the Pecos River.** Availability of spring flow was being impacted by several large diversions on the main stem of the Pecos River associated with the Red Bluff Irrigation District. In the WAM, these are modeled as run-of-the-river diversions that are backed up by releases from Red Bluff Reservoir. In actual operation, these water rights are dependent on releases from Red Bluff Reservoir and do not use or make calls on spring flow from San Solomon or Griffin

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

Springs. Also, it is likely that a priority call on spring flow would be considered a futile call since almost all of the water would be lost before it reached the Red Bluff Irrigation District diversions. To address these issues we request the following modifications:

- Modify the WAM to direct excess flows (flows not diverted directly from the creek) to Lake Balmorhea for storage in accordance with the Lake Balmorhea water right. The storage would then be modeled as backup for the run of river diversions.
- Model the Toyah Creek watershed to reflect actual operations and address potential futile calls.

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

Modification request is the same as in the previous cycle of planning.

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

Existing and Strategy Supply

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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.

Yes

Existing and Strategy Supply

Region F requests the use of safe yield for the allocation and distribution of surface water supplies from all reservoirs within the region. Safe yield is the amount of water that can be used during the critical drought while leaving a minimum one-year supply in reserve. Safe yield is consistent with the current operations of surface water in the region and previous regional water planning. In accordance with the TWDB planning rules, firm yields will also be determined and reported in the plan.

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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

Existing and Strategy Supply

[Click or tap here to enter text.](#)

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

Existing and Strategy Supply

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

Yes

Existing Supply

Yes, see response to question No. 2. These changes better reflect the operation of the basin and avoid futile calls.

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

Existing and Strategy Supply

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.

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.

Unknown

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.