

TO: Heather Rose
CC: Sabrina Anderson
FROM: Philip Taucer
SUBJECT: Request for Modifications to TCEQ Water Availability Models
DATE: 12/8/2023
PROJECT: SJR21660

1 Introduction

The Region H Water Planning Group (RHWPG) discussed required surface water supply analyses for the current cycle of Regional Water Plan (RWP) development at its May 3, 2023 regular meeting. At the same meeting, the RHWPG took formal action to authorize the Consultant Team to develop and submit to the Texas Water Development Board (TWDB) a variance request for the use of alternatives to the unmodified TCEQ WAM Run 3 models as a basis for determining firm water supplies for the 2026 RWP. After consideration of TWDB guidance and the results of review of the TCEQ WAM Run 3 models by the Region H Consultant Team, TWDB's approval is sought for exceptions to modeling requirements for the Trinity, Brazos/San Jacinto-Brazos, and Colorado/Brazos-Colorado WAMs. The proposed exceptions build upon the existing TCEQ WAM Run 3 with modifications to better reflect right-specific or basin-specific factors for Regional Planning purposes. In brief, the requested exceptions include the following.

- Trinity River Basin – Use of the modified Region C WAM as a base model to promote greater inter-regional consistency and incorporation of a limited quantity of return flows.
- Brazos River Basin / San Jacinto-Brazos Coastal Basin – Use of the modified Brazos G WAM as a base model to promote greater inter-regional consistency.
- Brazos-Colorado Coastal Basin – Adjustment of modeling procedures for multiple rights to better reflect permit conditions.

The proposed exceptions are discussed by basin in the following sections of this memorandum; corresponding documentation using TWDB's required Hydrologic Variance Request template is included as Attachment A. The RHWPG appreciates this opportunity to request modifications in order to more appropriately estimate surface water supply availability in the 2026 RWP. If you have any questions regarding the proposed changes or would like additional supporting data, please feel free to contact me at philip.taucer@freese.com.

2 Proposed Exceptions to Unmodified TCEQ WAM Run 3 Models

2.1 Trinity River Basin WAM

In order to promote inter-regional consistency, the RHWPG is seeking an exception from TWDB surface water modeling requirements to utilize the modified Region C WAM for the Trinity River Basin as a base model for analyses of surface water supply availability in Region H. This model, as noted in the August 2023 letter from Region C to TWDB, is based upon the posted TCEQ WAM Run 3, with modifications that reflect the operation of groups of reservoirs as systems, the adjustment of pool elevations where appropriate, and the adjustment of complex reservoir code to facilitate firm yield determination where applicable, as well as other changes.

The RHWPG has adopted the use of a modified Run 3 model for determining reservoir firm yield in the lower Trinity River Basin in the 2001, 2006, 2011, 2016, and 2021 RWPs. These models included a limited quantity of return flows in the upper basin expected to be available for future conditions as determined through correspondence with the Region C Planning Group. Inclusion of these flows is additionally reflective of authorization to utilize return flows in the water right for Lake Livingston, as amended. The RHWPG therefore requests an exception to conduct firm yield analysis to include a limited quantity of return flows in the Trinity River Basin.

2.2 Brazos River Basin / San Jacinto-Brazos Coastal Basin WAM

In order to promote inter-regional consistency, the RHWPG is seeking an exception from TWDB surface water modeling requirements to utilize the modified Brazos G WAM for the Brazos River Basin as a base model for analyses of surface water supply availability in Region H. The model is inclusive of the adjoining San Jacinto-Brazos Coastal Basin. This model, as noted in the October 27, 2023 letter from Carollo on behalf of the Brazos G RWPG to TWDB, is based upon the TCEQ WAM Run 3. The proposed Brazos G model, as indicated in the letter, includes changes to model certain aggregated contractual diversions in a disaggregated form, reflect existing subordination agreements, and incorporate some return flows, as well as other changes. Region H has similarly utilized the Brazos G WAM for prior RWPs.

2.3 Colorado River Basin / Brazos-Colorado Coastal Basin WAM

The Region H Water Planning Area includes the Brazos-Colorado Coastal Basin in the western portions of Austin, Fort Bend, and Brazoria Counties, with the remainder of the coastal basin within the Region K Water Planning Area. There are a number of surface water rights for various permitted uses in the basin, including multiple authorizations for irrigation diversions as well as several larger permits for industrial use. In reviewing the WAM for the basin (included within the TCEQ WAM Run 3 for the Colorado River Basin), opportunities were identified to adjust model code for two water rights to facilitate determination of firm yield and reflect annual streamflow diversion limits as specified in water right permits. Region H utilized the proposed modifications for the 2021 RWP.

2.3.1 Certificate of Adjudication 13-3421

Certificate of Adjudication (CoA) 13-3421, as amended, authorizes diversion of 20,000 ac-ft/yr of water from the San Bernard River by multiple water rights holders and storage in several off-channel reservoirs in the Region K Water Planning Area, with the various right holders granted access to differing storage volumes in the reservoirs. A portion of the diversion is also able to be taken as a run of river diversion at a downstream point within Region H if certain flow conditions are met or through releases of stored water to the downstream point. The WAM Run 3 represents this complex situation with composite reservoirs for each right holder's share of storage and an attempted downstream diversion of a portion

of the permit. The following modifications to the WAM Run 3 are proposed for RWP supply determination for Region H:

- Modeling of all diversions for the CoA occurring at the upstream reservoirs and diversion point on the San Bernard River to facilitate evaluation of reliable supply from the right.
- Applying limits to river diversions to prevent excess diversions from off-channel reservoir refilling.
- Application of a firm yield approach to determine the reliable supply from this portion of the run-of-river availability of the San Bernard River.

2.3.2 Certificate of Adjudication 13-3423

CoA 13-3423, as amended, authorizes diversion of 32,000 ac-ft/yr of water from the San Bernard River and storage in four off-channel reservoirs. The following modifications to the WAM Run 3 are proposed for RWP supply determination for Region H:

- Modeling of the off-channel reservoirs as a single composite reservoir to better reflect actual interconnectivity and use of storage by the right holder.
- Applying limits to river diversions to prevent excess diversions from off-channel reservoir refilling.
- Application of a firm yield approach to determine the reliable supply from this portion of the run-of-river availability of the San Bernard River.

Attachment A:
Hydrologic Variance Request Forms for Proposed Region H
Modifications to the TCEQ WAMs

Attachment A-1:
Trinity 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: H

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.

Trinity 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.
 - Region H requests to use the modified Region C WAM, as documented in the hydrologic variance request submitted by Region C in August 2023, as a base model for analyses of surface water supply availability in the Trinity River Basin in Region H to promote greater inter-regional consistency.
 - The modified Region C WAM uses the TCEQ WAM Run 3 as its base, with modifications that reflect the operation of groups of reservoirs as systems, the adjustment of pool elevations where appropriate, and the adjustment of complex reservoir code to facilitate firm yield determination where applicable. These variances are discussed in the Region C request referenced in Question 8.
 - Additionally, Region H requests to include a limited quantity of return flows in the Trinity River Basin. These modifications are discussed in greater detail in Question 9.

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

The variance request to utilize the modified Region C WAM was implemented in the 2016 and 2021 Region H RWPs, and Region H seeks the same authorization this cycle. The 2001, 2006, 2011, 2016, and 2021 Region H RWPs implemented hydrologic variances to include a limited quantity of return flows in the upper basin that are expected to be available for future conditions as determined through correspondence with Region C. The variance request is fundamentally the same, changing only in the estimated magnitudes and locations of return flows based upon more recent data and 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

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

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

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

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

- Region H requests to use the modified Region C WAM, as documented in detail in the hydrologic variance request submitted by Region C in August 2023.
- The modified Region C WAM uses the TCEQ WAM Run 3 with the variances to incorporate new water rights, correct issues related to usable storage for one reservoir, and model several rights as systems.
- The RHWPG has adopted the use of a modified Run 3 model for determining firm yield of Lake Livingston in the lower Trinity River Basin in the 2001, 2006, 2011, 2016, and 2021 RWP.
- These models included a limited quantity of return flows in the upper basin expected to be available for future conditions as determined through correspondence with the Region C Planning Group.
- The RHWPG therefore requests an exception to conduct firm yield analysis of Lake Livingston to include a limited quantity of return flows in the Trinity River 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

Existing Supply

Inclusion of return flows is consistent with authorizations to divert return flows granted by Certificate of Adjudication (CoA) 08-4248, as amended. The RHWPG has used a modified WAM Run 3 model for determining the firm yield of Lake Livingston in the lower Trinity River Basin in the 2001, 2006, 2011, 2016, and 2021 RWP as part of existing supply analyses. These models have included a limited quantity of return flows in the upper basin that are expected to be available for future conditions as determined through correspondence with Region C. This exception is made for purposes of determining existing supply availability and is not related to a direct reuse WMS. Region H requests an exception to conduct firm yield analysis to include a limited quantity of return flows in the Trinity River Basin.

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.

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.

Yes

The RHWPG seeks use of the modified Region C WAM for the Trinity River Basin as the basis for modeling of Trinity River Basin existing supply for Region H. The additional variance request by Region H to include a limited amount of return flow is specifically for Region H analyses and is not anticipated to be utilized by Region C or other regions.

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

No additional variance requests.

Attachment A-2:

Brazos River Basin and San Jacinto-Brazos Coastal 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: H

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 and San Jacinto-Brazos Coastal 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.
 - [Region H requests to use the modified Brazos G WAM, as documented in the hydrologic variance request submitted by the Brazos G Regional Water Planning Group on October 27, 2023, as a base model for analyses of surface water supply availability in the Brazos River Basin and San Jacinto-Brazos Coastal Basin in Region H to promote greater inter-regional consistency.](#)
 - [The modified Brazos G WAM uses the TCEQ WAM Run 3 as its base. The modified Brazos G WAM includes modifications to model certain aggregated contractual diversions in a disaggregated form, reflect existing subordination agreements, and incorporate some return flows, as well as other changes.](#)
 - [These modifications are discussed in Questions 8 and 9.](#)

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

The variance request to utilize the modified Brazos G WAM was implemented in the 2016 and 2021 Region H RWPs, and Region H seeks the same authorization this cycle. The variance request is fundamentally the same, seeking to utilize the Brazos G WAM for the corresponding RWP cycle to promote interregional consistency.

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

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

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

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

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.

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.

Yes

Existing Supply

- Region H requests to use the modified Brazos G WAM, as documented in the hydrologic variance request submitted by the Brazos G Regional Water Planning Group on October 27, 2023.
- The modified Brazos G WAM uses the TCEQ WAM Run 3 as its base. The modified Brazos G WAM includes modifications to model certain aggregated contractual diversions in a disaggregated form, reflect existing subordination agreements, and incorporate some return flows, as well as other changes.
- The RHWPG has adopted the use of the Brazos G WAM for determining existing supply availability in the lower Brazos River Basin and in the San Jacinto-Brazos Coastal Basin in the 2016 and 2021 RWP.

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 Supply

Region H requests to use the modified Brazos G WAM, which includes the addition of return flows in the WAM. The hydrologic variance request submitted by Brazos G indicates that return flows will be added for wastewater treatment plants with effluent discharge in excess of 0.9 MGD, with the magnitude of the return flows based on the minimum discharge from the previous 5 years of available historical data. The RHWPG is not currently seeking variances for inclusion of return flows beyond those already requested by Brazos G.

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

The RHWPG seeks use of the modified Brazos G WAM as the basis for modeling of Brazos River Basin and San Jacinto-Brazos Coastal Basin existing supply for Region H. Region H is not currently seeking variances for these basins beyond the use of the Brazos G model.

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

No additional variance requests.

Attachment A-3:
Colorado River Basin and Brazos-Colorado Coastal 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: H

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-Colorado Coastal 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.
 - The Region H Water Planning Group (RHWPG) requests to modify TCEQ's Colorado WAM Run 3 (includes the Brazos-Colorado Coastal Basin) in order to adjust the modeling procedures for multiple water rights, including:
 - Reflecting multiple small, related impoundments as single composite impoundments
 - Incorporation of diversion limits as specified in the corresponding water rights.
 - The changes facilitate determination of modeled firm yield.
 - Requested changes would be of a comparable or slightly greater degree of conservatism regarding supply availability relative to the unmodified WAM due to application of diversion limits specified in the water rights.
 - These revisions are addressed in greater detail in Question 8.

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

The same hydrologic variance requests were implemented in the 2021 Region H Water Plan. This request does not differ from the previous request except that the requested changes are implemented in the latest version of the Colorado WAM Run 3 (last updated by TCEQ 10/1/2023).

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

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

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

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

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.

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.

Yes

Existing Supply

Requested modifications include:

- Certificate of Adjudication (CoA) 13-3421, as amended, authorizes diversion of 20,000 ac-ft/yr of water from the San Bernard River by multiple water rights holders and storage in several off-channel reservoirs in the Region K Water Planning Area, with the various right holders granted access to differing storage volumes in the reservoirs. A portion of the diversion is also able to be taken as a run of river diversion at a downstream point within Region H if certain flow conditions are met or through releases of stored water to the downstream point. The WAM Run 3 represents this complex situation with composite reservoirs for each right holder's share of storage and an attempted downstream diversion of a portion of the permit. The following modifications to the WAM Run 3 are proposed for RWP supply determination for Region H:
 - Modeling of all diversions for the right occurring at the upstream reservoirs and diversion point on the San Bernard River to facilitate evaluation of reliable supply from the right.
 - Applying limits to river diversions to prevent excess diversions from off-channel reservoir refilling.
 - Application of a firm yield approach to determine the reliable supply from this portion of the run-of-river availability of the San Bernard River.

- CoA 13-3423, as amended, authorizes diversion of 32,000 ac-ft/yr of water from the San Bernard River and storage in four off-channel reservoirs. The following modifications to the WAM Run 3 are proposed for RWP supply determination for Region H:
 - Modeling of the off-channel reservoirs as a single composite reservoir to better reflect actual interconnectivity and use of storage by the right holder.
 - Applying limits to river diversions to prevent excess diversions from off-channel reservoir refilling.
 - Application of a firm yield approach to determine the reliable supply from this portion of the run-of-river availability of the San Bernard River.

Requested changes would be of a comparable or slightly greater degree of conservatism regarding supply availability relative to the unmodified WAM due to application of diversion limits specified in the water rights.

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

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

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

No additional variance requests.