Borrego Springs Watermaster
Technical Advisory Committee Meeting
May 4, 2026 @ 10:00 a.m.
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AGENDA

Items with supporting documents in the TAC Meeting Package are denoted with a page number.

I. Roll Call

II. Public Comments
This is an opportunity for members of the public to address the TAC on items included on the agenda. Comments will be limited to three minutes per commenter

III. Technical Scope-of-Work and Budget for WY 2027 .....Page 2

IV. Request for TAC Input on Technical Analysis of Water Rights Transfers .....Page 9

V. Public Comments (time permitting)
This is an opportunity for members of the public to address the TAC on items discussed during the meeting. Comments will be limited to three minutes per commenter, time permitting.

VI. Future Meetings

VII. Adjournment

Borrego Springs Watermaster
Technical Advisory Committee Meeting
May 4, 2026
AGENDA ITEM III

To: Technical Advisory Committee (TAC)

From: Andy Malone, PG (West Yost), Technical Consultant

Date: April 29, 2026

Subject: Technical Scope-of-Work and Budget for WY 2027

TAC Meeting Objectives

- Obtain input from each TAC member on the recommended technical scope-of-work to Redetermine the Sustainable Yield by 2030 and what work should be performed in water year (WY) 2027, 2028, and 2029.
- Based on TAC member input, determine if there is a consensus on what work is recommended to Redetermine the Sustainable Yield by 2030.

Background and Previous Actions by the TAC and Board

Section III.F of the Judgment outlines the process and schedule for redetermining the Sustainable Yield every five years, stating:

> *"By January 1, 2030, the Watermaster will, following receipt of input and recommendations from the Technical Advisory Committee, determine the revised estimate of Sustainable Yield for Water Years 2030/2031 through 2034/2035 (the "Third Five-Year Period"). The revised determination of Sustainable Yield will consider all sources of replenishment, including return flows and underflows, and all outflows from the Basin, and will consider, among other data, information derived from updated runs of the BVHM."*

This Judgment provision requires the Watermaster to consult with the TAC to redetermine the Sustainable Yield. The TAC is established as the body responsible "*…to study technical aspects of the Basin and to issue recommendations to Watermaster based on such technical study for the purpose of achieving Sustainable Groundwater Management…*", as defined in Section I.A.58. Section III.F of the Judgment also requires that the redetermination of the Sustainable Yield be based on best available data, including the use of the Borrego Valley Hydrologic Model (BVHM) and consideration of all sources of Basin inflows and outflows.

In tandem with each redetermination, a future scope of work and budget must also be prepared for the technical work to redetermine the Sustainable Yield over the subsequent five-year period through a process that includes: collecting additional data, refining the BVHM, and using model runs to update the Sustainable Yield.

In WY 2025, the TAC and Technical Consultant (TC) each prepared Recommendation Reports[1] on a recommended scope-of-work to redetermine the 2030 Sustainable Yield. The scope of work options included:

- **Minimum Required Scope-of-Work.** This was the minimum scope-of-work required to redetermine the 2030 Sustainable Yield and represents the lowest cost option. *The consensus TAC and TC recommendations were that the Minimum Required Scope-of-Work should not be performed. Instead, Additional/Optional Tasks should be performed* (see below).
- **Phased Redetermination Workflow.** This option was a workflow to redetermine the 2030 Sustainable Yield that could be implemented to further validate the BVHM and/or improve its ability to simulate the hydrology of the Basin. The workflow included five steps with "off-ramps" that would allow the TAC/Board to recommend whether the next step in the workflow needs to be performed (see Figure 1):

  Step 1. Review New Data and Compare to the BVHM. The new data considered included (i) airborne electromagnetic survey (AEM) results, (ii) GDE study results, (iii) monitoring program data (groundwater-levels and metered pumping data), (iv) estimates of natural inflows, and (v) other model platforms. The results of Step 1 would be used to determine (i) if the model should be updated (proceed to Step 2) or (ii) that no updates are needed and the BVHM can be used to redetermine the 2030 Sustainable Yield (skip to Step 5).

  Step 2. Develop Methods to Update the BVM

  Step 3. Update and Validate the BVHM. The results of Step 3 would be used to determine: (i) if the model needs to be recalibrated (proceed to Step 4) or (ii) that model recalibration is not needed and the BVHM can be used to redetermine the 2030 Sustainable Yield (skip to Step 5).

  Step 4. Recalibrate the BVHM

  Step 5. Redetermine the 2030 Sustainable Yield

  At a minimum, the workflow would include performing Steps 1 and 5. The need to perform steps 2 through 4 would be dependent on the outcome of the prior step (e.g., Steps 2 and 3 are dependent on the results of Step 1; Step 4 is dependent on the results of Step 3).

At its December 19, 2024 special meeting, the Watermaster Board considered the TAC and TC recommendations and approved a scope of work to support the redetermination of the 2030 Redetermination of the Sustainable Yield, which included performing Step 1 of the workflow by reviewing/evaluating the following new data and information:

[1] The TAC and TC Recommendation Reports are published as part of the agenda package for the Special December 19, 2024 Board Meeting (see agenda IV.A), available on the Watermaster's website at: https://borregospringswatermaster.com/wp-content/uploads/2024/12/20241219_Board-Agenda-Package.pdf

- **Monitoring Program Data** – Analyze measured groundwater levels and metered pumping data to determine if improvements should be made to the BVHM to improve its ability to estimate pumping and/or simulate groundwater levels.
- **UCI GDE Study Results** – Review the UCI study results and the current application of evapotranspiration of groundwater (ET_{gw}) within the BVHM to determine if improvements should be made to the BVHM to improve its ability to simulate ET_{gw}.

The estimated cost to perform the approved scope-of-work in WYs 2026 and 2027 was $95,000 (based on the then current rates).

As part of its approval, the Board agreed that any of the work to redetermine the 2030 Sustainable Yield should begin no sooner than WY 2026. As of April 2026, no work to advance the redetermination of the 2030 Sustainable Yield has been performed.

New Information since Approval of Scope of Work to Redetermine 2030 Sustainable Yield

Since the Board's approval of the scope of work in December 2024, additional technical work to complete the 5-year assessment of the Groundwater Management Plan (GMP) has been performed. Specifically, the BVHM was to be used to predict future groundwater conditions in the Basin (*i.e.*, future changes in groundwater-levels and groundwater storage) under future groundwater pumping plans and climatic conditions to assess the sustainability of Basin conditions under the pumping Rampdown to the 2025 Sustainable Yield by 2040 and beyond. This work led to the identification of BVHM discrepancies and limitations in its ability to evaluate long-term sustainability in certain areas of the Basin.

Upon executing the first BVHM projection, a discrepancy was identified in the BVHM which caused several wells in the South Management Area (SMA) to "under-pump" their assigned pumping rates. Under-pumping is a model discrepancy/error where the model is unable to pump the volume of water assigned to a well. Upon further investigation, the discrepancy likely reveals that the complex geology in this area of the Basin is not well represented in the BVHM, nor is the BVHM well calibrated in this area.[2] The investigation also identified potential next steps to improve confidence in the BVHM, including updates to the hydrogeologic conceptual model (HCM) and subsequent model recalibration.

Staff communicated these findings to the TAC and Board during a series of meetings in spring 2025,[3] which focused on understanding the implications of the discrepancy and identifying appropriate next steps, including if the BVHM could be used to support the 5-year GMP assessment. Through these discussions, the TAC identified several potential ideas for future work:[4]

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[2] This work is documented in a technical memorandum (TM) entitled *Use of the BVHM to Evaluate Sustainability of Future Pumping in the Borrego Springs Subbasin* Available on the Watermaster's website at: https://borregospringswatermaster.com/wp-content/uploads/2026/04/TM-BVHM-Future-Projection-Scenario-1A.pdf

[3] Including the March 18, 2025 Ad-Hoc TAC Meeting, April 16, 2025 Board Meeting, May 1, 2025 Ad-Hoc TAC Meeting, and June 18, 2025 Board meeting.

[4] Refer to meeting minutes from the May 1, 2025 TAC meeting, available at: https://borregospringswatermaster.com/wp-content/uploads/2025/05/20250501-TAC-Meeting-Minutes_final.pdf

- Developing alternate pumping projections to shift pumping to the North Management Area (NMA) to evaluate the effects on Basin-wide groundwater levels and long-term sustainability. Four TAC members recommended proceeding with running additional model projection scenarios.
- Updating the HCM, particularly in the SMA. Five TAC members agreed that a future scope of work should include an update to the HCM, and four of the five members recommended that this be performed as part of the scope of work to redetermine the 2030 Sustainable Yield. The TAC members acknowledged that updates to the HCM would require recalibration of the BVHM and that we should ensure recalibration occurs only once.
- Evaluating whether the current BVHM platform and grid resolution are sufficient to represent Basin conditions, and if not, consider using a different model platform. This was recommended by one TAC member. This effort was presented to the Board but not approved for immediate implementation.

The Board considered the TAC recommendations and directed staff to use the BVHM to complete the 5-year assessment report by running additional model scenarios that (i) used revised BWD projections that are more realistic of future demands and (ii) shifted future pumping northward to the NMA to evaluate the impact to Basin-wide groundwater levels and the potential for undesirable results. These model scenarios (Scenarios 1A through 1C) were used to support the 5-year assessment of the GMP, although results from these scenarios have consistently included disclaimers that model discrepancies exist. The Board did not approve the task to update the HCM as part of the 5-year assessment process.

Tasks to Consider for the Technical Scope-of-Work for WY 2027

At its meeting in April 2026, the Watermaster Board requested TAC input on an appropriate and cost-efficient technical scope-of-work and budget for Water Year (WY) 2027, with the primary focus on the requirement to redetermine the 2030 Sustainable Yield by January 1, 2030.

Also at its meeting in April 2026, the Board identified its priorities for future technical work:

- Focus on compliance with the Judgment requirements (Section III.F as quoted above)
- Recognition that a "perfect" model is not necessary
- Focus on performing the minimum scope of work needed to:
    - Develop a defensible estimate of the 2030 Sustainable Yield
    - Evaluate the projected impacts of pumping under the 2030 Sustainable Yield

Table 1 summarizes the tasks that the TAC should consider in the workflow to redetermine the 2030 Sustainable Yield. For each task, the table summarizes the objectives, provides an approximate cost estimate (based on WY 2025 rates[5]), and describes if this task has been previously considered by the Board, and if so, if it was approved or not approved for immediate implementation.

[5] This is for reference only and not a commitment that the cost will be similar.

Table 1. Tasks Considered in the Workflow to Redetermine the 2030 Sustainable Yield

Task Name	Task Description	Cost Estimate to Perform Task 1 of the Workflow[1] (2024$)	If Task was previously considered by the Board (and when)
Evaluate Monitoring Program Data	The BVHM is extended from WY 2022 to 2026 (or the latest year with data) and run over the historical period of WY 1930 through 2026. The model results are compared to the metered groundwater pumping data and measured groundwater-levels. Based on the comparison, the TAC may recommend to the Board that either (i) the differences are significant and methods should be developed to improve the BVHM (proceed to Step 2) or, (ii) the differences are not significant, no changes to the model are recommended (skip to Workflow Step 5).	**$55,000**	Approved at the December 19, 2024 Special Board meeting as part of scope-of-work to Redetermine the 2030 Sustainable Yield. **(Has not yet been performed)**
Evaluate ET from the UCI GDE Study Report	The GDE study results are reviewed and compared against the current BVHM to determine if there are significant differences and, therefore, if model updates are recommended. Based on the comparison, the TAC may recommend to the Board that either (i) the differences between the GDE study results and the current BVHM are significant and methods should be developed to update the BVHM (proceed to Step 2) or, (ii) the differences are not significant, no changes to the model are recommended (skip to Workflow Step 5).	**$40,000**	Approved at the December 19, 2024 Special Board meeting as part of scope-of-work to Redetermine the 2030 Sustainable Yield. **(Has not yet been performed)**
Upgrade to Latest Model Platform	Potential new modeling platforms are researched and a "white paper" is prepared that evaluates and compares the different modeling platforms and the level of effort to convert the BVHM to these platforms. The white paper may also evaluate structural changes to the existing BVHM, such as removing the FMP. The white paper will be reviewed by the TAC and the TAC will have the opportunity to recommend to the Board that either (i) the model platform should be upgraded/migrated to another platform, and hence, methods should be developed for this migration (proceed to Step 2) or, (ii) the model platform should not be upgraded/migrated and the BVHM can be used to redetermine the 2030 Sustainable Yield (skip to Step 5).	**$60,000**	**Not** approved at the December 19, 2024 Special Board meeting as part of scope-of-work to Redetermine the 2030 Sustainable Yield.
Evaluate the HCM	New information/data are reviewed and compared against the current HCM, particularly in CMA and SMA where the under-pumping discrepancy is located, to determine if there are significant differences and, therefore, model updates are recommended. New information and data could include: AEM survey data, groundwater-level contour maps, groundwater levels, and sonic boring logs of the Rams Hill wastewater treatment facility monitoring wells. This task may also include an optional task to perform a site-specific investigation to obtain new hydrogeologic information if data gaps are determined. Based on the comparison, the TAC will likely recommend to the Board that the differences between the data and the current HCM are significant and methods should be developed to update the HCM (proceed to Step 2).	**$40,000** to **$60,000** (includes $20,000 optional task for site-specific investigation)	**Not** approved at the June 18, 2025 Board meeting as part of next steps to use the BVHM to evaluate sustainability of future pumping and complete the 5-Year Assessment Report.

1. Cost estimates are based on 2025 rates and reflect the costs provided to the Board at the time the task was first considered.

Requested TAC Input

The Board must approve a technical scope-of-work and budget for WY 2027 at its June 2026 meeting. The WY 2027 budget must also contain approximate cost estimates for work in WYs 2028 through 2030.

The purpose of the May 4, 2026 TAC meeting is for the TAC to revisit the potential tasks to support the redetermination of the 2030 Sustainable Yield and provide updated recommendations (if any) to the Board in consideration of the new information since December 2024. Please come prepared to discuss your recommendation on the scope of work tasks, and when to perform them, in consideration of:

- The December 2024 TAC recommendation and Board-approved scope-of-work
- Model limitations identified through the analysis of model projection scenarios
- Board priorities for future technical work and budget

Following the May 4th TAC meeting, please provide any additional written feedback and recommendations to Andy Malone (amalone@westyost.com) and Lauren Salberg (lsalberg@westyost.com) **by May 11, 2026.** The TAC is asked to CC: the entire TAC membership in its email correspondence with the Technical Consultant.

Following receipt of TAC feedback, Staff will prepare and present a draft scope-of-work and cost estimate for recommended tasks to Redetermine the 2030 Sustainable Yield to the Board at its May 20, 2026 meeting.

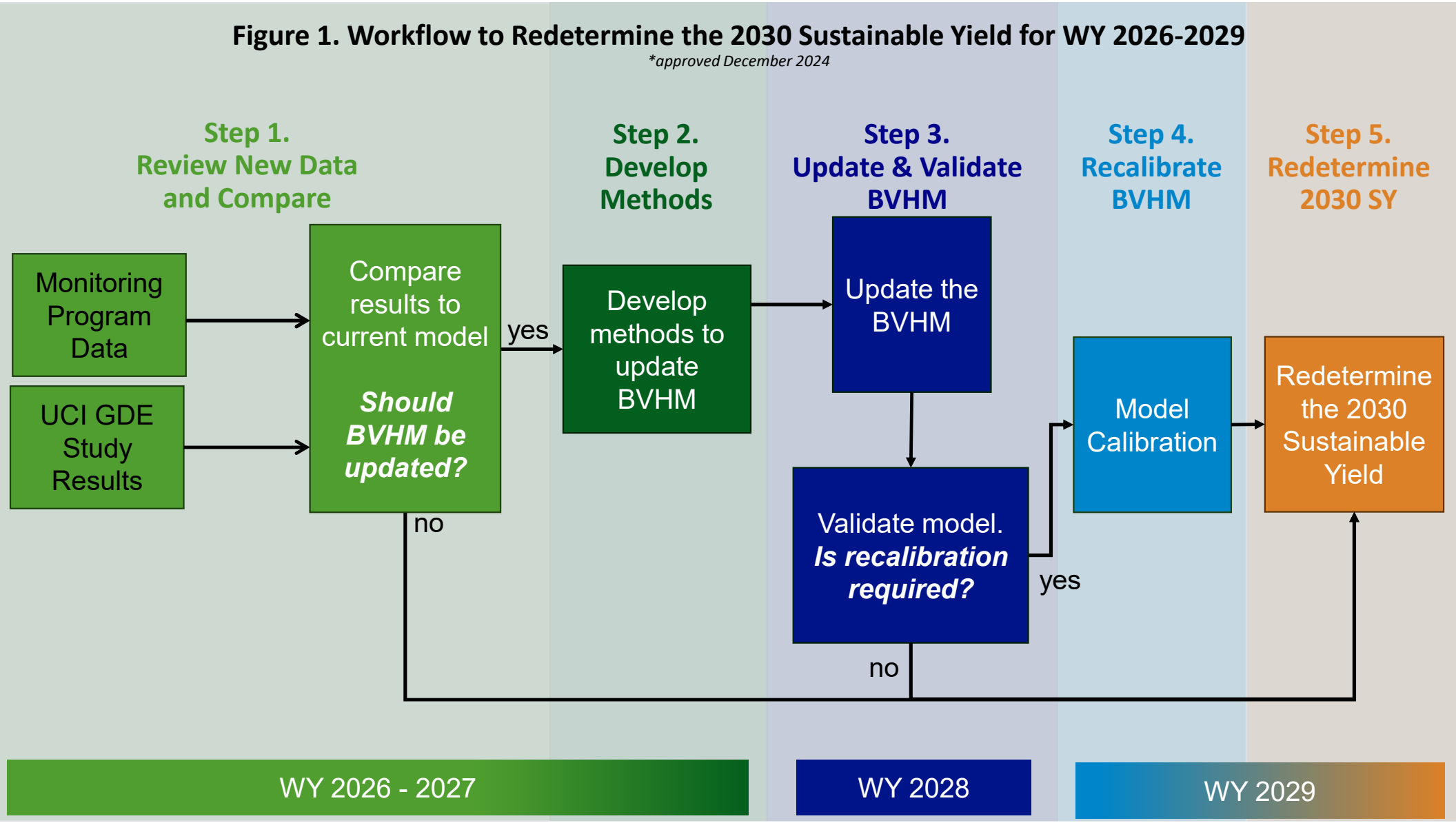
A second TAC meeting will be held in late May or early June 2026 to discuss Board feedback and questions from the May Board meeting. TAC feedback from this second meeting will be incorporated into a final recommended scope of work, which will be presented to the Board in June 2026.

Enclosures

Figure 1. Workflow to Redetermine the 2030 Sustainable Yield

Figure 1. Workflow to Redetermine the 2030 Sustainable Yield for WY 2026-2029

**approved December 2024*



Borrego Springs Watermaster
Technical Advisory Committee Meeting
May 4, 2026
AGENDA ITEM IV

To: Technical Advisory Committee (TAC)

From: Samantha Adams, Executive Director

Date: April 29, 2026

Subject: Request for TAC Input on Technical Analysis of Water Rights Transfers

TAC Meeting Objectives

The purpose of this discussion is to solicit input from the TAC on a technical-review framework for evaluating applications for transfers of water rights.

As Watermaster continues to implement the Judgment, there is a need to establish a consistent approach for the technical analysis of transfers in a manner that is in alignment with the requirements of the Judgment. The Watermaster Board is seeking TAC input/recommendations on the appropriate level and type of technical analysis needed to support Board decisions on transfer applications.

More specifically, the TAC is being asked to provide recommendations on how transfers should be evaluated to determine whether a proposed transfer has the potential to:

- Affect the ability to achieve sustainability by 2040 and maintain it thereafter
- Cause or exacerbate undesirable results
- Result in localized impacts, including potential interference with nearby pumpers (in the case where new wells are constructed as part of exercising the transferred rights).

TAC input will inform the development of a consistent technical approach that will be applied to transfer applications and used to support Board decisions.

Technical Context

Recent modeling work using the Borrego Valley Hydrologic Model (BVHM) has provided insight into potential future Basin conditions under projected pumping and climate scenarios. As previously discussed and presented to the TAC, Watermaster evaluated a BVHM scenario (Scenario 1A) that represents the best current estimate of planned future pumping[1] (as of late 2024) under two future hydrologic conditions (i.e., repeat of past climate conditions and dry climate conditions through 2040).

Key findings from this work included:

[1] Two iterations of the pumping plan were also evaluated to understand how shifting the location of pumping impacts groundwater level outcomes in the CMA and SMA – Scenarios 1B and 1C.

- In portions of the Central Management Area (CMA) and South Management Area (SMA), the model results indicated that future groundwater levels may continuously decline through 2070, rather than stabilizing over time.
- This outcome is inconsistent with the Basin's sustainability goal, which is that groundwater levels will generally stabilize by 2040 and thereafter.
- The BVHM-projected conditions occur under pumping assumptions that are less than the full exercise of water rights afforded under the Judgment.

These findings suggest that:

- If additional pumping were to occur in areas that are projected to have continuously declining groundwater levels past 2040, then the additional pumping could exacerbate the declining groundwater levels, depending on the location and magnitude of the additional pumping.
- Transfers of water rights into areas where continuous groundwater-level declines are projected may :
    - Exacerbate projected groundwater level declines
    - Increase the risk of exceeding minimum thresholds for groundwater levels at wells and cause undesirable results.

In interpreting these results, it is important to acknowledge that the BVHM has known limitations and areas of uncertainty. Some of these uncertainties are present in the same areas of the Basin where continuous groundwater-level declines have been projected. As a result, there is uncertainty in the magnitude of projected impacts; however, the model provides the best available representation of future Basin conditions and is the primary tool currently available to evaluate future scenarios.

Under the Judgment:

- Parties have the ability to exercise their full water rights.
- It is recognized that transfers have the potential to change both the location and distribution of pumping across the Basin, which could cause or exacerbate undesirable results

Hence, there is the need for a consistent technical approach to evaluate transfer applications, so that the potential physical impacts are understood prior to Board action.

Judgment Context

Section III.I.(5) of the Judgment provides Watermaster with the responsibility to restrict transfers under specific conditions, stating:

> "*In order to protect the Basin and protect against Undesirable Results, the Watermaster, with input from the Technical Advisory Committee, may restrict Permanent Transfers and Leases to specific areas of the Basin based on reasonable, evidence-based concern that the Permanent Transfer or Lease will cause or exacerbate Undesirable Results, and then only in a manner that is equitable to all affected Pumpers.*"

This Judgment provision requires that Watermaster consult with the TAC prior to implementing restrictions on transfers. The TAC is established as the body responsible "*…to study technical aspects*

of the Basin and to issue recommendations to Watermaster based on such technical study for the purpose of achieving Sustainable Groundwater Management…", as defined in Section I.A.58.

Section IV.E.9 further provides that the BVHM "shall" be used (i.e., is required) "to support the implementation of this Judgment" as follows:

> *"The Watermaster shall use, among other available data, BVHM runs and best available records and data to support the implementation of this Judgment. Where actual records of data are not available, Watermaster shall rely on and use sound scientific and engineering estimates for the BVHM runs. Watermaster may use preliminary records of measurements, and, if revisions are subsequently made, Watermaster may reflect such revisions in subsequent accounting."*

This provision establishes that Watermaster is required to rely on BVHM simulations and available data in making decisions, while also allowing for refinement and adjustment as new information becomes available.

Board Request of the TAC

The Board is requesting TAC input on the following overarching question:

> How should Watermaster technically evaluate transfer applications to determine whether a transfer:
>
> - may interfere with the ability to achieve sustainability
> - may cause or exacerbate undesirable results
> - may impact nearby pumpers (e.g., in the case of new wells as part of the exercise of the transfer)
> - may improve Basin conditions

The objective is to develop a consistent and defensible technical framework to evaluate transfer applications, support clear recommendations to the Board, and provide sufficient evidence to support decisions if challenged.

Example Technical Framework (for TAC Discussion)

To support discussion, Watermaster Staff has outlined an example approach for evaluating transfer applications. This is provided to facilitate TAC discussion and is not intended to prescribe a specific methodology.

Under this example framework, each transfer application would be evaluated using BVHM simulations to compare future Basin conditions with and without the proposed transfer.

- **Baseline Conditions (Without Transfer).** Establish a reasonable range of plausible future Basin conditions to reflect uncertainty in future pumping plans:
    - Upper-bound pumping scenario ("Judgment Scenario")
        - This scenario assumes Parties fully exercise their pumping rights under the Judgment on a go-forward basis

  - Lower-bound pumping scenario (current pumping plan, i.e., Scenario 1A)
    - This scenario represents the expected future pumping based on input from existing pumpers

  Together, these scenarios will provide a bracketed range of potential future Basin conditions.

- **Conditions With Transfer.** Modify the Baseline scenarios to incorporate the proposed transfer (adjust pumping quantities and locations, including any new wells associated with exercising transferred rights, etc.)
- **Comparison of Outcomes.** Evaluate model results by comparing the groundwater level outcomes with vs. without the transfer across the range of baseline scenarios. Develop a standardized set of outputs to support evaluation, such as:
  - Figures (e.g., groundwater-level hydrographs at key wells, maps of differences in groundwater elevations with/without the transfer, etc.)
  - Tables summarizing changes in key metrics
  - Summary indicators describing magnitude and direction of change
- **Summarize Findings**. Characterize the effects of the transfer, and based on the analysis, develop a recommendation to the Board regarding whether the transfer:
  - Is consistent with achieving sustainability
  - May cause or exacerbate undesirable results
  - May result in localized impacts to nearby pumpers

Considerations for TAC Input

In developing recommendations, the TAC is asked to consider the practical and technical factors associated with the technical evaluation of transfer applications.

- **Alignment with the Judgment**. Any recommended framework should support Watermaster's ability to make determinations consistent with the requirements of the Judgment, including the need to evaluate whether a transfer may cause or exacerbate undesirable results and to support decisions that can be demonstrated as evidence-based and equitable to all affected pumpers.
- **Schedule.** Watermaster seeks to have an initial framework in place in time to review and consider Carryover transfer applications that typically occur in the September/October time frame.
- **Use of available data and modeling tools**. The BVHM and available monitoring data represent the primary tools currently available to evaluate future Basin conditions. Recommendations should consider how these tools can be applied in a consistent and defensible manner, while acknowledging known limitations and uncertainty.
- **Treatment of uncertainty**. As discussed above, there is uncertainty associated with future pumping behavior and model projections. The framework should consider how to evaluate

transfers within a range of plausible future conditions, and how uncertainty should be reflected in the interpretation of results.

- **Use of bounding conditions**. An upper bound projection of future pumping conditions (i.e., Judgment Scenario) has not been defined or evaluated. Because additional pumping greater than current planned pumping is allowed and possible under the Judgment, some form of bounding condition is needed to evaluate how transfers may affect future Basin conditions. The TAC is asked to consider approaches for defining and applying such bounding conditions in the evaluation of transfer impacts so that range of potential impacts are fully considered.
- **Timing and decision-making**. Transfer applications may be submitted and require Board action before additional model refinements are completed. The framework should consider how decisions can be supported using currently available information and tools, while allowing for refinement over time as new data become available.
- **Localized impacts**. In cases where transfers may involve new wells or shifts in pumping locations, consideration should be given to potential impacts on nearby pumpers and whether additional analyses may be needed to evaluate localized effects.
- **Level of effort and applicability**. The TAC is asked to consider whether the same level of technical analysis should be applied to all transfers, or whether thresholds (e.g., size, location, direction/distance pumping is shifted, or type of transfer) may enable different levels of technical review. Any recommended approach should be able to implement across multiple transfer applications.

Next Steps

- Watermaster Staff will summarize TAC input and present it to the Board at the May Board meeting.
- Based on Board feedback, a subsequent TAC meeting is anticipated in late May or early June to further refine recommendations.
- The objective is to develop a final set of TAC recommendations by mid- to late summer to support Board consideration and potential adoption of a technical framework.

It is anticipated that this framework will be applied to transfer applications considered by the Board in the fall (September–October timeframe) for Carryover transfers associated with curing Overproduction in prior water years.