FOX CANYON GROUNDWATER MANAGEMENT AGENCY

A STATE OF CALIFORNIA WATER AGENCY

October 22, 2025

Board of Directors
Fox Canyon Groundwater Management Agency
800 South Victoria Avenue
Ventura, CA 93009-1600

SUBJECT: Approval of Watermaster Response Report to LPV Technical Advisory Committee Recommendation Report Regarding Basin Optimization Yield Study Numerical Modeling Results [LPV Watermaster] – *(New Item)*

RECOMMENDATION: (1) Receive an Agency Presentation on the Basin Optimization Yield Study Numerical Modeling Results, **(2)** Approve the Response Report to the Technical Advisory Committee Recommendation Report, and **(3)** Provide direction to staff.

BACKGROUND:
The Judgment requires Watermaster to prepare a Basin Optimization Yield Study (BOYS) that will establish the operating yield, and in turn the amount and rate of rampdown, in each water year (WY) through WY 2039 such that the operating yield and sustainable yield for the Las Posas Valley (LPV) Basin match by WY 2040, resulting in sustainable management of the LPV Basin in accordance with the Sustainable Groundwater Management Act (SGMA). (Judgment, §§ 3.3, 4.10, 5.1.)

After being unable to secure access and use to United Water Conservation District's model or modeling services in October 2024, your Board directed staff and their consultant, Dudek, to develop alternative modeling approaches and select a preferred alternative approach in consultation with the Policy Advisory Committee (PAC) and Technical Advisory Committee (TAC) to complete the BOYS in accordance with the provisions of the Judgment. On January 22, 2025, your Board approved extending the 40,000 AF operating yield set by the Judgment an additional water year due to the inability to secure access and use of United's model or services. On June 25, 2025, your Board directed staff to proceed with preparation of the BOYS using the preferred alternative approach and accordingly approved a contract modification with Dudek to perform the

modeling required to prepare the BOYS using the preferred alternative modeling approach.

On July 18, 2025, Watermaster's consultant Dudek presented preliminary results of the groundwater modeling simulations for baseline and project scenarios to the TAC. These preliminary results suggest that, if simulated projects are implemented in the Las Posas Valley Basin, sustainability goals can be met without any need for a pumping rampdown. On July 25, 2025, Watermaster referred the BOYS numerical modeling results to the TAC for consultation. In response to TACs clarifying questions, Watermaster submitted to TAC revised model output data with a second consultation request memo dated August 29, 2025, and specifically requested feedback on the following:

1. The revised BOY Study model results.

2. Proposed methods for developing alternative pumping scenarios

3. Proposed methods for estimating the Basin Optimization Yield.

The TAC discussed and developed their recommendation report over three meetings and submitted a recommendation report with five recommendations dated September 16, 2025 (Exhibit 18A).

DISCUSSION:
The September 16, 2026, TAC Recommendation Report included five recommendations, which are summarized below:

1. Clearly acknowledge the discrepancy between historical observations of boundary flow between management areas and model simulation results in the Basin Optimization Yield Study report

2. Include detailed explanation of the uncertainty in model-simulated water levels and in the Optimization Yield Study Report

3. Highlight the importance of monitoring project effects in the Optimization Yield Study report

4. Modify model zone budgets so that complete water budget outputs can be provided for future TAC model result review.

5. Consider using the additional model scenarios to identify impacts of not implementing projects, test reduced in-lieu delivery volumes for identification of cost-effective project refinement, and show the effect of pumping redistribution in the West Las Posas Management Area

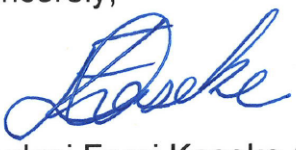
Staff agrees with the first four TAC recommendations summarized above and will incorporate those recommendations into the BOYS report.

While staff are in general agreement with two of the three sections of the TAC's fifth recommendation, staff do not believe iteratively modeling lower in-lieu volumes to identify the lower limit of in-lieu delivery volumes in each management area that may be necessary to prevent threshold exceedances is necessary for preparation of the BOYS given the model uncertainty. Updates to United Conservation District's (UWCD) Coastal Plain Model resulted in simulated groundwater flow from the West Las Posas Management Area to the East Las Posas Management Area across the Somis Fault in a manner inconsistent with the generally accepted hydrogeologic conceptual model. Thus, refinement of simulated in-lieu deliveries will not necessarily add any new information. Also, the additional time it will take to iteratively model lower in-lieu volumes, as well as the time associated with additional committee consultation, will adversely impact the schedule for preparation of the BOYS and jeopardize staff's ability to complete the BOYS for your Board's consideration in May 2026. At the same time, the In-Lieu project does not require capital expenditure and instead requires annual purchases of imported water for use by purveyors in-lieu of groundwater pumping. Staff, therefore, recommend an adaptive management approach to project implementation, relying on groundwater elevation data and other parameters to assess benefits of project and or adjust in-lieu delivery volumes. Staff's detailed Response Report is attached as Exhibit 18B.

CONCLUSION:
Agency staff recommends (1) your Board receive and file this presentation, (2) Approve the Watermaster Response Report to the Technical Advisory Committee Recommendation Report, and (3) Provide direction to staff.

This letter has been reviewed by Agency Counsel. If you have any questions, please call me at (805) 654-3942.

Sincerely,



Kudzai Farai Kaseke (Ph.D., PH, PMP, CSM)
Assistant Groundwater Manager

Attachments:
Exhibit 18A – TAC Recommendation Report, September 16, 2025
Exhibit 18B – Watermaster Response Report, October 8, 2025

LAS POSAS VALLEY TECHNICAL ADVISORY COMMITTEE

September 16, 2025

RECOMMENDATION REPORT

To: Las Posas Valley Watermaster

From: Las Posas Valley Watermaster Technical Advisory Committee, prepared by Chad Taylor, Administrator and Chair

Re: Recommendation Report – Las Posas Valley Basin, Basin Optimization Yield Study Numerical Modeling Results

The Las Posas Valley Watermaster Technical Advisory Committee (TAC) provides this Recommendation Report regarding the Basin Optimization Yield Study initial modeling results provided in July and August 2025. This Recommendation Report was prepared in response to committee consultation requests transmitted to the TAC on July 25, 2025 and August 29, 2025 by Las Posas Valley Basin Watermaster (Watermaster) staff.

BACKGROUND

The Las Posas Valley Adjudication judgment requires preparation of a Basin Optimization Yield (BOY) Study to evaluate Basin Optimization Yield, set the Operating Yield, and identify the need for and quantification of the rate of pumping rampdown to achieve sustainable groundwater management by 2040. The TAC received a presentation from Dudek, the Watermaster's groundwater consultant, providing model scenario results for the simulations included in the BOY Study on July 18, 2025 and model results information and data from the Watermaster on July 25, 2025. This included pumping by well, groundwater levels and hydrographs, and water budget summaries. In the presentation to the TAC, Dudek indicated that with-project model simulation results demonstrated that both management areas of the Las Posas Valley Basin (LPVB) can meet sustainability goals without the need for pumping rampdown, assuming the simulated projects are implemented. Initial TAC review of the model results identified significant differences between the materials that were presented to the TAC and the model results information provided subsequently. Clarifying questions from the TAC resulted in revised model data from Dudek that was shared with the TAC in a Committee Consultation request memorandum dated August 29, 2025. The revised model output did not change the conclusion that no pumping rampdown is required if the BOY Study projects are implemented in both LPVB management areas.

Watermaster staff requested TAC feedback on the following:

1. The revised BOY Study model results
2. Proposed methods for developing alternative pumping scenarios
3. Proposed methods for estimating the Basin Optimization Yield

The TAC considered the topics above in meetings on July 18, 2205, August 5, 2025, and September 5, 2025. TAC recommendations relating to the BOY Study model results, alternative pumping scenarios, and methods for estimating Basin Optimization Yield were discussed in those meetings and are summarized in this Recommendation Report.

The TAC reviewed this Recommendation Report and voted to approve it in a regular meeting on September 16, 2025.

TAC RECOMMENDATIONS

1. RECOMMENDATION 1: CLEARLY ACKNOWLEDGE THE DISCREPENCY BETWEEN HISTORICAL OBSERVATIONS OF BOUNDARY FLOW BETWEEN MANAGEMENT AREAS AND MODEL SIMULATION RESULTS IN THE BASIN OPTIMIZATION YIELD STUDY REPORT

The West Las Posas Management Area (WLPMA) numerical model appears to significantly overestimate the amount of groundwater exchange between WLPMA and the East Las Posas Management Area (ELPMA). More than half of the volume of the simulated with-project in-lieu deliveries to the WLPMA were accommodated by a simulated change in flow between the management areas, which is inconsistent with the conceptual model of the boundary between the WLPMA and ELPMA. This suggests that the model may significantly underestimate the benefits of in-lieu deliveries to the area of the WLPMA to which the related project targeted. It also suggests that the benefits of implementing the project with the simulated volume of in-lieu water delivery may be greater than those simulated. As a result, the actual volume of in-lieu deliveries required to prevent water level minimum threshold exceedances in the WLPMA may be lower than that simulated in the with-project model scenario.

1.1 Recommendations:

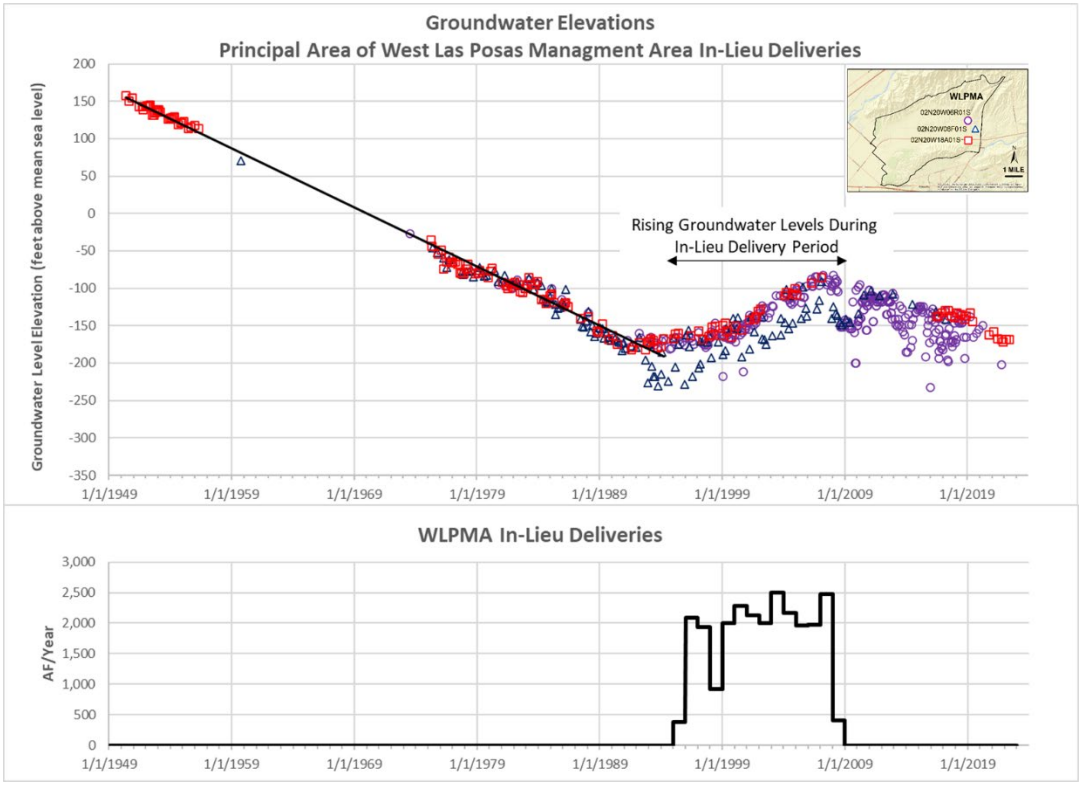
Include in the BOY Study report a detailed explanation of the differences between the baseline model results and the conceptual model at the boundary between the management areas. Also include descriptions of the simulated change in flow across the boundary in the simulation with an explanation of the potential differences between simulated and actual with-project conditions.

1.2 Technical Rationale for Recommendation:

The generally agreed upon hydrogeologic conceptual model of the LPVB includes a fault-related no-flow boundary between the WLPMA and ELPMA. This is supported by historically

observed water levels on either side of the boundary and has been the subject of previous TAC recommendations.

The representation of the management area boundary in the WLPMA model allows flow across this boundary and the baseline model scenario simulation indicates flow from the ELPMA to the WLPMA. In the with-project scenario simulation this flow direction reverses and water flows from WLPMA to the ELPMA. The difference in the volumes of flow between the baseline and with-project simulations is 1,033 acre-feet per year (AFY), which is 58 percent of the annual in-lieu delivery volume (1,764 AFY) simulated for the WLPMA with-project scenario.



Historical data demonstrates that a similar magnitude of in-lieu deliveries to WLMPA between 1996 and 2008 resulted in groundwater elevation increases of approximately 90 feet, as shown in the charts above.

The simulated change in groundwater elevations in wells near the WLPMA in-lieu project is much less than the historical observations. The four wells near the project showed simulated average groundwater elevation increases of around 7 to 17 feet compared to baseline simulated elevations. This comparison reinforces the observation that the model simulates WLPMA in-lieu deliveries leaving the management area across what is agreed to be a no-flow boundary. As a result, the simulated in-lieu deliveries likely exceed the volume necessary to achieve and maintain sustainable conditions in the WLPMA.

1.3 Summary of Facts in Support of Recommendation:

- The model simulates flow across the boundary between the WLPMA and ELPMA.
- This is a no-flow boundary in the agreed-upon hydrogeological conceptual model of the LPVB.
- Simulated flow across the boundary from the WLPMA to the ELPMA is approximately 58 percent of the annual simulated in-lieu water delivery to the WLPMA.
- Historical observations of past in-lieu deliveries to the same area of the WLPMA showed groundwater elevation increases of approximately 90 feet while model simulated change compared to baseline simulated conditions average only 7 to 17 feet.

2. RECOMMENDATION 2: INCLUDE DETAILED EXPLANATION OF THE UNCERTAINTLY IN MODEL-SIMUALTED WATER LEVELS AND IN THE OPTIMIZATION YIELD STUDY REPORT

Model simulated with-project water levels include uncertainty and may not accurately reflect the effects of management actions. As noted above in Recommendation 1, model-simulated changes in the WLPMA may underestimate the benefits of the in-lieu project in that management area. As a result, specific water level and/or other conditions in the model simulated with-project scenarios should be qualified in the BOY Study report.

2.1 Recommendations:

The BOY Study report should explain model assumptions and uncertainty in clear language with specific examples to aid the Watermaster Board and stakeholders in understanding the results of model simulations and the need for further data collection.

2.2 Technical Rationale for Recommendation:

Models are a tool for estimating the results of changed conditions on groundwater systems. Simulated water levels in individual wells within the area influenced by a project scenario are often the result of the specific distribution of pumping or other components of the scenario. The with-project scenario model results show that in-lieu water delivery to the WLPMA can improve conditions, and the discussion in Recommendation 1 above demonstrates that there is significant uncertainty in simulated with-project water levels. Therefore, documenting model uncertainty is important for understanding the outcome of the BOY Study.

2.3 Summary of Facts in Support of Recommendation:

- The results of model simulations are the result of the assumptions included in the model and in the components of the scenario.
- Inaccuracy in these assumptions and scenario inputs may not match future conditions with project implementation.
- Clear explanation of model assumption and uncertainty can assist decision makers and stakeholders in understanding the need to continue to collect data and manage adaptively while implementing projects.

3. RECOMMENDATION 3: HIGHLIGHT THE IMPORTANCE OF MONITORING PROJECT EFFECTS IN THE OPTIMIZATION YIELD STUDY REPORT

As indicated in the two preceding recommendations, model results may not match future conditions, especially with changes in management practices. Ongoing monitoring during implementation of projects and management actions (PMAs) designed to affect groundwater conditions combined with adaptive management is the only certain means of assessing the effectiveness of those projects and actions. Observation of groundwater conditions through monitoring also provides information to inform refinements to existing PMAs and/or development of new PMAs. Finally, tracking pumping, recharge, water levels, and other factors over time is the most effective way to improve groundwater models so they are better able to simulate historical and future conditions.

3.1 Recommendations:

The BOY Study report should highlight the importance of robust, careful, and consistent monitoring of in-lieu delivery volumes, monthly pumping by well, and groundwater elevations during implementation of all proposed projects. Appropriate monitoring will allow the Watermaster, stakeholders, and project operators to assess project benefits and modify in-lieu delivery volumes and timing so that project objectives, including meeting groundwater sustainability thresholds, are met while minimizing project costs.

3.2 Technical Rationale for Recommendation:

As stated above, models are a powerful tool for estimating the results of changed conditions on groundwater systems. However, the only way to test simulations and confirm that the expected effects and benefits occur is through robust, careful, and consistent monitoring.

3.3 Summary of Facts in Support of Recommendation:

- Model simulations of future periods with changes in water management do not always match observed conditions.
- Monitoring is the only means of confirming the effectiveness and benefits of PMAs.
- Future modifications to the existing groundwater models of the LPVB will require accurate monitoring.

4. RECOMMENDATION 4: MODIFY MODEL ZONE BUDGETS SO THAT COMPLETE WATER BUDGET OUTPUTS CAN BE PROVIED FOR FUTURE TAC MODEL RESULT REVIEW

Groundwater model zone budgets are a means of producing detailed categorization of water inflow and outflow for user-defined subregions, or zones, within a groundwater model. This can include representations of geographic areas corresponding to management areas, water districts, or geologically distinct units. Dudek indicated that the zone budget definition for the ELPMA model does not include a small area where some pumping occurs. As a result, the water budget data provided to the TAC did not match the reported total pumping, which caused confusion. TAC review of future model results would be more

effective and efficient if all components of the model input and output are included and are internally consistent.

4.1 Recommendations:

Review the models of both management areas to identify areas that are not included in zone budgets or other summary tools relied on to extract model output data. Allowance for sufficient time for Watermaster consultants and TAC to thoroughly review these and other detailed technical work would also benefit accuracy and reliability of the models and other tools the Watermaster relies on for assessing groundwater management in the LPVB.

4.2 Technical Rationale for Recommendation:

Effective and efficient review of detailed technical datasets requires those datasets be complete. Portions of a model not being included in any zone budget zone resulted in an apparent difference between model input and output data that TAC members could not independently distinguish from an error.

4.3 Summary of Facts in Support of Recommendation:

The information and data provided from the numerical groundwater models of the LPVB were internally inconsistent and model input, output, and summary datasets were different, complicating and slowing TAC review and reducing TAC confidence in model results.

5. RECOMMENDATION 5: CONSIDER USING THE ADDITIONAL MODEL SCENARIOS TO IDENTIFY IMACTS OF NOT IMPLEMENTING PROJECTS, TEST REDUCED IN-LIEU DELIVERY VOLUMES FOR IDENTIFICATION OF COST-EFFECTIVE PROJECT REFINEMENT, AND SHOW THE EFFECT OF PUMPING REDISTRIBUTION IN THE WEST LAS POSAS MANAGEMENT AREA

As indicated by Dudek in presentations to and discussion with the TAC, no additional model scenarios are necessary to quantify the basin optimization yield or assess the need for rampdown. However, the TAC recommends using the additional model scenarios in the BOY Study scope of work to roughly refine the volume of in-lieu water to identify the minimum average annual volume that would still result in sustainable conditions without the need for pumping rampdown.

5.1 Recommendations:

The TAC identified the three additional model scenarios below to provide additional information to the Watermaster and stakeholders when considering the benefits and effects of implementing the BOY Study projects. These recommended model scenarios are presented in order of priority.

1. Complete iterative simulations in both management areas to identify the amount of uniform pumping reduction that would be required to meet sustainability goals without implementing any new projects. The results of these iterative simulations would help the Watermaster and stakeholders understand the effects of not implementing the in-lieu projects.

2. Complete iterative simulations in both management areas with progressively lower in-lieu delivery volumes to identify the would be helpful to investigate the possible lower limit of in-lieu delivery volumes in each management area that may be necessary to prevent minimum threshold exceedances.
3. Simulate redistributed pumping in the WLPMA to reduce pumping from Well 02N20W06R01S. The model simulated with-project scenario results shows water levels below the minimum threshold for this well. Annual average pumping in 02N20W06R01S was reduced in the with-project scenario from 1,090 to 799 AFY. Pumping in this well could be further decreased to address this minimum threshold exceedance in additional model scenarios with alternative pumping distribution.

5.2 Technical Rationale for Recommendation:

The with-project simulations show that the in-lieu delivery volumes should result in sustainable water level conditions in both LPVB management areas. However, sustainability without pumping rampdown is contingent on implementation of both projects. The additional model scenarios identified above would demonstrate the benefits of project implementation, help assess the potential for lower cost project alternatives, and document how adaptive management and operational flexibility could be used to maximize project benefits.

5.3 Summary of Facts in Support of Recommendation:

- The scenarios simulated to date show one means of achieving water level sustainability in the LPVB.
- Alternative means of achieving water level sustainability are possible and showing how they differ from the scenarios simulated to date could provide decision makers with valuable information to guide project development and acceptance.

TALLY OF COMMITTEE MEMBER VOTES

The TAC voted to approve the content of this Recommendation Report and authorize the TAC Administrator to submit it to the Watermaster in a meeting held September 16, 2025. The vote was unanimous, as shown below.

	Vote			
TAC Member	**Yes**	**No**	**Abstain**	**Absent**
Chad Taylor, Chair	X			
Tony Morgan, East LPV Representative	X			
Bob Abrams, West LPV Representative	X			

REPORT OF BASES FOR MAJORITY AND MINORITY COMMITTEE MEMBER POSITIONS

The TAC vote to present the recommendations above to the Watermaster was unanimous, as indicated above. The bases for the unanimous positions are described for each

recommendation above. No minority positions were expressed by voting or non-voting TAC members.

LAS POSAS VALLEY WATERMASTER RESPONSE REPORT

Date: October 08, 2025

To: Las Posas Valley Watermaster Board of Directors

From: Kudzai Farai Kaseke, Assistant Groundwater Manager (FCGMA)

Re: Response Report to TAC Recommendation Report – Las Posas Valley Basin, Basin Optimization Yield Study Numerical Modeling Results

The Las Posas Valley (LPV) Watermaster (Watermaster) requested consultation from the Technical Advisory Committee (TAC) on Basin Optimization Yield Study (BOYS) numerical modeling results in a memo dated July 25, 2025. Watermaster's consultant, Dudek, presented the results of groundwater model simulations for "baseline" and "projects" scenarios to the TAC at special meeting on July 18, 2025. In response to clarifying questions from the TAC, Watermaster provided revised model output data with a second consultation request memo dated August 29, 2025.

The TAC discussed and developed its recommendation report at its August 5, 2025, regular meeting, September 9, 2025, special meeting, and September 16, 2025, regular meeting. TAC's September 16, 2025, recommendation report included five recommendations. Each of these recommendations is listed below followed by Watermaster staff's response. TAC's recommendations report additionally included technical rationale and summary of facts in support of each recommendation, which are not reproduced below, but TAC's complete recommendation report is attached to this response report.

Recommendation 1: Clearly acknowledge the discrepancy between historical observations of boundary flow between management areas and model simulation results in the Basin Optimization Yield Study report

The West Las Posas Management Area (WLPMA) numerical model appears to significantly overestimate the amount of groundwater exchange between WLPMA and the East Las Posas Management Area (ELPMA). More than half of the volume of the simulated with-project in-lieu deliveries to the WLPMA were accommodated by a simulated change in flow between the management areas, which is inconsistent with the conceptual model of the boundary between the WLPMA and ELPMA. This suggests that the model may significantly underestimate the benefits of in-lieu deliveries to the area of the WLPMA to which the related project targeted. It also suggests that the benefits of implementing the project with the simulated volume of in-lieu water delivery may be greater than those simulated. As a result, the actual volume of in-lieu deliveries required to prevent water level minimum threshold exceedances in the WLPMA may be lower than that simulated in the with-project model scenario.

1.1 Recommendations:

Include in the BOY Study report a detailed explanation of the differences between the baseline model results and the conceptual model at the boundary between the management areas. Also include descriptions of the simulated change in flow across the boundary in the simulation with an explanation of the potential differences between simulated and actual with-project conditions.

Response to Recommendation 1:
Watermaster agrees with TAC's recommendations to include these explanations and descriptions in the BOY Study report.

Recommendation 2: Include detailed explanation of the uncertainty in model-simulated water levels and in the Optimization Yield Study Report
Model simulated with-project water levels include uncertainty and may not accurately reflect the effects of management actions. As noted above in Recommendation 1, model-simulated changes in the WLPMA may underestimate the benefits of the in-lieu project in that management area. As a result, specific water level and/or other conditions in the model simulated with-project scenarios should be qualified in the BOY Study report.

2.1 Recommendations:

The BOY Study report should explain model assumptions and uncertainty in clear language with specific examples to aid the Watermaster Board and stakeholders in understanding the results of model simulations and the need for further data collection.

Response to Recommendation 2:
Watermaster agrees with TAC's recommendations to include an explanation of model assumptions and uncertainty in the BOY Study report.

Recommendation 3: Highlight the importance of monitoring project effects in the Optimization Yield Study report
As indicated in the two preceding recommendations, model results may not match future conditions, especially with changes in management practices. Ongoing monitoring during implementation of projects and management actions (PMAs) designed to affect groundwater conditions combined with adaptive management is the only certain means of assessing the effectiveness of those projects and actions. Observation of groundwater conditions through monitoring also provides information to inform refinements to existing PMAs and/or development of new PMAs. Finally, tracking pumping, recharge, water levels, and other factors over time is the most effective way to improve groundwater models so they are better able to simulate historical and future conditions.

3.1 Recommendations:

The BOY Study report should highlight the importance of robust, careful, and consistent monitoring of in-lieu delivery volumes, monthly pumping by well, and groundwater elevations during implementation of all proposed projects. Appropriate monitoring will allow the Watermaster, stakeholders, and project operators to assess project benefits and modify in-lieu delivery volumes and timing so that project objectives, including meeting groundwater sustainability thresholds, are met while minimizing project costs.

Response to Recommendation 3:
Watermaster agrees with TAC's recommendations to highlight the importance of monitoring of the proposed in-lieu project parameters in the BOY Study report. Watermaster notes that while the "projects" scenario groundwater modeling simulation suggest that rampdown may not be needed to achieve sustainable groundwater management in the LPV Basin by 2040 if the in-lieu projects are implemented in both the ELPMA and WLPMA, ongoing groundwater elevation monitoring will provide confirmation whether the projects are successful in raising groundwater levels above minimum thresholds at key wells in the Basin.

Recommendation 4: Modify model zone budgets so that complete water budget outputs can be provided for future TAC model result review
Groundwater model zone budgets are a means of producing detailed categorization of water inflow and outflow for user-defined subregions, or zones, within a groundwater model. This can include representations of geographic areas corresponding to management areas, water districts, or geologically distinct units. Dudek indicated that the zone budget definition for the ELPMA model does not include a small area where some pumping occurs. As a result, the water budget data provided to the TAC did not match the reported total pumping, which caused confusion. TAC review of future model results would be more effective and efficient if all components of the model input and output are included and are internally consistent.

4.1 Recommendations:

Review the models of both management areas to identify areas that are not included in zone budgets or other summary tools relied on to extract model output data. Allowance for sufficient time for Watermaster consultants and TAC to thoroughly review these and other detailed technical work would also benefit accuracy and reliability of the models and other tools the Watermaster relies on for assessing groundwater management in the LPVB.

Response to Recommendation 4:
Watermaster agrees that the zone budgets used to extract water budget data from the model output should be modified to include all pumping in the management areas.

Recommendation 5: Consider using the additional model scenarios to identify impacts of not implementing projects, test reduced in-lieu delivery volumes for identification of

cost-effective project refinement, and show the effect of pumping redistribution in the West Las Posas Management Area

As indicated by Dudek in presentations to and discussion with the TAC, no additional model scenarios are necessary to quantify the basin optimization yield or assess the need for rampdown. However, the TAC recommends using the additional model scenarios in the BOY Study scope of work to roughly refine the volume of in-lieu water to identify the minimum average annual volume that would still result in sustainable conditions without the need for pumping rampdown.

5.1 Recommendations:

The TAC identified the three additional model scenarios below to provide additional information to the Watermaster and stakeholders when considering the benefits and effects of implementing the BOY Study projects. These recommended model scenarios are presented in order of priority.

1. Complete iterative simulations in both management areas to identify the amount of uniform pumping reduction that would be required to meet sustainability goals without implementing any new projects. The results of these iterative simulations would help the Watermaster and stakeholders understand the effects of not implementing the in-lieu projects.
2. Complete iterative simulations in both management areas with progressively lower in-lieu delivery volumes to identify the would be helpful to investigate the possible lower limit of in-lieu delivery volumes in each management area that may be necessary to prevent minimum threshold exceedances.
3. Simulate redistributed pumping in the WLPMA to reduce pumping from Well 02N20W06R01S. The model simulated with-project scenario results shows water levels below the minimum threshold for this well. Annual average pumping in 02N20W06R01S was reduced in the with-project scenario from 1,090 to 799 AFY. Pumping in this well could be further decreased to address this minimum threshold exceedance in additional model scenarios with alternative pumping distribution.

Response to Recommendation 5:

Watermaster agrees with TAC's recommendations 5.1.1 and 5.1.3; however, Watermaster disagrees with recommendation 5.1.2. Watermaster disagrees with recommendation 5.1.2 for several reasons:

- The purpose of the BOY Study is to evaluate the optimized yield of the Basin if projects are implemented, whether the optimized yield is sustainable, and if the optimized yield is not sustainable, what yield is sustainable with project implementation and the amount of rampdown required. TAC's recommendation to conduct additional iterative simulations in an effort to optimize the proposed projects is outside the scope of the BOY Study.

- United Water Conservation District's (UWCD) Coastal Plain Model is used for simulations of future groundwater conditions in the WLPMA. As first identified in the Periodic Evaluation of the Groundwater Sustainability Plan, UWCD updated the boundary condition used to represent the Somis Fault to simulate groundwater flow to the ELPMA across the Somis Fault, which is inconsistent with the generally accepted hydrogeologic conceptual model. This introduces uncertainty in the model simulations of the in-lieu project in the WLPMA, as recognized in TAC's recommendation 1. TAC's recommendation 5.1.2 to iteratively simulate progressively lower in-lieu volumes to identify the lower limit of in-lieu delivery volumes would not be useful considering the model uncertainty.
- The in-lieu project does not require capital expenditure or planning for capital expenditure. Rather, this project simply requires annual purchases of imported water for use by purveyors in lieu of pumping groundwater. TAC's recommendation 3, which Watermaster agrees with, recognizes the importance of monitoring groundwater levels and other parameters to assess the benefits of the in-lieu project and to confirm groundwater elevations are above minimum thresholds and to adjust in-lieu volumes as appropriate. The proposed in-lieu project volumes are based on the empirical results of the historical in-lieu program in the Basin.

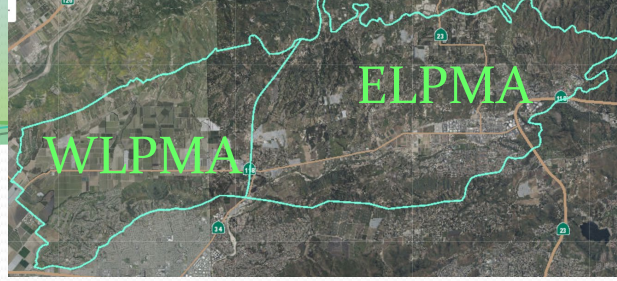
Approval of Watermaster Response Report to LPV Technical Advisory Committee Recommendation Report Regarding Basin Optimization Yield Study Numerical Modeling Results

Item 18 – October 22, 2025

Farai Kaseke (Ph.D., PH, PMP, CSM)
Assistant Groundwater Manager

Background

- Las Posas Valley Adjudication Judgment (Judgment):
  - Requires the Watermaster prepare a Basin Optimization Yield Study (BOYS) *(Judgment, § § 3.3, 4.10, 5.1.)*
  - The Study will determine the Operating Yield (OY) and in turn the rate of rampdown, in each water year through WY 2039 such that Sustainable Yield (SY) and OY are the same by 2040 *(Judgment, § 4.10.2.)*
    - *2025 BOYS*
    - *2030 BOYS*
    - *2035 BOYS*



Discussion and Timeline

Develop alternative modeling approaches
- Board direction

Board Extends Operating Yield
Through WY 2025

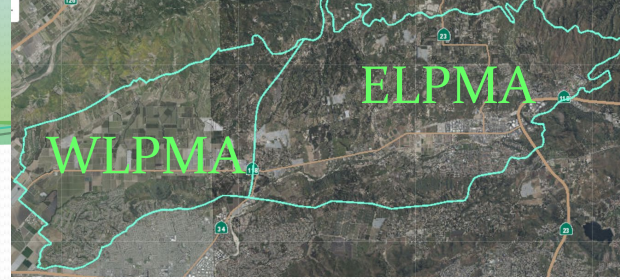
BOYS Preferred Alternative
- Board direction

Preliminary modeling results
- Dudek TAC presentation
- Request for consultation

Revised Model Output
- Request for consultation

Board update

Oct. 2024 (1) → Jan. 2025 (2) → Jun. 2025 (3) → Jul. 2025 (4) → Aug. 2025 (5) → Oct. 2025 (6)



TAC Recommendation Report

1) Clearly acknowledge the discrepancy between historical observations of boundary flow between management areas and model simulation results in the Basin Optimization Yield Study report.
2) Include detailed explanation of the uncertainty in model-simulated water levels and in the Optimization Yield Study Report.
3) Highlight the importance of monitoring project effects in the Optimization Yield Study report.
4) Modify model zone budgets so that complete water budget outputs can be provided for future TAC model result review.
5) Consider using the additional model scenarios to identify impacts of not implementing projects, test reduced in-lieu delivery volumes for identification of cost-effective project refinement, and show the effect of pumping redistribution in the West Las Posas Management Area

Watermaster Response Report

- Staff agrees with 4 / 5 TAC recommendations → incorporate into final BOYS report
- Disagree with 2nd recommendation of 5th recommendation
  - Test reduced in-lieu delivery volumes for identification of cost-effective project refinement
  - Recommendation is outside the scope of the BOYS
  - Simulated groundwater flow across the Somis Fault into ELPMA in the updated Coastal Plain Model is inconsistent with the generally accepted hydrogeologic conceptual model
    - Introduces uncertainty in model simulations of the In-Lieu project in WLPMA *(TAC recommendation 1)*
    - Refinement to identify lower limit of In-Lieu delivery volumes not useful considering uncertainty
  - In-lieu project does not require capital / planning for capital expenditure, relies on existing infrastructure & purchase of imported water.
    - Monitoring of groundwater levels & other parameters will inform basin management *(TAC recommendation 3)*

Recommendations

1. Receive and file this presentation; and
2. Approve the Watermaster Response Report to the Technical Advisory Committee Recommendation Report ,
3. Provide direction to staff.