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May 27, 2026

Board of Directors
Fox Canyon Groundwater Management Agency
800 South Victoria Avenue
Ventura, CA 93009-1610

SUBJECT: Adopt the Las Posas Valley Basin Optimization Yield Study – *(Returning Item)*

RECOMMENDATIONS: (1) Receive a Watermaster staff presentation on the Las Posas Valley Basin Optimization Yield Study and related Recommendation and Response Reports; and **(2)** Adopt the proposed Las Posas Valley Basin Optimization Yield Study (BOYS).

BACKGROUND:
The Las Posas Valley Judgment (Judgment) requires Watermaster prepare a Basin Optimization Yield Study (BOYS), a technical study to establish the Basin Optimization Yield, with committee consultation (Judgment, §§ 3.3, 4.10, 5.1.). The Basin Optimization Yield is defined as, "the estimated yield projected to be available to achieve Sustainable Groundwater Management by 2040" (Judgment, § 1.21) or the production rate, with implementation of Basin Optimization Projects, that can be reasonably implemented by 2040 and maintains groundwater elevations above the minimum thresholds established in the Groundwater Sustainability Plan (GSP). The BOYS follows the Basin Optimization Plan (BOP) whose purpose is to evaluate and select Basin Optimization Projects that are likely to be practical, reasonable, and cost-effective to implement prior to 2040 with the goal of maintaining the operating yield at 40,000 acre-feet per year (AFY) or as close thereto as possible.

While exigent circumstances delayed the completion of the BOYS, Watermaster staff regularly updated your Board and the Policy Advisory Committee (PAC) and the Technical Advisory Committee (TAC) of these challenges and provided alternatives for completion of the BOYS. On June 25, 2025, your Board directed staff and consultant Dudek to pursue the preferred modeling alternative following committee consultation. The TAC acknowledged that the preferred alternative, "preserves the original technical methodology for basin optimization and maintains consistency with the GSP and other analyses," and the PAC concurred with Watermaster that this alternative, "is the most favorable approach", to ensure completion of the study per the Judgment given the circumstances (Exhibits 14F and 14G, respectively). This BOYS is the first iteration of the technical document that will establish the Basin Optimization Yield, as defined in the

Judgment, for the next five water years. At least two more iterations of the BOYS will be prepared, which are scheduled for completion in 2030 and 2035. The iterative approach to preparing the BOYS will allow for adaptative management of the Basin to ensure sustainable management according to the requirements of the Sustainable Groundwater Management Act.

On March 25, 2026, following PAC and TAC consultation per the Judgment requirements, Watermaster staff introduced a draft version of the BOYS for your Board's and stakeholder's review and consideration. On April 22, 2026, Watermaster staff and Dudek again presented to your Board the draft BOYS and also the associated PAC and TAC Recommendation Reports and Watermaster Response Reports. At your Board's April 22, 2026, meeting, Watermaster staff explained that the draft BOYS would be updated to incorporate your Board's direction and feedback and included on the May 2026 Board Agenda for adoption (Exhibit 14A).

DISCUSSION:
The Basin Optimization Yield was evaluated using numerical groundwater model simulations that incorporated differing groundwater production rates and two projects selected in the Basin Optimization Plan that provided quantifiable groundwater benefits at a level of detail that could be included in the modeling: BOP Project 2, Purchase of Imported Water from Calleguas Municipal Water District (CMWD) for Basin Replenishment, and BOP Project 5, Arroyo Simi-Las Posas Water Acquisition. The scenarios evaluated included a Baseline Scenario, in which groundwater production equaled the initial Operating Yield of 40,000 AFY set by the Judgment, a Projects Scenario with BOP Projects 2 and 5, and two Rampdown Scenarios recommended by the TAC provided as informational items.

As has been the practice for numerical groundwater modeling in the Basin, two models were utilized for this study:

1) The Groundwater Flow model developed by Intera for CMWD applied in the East Las Posas Management Area (ELPMA), and
2) the Coastal Plain Model developed and maintained by United Water Conservation District (UWCD) applied in the West Las Posas Management Area (WLPMA). The same versions of these two models were used for the First Periodic Evaluation of the Groundwater Sustainability Plan.

Results indicate that groundwater production rates at the Baseline Scenario (40,000 AFY) are unsustainable with groundwater elevation levels across management areas falling below the minimum thresholds set in the GSP. The Projects Scenario suggests sustainability can be achieved by fully implementing Project 2, targeting areas showing chronic declines in groundwater elevation levels while maintaining flow in the Arroyo Simi-Las Posas. The estimated Basin Optimization Yield, at 40,000 AFY, less the reductions at the in-lieu project wells of 3,140 AFY [1,760 AFY in the WLPMA and 1,380 AFY in the ELPMA], results in a net yield of groundwater production or Basin Optimization Yield of 36,860 AFY. If the projects are fully implemented, the groundwater modeling forecasts that Rampdown, as defined in the Judgment, will not be needed. However, it is important to note that the participation of the modeled in-lieu recipients in the Projects Scenario will

be critical for the successful implementation of the projects. It should also be noted that the in-lieu deliveries and the Operating Yield are not simply additive. The location and volume of deliveries impact the sustainable yield and therefore the Basin Optimization Yield.

The BOYS explains that numerical groundwater model predictions are better at evaluating trends than absolute water levels, and both models used to prepare the BOYS have uncertainty related to data inputs, etc., which have been acknowledged by both PAC and TAC to Watermaster. While all numerical models have some uncertainty, the groundwater production distribution as presented in this BOYS is another area of significant uncertainty due to the distribution being based on a single year of water use reporting since Judgment implementation, Water Year 2023-24 (October 1, 2023, to September 30, 2024). The Judgment significantly altered groundwater allocations from the historical pumping patterns; thus, this uncertainty can only be addressed once additional groundwater extraction and use reporting is obtained and included in successive iterations of the BOYS. In addition, the UWCD Coastal Plain model used to prepare this BOYS included new boundary conditions, as compared to the model version used to prepare the LPV Basin GSP, to allow flow in the lower aquifers from the WLPMA to the ELPMA across the Somis Fault Zone, which is inconsistent with hydrogeologic conditions. These uncertainties were highlighted by Watermaster staff and Dudek to your Board, to the PAC and to the TAC, at various points during development of the BOYS, and all parties agreed that even with these uncertainties the model remained the best available tool to estimate the Basin Optimization Yield. Ongoing monitoring of key wells will confirm that measured groundwater elevations are consistent with forecasted groundwater elevations, as simulated by the numerical models, to provide assurance that undesirable results will not occur after 2040. Subsequent iterations of the BOYS in 2030 and 2035, as well as robust groundwater elevation level monitoring, will be important for adaptative management of the Basin.

If projects are not fully implemented as scheduled, this BOYS indicates that Rampdown, as defined by the Judgment, will be necessary to achieve sustainability. The BOYS includes a Basin-wide Rampdown Scenario that indicates that a 20% (8,000 AF) reduction in pumping from the current 40,000 AFY Operating Yield would be needed to bring the Basin into sustainability. The amount of Rampdown would reduce groundwater production to 32,000 AFY and result in the Operating Yield being reduced by 571 AFY for each of the 14 water years from fall 2026 through fall 2039. However, because the management areas are distinct, an across-the-board, Basin-wide rampdown might be an inappropriate or oversimplified approach to achieving Sustainable Groundwater Management, as defined by the Judgment. Hence, this BOYS includes a Differential Rampdown Scenario, meant to study localized restrictions on extractions (per Section 4.10.3 of the Judgment), recommended and requested by the TAC. The Differential Rampdown Scenario found that pumping reductions of 20% (3,683 AFY) in the WLPMA, 11% (2,261 AFY) in the ELPMA, and 11% (113 AFY) in the Epworth Gravels Management Area would avoid Undesirable Results and achieve Sustainable Groundwater Management. Watermaster staff notes that implementation of localized restrictions on extractions would require specific findings by your Board as required by the Judgment (Judgment, § 4.10.3.).

The PAC and TAC have provided extensive comments and recommendations on the draft BOYS that have either been incorporated or addressed in the current version of the BOYS or addressed in the response reports prepared by Watermaster staff (Exhibits 14B and 14D, respectively). These response reports were included with the BOYS item at the April 22, 2026, Board meeting and contain responses to each recommendation of PAC and TAC (Exhibits 14C and 14E, respectively). The PAC provided four recommendations generally focused on interpretation of the Judgment and related to Rampdown: when and how to initiate, Basin-wide versus Differential, use of rampdown as a last resort, and 18 specific comments (Exhibit 14B). Watermaster incorporated these recommendations and comments into the current version of the BOYS and prepared a response report detailing how staff addressed these recommendations in the study and explaining that TAC requested modeling and analysis of a differential rampdown scenario (Exhibit 14C). The TAC on the other hand provided a recommendation report with ten recommendations and 76 specific comments related to: clarifications on model assumptions, effects of the Somis Fault model boundary conditions on in-lieu and rampdown simulations, conditions in the Epworth Gravels, potential effects of carryover and addressing the specific comments of TAC members (Exhibit 14D). Similarly, the current version of the BOYS incorporates these recommendations while the Watermaster response report further details how they have been incorporated and/or addressed in the study. For example, Watermaster's response reports include a matrix with individual responses to each of the TAC's specific comments, questions, and recommendations (Exhibit 14E). In addition, part of these technical recommendations were addressed earlier in this Board letter.

SUMMARY:
The Basin Optimization Yield Study is a technical document that evaluates the sustainability of current groundwater extraction rates, establishes the Basin Optimization Yield based on modeled projects for the next five water years, calculates the amount and rate of Rampdown that would be needed in the absence of project implementation, and as recommended and requested by the TAC, includes a scenario for differential rampdown or localized restrictions, under Section 4.10.3 of the Judgment. The BOYS, however, does not and is not intended to provide policy recommendations, but rather is the technical basis for which your Board, in consultation with the advisory committees, can develop informed policy for sustainable and adaptive management of the Basin.

CONCLUSION:
Staff recommends that your Board (1) receive and file this presentation, and (2) adopt the proposed Las Posas Valley Basin Optimization Yield Study.

This letter has been reviewed by Agency Counsel. If you have any questions, please call me at (805) 654-2954.

Sincerely,

Kudzai Farai Kaseke (PhD, PH, PMP, CSM)
Assistant Groundwater Manager

Attachments:

Exhibit 14A – Las Posas Valley Basin Optimization Yield Study
Exhibit 14B – PAC Recommendation Report, February 5, 2026
Exhibit 14C – Watermaster Response Report to PAC, March 18, 2026
Exhibit 14D – TAC Recommendation Report, February 3, 2026
Exhibit 14E – Watermaster Response Report to TAC, March 18, 2026
Exhibit 14F - TAC Recommendation Report, May 9, 2025
Exhibit 14G – PAC Recommendation Report, May 15, 2025

Basin Optimization Yield Study

Las Posas Valley Basin

MAY 2026

Prepared for:

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
AF	Acre-Feet
AFY	Acre-Feet per Year
ASRVB	Arroyo Santa Rosa Valley Basin
Basin	Las Posas Valley Groundwater Basin (DWR Basin No. 4-008)
BOY	Basin Optimization Yield
CMWD	Calleguas Municipal Water District
CWD	Camrosa Water District
ELP	East Las Posas
ELPMA	East Las Posas Management Area
ET	Evapotranspiration
FCGMA	Fox Canyon Groundwater Management Agency
First Periodic Evaluation	First Periodic Evaluation of the Groundwater Sustainability Plan for the Las Posas Valley Groundwater Basin
Judgment	Judgment in Las Posas Valley Water Rights Coalition, et al., v. Fox Canyon Groundwater Management Agency, Santa Barbara Sup. Ct. Case No. VENC100509700
LAS	Lower Aquifer System
LPV	Las Posas Valley
MWC	Mutual Water Company
MT	Minimum Threshold Groundwater Elevation defined at Key Wells in the GSP for the Las Posas Valley Basin
PAC	LPV Policy Advisory Committee
PVB	Pleasant Valley Basin
SGMA	Sustainable Groundwater Management Act
SVWQCP	Simi Valley Water Quality Control Plant
TAC	LPV Technical Advisory Committee
UAS	Upper Aquifer System (in the Oxnard Subbasin)
UWMP	Urban Water Management Plan
VCWWD-1	Ventura County Waterworks District No. 1
VCWWD-19	Ventura County Waterworks District No. 19
VRGWFM	Ventura Regional Groundwater Flow Model
WLPMA	West Las Posas Management Area
WMID	Water Management Identification Number

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Executive Summary

This Basin Optimization Yield (BOY) Study has been prepared to determine the Basin Optimization Yield and evaluate the need for Rampdown in the Las Posas Valley Groundwater Basin (Basin) in conformance with the Judgment adjudicating groundwater rights in the Basin. The initial scope of this BOY Study was reviewed by both the Technical Advisory Committee (TAC) and Policy Advisory Committee (PAC) for the Basin. The December 2025 draft of the BOY Study was reviewed by, and recommendation reports submitted by, both the TAC and PAC. The BOY Study was revised based on the TAC and PAC comments.

The Basin Optimization Yield was evaluated using numerical groundwater model simulations that incorporated differing groundwater production rates and two projects selected in the Basin Optimization Plan (BOP) that provided quantifiable groundwater benefits at a level of detail that could be included in the modeling. These projects are BOP Project 2, Purchase of Imported Water from Calleguas Municipal Water District (CMWD) for Basin Replenishment, and BOP Project 5, Arroyo Simi-Las Posas Water Acquisition. The scenarios evaluated included a Baseline Scenario, in which groundwater production equaled the initial Operating Yield of 40,000 Acre-Feet per Year (AFY) set by the Judgment, a Projects Scenario with BOP Projects 2 and 5, and two Rampdown Scenarios.

Two numerical groundwater models were utilized for this BOY Study. The groundwater model developed by CMWD was used for the East Las Posas Management Area (ELPMA), and the Coastal Plain Model developed and maintained by United Water Conservation District (UWCD) was used for the West Las Posas Management Area (WLPMA). The same versions of these two models were used for the First Periodic Evaluation of the Groundwater Sustainability Plan (GSP). All numerical models have uncertainty in their results, which is discussed in this report. The distribution of groundwater production is an area of significant uncertainty, as there was only a single year of water use reporting since Judgment implementation. The Judgment significantly changed the groundwater allocations from those associated with historical pumping. Additionally, UWCD changed the boundary condition from the model version used for the GSP to allow flow in the lower aquifers from the WLPMA to the ELPMA across the Somis Fault Zone, which is inconsistent with hydrogeologic conditions.

Groundwater production in the Baseline Scenario at the initial Operating Yield of 40,000 AFY was determined to be unsustainable because simulated future groundwater elevations at several Key Wells, or representative monitoring points, fell below the minimum thresholds established in the GSP for the Basin. Groundwater elevations must be maintained above the minimum thresholds by 2040 for the Basin to achieve mandated sustainable management and prevent Undesirable Results, as defined in Water Code section 10721(x), referenced in the Judgment, and specified in the Groundwater Sustainability Plan.

For the Projects Scenario, groundwater production was reduced at nine wells owned and operated by Zone Mutual Water Company (MWC), Ventura County Waterworks District 1 (VCWWD-1), and Ventura County Waterworks District 19 (VCWWD-19), and replaced with imported water deliveries consistent with BOP Project 2. BOP Project 5 assures continuation of current discharges to the Arroyo Simi-Las Posas in Simi Valley that flow into the Basin. Based on the results of the Projects Scenario, the Basin Optimization Yield is estimated at 40,000 AFY inclusive of the reductions at the in-lieu project wells of 3,140 AFY, and any additional yield for the remaining allocations of 36,860. Participation of VCWWD-1, VCWWD-19, and Zone MWC would be under the policy and terms to be established by Watermaster and agreements with these purveyors.

Two Rampdown Scenarios were modeled to evaluate pumping reductions that would be needed if BOP Projects 2 and 5 are not implemented as scheduled. The results of the Basin-wide Rampdown Scenario indicate that a 20%

reduction in pumping from the initial Operating Yield of 40,000 AFY avoided Undesirable Results in all three management areas of the Basin. This is a Basin-wide extraction rate of 32,000 AFY with a Rampdown Rate of 571 AFY for each of the 14 water years from fall 2026 through fall 2039. At TAC's recommendation and request, a Differential Rampdown Scenario was conducted to evaluate localized restrictions on extractions in the ELPMA (including the Epworth Gravels Management Area) and the WLPMA, for informational purposes. Specific provisions of the Judgment would need to be addressed prior to implementing localized restrictions on extractions. The Differential Rampdown Scenario found that a reduction of 20% (3,683 AFY) in the WLPMA, and 11% in the ELPMA (2,261 AFY) and the Epworth Gravels Management Area (113 AFY) would avoid Undesirable Results.

In conclusion, if the projects are fully implemented as scheduled, numerical modeling conducted for this BOY Study forecasts that Rampdown is unnecessary to maintain a Basin Optimization Yield of 40,000 AFY, inclusive of the pumping reduced through in-lieu deliveries of imported water. However, ongoing monitoring of the Key Wells will confirm that measured groundwater elevations are consistent with forecasted groundwater elevations simulated by the numerical models to provide assurance that Undesirable Results will not occur after 2040. Per the Judgment, the Basin Optimization Yield must be re-evaluated in 2030 and 2035. The 2030 BOY Study must be completed by February 1, 2030.

1 Introduction

This initial BOY Study is prepared in conformance with the Judgment adjudicating groundwater rights in the Basin and in consultation with the TAC and PAC (Basin; Figure 1-1). TAC and PAC provided feedback and recommendations on the initial scope of this Study and TAC provided feedback on initial model simulations. TAC feedback and recommendations shaped the subsequent model simulations and discussion.

The purpose of this BOY Study is to determine the Basin Optimization Yield, which is defined in the Judgment as "*the estimated yield that is projected to be available to achieve Sustainable Groundwater Management by 2040*" (Judgment § 1.21). The BOY Study evaluates groundwater conditions under three potential future production scenarios: (1) continued production at 40,000 acre-feet per year (AFY), the initial Operating Yield defined in the Judgment, (2) implementation of two groundwater in-lieu projects evaluated in the Basin Optimization Plan (BOP), and (3) a ramp-down scenario to determine the BOY in the event that the projects are not implemented. The Rampdown calculated in this first BOY Study is the reduction of the initial Operating Yield necessary to "*(i) achieve Sustainable Groundwater Management and the reasonable and beneficial use of the Basin's water resources and (ii) avoid Undesirable Results*" (Judgment § 1.88) in the event that projects are not implemented. The Rampdown Rate is the annual amount of Rampdown of Operating Yield during each Water Year[1] necessary to achieve the Basin Optimization Yield by 2040.

The BOY Study must be performed every 5 years, following Committee Consultation, to reassess the Basin Optimization Yield (Judgment § 1.22). The next BOY Study must be completed, "*on or before February 1, 2030, to establish the Rampdown Rate for the period from Water Years 2030 through 2034*" (Judgment § 4.10.2). The 2030 BOY Study will be prepared in conjunction with the second Periodic Evaluation of the Groundwater Sustainability Plan, which is due to the California Department of Water Resources no later than January 13, 2030. Additionally, the Basin Optimization Plan can be amended or additional projects included if they meet the required criteria, as determined in Watermaster's discretion, subject to Committee Consultation (Judgment § 5.3.2.2). Amendment or addition of projects to the Basin Optimization Plan may trigger an update of the BOY Study, which can be updated "*at Watermaster's discretion in response to material changing or changed Basin conditions*" (Judgment § 1.22).

1.1 LPV Judgment

On July 10, 2023, the Santa Barbara Superior Court issued a statement of decision adopting a judgment in Las Posas Valley Water Rights Coalition, et al., v. Fox Canyon Groundwater Management Agency, Santa Barbara Sup. Ct. Case No. VENC100509700 (Judgment), and the Judgment has since been affirmed on appeal. The Judgment adjudicates all groundwater rights in the Las Posas Valley (LPV) Basin and requires the Basin to be managed sustainably, consistent with the Sustainable Groundwater Management Act (SGMA). The Judgment appoints Fox Canyon Groundwater Management Agency (FCGMA) as the Watermaster to implement and administer the Judgment and also recognizes FCGMA's authorities as the statutory groundwater management agency and Groundwater Sustainability Agency for the Basin.

[1] A water year begins October 1 and end September 30 to reflect the precipitation patterns in California. Under DWR's definition of a water year, water year 2030 begins October 1, 2029, and ends September 30, 2030. Under the Judgment, water year 2030 begins on October 1, 2030, and ends on September 30, 2031. This document, because it is required under the Judgment, adopts the Judgment naming convention for a water year.

As outlined in the Judgment, Watermaster, following Committee Consultation, is responsible for determining the Basin Optimization Yield of the Basin. The BOY Study is designed to evaluate future groundwater conditions, including projects selected for the Basin Optimization Plan, to set the Basin Optimization Yield, Rampdown, and Operating Yield, for the following water year and subsequent water years (Judgment § 2.22).

1.2 Summary of Basin Optimization Plan

Watermaster, in accordance with the Judgment and in consultation with the LPV Policy Advisory Committee (PAC) and TAC, developed a Basin Optimization Plan (FCGMA 2025a) that identified, evaluated, and prioritized projects that are "*practical, reasonable, and cost-effective to implement prior to 2040 to maintain the Operating Yield at 40,000 AFY or as close thereto as achievable*" (Judgment § 5.3.2.2). Potential projects for evaluation in the Basin Optimization Plan were identified by FCGMA and stakeholders via the Judgment, the LPV Groundwater Sustainability Plan (GSP), and the First Periodic Evaluation of the LPV GSP (First Periodic Evaluation; Table 1-1).

Table 1-1. Summary of Projects Evaluated

Project No.	Project Title	Project Ranking	Selected for BOP	Selected for BOY Modeling	Source(s)
1	Arroyo-Simi Las Posas Arundo Removal	7	Yes	No	Judgment No. 1 (§ 5.4.1) GSP Project No. 2 GSP Evaluation Project No. 2
2	Purchase of Imported Water from CMWD for Basin Replenishment[a]	1	Yes	Yes	Judgment Nos. 1&2 (§§ 5.4.2 & 5.4.9) GSP Project No. 1 GSP Evaluation Project No. 1
3	Arroyo Las Posas Storm Water Capture and Recharge	8	Yes	No	Judgment No. 3 (§ 5.4.3) GSP Evaluation Project No. 6
4	Moorpark Desalter	9	Yes	No	Judgment No. 4 (§ 5.4.4) GSP Evaluation Project No. 5
5	Arroyo Simi-Las Posas Water Acquisition	2	Yes	Yes	Judgment No. 5 (§ 5.4.5) GSP Project No. 3 GSP Evaluation Project No. 3
6	Delivery of Recycled Water to Las Posas Valley Users via Pipeline	6	No	No	Judgment No. 6 (§ 5.4.6)
7	In Lieu Deliveries to Northern East Las Posas Management Area Feasibility Study	4	No	No	Judgment No. 7 (§ 5.4.7) GSP Evaluation Project No. 9
8	Allocation Buyback and Reduction Program	3	No	No	Judgment No. 8 (§ 5.4.8)
9	Regional Desalter Feasibility Study	5	No	NO	GSP Evaluation Project No. 7

Notes: FCGMA = Fox Canyon Groundwater Management Agency; VCWWD-1 = Ventura County Waterwork District No. 1; AFY = Acre-Feet per Year; ET = evapotranspiration; SVWQCP = Simi Valley Water Quality Control Plant.

[a] Projects identified in Judgment sections 5.4.2 and 5.4.9 were combined based on TAC recommendation (TAC, August 27, 2024).

Watermaster developed evaluation criteria in four primary categories: (1) water supply, (2) timing and feasibility, (3) cost and funding, and (4) additional project considerations, to conduct the initial assessment of the original nine projects. After scoring, ranking, and prioritizing the potential projects, three projects and two feasibility studies were determined to be practical, reasonable, and cost-effective to implement prior to 2040. Five-year implementation schedules and costs for the selected projects and feasibility studies were developed in the Basin Optimization Plan.

Additionally, the Basin Optimization Plan evaluated which projects could be included in the numerical groundwater modeling conducted for the BOY Study. Two projects provided quantifiable supplemental groundwater at a level of detail that could be included in the model: Project 2, Purchase of Imported Water from CMWD for Basin Replenishment, and Project 5, and Arroyo Simi-Las Posas Water Acquisition Project. These Basin Optimization Projects are discussed further in Section 3.1.3.

1.3 Approach to Estimating the LPVB Basin Optimization Yield, Rampdown, and Rampdown Rate

As defined in the Judgment, the Basin Optimization Yield is *"the estimated yield that is projected to be available to achieve Sustainable Groundwater Management by 2040"* (Judgment § 1.21). Restated, the Basin Optimization Yield is the estimated groundwater production rate that can be maintained without causing Undesirable Results if the Basin Optimization Projects are implemented. Undesirable results were defined in the GSP for the three management areas of the Basin: the East Las Posas Management Area (ELPMA), the Epworth Gravels Management Area, and the West Las Posas Management Area (WLPMA; FCGMA 2019). Minimum threshold (MT) groundwater elevations were selected at representative monitoring points, or Key Wells, in each management area. The MTs represent the groundwater elevation below which Undesirable Results related to four sustainability indicators – chronic declines in groundwater elevation, loss of groundwater in storage, degradation of groundwater quality, and potential land subsidence related to groundwater production – may occur. Additionally, the MTs in the WLPMA were selected in concert with the MTs for the adjacent Oxnard Subbasin, to ensure that they do not interfere with the ability of the Oxnard Subbasin to meet its sustainability goal.

Because the MTs are the metric by which groundwater conditions in the Basin are determined to be sustainable, the BOY Study compares simulated future groundwater elevations in the Basin to the MTs at the Key Wells in the Basin. Future groundwater elevations were simulated using the two numerical groundwater models that cover the three management areas of the Basin. Simulated production rates that result in long-term stability of the groundwater elevations at levels above the MTs are considered sustainable. It is important to recognize, however, that numerical models are better at predicting changes and trends in future groundwater elevations than they are at predicting actual future groundwater elevations. The Basin Optimization Yield is the production rate, with implementation of the Basin Optimization Projects, that can be reasonably implemented by 2040 and maintains groundwater elevations above the MTs.

The need for a Rampdown was evaluated based on the difference between an Operating Yield of 40,000 AFY and the Basin Optimization Yield. Based on TAC recommendation, Rampdown was additionally evaluated should the Basin Optimization Projects not be implemented by 2040. This Rampdown evaluation was based on the difference between the initial Operating Yield and the sustainable groundwater production rate that could be maintained if projects are not implemented by 2040. The Rampdown Rate was calculated over a 14-year period (Judgment water

year 2026 through water year 2038[2]) assuming that, if Rampdown is warranted, the first pumping reductions would be in place by the fall of 2026, and the Basin would reach the final sustainable production rate by the fall of 2039.

The following sections discuss the numerical groundwater models, future model scenarios, calculation of the Basin Optimization Yield, and calculation of the Rampdown Rate in more detail.

[2] See footnote 1.

2 Summary of Numerical Models

The eastern and western portions of the Basin are hydrogeologically distinct, separated by the Somis Fault. Consequently, the Basin is covered by two distinct numerical groundwater models:

- **East Las Posas (ELP) Model:** a MODFLOW numerical model developed by CMWD, which covers the entirety of the ELPMA and Epworth Gravels Management Area (CMWD 2018).
- **Coastal Plain Model:** a version of the Ventura Regional Groundwater Flow Model (VRGWFM) MODFLOW numerical model developed and maintained by UWCD, which covers the entirety of the WLPMA, Oxnard Subbasin, Pleasant Valley Basin (PVB), and Mound Subbasin (UWCD 2018).

Both models are basin-scale models that reasonably reproduce historical trends in groundwater elevations in response to groundwater production, climate, recharge, and other basin management operations. As noted previously, numerical models are better at predicting changes and trends in future groundwater elevations than they are at predicting actual future groundwater levels. These models were used to assess potential future groundwater levels in the GSP and the First Periodic Evaluation (FCGMA 2019 and FCGMA 2024, respectively). As part of the First Periodic Evaluation, both the Coastal Plain Model and ELP Model were updated to re-evaluate projected future conditions. Additional information on the updates to the models is provided in Section 5.1 of the First Periodic Evaluation (FCGMA 2024). This BOY Study uses the same version of each model used for the First Periodic Evaluation.

2.1 East Las Posas Model

The East Las Posas (ELP) Model, which covers the entirety of the ELPMA and portions of the FCGMA expansion area to the north and east of the ELPMA, was used to conduct the numerical groundwater flow modeling for the ELPMA and Epworth Gravels Management Areas. The Epworth Gravels Management Area is fully within the ELPMA and consists exclusively of the Epworth Gravels aquifer – the underlying aquifers are part of the ELPMA. CMWD provided the ELP model to FCGMA to support management of the Basin. This model was used by FCGMA to support management of the LPVB under both the GSP and the First Periodic Evaluation. As part of the First Periodic Evaluation, FCGMA reviewed data collected since the GSP was prepared and determined that revisions to the model structure were not required (FCGMA 2024). Therefore, the only change FCGMA made to the model for the First Periodic Evaluation was to extend the simulation period through the end of Judgment water year 2021 (i.e., September 30, 2022) (FCGMA 2024). The BOY Study uses the version of the ELP Model that was used in the First Periodic Evaluation. The GSP established uncertainty bounds in the sustainable yield for the ELPMA (including the Epworth Gravels Management Area) estimated using the ELP Model of ±2,300 AFY (FCGMA 2019). This intrinsic model uncertainty should be kept in mind when evaluating the results of scenario simulations conducted for this BOY Study.

Consistent with the hydrogeologic conceptual model, the western boundary of the ELP Model in the Fox Canyon aquifer and Grimes Canyon aquifer is a no-flow boundary. Therefore, the ELP Model does not simulate flow between the ELPMA and the WLPMA.

2.2 Coastal Plain Model

UWCD actively maintains the VRGWFM to support regional groundwater management decisions. This model was first used to assess the sustainable yield for the WLPMA during development of the GSP for the Basin (FCGMA 2019). At the time the GSP was developed, the VRGWFM covered the entirety of the Oxnard and Mound Subbasins and the majority of the WLPMA and PVB (UWCD 2018). Between 2018 and 2020, UWCD updated the VRGWFM to cover the entirety of WLPMA and PVB and included the Santa Paula, Piru, and Fillmore Subbasins (UWCD 2021). The updated model included an improved representation of local hydrogeologic conditions in the Santa Paula, Piru, and Fillmore subbasins and, in the Oxnard Subbasin, a better representation of the influence of coastal groundwater elevations on seawater intrusion. The GSP established uncertainty bounds in the sustainable yield for the WLPMA using the GSP version of the VRGWFM of ±1,200 AFY (FCGMA 2019). While the uncertainty of the updated Coastal Plain Model used in the First Periodic Evaluation and this BOY Study has not been re-evaluated, the intrinsic model uncertainty from the GSP version should be kept in mind when evaluating the results of scenario simulations conducted for this BOY Study.

The updated VRGWFM simulated the effects of Santa Clara River flows on groundwater conditions in the Santa Paula, Piru, and Fillmore subbasins, with a daily model timestep, which is necessary to capture the complexity of river flows, but increases the computational requirements for each model run. Because of the computational requirements of the larger VRGWFM, UWCD also maintains a localized version of the VRGWFM that excludes the upper Santa Clara River subbasins (Santa Paula, Piru, and Fillmore) and uses a monthly timestep. This branch-off of the VRGWFM is informally referred to as the Coastal Plain Model. The Coastal Plain Model, which is distinct from the VRGWFM, has a design and structure that are consistent with the model used during development of the GSP, and is the model that was used for the First Periodic Evaluation of the GSP. Therefore, the Coastal Plain Model was used to assess the influence of groundwater pumping and projects on groundwater conditions in the WLPMA for this BOY Study.

Although the Coastal Plain Model included improved hydrogeologic conceptual model data in several groundwater basins, the update also included a revision to the model boundary condition at the eastern edge of the WLPMA. In previous versions of the model, the boundary between the ELPMA and WLPMA was represented using a no-flow boundary condition, which is consistent with the observation that the Somis Fault acts as a barrier to groundwater flow between the two management areas (FCGMA 2019). In contrast, the model boundary condition in the version of the model used in the First Periodic Evaluation and in this BOY Study was updated by UWCD to a general head boundary across approximately the southern third of the boundary with the Somis Fault. This change allows flow into or out of the WLPMA depending on the simulated groundwater elevations in the eastern portion of the WLPMA. As a result, the model predicts periods of flow from the WLPMA to the ELPMA, despite measured groundwater elevations in the ELPMA being several hundred feet higher than those in the WLPMA. Because these flows are an artifact of the updated model construction and are inconsistent with the hydrogeologic conceptual model, they were not integrated into the modeling conducted for the ELPMA.

In addition to impacting the groundwater budget, the change in the model boundary condition with the ELPMA also impacts simulated groundwater elevations in the eastern portion of the WLPMA. Because groundwater is allowed to flow out of the WLPMA along this boundary, simulated groundwater elevations do not rise as rapidly in response to reduced groundwater production as they would if the model boundary condition had not been changed from a no-flow boundary to a general head boundary. The impact of this change on groundwater elevations was observed in the difference between the simulated response to groundwater projects in the GSP and the First Periodic Evaluation (Figure 2-1). In the GSP, simulated groundwater elevations at well 02N20W06R01 rose approximately 103 feet in response to implementation of an in-lieu groundwater delivery project. This rise is similar to that

measured in the historical data between 1994 and 2006, when CMWD was delivering imported water in-lieu of local groundwater pumping to WLPMA. In contrast, when the same project was modeled in the First Periodic Evaluation with the general head boundary condition, the simulated groundwater elevation recovery was approximately 46 feet.

The comparison of the observed historical change in groundwater elevation to the modeled change in groundwater elevation indicates that UWCD's change to the model boundary condition between WLPMA and ELPMA has introduced additional uncertainty into the predictive capabilities of the model in this region. Future work should be conducted to reduce this uncertainty by modifying and recalibrating the revised model using a no-flow boundary condition to represent the hydrogeologic conceptual model of this area.

The changes to the UWCD model and their potential impact on simulated groundwater elevations were discussed with the LPV TAC before the model was used for this BOY Study. Watermaster and TAC agreed that, while the change in the model boundary condition is not consistent with the hydrogeologic conceptual model, groundwater management decisions will be based on observed water levels, rather than model simulations. The UWCD model is capable of simulating groundwater elevations in the eastern portion of the WLPMA that rise above the minimum threshold prior to 2040 and remain above the minimum threshold from 2040 to 2070. Thus, the use of the UWCD model files developed for the First Periodic Evaluation remains the best available option to evaluate the Basin Optimization Yield and complete this first BOY study prior to the beginning of the 2026 water year (October 1, 2026 – September 30, 2027) (FCGMA 2025b).

3 BOY Scenario Modeling

3.1 BOY Scenario Assumptions

This section describes the common set of assumptions used to model groundwater conditions with both the Coastal Plain Model and the ELP Model, as well as the common set of assumptions used to determine which model scenarios are considered sustainable.

3.1.1 Simulation Time Period

The future scenarios developed for the BOY Study simulate groundwater conditions in the Basin over the 47-year period from October 1, 2022, through September 30, 2069 (i.e., Judgment water years 2022 through 2068). This is the same period simulated for the First Periodic Evaluation.

3.1.2 Hydrology

To simulate future groundwater conditions, the numerical models must incorporate assumptions about the potential future hydrology of the Basin. Multiple methods can be used to generate the synthetic future hydrology. During development of the GSP, the preferred method for generating the synthetic future hydrology was to extract measured historical data from a representative period and adjust those data based on the future predicted climate. The period from 1933 to 1979 was determined to be representative of overall historical conditions and included periods of above average precipitation as well as periods of drought. To convert the historical record into a synthetic future hydrology, the data were multiplied by DWR's 2070 central tendency climate change factors, as described

in the GSP and the First Periodic Evaluation (FCGMA 2019 and FCGMA 2024). These adjusted data were then used to represent the future hydrology in the model runs for this BOY Study. This is the same future hydrology that was used in the First Periodic Evaluation.

Of course, the exact future hydrology is unknown. Therefore, the synthetic future hydrology is a source of uncertainty in any future model simulations. Water years 2022 and 2023 (October 2022 through September 2024) were wet years with wetter than average precipitation (FCGMA 2025c). This meant that the first two years of the simulations (Judgment water years 2022 and 2023) differed from the measured groundwater elevations at the wells in the Basin. Therefore, the simulated groundwater elevations were shifted to the most recent available groundwater measurement (in Judgment water year 2023) on the simulated future groundwater elevation hydrographs.

3.1.3 Water Supply and Future Projects

Projected future water supplies from existing sources are identified in Table 3-1. These include imported water delivered to purveyors in the Basin by CMWD; recycled water deliveries and discharges to percolation ponds in the ELPMA by Ventura County Waterworks District No. 1 (VCWWD-1); and discharges to the Arroyo Simi-Las Posas from dewatering wells in Simi Valley and the SVWQCP. Water supplies from existing sources remained constant in all of the model scenarios.

It should be noted that CMWD maintains stored groundwater in the Basin for emergency purposes. CMWD stored imported water as part of its historical in-lieu project in both the ELPMA and WLPMA and injects imported water at its Aquifer Storage and Recovery (ASR) project in the ELPMA. As of the end of Judgment water year 2021, CMWD had approximately 28,168 AF stored in the ELPMA and 25,192 AF in the WLPMA (FCGMA 2024). Injection or recovery of this water can affect groundwater elevations in the Basin. However, CMWD has represented that the water it has stored in the Basin is principally for an emergency when it loses access to imported water from the Metropolitan Water District of Southern California (MWD), which might occur during a State-wide emergency. It is beyond the scope of this BOY Study to include planning for such State-wide emergencies. Additionally, CMWD has represented that it would replenish stored water at the earliest opportunity when used for other purposes. Therefore, the model scenarios assume that CMWD stored water will remain in storage. Significant pumping without timely replenishment of this stored water may cause groundwater levels to be lower than simulated and impact ability to maintain groundwater elevations above minimum thresholds to avoid Undesirable Results.

Table 3-1. Projected Future Water Supplies from Existing Sources in the LPVB

Source of Future Water Supply	Description	Projected Future Water Supply (acre-feet)
Imported Water	CMWD imported water deliveries to purveyors	8,900
	Groundwater pumped from the ASRVB and used in the LPVB	0
	Groundwater pumped from the PVB and used in the LPVB	0
Non-potable and Recycled Water	CWD deliveries	370
	VCWWD-1 discharges to percolation ponds in the ELPMA	360
	VCWWD-1 deliveries to agricultural and M&I operators	2,000[a]
	SVWQCP discharges to Arroyo Simi-Las Posas	8,040[b]
	Simi Valley dewatering well discharges to Arroyo Simi-Las Posas	1,318[b]
	Total projected water supply from existing sources	20,988

Notes: ASRVB = Arroyo Santa Rosa Valley Basin; CMWD = Calleguas Municipal Water District; CWD = Camrosa Water District; PVB = Pleasant Valley Basin; SVWQCP = Simi Valley Water Quality Control Plant; VCWWD-1 = Ventura County Waterworks District No. 1.
[a] Estimated based on VCWWD-1 projections in its 2020 UWMP and actual deliveries within the LPVB between October 2018 and September 2019.
[b] October 2015 to September 2022 averages.

Two Basin Optimization Projects were incorporated into the future model scenarios based on the findings of the Basin Optimization Plan (FCGMA 2025a). These projects are the Purchase of Imported Water from CMWD for Basin Replenishment project, and the Arroyo Simi-Las Posas Water Acquisition project.

As discussed in the Basin Optimization Plan, the Purchase of Imported Water from CMWD for Basin Replenishment project would supply imported water in lieu of groundwater extraction in areas of the WLPMA and ELPMA exhibiting chronic groundwater level declines. Historical data suggest that rapid recoveries in groundwater elevation can be achieved with in-lieu deliveries to the WLPMA (FCGMA 2019). In the ELPMA, historical groundwater recoveries were not observed during implementation of the in-lieu program, but reduction in the rate of decline and stabilization of water levels were observed.

The total estimated imported water assumed to be available for the project was based on the historical deliveries of imported water under the previous in-lieu programs as well as estimates provided by CMWD, Zone Mutual Water Company (MWC), and Ventura County Waterworks District No. 19 (VCWWD-19) during development of the Basin Optimization Plan (FCGMA 2025a). In WLPMA, the in-lieu project would deliver 1,760 AFY of imported water to offset pumping in wells operated by Zone MWC and VCWWD-19 (Table 3-2; Figure 3-1). In the ELPMA, the in-lieu project would deliver 1,380 AFY of imported water to offset pumping in wells operated by VCWWD-1 (Figure 3-1). This project relies on existing infrastructure. Therefore, it can be implemented after a program policy by the Watermaster Board is developed, including determination of the pumping costs and amount of incentive, allocation of funds, and incentivization agreements to purchase water from CMWD (FCGMA 2025a).

Table 3-2. Projected Future Water Supplies from New Projects in the LPVB

Project Name	Description	Source of Future Water Supply	Projected Future Water Supply from New Projects (acre-feet)	Time Period for Implementation
Purchase of Imported Water from CMWD for Basin Replenishment	In lieu delivery of imported water to WLPMA and ELPMA to reduce groundwater production in key areas prone to declining groundwater levels and loss of groundwater storage	Imported water	1,760 AFY - WLPMA 1,380 AFY – ELPMA *3,140 AFY - Total*	Water year 2026 - if agencies choose to participate and the program policy is finalized by the Watermaster Board[1]
Arroyo Simi-Las Posas Water Acquisition	Purchase/lease of 4,200 AFY of upstream discharges to Arroyo Simi-Las Posas to maintain future surface water flows into ELPMA	SVWQCP Discharges to Arroyo Simi-Las Posas	0 AFY increase relative to current state. This project maintains existing flows	Water year 2026 - Following final negotiations with the City of Simi Valley
Total projected additional water supplies from new projects			3,140	

Note: Projects modeled from start of simulation time period of Judgment water year 2022.

The Arroyo Simi–Las Posas Water Acquisition project would involve the purchase or lease of recycled water from the City of Simi Valley to continue discharging the water from its shallow dewatering wells and/or the Simi Valley Water Quality Control Plant (SVWQCP) to the Arroyo Simi for downstream recharge to the Basin (FCGMA 2025a). Without the purchase or long-term lease, the City of Simi Valley could decide to use this water for use within the Simi Valley Basin or elsewhere where it would not flow downstream to the LPVB. The City of Simi Valley has indicated that 4,700 AFY of water would be available (FCGMA 2019). However, due to the riparian use of the water along the Arroyo Simi–Las Posas and flow downstream to the PVB, these flows result in an estimated 1,200 AFY of sustainable yield to the ELPMA (FCGMA 2021). As noted in the Basin Optimization Plan, this project seeks to maintain existing water supplies in the Basin rather than provide new or additional water supply. The project could be implemented immediately following final negotiations between FCGMA and Simi Valley, however, the time required to develop this agreement is not well defined. Under the Basin Optimization Plan, the time required to generate the final agreements was estimated to be approximately 18 months (FCMGA 2025).

Because neither project requires construction of additional infrastructure and the implementation timing for each project primarily relies on the timing of coordination agreements, both projects were implemented at the start of the model scenarios rather than assuming a delayed start date, consistent with the Basin Optimization Project schedule in the Basin Optimization Plan (FCGMA 2025a). This approach is consistent with the current state of the surface water flows in Arroyo Simi-Las Posas, which, to date, have continued to flow into the LPV Basin without a formal agreement. However, the in-lieu project deliveries are not currently occurring. If implementation of the in-lieu project is delayed for multiple years, the modeled impacts of the project on groundwater levels in this BOY Study may overestimate the impact of this project. Thus, the simulated groundwater levels should be considered an indicator of the long-term potential project impact, rather than the specific anticipated groundwater level for any given year. The actual timing of the project start date is a source of uncertainty in the future model results.

3.1.4 Sustainability Evaluation Metrics

This section provides a description of the criteria used to evaluate whether the simulated future groundwater production rates in the model scenarios developed for this BOY Study are sustainable. Because of the unique hydrogeologic characteristics of each management area, the criteria for evaluating sustainability are discussed, by management area, in the subsections below.

ELPMA and Epworth Gravels Management Area

In the ELPMA and Epworth Gravels Management Area, groundwater production rates were determined to be sustainable if the simulated groundwater elevations at the Key Wells remained above the MTs established in the GSP. These MTs were selected to protect against chronic declines in groundwater elevation in both the ELPMA and Epworth Gravels Management Area. In the ELPMA, the MTs were also selected to prevent significant and unreasonable loss of groundwater storage and conversion from confined to unconfined conditions in the Fox Canyon aquifer. Note that the MT for the Epworth Gravels Management Area applies specifically to the Epworth Gravels aquifer, not to the underlying aquifers (including Fox Canyon and Grimes Canyon aquifers), which are part of the ELPMA.

WLPMA

In the WLPMA, groundwater production rates were considered to be sustainable if the simulated groundwater elevations at the Key Wells remained above the MTs established in the GSP. These MTs were selected to protect against chronic declines in groundwater elevation and loss of groundwater in storage (FCGMA 2019).

Additionally, in the WLPMA, the long-term groundwater production rate was determined to be potentially sustainable for this BOY Study if groundwater elevations remained stable over the future model period, such that the ending groundwater level was equal to or higher than the starting groundwater elevation. This definition was adopted for this BOY Study because in the eastern portion of the WLPMA, groundwater elevations have declined significantly in recent years, such that they are now below the MTs established in the GSP. Historically, in-lieu imported water deliveries have resulted in groundwater elevation recoveries that exceeded 100 feet in this area of the WLPMA (Section 2.2; Figure 2-1); thus, it is likely that groundwater elevations will respond similarly to implementation of a similar in-lieu project in the future. However, the updated Coastal Plain Model did not reproduce the same magnitude of groundwater elevation response as was observed historically (Figure 2-1). Therefore, project implementation and adjustment of in-lieu delivery rates informed by groundwater elevation monitoring are expected to bring groundwater elevations back above the MT. Once the groundwater elevations are higher than the MT, a long-term production rate can be determined that results in stable groundwater elevations that remain above the MT which is sufficient to avoid Undesirable Results.

Because the WLPMA is hydrogeologically connected to the adjacent Oxnard Subbasin, which is experiencing seawater intrusion, the volume of groundwater that flows across the boundary between the Oxnard Subbasin and WLPMA can impact the ability of the Oxnard Subbasin to prevent future seawater intrusion. The First Periodic Evaluation found that the effects were more pronounced in the Lower Aquifer System (LAS) than in the shallower aquifers (Upper Aquifer System [UAS] in the Oxnard Subbasin, shallow aquifer system in the WLPMA). Based on findings in the First Periodic Evaluation that, under the pumping distribution in the No New Projects 3 or NNP3 scenario, up to 800 AFY of groundwater can flow from the Oxnard Subbasin to the WLPMA in the LAS without causing undesirable effects in either basin (See Table 5-2 in FCGMA 2024). For all other scenarios that avoided Undesirable Results, the flux across the

WLPMA boundary with the Oxnard Subbasin in the LAS was less than 800 AFY or, in some cases, changed direction with flow from WLPMA contributing to the Oxnard Subbasin. Based on these results, a simulated groundwater flux of 800 AFY or less across the boundary from the Oxnard Subbasin to the WLPMA in the LAS was considered sustainable for the purposes of this BOY Study. It should be noted that the flux is much higher in the UAS from the Oxnard Subbasin to the shallow aquifer system in the WLPMA.

3.1.5 Uncertainty

Numerical groundwater flow models are the best tools to evaluate future groundwater conditions, especially in hydrogeologically complex groundwater basins such as the LPVB. The models have inherent quantifiable uncertainty, as discussed in Section 2, and unquantified uncertainty associated with scenario assumptions, as discussed in Sections 3.1 and 3.2. Following is a summary of the uncertainties associated with the modeling of future groundwater conditions for this BOY Study. These uncertainties should be kept in mind when evaluating the model simulation results.

- **ELP Model**
  - The GSP uncertainty bounds for sustainable yield estimated using the ELP Model of ±2,300 AFY covering the ELPMA and the Epworth Gravels Management Area (Section 2.1; FCGMA 2019).
  - Distribution of pumping from the Epworth Gravels aquifer (Epworth Gravels Management Area) and the underlying Fox Canyon and Grimes Canyon aquifers within the ELPMA (Section 3.2.2).
- **Coastal Plain Model**
  - The GSP uncertainty bounds for sustainable yield estimated using the GSP version of the VRGWFM of ±1,200 AFY (FCGMA 2019). While the uncertainty of the updated Coastal Plain Model used in the First Periodic Evaluation and this BOY Study has not been re-evaluated, the intrinsic model uncertainty from the GSP version should be kept in mind when evaluating the results of scenario simulations conducted for this BOY Study (Section 2.2).
  - The boundary condition adjacent to the Somis Fault in the change in boundary condition in the updated Coastal Plain Model (Section 2.2).
- **Both Models**
  - Synthetic future hydrology (precipitation) through the simulation time period (Section 3.1.2).
  - Future water supply (Section 3.1.3).
  - Project start timing (for Projects Scenario; Section 3.1.3).
  - Distribution of future groundwater pumping, including uncertainty in use of transfers and Carryover (Section 3.2.2).

3.2 BOY Baseline Scenario

The baseline groundwater production scenario for the BOY Study assesses whether groundwater production can be maintained sustainably at the initial Operating Yield of 40,000 AFY, based on the allocation assigned to each Water Management Identification Number (WMID) in the Judgment, without implementing projects.

3.2.1 Judgment Allocations to WMIDs

The Judgment grants four types of allocations – Agricultural, Commercial, Domestic, and Mutual Water Company Allocations. Allocations were assigned to WMIDs for an individual Water Right Holder or a group of Water Right Holders. All agricultural landowners that participated in the Judgment received a groundwater allocation, although some of those allocations were less than 0.1 AFY. Additionally, some agricultural properties that historically reported extractions did not receive an allocation.

The total allocation assigned in Exhibit C of the Judgment equaled 41,851.58 AFY. This total exceeded the initial Operating Yield of 40,000 AFY and the Watermaster adjusted Annual Allocations to equal 40,000 AFY in accordance with the Judgment (Judgment § 4.2). Because the 2025 BOY Study is intended to assess the ability of projects to maintain the BOY at as close to 40,000 AFY as possible, and to evaluate the need for a Rampdown relative to the initial Operating Yield, this BOY Study used the Water Year 2023 Annual Allocations published by the Watermaster as the basis for extractions in the numerical groundwater models.

3.2.2 Baseline Scenario Extraction Rates

3.2.2.1 Baseline Pumping Distribution Methodology

While the Judgment assigns allocations based on WMIDs, groundwater production in the Basin occurs at individual wells. Therefore, the allocation assigned to each WMID had to be distributed to the groundwater production well or wells associated with that WMID. For the purpose of distributing the allocations assigned to each WMID, Water Right Holders were divided into three general groups:

- Water Right Holders who pump all their assigned groundwater allocation from wells associated with their WMID and not by a MWC,
- MWC exclusive users – who receive their entire allocation from mutual water companies and do not pump any groundwater from wells associated with their WMID,
- MWC hybrid users – who receive some of their allocation from MWCs and pump the remaining allocation from well(s) associated with their WMID.

For Water Right Holders who pump their groundwater allocation from a single well associated with their WMID, the distribution is straightforward. All of the Annual Allocation for these Water Right Holders was assigned to the single well associated with their WMID. For MWC exclusive users, all of their Annual Allocation was assumed to be pumped by the MWC and delivered to the Water Right Holder. Therefore, these users did not have wells in the Basin associated with their WMID. For all other Water Right Holders, those with multiple wells and those that receive some portion of their allocation from a MWC, several methods for determining the volume of Annual Allocation that was distributed to each well were considered.

Of the methods considered, the selected approach, with which the TAC concurred, was to distribute the Annual Allocation based on the reported pumping and MWC deliveries for Judgment water year 2023[3], the first full water year after the Judgment was adopted. Groundwater production patterns after the Judgment was adopted may better

[3] Note – The distribution was based on reported pumping, documented in the Water Year 2024 annual report, which follows the DWR Water Year naming convention and covers reported production from October 2023 through September 2024. Reported pumping in this report only accounted for approximately 75% of the anticipated total pumping for the reporting period (FCGMA 2025c).

represent future groundwater pumping under Exhibit C than the historical groundwater production distribution used in the GSP and the First Periodic Evaluation. However, shifts in pumping distribution in the future are also likely, as groundwater allocation trading occurs and Water Right Holders better understand how to manage their use under the new allocation scheme. Further, the Judgment allows Water Right Holders to Carryover up to 150 percent of their unused Allocation Basis. Carryover can be used or transferred within the next five water years. These potential shifts in where groundwater is pumped create significant uncertainty in the modeled future groundwater conditions. Therefore, while the pumping distribution in the BOY model scenarios represents the distribution based on the best available data, these data will change in the future and should be updated for the next BOY Study.

The method for distributing pumping for each user type is presented in Figure 3-2. For Water Right Holders that pump their allocation from multiple wells, the proportion of the allocation that was assigned to each well was based on the proportion of the total reported pumping for water year 2023 that well represented. For example, if in water year 2023, a Water Right Holder with two wells pumped 10% of their total water used from one well and 90% from their second well, 10% of the Annual Allocation for that Water Right Holder, whether it was larger or smaller than what was pumped in 2023, was distributed to the first well and 90% was distributed to the second well. Similarly, for water users that received a portion of their allocation from an MWC, the proportion of the allocation received equaled that reported as received in water year 2023. If a Water Right Holder received 50% of the water they used in water year 2023 from an MWC and pumped 50% from a well or wells associated with their WMID, then 50% of their Annual Allocation was assigned to the MWC and the remaining 50% was distributed to the well, or wells, associated with the WMID based on the percentage pumped in water year 2023. The Baseline Scenario allocation for each well is provided in Appendix A and shown in Figure 3-3.

3.2.2.2 Baseline Scenario Pumping Distribution by Management Area

After the allocations for each WMID were distributed to individual wells (Figure 3-3), the total groundwater production was calculated for each management area (Table 3-3). The Baseline Scenario production exceeds the First Periodic Evaluation estimates of sustainable yield by approximately 7,000 AFY in the WLPMA and by approximately 2,700 AFY in the ELPMA (Table 3-3). Note that the groundwater production and estimated sustainable yield for the Epworth Gravels Management Area applies specifically to pumping from the Epworth Gravels aquifer. Production within the aerial limits of the Epworth Gravels Management Area from the deeper aquifers is from the ELPMA.

Table 3-3. Comparison of Baseline Groundwater Production by Management Area

Management Area	Groundwater Production Rate (AFY)		
	BOY Study Baseline Scenario	Estimated Sustainable Yield[1]	
WLPMA	18,417	11,400	(±2,300)[2]
ELPMA	20,559	17,900	(±1,200)[3]
Epworth Gravels Aquifer / Mgt. Area	1,024	1,330	–
Total	**40,000**	**30,630**	**(±3,500)**

Note:
1 Values are from Tables 5-2 and 5-3 of the First Periodic Evaluation (FCGMA 2024).
2 Estimated uncertainty was quantified for the WLPMA portion of the VRGWFM used for the GSP (FCGMA 2019). Uncertainty for the updated model used for the First Periodic Evaluation and this BOY Study has not been re-evaluated.
3 Estimated uncertainty was quantified for the ELP Model used for the GSP (FCGMA 2019), the same model used for the First Periodic Evaluation and this BOY Study. The Epworth Gravels Management Area uncertainty is included in the ELPMA uncertainty.

It should be noted that not all operators who have historically pumped in the Basin received a Water Right Allocation. Unauthorized extraction of groundwater by some, or all, of these operators continues, which is not included in the Baseline Scenario groundwater production. In water year 2023, operators without an Allocation reported 259 AF of production in the WLPMA, 1,288 AF in the ELPMA, and 63 AF in the Epworth Gravels Management Area. There may be additional unauthorized pumping in the Basin by operators that did not receive an Allocation and have not reported their pumping to the Watermaster.

The differences between the Baseline Scenario production rate and the average groundwater production from October 2015 to September 2023 are shown in Figure 3-4. This figure shows increases or decreases in pumping at each well, based on whether the allocated groundwater production for the baseline scenario was higher (increase) or lower (decrease) than the historical average pumping between October 2015 and September 2023. The wells with the largest increases in groundwater production under the Baseline Scenario are located in the eastern WLPMA, and the northern ELPMA. These areas have been prone to declining groundwater elevations in the past and, as a result, specific groundwater elevation thresholds were developed in the GSP to avoid Undesirable Results from chronic declines in groundwater elevation (FCMGA 2019). Additional groundwater production from these areas beyond the historical average groundwater production would be anticipated to exacerbate groundwater declines, and likely cause groundwater elevations to fall below the minimum thresholds established in the GSP.

It should be noted, however, that the future pattern of groundwater production is unlikely to match the exact distribution of groundwater production shown in Figure 3-3 for two primary reasons. First, the distribution is based on a single year of reported groundwater production since the Judgment became effective. This approach was adopted, with concurrence by TAC, because the groundwater allocation in the Judgment did not match the historical pattern of groundwater production in the Basin (Figure 3-4). However, historically, the relative distribution of groundwater use between wells has changed from year to year as Water Right Holders actively manage which wells they use and how much they pump from those wells. Because the allocation is assigned to the Water Right Holders, and not to the well, we anticipate that, with additional years of reported groundwater extractions under the Judgment, the distribution of groundwater pumping calculated for this initial BOY Study is likely to change. Second, allocation transfers are allowed under the Judgment. As Water Right Holders transfer allocation between WMIDs, the distribution of groundwater production will also change. Consequently, while relying on the single year of groundwater production under the Judgment is appropriate for this initial BOY Study, the distribution of groundwater production may look quite different in five years. Thus, the physical distribution of groundwater production in the Baseline Scenario represents a source of uncertainty in the future model results. This uncertainty should be reduced for each successive BOY Study, as Basin operation conditions become established under the Judgment.

3.2.3 Baseline Scenario Model Results

3.2.3.1 Baseline Scenario Groundwater Elevations

Epworth Gravels

In the Epworth Gravels Management Area (Epworth Gravels aquifer), Baseline Scenario simulated groundwater elevations rose throughout the 47-year model time period (Figure 3-5). The model results are consistent with the finding in the GSP that the simulated groundwater elevations in the Epworth Gravels Management Area are sensitive to small changes in the groundwater production rate. However, the modeled groundwater elevations are not anticipated to reflect actual conditions in the Epworth Gravels Management Area over time for two primary reasons. First, not all groundwater producers with wells in the Epworth Gravels Management Area received an

allocation in the Judgment (Figure 3-4). Second, Water Right Holders within the Epworth Gravels Management Area (Epworth Gravels aquifer) typically have multiple wells, some of which are screened in the underlying Fox Canyon and/or Grimes Canyon aquifers. If, during Judgment water year 2023, these Water Right Holders pumped less than average from the Epworth Gravels Management Area wells, the baseline pumping distribution in the BOY Study Baseline Scenario would extrapolate this single year of reduced pumping over the entire 47-year model time period. The result is continuously rising simulated groundwater elevations that do not reflect the historical production patterns from the aquifer.

The baseline groundwater production rate in the Epworth Gravels Management Area for this BOY Study is 1,024 AFY, which is approximately 446 AFY lower than the average 2016 to 2022 baseline extractions modeled in the First Periodic Evaluation (FCGMA 2024). At the First Periodic Evaluation future baseline groundwater production rate of 1,470 AFY, simulated groundwater elevations in the Epworth Gravels Management Area decline over the entire model period (Figure 3-5). The sustainable groundwater production rate for the Epworth Gravels Management Area is estimated to be approximately 1,320 AFY (FCGMA 2019, FCGMA 2024).

Historically, groundwater production in the Epworth Gravels Management Area has depleted groundwater in storage, causing groundwater users to drill deeper wells that produce water from the underlying Fox Canyon aquifer (FCGMA 2019). When wells were rested in the Epworth Gravels Management Area (from the Epworth Gravels aquifer), the groundwater elevations recovered. Both the GSP and the First Periodic Evaluation anticipated that adaptive management would occur, through pumping reductions in Epworth Gravels Management Area wells, as necessary, to maintain groundwater elevations between the minimum threshold and measurable objective.

ELPMA

Groundwater production at the Baseline Scenario rates was determined not to be sustainable in the ELPMA because simulated groundwater elevations at five Key Wells fell below the minimum threshold groundwater during the 47-year model run (Figure 3-6). These wells, which are screened in the Fox Canyon aquifer, are located in the northern ELPMA, where the influence of recharge from Arroyo Simi-Las Posas is less pronounced. Baseline Scenario production rates in the northern ELPMA were, on average, higher than the 2016 to 2024 average production rates (Figure 3-4). The simulated groundwater elevation declines in the northern ELPMA are consistent with previous model scenarios evaluated in the GSP and the First Periodic Evaluation (FCGMA 2019, FCGMA 2024).

WLPMA

Groundwater production at the Baseline Scenario rates was determined not to be sustainable in the WLPMA because simulated groundwater elevations at three Key Wells were below the minimum thresholds during a portion of, or the entirety of, the 47-year model time period (Figure 3-6). Two of the three wells, which are screened in the Lower Aquifer System, are located in the eastern WLPMA, adjacent to the Somis Fault. Groundwater recharge in this area of the WLPMA is limited. Baseline Scenario production rates in the WLPMA were, on average, higher than the 2016 to 2024 average production rates, and these rates were determined not to be sustainable in the First Periodic Evaluation of the GSP (Figure 3-4; FCGMA 2024). Therefore, the determination that the Baseline Scenario production rates in this study are not sustainable is consistent with the findings of the GSP and the First Periodic Evaluation (FCGMA 2019, FCGMA 2024).

3.2.3.2 Baseline Scenario Water Budget

The two models covering the Basin were used to calculate the water budgets for the WLPMA, ELPMA, and Epworth Gravels Management Area. Because the ELP Model includes both the ELPMA and Epworth Gravels Management Area, a single water budget for both management areas is discussed below. The water budget for the WLPMA is discussed separately.

ELPMA and Epworth Gravels

The primary inflows in the ELPMA are stream leakage, recharge from precipitation, M&I and agricultural return flows, and mountain front recharge (Figure 3-7). The Epworth Gravels Management Area does not receive stream leakage or mountain front recharge. Recharge to this aquifer is limited to precipitation and return flows. The primary outflow in both the ELPMA and Epworth Gravel Management Area is groundwater production. In addition, in the ELPMA, there is outflow from evapotranspiration along Arroyo Simi-Las Posas, underflows to the Pleasant Valley Basin, and minor underflows to the WLPMA (Figure 3-7).

In the Baseline Scenario, groundwater outflows exceed groundwater inflows by approximately 1,500 AFY.

WLPMA

The WLPMA is divided vertically into a shallow aquifer system and the Lower Aquifer System (LAS). Approximately 90% of the total groundwater extraction from the WLPMA occurs in the LAS, while approximately 65% of the recharge to the LAS comes from the shallow aquifer system. The primary inflows to the shallow aquifer system are recharge from precipitation, M&I and agricultural return flows, subsurface flows from the Oxnard Subbasin, and, to a much smaller extent, subsurface inflow from the Pleasant Valley Basin (Figure 3-8). Vertical flows to the LAS and groundwater pumping are the primary outflows in the shallow aquifer system (Figure 3-8).

The primary inflows to the Lower Aquifer System of the WLPMA are vertical flows from the shallow aquifer system, recharge from precipitation, M&I and agricultural return flows, recharge from the outcrop area, and minor flows in from the Pleasant Valley Basin and Oxnard Subbasin (Figure 3-9). Groundwater production is the primary outflow from the LAS (Figure 3-9). Additionally, there is a component of the water budget that represents flows across the model boundary between the WLPMA and ELPMA. In the Baseline Scenario, the model simulated approximately 500 AFY of inflow to the WLPMA across this boundary (Figure 3-9). This component of flow is shown in the water budget for completeness but, as discussed in section 2.1, it is considered an artifact of the model construction and not representative of physical hydrogeological conditions in the management area.

In the Baseline Scenario, groundwater outflows from the WLPMA exceeded groundwater inflows by approximately 400 AFY (Figures 3-8 and 3-9).

3.3 Projects Scenario

Because the Baseline Scenario is unsustainable, a Projects Scenario was developed to simulate the Purchase of Imported Water from CMWD for Basin Replenishment project selected in the Basin Optimization Plan (FCGMA 2025a). This project consists of deliveries of CMWD imported water to VCWWD-1 in the northern ELPMA and VCWWD-19 and Zone MWC in the eastern WLPMA in lieu of local groundwater pumping. These areas were targeted because they were the areas in which Baseline Scenario groundwater elevations were below the minimum

thresholds. Historical in-lieu imported-water delivery projects were successful in reversing, or slowing, groundwater elevation declines in these areas (FCGMA 2019). Participation of VCWWD-1, VCWWD-2, and Zone MWC would be under the policy and terms to be established by Watermaster and agreements with these purveyors.

3.3.1 Projects Scenario Extraction Rates

As discussed in Section 3.1.3, the Projects Scenario incorporated 1,760 AFY of surface water deliveries to offset groundwater production from six wells in the eastern WLPMA, and 1,380 AFY of surface water deliveries to offset production from three wells in the ELPMA. Project wells are shown on Figure 3-1. The resulting groundwater production rates were 16,657 AFY in the WLPMA and 19,179 AFY in the ELPMA (Table 3-3). The groundwater production rate in the Epworth Gravels Management Area remained the same as in the Baseline Scenario. The total production in the Projects Scenario from all three management areas was 36,860 AFY (40,000 AFY less 3,240 AFY in-lieu reduction), which represents an approximately 8% reduction in the groundwater production relative to the Baseline Scenario.

Table 3-4. BOY Future Groundwater Production Scenario Extraction Rates

Management Area	Groundwater Production Rate (AFY)			
	Baseline Scenario	Projects Scenario	Basin-wide Rampdown Scenario	Differential Rampdown Scenario
			20% Reduction WLPMA, ELPMA, and Epworth Gravels	20% Reduction WLPMA/ 11% Reduction ELPMA and Epworth Gravels
WLPMA	18,417	16,657	14,734	14,734
ELPMA	20,559	19,179	16,447	18,298
Epworth Gravels	1,024	1,024	819	911
Total	**40,000**	**36,860**	**32,000**	**33,943**

3.3.2 Projects Scenario Results

3.3.2.1 Project Scenario Groundwater Elevations

Epworth Gravels

The simulated groundwater production rate in the Projects Scenario was the same as that simulated in the Baseline Scenario because no pumpers within the Epworth Gravels Management Area (Epworth Gravels aquifer) received in-lieu surface water deliveries as part of the projects in the Basin Optimization Plan and therefore in this BOY Study. Therefore, the groundwater elevations simulated in the Epworth Gravels Management Area for the Projects Scenario were the same as those discussed in Section 3.2.3.1 and shown in Figure 3-5.

ELPMA

The groundwater production rate in the Projects Scenario is likely to be sustainable in the ELPMA because simulated groundwater elevations remained above the minimum threshold at all the Key Wells in the management area (Appendix B). This includes the five Key Wells that had groundwater elevations fall below the minimum threshold in the Baseline scenario (Figure 3-10). These wells are in the area of the ELPMA that was targeted by the in-lieu surface water delivery program. Although the decline in simulated groundwater elevations in these wells did not fully stabilize in this scenario, the results suggest that implementation of the project as envisioned in the Basin Optimization Plan may be sufficient to avoid Undesirable Results in the ELPMA. Ongoing groundwater monitoring will confirm whether future groundwater elevations stabilize above the minimum thresholds.

WLPMA

In the WLPMA, groundwater production at the Projects Scenario rates is likely to be sustainable because simulated groundwater elevations remained above the minimum thresholds at two of three Key Wells in which groundwater elevations were previously below the minimum threshold (Figure 3-10). Although the simulated groundwater elevation at the third well, 02N20W06R01, remained below the minimum threshold during the Projects Scenario, the groundwater elevation at the end of the scenario was similar to the elevation at the start of the scenario.

After reviewing the initial results of the Projects Scenario, TAC suggested that additional Projects Scenarios be investigated for the WLPMA, to see if redistributing groundwater production among the project wells could help raise the simulated groundwater elevations at well 02N20W06R01. The overall groundwater production rate in the WLPMA remained the same in these redistributed Projects Scenarios, but the volume of groundwater produced from well 02N20W06R01 was reduced and assigned to the other project wells. The resulting groundwater elevations at well 02N20W06R01 were not significantly affected by redistributing the project pumping to the other project wells (Figure 3-11).

As discussed in Section 2.1, simulated groundwater elevations in well 02N20W06R01 are influenced by the change in the model boundary condition that dampens the groundwater level response to projects relative to the observed historical groundwater elevation response (Figure 2-1). For this reason, and because future simulated groundwater elevations at this well are generally stable in the Projects Scenario, the Projects Scenario may be sufficient to avoid Undesirable Results in the WLPMA. Ongoing groundwater monitoring will confirm whether future groundwater elevations stabilize above the minimum thresholds.

Because the project was successfully implemented in the WLPMA in the past, implementation does not require construction of new infrastructure, and the volume of in-lieu water can be actively managed based on measured groundwater elevations, additional attempts to simulate redistributed groundwater production were not pursued. Measured groundwater elevations will provide a better assessment of the effectiveness of the project, and in-lieu imported water deliveries can be increased or decreased annually in order to ensure that sufficient deliveries are provided to maintain groundwater elevations above the minimum thresholds.

3.3.2.2 Projects Scenario Water Budget

ELPMA and Epworth Gravels

The total inflow to the ELPMA and Epworth Gravels Management Areas in the Projects Scenario was similar to that in the Baseline Scenario (Figure 3-7). Groundwater production decreased in the Projects Scenario by 1,380 AFY, which is the volume of delivered CMWD in-lieu water. In the Projects Scenario, groundwater outflows exceed groundwater inflows by approximately 600 AFY.

WLPMA

The total inflow to, and outflow from, the shallow aquifer system of the WLPMA in the Projects Scenario was similar to that in the Baseline Scenario (Figure 3-8). The primary change between the two scenarios was an approximately 700 AFY decrease in the flow leaving the shallow aquifer system and replenishing the LAS because lower groundwater production in the LAS maintained higher groundwater elevations and induced less recharge from the shallow aquifer system. Additionally, in the LAS groundwater production was reduced by 1,760 AFY to simulate implementation of the in-lieu surface water delivery project to Zone MWC and VCWWD-19. As a result of higher groundwater elevations in the eastern WLPMA during the Projects Scenario, the model simulated flow leaving the model domain and flowing toward the ELPMA (Figure 3-9). This flow is an artifact of the model construction. In the Projects Scenario, groundwater outflows equaled groundwater inflows in the WLPMA.

The water budgets for the Redistributed Projects 1 and 2 scenarios are also shown in Figures 3-8 and 3-9. These water budgets are the same as the water budget for the Project Scenario, as the only change between the scenarios was the distribution of groundwater pumping at the project wells. The total groundwater production and the distribution of groundwater production at the non-project wells remained the same.

3.4 Rampdown Scenarios

In order to provide both the Watermaster Board and Water Right Holders with an understanding of the reduction in groundwater production that would be necessary to reach sustainable conditions if the projects are not implemented, two Rampdown Scenarios were developed at the recommendation TAC. Consistent with the Judgment, the first Rampdown Scenario applies a Basin-wide reduction factor to groundwater production in all three management areas. This scenario is discussed in Section 3.4.1. The second Rampdown Scenario applies two different reduction factors, one for the WLPMA and the other for the ELPMA and Epworth Gravels Management Area. This Rampdown Scenario is called the Differential Rampdown Scenario and is discussed further in Section 3.4.2. The Judgment provides that localized restrictions on extractions could be implemented (Judgment § 4.10.3). This process includes, but is not limited to, committee consultation and a list of specific findings relative to the implementation of projects and the avoidance of Undesirable Results (Judgment § 4.10.3.1).

3.4.1 Basin-wide Rampdown Scenario

3.4.1.1 Basin-wide Rampdown Scenario Extraction Rates

The goal of the Basin-wide Rampdown scenario was to determine the groundwater production rate at which Undesirable Results are avoided in all management areas if projects are not implemented. Previous model analyses conducted for the First Periodic Evaluation were used to develop an initial estimate of the reduction factor, relative to the initial Operating Yield of 40,000 AFY, that would maintain groundwater elevations above the minimum threshold at all Key Wells in the Basin. The initial estimate was then tested using the Coastal Plain and ELP Models. Simulated groundwater elevations from this initial estimate were used to refine the reduction rate and that rate was tested using the two models. The results of this scenario, which are discussed below, indicated that a 20% reduction to the Baseline Scenario extraction rates, or the Initial Operating Yield, avoided Undesirable Results in all three management areas of the Basin. If the Watermaster Board determines that Rampdown is necessary, it will be phased in with annual steps. Measured groundwater elevations at Key Wells should be evaluated on an ongoing basis to confirm the projected simulated groundwater elevations and that Rampdown will result in groundwater elevations above minimum thresholds by the end of Judgment water year 2038.

The total extraction rate for the Basin-wide Rampdown Scenario was 32,000 AFY (Table 3-4). Of the total, 14,734 AFY of groundwater was pumped in the WLPMA, 16,447 AFY was pumped in the ELPMA, and 819 AFY was pumped in the Epworth Gravels Management Area. The estimated sustainable yield of the WLPMA in the First Periodic Evaluation was 11,400 AFY, approximately 3,300 AFY lower than the simulated groundwater production in the Basin-wide Rampdown scenario. The simulated groundwater production in the Basin-wide Rampdown scenario in the Epworth Gravels Management Area was approximately 500 AFY lower, and in the ELPMA approximately 1,450 AFY lower than the estimated sustainable yields in the First Period Evaluation (Table 3-3 and Table 3-4). Note that the Rampdown scenarios were modeled at the fully reduced pumping rate throughout the simulations. For this reason, the simulated groundwater elevations in the Rampdown scenarios may be overestimated.

3.4.1.2 Basin-wide Rampdown Scenario Groundwater Elevations

Epworth Gravels

Simulated groundwater elevations in the Epworth Gravels Management Area (in the Epworth Gravels aquifer) rose at a higher rate in the Basin-wide Rampdown Scenario than those in the Baseline Scenario (see 03N19W29F06S in Appendix B). This is consistent with the additional 20% reduction in groundwater pumping simulated under this Basin-wide Rampdown Scenario.

ELPMA

Simulated groundwater elevations remained above the minimum threshold at all Key Wells in the ELPMA and remained above the measurable objective in several Key Wells in the Basin-wide Rampdown Scenario (Figure 3-12 and Appendix B). Simulated groundwater elevations were higher in the Basin-wide Rampdown scenario than in the Baseline Scenario consistent with approximately 4,100 AFY lower groundwater ELPMA production than in the Basin-wide Rampdown Scenario. The simulated groundwater elevations were consistent with groundwater production rates that were lower than the estimated sustainable yield for the ELPMA.

WLPMA

In the WLPMA, simulated groundwater elevations remained above the minimum threshold groundwater elevation at two of three Key Wells in which groundwater elevations were below the minimum threshold in the Baseline Scenario (Figure 3-12). While the simulated groundwater elevation at well 02N20W06R01 did not rise above the minimum threshold during this scenario, the trend was relatively stable with an ending simulated groundwater elevation higher than at the start of the simulation. This result is similar to the Projects Scenario simulation (Section 3.3.2.1).

As discussed in Sections 2.1 and 3.3.2.1, the simulated response to reduced groundwater production from this well is dampened relative to historical observations due to the change in model boundary condition. Therefore, it is likely that a 20% reduction in groundwater production relative to the Initial Operating Yield will be sufficient to allow groundwater elevations at this well to recover and rise above the minimum threshold. For this reason, the 20% reduction is considered sufficient for this initial BOY Study. Ongoing groundwater monitoring will confirm whether future groundwater elevations stabilize above the minimum thresholds. If groundwater elevations do not rise above the minimum thresholds in this area of the Basin in the future, subsequent BOY Studies will need to investigate ways in which the groundwater elevations can be raised to avoid Undesirable Results.

3.4.1.3 Basin-wide Rampdown Scenario Water Budget

ELPMA and Epworth Gravels

The total inflow to the ELPMA and Epworth Gravels Management Areas in the Basin-wide Rampdown Scenario was approximately 1,900 AFY lower than the inflow in the Baseline Scenario (Figure 3-7). The reduction occurs because there is less inflow to the ELPMA from stream leakage due to reduced pumping and higher groundwater elevations. Consequently, groundwater inflows exceed groundwater outflows in this scenario by approximately 600 AFY. This is the only scenario modeled for this study in which groundwater inflows exceed groundwater outflows in the ELPMA and Epworth Gravels Management Area.

WLPMA

The total inflow to and outflow from the shallow aquifer system of the WLPMA in the Basin-wide Rampdown Scenario was reduced by approximately 900 AFY relative to the Baseline Scenario resulting in no net change in storage between the two scenarios (Figure 3-8). The total inflow to the LAS was reduced by approximately 1,400 AFY relative to the Baseline Scenario, and the groundwater production rate in the LAS was reduced by approximately 3,700 AFY relative to the Baseline scenario (Figure 3-9). The reduced inflows to the WLPMA are the result of the decrease in groundwater production, as higher groundwater elevations reduce the gradient between the shallow aquifer system and the LAS. The reduction in groundwater pumping exceeded the reduction in inflows to the WLPMA. Consequently, inflows exceeded outflows by approximately 500 AFY in the Basin-wide Rampdown Scenario.

3.4.2 Differential Rampdown Scenario

Both the water budget and the simulated groundwater levels in the Basin-wide Rampdown Scenario suggested that a 20% reduction to the groundwater production was necessary to avoid Undesirable Results in the WLPMA, but that a 20% reduction in the ELPMA and Epworth Gravels Management Area production rates would result in groundwater production at rates that were lower than the estimated sustainable yield for these management areas. Therefore, although not specified in the Judgment, this BOY Study considers a Differential Rampdown Scenario in which the groundwater production rate is reduced by 20% relative to the Initial Operating Yield in the WLPMA but is reduced by a lower percentage in the ELPMA and Epworth Gravels Management Area.

3.4.2.1 Differential Rampdown Scenario Extraction Rates

The extraction rate for the WLPMA in the Differential Rampdown Scenario is the same as the WLPMA extraction rate in the Basin-wide Rampdown Scenario, as this reduction is needed to avoid Undesirable Results in the WLPMA if projects are not implemented (Table 3-4).

In the ELPMA and Epworth Gravels Management Area, previous model analyses from the First Periodic Evaluation were used to develop an initial estimate of a reduction factor, relative to the Baseline Scenario groundwater production rate, that would maintain groundwater elevations above the minimum threshold water level. The initial estimate was then tested using the ELP Model. Simulated groundwater elevations from this initial estimate were used to refine the reduction rate and that rate was tested again using the ELP Model. The results of this scenario, which are discussed below, indicated that an 11% reduction, relative to the Baseline Scenario extraction rates, or the initial Operating Yield, resulted in groundwater levels that would avoid Undesirable Results in the ELPMA and Epworth Gravels Management Area. Note that because Water Right Holders within the aerial extent of the Epworth Gravels Management Area commonly also have wells screened in the underlying aquifers in the ELPMA from which they may pump their allocation, the ELPMA and Epworth Gravels Management Area are simulated with a consistent Rampdown.

The total Basin extraction rate for the final Differential Rampdown Scenario was 33,943 AFY (Table 3-4). This rate is approximately equivalent to a 15% reduction of the initial Operating Yield for the Basin. Of the total, 14,734 AFY of groundwater was pumped in the WLPMA, which is the same as the production rate in the Basin-wide Rampdown Scenario. In the ELPMA, the groundwater production rate in the Differential Rampdown Scenario was 18,298 AFY, which is approximately 400 AFY higher than the sustainable yield estimate in the First Periodic Evaluation. In the Epworth Gravels Management Area, the groundwater production rate was 911 AFY, which is approximately 400 AFY lower than the estimated sustainable yield in the First Periodic Evaluation. But, as noted above and in Section 3.2.2,

Water Rights Holders within the areal extent of the Epworth Gravels Management Area typically also can extract from the underlying aquifers of the ELPMA. Less Rampdown was required to achieve the sustainability goals with the Differential Rampdown versus the Basin-wide Rampdown alternative.

As discussed in Section 2.1, the GSP established uncertainty bounds in the sustainable yield for the ELPMA estimated using the ELP Model. While the ELPMA production rate under the Differential Rampdown scenario is approximately 400 AFY higher than the estimated sustainable yield, it falls within the uncertainty bounds of the potential range of sustainable yields identified in the GSP and First Periodic Evaluation (FCGMA 2019, FCGMA 2024).

3.4.2.2 Differential Rampdown Scenario Groundwater Elevations

Epworth Gravels

Simulated groundwater elevations in the Epworth Gravels Management Area (in the Epworth Gravels aquifer) increased at a higher rate in the Differential Rampdown Scenario than those in the Baseline Scenario but did not increase as rapidly as those in the Basin-wide Rampdown Scenario (Appendix B). This is consistent with the 11% reduction in groundwater pumping simulated within the Epworth Gravels Management Area (Epworth Gravels aquifer) under this scenario.

ELPMA

Simulated groundwater elevations remained above the minimum threshold at all Key Wells in the ELPMA and were similar to the simulated groundwater elevations in the Projects Scenario (Appendix B; Figure 3-13). The simulated groundwater elevations suggest that groundwater production at a rate of 18,300 AFY may be sustainable for the ELPMA, however, it should be noted that simulated groundwater elevations exhibited a declining trend over the 47-year modeled period (Figure 3-13).

WLPMA

The simulated future groundwater elevations in the WLPMA under the Differential Rampdown Scenario were the same as the simulated future groundwater elevations under the Basin-wide Rampdown Scenario because the WLPMA groundwater extraction rates in these scenarios were the same (Figures 3-11 and 3-12).

3.4.2.3 Differential Rampdown Scenario Water Budget

ELPMA and Epworth Gravels

The total inflow to the ELPMA and Epworth Gravels Management Areas in the Basin-wide Rampdown Scenario was approximately 1,200 AFY lower than the inflow in the Baseline Scenario (Figure 3-7). The reduction occurs because there is less inflow to the ELPMA from stream leakage. Groundwater elevations are higher in the Differential Rampdown scenario than in the Baseline Scenario because groundwater production in the ELPMA is approximately 2,300 AFY lower in the Differential Rampdown Scenario. Groundwater outflows exceed groundwater inflows in this scenario by approximately 400 AFY.

WLPMA

The water budget for the Differential Rampdown Scenario is the same as the water budget for the Basin-wide Rampdown Scenario in the WLPMA. The Basin-wide Rampdown Scenario water budget for the WLPMA is discussed in Section 3.4.1.3.

4 Estimate of Basin Optimization Yield

As defined in the Judgment and discussed in Section 1.3, the Basin Optimization Yield is the production rate, with implementation of the Basin Optimization Projects, that can be reasonably implemented by 2040, that maintains groundwater elevations above the MTs and the flux between the WLPMA and the Oxnard Subbasin, as discussed in Section 3.1.4. Based on the model scenarios simulated for this BOY Study, the Basin Optimization Yield is estimated at 40,000 AFY inclusive of the reductions by the in-lieu project wells of 3,140 AFY for a net yield for the remaining pumpers of 36,860 AFY if the in-lieu surface water delivery projects are implemented as shown in Table 3-4 and described as Project 2 (Purchase of Imported Water from CMWD for Basin Replenishment). This pumping maintains the Baseline Scenario production rates at all but six wells in the WLPMA and three wells in the ELPMA. The wells in which groundwater production is reduced are owned and operated by VCWWD-1, VCWWD-19, and Zone MWC.

The estimate of Basin Optimization Yield was derived through the use of numerical groundwater flow models, as described in this BOY Study, and subject to the uncertainty inherent in the models described in Section 2 and the scenario assumptions described in Section 3.1. Significant uncertainty also exists regarding how and where Water Right Holders pump their allocations, as discussed in Section 3.2.1. In accordance with the Judgment, Basin Optimization Yield must be re-evaluated at least every five years with the next BOY Study due in 2030.

The forecasted groundwater elevations simulated by the numerical modeling should be compared to measured groundwater elevations at Key Wells on an ongoing basis to confirm the validity of the model projections and adjust project operations, as necessary. Additionally, if Project 2 (Purchase of Imported Water from CMWD for Basin Replenishment) is not fully implemented in a timely manner as modeled in the Projects Scenario, or if Project 5 (Arroyo Simi-Las Posas Water Acquisition) is not implemented and the City of Simi Valley reduces discharges to the Arroyo Simi, then Rampdown may be necessary to achieve sustainable groundwater management by 2040.

5 Rampdown Rate

Numerical groundwater flow modeling for this initial BOY Study found that if Project 2: Purchase of Imported Water from CMWD for Basin Replenishment implemented as proposed, Rampdown may not be required. At the recommendation of TAC, two Rampdown scenarios were modeled to provide both the Watermaster Board and Water Right Holders with an understanding of the reduction in groundwater production necessary to reach sustainable conditions if Projects 2 and 5 are not implemented (Section 3.4).

5.1 Basin-wide Rampdown Rate

This initial BOY Study calculates a Rampdown Rate for a Basin-wide reduction in groundwater pumping if the projects are not implemented. The Rampdown Rate is the annual reduction in groundwater production necessary to have the Operating Yield equal the Sustainable Yield by the fall of 2039 (Judgment §§ 1.89 and 4.10.1.4).

1. The Rampdown was determined by subtracting the overall production modeled in the Basin-wide Rampdown Scenario (32,000 AFY) from the Initial Operating Yield (40,000 AFY).
2. The Rampdown (8,000 AFY) was divided by 14 water years to calculate the Rampdown Rate (assuming that Rampdown would begin in the fall of 2026 and that the groundwater production rate would equal 32,000 AFY by the fall of 2039).

The resulting Rampdown Rate, or the annual reduction in groundwater production that would result in an overall production rate of 32,000 AFY by the fall of 2039, is 571.4 AFY.

Future BOY Studies, which are to be prepared at least every five years, will each re-evaluate the Rampdown and the Rampdown Rate. Therefore, while the Rampdown Rate was calculated to reduce the Operating Yield to the Basin-wide Scenario groundwater production of 32,000 AFY (Section 3.4.1) by the fall of 2039, the resulting annual Basin-wide groundwater production is provided through September of 2030 in this initial BOY Study (Table 5-1). It should be noted again that the Rampdown calculations in this initial BOY Study, as shown in Table 5-1, are provided for informational purposes for consideration by the Watermaster Board of Directors should the projects not be implemented in a timely manner.

Table 5-1. Water Year 2026 through 2029 Rampdown Production

Water Year (October – September)	Groundwater Production Rate (AFY)				
	Basin-wide Rampdown	Differential Rampdown			
		WLPMA	ELPMA	Epworth Gravels Management Area	Differential Rampdown TOTAL
Oct 2026 – Sept 2027	39,429	18,154	20,398	1,016	39,567
Oct 2027 – Sept 2028	38,857	17,891	20,236	1,008	39,135
Oct 2028 – Sept 2029	38,286	17,628	20,075	1,000	38,702
Oct 2029 – Sept 2030	37,714	17,365	19,913	992	38,269

5.2 Differential Rampdown Rate

In addition to the Basin-wide Rampdown rate, this initial BOY Study also calculates a potential Differential Rampdown rate based on the Differential Rampdown Scenario for informational purposes. In that scenario groundwater production was reduced by 20% relative to the Baseline Scenario pumping in the WLPMA and by 11% in the ELPMA and Epworth Gravels Management Area. The overall groundwater production from the Basin is higher under this scenario than it is in the Basin-wide Rampdown (Table 3-4).

In order to calculate the annual Rampdown Rate for each management area under this scenario, the management area specific groundwater production modeled in the Differential Rampdown Scenario was subtracted from the Baseline Scenario groundwater production for each management area. The resulting Rampdown for the WLPMA is 3,683 AFY; the Rampdown for the ELPMA is 2,261 AFY; and the Rampdown for the Epworth Gravels Management Area is 113 AFY. The Rampdown for each management area was then divided by 14 water years to calculate the resulting management area specific Rampdown Rates that would result in an overall production rate of 33,943 AFY by the fall of 2039. These rates are 236.1 AFY for the WLPMA, 161.5 AFY for the ELPMA, and 8.1 AFY for the Epworth Gravels Management Area (Table 5-1).

6 Conclusions

Based on the numerical model scenarios simulated for this initial BOY Study, with consideration of the inherent limitations and uncertainties of the models (Section 3.1.5), if Basin Optimization Plan Project 2 (Purchase of Imported Water from CMWD for Basin Replenishment) is implemented as scheduled, the Basin Optimization Yield is estimated at 40,000 AFY inclusive of the reductions at the in-lieu project wells of 3,140 AFY resulting in net yield for the remaining pumpers of 36,860 AFY. However, if Project 2 is not implemented as scheduled, then Rampdown would be required so that the Operating Yield equals the sustainable yield by fall of 2039. Additionally, if Project 5 (Arroyo Simi-Las Posas Water Acquisition) is not implemented and the City of Simi Valley reduces discharges to the Arroyo Simi, then Rampdown may also be required. The Judgment states that "*following the first Basin Optimization Yield Study, Rampdown of the Operating Yield will commence in annual steps, if necessary*" (Judgment § 4.9.1.3).

If Projects 2 and 5 are not implemented as scheduled, this BOY Study outlines two potential no-project Rampdown scenarios for the Watermaster to consider, consistent with the TAC recommendation. The first is a Basin-wide Rampdown that found groundwater production of 20% in all management areas of the Basin, relative to the initial Operating Yield of 40,000 AFY, may be required to avoid Undesirable Results by 2040 (Sections 3.4.1 and 5.1).

The second is a no-project Rampdown scenario that differentially reduces groundwater production in the management areas relative to the initial Operating Yield of 40,000 AFY. Groundwater production in the ELPMA and Epworth Gravels Management Area are reduced by 11%, relative to the Baseline Scenario production in these management areas, and groundwater production in the WLPMA is reduced 20%, relative to the Baseline Scenario production (Sections 3.4.2 and 5.2). Although the process to implement a Differential Rampdown is more complex (Section 3.4), this BOY Study finds that the differential Rampdown approach avoids Undesirable Results while preserving higher overall groundwater production rates in the Basin.

As discussed in Section 2.2, the Coastal Plain Model boundary condition at the eastern edge of the WLPMA, adjacent to the Somis Fault, was updated by UWCD inconsistent with hydrogeologic conditions. This caused additional uncertainty in the model simulations. Future work should be conducted to reduce this uncertainty by modifying and recalibrating the revised model using a no-flow boundary condition to represent the hydrogeologic conceptual model of this area.

In conclusion, if the projects are fully implemented as scheduled, numerical modeling conducted for this BOY Study forecasts that Rampdown is unnecessary to maintain a Basin Optimization Yield of 40,000 AFY, inclusive of the pumping reduced through in-lieu deliveries of imported water. However, ongoing monitoring of the Key Wells will confirm that measured groundwater elevations are consistent with forecasted groundwater elevations simulated by the numerical models to provide assurance that Undesirable Results will not occur after 2040. Per the Judgment, the Basin Optimization Yield must be re-evaluated in 2030 and 2035, and could be re-evaluated earlier, if necessary. The 2030 BOY Study must be completed by February 1, 2030.

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7 References

CMWD (Calleguas Municipal Water District). 2018. *Groundwater Flow Model of the East and South Las Posas Sub-basins – Preliminary Draft Report*. Torrance, California: Intera Geoscience and Engineering Solutions. January 2018.

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FCGMA (Fox Canyon Groundwater Management Agency). 2024. First Periodic Evaluation: Groundwater Sustainability Plan for the Las Posas Valley Basin. Available online: https://fcgma.org/groundwater-sustainability-plans-gsps/.

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FCGMA (Fox Canyon Groundwater Management Agency). 2025c. Las Posas Valley Groundwater Sustainability Plan 2025 Annual Report: Covering Water Year 2024.

UWCD (United Water Conservation District) 2018. *Ventura Regional Groundwater Flow Model and Updated Hydrogeologic Conceptual Model: Oxnard Plain, Oxnard Forebay, Pleasant Valley, West Las Posas, and Mound Groundwater Basins*. Open File Report 2018-02. July 2018.

UWCD (United Water Conservation District). 2021. *Ventura Regional Groundwater Flow Model Expansion and Updated Hydrogeologic Conceptual Model for the Piru, Fillmore, and Santa Paula Groundwater Basins*. June 2021. Available online: https://www.unitedwater.org/wp-content/uploads/2022/09/UWCD_OFR_2021_01_Ventura_Regional_Groundwater_Flow_Model_Expansion.pdf

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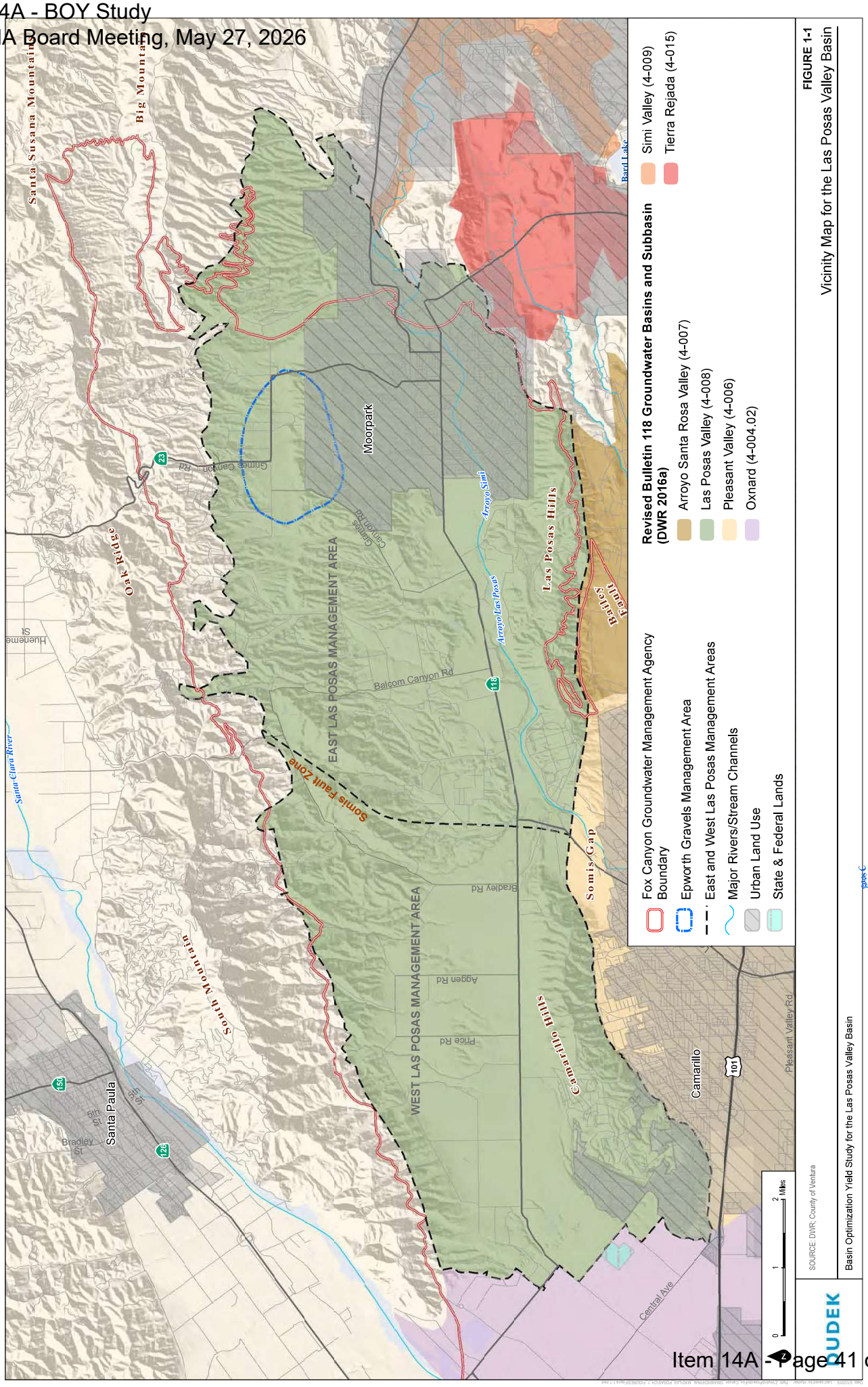
Santa Susana Mountains
Big Mountain
Oak Ridge
Moorpark
Simi Valley
Tierra Rejada
Arroyo Simi
Las Posas Hills
Bailey Fault
Arroyo Las Posas
Balcom Canyon Rd
EAST LAS POSAS MANAGEMENT AREA
Somis Fault Zone
WEST LAS POSAS MANAGEMENT AREA
Somis Gap
Bradley Rd
Aggen Rd
Price Rd
Camarillo Hills
South Mountain
Santa Clara River
Santa Paula
Camarillo
Pleasant Valley Rd
Central Ave
Bradley St
5th St
Revised Bulletin 118 Groundwater Basins and Subbasin (DWR 2016a)
Arroyo Santa Rosa Valley (4-007)
Las Posas Valley (4-008)
Pleasant Valley (4-006)
Oxnard (4-004.02)
Fox Canyon Groundwater Management Agency Boundary
Epworth Gravels Management Area
East and West Las Posas Management Areas
Major Rivers/Stream Channels
Urban Land Use
State & Federal Lands
0
1
2
Miles
SOURCE: DWR; County of Ventura
Basin Optimization Yield Study for the Las Posas Valley Basin
FIGURE 1-1
Vicinity Map for the Las Posas Valley Basin

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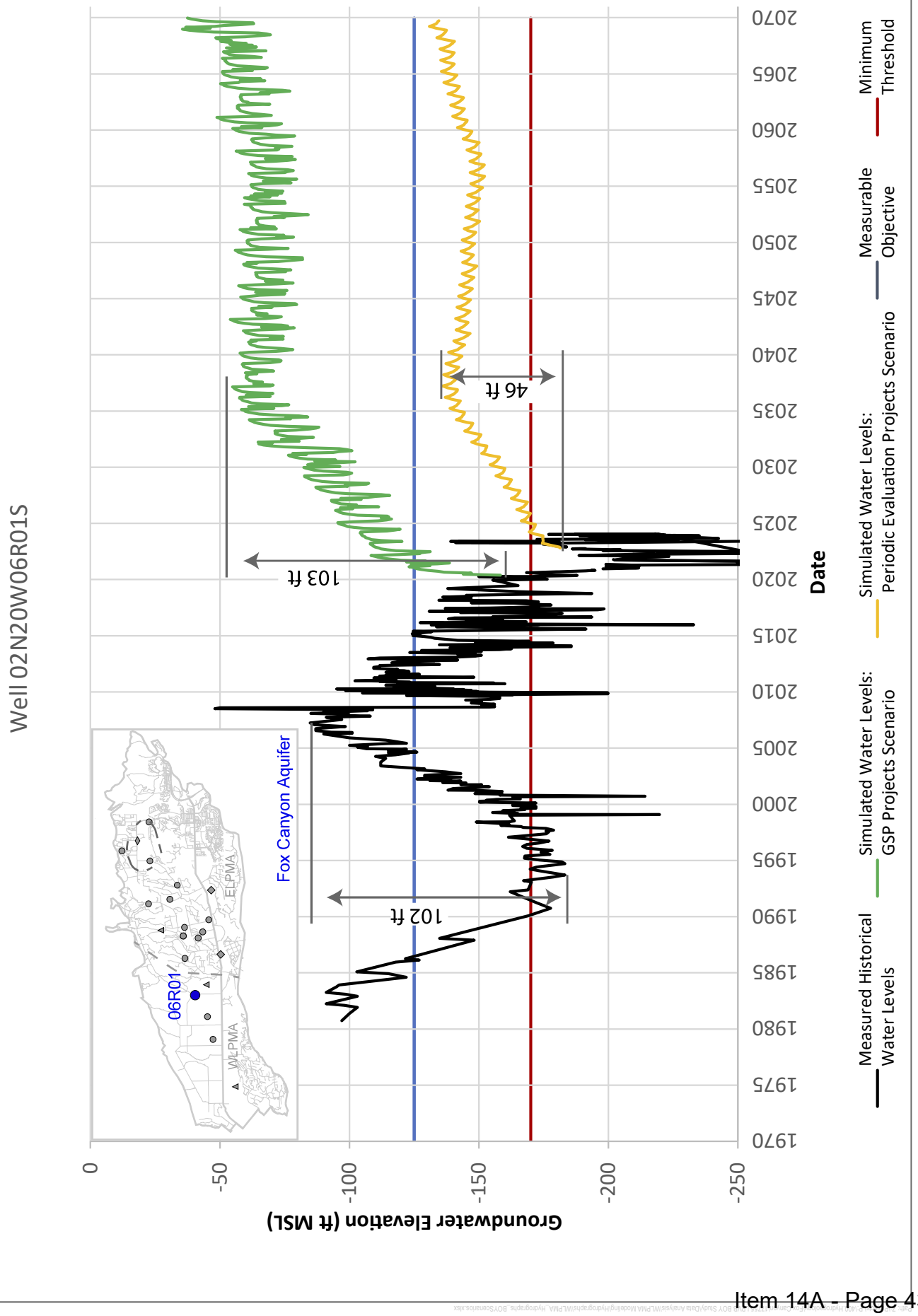

FIGURE 2-1

Groundwater Level Response Comparison in Well 02N20W06R01

Basin Optimization Yield Study for the Las Posas Valley Basin

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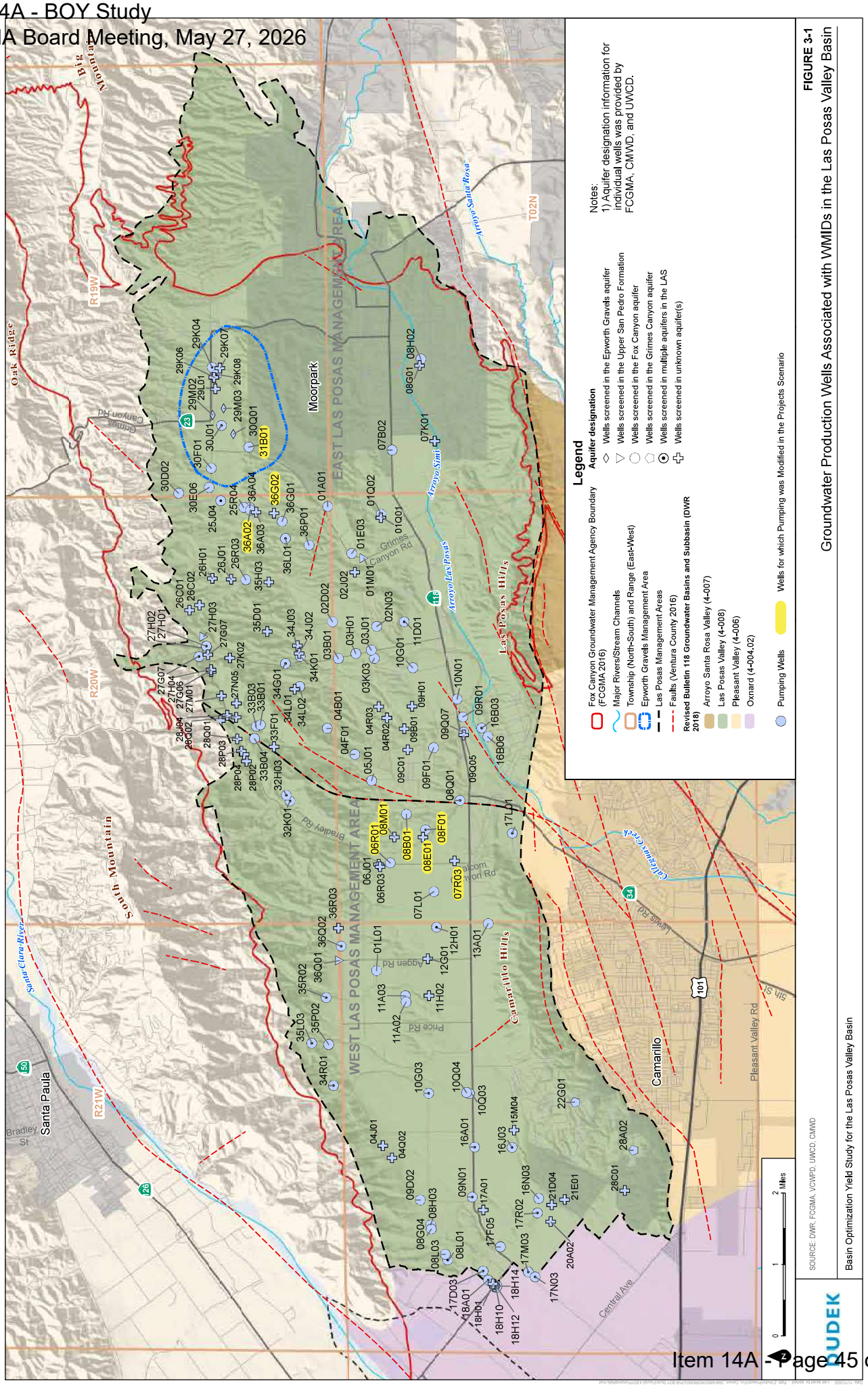
Legend
Aquifer designation
Fox Canyon Groundwater Management Agency Boundary (FCGMA 2016)
Major Rivers/Stream Channels
Township (North-South) and Range (East-West)
Epworth Gravels Management Area
Las Posas Management Areas
Faults (Ventura County 2016)
Revised Bulletin 118 Groundwater Basins and Subbasin (DWR 2018)
Arroyo Santa Rosa Valley (4-007)
Las Posas Valley (4-008)
Pleasant Valley (4-006)
Oxnard (4-004.02)
Wells screened in the Epworth Gravels aquifer
Wells screened in the Upper San Pedro Formation
Wells screened in the Fox Canyon aquifer
Wells screened in the Grimes Canyon aquifer
Wells screened in multiple aquifers in the LAS
Wells screened in unknown aquifer(s)
Pumping Wells
Wells for which Pumping was Modified in the Projects Scenario
Notes:
1) Aquifer designation information for individual wells was provided by FCGMA, CMWD, and UWCD.
EAST LAS POSAS MANAGEMENT AREA
WEST LAS POSAS MANAGEMENT AREA
Moorpark
Camarillo
Santa Paula
Oak Ridge
Big Mountain
South Mountain
Las Posas Hills
Camarillo Hills
Arroyo Santa Rosa
Arroyo Simi
Arroyo Las Posas
Santa Clara River
Calleguas Creek
Grimes Canyon Rd
Bradley Rd
Pleasant Valley Rd
Central Ave
Lewis Rd
Adolfo Rd
Aggen Rd
Price Rd
R19W
R20W
R21W
T02N
SOURCE: DWR, FCGMA, VCWPD, UWCD, CMWD
0
1
2 Miles
N
FIGURE 3-1
Groundwater Production Wells Associated with WMIDs in the Las Posas Valley Basin
Basin Optimization Yield Study for the Las Posas Valley Basin
RUDEK

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Baseline Scenario Pumping Distribution

Total Baseline Allocation by Watermaster ID (WMID): 40,000 AFY

USER TYPE

1 Water Right Holder that Pumps from Local Well

Pumps allocation from well(s) associated with their WMID.

For single well
Assign all allocation to single well

For multiple wells
Distribut e allocation based on pe rcentage of total pumping in each well for that user in WY2024.

2 Mutual Water Company (MWC) Exclusive User

Entire allocation pumped by MWC. No pumping from local wells associated with the WMID.

Assign all pumping to the MWC wells with which the WMID is associated

MWC pumping is distributed based on percentage of total pumping in each MWC well in WY2024.

3 Hybrid User

Allocation pumped by both WMID local well(s) and by MWC.

Determine the percentage of the total WY2024 use delivered by MWC and the percentage pumped

Distribute allocation to wells based on percentage of total pumping in each well in WY2024

Assign percentage of allocation to the MWC

FIGURE 3-2
Distribution of Pumping for Modeling
Basin Optimization Yield Study for the Las Posas Valley Basin

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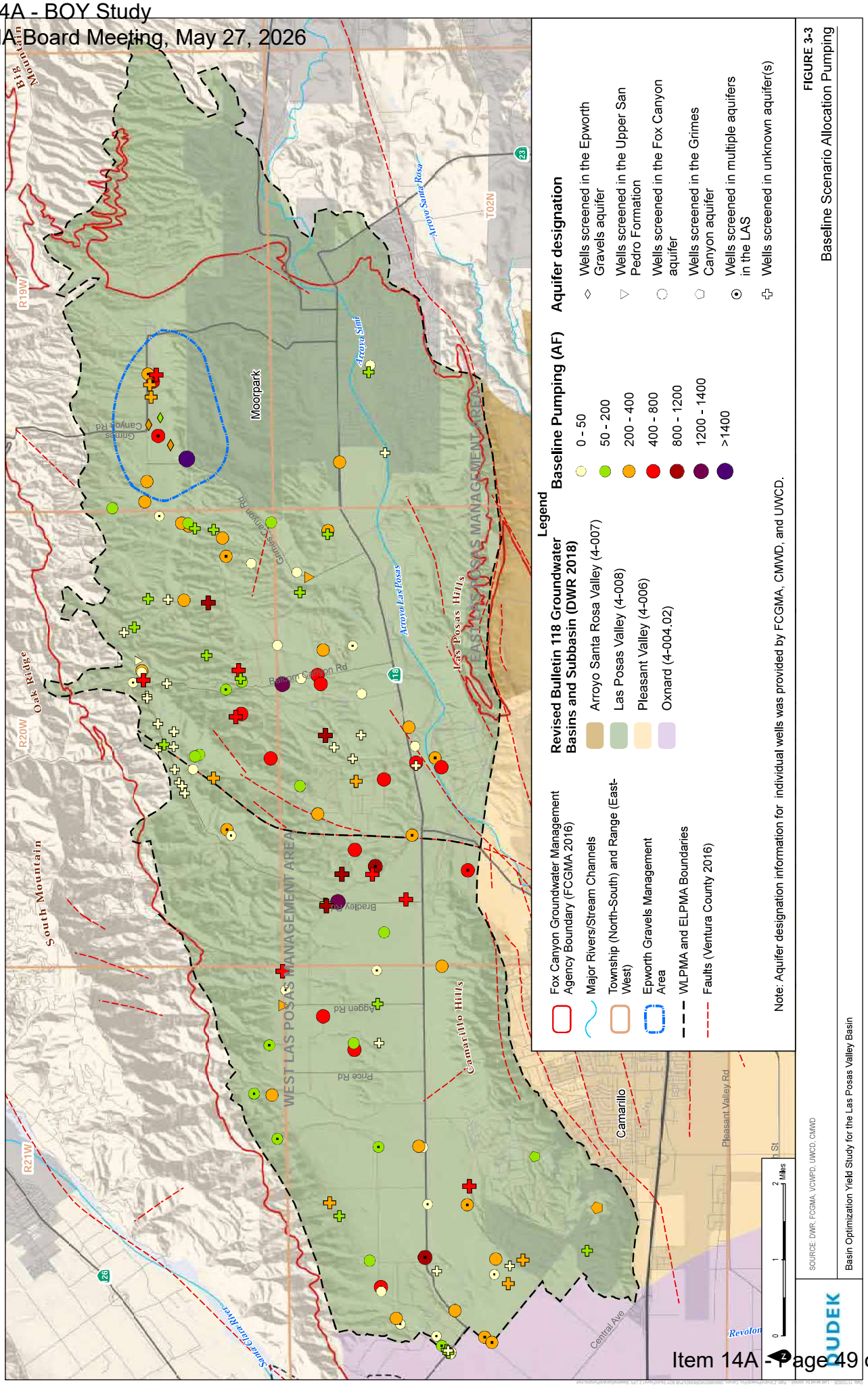
Legend
Fox Canyon Groundwater Management Agency Boundary (FCGMA 2016)
Major Rivers/Stream Channels
Township (North-South) and Range (East-West)
Epworth Gravels Management Area
WLPMA and ELPMA Boundaries
Faults (Ventura County 2016)
Revised Bulletin 118 Groundwater Basins and Subbasin (DWR 2018)
Arroyo Santa Rosa Valley (4-007)
Las Posas Valley (4-008)
Pleasant Valley (4-006)
Oxnard (4-004.02)
Baseline Pumping (AF)
0 - 50
50 - 200
200 - 400
400 - 800
800 - 1200
1200 - 1400
>1400
Aquifer designation
Wells screened in the Epworth Gravels aquifer
Wells screened in the Upper San Pedro Formation
Wells screened in the Fox Canyon aquifer
Wells screened in the Grimes Canyon aquifer
Wells screened in multiple aquifers in the LAS
Wells screened in unknown aquifer(s)
Note: Aquifer designation information for individual wells was provided by FCGMA, CMWD, and UWCD.
WEST LAS POSAS MANAGEMENT AREA
EAST LAS POSAS MANAGEMENT AREA
Moorpark
Camarillo
Las Posas Hills
Camarillo Hills
South Mountain
Oak Ridge
Big Mountain
Arroyo Simi
Arroyo Las Posas
Arroyo Santa Rosa
Santa Clara River
Grimes Canyon Rd
Balcom Canyon Rd
Bradley Rd
Aggen Rd
Price Rd
Pleasant Valley Rd
Central Ave
R19W
R20W
R21W
T02N
SOURCE: DWR, FCGMA, VCWPD, UWCD, CMWD
0
1
2
Miles
FIGURE 3-3
Baseline Scenario Allocation Pumping
Basin Optimization Yield Study for the Las Posas Valley Basin
AMEC FOSTER WHEELER
BUDEK

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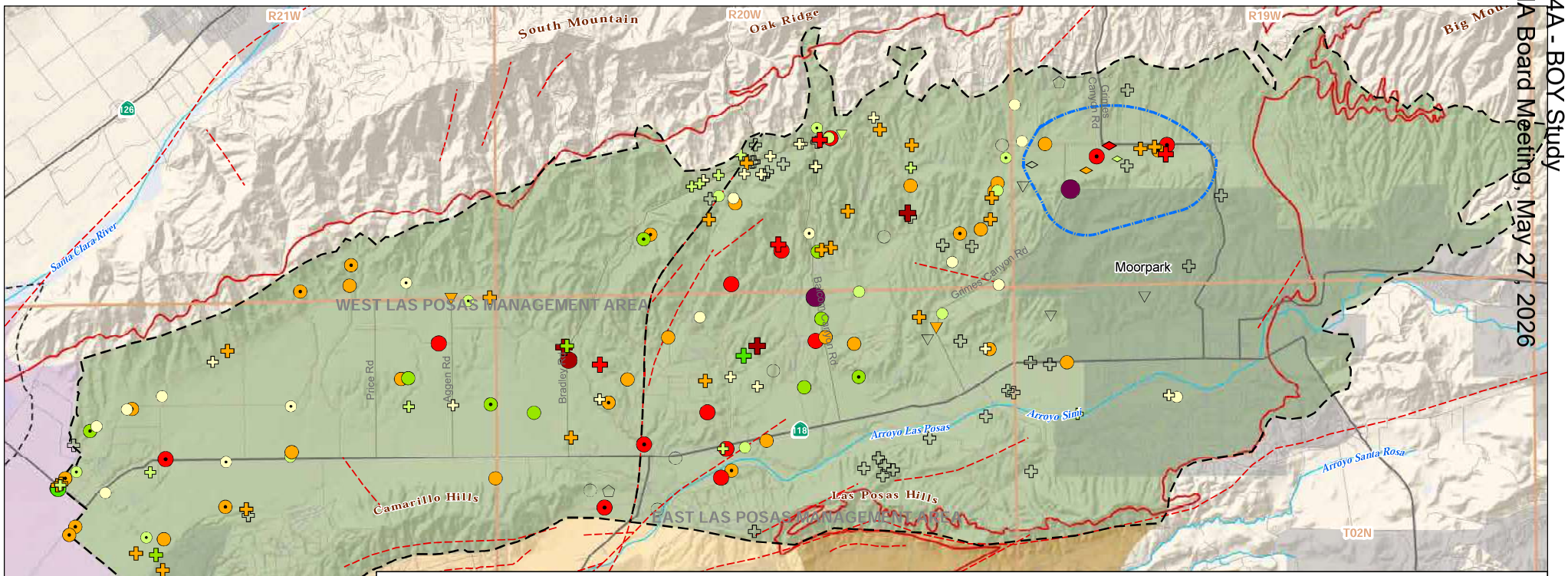

Legend

- Fox Canyon Groundwater Management Agency Boundary (FCGMA 2016)
- Major Rivers/Stream Channels
- Township (North-South) and Range (East-West)
- Epworth Gravels Management Area
- WLPMA and ELPMA Boundaries
- Faults (Ventura County 2016)

Bulletin 118 Groundwater Basins and Subbasin (DWR 2018)

- Arroyo Santa Rosa Valley (4-007)
- Las Posas Valley (4-008)
- Pleasant Valley (4-006)
- Oxnard (4-004.02)

Difference Between Baseline Allocation Pumping and Avg Historical Production, AFY

Decrease
- < -200
- -200 - -35
- -35 - 0

Increase
- 0 - 35
- 35 - 200
- 200 - 500
- 500 - 1000
- >1000

Wells without a baseline pumping allocation are represented by open symbols

Aquifer designation

- Wells screened in the Epworth Gravels aquifer
- Wells screened in the Upper San Pedro Formation
- Wells screened in the Fox Canyon aquifer
- Wells screened in the Grimes Canyon aquifer
- Wells screened in multiple aquifers in the LAS
- Wells screened in unknown aquifer(s)

Notes:

1) Negative difference indicates that Baseline Scenario allocation pumping is less than the historical pumping

2) Positive difference indicates that Baseline Scenario allocation pumping is greater than the historical pumping

3) Average historical pumping calculated from 2016 to 2024

4) Aquifer desigation information provided by FCGMA, CMWD, and UWCD

SOURCE: DWR, FCGMA, VCWPD, UWCD, CMWD

FIGURE 3-4

Baseline Scenario Allocation Pumping Compared to the 2016-2024 Historical Average Pumping

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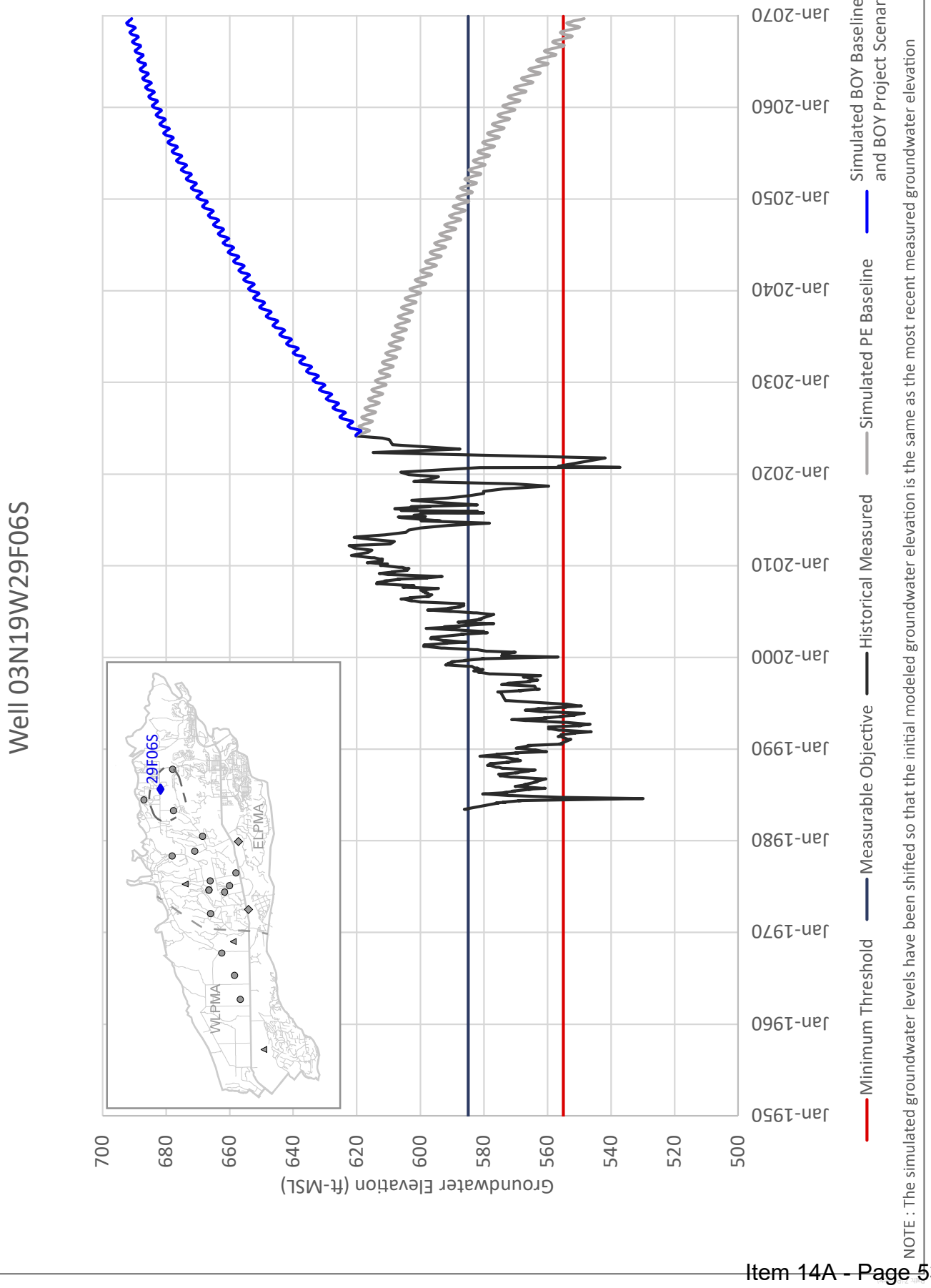

FIGURE 3-5
Epworth Gravels Key Well Hydrograph: Well 03N19W29F06S
Basin Optimization Yield Study for the Las Posas Valley Basin

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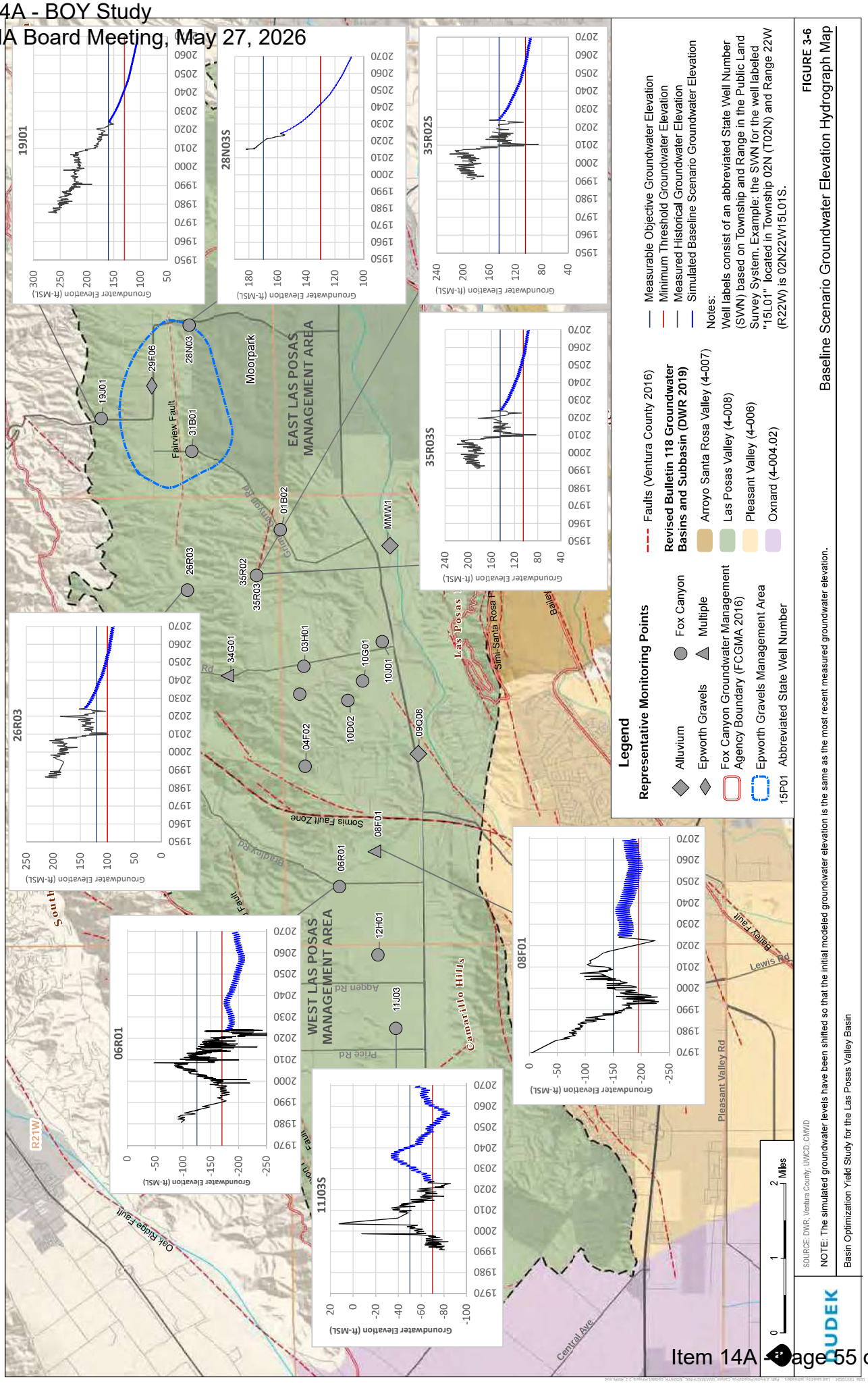
EAST LAS POSAS MANAGEMENT AREA
WEST LAS POSAS MANAGEMENT AREA
Moorpark
Somis
Camarillo Hills
Las Posas
Fairview Fault
Somis Fault Zone
Oak Ridge Fault
Bailey Fault
Simi-Santa Rosa Fault
Gino Avenue Rd
Aggen Rd
Price Rd
Bradley Rd
Lewis Rd
Pleasant Valley Rd
Central Ave
R21W
19J01
28N03
29F06
31B01
01B02
MMW1
35R02
35R03
26R03
34G01
03H01
10G01
10J01
04F02
10D02
09G08
08F01
06R01
12H01
11J03
Legend
Representative Monitoring Points
Alluvium
Fox Canyon
Epworth Gravels
Multiple
Fox Canyon Groundwater Management Agency Boundary (FCGMA 2016)
Epworth Gravels Management Area
15P01 Abbreviated State Well Number
Faults (Ventura County 2016)
Revised Bulletin 118 Groundwater Basins and Subbasin (DWR 2019)
Arroyo Santa Rosa Valley (4-007)
Las Posas Valley (4-008)
Pleasant Valley (4-006)
Oxnard (4-004.02)
Measurable Objective Groundwater Elevation
Minimum Threshold Groundwater Elevation
Measured Historical Groundwater Elevation
Simulated Baseline Scenario Groundwater Elevation
Notes:
Well labels consist of an abbreviated State Well Number (SWN) based on Township and Range in the Public Land Survey System. Example: the SWN for the well labeled "15L01" located in Township 02N (T02N) and Range 22W (R22W) is 02N22W15L01S.
19J01
28N03S
35R02S
35R03S
26R03
06R01
11J03S
08F01
Groundwater Elevation (ft-MSL)
0
1
2 Miles
SOURCE: DWR; Ventura County; UWCD; CMWD
NOTE: The simulated groundwater levels have been shifted so that the initial modeled groundwater elevation is the same as the most recent measured groundwater elevation.
Basin Optimization Yield Study for the Las Posas Valley Basin
AMEC FOSTER WHEELER
AECOM
FIGURE 3-6
Baseline Scenario Groundwater Elevation Hydrograph Map

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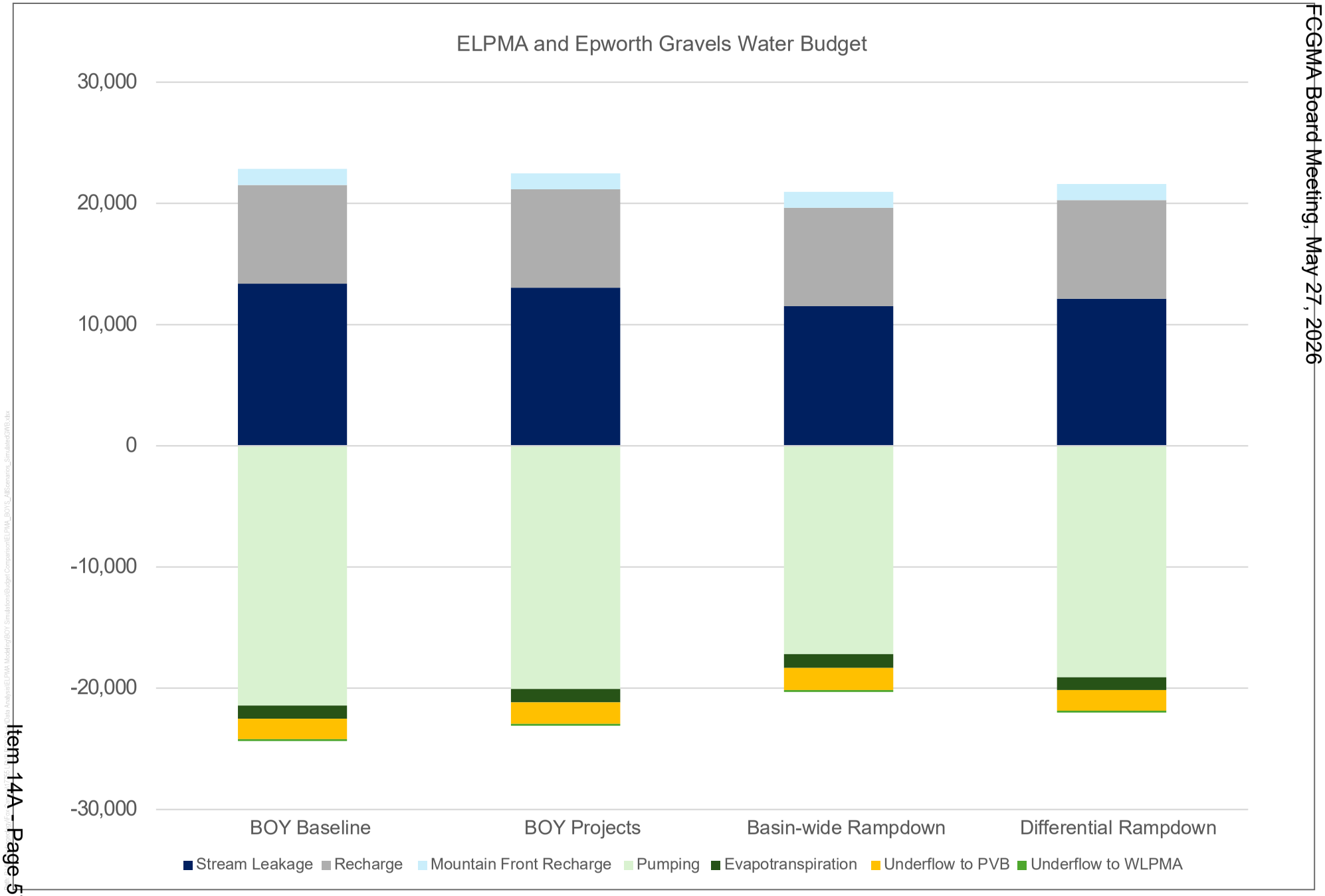

NOTE: The recharge term includes both precipitation recharge and return flows

FIGURE 3-7

Model Scenario Water Budgets for the ELPMA and Epworth Gravels Management Area

Basin Optimization Yield Stidy for the Las Posas Valley Basin

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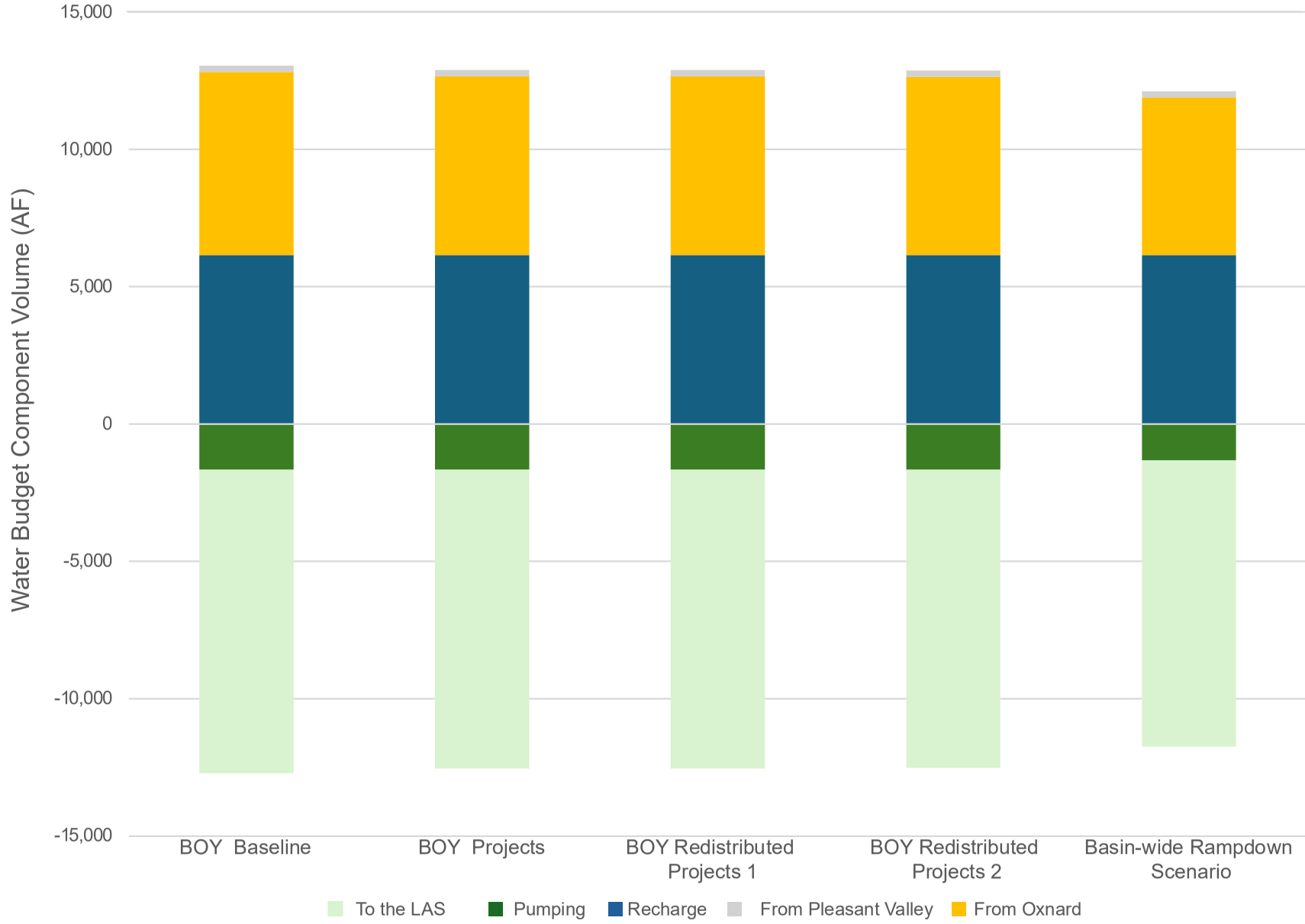

NOTE: The recharge term includes both precipitation recharge and return flows

FIGURE 3-8

Model Scenario Water Budgets for the WLPMA Shallow Aquifer System

Basin Optimization Yield Study for the Las Posas Valley Basin

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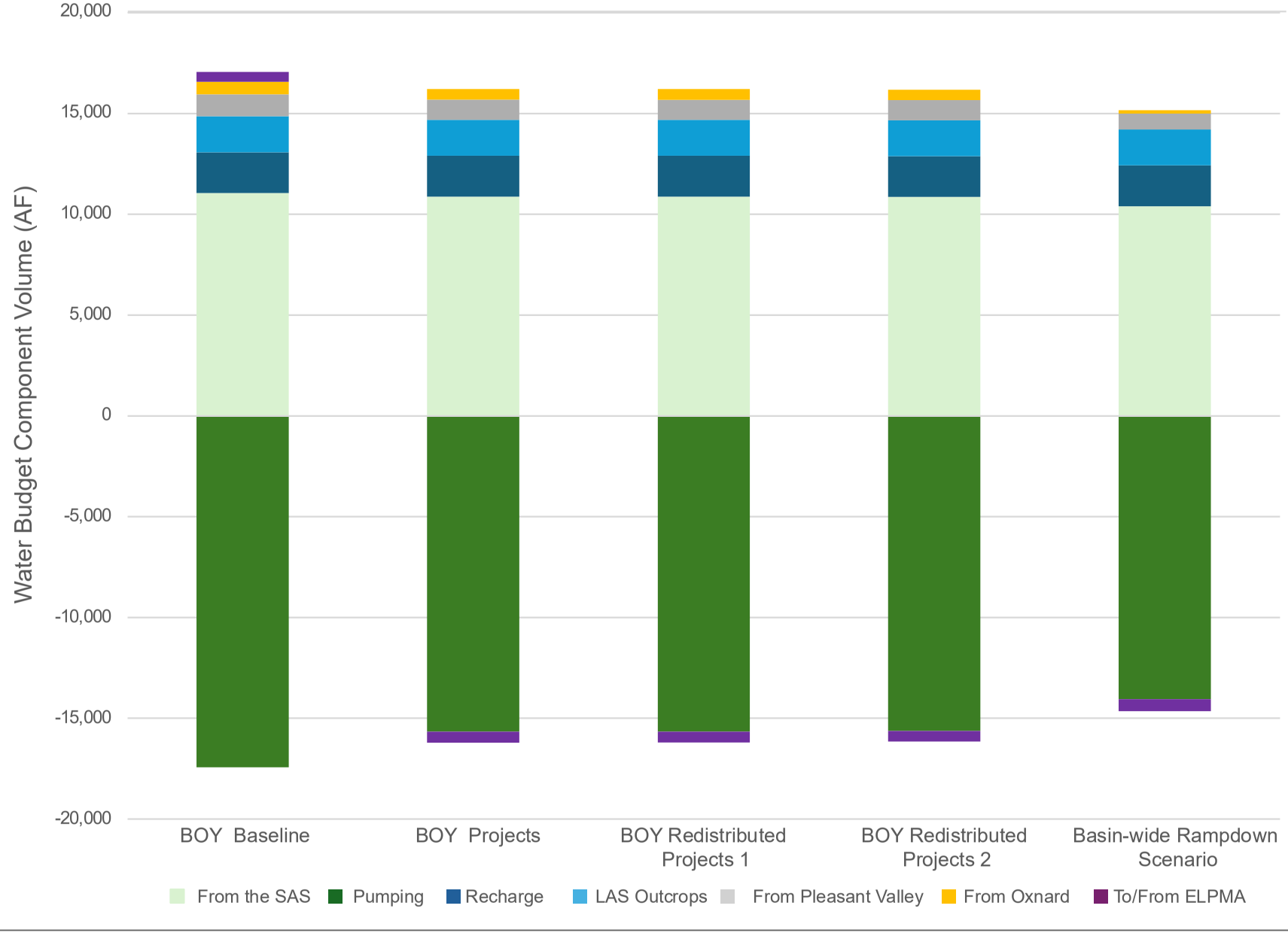

NOTE: The recharge term includes both precipitation recharge and return flows

FIGURE 3-9

Model Scenario Water Budgets for the WLPMA Lower Aquifer System

Basin Optimization Yield Study for the Las Posas Valley Basin

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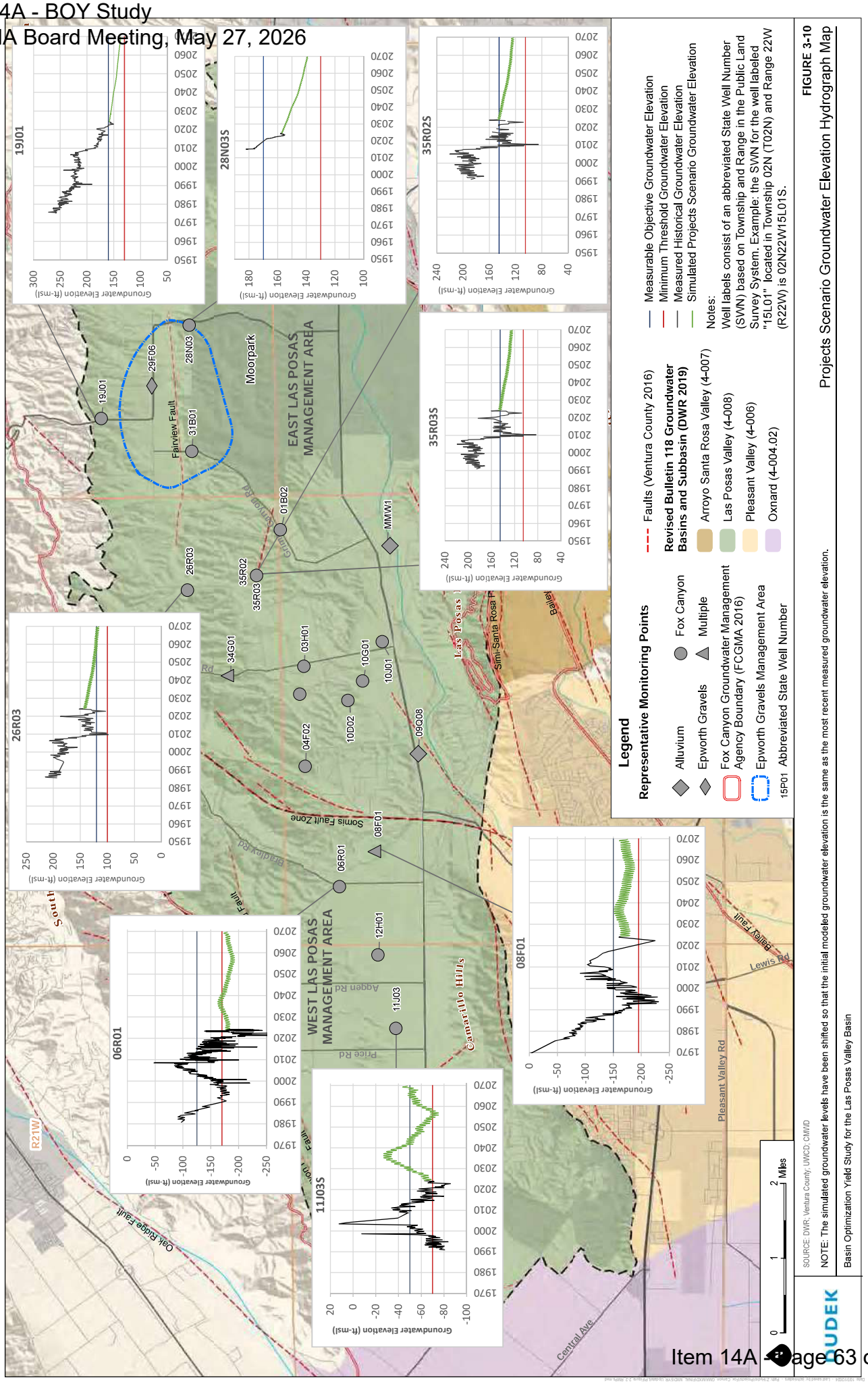

FIGURE 3-10
Projects Scenario Groundwater Elevation Hydrograph Map

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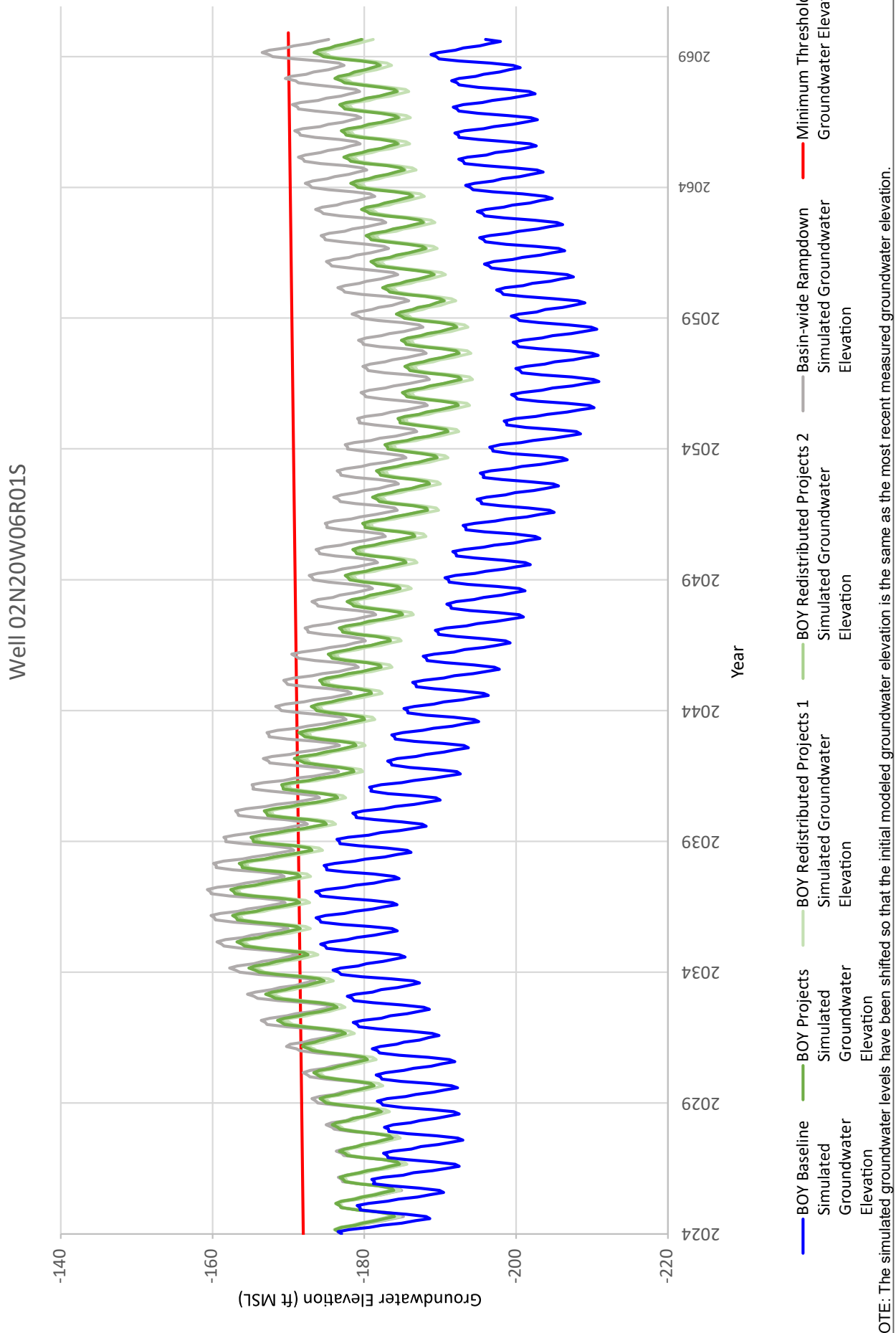

NOTE: The simulated groundwater levels have been shifted so that the initial modeled groundwater elevation is the same as the most recent measured groundwater elevation.

FIGURE 3-11
Simulated Groundwater Elevations in Well 02N20W06R01
Basin Optimization Yield Study for the Las Posas Valley Basin

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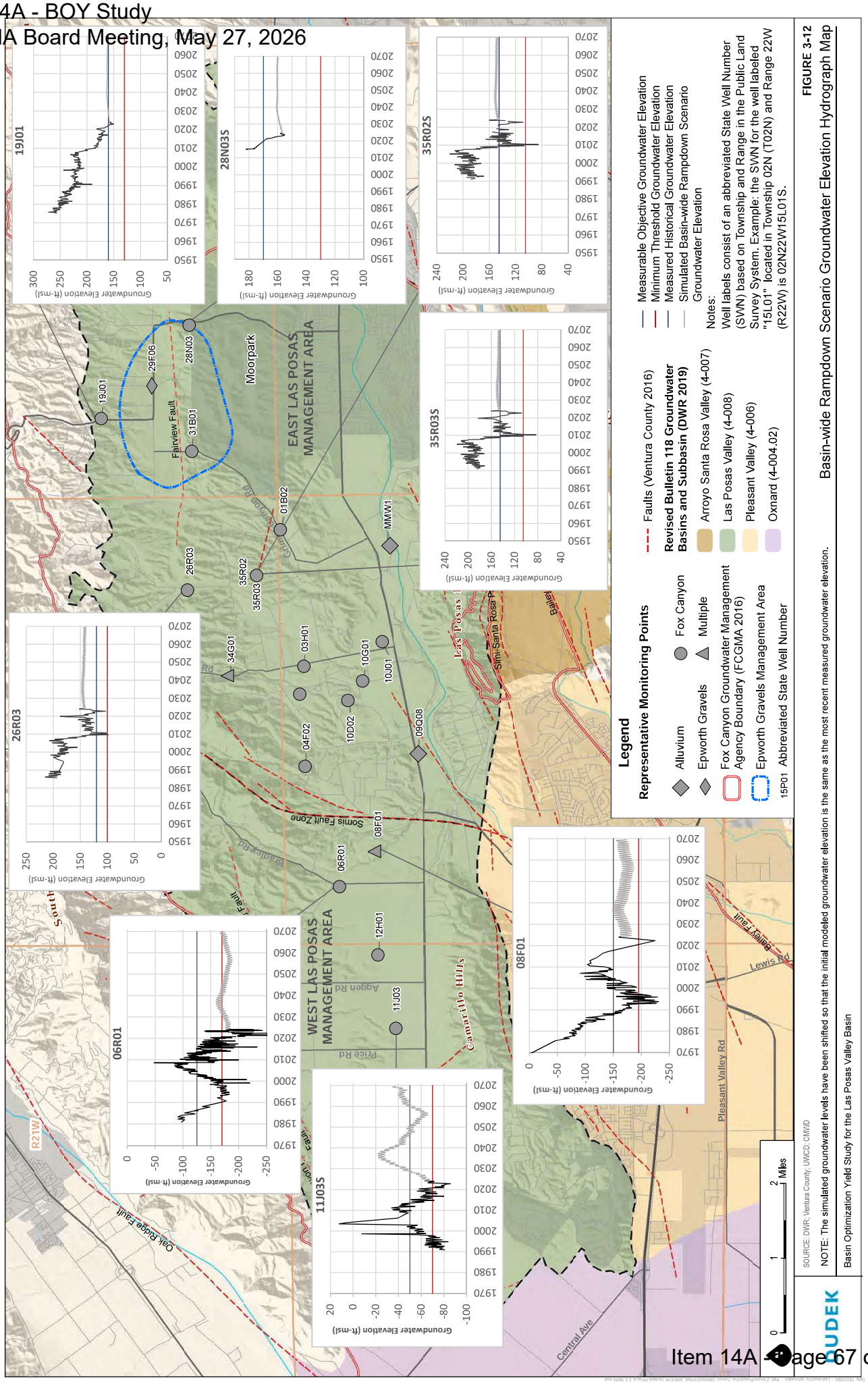
Legend
Representative Monitoring Points
Alluvium
Epworth Gravels
Fox Canyon
Multiple
Fox Canyon Groundwater Management Agency Boundary (FCGMA 2016)
Epworth Gravels Management Area
15P01 Abbreviated State Well Number
Faults (Ventura County 2016)
Revised Bulletin 118 Groundwater Basins and Subbasin (DWR 2019)
Arroyo Santa Rosa Valley (4-007)
Las Posas Valley (4-008)
Pleasant Valley (4-006)
Oxnard (4-004.02)
Measurable Objective Groundwater Elevation
Minimum Threshold Groundwater Elevation
Measured Historical Groundwater Elevation
Simulated Basin-wide Rampdown Scenario Groundwater Elevation
Notes:
Well labels consist of an abbreviated State Well Number (SWN) based on Township and Range in the Public Land Survey System. Example: the SWN for the well labeled "15L01" located in Township 02N (T02N) and Range 22W (R22W) is 02N22W15L01S.
EAST LAS POSAS MANAGEMENT AREA
WEST LAS POSAS MANAGEMENT AREA
Moorpark
Fairview Fault
Somis Fault Zone
Oak Ridge Fault
Camarillo Hills
Las Posas
Simi-Santa Rosa F
Bailey Fault
Lewis Rd
Pleasant Valley Rd
Central Ave
Aggen Rd
Price Rd
Bradley Rd
R21W
19J01
28N03
29F06
31B01
01B02
MMW1
35R02
35R03
26R03
34G01
03H01
10G01
10J01
10D02
04F02
09G08
08F01
06R01
12H01
11J03
Groundwater Elevation (ft-msl)
0 1 2 Miles
SOURCE: DWR; Ventura County; UWCD; CMWD
NOTE: The simulated groundwater levels have been shifted so that the initial modeled groundwater elevation is the same as the most recent measured groundwater elevation.
Basin Optimization Yield Study for the Las Posas Valley Basin
Basin-wide Rampdown Scenario Groundwater Elevation Hydrograph Map
FIGURE 3-12
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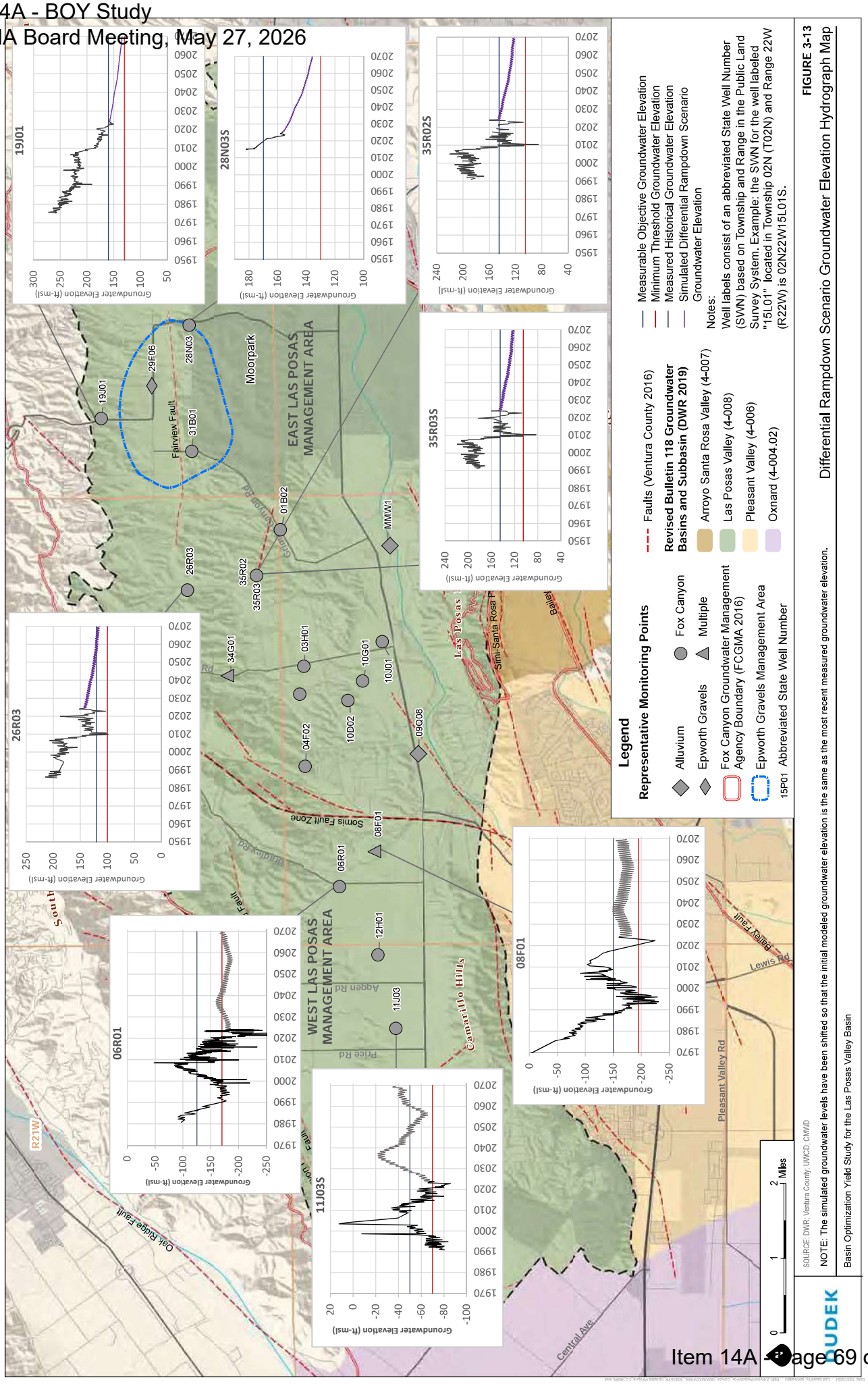
Legend
Representative Monitoring Points
Alluvium
Fox Canyon
Epworth Gravels
Multiple
Fox Canyon Groundwater Management Agency Boundary (FCGMA 2016)
Epworth Gravels Management Area
15P01 Abbreviated State Well Number
Faults (Ventura County 2016)
Revised Bulletin 118 Groundwater Basins and Subbasin (DWR 2019)
Arroyo Santa Rosa Valley (4-007)
Las Posas Valley (4-008)
Pleasant Valley (4-006)
Oxnard (4-004.02)
Measurable Objective Groundwater Elevation
Minimum Threshold Groundwater Elevation
Measured Historical Groundwater Elevation
Simulated Differential Rampdown Scenario Groundwater Elevation
Notes:
Well labels consist of an abbreviated State Well Number (SWN) based on Township and Range in the Public Land Survey System. Example: the SWN for the well labeled "15L01" located in Township 02N (T02N) and Range 22W (R22W) is 02N22W15L01S.
EAST LAS POSAS MANAGEMENT AREA
WEST LAS POSAS MANAGEMENT AREA
Moorpark
Camarillo Hills
Fairview Fault
Somis Fault Zone
Oak Ridge Fault
Bailey Fault
Simi-Santa Rosa Fault
Las Posas Valley
Pleasant Valley Rd
Lewis Rd
Central Ave
Aggen Rd
Price Rd
Bradley Rd
Gino Douglas Rd
R21W
19J01
28N03S
35R02S
35R03S
26R03
06R01
08F01
11J03S
Groundwater Elevation (ft-msl)
0
1
2 Miles
SOURCE: DWR; Ventura County; UWCD; CMWD
NOTE: The simulated groundwater levels have been shifted so that the initial modeled groundwater elevation is the same as the most recent measured groundwater elevation.
FIGURE 3-13
Differential Rampdown Scenario Groundwater Elevation Hydrograph Map
Basin Optimization Yield Study for the Las Posas Valley Basin
GEOSYNTEC
AMEC
KUDEK

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Appendix A

BOY Baseline Allocation Groundwater Production Rates

APPENDIX A

State Well Number	Management Area	BOY Baseline Scenario Groundwater Pumping (AFY)	Average Historical Groundwater Pumping (AFY)	Difference (AFY)
02N19W07B02	ELPMA	300.8	196.9	103.9
02N19W07K01	ELPMA	21.5	35.2	-13.7
02N19W08G01	ELPMA	61.3	35.2	26.2
02N19W08H02	ELPMA	31.3	18.5	12.8
02N20W01A01	ELPMA	85.1	51.3	33.7
02N20W01E03	ELPMA	43.8	58.5	-14.7
02N20W01J01	ELPMA	24.9	12.5	12.4
02N20W01M01	ELPMA	216.1	113.4	102.7
02N20W01Q01	ELPMA	82.4	63.9	18.5
02N20W01Q02	ELPMA	275.7	129.3	146.4
02N20W02D02	ELPMA	0.0	30.6	-30.6
02N20W02J02S	ELPMA	76.3	36.9	39.4
02N20W02N03	ELPMA	383.6	192.1	191.5
02N20W03B01	ELPMA	1383.6	336.1	1047.4
02N20W03H01	ELPMA	0.9	89.7	-88.7
02N20W03J01	ELPMA	478.4	309.9	168.5
02N20W04B01	ELPMA	614.8	248.0	366.7
02N20W04F01	ELPMA	144.3	119.7	24.6
02N20W04R02	ELPMA	22.6	126.8	-104.2
02N20W04R03	ELPMA	1248.1	649.2	598.9
02N20W05J01	ELPMA	326.4	268.3	58.1
02N20W08Q01	ELPMA	372.6	102.8	269.8
02N20W09B01	ELPMA	27.4	18.2	9.2
02N20W09C01	ELPMA	245.6	147.2	98.4
02N20W09F01	ELPMA	504.9	179.4	325.5
02N20W09H01	ELPMA	28.4	17.2	11.2
02N20W09Q05	ELPMA	30.2	41.2	-11.1
02N20W09Q07	ELPMA	747.0	436.5	310.6
02N20W09R01	ELPMA	24.4	34.1	-9.7
02N20W10G01	ELPMA	47.5	87.3	-39.7
02N20W10N01	ELPMA	248.3	158.8	89.5
02N20W11D01	ELPMA	0.0	81.7	-81.7
02N20W16B03	ELPMA	288.5	145.1	143.3
02N20W16B06	ELPMA	405.9	165.5	240.4
03N19W17Q01	ELPMA	29.2	11.4	17.8
03N19W18Q01	ELPMA	172.3	2.2	170.1
03N19W20G01	ELPMA	5.9	47.3	-41.3
03N19W29F07	ELPMA	38.9	19.7	19.2
03N19W29K04	ELPMA	378.3	176.2	202.1
03N19W29K07	ELPMA	428.9	287.8	141.1
03N19W29K08	ELPMA	695.4	391.5	303.9

APPENDIX A

State Well Number	Management Area	BOY Baseline Scenario Groundwater Pumping (AFY)	Average Historical Groundwater Pumping (AFY)	Difference (AFY)
03N19W30D02	ELPMA	171.8	166.6	5.1
03N19W30E06	ELPMA	273.5	268.5	5.1
03N19W30F01	ELPMA	218.7	67.8	150.9
03N19W30J01	ELPMA	448.0	200.7	247.3
03N19W31B01	ELPMA	1959.9	446.1	1513.8
03N19W31H01	ELPMA	0.0	200.4	-200.4
03N20W24P03	ELPMA	66.6	41.6	25.0
03N20W25J04	ELPMA	0.0	31.2	-31.2
03N20W25R04	ELPMA	277.9	129.0	148.8
03N20W26C01	ELPMA	1.0	0.1	0.9
03N20W26C02	ELPMA	77.7	18.9	58.8
03N20W26D01	ELPMA	0.0	0.0	0.0
03N20W26H01	ELPMA	115.3	71.4	43.9
03N20W26J01	ELPMA	1.2	2.5	-1.4
03N20W26R03	ELPMA	213.2	84.2	129.1
03N20W27B03	ELPMA	38.0	35.6	2.4
03N20W27G05	ELPMA	0.0	0.0	0.0
03N20W27G06	ELPMA	30.7	15.4	15.4
03N20W27G07	ELPMA	20.4	5.6	14.8
03N20W27H01	ELPMA	316.0	86.4	229.6
03N20W27H02	ELPMA	1.4	10.2	-8.8
03N20W27H03	ELPMA	0.0	0.3	-0.3
03N20W27H04	ELPMA	485.8	129.3	356.5
03N20W27J01	ELPMA	6.3	0.0	6.3
03N20W27K02	ELPMA	1.0	0.4	0.6
03N20W27M01	ELPMA	0.0	0.4	-0.4
03N20W27M01	ELPMA	2.0	0.6	1.4
03N20W27N01	ELPMA	0.0	5.6	-5.6
03N20W27N05	ELPMA	1.0	0.5	0.5
03N20W28J04	ELPMA	63.5	27.6	35.8
03N20W28Q02	ELPMA	29.9	19.1	10.9
03N20W33B01	ELPMA	59.7	58.7	0.9
03N20W33B03	ELPMA	61.8	24.4	37.4
03N20W33F01	ELPMA	231.8	58.9	172.9
03N20W34G01	ELPMA	87.3	65.2	22.0
03N20W34J02	ELPMA	101.4	42.3	59.1
03N20W34J03	ELPMA	65.0	7.2	57.8
03N20W34J03	ELPMA	335.4	243.4	91.9
03N20W34K01	ELPMA	165.0	212.7	-47.7
03N20W34L01	ELPMA	402.8	154.1	248.7
03N20W34L02	ELPMA	754.6	375.5	379.1

APPENDIX A

State Well Number	Management Area	BOY Baseline Scenario Groundwater Pumping (AFY)	Average Historical Groundwater Pumping (AFY)	Difference (AFY)
03N20W35D01	ELPMA	129.0	80.8	48.2
03N20W35H03	ELPMA	1197.8	573.4	624.4
03N20W36A02	ELPMA	331.5	156.7	174.8
03N20W36A03	ELPMA	71.4	31.2	40.1
03N20W36A04	ELPMA	82.3	99.1	-16.8
03N20W36G01	ELPMA	257.1	175.4	81.7
03N20W36G02	ELPMA	156.9	89.8	67.0
03N20W36L01	ELPMA	241.5	94.0	147.5
03N20W36P01	ELPMA	36.2	19.9	16.3
03N19W29K06	Epworth Gravels	253.2	170.3	82.9
03N19W29L01	Epworth Gravels	204.9	83.6	121.3
03N19W29M02	Epworth Gravels	239.1	21.6	217.6
03N19W29M03	Epworth Gravels	119.7	162.2	-42.5
03N19W30Q01	Epworth Gravels	207.3	158.3	48.9
02N20W06J01	WLPMA	75.6	120.7	-45.1
02N20W06R01	WLPMA	1258.7	725.6	533.1
02N20W06R03	WLPMA	1087.7	361.2	726.5
02N20W07L01	WLPMA	95.6	251.9	-156.3
02N20W07R03	WLPMA	508.4	335.8	172.6
02N20W08B01	WLPMA	647.1	518.1	128.9
02N20W08E01	WLPMA	410.8	386.5	24.3
02N20W08F01	WLPMA	1053.0	911.8	141.2
02N20W08M01	WLPMA	1050.6	747.0	303.5
02N20W17L01	WLPMA	545.5	318.5	227.0
02N21W01L01	WLPMA	655.8	406.2	249.6
02N21W04J01	WLPMA	239.6	153.2	86.3
02N21W04Q02	WLPMA	172.9	152.1	20.8
02N21W08G04	WLPMA	11.8	2.8	8.9
02N21W08H03	WLPMA	655.4	539.8	115.6
02N21W08L01	WLPMA	0.0	97.6	-97.6
02N21W08L02	WLPMA	0.0	84.3	-84.3
02N21W08L03	WLPMA	347.1	326.4	20.6
02N21W09D02	WLPMA	86.5	52.0	34.5
02N21W09N01	WLPMA	1176.7	866.9	309.7
02N21W10G03	WLPMA	84.3	62.3	22.0
02N21W10Q03	WLPMA	0.0	7.4	-7.4
02N21W10Q04	WLPMA	354.6	296.3	58.4
02N21W11A02	WLPMA	609.5	445.7	163.8
02N21W11A03	WLPMA	178.4	296.2	-117.7
02N21W11H02	WLPMA	23.5	35.1	-11.6
02N21W12G01	WLPMA	164.0	142.1	22.0

APPENDIX A

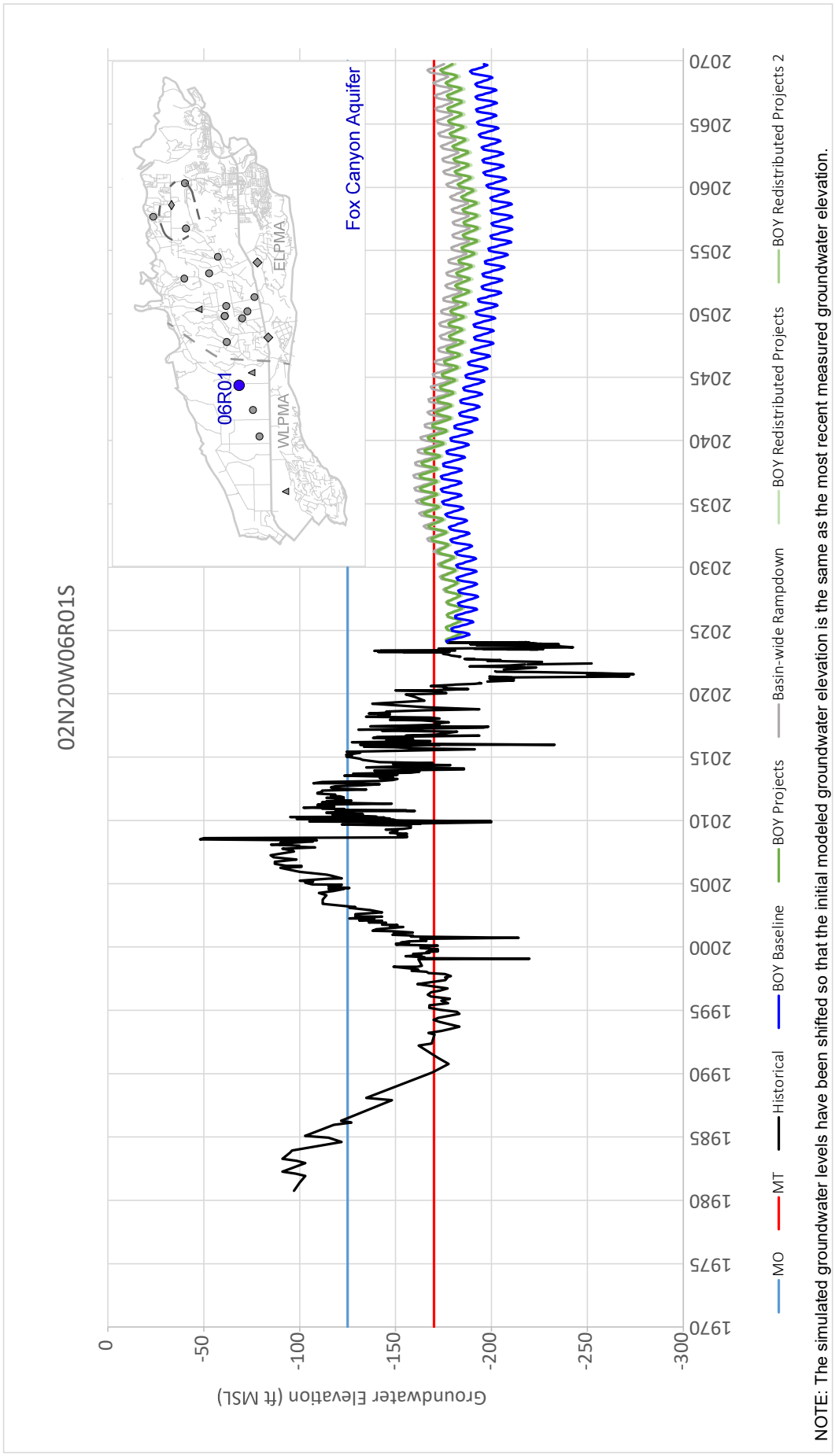
State Well Number	Management Area	BOY Baseline Scenario Groundwater Pumping (AFY)	Average Historical Groundwater Pumping (AFY)	Difference (AFY)
02N21W12H01	WLPMA	0.0	86.8	-86.8
02N21W12H02	WLPMA	211.1	195.0	16.1
02N21W13A01	WLPMA	332.4	234.9	97.5
02N21W15M04	WLPMA	479.4	420.3	59.2
02N21W16A01	WLPMA	1.0	0.5	0.4
02N21W16J03	WLPMA	344.0	280.0	64.0
02N21W16N03	WLPMA	307.9	197.1	110.7
02N21W17A01	WLPMA	13.2	21.1	-8.0
02N21W17D03	WLPMA	4.0	9.1	-5.2
02N21W17F05	WLPMA	222.9	194.0	28.9
02N21W17M03	WLPMA	285.2	218.1	67.1
02N21W17N03	WLPMA	205.6	150.9	54.7
02N21W17R02	WLPMA	1.7	23.8	-22.1
02N21W18A01	WLPMA	184.7	149.1	35.6
02N21W18H01	WLPMA	175.0	74.9	100.0
02N21W18H03	WLPMA	768.5	256.8	511.7
02N21W18H08	WLPMA	15.6	50.2	-34.6
02N21W18H10	WLPMA	17.2	7.6	9.6
02N21W18H11	WLPMA	79.9	15.9	64.0
02N21W18H12	WLPMA	177.9	368.6	-190.7
02N21W18H14	WLPMA	47.2	398.7	-351.5
02N21W20A02	WLPMA	202.5	152.2	50.3
02N21W21D04	WLPMA	16.6	102.4	-85.8
02N21W21E01	WLPMA	312.6	164.9	147.7
02N21W22G01	WLPMA	193.8	218.9	-25.1
02N21W28A02	WLPMA	492.6	438.5	54.1
02N21W28C01	WLPMA	192.7	192.0	0.7
03N20W28J05	WLPMA	1.0	1.2	-0.2
03N20W28P01	WLPMA	0.0	1.1	-1.1
03N20W28P02	WLPMA	1.0	1.0	0.0
03N20W28P03	WLPMA	26.2	5.5	20.6
03N20W28P04	WLPMA	24.5	26.3	-1.8
03N20W28Q01	WLPMA	10.6	17.0	-6.3
03N20W32H03	WLPMA	201.3	98.3	103.0
03N20W32K01	WLPMA	3.6	76.5	-72.9
03N20W33B04	WLPMA	16.3	40.6	-24.3
03N21W34R01	WLPMA	188.5	66.3	122.2
03N21W35L03	WLPMA	109.5	56.6	52.9
03N21W35P02	WLPMA	229.2	109.4	119.8
03N21W35R02	WLPMA	185.2	153.1	32.1
03N21W36Q01	WLPMA	239.2	148.6	90.6

APPENDIX A

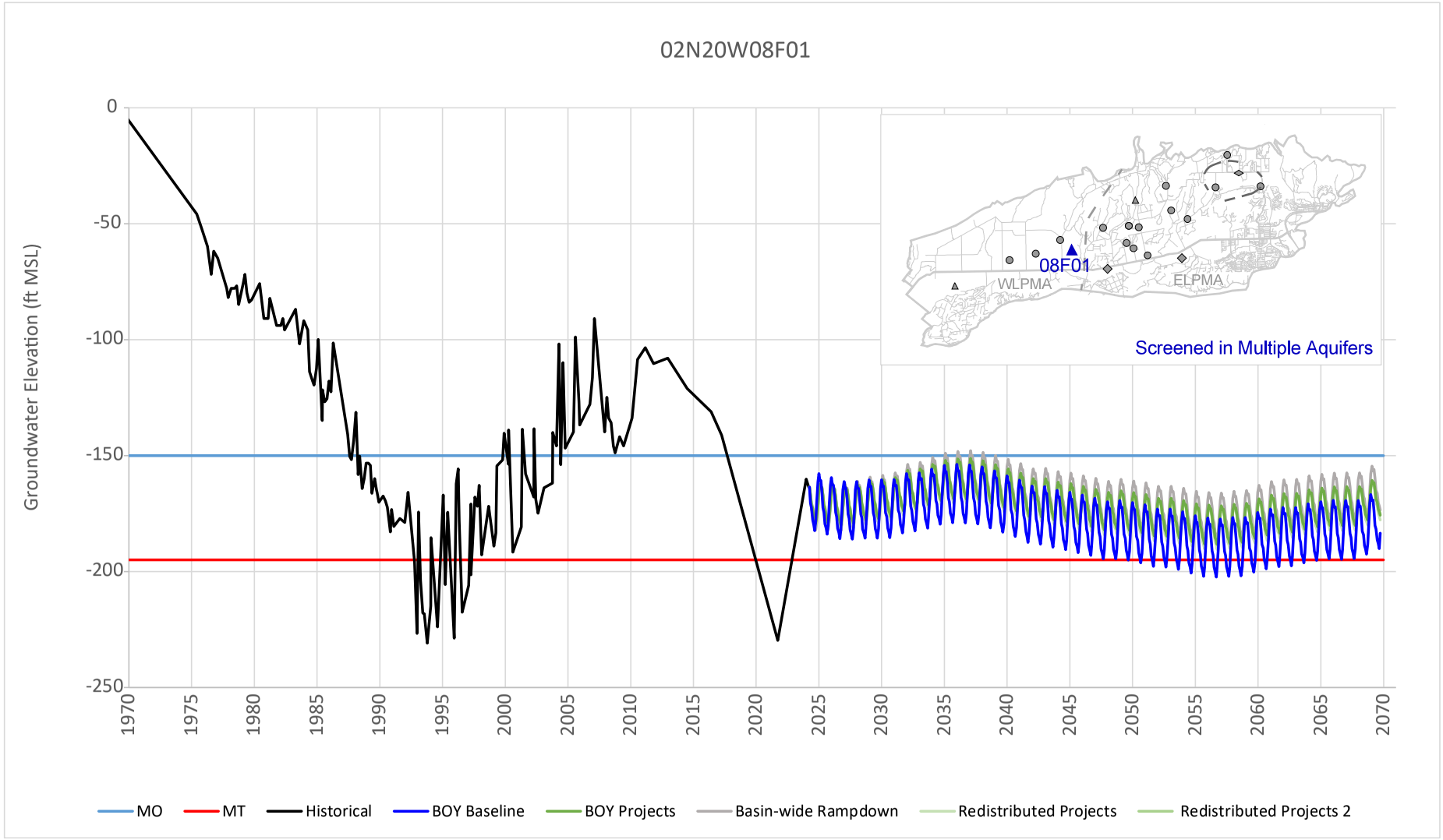
State Well Number	Management Area	BOY Baseline Scenario Groundwater Pumping (AFY)	Average Historical Groundwater Pumping (AFY)	Difference (AFY)
03N21W36Q02	WLPMA	0.2	27.0	-26.8
03N21W36R03	WLPMA	402.7	306.6	96.1

Appendix B
Groundwater Elevation Hydrographs

APPENDIX B

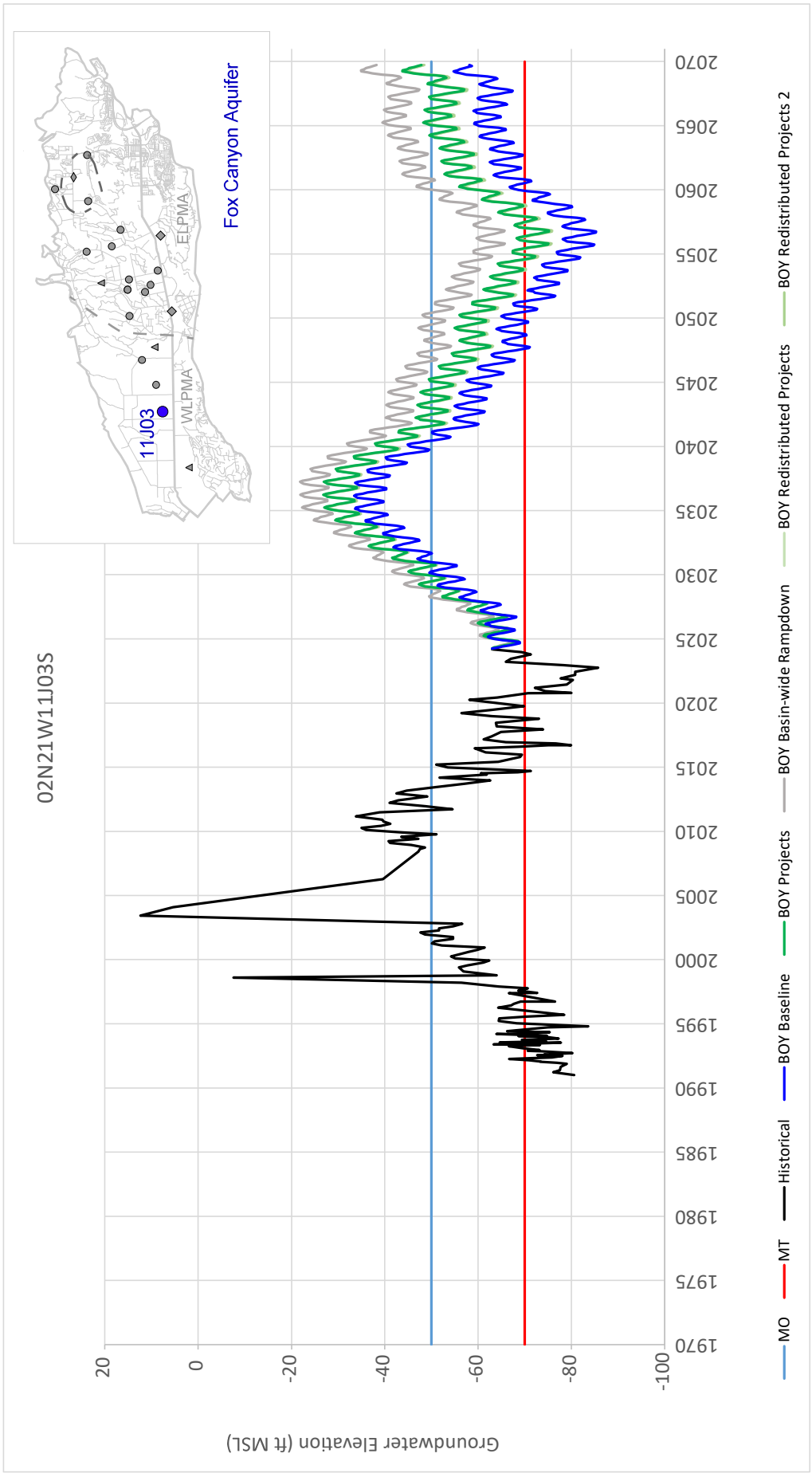


NOTE: The simulated groundwater levels have been shifted so that the initial modeled groundwater elevation is the same as the most recent measured groundwater elevation.



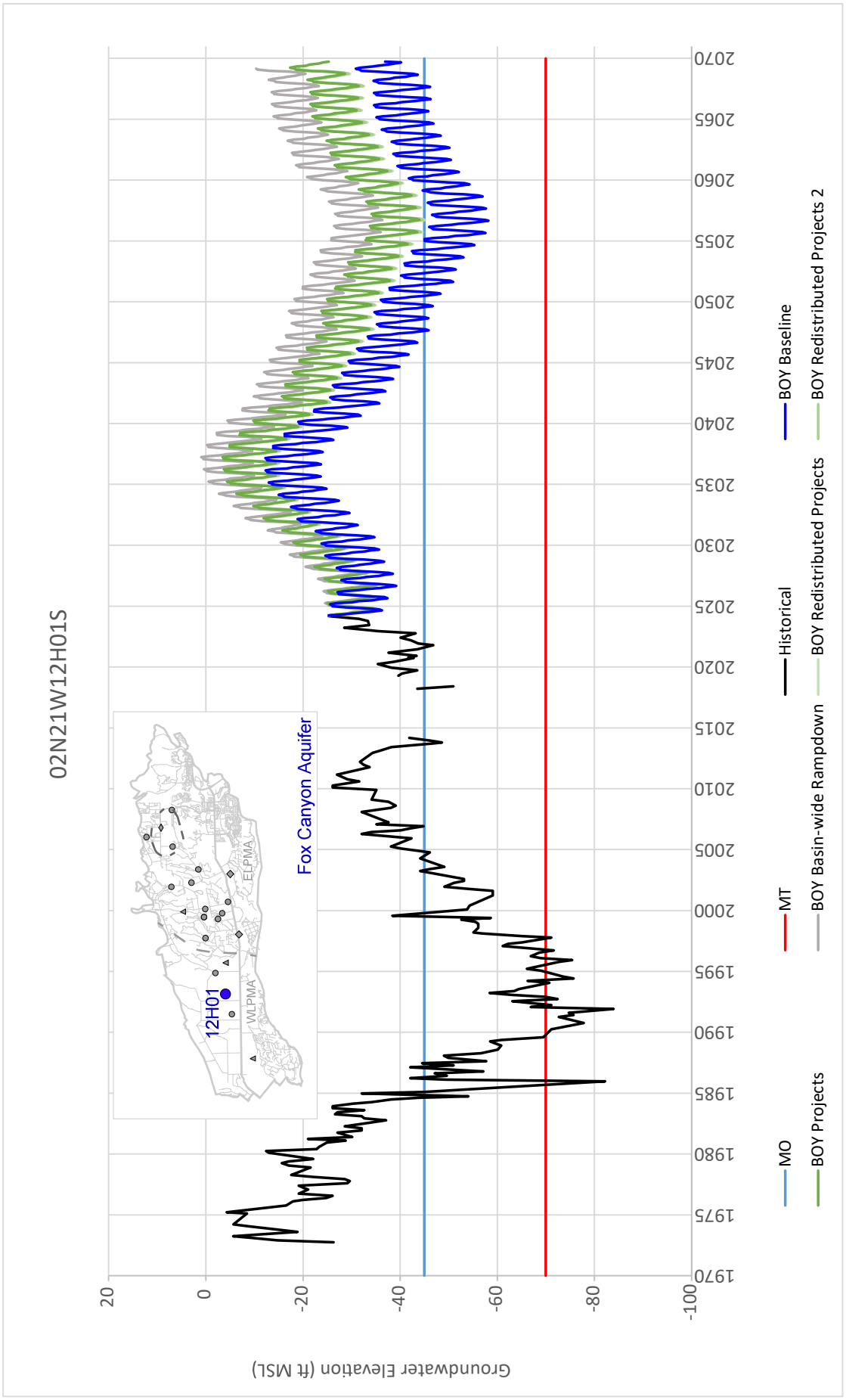
NOTE: The simulated groundwater levels have been shifted so that the initial modeled groundwater elevation is the same as the most recent measured groundwater elevation.

APPENDIX B



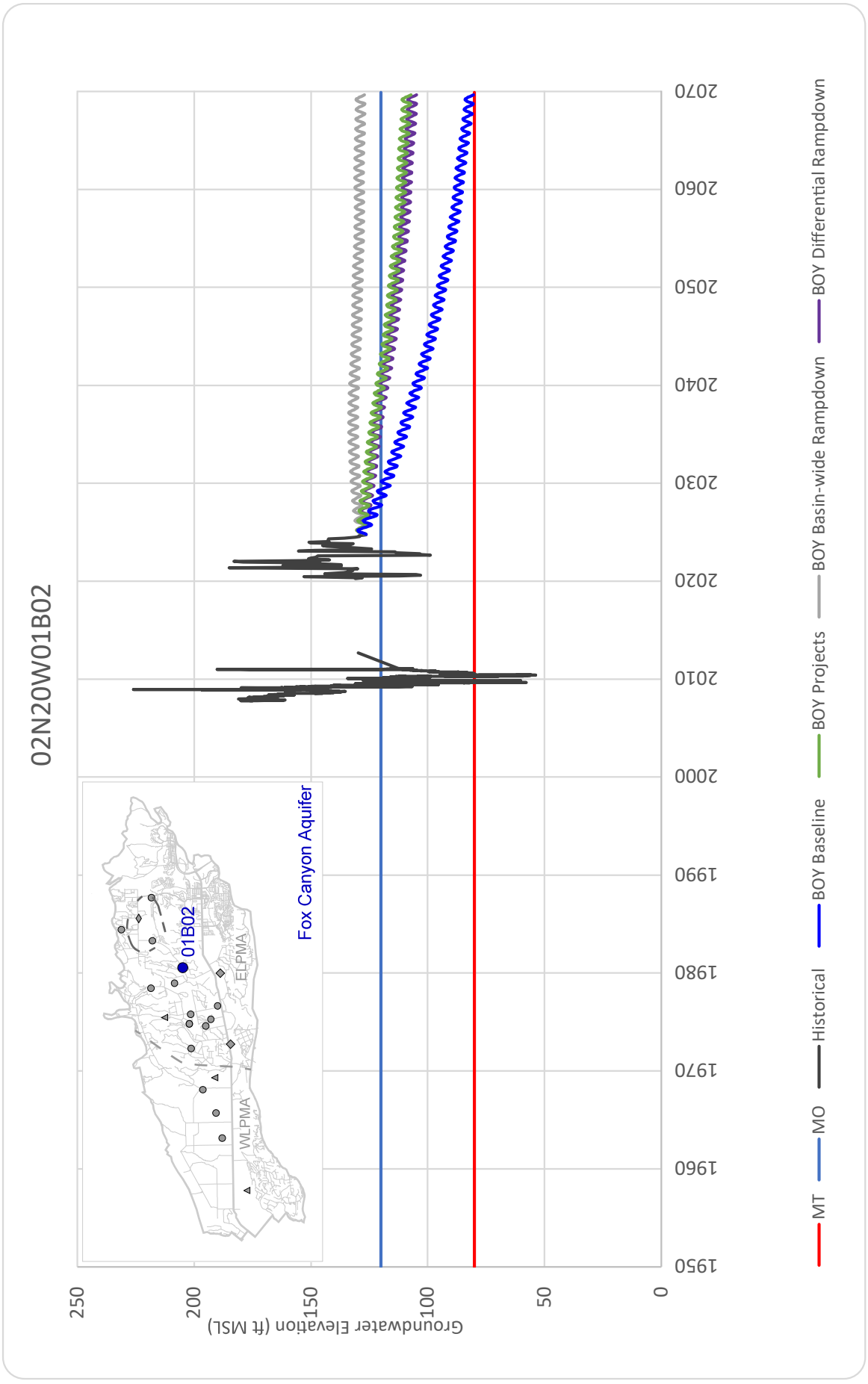
NOTE: The simulated groundwater levels have been shifted so that the initial modeled groundwater elevation is the same as the most recent measured groundwater elevation.

APPENDIX B



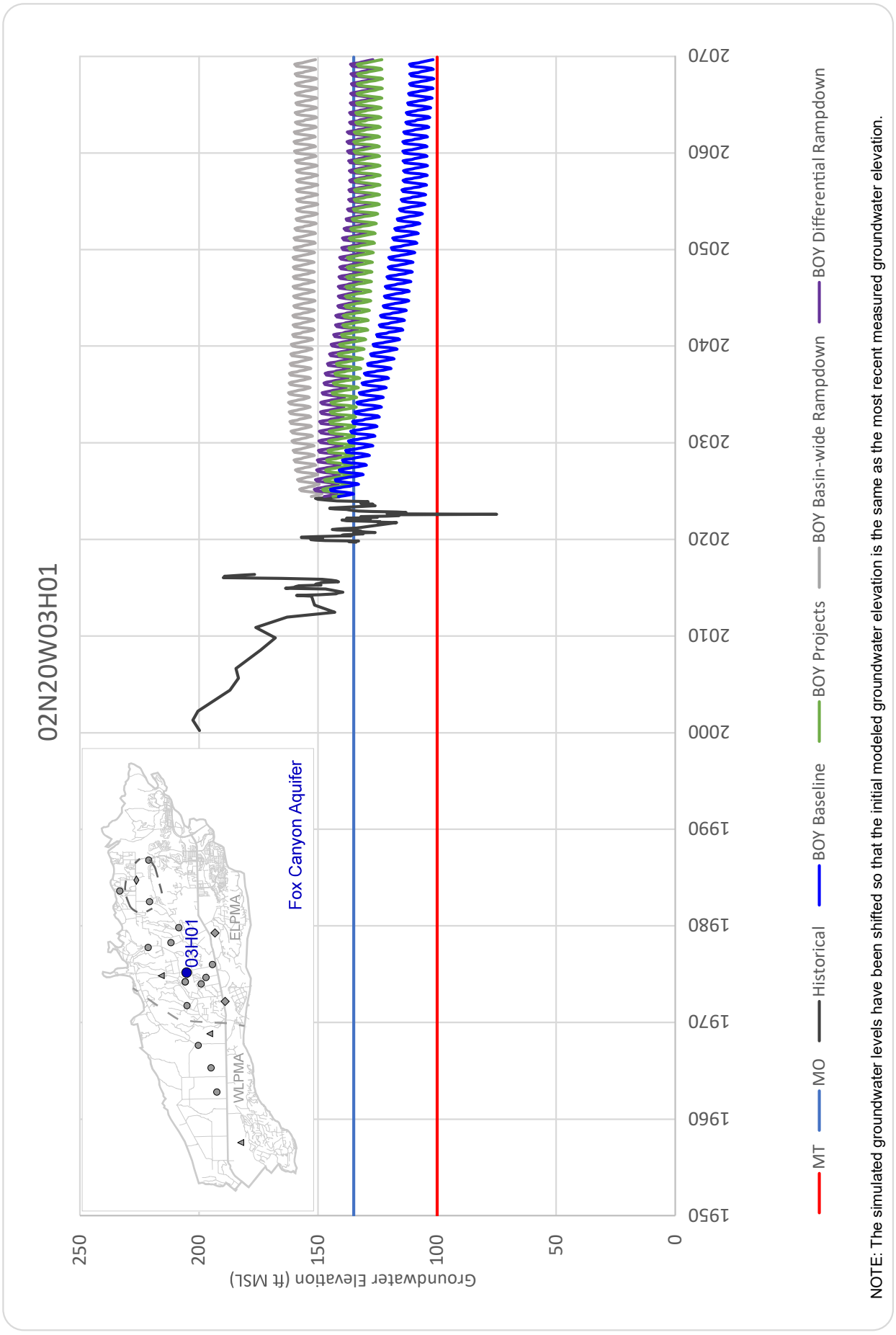
NOTE: The simulated groundwater levels have been shifted so that the initial modeled groundwater elevation is the same as the most recent measured groundwater elevation.

APPENDIX B

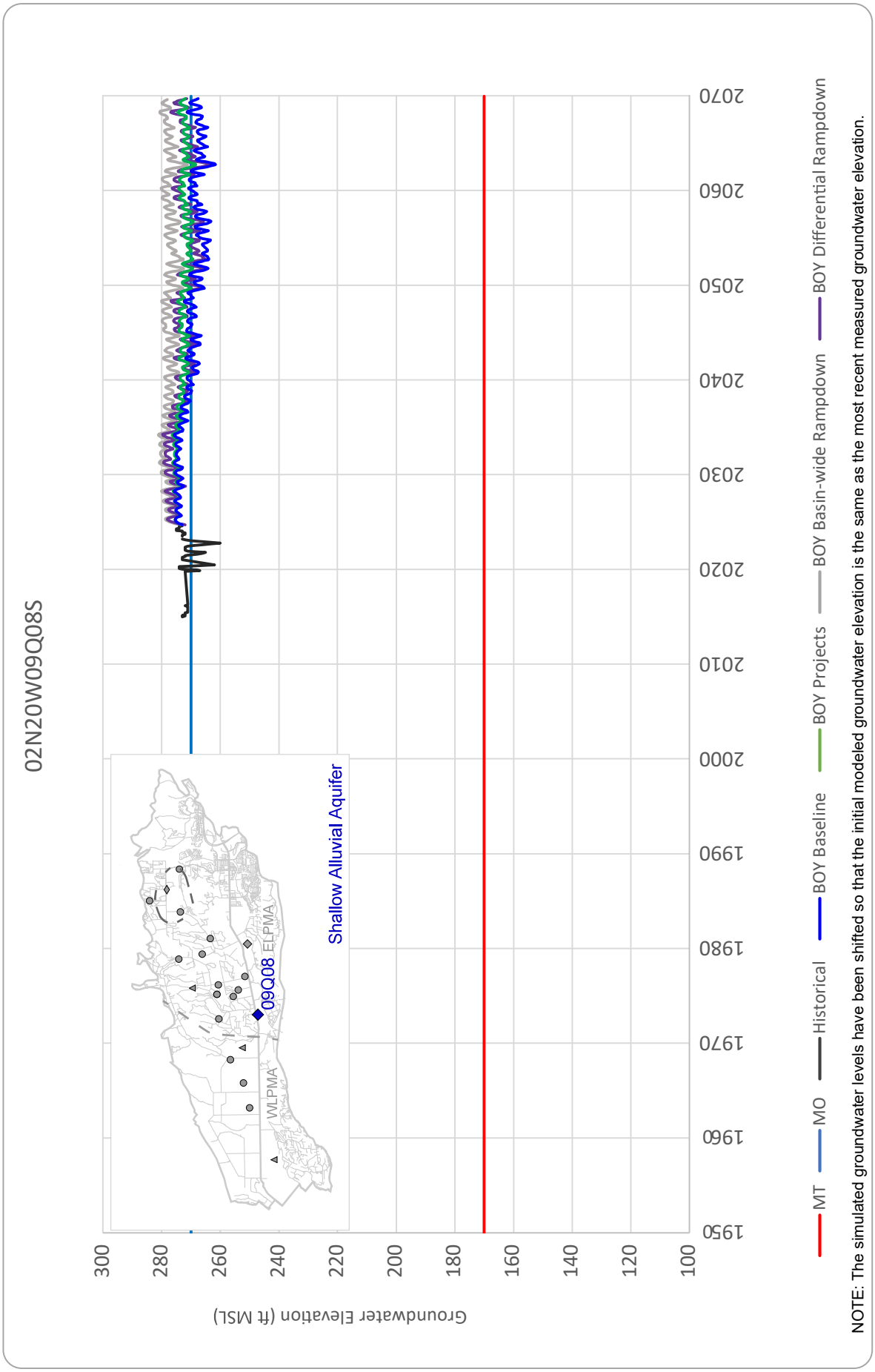


NOTE: The simulated groundwater levels have been shifted so that the initial modeled groundwater elevation is the same as the most recent measured groundwater elevation.

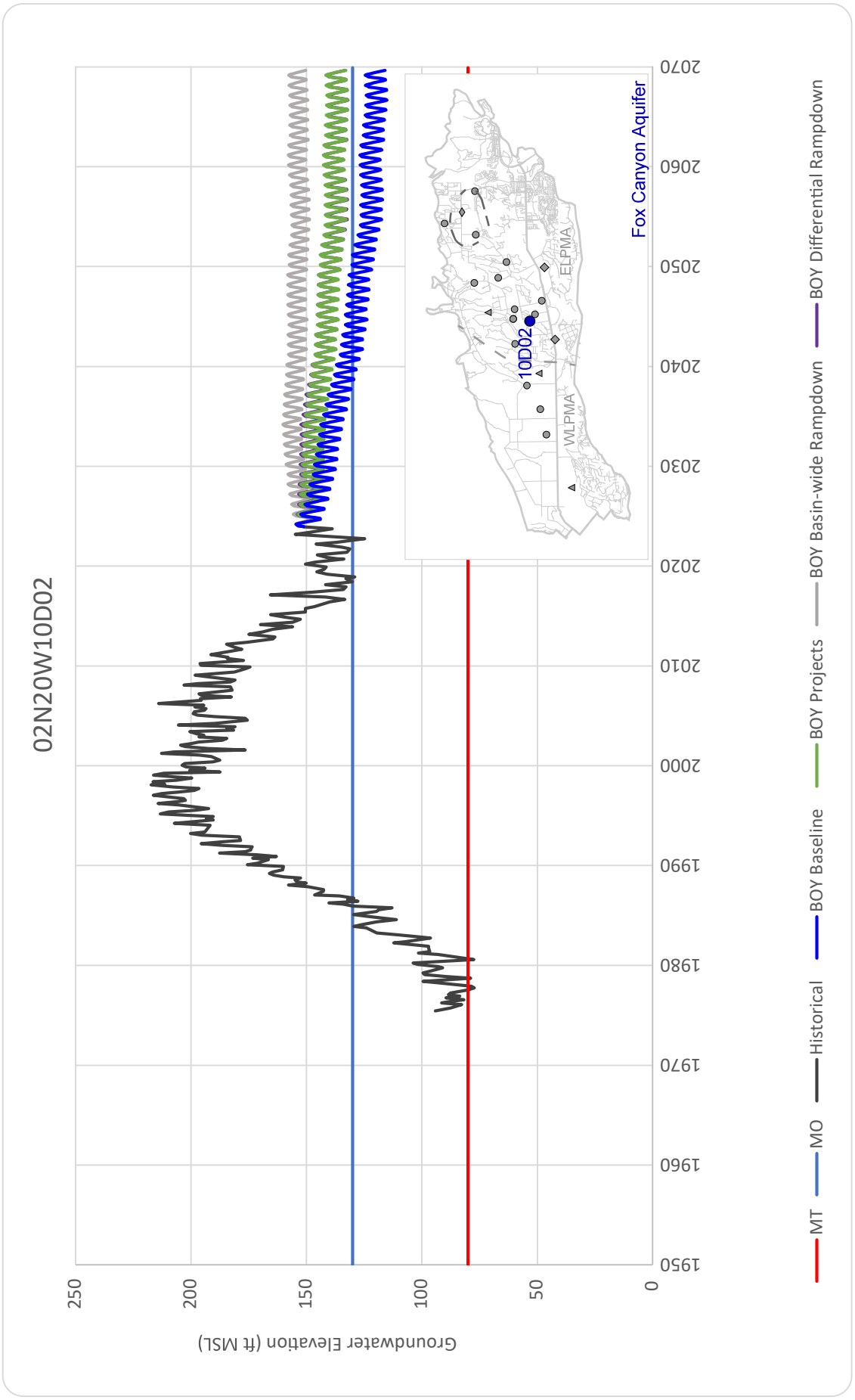
APPENDIX B


02N20W03H01
Groundwater Elevation (ft MSL)
250
200
150
100
50
0
1950
1960
1970
1980
1990
2000
2010
2020
2030
2040
2050
2060
2070
MT
MO
Historical
BOY Baseline
BOY Projects
BOY Basin-wide Rampdown
BOY Differential Rampdown
Fox Canyon Aquifer
03H01
ELPMA
WLPMA
NOTE: The simulated groundwater levels have been shifted so that the initial modeled groundwater elevation is the same as the most recent measured groundwater elevation.

APPENDIX B

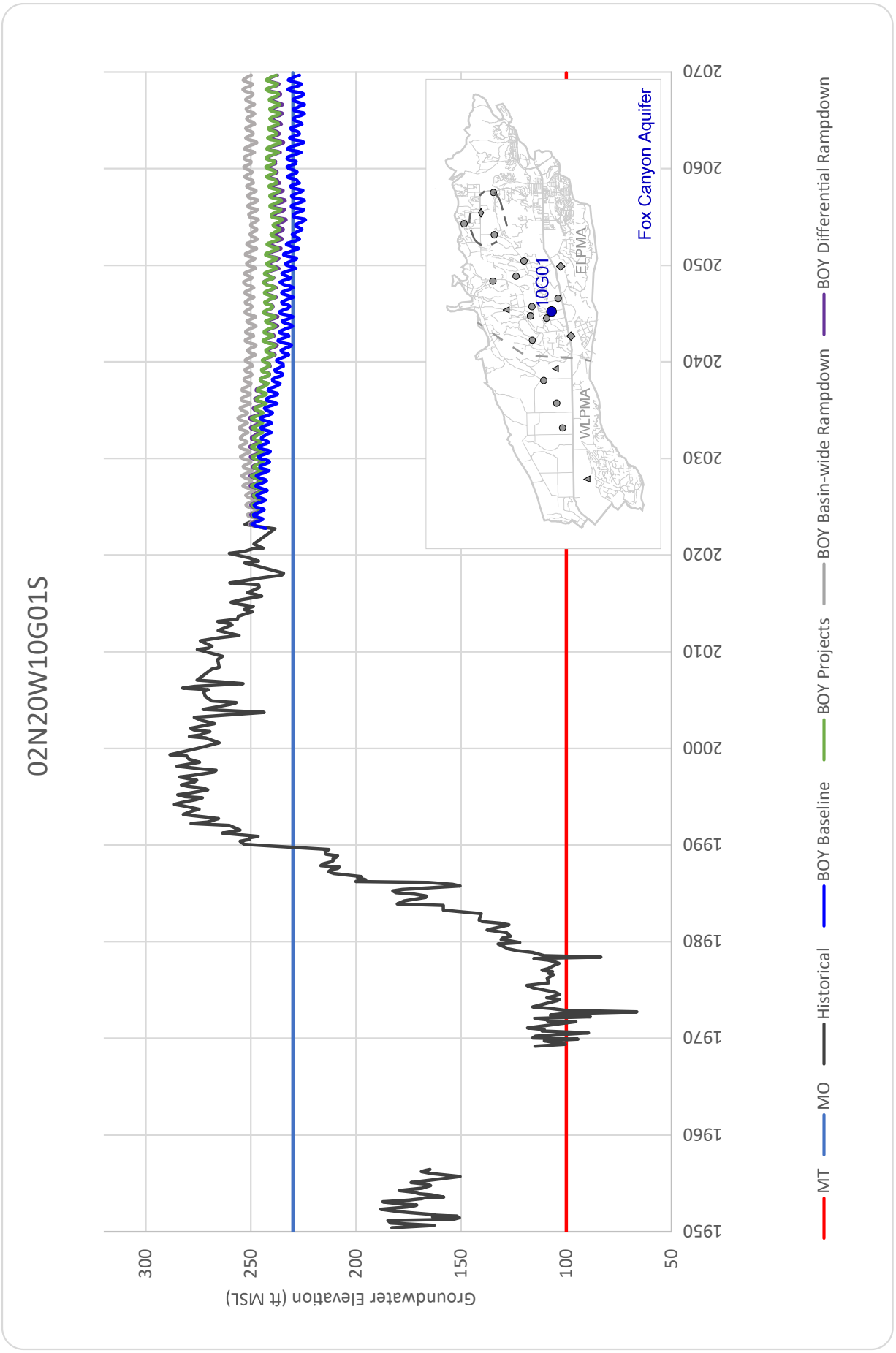

02N20W09Q08S
Groundwater Elevation (ft MSL)
300
280
260
240
220
200
180
160
140
120
100
1950
1960
1970
1980
1990
2000
2010
2020
2030
2040
2050
2060
2070
Shallow Alluvial Aquifer
09Q08
EL PMA
WLPMA
MT
MO
Historical
BOY Baseline
BOY Projects
BOY Basin-wide Rampdown
BOY Differential Rampdown
NOTE: The simulated groundwater levels have been shifted so that the initial modeled groundwater elevation is the same as the most recent measured groundwater elevation.

APPENDIX B

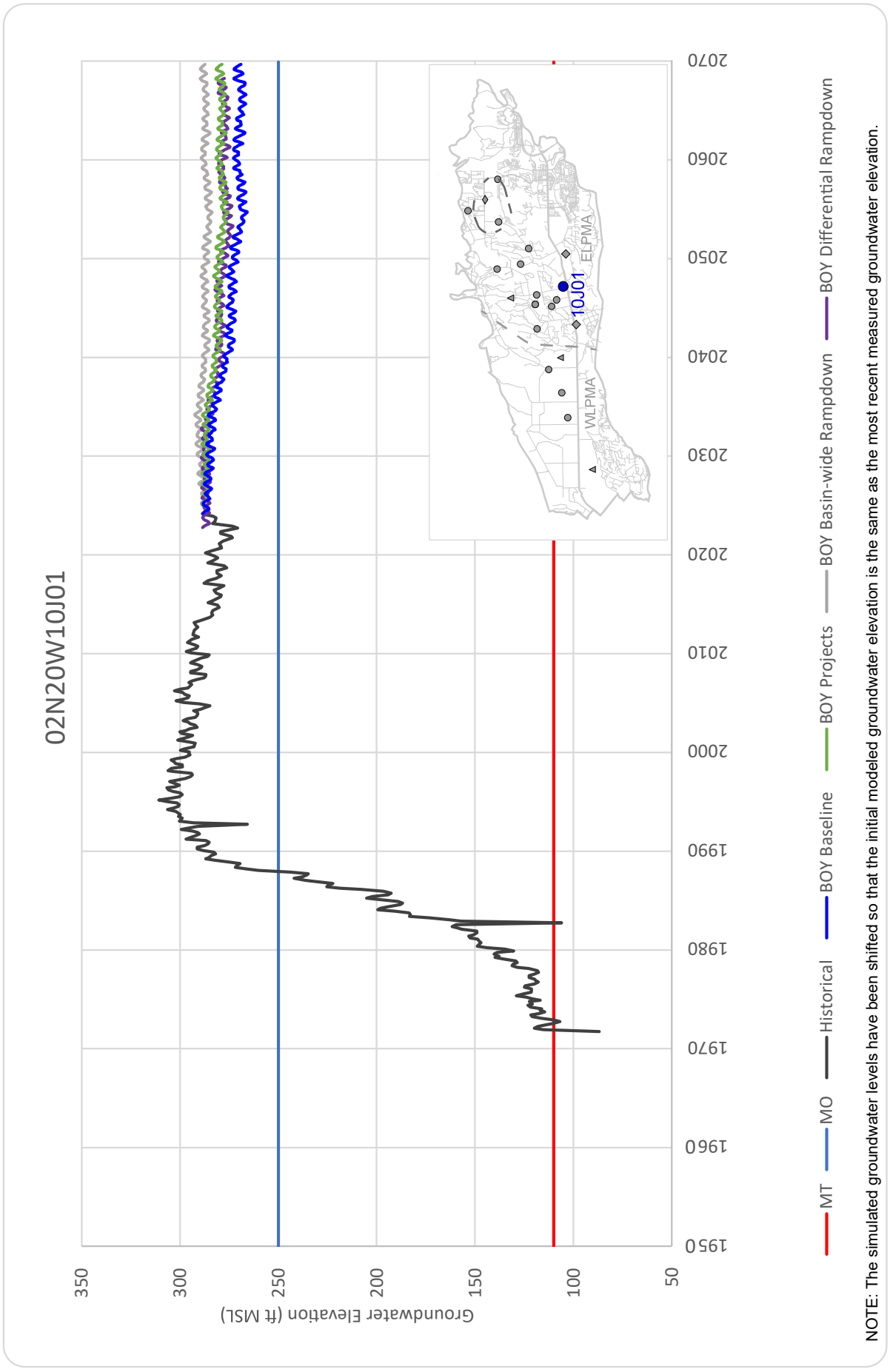


NOTE: The simulated groundwater levels have been shifted so that the initial modeled groundwater elevation is the same as the most recent measured groundwater elevation.

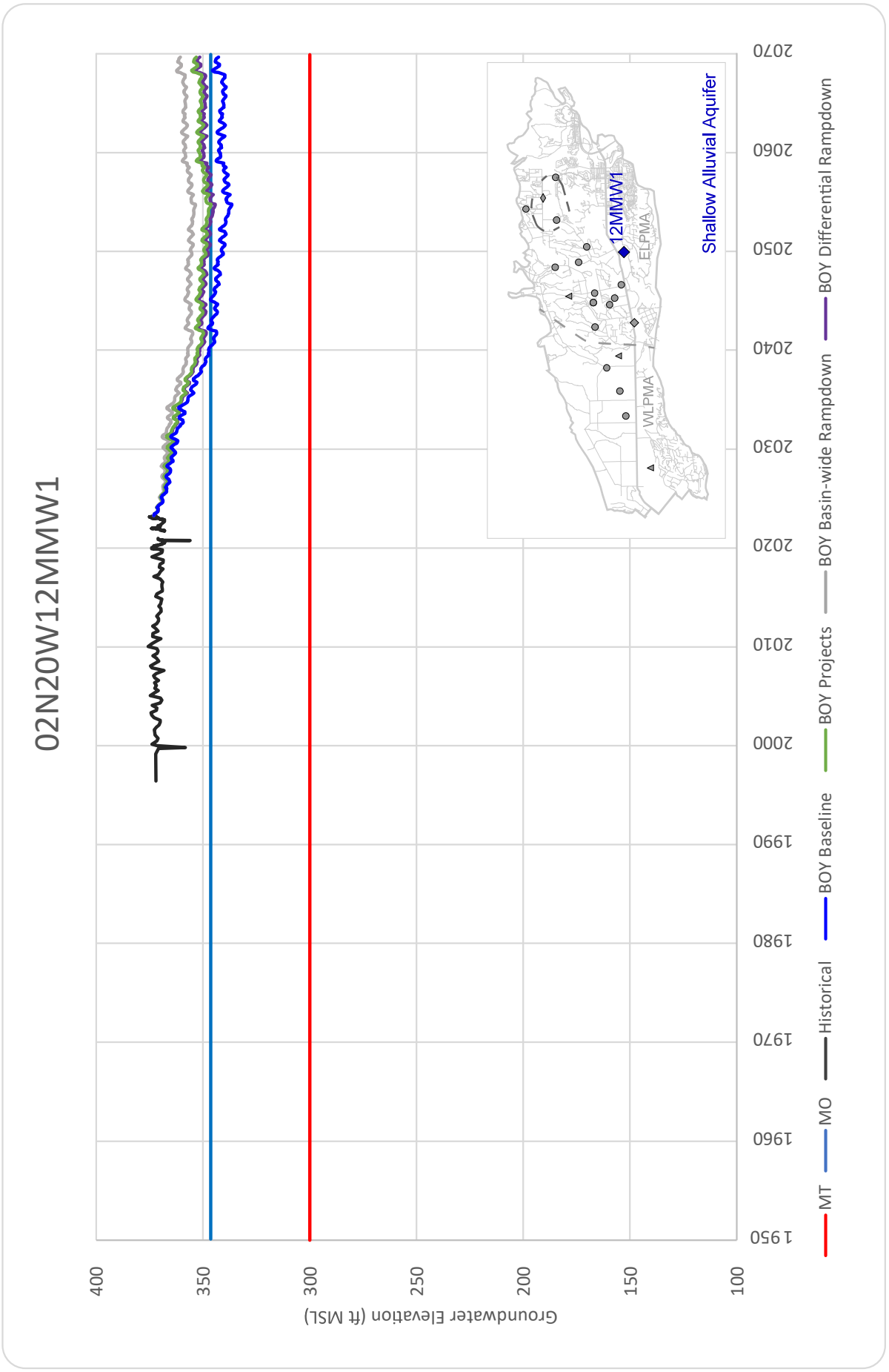
APPENDIX B


02N20W10G01S
Groundwater Elevation (ft MSL)
300
250
200
150
100
50
1950
1960
1970
1980
1990
2000
2010
2020
2030
2040
2050
2060
2070
MT
MO
Historical
BOY Baseline
BOY Projects
BOY Basin-wide Rampdown
BOY Differential Rampdown
Fox Canyon Aquifer
10G01
ELPMA
WLPMA

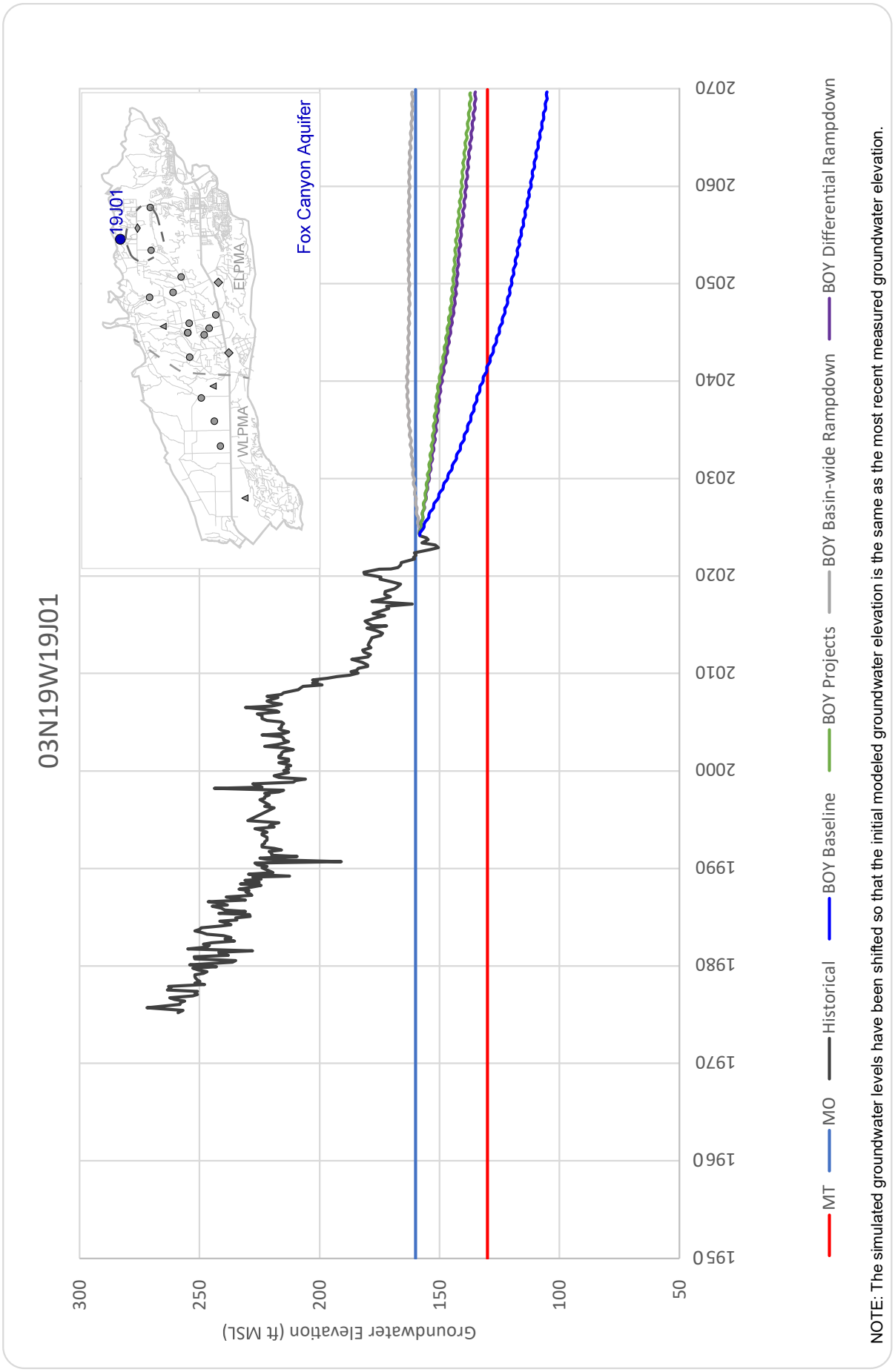
APPENDIX B


02N20W10J01
Groundwater Elevation (ft MSL)
350
300
250
200
150
100
50
1950
1960
1970
1980
1990
2000
2010
2020
2030
2040
2050
2060
2070
10J01
ELPMA
WLPMA
MT
MO
Historical
BOY Baseline
BOY Projects
BOY Basin-wide Rampdown
BOY Differential Rampdown
NOTE: The simulated groundwater levels have been shifted so that the initial modeled groundwater elevation is the same as the most recent measured groundwater elevation.

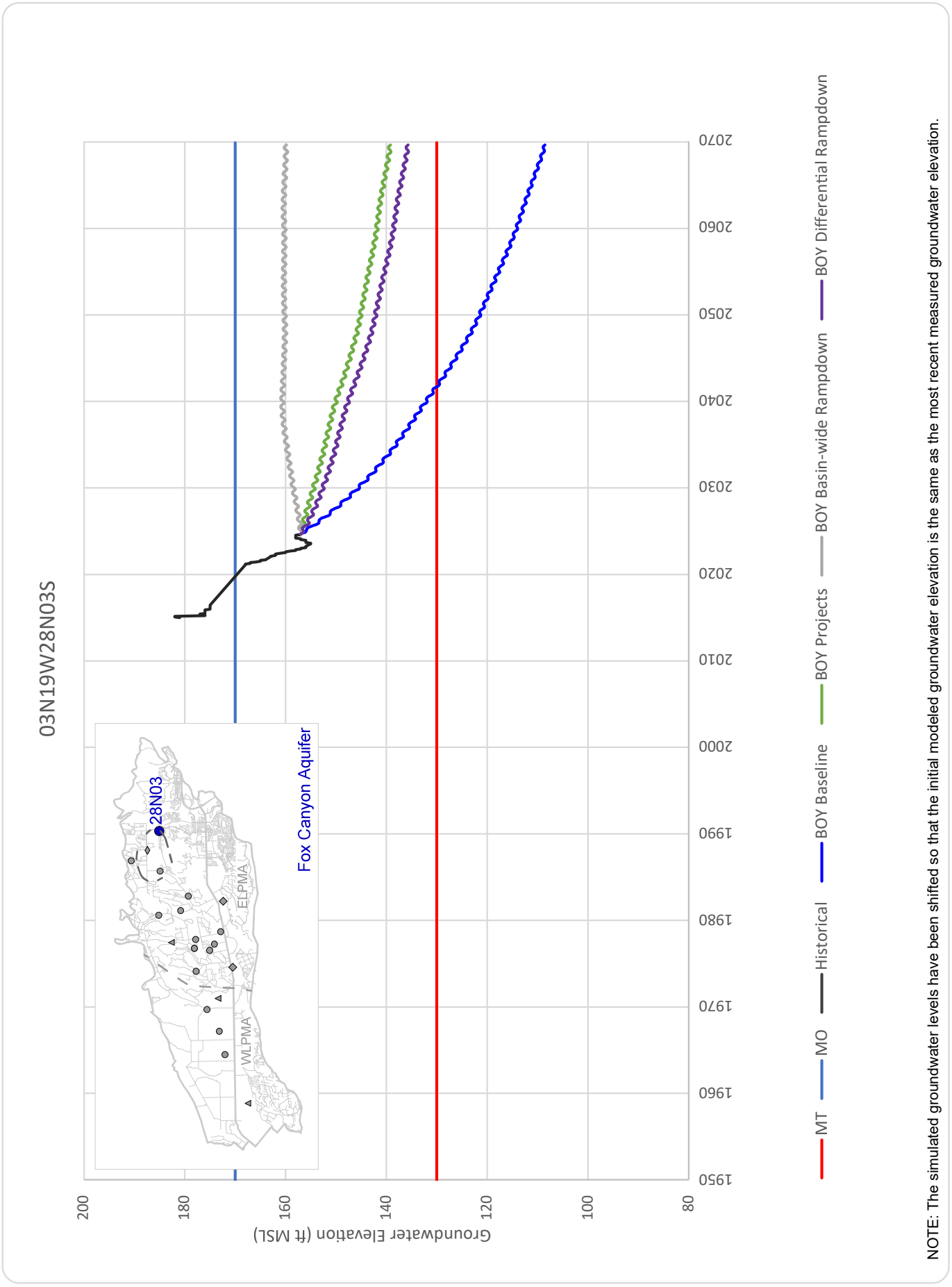
APPENDIX B


02N20W12MMW1
Groundwater Elevation (ft MSL)
400
350
300
250
200
150
100
1950
1960
1970
1980
1990
2000
2010
2020
2030
2040
2050
2060
2070
MT
MO
Historical
BOY Baseline
BOY Projects
BOY Basin-wide Rampdown
BOY Differential Rampdown
Shallow Alluvial Aquifer
12MMW1
EL-PMA
WLPMA

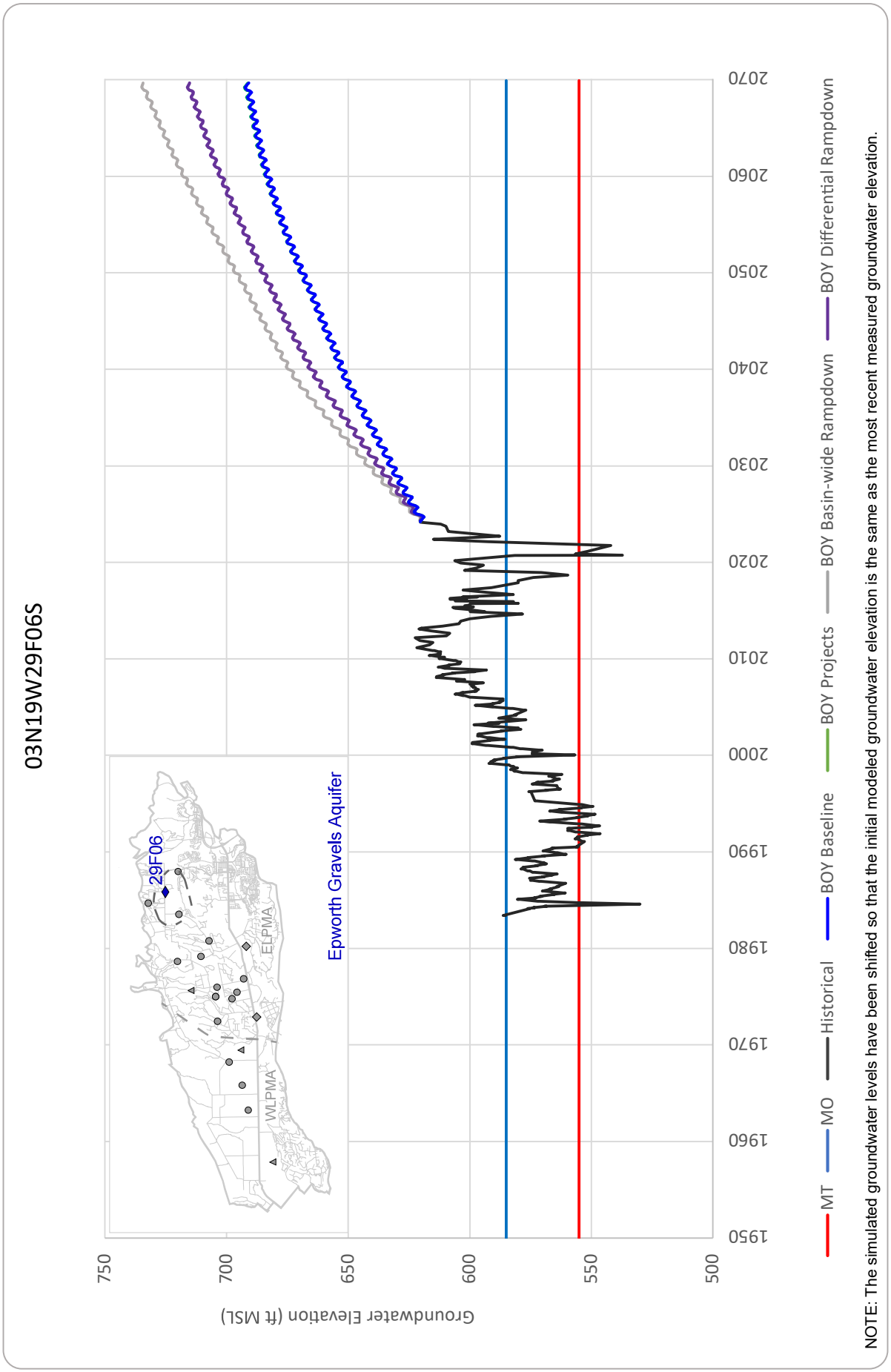
APPENDIX B

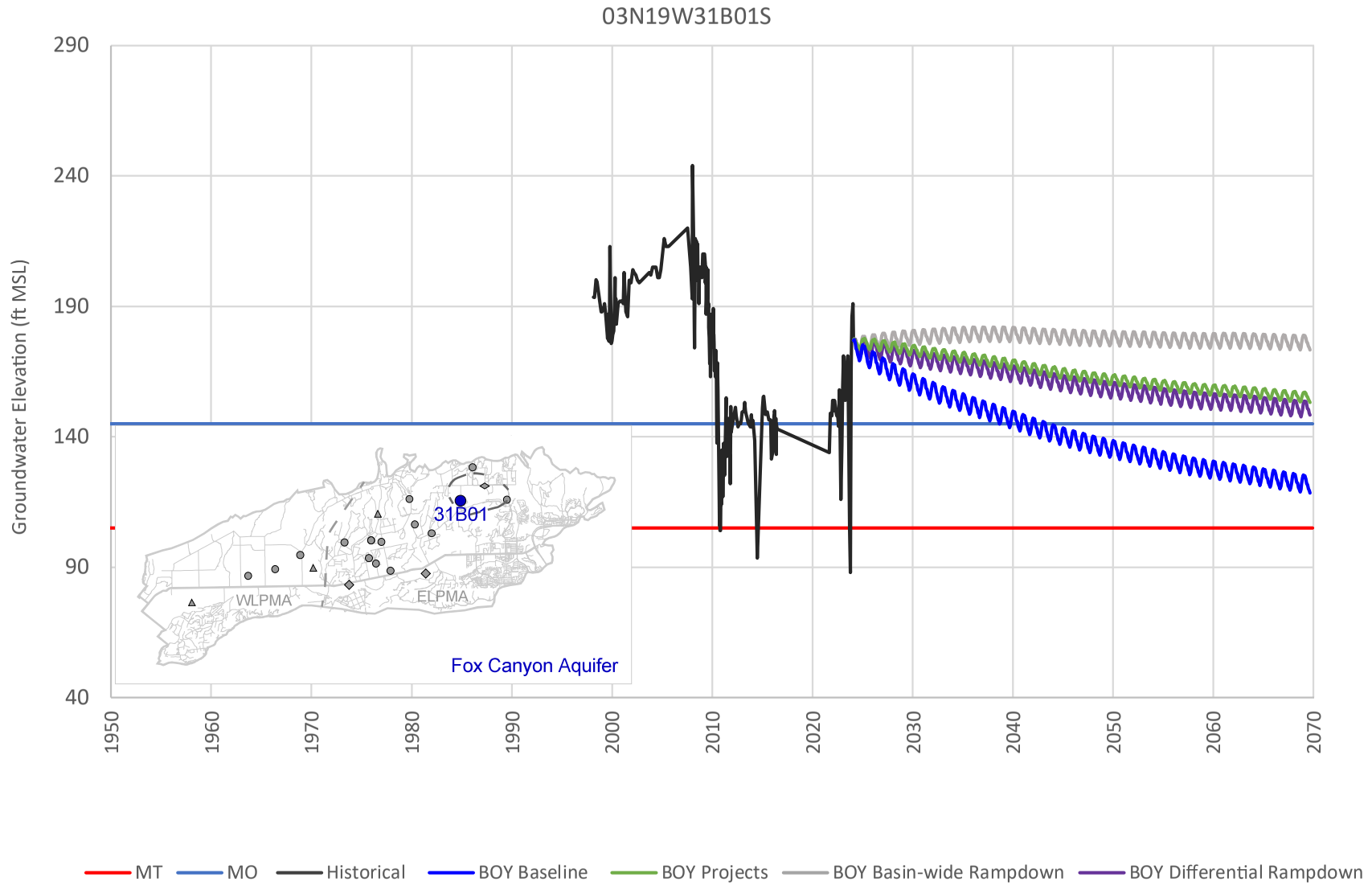

03N19W19J01
Fox Canyon Aquifer
19J01
EL PMA
WLPMA
Groundwater Elevation (ft MSL)
300
250
200
150
100
50
2070
2060
2050
2040
2030
2020
2010
2000
1990
1980
1970
1960
1950
MT
MO
Historical
BOY Baseline
BOY Projects
BOY Basin-wide Rampdown
BOY Differential Rampdown
NOTE: The simulated groundwater levels have been shifted so that the initial modeled groundwater elevation is the same as the most recent measured groundwater elevation.

APPENDIX B


03N19W28N03S
Groundwater Elevation (ft MSL)
200
180
160
140
120
100
80
1950
1960
1970
1980
1990
2000
2010
2020
2030
2040
2050
2060
2070
MT
MO
Historical
BOY Baseline
BOY Projects
BOY Basin-wide Rampdown
BOY Differential Rampdown
Fox Canyon Aquifer
28N03
ELPMA
WLPMA
NOTE: The simulated groundwater levels have been shifted so that the initial modeled groundwater elevation is the same as the most recent measured groundwater elevation.
Basin Optimization Yield Study
May 2026

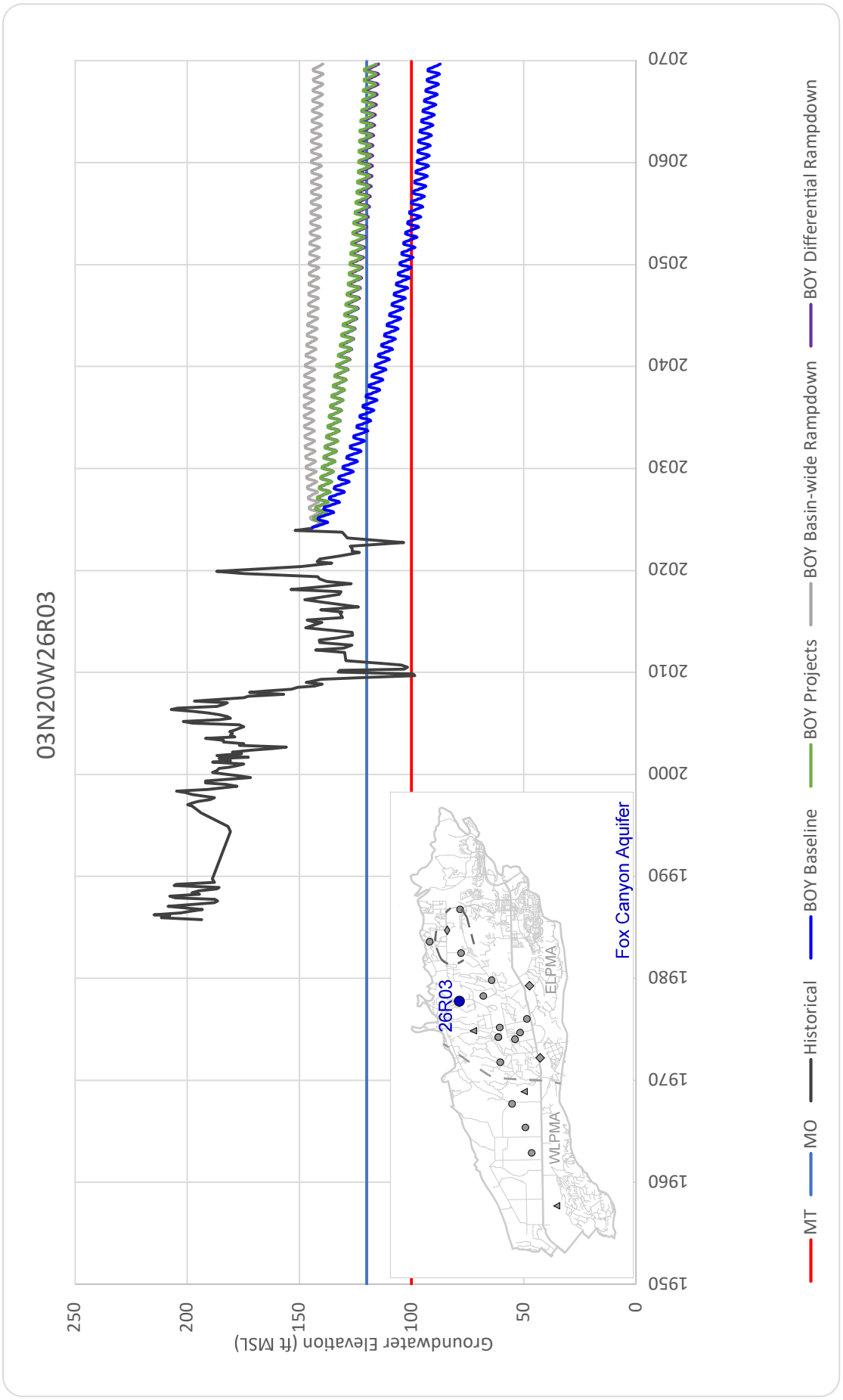
APPENDIX B


03N19W29F06S
Groundwater Elevation (ft MSL)
750
700
650
600
550
500
1950
1960
1970
1980
1990
2000
2010
2020
2030
2040
2050
2060
2070
MT
MO
Historical
BOY Baseline
BOY Projects
BOY Basin-wide Rampdown
BOY Differential Rampdown
Epworth Gravels Aquifer
29F06
EPMA
WLPMA
NOTE: The simulated groundwater levels have been shifted so that the initial modeled groundwater elevation is the same as the most recent measured groundwater elevation.

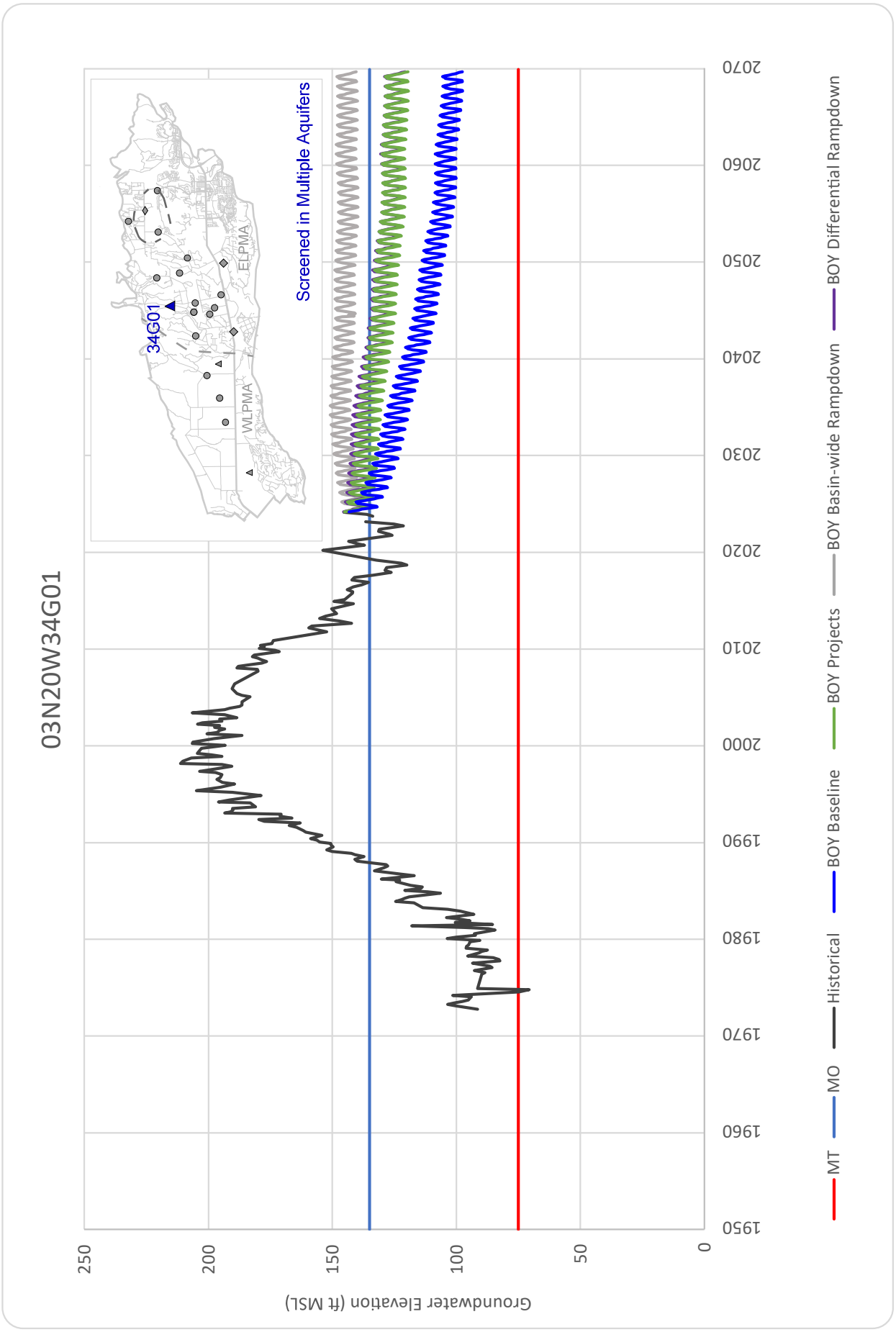


NOTE: The simulated groundwater levels have been shifted so that the initial modeled groundwater elevation is the same as the most recent measured groundwater elevation.

APPENDIX B



NOTE: The simulated groundwater levels have been shifted so that the initial modeled groundwater elevation is the same as the most recent measured groundwater elevation.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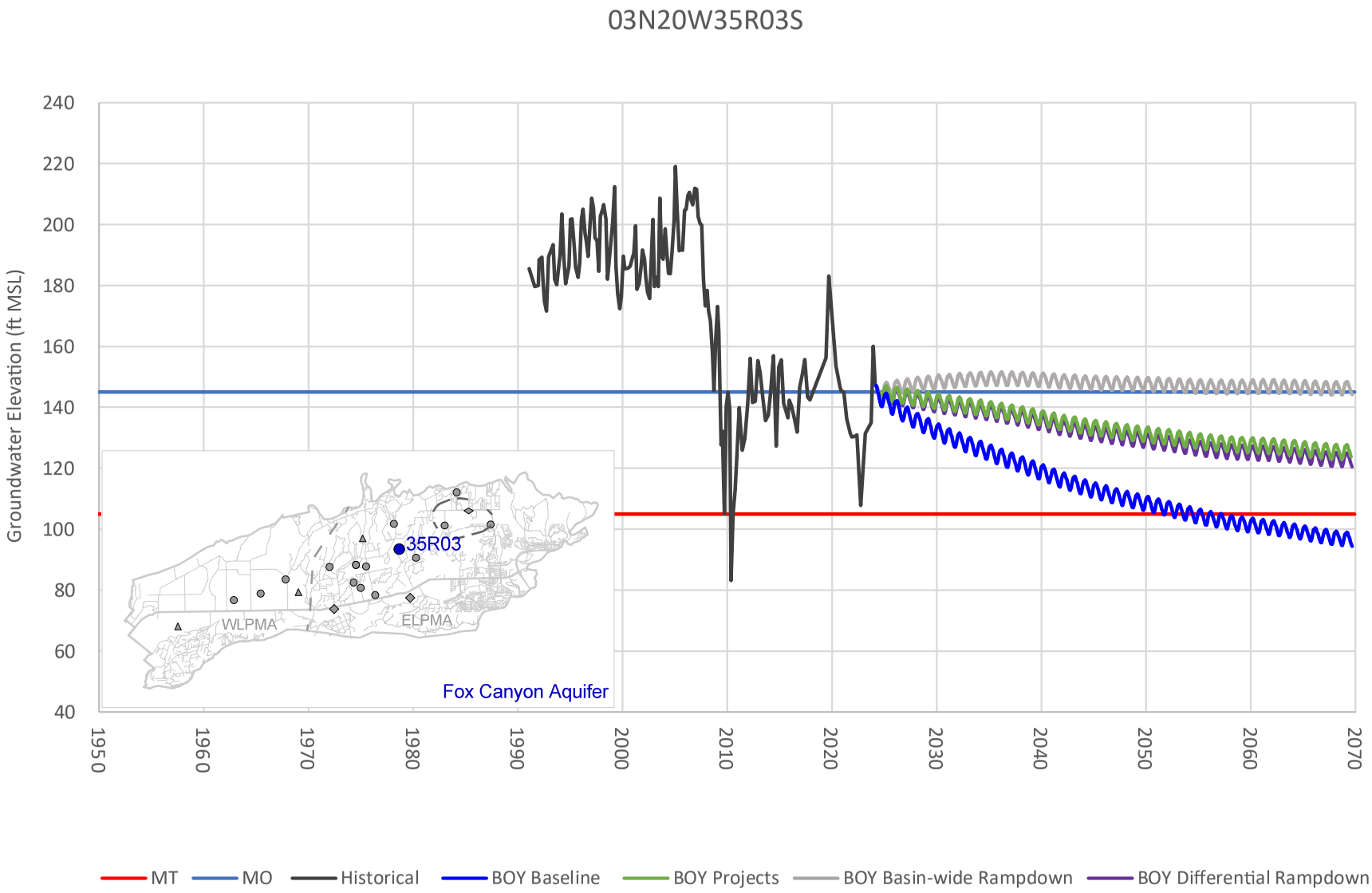
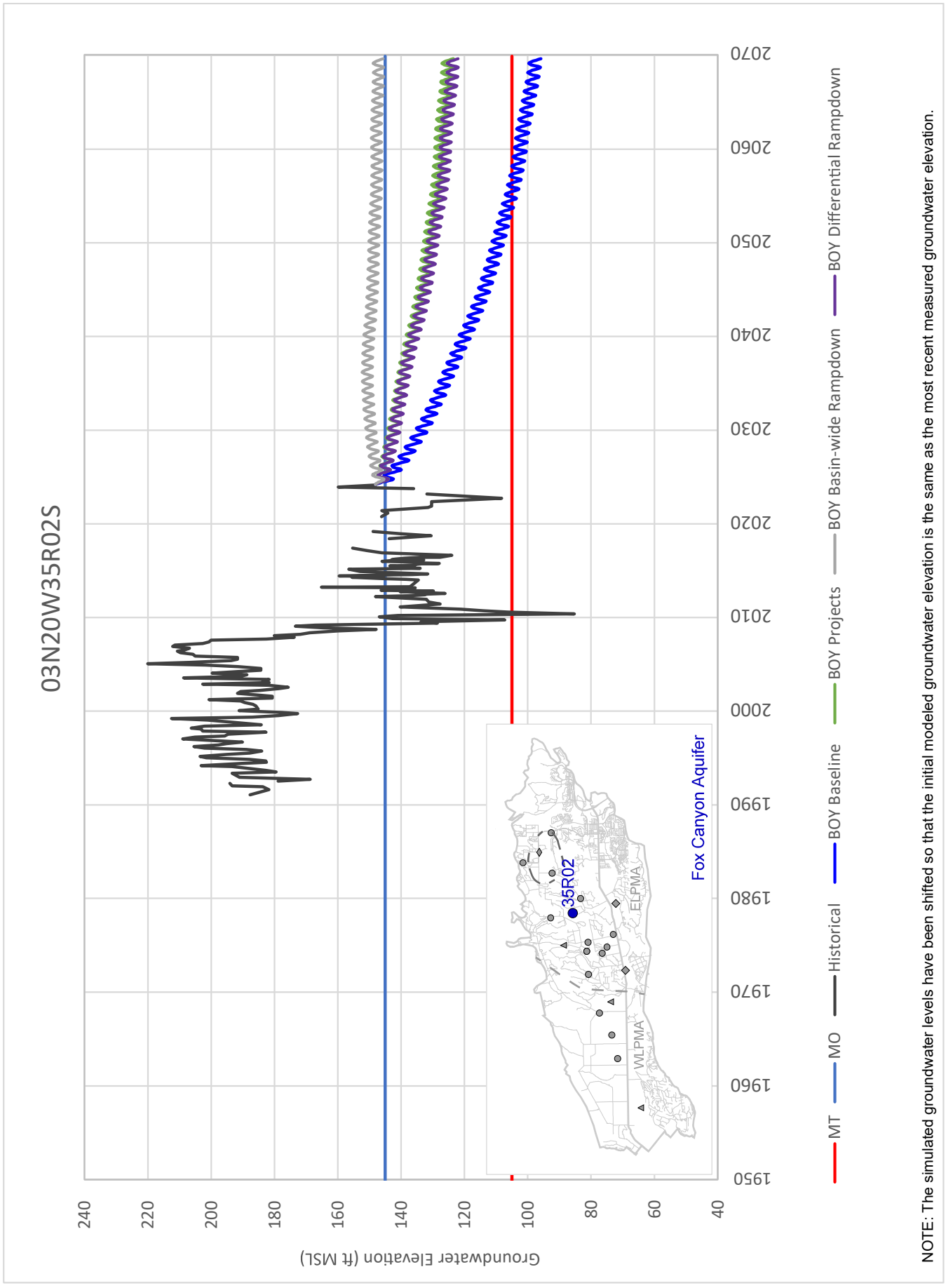
Groundwater Elevation (ft MSL)
250
200
150
100
50
0
1950
1960
1970
1980
1990
2000
2010
2020
2030
2040
2050
2060
2070
MT
MO
Historical
BOY Baseline
BOY Projects
BOY Basin-wide Rampdown
BOY Differential Rampdown
Screened in Multiple Aquifers
34G01
ELPMA
WLPMA



NOTE: The simulated groundwater levels have been shifted so that the initial modeled groundwater elevation is the same as the most recent measured groundwater elevation.

APPENDIX B



NOTE: The simulated groundwater levels have been shifted so that the initial modeled groundwater elevation is the same as the most recent measured groundwater elevation.

TO: Las Posas Valley Watermaster

FROM: Las Posas Valley Watermaster Policy Advisory Committee

RE: Recommendation Report – DRAFT LAS POSAS VALLEY BASIN OPTIMIZATION YIELD STUDY

DATE: February 5, 2026

Recommendation:
See memo below for recommended changes/additions to the **DRAFT LAS POSAS VALLEY BASIN OPTIMIZATION YIELD STUDY** (December 2025).

Policy Rationale for Recommendation:
See memo below for rationale.

Summary of Facts in Support of Recommendation:
See memo below for complete summary of facts.

Tally of Committee Member Votes:

	YES	NO	ABSTAIN	ABSENT
Ian Prichard, Calleguas MWD	X			
John Menne, Zone MWC	X			
Arturo Aseo, Commercial	X			
Rob Grether, West LPV Large Ag	X			
David Schwabauer, East LPV Large Ag	X			
Patty Martinez, East LPV Small Ag				X
Richard Cavaletto, West LPV Small Ag	X			
Laurel Servin, East LPV MWC	X			
Steven Murata, West LPV MWC				X
Paul Chan, VCWWD 1 and 19				X

Report of Bases for Majority and Minority Committee Member Positions:

PAC Recommendations Report Regarding the Las Posas Valley Basin DRAFT Basin Optimization Yield Study – December 2025

On December 17, 2025, the Fox Canyon Groundwater Management Agency (FCGMA), acting as Watermaster for the Las Posas Valley Basin (LPVB), sent a Committee Consultation request to the LPVB Policy Advisory Committee (PAC) regarding the Draft Las Posas Valley Basin Optimization Yield Study (BOYS) prepared by Dudek, Inc.

Following review of the Draft BOYS, the PAC developed the recommendations in this report to ensure that the BOYS is revised and applied strictly in accordance with the Judgment and the Basin Optimization Plan. As established by the Judgment, the BOYS is an adaptive process for setting the Basin Optimization Yield, Operating Yield, and any Rampdown Rate; it is not intended to presume allocation-based Rampdown unless it is necessary to meet the Judgment's requirements.

The PAC identified policy-level issues in the Draft BOYS, including the introduction of concepts not authorized by the Judgment, the treatment of reasonably anticipated Basin Optimization Projects, the conflation of basinwide allocation adjustments with localized extraction controls, and the framing of Rampdown as a presumed outcome rather than a conditional management tool. Consistent with the Judgment's adaptive management framework, the PAC emphasizes that Basin Optimization Projects and other authorized measures must be fully considered and that Rampdown should be initiated only where necessary to ensure that the Operating Yield equals the Basin Optimization Yield by 2040.

Individual PAC member comments are compiled in the Master List appended to this Recommendations Report (to be provided to Watermaster staff in Excel format for ease of response). Those comments are keyed to specific sections of the Draft BOYS and provide detailed, section-specific input. The PAC's principal policy recommendations are summarized below.

Recommendation 1: Apply the BOYS Strictly as Defined in the Judgment; Initiate Rampdown Only Where Necessary to Achieve the 2040 Endpoint

Section 1.22 of the Judgment defines the Basin Optimization Yield Study (BOYS) as a five-year process used to set the Basin Optimization Yield, the Operating Yield, and any Rampdown Rate. The BOYS is one part of the Judgment's overall approach to achieving sustainable groundwater management by 2040.

Section 4.9.1.3 of the Judgment provides that Rampdown of the Operating Yield is to begin *if necessary* to ensure that the Operating Yield in Water Year 2040 equals both the Sustainable Yield and the Basin Optimization Yield. Sections 4.10.1.4 and 4.10.2 describe how Rampdown is to be calculated and revisited if Rampdown is required, but they do not eliminate the initial determination of whether Rampdown is needed at the time of the BOYS.

While the Judgment requires that the Operating Yield and Basin Optimization Yield align by 2040, it does not require Rampdown to begin automatically simply because the Basin Optimization Yield is lower than the current Operating Yield. Rampdown is required only where other management tools authorized by the Judgment are not sufficient to meet the 2040 requirement.

Based on current basin conditions and the status of reasonably anticipated Basin Optimization Projects, the available record does not show that starting Rampdown at this time is necessary under Section 4.9.1.3 of the Judgment.

Recommendation
Watermaster should revise and implement the BOYS in a manner that recognizes the 2040 alignment requirement, but clearly states that Rampdown should begin only if needed after considering other Judgment-authorized management tools. The BOYS should not assume Rampdown unless the need for it is clearly demonstrated.

Recommendation 2: Prioritize In-Lieu Water and Other Non-Allocational Tools Management Tools

Section 5 of the Judgment expressly authorizes the use of in-lieu water deliveries to reduce groundwater pumping while preserving water right allocations. Past basin conditions demonstrate that groundwater levels have recovered when pumping was reduced through in-lieu deliveries rather than through allocation reductions.

In-lieu water and similar non-allocational tools are efficient, lower-risk, and consistent with both the Basin Optimization Plan and the Judgment's structure, which favors operational and project-based solutions before allocation-based reductions.

Recommendation
Watermaster should prioritize implementation and use of in-lieu water deliveries and other non-allocational management tools authorized by the Judgment and should incorporate their reasonably anticipated effects into the BOYS before initiating allocation-based Rampdown.

Recommendation 3: Do Not Apply Differential Rampdown; Distinguish Allocation Changes from Extraction Controls

Under the Judgment, Rampdown is a single, basinwide mechanism that adjusts the Operating Yield and resulting Annual Allocations uniformly. Section 4.10 of the Judgment governs this process.

Section 4.10.3 of the Judgment does not authorize different Rampdown rates or allocation reductions by management area. Instead, it allows Watermaster, under specific conditions and following Committee Consultation, to impose localized restrictions on physical groundwater extraction in areas where Undesirable Results are occurring or are likely to occur.

These localized extraction restrictions regulate where groundwater may be pumped, not how much water a Water Right Holder is entitled to use. Allocation rights are preserved through the ability to pump outside the restricted area or to transfer allocation basis. Referring to these tools as "Differential Rampdown" conflates two separate mechanisms and implies a reallocation of water rights that the Judgment does not authorize.

Recommendation
Watermaster should remove or revise references to "Differential Rampdown" and clearly distinguish basinwide allocation-based Rampdown from localized extraction controls authorized

under Section 4.10.3 of the Judgment.

Recommendation 4: Base Rampdown Decisions on Demonstrated Need and Observed Basin Conditions

Actual groundwater extractions during the first two full Water Years following implementation of the Judgment have been well below both the Initial Operating Yield and the modeled Basin Optimization Yield. In this context, modeled exceedances of Minimum Thresholds should be treated as planning indicators, not as proof that Undesirable Results are occurring or imminent.

The Judgment's adaptive management approach requires that Rampdown decisions be based on demonstrated need, informed by observed basin conditions and sufficiently complete and reliable data, and revisited through future Basin Optimization Yield Studies as conditions evolve.

Recommendation
Watermaster should base any decision to initiate Rampdown on demonstrated necessity supported by observed basin conditions, rather than on speculative scenarios or model outputs alone, and should reassess the need for Rampdown through future BOYS updates consistent with the Judgment.

Conclusion

The PAC urges Watermaster to revise and implement the BOYS consistent with these recommendations so that it functions as intended under the Judgment: as an adaptive, forward-looking tool that prioritizes Basin Optimization Projects and authorized management measures, and applies Rampdown only where and when necessary to achieve sustainable groundwater management by 2040.

Specific Comments from the Las Posas Valley Basin Policy Advisory Committee (PAC) - SORTED
Draft Las Posas Valley Basin Optimization Yield Study (BOYS) - December 2025

Comment ID	Commentor	Technical or Editorial Comment	Topic	Page Number	Section ID	Quoted Text	Comment
CN-1 (commentor initials and comment number)	Commentor Name	General Technical, General Editorial, Technical, Editorial, etc.	Simple description of comment topic	Page number as it appears in document	Section number with as much detaill as possible, including paragraph and line whenever practicle	*Text from document in italics for identification*	Comment with as much detail as possible/necessary.
RC-3	RCavaletto	Misc	Rampdown period	3	1.3	*Rampdown was calculated over a 13-year period*	The Executive Summary says 14 years. Which is correct?
DS-1	DSchwabauer	General Editorial	clarification of purchase or lease of water	8	3.1.3	*The Arroyo Simi-Las Posas Water Acquisition project would involve the purchase or lease of recycled water from the City of Simi Valley to continue discharging the water from its shallow dewatering wells and/or the Simi Valley Water Quality Control Plant to the Arroyo Simi for downstream recharge to the Basin (FCGMA 2025a).*	This sentence needs further clarification as to the purchase or lease of water. Price will be extremely important. As well how long a purchase contract will/can last and/or how long a lease continue for.
DS-2	DSchwabauer	General Editorial	needed validation on Epworth Gravels	13	3.2.3.1	*In the Epworth Gravels Management Area, simulated groundwater elevations rose throughout the 47-year model time period (Figure 3.5).*	The beginning sentence about the Epworth Gravels is very misleading. It is well documented from historic pumping records that the Epworth Gravels water level has in general declined over the past 50 years, I say this as a pumper who has witnessed water level decline in our own wells in the Epworth.
DS-3	DSchwabauer	General Editorial	impacts unknown to date	13	3.2.3.1	*First, not all groundwater producers with wells in the Epworth Gravels Management Area received an allocation in the Judgement (Figure 3-4).*	The full impact of this allocation change is unknown; at this time there has not yet been a ruling by the court.
DS-4	DSchwabauer	General Editorial	validation of the In-lue project	13	3.2.3.1	*When wells were rested in the Epworth Gravels Management Area, the groundwater elevations recovered. Both the GSP and the First Periodic Evaluation anticipated that adaptive management would occur, through pumping reductions in Epworth Gravels Management Area wells, as necessary, to maintain groundwater elevations between the minimum threshold and measurable objective.*	From my perspective, these ending sentences clearly encapsulate the water usage patterns of the Epworth Gravels Management Area. The key takeaway from this resting of pumping of the Epworth Gravels clearly illustrates the benefit of the In-lue water purchase program. In my opinion, this demonstrates the high value of In-lue water usage to the basin, which benefits everyone in both the East and West Las Posas.
JM-2	JMenne	General Policy	Postpone Rampdown	15	3.3	*Discussed in entire Section 3.3.*	Given the Projects Scenario yielded adequate production (36,860 AF/Y) without undesirable effects, combined with the high amount of carryover developed during the last 2 water years, postponing rampdown until the next BOYS is drafted seems reasonable and would be beneficial to the Basin's users.
JM-1	JMenne	General Policy	Implement Calleguas In Lieu asap	26	3.1.3	*Discussed in entire Section 3.1.3*	Efficient, tested, low risk Project to increase Basin production. PAC should continue pressing to implement this Project, hopefully to start 2026Q3 when CMWD rates are lower.
RG-2	Rob Grether	General Editorial	Conflation of Allocation Reductions with Extraction Controls	Multiple, but Quoted Text from: - Executive Summary - v	Various, but Quoted Text from: - Executive Summary	*"Under this scenario, groundwater production was reduced by 3,683 AFY in the WLPMA, 4,112 AFY in the ELPMA, and 205 AFY in the Epworth Gravels Management Area."*	The Draft BOYS frequently conflates **reductions in groundwater extraction** with **reductions in Allocations**, creating confusion regarding the legal effect of Rampdown under the Judgment. Under the Judgment, Allocations represent the legal entitlement to use groundwater, while extraction controls regulate where and how groundwater may be physically pumped. Rampdown adjusts the Operating Yield and resulting Annual Allocations on a basinwide basis, whereas localized extraction restrictions under Judgment §4.10.3 regulate physical pumping locations without reducing Allocation rights. By describing Rampdown primarily in terms of "production" or "pumping" reductions by Management Area, the Draft BOYS obscures this distinction and risks implying that Rampdown is an operational control rather than an allocation adjustment. This framing is particularly confusing for Water Right Holders whose Allocations may be exercised through alternative extraction locations, transfers, or other Judgment-authorized mechanisms. **Proposed Revision:** Revise the Draft BOYS to clearly distinguish allocation adjustments from extraction controls, and to ensure that discussion of Rampdown consistently reflects its effect on Allocations rather than physical extraction locations.

Specific Comments from the Las Posas Valley Basin Policy Advisory Committee (PAC) - SORTED
Draft Las Posas Valley Basin Optimization Yield Study (BOYS) - December 2025

Comment ID	Commentor	Technical or Editorial Comment	Topic	Page Number	Section ID	Quoted Text	Comment
RG-3	Rob Grether	Editorial	Incorrect Definition and Calculation of Basin Optimization Yield and Rampdown	Multiple, but Quoted Text from: - Executive Summary - v	Various, but Quoted Text from: - Executive Summary	*"The Rampdown is the difference between the Initial Operating Yield and this Sustainable Yield."*	The Draft BOYS misdefines and misapplies the Judgment's terms for **Basin Optimization Yield** and **Rampdown**, resulting in incorrect Rampdown magnitudes and Rampdown Rates. Under the Judgment, Rampdown is calculated as the difference between the **then-effective Operating Yield** and the **Basin Optimization Yield**, not the difference between the Initial Operating Yield and the Sustainable Yield. Judgment §4.10.1.4 expressly provides that the annual Rampdown equals the deficit between the Operating Yield (e.g., 40,000 AFY) and the Basin Optimization Yield, divided into fifteen annual increments. The Draft BOYS states that the Basin Optimization Yield incorporating projects is 36,860 AFY; however, it does not consistently use this value for Rampdown calculations. Applying the Judgment's formula, the resulting Rampdown would be 3,140 AFY, with a Rampdown Rate of approximately 224 AFY. Instead, the Draft BOYS calculates Rampdown by reference to Sustainable Yield and introduces alternative "Basin Optimization Yield" sub-types, which are not provided for in the Judgment. The Judgment does not authorize Basin Optimization Yield formulations that exclude feasible projects. Introducing multiple BOY constructs creates confusion and leads to Rampdown calculations that are inconsistent with the Judgment. **Proposed Revision:** Revise the Draft BOYS to define and calculate Basin Optimization Yield and Rampdown strictly in accordance with Judgment §§1.21, 1.88, and 4.10.1.4, and remove alternative BOY formulations that do not incorporate reasonably anticipated projects.
RG-4	Rob Grether	General Policy	Failure to Treat Reasonably Anticipated Basin Optimization Projects as Incorporated into BOY	Multiple, but Quoted Text from: - Executive Summary - v	Various, but Quoted Text from: - Executive Summary	*"The projects rely on other water agencies for implementation… coordination agreements between the agencies have not yet been drafted."*	The Draft BOYS understates the Basin Optimization Yield by treating Basin Optimization Projects as speculative rather than as **reasonably anticipated**, contrary to the Judgment's definition of Basin Optimization Yield. Judgment §1.21 defines Basin Optimization Yield as incorporating "reasonably anticipated enhanced yield" projected to be available by 2040 consistent with the Basin Optimization Plan. The Judgment does not require that Basin Optimization Projects be fully implemented, contractually finalized, or guaranteed at the time of the BOY Study to be incorporated into BOY. Instead, BOY is intended to reflect a forward-looking assessment based on reasonably anticipated conditions and adaptive management. By emphasizing uncertainty in project coordination and timing, the Draft BOYS implicitly discounts projects that have been selected through the Basin Optimization Plan and are actively being pursued. This framing shifts the BOY analysis away from optimization and toward speculative project failure, which is inconsistent with the Judgment's intent. **Proposed Revision:** Revise the Draft BOYS to clearly state that Basin Optimization Yield incorporates reasonably anticipated Basin Optimization Projects consistent with Judgment §1.21, and to avoid framing selected projects as speculative for purposes of BOY or Rampdown determinations.
RG-5	Rob Grether	General Editorial	Inclusion of "No Projects" Scenario Not Required by the Judgment	Multiple, but Quoted Text from: - Executive Summary - v	Various, but Quoted Text from: - Executive Summary	*"If the projects are not implemented, the BOY Study evaluated the Rampdown, and Rampdown rate for the Basin for two scenarios."*	The Judgment does not require the Basin Optimization Yield Study to analyze or develop a "no projects" scenario. The purpose of the BOYS is to determine the Basin Optimization Yield, Operating Yield, and any Rampdown consistent with the Judgment and the Basin Optimization Plan, based on reasonably anticipated conditions. While the analysis of a "no projects" scenario is appreciated as a technical exercise and provides interesting context, it is not relevant to the determination of the BOY or Rampdown under the Judgment. Inclusion of this analysis risks creating confusion by presenting speculative outcomes that are outside the scope of the BOYS and the Judgment's required findings. **Proposed Revision:** Clarify that the "no projects" analysis is informational only and not a basis for determining the Basin Optimization Yield or Rampdown, or remove the analysis from the BOYS to avoid confusion regarding its relevance under the Judgment.

Specific Comments from the Las Posas Valley Basin Policy Advisory Committee (PAC) - SORTED
Draft Las Posas Valley Basin Optimization Yield Study (BOYS) - December 2025

Comment ID	Commentor	Technical or Editorial Comment	Topic	Page Number	Section ID	Quoted Text	Comment
RG-6	Rob Grether	Policy	Actual Groundwater Extractions Do Not Support Initiation of Rampdown at This Time	Multiple, but Quoted Text from: - Executive Summary - v	Various, but Quoted Text from: - Executive Summary	*"The Rampdown Rate, which is the annual reduction in pumping required if the Rampdown is fully implemented by the fall of 2039…"*	Actual groundwater extractions during the first two full Water Years following implementation of the Judgment are well below both the Initial Operating Yield of 40,000 AFY and the modeled Basin Optimization Yield of 36,860 AFY. These observed conditions do not support initiation of Rampdown at this time. According to the Water Year 2024 Annual Report, total Basin-wide extractions were approximately**26,805 AF**, and according to the Draft Water Year 2025 Annual Report were approximately**31,122 AF**. Even under conservative assumptions that all WMIDs with incomplete reporting used their full allocations, adjusted extractions remain well below modeled yields: approximately**29,889** AF for WY 2024 and **32,738** AF for WY 2025. The Judgment expressly conditions Rampdown on necessity. Section 4.9.1.3 provides that Rampdown shall commence "if necessary" to ensure that the Operating Yield equals the Basin Optimization Yield and Sustainable Yield by 2040. The Judgment further provides for reassessment of Rampdown through the 2030 and 2035 Basin Optimization Yield Studies (§4.10.2), and includes an additional safeguard allowing interim increases to Rampdown only if required to prevent imminent Undesirable Results (§4.10.4). Given the substantial margin between observed extractions and both the Initial Operating Yield and Basin Optimization Yield, the Draft BOYS should acknowledge that current conditions do not demonstrate the necessity to initiate Rampdown at this time, consistent with the Judgment's adaptive management framework. **Proposed Revision:** Revise the Draft BOYS to explicitly consider recent extraction data and clarify that Rampdown is not presently necessary and may be reassessed in future BOY Studies pursuant to Sections 4.10.2 and 4.10.4
RG-7	Rob Grether	Editorial	Modeled Minimum Threshold Exceedances Are Not Equivalent to Undesirable Results	Multiple, but Quoted Text from: - Executive Summary - v	Various, but Quoted Text from: - Executive Summary	*"Groundwater Production at the Initial Operating Yield was determined to be unsustainable because modeled future groundwater elevations at several Key Wells… fell below the minimum threshold groundwater elevation…"*	The Draft BOYS treats modeled exceedances of Minimum Thresholds (MTs) as determinative of the need for Rampdown, without adequately distinguishing between**modeled threshold exceedances** and the occurrence of actual **Undesirable Results** as defined in the Judgment and SGMA. Minimum Thresholds are planning and monitoring tools used to evaluate trends and inform management decisions. They are not, by themselves, equivalent to Undesirable Results. The Judgment defines Undesirable Results as basin conditions that are significant and unreasonable, and it provides multiple management tools—adaptive management, Basin Optimization Projects, In Lieu Water, and localized extraction restrictions—to address emerging concerns before Rampdown becomes necessary. As demonstrated by actual extraction data for Water Years 2024 and 2025, Basin-wide pumping has been far below both the Initial Operating Yield and the modeled Basin Optimization Yield. In this context, reliance on conservative model projections alone, particularly where acknowledged model limitations exist, does not establish that Undesirable Results are occurring or are imminent. By equating modeled MT exceedances with the necessity for Rampdown, the Draft BOYS collapses an adaptive management framework into a precautionary enforcement mechanism that is not required by the Judgment. **Proposed Revision:** Revise the Draft BOYS to clearly distinguish modeled MT exceedances from actual Undesirable Results, and to clarify that Rampdown is triggered by demonstrated necessity based on observed conditions and Judgment-defined findings, not by model outputs alone

Specific Comments from the Las Posas Valley Basin Policy Advisory Committee (PAC) - SORTED
Draft Las Posas Valley Basin Optimization Yield Study (BOYS) - December 2025

Comment ID	Commentor	Technical or Editorial Comment	Topic	Page Number	Section ID	Quoted Text	Comment
RG-8	Rob Grether	General Editorial	Overstatement of Linear Rampdown Requirement to Achieve 2040 Compliance	Multiple, but Quoted Text from: - Executive Summary - v	Various, but Quoted Text from: - Executive Summary	*"The Rampdown Rate… required if the Rampdown is fully implemented by the fall of 2039…"*	The Draft BOYS overstates the requirement for immediate and linear Rampdown to achieve compliance by 2040. The Judgment does contemplate a **linear calculation method** for Rampdown if Rampdown is necessary. Specifically, Judgment §4.10.1.4 provides that the amount of any required Rampdown shall be calculated by dividing the deficit between the then-effective Operating Yield and the Basin Optimization Yield into fifteen annual increments following the 2025 BOY Study. However, this provision establishes a**calculation framework**, not a mandate that Rampdown must begin immediately or proceed linearly in all circumstances. The Judgment expressly conditions Rampdown on necessity (§4.9.1.3), provides for reassessment through subsequent BOY Studies in 2030 and 2035 (§4.10.2), and allows for interim adjustments only where required to prevent imminent Undesirable Results (§4.10.4). Read together, these provisions reflect an adaptive management approach in which linear Rampdown is applied only when warranted by actual conditions and Judgment-defined findings. By back-solving linearly from the 2040 endpoint and presenting early Rampdown as a default pathway, the Draft BOYS risks implying an obligation that exceeds what the Judgment requires and may not reflect current basin conditions. **Proposed Revision:** Revise the Draft BOYS to clarify that while the Judgment provides a linear method for calculating Rampdown if necessary, the initiation, timing, and magnitude of Rampdown remain conditional and subject to demonstrated necessity and periodic reassessment pursuant to the Judgment
RG-1	Rob Grether	General Policy	Improper Introduction of "Differential Rampdown" Contrary to Judgment §4.10.3	Multiple, but Quoted Text from: - Executive Summary - v - 19	Various, but Quoted Text from: - Executive Summary - 3.4.2	*"In the second scenario, referred to as the Differential Rampdown Scenario, the Rampdown differed by management area."* *"although not specified in the Judgment, this BOY Study considers a Differential Rampdown Scenario…"*	The Draft Basin Optimization Yield Study introduces a "Differential Rampdown" concept that applies non-uniform reductions in groundwater production by Management Area. This approach is**not authorized by the Judgment** and misinterprets **Judgment §4.10.3**. Under the Judgment, **Rampdown is a single, basinwide mechanism** that adjusts the Operating Yield and Annual Allocations uniformly pursuant to Section 4.10. Section 4.10.3 does not authorize differential or Management Area–specific reductions in Allocations. Instead, it provides a**separate and limited authority** for Watermaster, following Committee Consultation and specific findings, to impose**localized restrictions on physical Extractions** from certain wells or areas where Undesirable Results are occurring or are likely to occur. Critically, §4.10.3 preserves Allocation rights by allowing affected Water Right Holders to extract their Annual Allocation outside the Restriction Area or to transfer Allocation Basis pursuant to Section 4.12. Localized extraction restrictions therefore regulate**where groundwater may be pumped**, not **how much water a Water Right Holder is entitled to use**. By framing localized extraction controls as a "Differential Rampdown," the Draft BOYS improperly conflates two distinct Judgment mechanisms and has the effect of converting site-specific extraction management into a de facto reallocation of groundwater rights, which the Judgment does not permit. **Proposed Revision:** Remove or revise all references to "Differential Rampdown" to clearly distinguish basinwide Rampdown of Allocations under Section 4.10 from localized restrictions on Extractions under Section 4.10.3, and to clarify that the Judgment does not authorize non-uniform Rampdown or differential allocation reductions by Management Area
JM-3	JMenne	General Policy	Communication to Stakeholders	N/A	N/A	*N/A*	PAC should consider ways to effectively communicate the study's findings and recommendations to educate/update the stakeholders of the LPV Water Basin performance, challenges, and what is being done by FCGMA, PAC and TAC to improve the sustainability and cost effective access to their water resource.
RC-4	RCavaletto	General Policy	Economic Considerations	NA	NA		This was disucssed in our last PAC mtg and I believe Ian or Rob maybe drafting a statement regarding the issue of economic impacts of the different scenarios. While this report may not be the appropriate place to do the analysis, it is essential that an economic anaylis be completed for the different scenarios so water users can anticipate the additional costs they may be facing in order to meet the objective of keeping the basin operating yield at 40,000 AFY.
RC-1	RCavaletto	Editorial	Number senarios evaluated.	v	Executive Summary	*The scenarios evaluated included. . . scenarios.*	number each of the scenarios to make it easer to follow.

Specific Comments from the Las Posas Valley Basin Policy Advisory Committee (PAC) - SORTED
Draft Las Posas Valley Basin Optimization Yield Study (BOYS) - December 2025

Comment ID	Commentor	Technical or Editorial Comment	Topic	Page Number	Section ID	Quoted Text	Comment
RC-2	RCavaletto	Misc	Rampdown rate	v	Executive Summary	*4th Paragraph.*	What happens if the projects can't be implemented for some extended time, say "5 years". Is the rampdown rate (8,000 ac/ft /9 years) still a valid approach? How long do the projects need to be active before 2039 (14 years?) to insure the 40,000 AFY Operating Yield will be valid in 2040?

LAS POSAS VALLEY WATERMASTER RESPONSE REPORT

Date: March 18, 2026

To: Las Posas Valley Watermaster Board of Directors

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

Re: Response Report to PAC Recommendation Report – Draft Las Posas Valley Basin Optimization Yield Study

The Las Posas Valley (LPV) Watermaster (Watermaster) requested consultation from the LPV Policy Advisory Committee (PAC) on the draft Basin Optimization Yield Study (BOY Study or BOYS). Watermaster's request was transmitted in a December 17, 2025, memorandum to PAC. Watermaster requested two previous TAC consultations regarding the BOY Study which guided preparation of the draft BOY Study:

- December 23, 2024, request for consultation on the BOY Study schedule (January 22, 2025, PAC verbal comments at Watermaster Board meeting)
- April 3, 2025, request for consultation on preferred modeling alternatives and impacts to schedule (May 15, 2025, PAC recommendation report)

The PAC discussed and developed its recommendation report at its January 15, 2026, and February 5, 2026, regular meetings. PAC's February 5, 2026 (received February 24, 2026), recommendation report included four recommendations. Each of these recommendations is listed below followed by Watermaster response. Watermaster appreciates PAC's review of the draft BOY Study and recommendations.

RECOMMENDATION 1: Apply the BOYS Strictly as Defined in the Judgment; Initiate Rampdown Only Where Necessary to Achieve the 2040 Endpoint

Section 1.22 of the Judgment defines the Basin Optimization Yield Study (BOYS) as a five-year process used to set the Basin Optimization Yield, the Operating Yield, and any Rampdown Rate. The BOYS is one part of the Judgment's overall approach to achieving sustainable groundwater management by 2040.

Section 4.9.1.3 of the Judgment provides that Rampdown of the Operating Yield is to begin if necessary to ensure that the Operating Yield in Water Year 2040 equals both the Sustainable Yield and the Basin Optimization Yield. Sections 4.10.1.4 and 4.10.2 describe how Rampdown is to be calculated and revisited if Rampdown is required, but they do not eliminate the initial determination of whether Rampdown is needed at the time of the BOYS.

While the Judgment requires that the Operating Yield and Basin Optimization Yield align by 2040, it does not require Rampdown to begin automatically simply because the Basin Optimization Yield is lower than the current Operating Yield. Rampdown is required only where other management tools authorized by the Judgment are not sufficient to meet the 2040 requirement.

Based on current basin conditions and the status of reasonably anticipated Basin Optimization Projects, the available record does not show that starting Rampdown at this time is necessary under Section 4.9.1.3 of the Judgment.

Recommendation
Watermaster should revise and implement the BOYS in a manner that recognizes the 2040 alignment requirement, but clearly states that Rampdown should begin only if needed after considering other Judgment-authorized management tools. The BOYS should not assume Rampdown unless the need for it is clearly demonstrated.

Response to Recommendation 1:
The BOY Study has been revised to clarify that numerical modeling forecasts that Rampdown is unnecessary if Basin Optimization Plan Project 2 (Purchase of Imported Water from CMWD for Basin Replenishment) is fully implemented as scheduled. However, if Project 2 is not fully implemented as scheduled, then Rampdown would be required so that the Operating Yield equals the sustainable yield by fall of 2039. Additionally, the BOY Study finds that if Project 5 (Arroyo Simi-Las Posas Water Acquisition) is not implemented and the City of Simi Valley reduces discharges to the Arroyo Simi, then Rampdown may be required. Ongoing monitoring of the Key Wells will confirm that measured groundwater elevations are consistent with forecasted groundwater elevations simulated by the numerical models to provide assurance that undesirable results will not occur after 2040.

RECOMMENDATION 2: Prioritize In-Lieu Water and Other Non-Allocational Tools Management Tools
Section 5 of the Judgment expressly authorizes the use of in-lieu water deliveries to reduce groundwater pumping while preserving water right allocations. Past basin conditions demonstrate that groundwater levels have recovered when pumping was reduced through in-lieu deliveries rather than through allocation reductions.

In-lieu water and similar non-allocational tools are efficient, lower-risk, and consistent with both the Basin Optimization Plan and the Judgment's structure, which favors operational and project- based solutions before allocation-based reductions.

Recommendation
Watermaster should prioritize implementation and use of in-lieu water deliveries and other non-allocational management tools authorized by the Judgment and should incorporate their reasonably anticipated effects into the BOYS before initiating allocation-based Rampdown.

Response to Recommendation 2:
The BOY Study Projects Scenario includes the projects selected for the Basin Optimization Plan that include sufficient information that the project benefits can be quantified for numerical modeling. These are Project 2 (Purchase of Imported Water from CMWD for Basin Replenishment) and Project 5 (Arroyo Simi-Las Posas Water Acquisition). Watermaster is working with CMWD on a fee structure for the purchase of imported water and once finalized will be working with the CMWD and the purveyors on the mechanism for the project. Additionally, Watermaster is working on development of the additional projects selected for the Basin Optimization Plan. These are Project 8 (Allocation Buyback and Reduction Program), Project 7 (In Lieu Deliveries to Northern East Las Posas Feasibility

Study), and Project 9 (Regional Desalter Feasibility Study). Watermaster anticipates that Project 8 will be included numerical modeling forecasts for the next BOY Study, which must be completed by February 1, 2030. Projects 7 and 9 are feasibility studies, the findings of which will inform whether these projects will be included in the 2030 BOY Study. Watermaster is currently soliciting proposals from qualified firms to conduct Project 7. At the same time, given that ELPMA lies completely within CMWD service area and that CMWD has a regional feasibility study similar to Project 9 which requires the same or similar stakeholders, Watermaster is working to collaborate with CMWD on this project. Such collaboration will avoid duplication of work and potentially result in some cost savings.

RECOMMENDATION 3: Do Not Apply Differential Rampdown; Distinguish Allocation Changes from Extraction Controls

Under the Judgment, Rampdown is a single, basin wide mechanism that adjusts the Operating Yield and resulting Annual Allocations uniformly. Section 4.10 of the Judgment governs this process.

Section 4.10.3 of the Judgment does not authorize different Rampdown rates or allocation reductions by management area. Instead, it allows Watermaster, under specific conditions and following Committee Consultation, to impose localized restrictions on physical groundwater extraction in areas where Undesirable Results are occurring or are likely to occur.

These localized extraction restrictions regulate where groundwater may be pumped, not how much water a Water Right Holder is entitled to use. Allocation rights are preserved through the ability to pump outside the restricted area or to transfer allocation basis. Referring to these tools as "Differential Rampdown" conflates two separate mechanisms and implies a reallocation of water rights that the Judgment does not authorize.

Recommendation

Watermaster should remove or revise references to "Differential Rampdown" and clearly distinguish basinwide allocation-based Rampdown from localized extraction controls authorized under Section 4.10.3 of the Judgment.

Response to Recommendation 3:

The Differential Rampdown Scenario was developed and modeled based on a specific Technical Advisory Committee (TAC) recommendation. The term "differential rampdown," as used in the BOYS, refers to localized restrictions on extractions that could be implemented pursuant to Section 4.10.3 of the Judgment to ensure sustainable management and maintain an Operating Yield as close to 40,000 AFY as possible. The scenarios, both Basin-wide and Differential, were modeled to provide both the Watermaster Board and Water Right Holders with an understanding of the reduction in groundwater production that would be necessary to reach sustainable conditions if the projects are not implemented. Decisions regarding Rampdown and localized restrictions, if any, are outside the scope of the BOY Study.

RECOMMENDATION 4: Base Rampdown Decisions on Demonstrated Need and Observed Basin Conditions

Actual groundwater extractions during the first two full Water Years following implementation of the Judgment have been well below both the Initial Operating Yield and the modeled Basin Optimization

Yield. In this context, modeled exceedances of Minimum Thresholds should be treated as planning indicators, not as proof that Undesirable Results are occurring or imminent.

The Judgment's adaptive management approach requires that Rampdown decisions be based on demonstrated need, informed by observed basin conditions and sufficiently complete and reliable data, and revisited through future Basin Optimization Yield Studies as conditions evolve.

Recommendation
Watermaster should base any decision to initiate Rampdown on demonstrated necessity supported by observed basin conditions, rather than on speculative scenarios or model outputs alone, and should reassess the need for Rampdown through future BOYS updates consistent with the Judgment.

Response to Recommendation 4:
Judgment Section 4.10 clearly states that the BOY Study will establish the Basin Optimization Yield and establish the need for Rampdown, and the Rampdown Rate for the next five years, if the Basin Optimization Yield is less than the initial Operating Yield of 40,000 acre-feet per year. The two numerical models were determined to be the best available tools to establish the Basin Optimization Yield. Watermaster notes that PAC "concurs with Watermaster and Dudek that the alternative providing for the use of the Estimation for the BOY [Basin Optimization Yield] Using the UWCD [United Water Conservation District] Periodic Evaluation Model Files to Run New Scenarios is the most favorable approach" (PAC May 15, 2025, recommendation report).

Watermaster agrees that groundwater elevations measured at Key Wells is the basis for determining if Undesirable Results are occurring in the Basin. PAC is correct that reported groundwater extractions over the first two water years following Judgment implementation have been less than the initial Operating Yield. However, groundwater elevations have been below the minimum thresholds at one or two Key Wells when measured in water years 2024 and 2025 indicating that Undesirable Results are occurring. These wells are in the West Las Posas Management Area of the Basin. In the northern portion of the East Las Posas Management Area of the Basin, groundwater elevations continue to exhibit a long-term non-sustainable decline.

The BOY Study text has been revised to provide clarity that ongoing monitoring of the Key Wells will confirm that measured groundwater elevations are consistent with forecasted groundwater elevations simulated by the numerical models to provide assurance that undesirable results will not occur after 2040. Watermaster will exercise adaptive management based on the findings of ongoing groundwater monitoring. Further, the Basin Optimization Yield will be re-evaluated in 2030 and 2035 BOY Studies, as required by the Judgment. The 2030 BOY Study must be completed by February 1, 2030.

Specific Comments from the Las Posas Valley Basin Policy Advisory Committee (PAC) - SORTED Draft Las Posas Valley Basin Optimization Yield Study (BOYS) - December 2025

Comment ID	Commentor	Technical or Editorial Comment	Topic	Page Number	Section ID	Quoted Text	Comment	Watermaster Response
CN-1 (commentor initials and comment number)	Commentor Name	General Technical, General Editorial, Technical, Editorial, etc.	Simple description of comment topic	Page number as it appears in document	Section number with as much detaill as possible, including paragraph and line whenever practicle	*Text from document in italics for identification*	Comment with as much detail as possible/necessary.	
RC-3	RCavaletto	Misc	Rampdown period	3	1.3	*Rampdown was calculated over a 13-year period*	The Executive Summary says 14 years. Which is correct?	14 years is correct. Text revised.
DS-1	DSchwabauer	General Editorial	clarification of purchase or lease of water	8	3.1.3	*The Arroyo Simi-Las Posas Water Acquisition project would involve the purchase or lease of recycled water from the City of Simi Valley to continue discharging the water from its shallow dewatering wells and/or the Simi Valley Water Quality Control Plant to the Arroyo Simi for downstream recharge to the Basin (FCGMA 2025a).*	This sentence needs further clarification as to the purchase or lease of water. Price will be extremely important. As well how long a purchase contract will/can last and/or how long a lease continue for.	The Arroyo Simi-Las Posas Water Acquisition Project is discussed in detail in the Basin Optimization Plan (BOP). The BOYS purpose is to estimate the Basin Optimization Yield based on the projects selected in the BOP. Evaluation of the purchase/lease and costs are beyond the scope of the BOYS.
DS-2	DSchwabauer	General Editorial	needed validation on Epworth Gravels	13	3.2.3.1	*In the Epworth Gravels Management Area, simulated groundwater elevations rose throughout the 47-year model time period (Figure 3.5).*	The beginning sentence about the Epworth Gravels is very misleading. It is well documented from historic pumping records that the Epworth Gravels water level has in general declined over the past 50 years, I say this as a pumper who has witnessed water level decline in our own wells in the Epworth.	Commenter is correct regarding historical groundwater levels. The BOYS notes that the projected future groundwater levels simulated by the numerical model are not anticipated to reflect actual conditions in the Epworth Gravels. The text explains the two reasons why the model does not accurately predict future groundwater levels in the Epworth Gravels.
DS-3	DSchwabauer	General Editorial	impacts unknown to date	13	3.2.3.1	*First, not all groundwater producers with wells in the Epworth Gravels Management Area received an allocation in the Judgement (Figure 3-4).*	The full impact of this allocation change is unknown; at this time there has not yet been a ruling by the court.	Comment noted.
DS-4	DSchwabauer	General Editorial	validation of the In-lue project	13	3.2.3.1	*When wells were rested in the Epworth Gravels Management Area, the groundwater elevations recovered. Both the GSP and the First Periodic Evaluation anticipated that adaptive management would occur, through pumping reductions in Epworth Gravels Management Area wells, as necessary, to maintain groundwater elevations between the minimum threshold and measurable objective.*	From my perspective, these ending sentences clearly encapsulate the water usage patterns of the Epworth Gravels Management Area. The key takeaway from this resting of pumping of the Epworth Gravels clearly illustrates the benefit of the In-lue water purchase program. In my opinion, this demonstrates the high value of In-lue water usage to the basin, which benefits everyone in both the East and West Las Posas.	Comment noted.
JM-2	JMenne	General Policy	Postpone Rampdown	15	3.3	*Discussed in entire Section 3.3.*	Given the Projects Scenario yielded adequate production (36,860 AF/Y) without undesirable effects, combined with the high amount of carryover developed during the last 2 water years, postponing rampdown until the next BOYS is drafted seems reasonable and would be beneficial to the Basin's users.	Based on PAC and TAC recommendations, the BOYS has been revised to clarify that modeling indicates that rampdown is not needed if the two projects are implemented as proposed in the BOP.
JM-1	JMenne	General Policy	Implement Calleguas In Lieu asap	26	3.1.3	*Discussed in entire Section 3.1.3*	Efficient, tested, low risk Project to increase Basin production. PAC should continue pressing to implement this Project, hopefully to start 2026Q3 when CMWD rates are lower.	Watermaster agrees that the in-lieu project should be implemented in a timely manner.
RG-2	Rob Grether	General Editorial	Conflation of Allocation Reductions with Extraction Controls	Multiple, but Quoted Text from: - Executive Summary - v	Various, but Quoted Text from: - Executive Summary	*"Under this scenario, groundwater production was reduced by 3,683 AFY in the WLPMA, 4,112 AFY in the ELPMA, and 205 AFY in the Epworth Gravels Management Area."*	The Draft BOYS frequently conflates **reductions in groundwater extraction** with **reductions in Allocations**, creating confusion regarding the legal effect of Rampdown under the Judgment. Under the Judgment, Allocations represent the legal entitlement to use groundwater, while extraction controls regulate where and how groundwater may be physically pumped. Rampdown adjusts the Operating Yield and resulting Annual Allocations on a basinwide basis, whereas localized extraction restrictions under Judgment §4.10.3 regulate physical pumping locations without reducing Allocation rights. By describing Rampdown primarily in terms of "production" or "pumping" reductions by Management Area, the Draft BOYS obscures this distinction and risks implying that Rampdown is an operational control rather than an allocation adjustment. This framing is particularly confusing for Water Right Holders whose Allocations may be exercised through alternative extraction locations, transfers, or other Judgment- authorized mechanisms.	Text has been revised to clarify that the "Differential Rampdown" scenario was modeled for informational purposes relevant to Section 4.10.3 of the Judgment. The BOYS is a technical document, and as such, does not provide policy recommendations.

Specific Comments from the Las Posas Valley Basin Policy Advisory Committee (PAC) - SORTED Draft Las Posas Valley Basin Optimization Yield Study (BOYS) - December 2025

Comment ID	Commentor	Technical or Editorial Comment	Topic	Page Number	Section ID	Quoted Text	Comment	Watermaster Response
							Proposed Revision: Revise the Draft BOYS to clearly distinguish allocation adjustments from extraction controls, and to ensure that discussion of Rampdown consistently reflects its effect on Allocations rather than physical extraction locations.	
RG-3	Rob Grether	Editorial	Incorrect Definition and Calculation of Basin Optimization Yield and Rampdown	Multiple, but Quoted Text from: - Executive Summary - v	Various, but Quoted Text from: - Executive Summary	*"The Rampdown is the difference between the Initial Operating Yield and this Sustainable Yield."*	The Draft BOYS misdefines and misapplies the Judgment's terms for **Basin Optimization Yield** and **Rampdown**, resulting in incorrect Rampdown magnitudes and Rampdown Rates. Under the Judgment, Rampdown is calculated as the difference between the**then-effective Operating Yield** and the **Basin Optimization Yield**, not the difference between the Initial Operating Yield and the Sustainable Yield. Judgment §4.10.1.4 expressly provides that the annual Rampdown equals the deficit between the Operating Yield (e.g., 40,000 AFY) and the Basin Optimization Yield, divided into fifteen annual increments. The Draft BOYS states that the Basin Optimization Yield incorporating projects is 36,860 AFY; however, it does not consistently use this value for Rampdown calculations. Applying the Judgment's formula, the resulting Rampdown would be 3,140 AFY, with a Rampdown Rate of approximately 224 AFY. Instead, the Draft BOYS calculates Rampdown by reference to Sustainable Yield and introduces alternative "Basin Optimization Yield" sub-types, which are not provided for in the Judgment. The Judgment does not authorize Basin Optimization Yield formulations that exclude feasible projects. Introducing multiple BOY constructs creates confusion and leads to Rampdown calculations that are inconsistent with the Judgment. **Proposed Revision:** Revise the Draft BOYS to define and calculate Basin Optimization Yield and Rampdown strictly in accordance with Judgment §§1.21, 1.88, and 4.10.1.4, and remove alternative BOY formulations that do not incorporate reasonably anticipated projects	The Executive Summary has been completely revised. Text discussing rampdown has also been revised in the body text. Definition of Basin Optimization Yield quote the Judgment definition in Section 1.21 and 1.88. Revisions have been made for clarification.
RG-4	Rob Grether	General Policy	Failure to Treat Reasonably Anticipated Basin Optimization Projects as Incorporated into BOY	Multiple, but Quoted Text from: - Executive Summary - v	Various, but Quoted Text from: - Executive Summary	*"The projects rely on other water agencies for implementation… coordination agreements between the agencies have not yet been drafted."*	The Draft BOYS understates the Basin Optimization Yield by treating Basin Optimization Projects as speculative rather than as **reasonably anticipated**, contrary to the Judgment's definition of Basin Optimization Yield. Judgment §1.21 defines Basin Optimization Yield as incorporating "reasonably anticipated enhanced yield" projected to be available by 2040 consistent with the Basin Optimization Plan. The Judgment does not require that Basin Optimization Projects be fully implemented, contractually finalized, or guaranteed at the time of the BOY Study to be incorporated into BOY. Instead, BOY is intended to reflect a forward-looking assessment based on reasonably anticipated conditions and adaptive management. By emphasizing uncertainty in project coordination and timing, the Draft BOYS implicitly discounts projects that have been selected through the Basin Optimization Plan and are actively being pursued. This framing shifts the BOY analysis away from optimization and toward speculative project failure, which is inconsistent with the Judgment's intent.	The BOYS text has been revised, and the estimate of Basin Optimization Yield, to be based on the assumption that the two projects selected in the Basin Optimization Plan (BOP) will be implemented as presented in the BOP.

Specific Comments from the Las Posas Valley Basin Policy Advisory Committee (PAC) - SORTED Draft Las Posas Valley Basin Optimization Yield Study (BOYS) - December 2025

Comment ID	Commentor	Technical or Editorial Comment	Topic	Page Number	Section ID	Quoted Text	Comment	Watermaster Response
							Proposed Revision: Revise the Draft BOYS to clearly state that Basin Optimization Yield incorporates reasonably anticipated Basin Optimization Projects consistent with Judgment §1.21, and to avoid framing selected projects as speculative for purposes of BOY or Rampdown determinations	
RG-5	Rob Grether	General Editorial	Inclusion of "No Projects" Scenario Not Required by the Judgment	Multiple, but Quoted Text from: - Executive Summary - v	Various, but Quoted Text from: - Executive Summary	*"If the projects are not implemented, the BOY Study evaluated the Rampdown, and Rampdown rate for the Basin for two scenarios."*	The Judgment does not require the Basin Optimization Yield Study to analyze or develop a "no projects" scenario. The purpose of the BOYS is to determine the Basin Optimization Yield, Operating Yield, and any Rampdown consistent with the Judgment and the Basin Optimization Plan, based on reasonably anticipated conditions. While the analysis of a "no projects" scenario is appreciated as a technical exercise and provides interesting context, it is not relevant to the determination of the BOY or Rampdown under the Judgment. Inclusion of this analysis risks creating confusion by presenting speculative outcomes that are outside the scope of the BOYS and the Judgment's required findings. **Proposed Revision:** Clarify that the "no projects" analysis is informational only and not a basis for determining the Basin Optimization Yield or Rampdown, or remove the analysis from the BOYS to avoid confusion regarding its relevance under the Judgment.	Text has been revised throughout to state that if the projects are fully implemented as scheduled, numerical modeling forecasts that Rampdown is unnecessary to maintain a Basin Optimization Yield of 40,000 AFY. Text has been revised in Section 5, Rampdown Rate, that "It should be noted again that the Rampdown calculations in this initial BOY Study, as shown in Table 5-1, are provided for informational purposes for consideration by the Watermaster Board of Directors should the projects not be implemented in a timely manner."
RG-6	Rob Grether	Policy	Actual Groundwater Extractions Do Not Support Initiation of Rampdown at This Time	Multiple, but Quoted Text from: - Executive Summary - v	Various, but Quoted Text from: - Executive Summary	*"The Rampdown Rate, which is the annual reduction in pumping required if the Rampdown is fully implemented by the fall of 2039…"*	Actual groundwater extractions during the first two full Water Years following implementation of the Judgment are well below both the Initial Operating Yield of 40,000 AFY and the modeled Basin Optimization Yield of 36,860 AFY. These observed conditions do not support initiation of Rampdown at this time. According to the Water Year 2024 Annual Report, total Basin-wide extractions were approximately**26,805 AF**, and according to the Draft Water Year 2025 Annual Report were approximately**31,122 AF**. Even under conservative assumptions that all WMIDs with incomplete reporting used their full allocations, adjusted extractions remain well below modeled yields: approximately**29,889** AF for WY 2024 and **32,738** AF for WY 2025. The Judgment expressly conditions Rampdown on necessity. Section 4.9.1.3 provides that Rampdown shall commence "if necessary" to ensure that the Operating Yield equals the Basin Optimization Yield and Sustainable Yield by 2040. The Judgment further provides for reassessment of Rampdown through the 2030 and 2035 Basin Optimization Yield Studies (§4.10.2), and includes an additional safeguard allowing interim increases to Rampdown only if required to prevent imminent Undesirable Results (§4.10.4). Given the substantial margin between observed extractions and both the Initial Operating Yield and Basin Optimization Yield, the Draft BOYS should acknowledge that current conditions do not demonstrate the necessity to initiate Rampdown at this time, consistent with the Judgment's adaptive management framework. **Proposed Revision:** Revise the Draft BOYS to explicitly consider recent extraction data and clarify that Rampdown is not presently necessary and may be reassessed in future BOY Studies pursuant to Sections 4.10.2 and 4.10.4.	Watermaster agrees that there is uncertainty regarding the amount and distribution of extractions in the Basin. When the numerical groundwater modeling was conducted for the BOYS, there was only a single water year of reported extractions available. The Judgment allocations were distributed based on the methodology discussed in section 3.2.2.1. TAC concurred with this methodology. Text has also been revised to identify a further unknown regarding Carryover of unused allocation. Watermaster also agrees with commentor's identification of Basin conditions will drive consideration of the need for rampdown. Text has been revised to clarify that ongoing monitoring of Key Wells will confirm that measured groundwater elevations are consistent with forecasted groundwater elevations simulated by the numerical models and that the Basin Optimization Yield must be re-evaluated in 2030 and 2035, and could be re-evaluated earlier, if necessary.

Specific Comments from the Las Posas Valley Basin Policy Advisory Committee (PAC) - SORTED Draft Las Posas Valley Basin Optimization Yield Study (BOYS) - December 2025

Comment ID	Commentor	Technical or Editorial Comment	Topic	Page Number	Section ID	Quoted Text	Comment	Watermaster Response
RG-7	Rob Grether	Editorial	Modeled Minimum Threshold Exceedances Are Not Equivalent to Undesirable Results	Multiple, but Quoted Text from: - Executive Summary - v	Various, but Quoted Text from: - Executive Summary	*"Groundwater Production at the Initial Operating Yield was determined to be unsustainable because modeled future groundwater elevations at several Key Wells… fell below the minimum threshold groundwater elevation…"*	The Draft BOYS treats modeled exceedances of Minimum Thresholds (MTs) as determinative of the need for Rampdown, without adequately distinguishing between**modeled threshold exceedances** and the occurrence of actual **Undesirable Results** as defined in the Judgment and SGMA. Minimum Thresholds are planning and monitoring tools used to evaluate trends and inform management decisions. They are not, by themselves, equivalent to Undesirable Results. The Judgment defines Undesirable Results as basin conditions that are significant and unreasonable, and it provides multiple management tools—adaptive management, Basin Optimization Projects, In Lieu Water, and localized extraction restrictions—to address emerging concerns before Rampdown becomes necessary. As demonstrated by actual extraction data for Water Years 2024 and 2025, Basin-wide pumping has been far below both the Initial Operating Yield and the modeled Basin Optimization Yield. In this context, reliance on conservative model projections alone, particularly where acknowledged model limitations exist, does not establish that Undesirable Results are occurring or are imminent. By equating modeled MT exceedances with the necessity for Rampdown, the Draft BOYS collapses an adaptive management framework into a precautionary enforcement mechanism that is not required by the Judgment. **Proposed Revision:** Revise the Draft BOYS to clearly distinguish modeled MT exceedances from actual Undesirable Results, and to clarify that Rampdown is triggered by demonstrated necessity based on observed conditions and Judgment-defined findings, not by model outputs alone	California Code of Regulations, Title 23, Division 2, Chapter 1.5, Subchapter 2, defines minimum threshold as a numeric value for each sustainability indicator used to define undesirable results. The Groundwater Sustainability Plan for the Basin established the minimum thresholds that define when undesirable results are occurring in the Basin.
RG-8	Rob Grether	General Editorial	Overstatement of Linear Rampdown Requirement to Achieve 2040 Compliance	Multiple, but Quoted Text from: - Executive Summary - v	Various, but Quoted Text from: - Executive Summary	*"The Rampdown Rate… required if the Rampdown is fully implemented by the fall of 2039…"*	The Draft BOYS overstates the requirement for immediate and linear Rampdown to achieve compliance by 2040. The Judgment does contemplate a **linear calculation method** for Rampdown if Rampdown is necessary. Specifically, Judgment §4.10.1.4 provides that the amount of any required Rampdown shall be calculated by dividing the deficit between the then-effective Operating Yield and the Basin Optimization Yield into fifteen annual increments following the 2025 BOY Study. However, this provision establishes a**calculation framework**, not a mandate that Rampdown must begin immediately or proceed linearly in all circumstances. The Judgment expressly conditions Rampdown on necessity (§4.9.1.3), provides for reassessment through subsequent BOY Studies in 2030 and 2035 (§4.10.2), and allows for interim adjustments only where required to prevent imminent Undesirable Results (§4.10.4). Read together, these provisions reflect an adaptive management approach in which linear Rampdown is applied only when warranted by actual conditions and Judgment-defined findings. By back-solving linearly from the 2040 endpoint and presenting early Rampdown as a default pathway, the Draft BOYS risks implying an obligation that exceeds what the Judgment requires and may not reflect current basin conditions.	Text has been revised throughout to state that if the projects are fully implemented as scheduled, numerical modeling forecasts that Rampdown is unnecessary to maintain a Basin Optimization Yield of 40,000 AFY. Additionally, text has been revised to clarify that ongoing monitoring of Key Wells will confirm that measured groundwater elevations are consistent with forecasted groundwater elevations simulated by the numerical models and that the Basin Optimization Yield must be re-evaluated in 2030 and 2035, and could be re-evaluated earlier, if necessary.

Specific Comments from the Las Posas Valley Basin Policy Advisory Committee (PAC) - SORTED Draft Las Posas Valley Basin Optimization Yield Study (BOYS) - December 2025

Comment ID	Commentor	Technical or Editorial Comment	Topic	Page Number	Section ID	Quoted Text	Comment	Watermaster Response
							Proposed Revision: Revise the Draft BOYS to clarify that while the Judgment provides a linear method for calculating Rampdown if necessary, the initiation, timing, and magnitude of Rampdown remain conditional and subject to demonstrated necessity and periodic reassessment pursuant to the Judgment	
RG-1	Rob Grether	General Policy	Improper Introduction of "Differential Rampdown" Contrary to Judgment §4.10.3	Multiple, but Quoted Text from: - Executive Summary - v - 19	Various, but Quoted Text from: - Executive Summary - 3.4.2	*"In the second scenario, referred to as the Differential Rampdown Scenario, the Rampdown differed by management area."* *"although not specified in the Judgment, this BOY Study considers a Differential Rampdown Scenario…"*	The Draft Basin Optimization Yield Study introduces a "Differential Rampdown" concept that applies non- uniform reductions in groundwater production by Management Area. This approach is**not authorized by the Judgment** and misinterprets **Judgment §4.10.3**. Under the Judgment, **Rampdown is a single, basinwide mechanism** that adjusts the Operating Yield and Annual Allocations uniformly pursuant to Section 4.10. Section 4.10.3 does not authorize differential or Management Area–specific reductions in Allocations. Instead, it provides a **separate and limited** **authority** for Watermaster, following Committee Consultation and specific findings, to impose **localized restrictions on physical Extractions** from certain wells or areas where Undesirable Results are occurring or are likely to occur. Critically, §4.10.3 preserves Allocation rights by allowing affected Water Right Holders to extract their Annual Allocation outside the Restriction Area or to transfer Allocation Basis pursuant to Section 4.12. Localized extraction restrictions therefore regulate **where groundwater may be pumped**, not **how much water a Water Right Holder is entitled to use**. By framing localized extraction controls as a "Differential Rampdown," the Draft BOYS improperly conflates two distinct Judgment mechanisms and has the effect of converting site-specific extraction management into a de facto reallocation of groundwater rights, which the Judgment does not permit. **Proposed Revision:** Remove or revise all references to "Differential Rampdown" to clearly distinguish basinwide Rampdown of Allocations under Section 4.10 from localized restrictions on Extractions under Section 4.10.3, and to clarify that the Judgment does not authorize non-uniform Rampdown or differential allocation reductions by Management Area	Please see response to RG-2.
JM-3	JMenne	General Policy	Communication to Stakeholders	N/A	N/A	*N/A*	PAC should consider ways to effectively communicate the study's findings and recommendations to educate/update the stakeholders of the LPV Water Basin performance, challenges, and what is being done by FCGMA, PAC and TAC to improve the sustainability and cost effective access to their water resource.	Comment noted.
RC-4	RCavaletto	General Policy	Economic Considerations	NA	NA		This was disucssed in our last PAC mtg and I believe Ian or Rob maybe drafting a statement regarding the issue of economic impacts of the different scenarios. While this report may not be the appropriate place to do the analysis, it is essential that an economic anaylis be completed for the different scenarios so water users can anticipate the additional costs they may be facing in order to meet the objective of keeping the basin operating yield at 40,000 AFY.	Comment noted.
RC-1	RCavaletto	Editorial	Number senarios evaluated.	v	Executive Summary	*The scenarios evaluated included. . . scenarios.*	number each of the scenarios to make it easer to follow.	Text has been extensively rewritten for clarity rendering the need for scenario numbering unnecessary.

Specific Comments from the Las Posas Valley Basin Policy Advisory Committee (PAC) - SORTED Draft Las Posas Valley Basin Optimization Yield Study (BOYS) - December 2025

Comment ID	Commentor	Technical or Editorial Comment	Topic	Page Number	Section ID	Quoted Text	Comment	Watermaster Response
RC-2	RCavaletto	Misc	Rampdown rate	v	Executive Summary	*4th Paragraph.*	What happens if the projects can't be implemented for some extended time, say "5 years". Is the rampdown rate (8,000 ac/ft /9 years) still a valid approach? How long do the projects need to be active before 2039 (14 years?) to insure the 40,000 AFY Operating Yield will be valid in 2040?	The BOYS is a technical document to provide the Watermaster Board with the technical basis for consideration of policy including consideration of implementation of rampdown. The modeling scenarios did not evaluate how long the projects need to be active before 2039 to provide assurance of a 40,000 AFY Operating Yield in 2040. However, ongoing groundwater monitoring at the Key Wells will be compared with the projected groundwater elevations simulated by the numerical model and be used to evaluate whether undesirable results are occurring and the need for rampdown.

February 3, 2026

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, Draft Basin Optimization Yield Study Report

The Las Posas Valley Watermaster Technical Advisory Committee (TAC) provides this Recommendation Report regarding the draft Basin Optimization Yield Study in response to a committee consultation request transmitted to the TAC on December 17, 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 calculate the pumping rampdown to achieve sustainable groundwater management by 2040. A draft of the Las Posas Valley Basin Optimization Yield Study was provided to the TAC for review. This followed previous TAC review of preliminary model scenario results for the simulations included in the BOY Study in the summer of 2025. TAC prepared and submitted a Recommendation Report presenting comments and recommendations on the preliminary model scenario results on September 16, 2025. In preparation of the draft BOY Study, the Watermaster considered and incorporated comments and recommendations the TAC provided after reviewing the preliminary model scenario results.

The draft BOY Study follows coordination and consultation between the Watermaster, Dudek, and the TAC regarding the methods for assessing basin yield and initial results of those assessments. The Watermaster requested TAC recommendations or comments on the draft and the TAC discussed and reviewed the draft BOY Study in meetings on January 6 and 20, 2026. TAC comments and recommendations following review of the draft BOY Study are summarized in this Recommendation Report. Detailed TAC comments and editorial suggestions are also attached in tabular format organized by TAC member, comment type and topic, and draft BOY Study page and section to provide additional information and assist the Watermaster in tracking and responding to comments.

The draft BOY Study represents a significant effort on the part of the Watermaster and their groundwater consultant, Dudek. The TAC appreciates the considerate approach both parties have taken in analyzing optimized yield in the Las Posas Valley Basin (LPVB) and presenting a thorough report summarizing the work.

The TAC reviewed this Recommendation Report and voted to approve it in a regular meeting on February 3, 2026.

TAC RECOMMENDATIONS

1. RECOMMENDATION 1: CLARIFY HOW THE ARROYO SIMI-LAS POSAS WATER ACQUISITION PROJECT WAS SIMULATED IN THE MODEL SCENARIOS

It is unclear how the Arroyo Simi-Las Posas water acquisition project (Basin Optimization Plan Project 5) was included in the various simulations. Please clarify in text and add a simple table that lists the amount of surface water that was simulated to enter the LPVB for each simulation. This is particularly important for the rampdown scenarios, which are described as being no-project scenarios. If they are no-project scenarios, please clarify that the current flows in the Arroyo Simi-Las Posas that Basin Optimization Plan Project 5 are intended to maintain were not included.

1.1 Recommendations:

Clarify and document how surface water flows were adjusted between scenarios to include or exclude the Arroyo Simi-Las Posas water acquisition project.

1.2 Technical Rationale for Recommendation:

The Arroyo Simi-Las Posas water acquisition project is designed to maintain recent historical surface water flow into the LPVB. If the no-project rampdown scenarios do not include the contribution to the water budget from the project, that should be clearly stated in the BOY Study.

1.3 Summary of Facts in Support of Recommendation:

- The Arroyo Simi-Las Posas water acquisition project (Basin Optimization Plan Project 5) has been described as a means of maintaining current and recent historical surface water flow into the LPVB.
- If maintenance of this surface water inflow is dependent on the project, then it should not be included in the no-project rampdown scenario simulations.

2. RECOMMENDATION 2: PRESENT BASIN OPTIMIZATION YIELD AND RAMPDOWN CONSISTENT WITH JUDGEMENT

The Judgment defines Basin Optimization Yield as the estimated yield projected to be available to achieve sustainable groundwater management by 2040 and rampdown as the deficit between the effective Operating Yield and the Basin Optimization Yield. The draft BOY Study references these definitions and identifies the Basin Optimization Yield as a

groundwater production rate of 36,860 acre-feet per year (AFY), which includes implementation of Basin Optimization Projects and maintains sustainable groundwater conditions. However, the draft BOY Study then uses a different annual production rate to identify and define rampdown and rampdown rate. According to the Judgment, rampdown would therefore be 40,000 AFY minus 36,860 AFY, which is 3,140 AFY (current Operating Yield is 40,000 AFY and BOY Study calculated Basin Optimization Yield is 36,860 AFY).

This may point to a conflict within the Judgement. The reduction in pumping below the Operational Yield identified in the draft BOY Study as the Basin Optimization Yield applies only to those LPVB groundwater users who would receive project in lieu water deliveries. However, the Judgment requires rampdown to be applied to all groundwater users in the LPVB. The Judgment does not appear to contemplate a condition in which a no-project scenario results in rampdown, which is the context in which rampdown has been discussed and estimated in the draft BOY Study.

2.1 Additionally the Judgment requires that the Basin Optimization Yield be used by the Watermaster to allocate pumping to pumpers. If the Basin Optimization Yield identified in the BOY Study is used for this purpose, pumpers will not receive the correct annual allocations; it will be reduced by the volume of in lieu water delivered to the projects assessed in the BOY Study. Because the in lieu projects in the BOY Study offset some groundwater use, the volume of water delivered for in lieu use should be included in the Basin Optimization Yield. Recommendations:

- Clarify how the Basin Optimization Yield with the in lieu projects will be used for future allocation determinations, and rampdown (which is assumed to be zero so long as projects are implemented).
- Explore and characterize how rampdown is being presented in the BOY Study in contrast to the definitions in the Judgment.
- Provide additional explanation for the context of including a no-project scenario and associated rampdown in the BOY Study. To avoid confusion, this explanation should differentiate between pumping reductions in the BOY Study and rampdown in the Judgment. This explanation should also inform the reader that uniform and differential pumping reductions are both presented for informational purposes only.

2.2 Technical Rationale for Recommendation:

The Judgment and the draft BOY Study appear to address rampdown differently, as discussed above. The BOY Study should accurately describe these differences and discuss how the Basin Optimization Yield will be used to determine future allocations. Without this clarification, and in strict compliance with the Judgment, there may be confusion regarding the basis for allocations. The no-project pumping reduction in the BOY Study should also be modified so that its difference from rampdown as defined and described in the Judgment.

2.3 Summary of Facts in Support of Recommendation:

- The Judgment includes the following definitions:
    - Basin Optimization Yield is the estimated yield projected to be available to achieve sustainable groundwater management by 2040.

    - Rampdown is the deficit between the effective Operating Yield and the Basin Optimization Yield.
- The draft BOY Study references these definitions, however:
    - The Basin Optimization Yield is identified a groundwater production rate of 36,860 AFY, implying that this is the value that would be used to determine future allocations.
    - No-project pumping reductions are identified using an approach that differs from the definition in the Judgment.

3. RECOMMENDATION 3: CONSIDER ADDRESSING THE EFFECTS OF THE SOMIS FAULT MODEL BOUNDARY CONDITION ON IN LIEU AND RAMPDOWN SIMULATIONS

As noted in the draft BOY Study and raised by the TAC in previous recommendation reports, the Coastal Plain Model includes a boundary condition on the Somis fault that is inconsistent with the agreed-upon hydrogeologic conceptual model of the LPVB, the boundary condition in the East Las Posas Model, and the version of the Ventura Regional Groundwater Flow Model (VRGFM) that was used to develop the LPVB GSP. While the draft BOY Study indicates that the simulated in lieu and rampdown scenarios for the WLPMA are sustainable despite this issue with the Coastal Plain Model, it is possible that the volumes of water identified for in lieu delivery and reduced pumping in the projects and rampdown scenarios, respectively, exceed what would actually be required to achieve sustainable groundwater conditions in the WLPMA.

3.1 Recommendations:

Consider estimating the volumetric effect the inconsistent boundary condition has on the project and rampdown scenario simulations. This could allow the in lieu and rampdown volumes to be refined downward, reducing costs and impacts to WLPMA groundwater users.

3.2 Technical Rationale for Recommendation:

The Coastal Plain model boundary condition at the Somis fault is inconsistent with the agreed upon hydrogeologic conceptualization and observed conditions in the eastern portion of the WLMPA. As a result the Coastal Plain model simulates flow leaving the WLPMA when groundwater elevations in the eastern part of the management area rise in response to the simulated project and rampdown changes to the local water budget. An analysis of the volume of water that leaves the management area could show how much the in lieu project and rampdown scenarios overestimate pumping reductions, thereby allowing for reduced in lieu water delivery and rampdown requirements.

3.3 Summary of Facts in Support of Recommendation:

- The Coastal Plain model boundary condition at the Somis fault is not consistent with the agreed-upon hydrogeologic conceptual model.

- Increased groundwater elevations resulting from reduced pumping in project and rampdown scenarios causes the model to simulate groundwater flow out of the WLMPA across the Somis fault.
- In practice, the groundwater that leaves the WLPMA in the model would remain in the management area increasing water levels above what is simulated in the scenarios presented in the draft BOY Study.
- This outflow implies that the in lieu delivery and rampdown pumping reduction volumes identified in the draft BOY Study could be reduced.

4. RECOMMENDATION 4: CLARIFY EXISTING AND PROJECTED CONDITIONS IN THE EPWORTH GRAVELS MANAGEMENT AREA

The information presented for the Epworth Gravels Management Area (EGMA) should be expanded to explain several factors. These include the presence of groundwater producers without allocations in the Judgment, the effects of recent pumping patterns on model simulations, and the need for rampdown in the management area if the Basin Optimization Plan projects are not implemented.

4.1 Recommendations:

- In section 3.2.3.1:
  - Provide more information and quantify or estimate how much pumping in the EGMA is not accounted for in the distribution of allocations in the Judgment.
  - Provide similar information for the other management areas or note the absence of pumpers without allocations in those management areas.
- Provide additional information regarding the effects of using water year 2024 pumping in the EGMA for the 47-year model period and how this will be accounted for in the Operating Yield for the management area and LPVB.
- Explain why the difference between the estimated sustainable yield and rampdown volumes were so large for the EGMA.
- Explain why EGMA pumping is reduced in the rampdown scenarios when the baseline production rate for the management area is already lower than the sustainable yield, as indicated on page 13 of the draft BOY Study.
- Provide additional discussion of the differential rampdown scenario results in the EGMA, specifically addressing continuing declines in groundwater levels shown on Figure 3-13.

4.2 Technical Rationale for Recommendation:

Technical rationale for each recommendation above is included in the context of the recommendation.

4.3 Summary of Facts in Support of Recommendation:

A summary of facts for this recommendation is not applicable.

5. RECOMMENDATION 5: CLARIFY HOW PUMPING AND WATER BUDGET CHANGES WERE APPLIED IN MODEL SCENARIOS, SPECIFICALLY WITH RESPECT TO TEMPORAL VARIABILITY IN PUMPING VOLUME AND DISTRIBUTION

It is not clear from the descriptions of model scenarios if pumping was held constant for every year of the simulation period for each scenario, or if pumping volume and/or distribution were varied during the simulation period.

While this comment and recommendation applies to all model simulations, it is particularly important for the rampdown scenarios. It is unclear whether pumping at the fully reduced rate was used for the entire rampdown simulation period or if pumping was reduced incrementally each year. If it is the former, the TAC questions whether rampdown will be effective in achieving sustainable groundwater conditions by 2040. As presented in the BOY Study, the model scenarios indicate that over the 47-year model period the annual groundwater production volumes pumped in the rampdown scenarios will achieve sustainability. However, the BOY Study does not appear to assess how long after reaching the rampdown pumping rate it will take for water levels to rise to the thresholds identified as sustainable. Prolonged pumping at rates in excess of the rampdown rate may result in water levels below the minimum thresholds in representative monitoring wells and it is not clear that one year of pumping at the rampdown rate at the end of the 14-year rampdown period will be sufficient to facilitate water level recovery.

5.1 Recommendations:

- Clarify how pumping and other water budget changes were applied in model scenarios, especially as it relates to rampdown rate implementation over time during the model period.
- Assuming the rampdown was assumed to have occurred before the start of each scenario and pumping during the entire model period was equal to the rampdown rate for the scenario, explain how long water level recovery to sustainable conditions may take after rampdown is complete.

5.2 Technical Rationale for Recommendation:

The BOY Study presents rampdown scenario model results that appear to have assumed pumping over the entire 47-year model period at the reduced rampdown rate that will only be achieved after a period of progressive pumping reduction according to a rampdown rate schedule. These simulations do not appear to show how long it will take water levels in the LPVB to respond once rampdown is completed and as defined in the Judgment and BOY Study that would not occur until 2040.

5.3 Summary of Facts in Support of Recommendation:

- Modeling over a long period at a reduced pumping rate will show higher water levels than can be achieved by prolonged pumping at higher rates.
- The 14-year rampdown period includes linear reduction in groundwater pumping every year.

- Rampdown model scenarios appear to have assumed pumping would be constant every year during the 47-year model period.
- Water levels are likely to take time to rise once rampdown is complete.

6. RECOMMENDATION 6: CLEARLY IDENTIFY ASSUMPTIONS ASSOCIATED WITH MODELING AND OTHER ANALYSES IN THE BOY STUDY

The TAC review identified some unstated assumptions in the modeling approach that should be included in the BOY Study. These include the assumption that modeled hydrology from the beginning of water year 2023 and current is consistent with actual conditions and that water in storage credited to Calleguas Municipal Water District will remain in storage. There may be other assumptions that are implicit in the modeling and other analyses in the BOY Study and these should be clearly identified and discussed in a dedicated section of the report.

6.1 Recommendations:

Clearly describe and explain the implications of assumptions in the modeling and other analyses in the BOY Study, including but not limited to the following:

- The difference between modeled and actual hydrology for the period from beginning of water year 2023 (October 2022) through the end of water year 2025 (September 2025) and briefly describe (qualitatively) the impact on interpretation of model results.
- The potential effects of recovery of water stored by Calleguas Municipal Water District on water levels, water budgets, and sustainable groundwater conditions.

6.2 Technical Rationale for Recommendation:

It is important for reports that include complex analysis to include documentation and discussion of the assumptions that were used and the potential implications of the assumptions on the outcome of the analyses.

6.3 Summary of Facts in Support of Recommendation:

A summary of facts for this recommendation is not applicable.

7. RECOMMENDATION 7: DISCUSS THE POTENTIAL EFFECTS OF CARRYOVER WATER ON SUSTAINABLE MANAGEMENT OF THE BASIN

The methodology used to distribute pumping in the baseline and other model scenarios assumed that pumping was constant every year and that all active wells produced the same volume of groundwater every year. While this approach preserves the water balance and allows the model to show how hydrologic variability affects groundwater conditions, it does not allow for assessment of the impacts of highly variable changes in groundwater pumping dependent on those same hydrologic conditions. Recent groundwater use in the LPVB has been below the current Operational Yield of 40,000 AFY, which indicates that some water rights holders have been accumulating carryover water, which is common during wet years.

Subsequent use of carryover water in dry years has the potential to effect groundwater sustainability and should be discussed.

7.1 Recommendations:
Discuss the potential effects of carryover water on sustainable management in the LPVB in light of the scenarios simulated for the BOY Study.

7.2 Technical Rationale for Recommendation:
Carryover is allowed by the Judgment recent historical pumping records show that some water rights holders have not used their allocations. Therefore some water rights holders are likely already accumulating carryover water that could lead to single-year groundwater production in excess of the Operational Yield, which may impact groundwater sustainability.

7.3 Summary of Facts in Support of Recommendation:

- Recent water use records show total pumping in the LPVB has been less than the Operational Yield.
- Some water rights holders have therefore been accumulating carryover water.
- Significant pumping in excess of the Operational Yield in a single year could occur if multiple parties elected to recover all their carryover water simultaneously.
- Pumping in excess of the Operational Yield has the potential to impact groundwater sustainability.

8. RECOMMENDATION 8: DOCUMENT AND DISCUSS UNCERTAINTIES IN THE MODEL RESULTS AS THEY RELATE TO THE FINDINGS OF THE BOY STUDY

Uncertainty in model results is presented alongside some values in section 2.1 of the draft BOY Study but then not explored further when describing the project scenario simulations, Basin Optimization Yield, or rampdown scenarios. Adding discussion of uncertainty and contextualizing quantified uncertainty would help readers understand the confidence that should be placed on the projections for LPVB management based on model simulations.

8.1 Recommendations:
Show quantitative estimates of uncertainties for all model simulation results, similar to those presented in section 2.1 and discuss how uncertainty should be considered in relation to project scenarios, Basin Optimization Yield, and rampdown.

8.2 Technical Rationale for Recommendation:
Relatively large amounts of uncertainty are presented in section 2.1 when discussing the sustainable yield estimates from the LPVB GSP. However, similar uncertainty quantification is not presented for the model scenario simulations developed as part of the BOY Study. Understanding the uncertainty associated with the information presented in the BOY Study may be important for stakeholders and policy makers when implementing the findings of the BOY Study. This understanding may also help reinforce the need for adaptive management of projects through consistent and high-quality groundwater monitoring.

8.3 Summary of Facts in Support of Recommendation:

- Quantitative uncertainty is presented for the sustainable yield estimates from the GSP but not for the yield and rampdown estimates presented in the BOY Study.
- Understanding uncertainty is important for stakeholders and policy makers.
- Documentation of uncertainty may also reinforce the need for adaptive management and consistent groundwater monitoring.

9. RECOMMENDATION 9: REVIEW AND CONSIDER SIGNIFICANT EDITS TO TEXT IDENTIFIED BY TAC

There are significant text edits identified through the TAC review that should be considered by the Watermaster in preparation for finalizing the draft BOY Study. Specific recommendations are referenced below.

9.1 Recommendations:

- Consider reframing the executive summary and section 6 to highlight the positive outcome that rampdown won't be necessary if the two identified projects proceed in a timely fashion and that both project and rampdown implementation will have to be adaptive processes guided by monitoring data and the required 5-year updates to the BOY Study. Suggested text for some of the revisions to the Executive Summary has been provided by Dr. Abrams and is attached.
- State in the BOY Study that simulated relative head changes are used and are deemed to be more reliable for comparing MTs to groundwater elevations. This is noted as a "shift" in hydrographs but should be more specific. Models are better at predicting head changes than they are at predicting actual heads. The second paragraph of section 1.3 might be a good place to include this information. Each instance of shifted hydrographs should also be identified in the text and on the relevant figures.
- Revise text in section 2.2 to refer to boundary *conditions* and the Somis fault as a barrier to groundwater flow as indicated in comments BA-7, 8, 9, 10, and 12 in the attached tabular comments.
- Consider including uncertainty in the presentation of sustainable yield in table 3-2 as a separate column where the uncertainty in the sustainable yield for each management area can be documented.
- Reference the Coastal Plain model uncertainty and difference between groundwater elevation observations during past in lieu water use presented in sections 2.2 and 3.1.4 when discussing assessment of model simulation results for the WLPMA in comparison to sustainability metrics. The intent would be to remind readers that the model simulated conditions at well 02N20W06R01 do not align with historical observations and that in practice sustainability in this area of the LPVB will be assessed using monitoring data and adaptive project management.
- Add explanatory text regarding the significant difference between the sustainable yield published in the First GSP Periodic Evaluation for the LPVB and the annual groundwater production rate identified in the basin-wide rampdown scenario.

- Add a table or tables in section 4 that summarize the Baseline, BOY Project, Basin-wide Rampdown, Differential Rampdown, and Sustainable Yield estimates for each management area to assist the reader in understanding the differences between the scenarios.
- Revise Conclusions to be consistent with changes to the Executive Summary and discuss all conclusions from the study. The existing Conclusions section is focused on the rampdown scenarios. All of the modeled scenarios should be discussed in this section along with reiterating that timely project implementation is shown to result in sustainable groundwater conditions without the need for basin-wide pumping reductions associated with rampdown. Suggested text for some of the revisions to the Conclusions was provided by Dr. Abrams and is attached. Also consider including a summary table of each scenario evaluated in the BOY Study in the conclusions to provide readers with context for the discussion of the conclusions.
- Develop and include a recommendations section. While the Judgment may not specifically call for recommendations, it would be prudent to include a discussion recommendations identified by the BOY Study. This should include recommendations for the rapid development of the projects identified in the BOY Study along with creation of contingency plans in case the projects are delayed or not successfully implemented, as raised in section 4. Recommendations could also include data needs, model clarifications and/or updates, and other ongoing tasks that would be prudent to consider pursuing ahead of the next update of the BOY Study.

9.2 Technical Rationale for Recommendation:
Technical rationale for each recommendation above is included in the context of the recommendation.

9.3 Summary of Facts in Support of Recommendation:
A summary of facts for this recommendation is not applicable.

10. RECOMMENDATION 10: REVIEW EDITORIAL COMMENTS PROVIDED BY TAC IN TABULATED COMMENT MATRIX

The TAC members each prepared detailed tabulated comments numbered by commentor with references to specific section and page numbers and quoted text. Many of these comments are editorial in nature and identify apparent errors in the draft BOY Study, including typographic errors and unclear text.

10.1 Recommendations:
Consider revising the text to address the comments identified as editorial and clarification in the attached tabular comment matrix.

10.2 Technical Rationale for Recommendation:
See individual editorial comments for rationale.

10.3 Summary of Facts in Support of Recommendation:
A summary of facts for this recommendation is not applicable.

11. 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 February 3, 2026. 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.

Attachment 1

Specific Comments from the Las Posas Valley Basin Technical Advisory Committee, Draft Basin Optimization Yield Study

Specific Comments from the Las Posas Valley Basin Technical Advisory Committee
Draft Basin Optimization Yield Study

Comment ID	Commentor	Technical or Editorial Comment	Topic	Page Number	Section ID	Quoted Text	Comment
BB-1	Bryan Bondy	Editorial	Clarification	5	2.1	*"CMWD no longer maintains the ELP Model but has provided this model to FCGMA to support management of the Basin."*	Calleguas has not made a decision to stop maintaining the model.
BB-2	Bryan Bondy	Editorial	Editorial	7	3.1.2	*"Of course, the exact future hydrology is unknown. Therefore, the synthetic future hydrology is a source of uncertainty in any future model simulations."*	Standalone sentence - should it be included in the prior paragraph?
BB-3	Bryan Bondy	Editorial	Editorial	12, 13, and 16	3.2.3.1 & Tables 3-2 and 3-3	*N/A*	Baseline groundwater production value for Epworth Gravels Mgmt. Area listed in text does not match value in Tables 3-2 and 3-3.
BB-4	Bryan Bondy	Editorial	Editorial	15 and 16	3.3.1 & Table 3-3	*N/A*	Groundwater production values for ELPMA and WLPMA listed in text do not match values in Table 3-3.
BB-5	Bryan Bondy	Editorial	Editorial	v	N/A	*Second paragraph, first sentence "...that provided quantifiable groundwater at a level of detail that could be included in the model."*	Groundwater what? Levels, flow, budgets?
BB-6	Bryan Bondy	Technical	Analysis Assumptions	7	3.1.2	*N/A*	An unstated assumption of the modeling approach is that the modeled hydrology between 10/1/22 and now is identical to that which has actually occurred. Consider qualitatively describing the difference between modeled and actual hydrology for this period and briefly describe (qualitatively) the impact on interpretation of the results.
BB-7	Bryan Bondy	Technical	Analysis Assumptions	8	3.1.3	*N/A*	An unstated assumption of the modeling approach is that water in storage credited to Calleguas MWD by FCGMA will remain in storage. Should this water be recovered, water levels would be lower than simulated and minimum thresholds may not be achieved. Consider describing this (qualitatively) for context.
BB-8	Bryan Bondy	Technical	Clarification	v & 1	ES, 2nd paragraph & 1, 2nd paragraph	*N/A*	It is unclear how the Arroyo Simi-Las Posas water acquisition project (Basin Optimization Plan Project 5) was included in the various simulations. Please clarify in text and add a simple table that lists the amount of surface water that was simulated to enter the model domain via the SFR package from Simi Valley for each simulation.
BB-9	Bryan Bondy	Technical	Epworth Gravels Mgmt. Area	Various	Various	*N/A*	It is stated on page 13 that the sustainable production rate for the Epworth Gravels Mgmt. Area is 1,320 AFY. The baseline Epworth Gravels Mgmt. Area extractions were less than this (1,024 AFY). Given this, please explain why the Epworth Gravels Mgmt. Area extractions were reduced in the rampdown scenarios. Please also caveat the rampdown to alert policymakers to the fact that it appears that Epworth Gravels Mgmt. Area rampdown does not appear necessary from a technical perspective.
BB-10	Bryan Bondy	Technical	Epworth Gravels Mgmt. Area	13	3.2.3.1	*"not all groundwater producers with wells in the Epworth Gravels Management Area received an allocation in the Judgment (Figure 3-4)."*	Two comments. (1) Estimates of Epworth Gravels Mgmt. Area extractions that are not included in the analysis should be provided (i.e. groundwater producers w/o a Judgment allocation) for context. This can be estimated from historical extractions reported to FCGMA. (2) Is the Epworth Gravels Management Area the only management area that has groundwater producers w/o a Judgment allocation? If no, estimates should also be provided for those management areas for context.
BB-11	Bryan Bondy	Technical	Epworth Mgmt Area Sustainable Yield vs. Rampdown Pumping	18	3.4.1.1	*"The estimated sustainable yields of the Epworth Gravels Management Area and the ELPMA were approximately 500 and 1,450 AFY higher, respectively, than the simulated groundwater production in the Basin-wide Rampdown scenario."*	This difference for Epworth Gravels Mgmt Area is significant on a percentage basis. Text should be added to explain why this large of a difference exists.
BB-12	Bryan Bondy	Technical	Projects and Rampdown	v and 26-27	ES and 6	*N/A*	Please add more text to remind the reader that implementation of either projects or rampdown would be an adaptive process that is guided by monitoring data and the required 5-year updates to this document.

Specific Comments from the Las Posas Valley Basin Technical Advisory Committee
Draft Basin Optimization Yield Study

Comment ID	Commentor	Technical or Editorial Comment	Topic	Page Number	Section ID	Quoted Text	Comment
BB-13	Bryan Bondy	Technical	Rampdown Rate	N/A	5	*N/A*	It appears that the rampdown rates are based on an assumption that the amount of surface water entering ELPMA from Simi Valley will not change even if the Arroyo Simi-Las Posas water acquisition project (Basin Optimization Plan Project 5) is not executed. This should be made clear in the text and the rampdown rate should be caveated accordingly.
BB-14	Bryan Bondy	Technical	Rampdown Rate	18	3.4.1.1	*N/A*	Please clarify how rampdown was simulated in the rampdown model scenarios. It is unclear whether pumping at that the fully reduced rate was used for the entire rampdown period or if pumping was reduced incrementally each year during the rampdown period. If it is the former, the results should be caveated because the model scenario may be underestimating pumping and the resulting simulated groundwater levels may be overestimated.
BB-15	Bryan Bondy	Technical	Recommendations	N/A	N/A	*N/A*	There is no recommendations section. While the Judgment may not specifically call for recommendations, it would be prudent to include a discussion of data needs, model clarifications/updates, etc. that would be prudent to consider pursuing ahead of the next update of this document.
BB-16	Bryan Bondy	Technical	Technical	16	3.3.2.1	*"Although the groundwater elevation at the third well, Well 02N20W06R01, remained below the minimum threshold during the Projects Scenario, the groundwater elevation at the end of the scenario was similar to the elevation at the start of the scenario. This suggests that if the initial groundwater elevation can be raised at this well, ongoing production at the rates simulated in the Projects Scenario will maintain the groundwater elevation in the future."*	This text is unclear. What is meant by "if the initial groundwater elevation can be raised at this well"? How would this initial groundwater level increase be achieved? Would it be more appropriate to say that the simulated groundwater elevations are close to the MT and that is reasonable to conclude that the MT could be achieved consistently when considering uncertainty in the WLPMA model?
BB-17	Bryan Bondy	Technical	WLPMA Sustainable Yield vs. Rampdown Pumping	18	3.4.1.1	*"The estimated sustainable yield of the WLPMA in the First Periodic Evaluation was approximately 3,300 AFY lower than the simulated groundwater production in the Basin-wide Rampdown scenario."*	This is significant difference. Text should be added to explain why this large of a difference exists.
TM-1	Tony Morgan	General Editorial	spell out abbreviation	1	1.1	*LPV Judgment*	first use of Las Posas Valley so spell out abbreviation - Las Posas Valley (LPV) Judgment
TM-2	Tony Morgan	General Editorial	spell out abbreviation	5	2	*ELP Model; a MODLFOW numerical model…*	first use of ELP - spell out
TM-3	Tony Morgan	General Technical	model uncertainty	5	2.1	*uncertainty bounds in the sustainable yield …estimated using the ELP Model of ±2,300 AFY…*	the ±2,300 AFY uncertainty (on an ~18,000 AFY yield) is significant – on the order of 13% – which directly affects confidence in the BOY and rampdown values
TM-4	Tony Morgan	Technical	model uncertainty	6	2.1	*…uncertainty bounds in the sustainable yield for the WLPMA estimated using the GSP version of the VRGWFM of ±1,200 AFY …*	How is the model uncertainty considered in the analyses?
TM-5	Tony Morgan	Technical	sustainable yield uncertainty	22	4	*…model scenarios simulated for this BOY Study the Basin Optimization Yield is estimated to be 36,860 AFY if the in-lieu surface water delivery projects are implemented…*	How is the model uncertainty reflected in this value? Is it 36,860 AFY+/- the uncertainty?
TM-6	Tony Morgan	Technical	rampdowns	24	5.2	*…scenario groundwater production was reduced by 20% relative to the Baseline Scenario pumping in the WLPMA…*	It is recognized that the model used for WLPMA under predicts WLs for the Key Wells. If a 20% rampdown is needed per the model to ultimately get WLs above the MT, isn't it logical to assume that a lesser rampdown could achieve comparable results when the WLs are corrected for the under prediction tendencies of the model? It didn't seem like the underprediction was accounted for, at least semiquantitatively, in the analyses. Is the report suggesting a rampdown quantity that is too aggressive?

Specific Comments from the Las Posas Valley Basin Technical Advisory Committee
Draft Basin Optimization Yield Study

Comment ID	Commentor	Technical or Editorial Comment	Topic	Page Number	Section ID	Quoted Text	Comment
TM-7	Tony Morgan	Technical	conclusions	26	6	*Conclusion*	why does the Conclusion section focus solely on the ramp-down scenarios? Per Section 1, *the BOY Study evaluates groundwater conditions under three potential future production scenarios: (1) continued production at 40,000 acre-feet per year (AFY), the initial Operating Yield defined in the Judgment, (2) implementation of two groundwater in-lieu projects evaluated in the Basin Optimization Plan (BOP), and (3) a ramp-down scenario to determine the BOY in the event that the projects are not implemented..* . Discussions of all three scenarios should be included in the Conclusions. Isn't the major take-away message that if the in-lieu delivery projects can be implemented promptly, then ramp-downs are not likely to be needed? Don't bury (or omit) the lead message.
TM-8	Tony Morgan	Technical	conclusions	26	6		It would be useful to the reader to have a summary table for each of the scenarios evaluated in the report. There are lots of numbers in the document. A summary in the conclusions makes it easier to compare the scenario outcomes. Suggest a table (with supporting text) that lists for each key well when each scenario brings water levels above the MT, is the MT achieved before 2040, water level trends (up or down), do water level trends suggest that MO will be met, etc.
TM-9	Tony Morgan	Technical	possible typo	7	3.1.1	*The future scenarios developed for the BOY Study simulate groundwater conditions in the Basin over the 47-year…*	reference to a "37-year modeled period" for trends in section 3.4.2.2 – this appears to be a typo, since the scenarios run 47 years
TM-10	Tony Morgan	Technical	timing of project implementation	8	3.1.3	*Table 3-1*	Table 3-1 indicates Time Period for Implementation as "Water Year 2027", but does not specifically identify when in WY2027 the water deliveries were initiated in the model
TM-11	Tony Morgan	Technical	timing of project implementation	8	3.1.3	*…the in-lieu project deliveries are not currently occurring. If implementation of the in-lieu project is delayed for multiple years, the modeled impacts of the project on groundwater levels in this BOY Study may 'overestimate the impact of this project…*	since these projects depend on agencies outside the Watermaster's direct control, there is uncertainty in their yield and timing. The study already notes no agreements are signed yet. It might be prudent to recommend contingency planning (e.g., if by year X the projects are behind schedule, implement phased rampdowns to compensate). This is hinted in Section 4 (if Project 2 is not fully implemented, consider a Rampdown), which is a good inclusion.
TM-12	Tony Morgan	Technical	SGMA compliance	9	3.1.4	*…in the WLPMA, the long-term groundwater production rate was determined to be potentially sustainable if groundwater elevations remained stable over the future model period, such that the ending groundwater level was equal to or higher than the starting groundwater elevation."*	an additional criterion is used: a pumping rate is considered potentially sustainable if groundwater levels **stabilize or rise over the future period**, even if they start (and end) below the MT. It's important to highlight the risk of allowing "stable but below-threshold" conditions, even temporarily, technically means undesirable results (as defined in the GSP) persist until those levels rise above MT. The study implies that with projects or rampdown, those key wells might not reach MT by 2040 but could soon after.
TM-13	Tony Morgan	Technical	Baseline Scenario extractions	10	3.2.2	*…the selected approach, with which the TAC concurred, was to distribute the Annual Allocation based on the reported pumping and MWC deliveries for DWR water year 2024…*	The distribution method ensures every drop of the 40,000 AFY is assigned to a specific well or MWC, preserving the water balance, and does so in a way that reflects current (2024) usage patterns. The model does not account for underutilization (which has occurred in the past couple of years) which results in carryover amounts that can have an as yet unmodeled impact on future water levels. The baseline scenario is logical, however, it would be useful to be more forthcoming with the shortcomings of the scenario assumptions as predictors of future conditions.
TM-14	Tony Morgan	General Technical	modeling assumptions	10	3.2.2		The modeling approach could be more robust by accounting for the carryover amounts earned in the wet periods and their use in subsequent dry periods. For example, assume carryover was earned in "above normal wet years" at a rate consistent with GW use in recent wet years. The carryover would be used in dry years when irrigated water demand is greater than the average. It is not clear how this would impact efforts to bring GW levels above the MT, but it would offer a more likely scenario for how the basin would operate.
TM-15	Tony Morgan	Technical	estimated sustainable yield uncertainty	12	3.2.2.2	*Table 3-2 Estimated Sustainable Yield*	shouldn't the sustainable yield be +/- the uncertainty ? Suggest adding another column to show the possible range of the sustainable yield OR put the range in paretheses in the same cell as the Estimated Sustainable Yield. For example, WLPMA Estimated Sustainable Yield is 11,400 (10,200-12,600), ELPMA + EG is 19,230 (16,930-21,530). LPVB sustainable yield is 30,630 (27,137-34,130).

Specific Comments from the Las Posas Valley Basin Technical Advisory Committee
Draft Basin Optimization Yield Study

Comment ID	Commentor	Technical or Editorial Comment	Topic	Page Number	Section ID	Quoted Text	Comment
TM-16	Tony Morgan	Technical	in lieu amounts	17	3.2.2.2	*...the LAS groundwater production was reduced by 1,760 AFY to simulate implementation of the in-lieu surface water delivery project to Zone MWC and VCWWD 19."*	Is the in lieu delivery amount being overestimated because the WLPMA model under predicts WL responses to imported water? Could a lesser in lieu amount achieve the same result if the model's WLs were adjusted to account for the underprediction?
TM-17	Tony Morgan	Technical	possible typo	15	3.3.1	*The resulting groundwater production rates were 16,656 AFY in the WLPMA and 16,420 AFY in the ELPMA (Table 3-3).*	Table 3-3 shows ELPMA pumping as 19,179 AFY in the Projects scenario, but 16,420 AFY in text. Looks like the text should be changed to 19,179 AFY which is consistent with modeled ~7% reduction. Similar for WLPMA - Table 3-3 shows 16,657 AFY, text says 16,656 AFY– likely typo.
TM-18	Tony Morgan	Technical	estimated sustainable yield uncertainty	16	3.3.1	*Table 3-3*	how is model uncertainty accounted for in this table?
TM-19	Tony Morgan	Technical	SGMA compliance	16	3.3.2	*...if the initial groundwater elevation can be raised at this well, ongoing production at the rates simulated in the Projects Scenario will maintain the groundwater elevation in the future.*	WLPMA meets the softer criterion (stable levels at the problematic well). From a hydrogeologic standpoint, the in-lieu deliveries clearly mitigate drawdown in the targeted areas. It just flags one gap - one location still below threshold, requiring either trust in model correction of flow across Somis fault or additional management.
TM-20	Tony Morgan	Technical	SGMA compliance	19	3.4.1.2	*In the WLPMA, simulated groundwater elevations remained above the minimum threshold groundwater elevation at two of three Key Wells...*	The 20% reduction predicted water levels would remain below the MT in one Key Well. So, a 20% reduction is not actually consistent with SGMA goals of avoiding undesirable results. It is unknown if this "modified approach" to SGMA compliance is acceptable to DWR. Report states that model response is "...dampened relative to historical observations" therefore, groundwater elevations in this well are expected to be above the MT. What happens to the groundwater elevations in the other key wells if we account for the "dampened response"? Are we suggesting that a rampdown of some amount less that 20% is adequate if the dampened response is accounted for? If so, why not present the model results for that lower value? Does the use of a 20% rampdown put unnecessarily stringent cuts on ELPMA & Epworth?
TM-21	Tony Morgan	Technical	rampdowns	20	3.4.2.1	*...it should be noted that simulated groundwater elevations exhibited a declining trend over the 37-year modeled period."*	under the 11% cut, ELPMA is still *mildly overdrafting* , which is consistent with the note that water levels in ELPMA show a declining trend over the 47-year simulation (albeit all above MT). Is the declining trend over the SGMA compliance timeframe consistent with SGMA compliance requirements?
TM-22	Tony Morgan	General Editorial	add PVB, LPV, ELP, WMID to list of abbreviations	iii			
TM-23	Tony Morgan	General Technical	Somis fault/model boundaries				The WLPMA model has assigned properties to the Somis fault that are inconsistent with current hydrogeologic understanding. Before the next BOYS or Periodic Evaluation update, it is recommended that the model be updated to reflect our hydrogeologic conceptual model. This allows the forward forecasts to be used without having to consider the "dampened results" correction factor.
BA-1	Bob Abrams	Technical	Setting the tone of the report (that the report presents good news)	v	Executive Summary		Overall, the BOYS study and report present good news that rampdown won't be necessary if the two projects proceed in a timely fashion. Suggest revising the Executive Summary to highlight this and support better understanding of terms in the Judgment, such Operating Yield, etc. Please see accompanying Word file that presents my suggested revisions.
BA-2	Bob Abrams	Editorial	Conforming main text to suggested revised Executive Summary	v	Executive Summary		Left to Dudek to revise main text to hit the highlights noted in the suggested revised Executive Summary
BA-3	Bob Abrams	Editorial	Delete unneeded comma	3	1.3	*Undesirable results were defined in the GSP for the three management areas of the Basin: the East Las Posas Management Area (ELPMA), the Epworth Gravels Management Area, and the West Las Posas Management Area (WLPMA) , (FCGMA 2019).*	Delete identified comma (in red)

Specific Comments from the Las Posas Valley Basin Technical Advisory Committee
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Comment ID	Commentor	Technical or Editorial Comment	Topic	Page Number	Section ID	Quoted Text	Comment
BA-4	Bob Abrams	Technical	Use of modeled heads for MT metric versus head changes (i.e., the "shift" used in hydrographs)	3	1.3	*Because the MTs are the metric by which groundwater conditions in the Basin are determined to be sustainable, the BOY Study compares simulated future groundwater elevations in the Basin to the MTs at the Key Wells in the Basin. Future groundwater elevations were simulated using the two numerical groundwater models that cover the three management areas of the Basin. Simulated production rates that result in long-term stability of the groundwater elevations at levels above the MTs are considered sustainable. The Basin Optimization Yield is the production rate, with implementation of the Basin Optimization Projects that can be reasonably implemented by 2040 and maintains groundwater elevations above the MTs.*	Somewhere in the main text it should be stated that simulated relative head changes are used to compare to MTs for groundwater elevations. This is noted as a "shift" in hydrographs, but should be more specific. Models are better at predicting head changes than they are at predicting actual heads. This paragraph might be a good place to do that.
BA-5	Bob Abrams	Editorial	Inconsistent use of acronyms	5	2	*Coastal Plain Model: a version of the Ventura Regional Groundwater Flow Model (VRGFM) MODFLOW numerical model developed and maintained by UWCD, which covers the entirety of the WLPMA, Oxnard Subbasin, PVB, and Mound Subbasin (UWCD 2018).*	Ventura Regional Groundwater Flow Model is sometimes abbreviated as VRGFM and sometimes as VRGWFM. Be consistent.
BA-6	Bob Abrams	Editorial	Delete unneeded word	5	2	*Therefore, the only change FCGMA made to the model for the First Periodic Evaluation was to extend the simulation time period through the end of water year 2022 (i.e., September 30, 2022) (FCGMA 2024*	Delete the word "time" (in red)
BA-7	Bob Abrams	Technical	Model "boundary" and modeled "boundary condition" are not the same thing and cannot be used interchangeably	6	2.2	*Although the Coastal Plain Model included improved hydrogeologic conceptual model data in several groundwater basins, the update also included a revision to the model boundary at the eastern edge of the WLPMA.*	Revise to: Although the Coastal Plain Model included improved hydrogeologic conceptual model data in several groundwater basins, the update also included a revision to the model boundary condition at the eastern edge of the WLPMA.
BA-8	Bob Abrams	Technical	Somis Fault is observed to be a flow barrier; should emphasize that this is an observation and not a model phenomenon	6	2.2	*In previous versions of the model, the boundary between the ELPMA and WLPMA was represented using a no-flow boundary condition, which is consistent with the Somis Fault acting as a barrier to groundwater flow between the two management areas (FCGMA 2019).*	Revise to: In previous versions of the model, the boundary between the ELPMA and WLPMA was represented using a no-flow boundary condition, which is consistent with the observation that the Somis Fault acts as a barrier to groundwater flow between the two management areas (FCGMA 2019).
BA-9	Bob Abrams	Technical	Model "boundary" and modeled "boundary condition" are not the same thing and cannot be used interchangeably	6	2.2	*In contrast, the model boundary in the version of the model used in the First* *Periodic Evaluation and in this BOY Study is a general head boundary condition ...*	Insert the word "condition" as indicated in red. THERE ARE also two other instances in the next paragraph to insert the word "condition." One is noted in next comment along with suggested change in wording.
BA-10	Bob Abrams	Technical	Model "boundary" and modeled "boundary condition" are not the same thing and cannot be used interchangeably, and clarification	6	2.2	*...simulated groundwater elevations do not rise as rapidly in response to* *reduced groundwater production as they would if the model boundary were a no-flow boundary.*	Revise to: ...simulated groundwater elevations do not rise as rapidly in response to reduced groundwater production as they would if the model boundary condition had not been changed from a no-flow boundary to a general head boundary. ~~they would if the model boundary~~
BA-11	Bob Abrams	Technical	Missing or extra words	6	2.2	*This rise is similar to that measured in the historical data between 1994 and 2006, when CMWD was delivering imported water in-lieu groundwater delivery to WLPMA*	Revise to: This rise is similar to that measured in the historical data between 1994 and 2006, when CMWD was delivering imported water in lieu of local groundwater pumping to the ~~r in-lieu groundwater delivery to~~ WLPMA

Specific Comments from the Las Posas Valley Basin Technical Advisory Committee
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Comment ID	Commentor	Technical or Editorial Comment	Topic	Page Number	Section ID	Quoted Text	Comment
BA-12	Bob Abrams	Technical	Model "boundary" and modeled "boundary condition" are not the same thing and cannot be used interchangeably, and clarification	7	2.2	*The comparison of the observed historical change in groundwater elevation to the modeled change in groundwater elevation indicates that the model boundary change has introduced additional uncertainty into the predictive capabilities of the model in this region. Future work should be conducted to reduce this uncertainty by recalibrating the revised model using a no-flow boundary to better represent the hydrogeologic conceptual model of this area.*	Revise to: The comparison of the observed historical change in groundwater elevation to the modeled change in groundwater elevation indicates that UWCD's change to the model boundary condition between the WLPMA and ELPMA ~~model boundary change~~ has introduced errors and additional uncertainty into the predictive capabilities of the model in this region. Future work should be conducted to fix this error and reduce this uncertainty by recalibrating the revised model using a no-flow boundary condition to ~~better~~ represent the hydrogeologic conceptual model of this area.
BA-13	Bob Abrams	Editorial	Grammer	7	2.2	*Watermaster and TAC agreed that, while the change in the model boundary is not consistent with the hydrogeologic conceptual model, groundwater management decisions will be based on observed water levels, rather than model simulation .*	Change to "simulations"
BA-14	Bob Abrams	Editorial	Run-on sentence	7	2.2	*Because the UWCD model is capable of simulating groundwater elevations in the eastern portion of the WLPMA that rise above the minimum threshold prior to 2040 and remain above the minimum threshold from 2040 to 2070, use of the UWCD model files developed for the Periodic Evaluation remains the best available option to evaluate the BOY and complete this first BOY study prior to the beginning of the 2027 water year (October 1 2026 – September 30, 2027) (FCGMA 2025b).*	Change to: The UWCD model is capable of simulating groundwater elevations in the eastern portion of the WLPMA that rise above the minimum threshold prior to 2040 and remain above the minimum threshold from 2040 to 2070. Thus, the use of the UWCD model files developed for the Periodic Evaluation remains the best available option to evaluate the BOY and complete this first BOY study prior to the beginning of the 2027 water year (October 1, 2026 – September 30, 2027) (FCGMA 2025b)
BA-15	Bob Abrams	Editorial	Needs additional clarification	8	3.1.3	*The Arroyo Simi–Las Posas Water Acquisition project would involve the purchase or lease of recycled water from the City of Simi Valley to continue discharging the water from its shallow dewatering wells and/or the Simi Valley Water Quality Control Plant to the Arroyo Simi for downstream recharge to the Basin (FCGMA 2025a).*	Need a statement as to why this water can't continue without purchasing or leasing.
BA-16	Bob Abrams	Editorial	Needs additional clarification	10	3.1.4	*However, the updated Coastal Plain Model did not reproduce the same magnitude of groundwater elevation response as was observed historically (Figure 2-1). Therefore, project implementation and adjustment through groundwater elevation monitoring are expected to bring groundwater elevations back above the MT. Once the groundwater elevations are higher than the MT, a long-term production rate that results in stable groundwater elevations that remain above the MT is sufficient to avoid undesirable results.*	Revise to: However, the updated Coastal Plain Model did not reproduce the same magnitude of groundwater elevation response as was observed historically (Figure 2-1). Therefore, project implementation and adjustment of in-lieu delivery rates driven by ~~through~~ groundwater elevation monitoring are expected to bring groundwater elevations back above the MT. Once the groundwater elevations are higher than the MT, a long-term production rate can be determined that results in stable groundwater elevations that remain above the MT is sufficient to avoid undesirable results.
BA-17	Bob Abrams	Technical	Needs additional clarification	10	3.1.4	*Based on these results, a simulated groundwater flux of 800 AFY or less across the boundary between Oxnard Subbasin and the WLPMA was considered sustainable in this BOY Study.*	Which direction? Should state.
BA-18	Bob Abrams	Editorial	Grammer	10	3.2.1	*Additionally, some agricultural properties that historically reported extractions did not receive allocation.*	Insert the word "an": Additionally, some agricultural properties that historically reported extractions did not receive an allocation.

Specific Comments from the Las Posas Valley Basin Technical Advisory Committee
Draft Basin Optimization Yield Study

Comment ID	Commentor	Technical or Editorial Comment	Topic	Page Number	Section ID	Quoted Text	Comment
BA-19	Bob Abrams	Technical	Terminology	10	3.2.1	*Because the BOY Study is intended to assess the ability of projects to maintain the BOY at as close to 40,000 AFY as possible, and to evaluate the need for a Rampdown relative to the Basin Optimization Yield, this BOY Study used the Water Year 2024 Annual Allocations published by the Watermaster as the basis for extractions in the numerical groundwater models.*	Revise to: Because the 2025 BOY Study is intended to assess the ability of projects to maintain the BOY at as close to 40,000 AFY as possible, and to evaluate the need for a Rampdown relative to the Initial Operating ~~Basin Optimization~~ Yield, this BOY Study used the Water Year 2024 Annual Allocations published by the Watermaster as the basis for extractions in the numerical groundwater models
BA-20	Bob Abrams	Technical	Wording	12	3.2.2.2	*The differences between the Baseline Scenario production rate and the average groundwater production from water years 2016 to 2024 are shown in Figure 3-4.*	Should state explicitly if these differences are increases or decreases, here and on Figure 3-4. e.g., text could say increases and decreases are shown on Figure 3-4. Figure legend could indicate which ranges equate to increases and which to decreases.
BA-21	Bob Abrams	Technical	Clarification	13	3.2.3.1	*If, during water year 2024, these Water Right Holders pumped less than average from the Epworth Gravels Management Area wells, the baseline pumping distribution in the BOY Study Baseline Scenario*	There should be some kind of text explaining that this is unavoidable and HOW THIS WILL be accounted for in the Operating Yield/
BA-22	Bob Abrams	Technical	Clarification	13	3.2.3.1	*Groundwater production at the Baseline Scenario rates was determined not to be sustainable in the ELPMA because simulated groundwater elevations at five Key Wells fell below the minimum threshold groundwater during the 47-year model run (Figure 3-6).*	Were these simulated hydrographs also shifted, as in Figure 3-5. If so there should be a note on the figure. Also, I think you need to say somewhere in the main text that you have more faith in simulated groundwater changes, than simply the simulated elevations.
BA-23	Bob Abrams	Technical	Clarification	15	3.3.1	*As discussed in Section 3.1.3, the Projects Scenario incorporated 1,760 AFY of surface water deliveries to offset groundwater production from six wells in the eastern WLPMA, and 1,380 AFY of surface water deliveries to offset production from three wells in the ELPMA.*	Which six wells? Which three wells?
BA-24	Bob Abrams	Technical	Interpretation of the Judgment	18	3.4.1.1	*The total extraction rate for the Basin-wide Rampdown Scenario was 32,000 AFY (Table 3-3).*	However, the Rampdown should be the Initial Operating Yield minus the BOY, or 40,000 acre-feet per year (AFY) minus 36,860 AFY. Accordingly, the Rampdown should be 3,140 AF, or approximately 224 AFY over the 14-year period between now and 2040. Further, my understanding is that the Judgment does not contemplate a no-project Rampdown or Rampdown Rate.
BA-25	Bob Abrams	Technical	Clarification	24	5.1	*Consistent with the Judgment, this initial BOY Study calculates a Rampdown Rate for a Basin-wide reduction in groundwater pumping if the projects are not implemented. The Rampdown Rate is the annual reduction in groundwater necessary to have the Operating Yield equal the Sustainable Yield by the fall of 2039 (Judgment §§1.89 and 4.10.1.4).*	Insert the word "production" as indicated in red: Consistent with the Judgment, this initial BOY Study calculates a Rampdown Rate for a Basin-wide reduction in groundwater pumping if the projects are not implemented. The Rampdown Rate is the annual reduction in groundwater production necessary to have the Operating Yield equal the Sustainable Yield by the fall of 2039 (Judgment §§1.89 and 4.10.1.4).
BA-26	Bob Abrams	Technical	Interpretation of the Judgment	24	5.1		As noted above, the Rampdown should be the Initial Operating Yield minus the BOY, or 40,000 acre-feet per year (AFY) minus 36,860 AFY. Accordingly, the Rampdown should be 3,140 AF, or approximately 224 AFY over the 14-year period between now and 2040. Further, my understanding is that the Judgment does not contemplate a no-project Rampdown or Rampdown Rate.
BA-27	Bob Abrams	Technical	Clarification	26	6		Suggest revising conclusions based on the suggested revisions to the Executive Summary. Please see accompanying Word file that presents my suggested revisions to the Conclusions section.
CT-1	Chad Taylor	Editorial	Error	3	1.3	*The Rampdown was calculated over a 13-year period…*	The rampdown period is identified as 14 years in other sections.
CT-2	Chad Taylor	Editorial	Missing footnote/endnote	3	1.3	*…(DWR water year 2027 through water year 2039 [1])…*	There is no footnote or endnote corresponding to the note identified in the second to last paragraph on page 3.

Specific Comments from the Las Posas Valley Basin Technical Advisory Committee
Draft Basin Optimization Yield Study

Comment ID	Commentor	Technical or Editorial Comment	Topic	Page Number	Section ID	Quoted Text	Comment
CT-3	Chad Taylor	Editorial	missplaced word	13	3.2.3.1	*The simulated groundwater elevation declines in the northern ELPMA are consistent with previous model scenarios evaluated in for the GSP …*	Remove the unnecessary *for* in the last sentence of the last paragraph on the page.
CT-4	Chad Taylor	Editorial	Inconsistent values	15-16	3.3.1	*The resulting groundwater production rates were 16,656 AFY in the WLPMA and 16,420 AFY in the ElPMA (Table 3-3)*	The values referenced in this text don't match those in Table 3-3
CT-5	Chad Taylor	Technical	Rampdown and water budget	19	3.4.1.3	*…inflows exceed outflows by approximately 500 AFY in the Basin-wide Rampdown Scenario.*	Could the rampdown volume and rate for the WLPMA have been reduced if the simulation of pumping reduction resulted in a closer correlation of inflow and outflow? Was the difference between inflow and outflow necessary to recover from historical water level declines.
CT-6	Chad Taylor	Editorial	Inconsistent values	20	3.4.2.2	*…however, it should be note that simulated groundwater elevations exhibited a declining trend over the 37-year model period.*	In other sections of the report the model period is identified as 47 years.
CT-7	Chad Taylor	Editorial	Add comparison / compilation tables	22	4		Consider adding a table or tables in section 4 that summarize the Baseline, BOY Project, Basin-wide Rampdown, Differential Rampdown, and Sustainable Yield estimates for each management area to assist the reader in understanding the differences between the scenarios.
CT-8	Chad Taylor	Editorial	Expand explanation	24	5.1		Consider expanding the explanation of the rampdown period. As presented lay readers may not understand how the period from the fall of 2026 through the fall of 2039 equates to 14 years and is the appropriate denominator for calculating the rampdown period.
CT-9	Chad Taylor	General Technical	Rampdown period and sustainable conditions	24-25	5		It is not clear in Section 5 how water levels, which are the metric the BOY Study identifies will be used for assessing sustainability, are expected to react to the rampdown period. The model scenarios appear to indicate that over a 47 year period the annual groundwater production volumes pumped in the rampdown scenarios will achieve sustainability. However, the BOY Study does not appear to assess how long after reaching the rampdown pumping rate it will take for water levels to rise to the thresholds identified as sustainable. One assumes that prolonged pumping at rates in excess of the rampdown rate will result in water levels below the minimum thresholds in representative monitoring wells and it is not clear that one year of pumping at the rampdown rate at the end of the 14 year rampdown period will be sufficient to facilitate water level recovery.

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DRAFT MEMORANDUM

To: Chad Taylor, PG, CHg, LPVB Watermaster TAC Administrator
From: Bob Abrams, PhD, PG, CHg., LPVB Watermaster TAC Member
Date: January 23, 2026

Subject: Comments on the Draft Basin Optimization Yield (BOY) Study for the Las Posas Valley Basin (LPVB) Report and the Draft Water Year 2025 Annual Report
Project No.: 091-01

This memorandum is provided to transmit my comments on the draft LPVB BOY Study report and the draft Water Year 2025 Annual Report. Both draft reports are generally well-written. My email submittal contains four electronic files: (1) a native Excel spreadsheet of comments for the BOY Study report; (2) a native Word file providing suggested revisions to the BOY Study report Executive Summary (in Track Changes); (3) a native Word file providing suggested revisions to BOY Study report Conclusions (in Track Changes); and (4) a native Excel spreadsheet of comments for the Annual Report. Items 2 and 3 are also provided as **Attachments 1** and **2** to this memorandum.

The suggested revisions to the Executive Summary and Conclusions are provided in an attempt highlight the major finding of the BOY Study report. That is, Rampdown is not needed if the two projects described in the report are implemented as scheduled. **Attachments 1** and **2** are not necessarily provided as replacements for the respective sections of the report. Rather, they are provided as suggested text that may improve the messaging of the BOY Study report, which may help the layperson understand the main outcome of the BOY Study.

I should also note that my interpretation of the Judgment is that Rampdown should be the Initial Operating Yield minus the BOY, or 40,000 acre-feet per year (AFY) minus 36,860 AFY. Accordingly, the Rampdown should be 3,140 AF, or approximately 224 AFY over the 14-year period between now and 2040. Further, my understanding is that the Judgment does not contemplate a no-project Rampdown or Rampdown Rate.

Attachment 2

Recommended Edits to Executive Summary and Conclusions Sections, Draft Basin Optimization Yield Study, prepared by Bob Abrams, PhD

Suggested Revisions to Executive Summary

In conformance with the Judgment adjudicating groundwater rights in the Las Posas Valley Groundwater Basin (Basin), this report presents the results of the first Basin Optimization Yield (BOY) Study. The results of this BOY Study indicate that if the projects selected from the Basin Optimization Plan (BOP), Project 2 and Project 5, are implemented as scheduled, the BOY is 36,860 acre-feet per year (AFY).[1] BOP Project 2 is the purchase of imported water from Calleguas Municipal Water District (CMWD) for Basin replenishment. BOP Project 5 is an Arroyo Simi-Las Posas water acquisition project. It is anticipated that Rampdown will not be necessary during this five-year period, but could be implemented if conditions change based on monitoring, production levels, or failure to achieve anticipated progress implementing the BOP-identified projects.

The initial scope of this Study was reviewed by both the Technical Advisory Committee (TAC) and Policy Advisory Committee (PAC) for the Basin. The BOY was estimated using numerical groundwater model simulations that incorporated differing groundwater production rates and imported water associated with BOP Projects 2 and 5. The scenarios modeled included a Baseline, Project, and Rampdown Scenarios.

Two numerical groundwater models were utilized for this BOY Study. For the East Las Posas Management Ares (ELPMA), the groundwater model developed by CMWD was used. For the West Las Posas Management Ares (WLPMA), the Coastal Plain Model (CPM) developed by United Water Conservation District (UWCD) was used. The CPM incorrectly characterizes the boundary between the ELPMA and WLPMA (i.e., the Somis Fault), which allows groundwater to flow from the WLPMA to the ELPMA, contrary to conditions observed in the field. This reduces the simulated effectiveness of Project 2 in the WLMPA. Therefore, the BOY of 36,860 AFY should be considered a minimum value, because water levels observed in the field will increase more than the increase simulated by the CPM. This model error should be rectified prior to the 2030 BOY Study.

In the Baseline Scenario, groundwater production equaled the Initial Operating Yield of 40,000 AFY set by the Judgment. In the Projects Scenario, groundwater production was reduced at nine wells owned and operated by Zone Mutual Water Company (ZMWC), Ventura County Waterworks District 19 (VCWWD 19), and Ventura County Waterworks District 1 (VCWWD 1). The reduced groundwater production was replaced with imported water consistent with BOP Project 2. BOP Project 5 is a continuation of imported water that is currently discharged to Arroyo Simi-Las Posas outside of the Basin and therefore did not require any modifications to the numerical models. The Rampdown Scenario was developed to provide an estimate of the Rampdown that may be required in the unlikely event that BOP Projects 2 and 5 are not implemented as scheduled.

[1] In the Judgment, WY 2026 is defined as the period October 1, 2026 through September 30, 2027 and WY 2029 is defined as the period October 1, 2029 through September 30, 2030.

Simulated groundwater production at the Initial Operating Yield of 40,000 AFY was determined to be unsustainable because modeled future groundwater elevations at several Key Wells, or representative monitoring points, fell below the minimum threshold (MT) groundwater elevations established in the Groundwater Sustainability Plan (GSP) for the Basin. In the Projects Scenario, the BOY (the estimated yield that is projected to be available to achieve sustainable groundwater management by 2040) was determined to be 36,860 AFY. It should be noted that BOP Projects 2 and 5 rely on other water agencies for implementation. Thus inter-agency coordination is critical. Initial discussions between the Watermaster and these agencies have begun, but coordination agreements between the agencies have not yet been drafted.

In the unlikely event that BOP Projects 2 and 5 are not implemented, the BOY Study evaluated the Rampdown and Rampdown Rate for the Basin for two scenarios (in addition to the analysis required by the Judgment). In the first scenario, referred to as the Basin-wide Rampdown Scenario, groundwater production was reduced uniformly in all management areas relative to the Initial Operating Yield of 40,000 AFY until groundwater conditions avoided the undesirable results specified in the GSP. In this Scenario, the Operating Yield for WYs 2026-2029, without implementation of BOP Projects 2 and 5, was determined to be approximately 32,000 AFY.

If BOP Project 2 and 5 are not implemented, Rampdown under the first scenario is 8,000 AFY of groundwater production. Under this Rampdown scenario, groundwater production was reduced by 3,683 AFY in the WLPMA, 4,112 AFY in the ELPMA, and 205 AFY in the Epworth Gravels Management Area. The Rampdown Rate in the absence of projects was determined by dividing the Rampdown by the 14-year period over which it will be implemented. The no-projects Rampdown rate would be 571 AFY.

The no-projects Operating Yield may be higher than 32,000 AFY if circumstances indicate that a uniform Rampdown for all management areas is not appropriate pursuant to the Judgment's provisions on differential Rampdown. Thus, in the second Rampdown scenario, referred to as the Differential Rampdown Scenario, Rampdown differed by management area. Under this scenario the Operating Yield, in the absence of projects, was determined to be 33,942 AFY, and the overall Rampdown was 6,058 AFY. Groundwater production was reduced in this scenario by 3,683 AFY in the WLPMA, 2,261 AFY in the ELPMA, and 113 AFY in the Epworth Gravels Management Area. This scenario avoided undesirable results while maintaining higher overall groundwater production rates than the Basin-wide Rampdown Scenario.

It should be noted that three additional projects were identified in the BOP that could be implemented prior to WY 2040. These additional projects were not simulated in the 2025 BOY Study but should be considered for the 2030 BOY Study under the Judgment's standard for inclusion. These projects have the potential to raise the Basin Optimization Yield, and thus the Sustainable Yield, to the target 40,000 AFY by WY 2039. It should also be noted that WY 2025 groundwater extractions were only 32,656 AF and

WY 2024 groundwater extractions were only 28,031 AF.[2] Thus, the error in the CPM noted above and the low actual groundwater extractions during the last two WYs further support the determination that Rampdown is not presently needed if BOP Projects 2 and 5 are implemented as scheduled.

[2] These values are from the Draft Water Year 2025 Annual Report (note that the California Department of Water Resources [DWR] defines WY 2025 as the period October 1, 2024 through September 30, 2025). The Draft Water Year 2025 Annual Report notes that 86% of groundwater extractions had been reported by the time the draft report was releases.

Attachment 2: Suggested Revisions to Conclusions

Based on numerical modeling, with consideration of the inherent limitations of the models, the results of this BOY Study indicate that if BOP Project 2 and BOP Project 5 are implemented as scheduled, the BOY for WY 2026 through WY 2029 is 36,860 AFY, rendering Rampdown unnecessary at present. However, if these projects are not implemented as scheduled, the BOY may be as low as 32,000 AFY, which would require Rampdown to reduce the Operating Yield of the Basin so that it is equal to the BOY (and Sustainable Yield) of the Basin by the fall of 2039. In this case, the Judgment states that "following the first Basin Optimization Yield Study, Rampdown of the Operating Yield will commence in annual steps, if necessary" (Judgment §4.9.1.3).

The Baseline scenario includes 40,000 AFY of groundwater production for the Basin, as defined in the Judgment as the Initial Operating Yield. If BOP Projects 2 and 5 are not implemented as scheduled, this BOY Study report outlines two potential no-project Rampdown scenarios for the Watermaster to consider. The first is a Basin-wide Rampdown that reduces groundwater production by 20%, relative to the Baseline Scenario groundwater production of 40,000 AFY, in all management areas of the Basin (Sections 3.4.1 and 5.1).

The Judgment provides that a Differential Rampdown could be implemented that would result in "localized restrictions on extractions" (Judgment §4.10.3). This process includes, but is not limited to, committee consultation and a list of specific findings relative to the implementation of projects and the avoidance of undesirable results (Judgment §4.10.3.1). Although the process to implement a Differential Rampdown is more complex, this BOY Study finds that the Differential Rampdown approach avoids undesirable results while preserving higher overall groundwater production rates in the Basin.

Thus, the second no-project Rampdown scenario is a Differential Rampdown that reduces groundwater production in the ELPMA and Epworth Gravels Management Areas by 11%, relative to the Initial Operating Yield, and reduces groundwater production in the WLPMA by 20% relative to the Initial Operating Yield (Sections 3.4.2 and 5.2).

However, as noted above, Rampdown is unnecessary if BOP Projects 2 and 5 are implemented as scheduled.

LAS POSAS VALLEY WATERMASTER RESPONSE REPORT

Date: March 18, 2026

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, Draft Basin Optimization Yield Study

The Las Posas Valley (LPV) Watermaster (Watermaster) requested consultation from the LPV Technical Advisory Committee (TAC) on the draft Basin Optimization Yield Study (BOY Study or BOYS). Watermaster's request was transmitted in a December 17, 2025, memorandum to TAC. Watermaster requested five previous TAC consultations regarding the BOY Study which guided preparation of the draft BOY Study:

- July 16, 2024, request for consultation on the BOY Study draft scope of work (August 27, 2024, TAC recommendation report)
- December 23, 2024, request for consultation on the BOY Study schedule (January 21, 2025, TAC recommendation report)
- January 7, 2025, presentation to TAC by Watermaster's consultant Dudek on the BOY Study modeling approach (January 21, 2025, TAC recommendation report)
- April 3, 2025, request for consultation on preferred modeling alternatives and impacts to schedule (May 9, 2025, TAC recommendation report)
- August 29, 2025, request for consultation on numerical modeling results (September 16, 2025, TAC recommendation report)

The TAC discussed and developed its recommendation report at its January 6, 2026, and January 20, 2026, regular meetings. TAC's February 3, 2026 (received February 9, 2026), recommendation report included ten recommendations and an attachment with 76 comments by each of the TAC members on specific sections of the draft BOY Study. Each of these recommendations is listed below followed by Watermaster response. Watermaster's responses to the 76 specific recommendations are included in the attached table. Watermaster appreciates TAC's prompt and thorough review of the draft BOY Study and recommendations.

RECOMMENDATION 1: Clarify How the Arroyo Simi-Las Posas Water Acquisition Project Was Simulated in the Model Scenarios
It is unclear how the Arroyo Simi-Las Posas water acquisition project (Basin Optimization Plan Project 5) was included in the various simulations. Please clarify in text and add a simple table that lists the amount of surface water that was simulated to enter the LPVB for each simulation. This is particularly important for the rampdown scenarios, which are described as being no-project scenarios. If they are no-project scenarios, please clarify that the current flows in the Arroyo Simi-Las Posas that Basin Optimization Plan Project 5 are intended to maintain were not included.

Response to Recommendation 1:
BOY Study text has been modified and a new table added to clarify the Simi Valley discharges used in the model simulations. As described in text and shown in draft BOY Study Table 3-1, the purpose

of the Arroyo Simi-Las Posas Water Acquisition project would be to maintain current upstream discharges to the Arroyo that flow into the LPV Basin. This project, if implemented, would ensure that the City of Simi Valley (City) would continue these discharges into the future. At the time of preparation of the LPV Groundwater Sustainability Plan (GSP), the City was considering diverting a portion of discharges from the Simi Valley Water Quality Control Plant (SVWQCP) and dewatering wells to produce additional recycled water for use in the Simi Valley Basin; however, the City subsequently indicated it had no near-term plan to decrease these discharges. Further, the City's 2020 Urban Water Management Plan, the most recently published Plan, does not project a significant increase in the production of recycled water in a 25-year planning horizon. Therefore, both the BOY Study Baseline and Project scenarios were simulated with the same volume of flows in the Arroyo entering the LPV Basin. This is consistent with the scenarios modeled in the First Periodic Evaluation of the GSP and Table 3-1 in the draft BOY Study which shows 0 acre-feet per year (AFY) increase in water supply over the current state if the project is implemented. Further, the consultation with TAC at the January 7, 2026, meeting on the planned modeling approach specifically identified that SVWQCP 2016 – 2022 average discharges of 8,040 AFY and 2016 – 2022 average dewatering well discharges of 1,318 AFY would be used for both the Baseline and Projects model scenarios. TAC's January 21, 2025, recommendation report regarding the BOY Study modeling approach did not contain any concerns or recommendations regarding the proposed Simi Valley discharges in the model scenarios.

RECOMMENDATION 2: Present Basin Optimization Yield and Rampdown Consistent with Judgment

The Judgment defines Basin Optimization Yield as the estimated yield projected to be available to achieve sustainable groundwater management by 2040 and rampdown as the deficit between the effective Operating Yield and the Basin Optimization Yield. The draft BOY Study references these definitions and identifies the Basin Optimization Yield as a groundwater production rate of 36,860 acre-feet per year (AFY), which includes implementation of Basin Optimization Projects and maintains sustainable groundwater conditions. However, the draft BOY Study then uses a different annual production rate to identify and define rampdown and rampdown rate. According to the Judgment, rampdown would therefore be 40,000 AFY minus 36,860 AFY, which is 3,140 AFY (current Operating Yield is 40,000 AFY and BOY Study calculated Basin Optimization Yield is 36,860 AFY).

This may point to a conflict within the Judgement. The reduction in pumping below the Operational Yield identified in the draft BOY Study as the Basin Optimization Yield applies only to those LPVB groundwater users who would receive project in lieu water deliveries. However, the Judgment requires rampdown to be applied to all groundwater users in the LPVB. The Judgment does not appear to contemplate a condition in which a no-project scenario results in rampdown, which is the context in which rampdown has been discussed and estimated in the draft BOY Study.

2.1 Additionally the Judgment requires that the Basin Optimization Yield be used by the Watermaster to allocate pumping to pumpers. If the Basin Optimization Yield identified in the BOY Study is used for this purpose, pumpers will not receive the correct annual allocations; it will be reduced by the volume of in lieu water delivered to the projects assessed in the BOY Study. Because the in lieu projects in the BOY Study offset some groundwater use, the volume

of water delivered for in lieu use should be included in the Basin Optimization Yield. Recommendations:

- Clarify how the Basin Optimization Yield with the in lieu projects will be used for future allocation determinations, and rampdown (which is assumed to be zero so long as projects are implemented).
- Explore and characterize how rampdown is being presented in the BOY Study in contrast to the definitions in the Judgment.
- Provide additional explanation for the context of including a no-project scenario and associated rampdown in the BOY Study. To avoid confusion, this explanation should differentiate between pumping reductions in the BOY Study and rampdown in the Judgment. This explanation should also inform the reader that uniform and differential pumping reductions are both presented for informational purposes only.

Response to Recommendation 2:
The draft BOY Study text lacked clarity regarding the Basin Optimization Yield; text has been revised for clarity. The Basin Optimization Yield under the Projects Scenario with implementation of both in-lieu projects is 40,000 AFY less the 3,140 AFY reductions by the in-lieu participants, for a net yield of 36,860 AFY for the remaining Water Right Holders. The in-lieu projects would consist of deliveries of 3,140 AFY of imported water from Calleguas MWD to Ventura County Waterworks Districts (VCWD) 1 and 19 and to Zone Mutual Water Company (MWC) to replace the 3,140 AFY these purveyors would otherwise pump. Participation by VCWD-1, VCWD-19, and Zone MWC, would be under the policy and terms to be established by Watermaster and agreements with the purveyors. Annual Allocation would be based on a Basin Optimization Yield of 40,000 AFY. Importantly, 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. Note that the Basin Optimization Yield will be re-evaluated in the 2030 BOY Study. BOY Study text has been revised to provide this clarification.

Regarding the two no-project Rampdown scenarios presented in the draft BOY Study, these were specifically requested for inclusion by the TAC in its September 16, 2025, recommendation report on BOY Study numerical modeling results; recommendation 5.1.1:

> 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¡

BOY Study text has been updated to clarify the purpose of the two no-project Rampdown scenarios.

Following are responses to the bulleted comments in recommendation 2.1:

- Response to this comment is provided in the first paragraph above. BOY Study text has been updated to provide additional clarification.
- BOY Study text has been updated to provide additional clarification.
- BOY Study text has been updated to provide additional clarification.

RECOMMENDATION 3: Consider Addressing the Effects of the Somis Fault Model Boundary Condition on In Lieu and Rampdown Simulations

As noted in the draft BOY Study and raised by the TAC in previous recommendation reports, the Coastal Plain Model includes a boundary condition on the Somis fault that is inconsistent with the agreed-upon hydrogeologic conceptual model of the LPVB, the boundary condition in the East Las Posas Model, and the version of the Ventura Regional Groundwater Flow Model (VRGFM) that was used to develop the LPVB GSP. While the draft BOY Study indicates that the simulated in lieu and rampdown scenarios for the WLPMA are sustainable despite this issue with the Coastal Plain Model, it is possible that the volumes of water identified for in lieu delivery and reduced pumping in the projects and rampdown scenarios, respectively, exceed what would actually be required to achieve sustainable groundwater conditions in the WLPMA.

3.1 Recommendation:

Consider estimating the volumetric effect the inconsistent boundary condition has on the project and rampdown scenario simulations. This could allow the in lieu and rampdown volumes to be refined downward, reducing costs and impacts to WLPMA groundwater users.

Response to Recommendation 3:

A comparison of simulated groundwater level response in well 02N20W06R01 between the GSP Projects Scenario and the First Periodic Evaluation of the GSP Projects Scenario is provided in Figure 2-1 and discussed in section 2.2 of the draft BOY Study. This comparison was conducted between these two studies because the groundwater pumping distribution was similar, whereas the groundwater pumping distribution in the BOY Study model simulation was based on water-right allocations as discussed in section 3.2.2 of the draft BOY Study. This comparison showed that the simulated groundwater elevation response in the GSP was consistent with the observed groundwater elevation response to the 1994 to 2006 historical in-lieu program. Therefore, the historical program may provide a better guide to in-lieu program response in the WLPMA than the BOY Study Projects Scenario simulation. It should be noted that 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. Ongoing groundwater elevation monitoring will provide direct evidence of the benefits of the in-lieu project and confirm whether groundwater elevations are above minimum thresholds. Annual in-lieu volumes can be adjusted as appropriate through adaptive management based on groundwater monitoring.

RECOMMENDATION 4: Clarify Existing and Projected Conditions in the Epworth Gravels Management Area

The information presented for the Epworth Gravels Management Area (EGMA) should be expanded to explain several factors. These include the presence of groundwater producers without allocations in the Judgment, the effects of recent pumping patterns on model simulations, and the need for rampdown in the management area if the Basin Optimization Plan projects are not implemented.

4.1 Recommendations:

- In section 3.2.3.1:
  - Provide more information and quantify or estimate how much pumping in the EGMA is not accounted for in the distribution of allocations in the Judgment.

    - Provide similar information for the other management areas or note the absence of pumpers without allocations in those management areas.
- Provide additional information regarding the effects of using water year 2024 pumping in the EGMA for the 47-year model period and how this will be accounted for in the Operating Yield for the management area and LPVB.
- Explain why the difference between the estimated sustainable yield and rampdown volumes were so large for the EGMA.
- Explain why EGMA pumping is reduced in the rampdown scenarios when the baseline production rate for the management area is already lower than the sustainable yield, as indicated on page 13 of the draft BOY Study.
- Provide additional discussion of the differential rampdown scenario results in the EGMA, specifically addressing continuing declines in groundwater levels shown on Figure 3-13.

Response to Recommendation 4:
The BOY Study text discusses issues related to model simulations for the Epworth Gravels Management Area. Forecasting extractions, and thus future groundwater conditions, in the Epworth Gravels aquifer is problematic, as the Epworth Gravels Management Area is fully contained within the ELPMA and many Water Right Holders within the Epworth Gravels Management Area have wells that extract from the Epworth Gravels aquifer and wells that extract from the underlying Fox Canyon and/or Grimes Canyon aquifers. The BOY Study simulations distributed pumping by Water Right Holders based on pumping reported for water year 2024, the first available year of reporting under the Judgment. Because these Water Right Holders may vary their pumping between the two aquifers year-to-year, the simulated future groundwater elevations should not be overly relied upon. Additionally, not all groundwater producers with wells in the Epworth Gravels Management Area received Water Right allocations in the Judgment. Text in the BOY Study has been expanded to include an estimate of the unauthorized extraction that may be occurring in the Epworth Gravels.

Following are responses to the bulleted comments in recommendation 4.1:

- Estimates of unauthorized pumping by operators without Water Right allocations has been added to the BOY Study for the management areas.
- Section 3.2.2 of the draft BOY Study contains a detailed explanation of the Baseline Scenario pumping distribution methodology. The methodology is based on the Annual Allocations distributed among multi-well and mutual-water-company exclusive and hybrid users based on the DWR water year 2024 pumping, the first full water year of water-use-reporting available post Judgment implementation. This methodology was presented to, and agreed with, by the TAC. Because the Epworth Gravels Management Area is wholly within the ELPMA, and because Water Right Holders typically extract from both the Epworth Gravels aquifer and the underlying Fox Canyon aquifer, it is recommended that the Operating Yields of the Epworth Gravels Management Area and ELPMA be managed together.
- As discussed above, the Operating Yield, and Rampdown, in the Epworth Gravels Management Area should be managed together with the ELPMA.
- As noted in Section 3.4.2.2, the hydrograph for the Epworth Gravels Management Area Key Well is in Appendix B, not shown in Figure 3-13.

RECOMMENDATION 5: Clarify How Pumping and Water Budget Changes Were Applied in Model Scenarios, Specifically with Respect to Temporal Variability in Pumping Volume and Distribution

It is not clear from the descriptions of model scenarios if pumping was held constant for every year of the simulation period for each scenario, or if pumping volume and/or distribution were varied during the simulation period.

While this comment and recommendation applies to all model simulations, it is particularly important for the rampdown scenarios. It is unclear whether pumping at the fully reduced rate was used for the entire rampdown simulation period or if pumping was reduced incrementally each year. If it is the former, the TAC questions whether rampdown will be effective in achieving sustainable groundwater conditions by 2040. As presented in the BOY Study, the model scenarios indicate that over the 47-year model period the annual groundwater production volumes pumped in the rampdown scenarios will achieve sustainability. However, the BOY Study does not appear to assess how long after reaching the rampdown pumping rate it will take for water levels to rise to the thresholds identified as sustainable. Prolonged pumping at rates in excess of the rampdown rate may result in water levels below the minimum thresholds in representative monitoring wells and it is not clear that one year of pumping at the rampdown rate at the end of the 14-year rampdown period will be sufficient to facilitate water level recovery.

5.1 Recommendations:

- Clarify how pumping and other water budget changes were applied in model scenarios, especially as it relates to rampdown rate implementation over time during the model period.
- Assuming the rampdown was assumed to have occurred before the start of each scenario and pumping during the entire model period was equal to the rampdown rate for the scenario, explain how long water level recovery to sustainable conditions may take after rampdown is complete.

Response to Recommendation 5:

Simulated groundwater production was constant for the duration of each modeling scenario from the start of the simulated model time period of October 2022. It is important to recognize that numerical groundwater models are more effective at simulating changes and trends in groundwater elevations than they are at forecasting absolute groundwater elevations. For this reason and given the known uncertainties in the models and especially uncertainties in the distribution of future groundwater extraction and future precipitation, trying to use the model simulations to predict specific groundwater elevations at a specific future year would be inappropriate. Rather, the BOY Study appropriately uses numerical groundwater model simulations to forecast groundwater elevation trends over time to evaluate whether a given pumping scenario may be sustainable. That said, review of simulated Baseline Scenario hydrographs (e.g., well 03N19W28N03S) suggests that significant delay of project implementation, or Rampdown if the projects are not implemented, could be a challenge to achieving sustainability by 2040. The model simulations provide the Watermaster Board with the best-available information for management actions; however, ongoing groundwater elevation monitoring will provide direct evidence and confirmation whether groundwater elevations are above, or trending to, minimum thresholds, to provide the Watermaster with the information needed for adaptive management.

RECOMMENDATION 6: Clearly Identify Assumptions Associated with Modeling and Other Analyses in the BOY Study

The TAC review identified some unstated assumptions in the modeling approach that should be included in the BOY Study. These include the assumption that modeled hydrology from the beginning of water year 2023 and current is consistent with actual conditions and that water in storage credited to Calleguas Municipal Water District will remain in storage. There may be other assumptions that are implicit in the modeling and other analyses in the BOY Study and these should be clearly identified and discussed in a dedicated section of the report.

6.1 Recommendations:

Clearly describe and explain the implications of assumptions in the modeling and other analyses in the BOY Study, including but not limited to the following:

- The difference between modeled and actual hydrology for the period from beginning of water year 2023 (October 2022) through the end of water year 2025 (September 2025) and briefly describe (qualitatively) the impact on interpretation of model results.
- The potential effects of recovery of water stored by Calleguas Municipal Water District on water levels, water budgets, and sustainable groundwater conditions.

Response to Recommendation 6:
A table has been added provide the water supply assumptions included in the modeling scenarios.

Following are responses to the bulleted comments in recommendation 6.1:

- Numerical groundwater models are most effective at simulating changes and trends in groundwater elevations rather than forecasting absolute groundwater elevations in any given year. The models use a synthetic forecast of precipitation based on historical precipitation for future hydrology, as described in section 3.1.2 of the draft BOY Study. Because actual precipitation since October 2022 naturally was different from the synthetic forecast, this affected groundwater elevations measured at some key wells. The hydrographs of the simulated future groundwater elevations were shifted to start at the most recent groundwater elevations measured in water year 2024. Explanation of this shift has been added to the BOY Study text.
- Calleguas MWD has represented that the water it has stored in the Basin is principally for an emergency when it loses access to imported water from the Metropolitan Water District of Southern California (MWD). Scenarios when this situation might occur such as a disruption in the Bay Delta or an earthquake that disrupts the supply line between MWD and Calleguas would likely be associated with a State-wide emergency situation. It is beyond the scope of the GSP or the BOY Study to include planning for such State-wide emergencies. Calleguas has represented that it would replenish stored water at the earliest opportunity when used for other purposes. Much more information about Calleguas' operations and plans will become public upon the completion of the Calleguas ASR Project Operation Plan which is required to be prepared by the Judgment. When the Operation Plan becomes available, consideration can be made as to how Calleguas' water-storage operation should be considered in the next 5-year BOY Study. The BOY Study text has been updated to explain the

assumption that the Calleguas MWD water will remain in storage in the Basin over the long term.

RECOMMENDATION 7: Discuss The Potential Effects of Carryover Water on Sustainable Management of the Basin

The methodology used to distribute pumping in the baseline and other model scenarios assumed that pumping was constant every year and that all active wells produced the same volume of groundwater every year. While this approach preserves the water balance and allows the model to show how hydrologic variability affects groundwater conditions, it does not allow for assessment of the impacts of highly variable changes in groundwater pumping dependent on those same hydrologic conditions. Recent groundwater use in the LPVB has been below the current Operational Yield of 40,000 AFY, which indicates that some water rights holders have been accumulating carryover water, which is common during wet years.

Subsequent use of carryover water in dry years has the potential to effect groundwater sustainability and should be discussed.

7.1 Recommendation:

Discuss the potential effects of carryover water on sustainable management in the LPVB in light of the scenarios simulated for the BOY Study.

Response to Recommendation 7:
TAC identifies Carryover as an important challenge to groundwater management in the Basin. As discussed in section 3.2.2 of the draft BOY Study, assumptions were made regarding the simulated future pumping distribution (with TAC consultation and concurrence) because the Judgment Water Right Allocations are significantly different than historical pumping patterns. Carryover use causes additional uncertainty. There will have been several years of pumping and potential Carryover use that will inform simulated future pumping in the next 5-year BOY Study. Text in the current BOY Study has been updated to qualitatively identify the uncertainty associated with future Carryover use.

RECOMMENDATION 8: Document and Discuss Uncertainties in the Model Results as They Relate to the Findings of the BOY Study

Uncertainty in model results is presented alongside some values in section 2.1 of the draft BOY Study but then not explored further when describing the project scenario simulations, Basin Optimization Yield, or rampdown scenarios. Adding discussion of uncertainty and contextualizing quantified uncertainty would help readers understand the confidence that should be placed on the projections for LPVB management based on model simulations.

8.1 Recommendations:

Show quantitative estimates of uncertainties for all model simulation results, similar to those presented in section 2.1 and discuss how uncertainty should be considered in relation to project scenarios, Basin Optimization Yield, and rampdown.

Response to Recommendation 8:
The BOY Study text has been updated to include quantitative and qualitative uncertainty in the discussion of the modeled scenarios. It is important to recognize the model simulations provide the Watermaster Board with the best-available information for management actions; however, ongoing groundwater elevation monitoring will provide direct evidence and confirmation whether groundwater elevations are above, or trending to, minimum thresholds, to provide the Watermaster with the information needed for adaptive management.

RECOMMENDATION 9: Review and Consider Significant Edits to Text Identified by TAC

There are significant text edits identified through the TAC review that should be considered by the Watermaster in preparation for finalizing the draft BOY Study. Specific recommendations are referenced below.

9.1 Recommendations:

[bullets have been replaced with letters for ease of reference in responses]

a. Consider reframing the executive summary and section 6 to highlight the positive outcome that rampdown won't be necessary if the two identified projects proceed in a timely fashion and that both project and rampdown implementation will have to be adaptive processes guided by monitoring data and the required 5-year updates to the BOY Study. Suggested text for some of the revisions to the Executive Summary has been provided by Dr. Abrams and is attached.
b. State in the BOY Study that simulated relative head changes are used and are deemed to be more reliable for comparing MTs to groundwater elevations. This is noted as a "shift" in hydrographs but should be more specific. Models are better at predicting head changes than they are at predicting actual heads. The second paragraph of section 1.3 might be a good place to include this information. Each instance of shifted hydrographs should also be identified in the text and on the relevant figures.
c. Revise text in section 2.2 to refer to boundary conditions and the Somis fault as a barrier to groundwater flow as indicated in comments BA-7, 8, 9, 10, and 12 in the attached tabular comments.
d. Consider including uncertainty in the presentation of sustainable yield in table 3-2 as a separate column where the uncertainty in the sustainable yield for each management area can be documented.
e. Reference the Coastal Plain model uncertainty and difference between groundwater elevation observations during past in lieu water use presented in sections 2.2 and 3.1.4 when discussing assessment of model simulation results for the WLPMA in comparison to sustainability metrics. The intent would be to remind readers that the model simulated conditions at well 02N20W06R01 do not align with historical observations and that in practice sustainability in this area of the LPVB will be assessed using monitoring data and adaptive project management.
f. Add explanatory text regarding the significant difference between the sustainable yield published in the First GSP Periodic Evaluation for the LPVB and the annual groundwater production rate identified in the basin-wide rampdown scenario.

g. Add a table or tables in section 4 that summarize the Baseline, BOY Project, Basin- wide Rampdown, Differential Rampdown, and Sustainable Yield estimates for each management area to assist the reader in understanding the differences between the scenarios.
h. Revise Conclusions to be consistent with changes to the Executive Summary and discuss all conclusions from the study. The existing Conclusions section is focused on the rampdown scenarios. All of the modeled scenarios should be discussed in this section along with reiterating that timely project implementation is shown to result in sustainable groundwater conditions without the need for basin-wide pumping reductions associated with rampdown. Suggested text for some of the revisions to the Conclusions was provided by Dr. Abrams and is attached. Also consider including a summary table of each scenario evaluated in the BOY Study in the conclusions to provide readers with context for the discussion of the conclusions.
i. Develop and include a recommendations section. While the Judgment may not specifically call for recommendations, it would be prudent to include a discussion recommendations identified by the BOY Study. This should include recommendations for the rapid development of the projects identified in the BOY Study along with creation of contingency plans in case the projects are delayed or not successfully implemented, as raised in section 4. Recommendations could also include data needs, model clarifications and/or updates, and other ongoing tasks that would be prudent to consider pursuing ahead of the next update of the BOY Study.

Response to Recommendation 9:
Following are responses to the bulleted comments in recommendation 9.1:

a. The Executive Summary and the Conclusions section of the BOY Study have been rewritten to clarify that modeling of the Projects Scenario suggests that Rampdown may not be needed if the projects are implemented in a timely manner, and the two Rampdown scenarios are included for informational purposes should the projects not be implemented. The text has been revised considering text suggestions provided by Dr. Abrams.
b. TAC correctly points out that numerical groundwater models are better at predicting changes and trends in simulated future groundwater elevations than they are in predicting actual future groundwater elevations. The BOY Study text has been updated to include discussion of the shifts in starting simulated groundwater elevation in hydrographs of certain key wells. Hydrographs have been revised with a note.
c. BOY Study text has been revised to address comments BA-7, 8, 9, 10, and 12, regarding the boundary condition in the Coastal Plain Model at the Somis Fault.
d. Table 3-2 has been updated to provide estimated uncertainty for the sustainable yield estimates of each management area.
e. Watermaster agrees with this recommendation. BOY Study text has been updated to clarify that model simulations in the vicinity of well 02N20W06R01do not align with historical observations and that in practice sustainability in this area of the LPVB will be assessed using monitoring data and adaptive project management.
f. BOY Study text has been updated to provide explanation as to the differences in sustainable yield estimates in the First Periodic Evaluation of the GSP and the BOY Study scenarios.
g. Text has been extensively revised for clarity rendering a table unnecessary.

h. The Conclusions section and Executive Summary have been revised based on TAC recommendations, TAC member comments, and Dr. Abrams' suggested text.
i. The TAC correctly points out that the Judgment does not call for a recommendations section and Watermaster does not believe adding a recommendations section is appropriate, especially the new recommendation by the TAC to create contingency plans. Watermaster notes that this newly recommended scope was not in the draft scope of work which was subject of a July 16, 2024, TAC consultation nor did TAC include recommendations for this additional scope of work in its August 27, 2024, recommendations report. That said, recommendations that are discussed in various sections of the BOY text have been summarized in the updated Conclusions section for easy reference.

RECOMMENDATION 10: Review Editorial Comments Provided by TAC in Tabulated Comment Matrix

The TAC members each prepared detailed tabulated comments numbered by commentor with references to specific section and page numbers and quoted text. Many of these comments are editorial in nature and identify apparent errors in the draft BOY Study, including typographic errors and unclear text.

10.1 Recommendations:

Consider revising the text to address the comments identified as editorial and clarification in the attached tabular comment matrix.

Response to Recommendation 10:
The BOY Study text was reviewed and revised where appropriate in response to TAC's recommendations. The text and tables of the BOY Study have been revised, where appropriate, in response to TAC member comments provided in the table attached to the recommendation report. Detailed responses to each of the TAC member comments are included in the attached table.

Specific Comments from the Las Posas Valley Basin Technical Advisory Committee
Draft Basin Optimization Yield Study

Comment ID	Topic	Page Number	Section ID	Quoted Text	Comment
BB-1	Clarification	5	2.1	*"CMWD no longer maintains the ELP Model but has provided this model to FCGMA to support management of the Basin."*	Calleguas has not made a decision to stop maintaining the model.
BB-2	Editorial	7	3.1.2	*"Of course, the exact future hydrology is unknown. Therefore, the synthetic future hydrology is a source of uncertainty in any future model simulations."*	Standalone sentence - should it be included in the prior paragraph?
BB-3	Editorial	12, 13, and 16	3.2.3.1 & Tables 3-2 and 3-3	*N/A*	Baseline groundwater production value for Epworth Gravels Mgmt. Area listed in text does not match value in Tables 3-2 and 3-3.
BB-4	Editorial	15 and 16	3.3.1 & Table 3-3	*N/A*	Groundwater production values for ELPMA and WLPMA listed in text do not match values in Table 3-3.
BB-5	Editorial	v	N/A	*Second paragraph, first sentence "...that provided quantifiable groundwater at a level of detail that could be included in the model."*	Groundwater what? Levels, flow, budgets?
BB-6	Analysis Assumptions	7	3.1.2	*N/A*	An unstated assumption of the modeling approach is that the modeled hydrology between 10/1/22 and now is identical to that which has actually occurred. Consider qualitatively describing the difference between modeled and actual hydrology for this period and briefly describe (qualitatively) the impact on interpretation of the results.
BB-7	Analysis Assumptions	8	3.1.3	*N/A*	An unstated assumption of the modeling approach is that water in storage credited to Calleguas MWD by FCGMA will remain in storage. Should this water be recovered, water levels would be lower than simulated and minimum thresholds may not be achieved. Consider describing this (qualitatively) for context.
BB-8	Clarification	v & 1	ES, 2nd paragraph & 1, 2nd paragraph	*N/A*	It is unclear how the Arroyo Simi-Las Posas water acquisition project (Basin Optimization Plan Project 5) was included in the various simulations. Please clarify in text and add a simple table that lists the amount of surface water that was simulated to enter the model domain via the SFR package from Simi Valley for each simulation.
BB-9	Epworth Gravels Mgmt. Area	Various	Various	*N/A*	It is stated on page 13 that the sustainable production rate for the Epworth Gravels Mgmt. Area is 1,320 AFY. The baseline Epworth Gravels Mgmt. Area extractions were less than this (1,024 AFY). Given this, please explain why the Epworth Gravels Mgmt. Area extractions were reduced in the rampdown scenarios. Please also caveat the rampdown to alert policymakers to the fact that it appears that Epworth Gravels Mgmt. Area rampdown does not appear necessary from a technical perspective.

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BB-10	Epworth Gravels Mgmt. Area	13	3.2.3.1	*"not all groundwater producers with wells in the Epworth Gravels Management Area received an allocation in the Judgment (Figure 3-4)."*	Two comments. (1) Estimates of Epworth Gravels Mgmt. Area extractions that are not included in the analysis should be provided (i.e. groundwater producers w/o a Judgment allocation) for context. This can be estimated from historical extractions reported to FCGMA. (2) Is the Epworth Gravels Management Area the only management area that has groundwater producers w/o a Judgment allocation? If no, estimates should also be provided for those management areas for context.
BB-11	Epworth Mgmt. Area Sustainable Yield vs. Rampdown Pumping	18	3.4.1.1	*"The estimated sustainable yields of the Epworth Gravels Management Area and the ELPMA were approximately 500 and 1,450 AFY higher, respectively, than the simulated groundwater production in the Basin-wide Rampdown scenario."*	This difference for Epworth Gravels Mgmt. Area is significant on a percentage basis. Text should be added to explain why this large of a difference exists.
BB-12	Projects and Rampdown	v and 26-27	ES and 6	*N/A*	Please add more text to remind the reader that implementation of either projects or rampdown would be an adaptive process that is guided by monitoring data and the required 5-year updates to this document.
BB-13	Rampdown Rate	N/A	5	*N/A*	It appears that the rampdown rates are based on an assumption that the amount of surface water entering ELPMA from Simi Valley will not change even if the Arroyo Simi-Las Posas water acquisition project (Basin Optimization Plan Project 5) is not executed. This should be made clear in the text and the rampdown rate should be caveated accordingly.
BB-14	Rampdown Rate	18	3.4.1.1	*N/A*	Please clarify how rampdown was simulated in the rampdown model scenarios. It is unclear whether pumping at that the fully reduced rate was used for the entire rampdown period or if pumping was reduced incrementally each year during the rampdown period. If it is the former, the results should be caveated because the model scenario may be underestimating pumping and the resulting simulated groundwater levels may be overestimated.
BB-15	Recommendations	N/A	N/A	*N/A*	There is no recommendations section. While the Judgment may not specifically call for recommendations, it would be prudent to include a discussion of data needs, model clarifications/updates, etc. that would be prudent to consider pursuing ahead of the next update of this document.
BB-16	Technical	16	3.3.2.1	*"Although the groundwater elevation at the third well, Well 02N20W06R01, remained below the minimum threshold during the Projects Scenario, the groundwater elevation at the end of the scenario was similar to the elevation at the start of the scenario. This suggests that if the initial groundwater elevation can be raised at this well, ongoing production at the rates simulated in the Projects Scenario will maintain the groundwater elevation in the future."*	This text is unclear. What is meant by "if the initial groundwater elevation can be raised at this well"? How would this initial groundwater level increase be achieved? Would it be more appropriate to say that the simulated groundwater elevations are close to the MT and that is reasonable to conclude that the MT could be achieved consistently when considering uncertainty in the WLPMA model?

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Comment ID	Topic	Page Number	Section ID	Quoted Text	Comment
BB-17	WLPMA Sustainable Yield vs. Rampdown Pumping	18	3.4.1.1	*"The estimated sustainable yield of the WLPMA in the First Periodic Evaluation was approximately 3,300 AFY lower than the simulated groundwater production in the Basin-wide Rampdown scenario."*	This is significant difference. Text should be added to explain why this large of a difference exists.
TM-1	spell out abbreviation	1	1.1	*LPV Judgment*	first use of Las Posas Valley so spell out abbreviation - Las Posas Valley (LPV) Judgment
TM-2	spell out abbreviation	5	2	*ELP Model; a MODLFOW numerical model…*	first use of ELP - spell out
TM-3	model uncertainty	5	2.1	*uncertainty bounds in the sustainable yield …estimated using the ELP Model of ±2,300 AFY…*	the ±2,300 AFY uncertainty (on an ~18,000 AFY yield) is significant – on the order of 13% – which directly affects confidence in the BOY and rampdown values
TM-4	model uncertainty	6	2.1	*…uncertainty bounds in the sustainable yield for the WLPMA estimated using the GSP version of the VRGWFM of ±1,200 AFY …*	How is the model uncertainty considered in the analyses?
TM-5	sustainable yield uncertainty	22	4	*…model scenarios simulated for this BOY Study the Basin Optimization Yield is estimated to be 36,860 AFY if the in-lieu surface water delivery projects are implemented…*	How is the model uncertainty reflected in this value? Is it 36,860 AFY+/- the uncertainty?
TM-6	rampdowns	24	5.2	*…scenario groundwater production was reduced by 20% relative to the Baseline Scenario pumping in the WLPMA…*	It is recognized that the model used for WLPMA under predicts WLs for the Key Wells. If a 20% rampdown is needed per the model to ultimately get WLs above the MT, isn't it logical to assume that a lesser rampdown could achieve comparable results when the WLs are corrected for the under prediction tendencies of the model? It didn't seem like the underprediction was accounted for, at least semiquantitatively, in the analyses. Is the report suggesting a rampdown quantity that is too aggressive?

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Comment ID	Topic	Page Number	Section ID	Quoted Text	Comment
TM-7	conclusions	26	6	*Conclusion*	why does the Conclusion section focus solely on the ramp-down scenarios? Per Section 1, *the BOY Study evaluates groundwater conditions under three potential future production scenarios: (1) continued production at 40,000 acre-feet per year (AFY), the initial Operating Yield defined in the Judgment, (2) implementation of two groundwater in-lieu projects evaluated in the Basin Optimization Plan (BOP), and (3) a ramp-down scenario to determine the BOY in the event that the projects are not implemented.. .* Discussions of all three scenarios should be included in the Conclusions. Isn't the major take-away message that if the in-lieu delivery projects can be implemented promptly, then ramp-downs are not likely to be needed? Don't bury (or omit) the lead message.
TM-8	conclusions	26	6		It would be useful to the reader to have a summary table for each of the scenarios evaluated in the report. There are lots of numbers in the document. A summary in the conclusions makes it easier to compare the scenario outcomes. Suggest a table (with supporting text) that lists for each key well when each scenario brings water levels above the MT, is the MT achieved before 2040, water level trends (up or down), do water level trends suggest that MO will be met, etc.
TM-9	possible typo	7	3.1.1	*The future scenarios developed for the BOY Study simulate groundwater conditions in the Basin over the 47-year...*	reference to a "37-year modeled period" for trends in section 3.4.2.2 – this appears to be a typo, since the scenarios run 47 years
TM-10	timing of project implementation	8	3.1.3	*Table 3-1*	Table 3-1 indicates Time Period for Implementation as "Water Year 2027", but does not specifically identify when in WY2027 the water deliveries were initiated in the model
TM-11	timing of project implementation	8	3.1.3	*...the in-lieu project deliveries are not currently occurring. If implementation of the in-lieu project is delayed for multiple years, the modeled impacts of the project on groundwater levels in this BOY Study may 'overestimate the impact of this project...*	since these projects depend on agencies outside the Watermaster's direct control, there is uncertainty in their yield and timing. The study already notes no agreements are signed yet. It might be prudent to recommend contingency planning (e.g., if by year X the projects are behind schedule, implement phased rampdowns to compensate). This is hinted in Section 4 (if Project 2 is not fully implemented, consider a Rampdown), which is a good inclusion.
TM-12	SGMA compliance	9	3.1.4	*...in the WLPMA, the long-term groundwater production rate was determined to be potentially sustainable if groundwater elevations remained stable over the future model period, such that the ending groundwater level was equal to or higher than the starting groundwater elevation."*	an additional criterion is used: a pumping rate is considered potentially sustainable if groundwater levels **stabilize or rise over the future period**, even if they start (and end) below the MT. It's important to highlight the risk of allowing "stable but below-threshold" conditions, even temporarily, technically means undesirable results (as defined in the GSP) persist until those levels rise above MT. The study implies that with projects or rampdown, those key wells might not reach MT by 2040 but could soon after.

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Comment ID	Topic	Page Number	Section ID	Quoted Text	Comment
TM-13	Baseline Scenario extractions	10	3.2.2	*...the selected approach, with which the TAC concurred, was to distribute the Annual Allocation based on the reported pumping and MWC deliveries for DWR water year 2024...*	The distribution method ensures every drop of the 40,000 AFY is assigned to a specific well or MWC, preserving the water balance, and does so in a way that reflects current (2024) usage patterns. The model does not account for underutilization (which has occurred in the past couple of years) which results in carryover amounts that can have an as yet unmodeled impact on future water levels. The baseline scenario is logical, however, it would be useful to be more forthcoming with the shortcomings of the scenario assumptions as predictors of future conditions.
TM-14	modeling assumptions	10	3.2.2		The modeling approach could be more robust by accounting for the carryover amounts earned in the wet periods and their use in subsequent dry periods. For example, assume carryover was earned in "above normal wet years" at a rate consistent with GW use in recent wet years. The carryover would be used in dry years when irrigated water demand is greater than the average. It is not clear how this would impact efforts to bring GW levels above the MT, but it would offer a more likely scenario for how the basin would operate.
TM-15	estimated sustainable yield uncertainty	12	3.2.2.2	*Table 3-2 Estimated Sustainable Yield*	shouldn't the sustainable yield be +/- the uncertainty ? Suggest adding another column to show the possible range of the sustainable yield OR put the range in paretheses in the same cell as the Estimated Sustainable Yield. For example, WLPMA Estimated Sustainable Yield is 11,400 (10,200-12,600), ELPMA + EG is 19,230 (16,930-21,530). LPVB sustainable yield is 30,630 (27,137-34,130).
TM-16	in lieu amounts	17	3.2.2.2	*...the LAS groundwater production was reduced by 1,760 AFY to simulate implementation of the in-lieu surface water delivery project to Zone MWC and VCWWD 19."*	Is the in lieu delivery amount being overestimated because the WLPMA model under predicts WL responses to imported water? Could a lesser in lieu amount achieve the same result if the model's WLs were adjusted to account for the underprediction?
TM-17	possible typo	15	3.3.1	*The resulting groundwater production rates were 16,656 AFY in the WLPMA and 16,420 AFY in the ELPMA (Table 3-3).*	Table 3-3 shows ELPMA pumping as 19,179 AFY in the Projects scenario, but 16,420 AFY in text. Looks like the text should be changed to 19,179 AFY which is consistent with modeled ~7% reduction. Similar for WLPMA - Table 3-3 shows 16,657 AFY, text says 16,656 AFY– likely typo.
TM-18	estimated sustainable yield uncertainty	16	3.3.1	*Table 3-3*	how is model uncertainty accounted for in this table?

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TM-19	SGMA compliance	16	3.3.2	*...if the initial groundwater elevation can be raised at this well, ongoing production at the rates simulated in the Projects Scenario will maintain the groundwater elevation in the future.*	WLPMA meets the softer criterion (stable levels at the problematic well). From a hydrogeologic standpoint, the in-lieu deliveries clearly mitigate drawdown in the targeted areas. It just flags one gap - one location still below threshold, requiring either trust in model correction of flow across Somis fault or additional management.
TM-20	SGMA compliance	19	3.4.1.2	*In the WLPMA, simulated groundwater elevations remained above the minimum threshold groundwater elevation at two of three Key Wells...*	The 20% reduction predicted water levels would remain below the MT in one Key Well. So, a 20% reduction is not actually consistent with SGMA goals of avoiding undesirable results. It is unknown if this "modified approach" to SGMA compliance is acceptable to DWR. Report states that model response is "...dampened relative to historical observations" therefore, groundwater elevations in this well are expected to be above the MT. What happens to the groundwater elevations in the other key wells if we account for the "dampened response"? Are we suggesting that a rampdown of some amount less that 20% is adequate if the dampened response is accounted for? If so, why not present the model results for that lower value? Does the use of a 20% rampdown put unnecessarily stringent cuts on ELPMA & Epworth?
TM-21	rampdowns	20	3.4.2.1	*...it should be noted that simulated groundwater elevations exhibited a declining trend over the 37-year modeled period."*	under the 11% cut, ELPMA is still *mildly overdrafting* , which is consistent with the note that water levels in ELPMA show a declining trend over the 47-year simulation (albeit all above MT). Is the declining trend over the SGMA compliance timeframe consistent with SGMA compliance requirements?
TM-22	add PVB, LPV, ELP, WMID to list of abbreviations	iii			
TM-23	Somis fault/model boundaries				The WLPMA model has assigned properties to the Somis fault that are inconsistent with current hydrogeologic understanding. Before the next BOYS or Periodic Evaluation update, it is recommended that the model be updated to reflect our hydrogeologic conceptual model. This allows the forward forecasts to be used without having to consider the "dampened results" correction factor.
BA-1	Setting the tone of the report (that the report presents good news)	v	Executive Summary		Overall, the BOYS study and report present good news that rampdown won't be necessary if the two projects proceed in a timely fashion. Suggest revising the Executive Summary to highlight this and support better understanding of terms in the Judgment, such Operating Yield, etc. Please see accompanying Word file that presents my suggested revisions.

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Comment ID	Topic	Page Number	Section ID	Quoted Text	Comment
BA-2	Conforming main text to suggested revised Executive Summary	v	Executive Summary		Left to Dudek to revise main text to hit the highlights noted in the suggested revised Executive Summary
BA-3	Delete unneeded comma	3	1.3	*Undesirable results were defined in the GSP for the three management areas of the Basin: the East Las Posas Management Area (ELPMA), the Epworth Gravels Management Area, and the West Las Posas Management Area (WLPMA)* , *(FCGMA 2019).*	Delete identified comma (in red)
BA-4	Use of modeled heads for MT metric versus head changes (i.e., the "shift" used in hydrographs)	3	1.3	*Because the MTs are the metric by which groundwater conditions in the Basin are determined to be sustainable, the BOY Study compares simulated future groundwater elevations in the Basin to the MTs at the Key Wells in the Basin. Future groundwater elevations were simulated using the two numerical groundwater models that cover the three management areas of the Basin. Simulated production rates that result in long-term stability of the groundwater elevations at levels above the MTs are considered sustainable. The Basin Optimization Yield is the production rate, with implementation of the Basin Optimization Projects that can be reasonably implemented by 2040 and maintains groundwater elevations above the MTs.*	Somewhere in the main text it should be stated that simulated relative head changes are used to compare to MTs for groundwater elevations. This is noted as a "shift" in hydrographs, but should be more specific. Models are better at predicting head changes than they are at predicting actual heads. This paragraph might be a good place to do that.
BA-5	Inconsistent use of acronyms	5	2	*Coastal Plain Model: a version of the Ventura Regional Groundwater Flow Model (VRGFM) MODFLOW numerical model developed and maintained by UWCD, which covers the entirety of the WLPMA, Oxnard Subbasin, PVB, and Mound Subbasin (UWCD 2018).*	Ventura Regional Groundwater Flow Model is sometimes abbreviated as VRGFM and sometimes as VRGWFM. Be consistent.
BA-6	Delete unneeded word	5	2	*Therefore, the only change FCGMA made to the model for the First Periodic Evaluation was to extend the simulation time period through the end of water year 2022 (i.e., September 30, 2022) (FCGMA 2024*	Delete the word "time" (in red)
BA-7	Model "boundary" and modeled "boundary condition" are not the same thing and cannot be used interchangeably	6	2.2	*Although the Coastal Plain Model included improved hydrogeologic conceptual model data in several groundwater basins, the update also included a revision to the model boundary at the eastern edge of the WLPMA.*	Revise to: Although the Coastal Plain Model included improved hydrogeologic conceptual model data in several groundwater basins, the update also included a revision to the model boundary condition at the eastern edge of the WLPMA.
BA-8	Somis Fault is observed to be a flow barrier; should emphasize that this is an observation and not a model phenomenon	6	2.2	*In previous versions of the model, the boundary between the ELPMA and WLPMA was represented using a no-flow boundary condition, which is consistent with the Somis Fault acting as a barrier to groundwater flow between the two management areas (FCGMA 2019).*	Revise to: In previous versions of the model, the boundary between the ELPMA and WLPMA was represented using a no-flow boundary condition, which is consistent with the observation that the Somis Fault acts as a barrier to groundwater flow between the two management areas (FCGMA 2019).

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Comment ID	Topic	Page Number	Section ID	Quoted Text	Comment
BA-9	Model "boundary" and modeled "boundary condition" are not the same thing and cannot be used interchangeably	6	2.2	*In contrast, the model boundary in the version of the model used in the First Periodic Evaluation and in this BOY Study is a general head boundary condition ...*	Insert the word "condition" as indicated in red. THERE ARE also two other instances in the next paragraph to insert the word "condition." One is noted in next comment along with suggested change in wording.
BA-10	Model "boundary" and modeled "boundary condition" are not the same thing and cannot be used interchangeably, and clarification	6	2.2	*...simulated groundwater elevations do not rise as rapidly in response to reduced groundwater production as they would if the model boundary were a no-flow boundary.*	Revise to: ...simulated groundwater elevations do not rise as rapidly in response to reduced groundwater production as they would if the model boundary condition had not been changed from a no-flow boundary to a general head boundary. ~~they would if the model boundary~~
BA-11	Missing or extra words	6	2.2	*This rise is similar to that measured in the historical data between 1994 and 2006, when CMWD was delivering imported water in-lieu groundwater delivery to WLPMA*	Revise to: This rise is similar to that measured in the historical data between 1994 and 2006, when CMWD was delivering imported water in lieu of local groundwater pumping to the ~~r in-lieu groundwater delivery to~~ WLPMA
BA-12	Model "boundary" and modeled "boundary condition" are not the same thing and cannot be used interchangeably, and clarification	7	2.2	*The comparison of the observed historical change in groundwater elevation to the modeled change in groundwater elevation indicates that the model boundary change has introduced additional uncertainty into the predictive capabilities of the model in this region. Future work should be conducted to reduce this uncertainty by recalibrating the revised model using a no-flow boundary to better represent the hydrogeologic conceptual model of this area.*	Revise to: The comparison of the observed historical change in groundwater elevation to the modeled change in groundwater elevation indicates that UWCD's change to the model boundary condition between the WLPMA and ELPMA ~~model boundary change~~ has introduced errors and additional uncertainty into the predictive capabilities of the model in this region. Future work should be conducted to fix this error and reduce this uncertainty by recalibrating the revised model using a no-flow boundary condition to ~~better~~ represent the hydrogeologic conceptual model of this area.
BA-13	Grammer	7	2.2	*Watermaster and TAC agreed that, while the change in the model boundary is not consistent with the hydrogeologic conceptual model, groundwater management decisions will be based on observed water levels, rather than model simulation .*	Change to "simulations"
BA-14	Run-on sentence	7	2.2	*Because the UWCD model is capable of simulating groundwater elevations in the eastern portion of the WLPMA that rise above the minimum threshold prior to 2040 and remain above the minimum threshold from 2040 to 2070, use of the UWCD model files developed for the Periodic Evaluation remains the best available option to evaluate the BOY and complete this first BOY study prior to the beginning of the 2027 water year (October 1 2026 – September 30, 2027) (FCGMA 2025b).*	Change to: The UWCD model is capable of simulating groundwater elevations in the eastern portion of the WLPMA that rise above the minimum threshold prior to 2040 and remain above the minimum threshold from 2040 to 2070. Thus, the use of the UWCD model files developed for the Periodic Evaluation remains the best available option to evaluate the BOY and complete this first BOY study prior to the beginning of the 2027 water year (October 1, 2026 – September 30, 2027) (FCGMA 2025b)

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BA-15	Needs additional clarification	8	3.1.3	*The Arroyo Simi–Las Posas Water Acquisition project would involve the purchase or lease of recycled water from the City of Simi Valley to continue discharging the water from its shallow dewatering wells and/or the Simi Valley Water Quality Control Plant to the Arroyo Simi for downstream recharge to the Basin (FCGMA 2025a).*	Need a statement as to why this water can't continue without purchasing or leasing.
BA-16	Needs additional clarification	10	3.1.4	*However, the updated Coastal Plain Model did not reproduce the same magnitude of groundwater elevation response as was observed historically (Figure 2-1). Therefore, project implementation and adjustment through groundwater elevation monitoring are expected to bring groundwater elevations back above the MT. Once the groundwater elevations are higher than the MT, a long-term production rate that results in stable groundwater elevations that remain above the MT is sufficient to avoid undesirable results.*	Revise to: However, the updated Coastal Plain Model did not reproduce the same magnitude of groundwater elevation response as was observed historically (Figure 2-1). Therefore, project implementation and adjustment of in-lieu delivery rates driven by ~~through~~ groundwater elevation monitoring are expected to bring groundwater elevations back above the MT. Once the groundwater elevations are higher than the MT, a long-term production rate can be determined that results in stable groundwater elevations that remain above the MT is sufficient to avoid undesirable results.
BA-17	Needs additional clarification	10	3.1.4	*Based on these results, a simulated groundwater flux of 800 AFY or less across the boundary between Oxnard Subbasin and the WLPMA was considered sustainable in this BOY Study.*	Which direction? Should state.
BA-18	Grammer	10	3.2.1	*Additionally, some agricultural properties that historically reported extractions did not receive allocation.*	Insert the word "an": Additionally, some agricultural properties that historically reported extractions did not receive an allocation.
BA-19	Terminology	10	3.2.1	*Because the BOY Study is intended to assess the ability of projects to maintain the BOY at as close to 40,000 AFY as possible, and to evaluate the need for a Rampdown relative to the Basin Optimization Yield, this BOY Study used the Water Year 2024 Annual Allocations published by the Watermaster as the basis for extractions in the numerical groundwater models.*	Revise to: Because the 2025 BOY Study is intended to assess the ability of projects to maintain the BOY at as close to 40,000 AFY as possible, and to evaluate the need for a Rampdown relative to the Initial Operating ~~Basin Optimization~~ Yield, this BOY Study used the Water Year 2024 Annual Allocations published by the Watermaster as the basis for extractions in the numerical groundwater models
BA-20	Wording	12	3.2.2.2	*The differences between the Baseline Scenario production rate and the average groundwater production from water years 2016 to 2024 are shown in Figure 3-4.*	Should state explicitly if these differences are increases or decreases, here and on Figure 3-4. e.g., text could say increases and decreases are shown on Figure 3-4. Figure legend could indicate which ranges equate to increases and which to decreases.
BA-21	Clarification	13	3.2.3.1	*If, during water year 2024, these Water Right Holders pumped less than average from the Epworth Gravels Management Area wells, the baseline pumping distribution in the BOY Study Baseline Scenario would extrapolate this single year of reduced pumping over the entire 47-year model time period. The result is continuously rising simulated groundwater elevations that do not reflect the historical production patterns from the aquifer.*	There should be some kind of text explaining that this is unavoidable and HOW THIS WILL be accounted for in the Operating Yield/

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BA-22	Clarification	13	3.2.3.1	*Groundwater production at the Baseline Scenario rates was determined not to be sustainable in the ELPMA because simulated groundwater elevations at five Key Wells fell below the minimum threshold groundwater during the 47-year model run (Figure 3-6).*	Were these simulated hydrographs also shifted, as in Figure 3-5. If so there should be a note on the figure. Also, I think you need to say somewhere in the main text that you have more faith in simulated groundwater changes, than simply the simulated elevations.
BA-23	Clarification	15	3.3.1	*As discussed in Section 3.1.3, the Projects Scenario incorporated 1,760 AFY of surface water deliveries to offset groundwater production from six wells in the eastern WLPMA, and 1,380 AFY of surface water deliveries to offset production from three wells in the ELPMA.*	Which six wells? Which three wells?
BA-24	Interpretation of the Judgment	18	3.4.1.1	*The total extraction rate for the Basin-wide Rampdown Scenario was 32,000 AFY (Table 3-3).*	However, the Rampdown should be the Initial Operating Yield minus the BOY, or 40,000 acre-feet per year (AFY) minus 36,860 AFY. Accordingly, the Rampdown should be 3,140 AF, or approximately 224 AFY over the 14-year period between now and 2040. Further, my understanding is that the Judgment does not contemplate a no-project Rampdown or Rampdown Rate.
BA-25	Clarification	24	5.1	*Consistent with the Judgment, this initial BOY Study calculates a Rampdown Rate for a Basin-wide reduction in groundwater pumping if the projects are not implemented. The Rampdown Rate is the annual reduction in groundwater necessary to have the Operating Yield equal the Sustainable Yield by the fall of 2039 (Judgment §§1.89 and 4.10.1.4).*	Insert the word "production" as indicated in red: Consistent with the Judgment, this initial BOY Study calculates a Rampdown Rate for a Basin-wide reduction in groundwater pumping if the projects are not implemented. The Rampdown Rate is the annual reduction in groundwater production necessary to have the Operating Yield equal the Sustainable Yield by the fall of 2039 (Judgment §§1.89 and 4.10.1.4).
BA-26	Interpretation of the Judgment	24	5.1		As noted above, the Rampdown should be the Initial Operating Yield minus the BOY, or 40,000 acre-feet per year (AFY) minus 36,860 AFY. Accordingly, the Rampdown should be 3,140 AF, or approximately 224 AFY over the 14-year period between now and 2040. Further, my understanding is that the Judgment does not contemplate a no-project Rampdown or Rampdown Rate.
BA-27	Clarification	26	6		Suggest revising conclusions based on the suggested revisions to the Executive Summary. Please see accompanying Word file that presents my suggested revisions to the Conclusions section.
CT-1	Error	3	1.3	*The Rampdown was calculated over a 13-year period…*	The rampdown period is identified as 14 years in other sections.
CT-2	Missing footnote/endnote	3	1.3	*…(DWR water year 2027 through water year 2039 [1])…*	There is no footnote or endnote corresponding to the note identified in the second to last paragraph on page 3.
CT-3	missplaced word	13	3.2.3.1	*The simulated groundwater elevation declines in the northern ELPMA are consistent with previous model scenarios evaluated in for the GSP …*	Remove the unnecessary *for* in the last sentence of the last paragraph on the page.
CT-4	Inconsistent values	15-16	3.3.1	*The resulting groundwater production rates were 16,656 AFY in the WLPMA and 16,420 AFY in the ElPMA (Table 3-3)*	The values referenced in this text don't match those in Table 3-3

Specific Comments from the Las Posas Valley Basin Technical Advisory Committee
Draft Basin Optimization Yield Study

Comment ID	Topic	Page Number	Section ID	Quoted Text	Comment
CT-5	Rampdown and water budget	19	3.4.1.3	*…inflows exceed outflows by approximately 500 AFY in the Basin-wide Rampdown Scenario.*	Could the rampdown volume and rate for the WLPMA have been reduced if the simulation of pumping reduction resulted in a closer correlation of inflow and outflow? Was the difference between inflow and outflow necessary to recover from historical water level declines.
CT-6	Inconsistent values	20	3.4.2.2	*…however, it should be note that simulated groundwater elevations exhibited a declining trend over the 37-year model period.*	In other sections of the report the model period is identified as 47 years.
CT-7	Add comparison / compilation tables	22	4		Consider adding a table or tables in section 4 that summarize the Baseline, BOY Project, Basin-wide Rampdown, Differential Rampdown, and Sustainable Yield estimates for each management area to assist the reader in understanding the differences between the scenarios.
CT-8	Expand explanation	24	5.1		Consider expanding the explanation of the rampdown period. As presented lay readers may not understand how the period from the fall of 2026 through the fall of 2039 equates to 14 years and is the appropriate denominator for calculating the rampdown period.
CT-9	Rampdown period and sustainable conditions	24-25	5		It is not clear in Section 5 how water levels, which are the metric the BOY Study identifies will be used for assessing sustainability, are expected to react to the rampdown period. The model scenarios appear to indicate that over a 47 year period the annual groundwater production volumes pumped in the rampdown scenarios will achieve sustainability. However, the BOY Study does not appear to assess how long after reaching the rampdown pumping rate it will take for water levels to rise to the thresholds identified as sustainable. One assumes that prolonged pumping at rates in excess of the rampdown rate will result in water levels below the minimum thresholds in representative monitoring wells and it is not clear that one year of pumping at the rampdown rate at the end of the 14 year rampdown period will be sufficient to facilitate water level recovery.

LAS POSAS VALLEY TECHNICAL ADVISORY COMMITTEE

May 9, 2025

REVISED 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 – Preferred Modeling Alternatives and Impacts to Schedule, Basin Optimization Yield Study

The Las Posas Valley Watermaster Technical Advisory Committee (TAC) provides this Recommendation Report regarding the Basin Optimization Yield Study Preferred Modeling Alternatives and Impacts to Schedule. This Recommendation Report was prepared in response to the Las Posas Valley Basin Watermaster (Watermaster) committee consultation request transmitted to the TAC on April 3, 2025.

BACKGROUND

The Watermaster requested TAC consultation on a preferred alternative method to assess basin yield optimization in the BOYS. The Las Posas Valley Adjudication judgment requires preparation of a Basin Optimization Yield Study (BOYS) 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 Watermaster originally planned to use the two groundwater models to simulate conditions related to optimization in the east and west management areas of the Las Posas Valley Basin (LPVB). However, the model for the West Las Posas Management Area (WLPMA) was developed and is maintained by United Water Conservation District (UWCD). The Watermaster attempted to develop an agreement with UWCD to facilitate UWCD's services in applying their model to simulate yield optimization scenarios. The Watermaster has reported that an agreement for this purpose could not be reached and alternatives to the original approach must be implemented.

The Watermaster informed the TAC in a December 23, 2024 memorandum that another technical approach may be required. That memorandum also identified three potential alternatives, which were:

(i) Estimating the Basin Optimization Yield and Rampdown using Groundwater Sustainability Plan (GSP) periodic evaluation model simulations

(ii) Estimating the Basin Optimization Yield and Rampdown using historical groundwater elevation measurements and extraction reports
(iii) Developing a new numerical groundwater flow model for the WLPMA.

In early 2025, the Watermaster removed the new numerical model development alternative (iii above) from consideration due to the associated schedule impacts. The Watermaster and its consultant, Dudek, have also identified an additional alternative, described as estimating the Basin Optimization Yield using the model provided by UWCD as part of the LPVB GSP Periodic Evaluation completed in 2025.

The Watermaster Board of Directors asked Dudek to review and select its preferred modeling alternative and submit its analysis to the LPV Policy Advisory Committee (PAC) and TAC for consultation. Dudek analyzed the modeling alternatives and their respective impacts to the BOYS schedule and identified the recently developed alternative that would use the model scenario provided by UWCD as part of the Periodic Evaluation as the preferred alternative. Dudek has estimated inclusion of this alternative would result in the BOYS being completed in April 2026 for adoption at the May 2026 Watermaster Board of Directors meeting. Dudek presented the alternative BOYS approaches and their preferred alternative in a letter titled *Basin Optimization Yield Study Alternative Approach, Scope, and Schedule Impacts* dated March 31, 2025.

The Watermaster requested the TAC specifically consider and provide consultation on the following topics:

1. Should the Watermaster use the UWCD Periodic Evaluation model files to run scenarios for preparation of the Basin Optimization Yield Study rather than estimating the Basin Optimization Yield and Rampdown (i) using GSP periodic evaluation model simulations or (ii) using historical groundwater elevation measurements and extraction reports?
2. Is the schedule to implement the alternative in (1) and complete the Basin Optimization Yield Study in April 2026 for adoption at the May 2026 Watermaster Board of Directors meeting, approximately four months before the start of Water Year 2026 (October 1, 2026 through September 30, 2027), a reasonable alternative for timely completion of the Basin Optimization Yield Study?

The TAC considered the BOYS preferred modeling alternative and schedule impacts in a regular TAC meeting on April 15, 2025 and again on May 6, 2025. TAC comments on the BOYS preferred modeling alternative and schedule 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 special meeting on May 9, 2025.

COMMENTS

The TAC would also like to express gratitude to the Watermaster for working diligently to develop an agreement with UWCD to access and use the current version of the Coastal Plain groundwater model and to Watermaster staff and Dudek for identifying this alternative. The proposed approach preserves the original technical methodology for basin optimization and maintains consistency with the GSP and other analyses that also employed the two models representing the LPVB.

However, the TAC has concerns that the model scenario provided by UWCD as part of the Periodic Evaluation does not accurately represent the conceptual model of the boundary between the WLPMA and East Las Posas Management Area (ELPMA). The TAC is also concerned that criteria for evaluating the project and/or alternative model scenarios have not been described for review by the TAC. The TAC views resolution of the recommendations presented below as critical requirements that should be addressed before BOYS simulations are undertaken.

TAC RECOMMENDATIONS

1. RECOMMENDATION 1: CONSIDER ADDRESSING THE SOMIS FAULT REPRESENTATION IN THE COASTAL PLAIN MODEL BEFORE PERFORMING BASIN OPTIMIZATION YIELD MODEL SIMULATIONS

As described in TAC comments and recommendations on the Draft First Periodic Evaluation, Groundwater Sustainability Plan for the Las Posas Valley Basin (Draft GSP Evaluation) (*TAC Consultation Recommendation Report, Draft First Periodic Evaluation, Groundwater Sustainability Plan for the Las Posas Valley Basin*, dated October 10, 2024), modifications to the version of the Coastal Plain model used in the GSP Evaluation to simulate conditions in the WLPMA included a significant change to the boundary condition used to represent the Somis Fault. This fault, which separates the WLPMA from the ELPMA, was changed from a no-flow boundary condition to a partial general head boundary condition. This change means the Coastal Plain Model used for the Draft GSP Evaluation and proposed for use in the BOYS optimization simulations allows flow from the WLPMA to the ELPMA. The average annual flow rate from the WLPMA to the ELPMA from 2016 to 2022 presented in the GSP Evaluation was 832 acre feet per year, which represents slightly less than 17 percent of the change in groundwater storage in the WLPMA during the period.

As the TAC has noted in our October 10, 2024 Recommendation Report, the Draft GSP Evaluation indicates that the limited groundwater elevation information in this area of the LPVB implies there is little groundwater flow across the Somis Fault. In addition, local groundwater gradients suggest that if flow occurs it would be from ELPMA to WLPMA. In response to this comment, the Watermaster indicated the TAC recommendations were forwarded to UWCD and that:

> "UWCD is currently working on the supplemental documentation to cover the changes made since the GSP. As of the time this response report was prepared, UWCD had not yet provided a date when the supplemental documentation will be made available."

Unfortunately, such supplemental documentation is still not available.

The TAC further recommended in October 2024 that the Watermaster

> "Advance the coordination with UWCD and the TAC to develop agreement on the representation of this boundary in the two models. The coordination of this boundary between the two models should not wait until after the GSP is amended. The analyses in the amended GSP should be consistent with the Basin Optimization Yield Study."

While use of the GSP periodic evaluation model simulations as suggested in the preferred alternative for yield optimization in the WLPMA is consistent with the GSP periodic evaluation, the TAC has significant concerns over the representation of the Somis Fault in that model. The TAC is specifically concerned that the apparent conflict between the groundwater flow direction and magnitude of average annual flow in the GSP periodic evaluation model simulations and the observed water levels and groundwater gradients in this area indicate the model is an inappropriate tool for simulating future conditions with changed management and the addition of projects designed to increase groundwater storage and elevations in the WLPMA.

1.1 Recommendations:

The TAC recommends that Watermaster and their consultant Dudek evaluate and report back to the TAC if the GSP periodic evaluation model simulation files currently in their possession could be used to assess and quantify the potential impacts to available water supply in the WLPMA given the apparent groundwater flow direction discrepancy between the Coastal Plain model and observed local groundwater conditions around the Somis Fault boundary between the WLPMA and ELPMA.

1.2 Technical Rationale for Recommendation:

As stated above, the TAC is concerned that groundwater flow direction in the GSP periodic evaluation model simulations is from the WLPMA to the ELPMA and the observed water levels and groundwater gradients in this area indicate the actual flow, if it occurs, would be from the ELPMA to the WLMPA. Simulating future conditions with projects in the WLPMA intended to increase groundwater elevations and storage in that management area would likely simulate increased flow across the Somis Fault in the model. This would mean that the simulated conditions would show less benefit to water levels and storage in the WLPMA than would be expected in reality. Given the conceptual model and local observations relating to the effect of the Somis Fault on groundwater flow it is likely that increased groundwater elevations and storage in the WLPMA would have little effect on flow between the WLPMA and ELPMA. In fact, if the Somis Fault does present a barrier to horizontal flow

of groundwater it would cause groundwater to mound higher on the western side of the Fault in response to WLPMA projects that increase groundwater elevations and storage.

1.3 Summary of Facts in Support of Recommendation:

- The GSP periodic evaluation model simulations appear to misrepresent the direction of groundwater flow across the Somis Fault at the boundary between the WLPMA and ELPMA.
- Using a model that misrepresents boundary conditions for predictive simulations, optimization of yield, and reduction in pumping allocations is likely to result in significant errors that risk either over or underestimating the effectiveness of projects and changes in groundwater pumping, especially close to the boundary in question.

2. RECOMMENDATION 2: CLARIFY WHAT CRITERIA WILL BE USED TO ASSESS UNDESIRABLE RESULTS IN THE WLPMA WHEN COMPARING BASIN OPTIMIZATION YIELD STUDY PROJECT AND ALTERNATIVE PUMPING SCENARIOS TO THE BASELINE SCENARIO

In the October 10, 2024 Recommendation Report on the Draft GSP Periodic Evaluation, the TAC also commented on the relationship between the Oxnard Subbasin and sustainability in the WLPMA. In that comment, the TAC expressed concern that the methodology used to assess the effects of pumping in the WLPMA on seawater intrusion in the Oxnard Subbasin did not effectively isolate the effects of changes in pumping in WLPMA on conditions in the Oxnard Subbasin. As pointed out in our October 10, 2024 Recommendation Report:

> "The Draft GSP Evaluation presented model scenarios that included simultaneous changes in pumping volumes in the WLPMA, both Oxnard aquifers, and the Pleasant Valley Basin. The results of these simulations were then compared to a baseline scenario and the changes to simulated seawater intrusion in the Oxnard Subbasin were used to evaluate effects on sustainable yield in the WLPMA. However, the changes to pumping volumes in the scenarios appeared to be relatively arbitrary and the TAC is concerned that the resulting sustainable yield estimates for the WLPMA are similarly arbitrary."

The TAC recommended development of model scenarios designed to limit changes between compared simulations to single variables to isolate the impacts of those variables on sustainability. To the TAC's knowledge isolated variable model simulations for this purpose have not been completed to date.

Given this uncertainty, the TAC recommends the Watermaster and Dudek clarify what criteria will be used to assess the presence of undesirable results in the WLPMA when comparing the projects and alternative pumping scenarios to the baseline scenario.

2.1 Recommendations:

Clarify what criteria will be used to assess undesirable results conditions in the WLPMA when comparing the projects and alternative pumping scenarios to the baseline scenario. The TAC is specifically interested in understanding if simulated effects on seawater intrusion conditions in the Oxnard Subbasin will be used as a component of the criteria for assessing undesirable results, or if comparisons of simulated conditions within the WLPMA will be the sole criteria.

2.2 Technical Rationale for Recommendation:

The presentation of the preferred alternative for basin optimization yield estimation indicated:

> "Groundwater budgets, the change in groundwater storage, and groundwater levels at key wells simulated in the projects scenario would be compared to those simulated in the baseline scenario in order to provide a quantitative estimate of Basin Optimization Project benefits."

And

> "If the Basin Optimization Projects do not avoid undesirable results in the WLPMA, up to three additional model scenarios would be evaluated to define a groundwater production rate that avoids undesirable results"

While these statements appear to indicate that the assessment of undesirable results will be limited to conditions in the WLPMA the specific metrics that will be used for assessing undesirable results have not been presented.

2.3 Summary of Facts in Support of Recommendation:

- Previous model scenarios used to estimate available yield in the WLPMA have used simulated seawater intrusion conditions in the Oxnard Subbasin as the metric for assessment of undesirable results and these simulations combined variables making it impossible to evaluate the effects of changes in management of the WLPMA in isolation.
- The presentation of the proposed approach to estimating basin optimization yield in the WLPMA to date has not included details of the proposed methodology for assessing undesirable results.

3. RECOMMENDATION 3: PREEMPTIVELY CONSIDER WHAT INFORMATION FROM THE BASIN OPTIMIZATION MODEL SCENARIOS CAN BE SHARED WITH THE TAC AND OTHER INTERESTED PARTIES

The Watermaster informed the TAC that some information from the model that they and Dudek plan to use for the basin optimization assessments of the West Las Posas Management Area (WLPMA) are subject to a protective order in the Oxnard Subbasin and Pleasant Valley Subbasin (OPV) Adjudication. Specifically:

> Some of the model files that Watermaster will use to prepare the LPV basin optimization yield study (specifically in the West Las Posas Management Area) include files received from United Water Conservation District. These files and the information embedded in them may be subject to a protective order in the OPV Adjudication. Requests for access to or disclosure of those files will be reviewed against that protective order by FCGMA [Fox Canyon Groundwater Management Agency] counsel on a case-by-case basis.

In reviewing the scope of work for the BOYS, the TAC requested additional time and consultation to allow opportunities to receive and review information from the optimization model scenarios. The uncertainty regarding the TAC's ability to review information from the WLPMA optimization modelling concerns the TAC. As a means of avoiding this uncertainty and delays associated with legal review of requests for model information, the TAC proposes to provide test case requests for types of information for Watermaster counsel to review before the optimization modeling of the WLPMA is complete.

3.1 Recommendations:

The TAC specifically recommends that Watermaster staff and legal counsel consider whether information including but not limited to those listed below can be provided from the Coastal Plain model simulations planned for assessing basin optimization yield from the WLPMA.

- Time series datasets showing comparison of model inputs representing simulation of project and alternative pumping scenarios to the baseline scenario.
- Time series of simulated head data at key wells and other important locations for baseline, project, and alternative pumping scenarios.
- Total and zonal water budgets for the entire model area, portions of the model area, boundaries at the edges of the model, and boundaries between specific portions of the model for the baseline, projects, and alternative pumping scenarios.
- Total and zonal water budgets for the WLPMA portion of the model area, zones within the WLPMA portion of the model area, boundaries at the edges of the WLPMA within the model, and boundaries between specific portions of the WLPMA model for the baseline, projects, and alternative pumping scenarios.

3.2 Technical Rationale for Recommendation:

The schedule for completion of the BOYS does not allow for delays and the TAC may require specific technical information from the model scenario simulations planned and completed for testing optimal yield from the WLPMA. Given that some of the information within the Coastal Plain model that includes the WLPMA may be protected under the OPV Adjudication, it is appropriate for Watermaster legal counsel to consider what specific information can and cannot be shared with the TAC before the request for committee consultation is sent to the TAC.

3.3 Summary of Facts in Support of Recommendation:

- The TAC is the technical representative of the Watermaster providing expertise in evaluation of technical and scientific assessments relating to the LPVB.

- Review of comparative groundwater management scenarios simulated using numerical groundwater models typically includes detailed evaluation of model inputs, results, outputs, and statistics.
- In order to provide appropriate technical review and recommendations to the Watermaster, the TAC should know what information it can expect to have access to with as much advanced notice as possible.

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 May 9, 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.

TO: Las Posas Valley Watermaster

FROM: Las Posas Valley Watermaster Policy Advisory Committee

RE: Recommendation Report – BOYS Preferred Modeling Alternative and Impacts to Schedule

DATE: May 15, 2025

Dear Las Posas Valley Watermaster,

The Las Posas Valley Watermaster Policy Advisory Committee (PAC) provides this Recommendation Report on the **Basin Optimization Yield Study (BOYS) Preferred Modeling Alternative and Impacts to Schedule**.

Recommendation:
See memo below for recommended course of action**.**

Policy Rationale for Recommendation:
See memo below for rationale.

Summary of Facts in Support of Recommendation:
See memo below for complete summary of facts.

Tally of Committee Member Votes:

	YES	NO	ABSTAIN	ABSENT
Ian Prichard, Calleguas MWD	X			
Jeff Palmer, VC WWD No. 1 & 19				X
John Menne, Zone MWC	X			
Rob Grether, West LPV Large Ag	X			
David Schwabauer, East LPV Large Ag	X			
Josh Waters, East LPV Small Ag	X			
Richard Cavaletto, West LPV Small Ag	X			
Laurel Servin, East LPV MWC	X			
Steven Murata, West LPV MWC	X			
Arturo Aseo, Commercial				X

Report of Bases for Majority and Minority Committee Member Positions:

PAC Recommendation Report Regarding the BOYS Preferred Modeling Alternative and Impacts to Schedule

Regarding the Watermaster's April 3, 2025 memo on preferred modeling alternative and impacts to schedule of the Basin Optimization Yield Study, the PAC concurs with the Watermaster and Dudek that the alternative providing for the use of the *Estimation of the BOY Using the UWCD Periodic Evaluation Model Files to Run New Scenarios* is the most favorable approach.

The PAC recognizes that the BOYS will be an important management tool for the Watermaster and will aid in the development of a groundwater extractions ramp-down scheme that has the potential to impact all stakeholders in the basin. With that understanding, the PAC would prefer the model used for the BOYS not be just "good enough" or what's most expedient but rather be based on the latest understanding of the hydrogeologic conditions in the basin.

The PAC has considered the pros and cons of using the *UWCD Periodic Evaluation Model Files* in the BOYS and would like to explore the potential of augmenting that approach to better address the key policy questions facing the PAC and Watermaster. Committee members debated the merits of using the periodic evaluation model files without modification and alternatively augmenting those model files to address key concerns recognized during the preparation of the 5-Year Periodic Evaluation.

The creation of a completely new groundwater model for the WLPMA was determined to be a costly alternative and had unacceptable impacts to the timeline for completion of the BOYS. However, using the pre-existing model files provides a major jumpstart to the modeling effort. The PAC would like to explore the cost and schedule impacts to upgrading the periodic model to address the following topics:

- Extension of the modeling period to 2024 (instead of 1979)
- The Somis fault was changed from a NO FLOW to GENERAL HEAD BOUNDARY for the periodic evaluation, but the model was not recalibrated. In-lieu water delivery projects are proposed in the vicinity of that fault and a more refined understanding of how the water levels would respond with these revised assumptions about the fault are important.
- Perform the model recalibration, as well as the model validation, sensitivity, and uncertainty analyses needed to support the model. The Dudek memorandum dated March 31, 2025 reported that the necessary documentation of the periodic evaluation model was not available. The PAC recommends that this deficiency be eliminated for any model used in the BOYS. These technical evaluations of the model can make the process of fostering stakeholder acceptance a more straightforward endeavor.

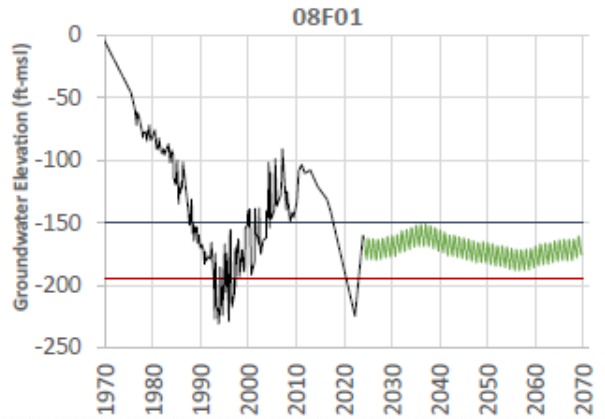
Receiving this additional information will help the Watermaster make a more informed decision about the tradeoffs between advancing the study with Dudek and waiting for United to contract to do the modeling.

Adopt the Las Posas Valley Basin Optimization Yield Study

Item No. 14 – May 27, 2026

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

Background



- Las Posas Valley Adjudication Judgment (Judgment):
  - Requires the Watermaster prepare a Basin Optimization Yield Study, a technical study to establish the Basin Optimization Yield following Committee Consultation *(Judgment, § § 3.3, 4.10, 5.1.)*
    - Basin Optimization Yield - "estimated yield that is projected to be available to achieve Sustainable Groundwater Management by 2040" (Judgment, § 1.21) or the groundwater production rate, with implementation of Basin Optimization Projects, that can be reasonably implemented by 2040 and maintains groundwater elevations above the minimum thresholds established in the GSP.
    - Basin Optimization Projects (BOP) – defined in the Basin Optimization Plan (June 25, 2025)
    - Iterative process - additional studies 2030 & 2035

Schedule and committee consultation

- Jul. 16, 2024 – BOYS draft scope of work committee consultation
  - Aug. 27, 2024 – TAC Recommendation Report (RR)
- Dec. 23, 2024 – BOYS schedule (PAC & TAC consultation)
  - Jan. 7, 2025 - Dudek presentation to TAC on BOYS modeling approach
  - Jan. 21, 2025 - TAC RR
  - Jan. 22, 2025 (Board update - BOYS schedule & Extension of Initial Operating Yield)
  - Apr. 03, 2025 (BOYS memo - PAC & TAC consultation preferred alternative)
- Apr. 23, 2025 - Board update (BOYS schedule)
  - May 9 & 15, 2025 – PAC & TAC RR

Schedule and committee consultation

- Jun. 25, 2025 – Board update (BOYS preferred modeling approach)
- Aug. 29, 2025 – TAC consultation (Numerical modeling results)
  - Sept. 16, 2025 - TAC RR
- Dec. 17, 2025 – Draft BOYS released for PAC & TAC review
  - Feb. 3 & 5, 2026 – TAC & PAC RR
- Mar. 25, 2026 – Board presentation (revised draft BOYS)
- April 22, 2026 – Board discussion (draft BOYS, PAC & TAC RR)
- May 27, 2026 – Adoption of the BOYS

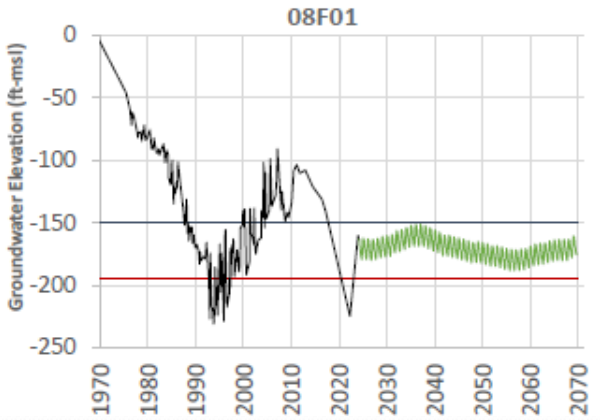
2026 Basin Optimization Yield Study

- Relies on two numerical groundwater models
  - United Water Conservation District model of the West Las Posas Management Area (WLPMA)
  - Calleguas Municipal Water District (CMWD) Model of the East Las Posas and Epworth Gravels Management Areas
- Compares simulated groundwater elevations to sustainable management criteria in the GSP
- Groundwater production rate(s) that avoid undesirable results are used to determine the Basin Optimization Yield, Rampdown, and Operating Yield for future water years

Numerical Groundwater Model Assumptions

- A common set of assumptions was developed for both models
  - Time Period - October 2022 through September 2069
  - Hydrology – same as that used in the First Periodic Evaluation of the GSP
  - Projected future water supplies from existing sources (imported water, non-potable water, recycled water)
  - Projected future water supplies from new sources (projects)
    - Purchase of imported water from CMWD for Basin Replenishment (BOP 2)
    - Arroyo Simi-Las Posas Water Acquisition (BOP 5)
  - Initial pumping distribution – based on reported groundwater production during the first year of implementation under the Judgment

Model Scenarios



- Baseline scenario – groundwater pumping at 40,000 AFY
  - WLPMA (18,417 AFY) & ELPMA and Epworth (21,583 AFY)
- Projects scenario [36,860 AFY (pumping) + 3,140 AFY (BOP2)]
  - BOP Project 2, Purchase of Imported Water from CMWD for Basin Replenishment
  - BOP Project 5, Arroyo Simi-Las Posas Water Acquisition Ongoing
- Rampdown – Informational
  - Provides an understanding of the reduction necessary to reach sustainable conditions if projects are not implemented - recommended and requested by TAC
    - Scenario 1 - Basin-wide [20% reduction across the basin compared to Baseline]
    - Scenario 2 - Differential [20% reduction WLPMA & 11% ELPMA & 11% Epworth]

Model Uncertainty

- Uncertainty is an element of any investigation evaluating future conditions.
- Sources of uncertainty in both models
  - Synthetic future hydrology
  - Future water supply
  - Project timing start
  - Distribution of future groundwater pumping
  - UWCD model boundary conditions
- Uncertainty in this study is within reasonable bounds, the models represent the best available science, and future BOY Studies will be developed after additional water year production is reported and model refinements are made to help reduce uncertainties.
- Groundwater elevation monitoring to inform management actions

Key Takeaways

- The BOYS is a technical document
  - Sustainability of current groundwater extraction rates
  - Establishes the Basin Optimization Yield
  - Calculates the amount and rate of rampdown in the absence of project implementation
  - Includes differential rampdown or localized restrictions scenario (Judgment, 4.10.3)
  - Developed in consultation with TAC and PAC as required by the Judgment
- The BOYS does not and is not intended to provide policy recommendations, but rather is the technical basis for which your Board, in consultation with PAC & TAC can develop informed policy for sustainable and adaptative management of the basin.
- Monitoring key wells will provide assurance that groundwater elevations remain above the minimum thresholds
- Basin Optimization Yield will be re-evaluated in 2030 and 2035, at a minimum

Next Steps

- ~~April 22, 2026 - Watermaster Board Meeting (BOYS Discussion)~~
- May 27, 2026 - Watermaster Board Meeting
  - Adoption of the 2026 BOYS
- Jun – Aug. 2026 - set WY2026-27 Operating Yield & Annual Allocations
- 2030 BOY Study – due February 1, 2030
  - Begin work to plan for upcoming studies in 2026
    - Project implementation
    - Basin Optimization Plan
    - Numerical groundwater model approach

Recommendations

- Receive and file this board presentation.
- Adopt the proposed Las Posas Valley Basin Optimization Yield Study