From:	McGlothlin, Russell
To:	FCGMA
Cc:	Adam Phillips; Kline, Matt; Heather Welles; Kretz, Bobby; Sam Collie
Subject:	OPV Coalition's Comments on the Draft Oxnard 5-Year GSP Evaluation and the Draft Pleasant Valley 5-Year GSP Evaluation
Date:	Monday, October 7, 2024 4:48:03 PM
Attachments:	2024.10.07 Cover Letter to Tonkin GSP Evaluation Comment Letter.pdf OPV Coalition Comments on Oxnard and PV 5-Year Evaluations.pdf

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FCGMA:

Please see the attached correspondence and kindly acknowledge receipt by responsive email. Thank you.

O'Melveny

Russell M. McGlothlin

[redacted]

O'Melveny & Myers LLP

[redacted]

Website | LinkedIn | Twitter

O'Melveny & Myers LLP
1999 Avenue of the Stars
8th Floor
Los Angeles, CA 90067-6035

T: +1 310 553 6700
F: +1 310 246 6779
omm.com

File Number:

October 7, 2024

Russell McGlothlin
D: +1 310 246 8463
rmcglothlin@omm.com

VIA EMAIL

Fox Canyon Groundwater Management Agency
800 S Victoria Ave, Ventura, CA 93009
FCGMA@ventura.org

Re: OPV Coalition's Comments on the Draft Oxnard 5-Year GSP Evaluation and the Draft Pleasant Valley 5-Year GSP Evaluation

Dear FCGMA:

Enclosed with this letter is a memorandum from the OPV Coalition's consulting hydrogeologist, Matthew Tonkin, PhD, the President of S.S. Papadopulos & Associates, Inc., providing technical comments on the Draft Oxnard 5-Year GSP Evaluation and the Draft Pleasant Valley 5-Year GSP Evaluation. We appreciate the opportunity to provide these comments and hope that the FCGMA will amend the evaluations to address our comments.

As a broader matter, we respectfully urge the FCGMA to provide a written response to all substantive comments that it receives concerning the evaluations. Various parties made extensive comments on the drafts of the original groundwater sustainability plans, but we are unaware of any amendments or responses that the FCGMA made in response to those comments. We hope that the FCGMA will be more responsive with respect to the comments that it receives on the 5-Year evaluations by identifying where amendments were made in response to the comments, or through a written explanation for why changes to the draft evaluations were not made in response to received comments.

Please contact me if you would like us to further explain or elaborate on any of the comments made in the attached memorandum or to discuss the comment process generally.

Sincerely,

Russell McGlothlin

S.S. PAPADOPULOS & ASSOCIATES, INC.

ENVIRONMENTAL & WATER-RESOURCE CONSULTANTS

Monday, October 7, 2024

Attention: **Russell McGlothlin, O'Melveny & Myers, LLP**

Subject: **Technical Comments Concerning the Draft *First Periodic Evaluation, Groundwater Sustainability Plan for the Oxnard Subbasin* and the Draft *First Periodic Evaluation Groundwater Sustainability Plan for the Pleasant Valley Basin* (August 2024)**

Pursuant to your request, I have reviewed the Draft *First Periodic Evaluation, Groundwater Sustainability Plan for the Oxnard Subbasin* (August 2024: referred to herein as the "Oxnard Evaluation"), and the Draft *First Periodic Evaluation, Groundwater Sustainability Plan for the Pleasant Valley Basin* (August 2024: referred to herein as the "Pleasant Valley Evaluation"). Both Evaluations were prepared for Fox Canyon Groundwater Management Agency (FCGMA) by Dudek.

Overall, the Evaluations provide well-organized overviews of planning, monitoring, management and analysis activities focused on the period 2020 and 2024, including how FCGMA responded to Corrective Actions recommended by the Department of Water Resources (DWR) on the Oxnard Subbasin's and the Pleasant Valley Basin's respective GSPs. The Evaluations also present several appropriate strategies for improving understanding of the basins, including installing new monitoring wells and using transducers/dataloggers in selected wells. I provide herein several comments and recommendations to be transmitted to the FCGMA which are intended to help clarify understanding regarding the basins' hydrogeology, resources, and sustainability criteria.

Both Evaluations rely heavily upon groundwater modeling for many analyses, including (1) estimating water budgets and groundwater storage changes; (2) estimating the extent of seawater intrusion; (3) simulating hypothetical management scenarios that contrast "baseline" conditions with alternative pumping scenarios and some with future projects; (4) proposing changes to Measurable Objectives and Minimum Thresholds; and (5) evaluating and contrasting potential future management alternatives. The reliability of these various model-driven analyses hinges on the accuracy and reliability of the groundwater model(s) used to conduct them.

Although the FCGMA has provided workshops and limited text-based outputs from some model simulations, it has not made available the groundwater model input and output files necessary to independently evaluate the appropriateness, accuracy, and reliability of the modeling and the conclusions and recommendations that the FCGMA derives from modeling as presented in the Evaluations. I understand this is because United Water Conservation District (United) controls the models used and has so far refused to share the groundwater model files with the Basin's stakeholders—including the OPV Coalition—for quality assurance review. In effect, United and the FCGMA are signaling to stakeholders to trust in the reliability of the modeling and related recommendations, while providing no opportunity for their constituents to conduct a thorough review. This is inconsistent with the intent to foster public participation and engagement in the

GSP evaluation process, fostering instead distrust of the technical analyses underpinning significant water resource management decisions in the basins.

Recommendation #1: Given that historical peer reviews conducted on the models were completed at the discretion of United and FCGMA, and that those reviews did not assess recent revisions to the models, I recommend, in the interest of transparency, quality assurance, and diversity of opinion that either an arms-length independent review strategy be implemented or, preferably, that FCGMA and United agree to disclose the model(s) for review by the basin's stakeholders consistent with numerous previous requests.

I offer below several additional specific comments and recommendations on the Evaluations that in my opinion are necessary to build trust in the Evaluations, the modeling that was relied upon in those evaluations, and the GSP process as a whole.

Recommendation 2: The Evaluations should clearly distinguish observed data from model outputs.

> Explanation: It is important to distinguish measured data from model outputs: model outputs are not data. The Evaluations conflate interpretations based on monitoring data with outputs from groundwater models, as illustrated by these example statements from the Executive Summary of the Oxnard Evaluation: "*While groundwater elevations are higher than they were in 2015, available groundwater quality and numerical modeling data indicate that the Subbasin experienced additional seawater intrusion over the evaluation period*" and "*As anticipated in the GSP, numerical modeling data suggests that since 2015, approximately 140,000 acre-feet of groundwater was added to the Subbasin, and 113,600 acre-feet of seawater has intruded into the Subbasin.*" Absent substantial changes such as achieved through re-calibration, model outputs will continue to show outputs analogous to those obtained previously (e.g., during preparation of the GSP), and this does not verify previous modeling or provide greater confidence in any conclusions. For the Evaluations, it is more important to determine (a) what the mapped salinity data indicate, (b) how measured data compare with previous model outputs and projections, and (c) whether differences in this comparison are substantial enough to warrant model revisions including structural changes or re-calibration.

Recommendation 3: The Evaluations should state the reasons and technical bases for proposed revisions to Measurable Objectives and Minimum Thresholds.

> Explanation: Changes are proposed to the Measurable Objectives and Minimum Thresholds, but the reasons and technical basis are not given. For example from the Oxnard Evaluation Section 2.2.1.8: "*Based on the updated simulations, revisions are recommended to 9 minimum threshold groundwater elevations established in the GSP (Table 2-2, Minimum Threshold and Measurable Objective Groundwater Elevations for the Oxnard*

Subbasin). Eight of the recommended revisions are for wells located within the Saline Intrusion and Oxnard Pumping Depression management areas" and "*Future scenario modeling was updated as part of this Periodic GSP evaluation. Two simulations were identified that minimize seawater intrusion and maximize total groundwater production from the Subbasin, PVB, and West Las Posas Management Area (WLPMA)… The simulated groundwater elevations from the NNP 3 scenario were used to develop recommended revisions to SMCs for the Subbasin."* Current Measurable Objectives and Minimum Thresholds were based on groundwater modeling, and the proposed changes appear to be based on a newly modeled scenario. The groundwater model is clearly playing a central role for FCGMA in determining these criteria, but it is unclear how it is being used to develop qualitative and quantitative recommendations. Thus, much greater explanation is necessary so that proposed changes can be understood and evaluated.

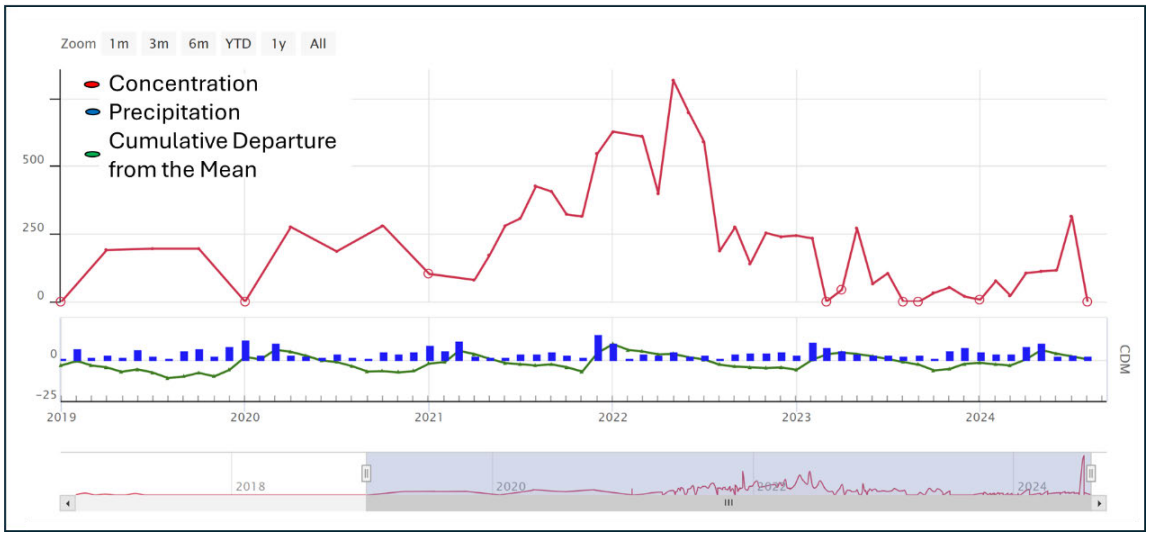
Recommendation 4: Given the growing body of monitoring data, the Evaluations should provide updates on the relationship between water levels and SGMA sustainability indicators and explain whether and when FCGMA and Dudek anticipate using direct measurements of these indicators in place of water levels.

Explanation: At the present time, FCGMA uses water levels as a surrogate for the SGMA sustainability indicators. However, the body of monitoring data is growing and is incorporating more direct measurements of sustainability criteria. For example, the Oxnard Evaluation presents data and information regarding changes in chloride concentrations pertaining to seawater intrusion, which is a sustainability indicator under SGMA. With regard to subsidence, which is also a SGMA sustainability indicator, the Oxnard Evaluation also states that (Table 1-1. Summary of New Information Since GSP) "*DWR InSAR data are now available to examine land subsidence in the Oxnard Subbasin.*" The Pleasant Valley Evaluation states similarly (again, in Table 1-1. Summary of New Information Since GSP). The Evaluations should discuss what was learned over the monitoring period regarding the reliability of water levels as a surrogate for SGMA sustainability indicators, including whether correlations that were previously developed between changes in water levels and SGMA sustainability indicators have been validated or will be updated, and whether and when FCGMA anticipates ultimately replacing the water level surrogate with the direct measurements.

Recommendation 5: Monitoring data relied upon in the Evaluations should be made publicly available.

Explanation: In the Evaluations, model outputs and monitoring data are used to interpret progress toward sustainable management and recommend changes to Measurable Objectives and Minimum Thresholds. However, it is unclear what specific role monitoring data played in these decisions, since changes evident in some monitoring data – such as

increases in chloride concentrations – are only available to stakeholders occasionally and in an incomplete fashion via reports and workshops. The Evaluations would facilitate better communication, understanding, and transparency by making monitoring data available in a format enabling stakeholders and the public to access, view, and interpret them. For example, the relationship between water levels and salinity (chloride) and the role of very wet or dry conditions on these relationships can be depicted and evaluated using mixed line-and-bar type charts. Such plots are available, for example, via the HiCharts charting library which enables sharing of data and plots over the web (www.highcharts.com). An example is provided below: the data in this example plot are unrelated to either the Oxnard Evaluation or the Pleasant Valley Evaluation, but similar plots could easily be made using the data that presumably supported both Evaluations. Once developed, updating of these plots with newly acquired data is a trivial task.



Recommendation 6: The Evaluations should clarify the number of "key wells" and whether those are uniquely screened within individual aquifer units or span multiple aquifer units.

Explanation: The Oxnard Evaluation provides contradictory statements regarding the number, and screened aquifer unit, of key wells. For example, its Executive Summary states "*The GSP established minimum threshold and measurable objective groundwater elevations at 34 representative monitoring points, or "key wells" in the Subbasin.*" Section 2.2.1.4 states (a) "*In any single monitoring event, water levels in 6 of the 14 key wells are below their respective minimum threshold*[7]" and refers to footer #7 which states "*15 wells were referenced in the GSP. However, only 14 key wells are screened in the UAS."* and (b) "*During the evaluation period, groundwater elevations occurred below the historical low*

groundwater elevations at 9 of the 15 key wells screened in the UAS and 11 of the 19 key wells screened in the LAS." Section 2.2.1.4 thus refers to 14 key wells in the UAS, with reference to footer 7, but later refers to 15 key wells; whereas the Executive Summary and other locations in the Oxnard Evaluation refer to 19 key wells in the LAS and 34 key wells in total from which a count of 15 key wells is obtained for the UAS contradicting footer #7. Both the Oxnard Evaluation and the Pleasant Valley Evaluation should clarify the number of "key wells" and whether those are uniquely screened within individual aquifer units or span multiple aquifer units.

Recommendation 7: The Evaluations should clearly recognize apparent progress toward sustainable conditions achieved through pumping curtailment and other basin management actions and distinguish this clearly from apparent progress achieved through favorable changes in climatic conditions.

Explanation: The Oxnard Evaluation contains positive statements regarding progress. For example, the Executive Summary states "*Under average climate conditions, the interim milestones targeted groundwater elevation recoveries that averaged approximately 14 feet in the UAS and approximately 22 feet in the LAS over the first five years of GSP implementation. The groundwater elevations measured in spring 2024 ranged from approximately 5 to 117 feet higher than those in spring 2015. Importantly, groundwater elevations in spring 2024 were higher than the minimum thresholds in 21 of the 27 key based upon the available data. FCGMA anticipates that the general trend of rising groundwater elevations will continue through 2040 with continued implementation of the GSP*." Likewise Section 2.2.1.5 states "*The introduction of new recycled water supplies, reduction in groundwater pumping, and historically high recharge have reversed the downward trend in groundwater elevations in the Subbasin*." Similar statements are made in the Pleasant Valley Evaluation. Increased water levels and other indicators are indeed positive, however, the vast majority of this apparent progress likely results from very wet recent conditions, with the introduction of new recycled water supplies and reductions in groundwater pumping only minor contributors. An effort should be made to determine to what extent these projects contributed to the changed conditions versus the historically high recharge.

Recommendation 8: The Evaluations should clarify and expand upon the proposed use of transducer/dataloggers.

Explanation: As noted in the Oxnard Evaluation Section 2.2.1 "*Water year groundwater elevations are characterized using seasonal low and seasonal high measurements. Seasonal low groundwater elevations are defined in the GSP as groundwater elevations measured between October 2 and October 29 and seasonal high groundwater elevations are defined in the GSP as groundwater elevations measured between March 2 and March*

29." The Oxnard Evaluation proposes installation of transducer/dataloggers (Section 3.2.7 Project No. 12: Installation of Transducers in Groundwater Monitoring Wells). The Pleasant Valley Evaluation also proposes installation of transducer/dataloggers (Section 3.2.10 Project No. 11: Installation of Transducers in Groundwater Monitoring Wells). The installation of transducers/dataloggers is an important improvement to the monitoring program to mitigate data gaps. However, it is unclear whether the transducer/dataloggers will (a) be installed only for two weeks at each (spring/fall) event or will (b) remain in place for a much longer time and a two-week data window retrieved for this specific use. Installation of transducer/dataloggers for the March and October events would improve the comparability of data retrieved at individual synoptic events but offer limited additional value whereas leaving the instruments in-place for an extended time would enable the actual timing of seasonal low and high values each year to be determined (which are weather dependent and may not fall in these months) enabling comparability between synoptic events as well as within them, and improving understanding of the aquifer response to changes in recharge, pumping, and projects.

Recommendation 9: The Evaluations should be consistent in their analysis and comparison of actual and potential projects and their value for water resources management.

Explanation: Note c to Table ES-3 of the Oxnard Evaluation states that it "*Excludes the 10,000 AFY of simulated brackish water extractions from the Subbasin via United Water Conservation District's Extraction Barrier and Brackish Water Treatment project extraction wells*." Where is this extraction accounted for? Given that the extracted water is brackish, and likely to increase in salinity over time, there should be an accounting of this withdrawal possibly with a fresh-saline apportionment when weighing the relative value of this potential project to the sustainability of the basins' water resources.

Recommendation 10: The Evaluations should state whether cross-aquifer flows and migration of salts have been considered in the conceptual site model (CSM) and in groundwater modeling.

Explanation: Section 3.2.5 of the Oxnard Evaluation (Project No. 10: Destruction of Abandoned Wells), states that abandoned and potentially cross-connecting wells will be properly destroyed. This is an important activity to reduce the potential for migration of poor-quality water between aquifers. Such cross-connections can sometimes be a significant component of the water budget: the Evaluations should clearly state whether the locations and rates of historical cross-connection have been considered in the Basins' CSM and whether the model simulations and water budgets considered these flows and the migration of salts.

Recommendation 11: The Evaluations should state whether additional modeling was performed following the May 30, 2024 Technical Discussion Workshops.

Explanation: There are differences in the scenario results presented in the May workshops and those presented in the August Evaluations including for example the tabulated budgets for the NNP1,2,3 scenarios presented in the Oxnard Evaluation. Similar differences appear when comparing the workshop presentation materials with the August Pleasant Valley Evaluation as well. Please explain if additional modeling was conducted after the May workshop results were presented, or if there is another cause for these differences.

Recommendation 12: The Evaluations should state when model documentation will be made available.

Explanation: Section 5.1.3 of the Oxnard Evaluation (Model Extension and Recalibration**)** states that **"***As part of this periodic evaluation, UWCD extended the Coastal Plain Model to simulate groundwater conditions in the Subbasin through the end of water year 2022 (i.e., September 30, 2022). During the model update and extension process, UWCD recalibrated the Coastal Plain Model. This recalibration effort involved incremental adjustments to local hydraulic conductivity, storativity, and boundary conductance values which resulted in better simulation of groundwater conditions along the coastline (details to be included in UWCD's Coastal Plain Model update technical memorandum)*." A similar statement is made in the Pleasant Valley Evaluation (again, in Section 5.1.3 Model Extension and Re-Calibration). When will the Coastal Plain Model Technical Memorandum (TM) be made available? To complete a thorough review of the conclusions and recommendations presented in the Evaluations, and to dispel any concerns regarding the reliability of the modeling, it is essential to have access to this TM detailing updates to the groundwater model(s) that underpinned these basins' Evaluations.

Thank you for the opportunity to review the Evaluations and provide you these comments for submittal to the FGCMA.

With regards,

S.S. PAPADOPULOS & ASSOCIATES, INC.

Matthew Tonkin, PhD

President, SSP&A