Kern County Subbasin
Groundwater Sustainability Agencies

February 13, 2025

Via electronic mail

California State Water Resources Control Board
Attn: Courtney Tyler, Clerk to the Board
P.O. Box 100
Sacramento, CA 95812-2000
SGMA-Kern@waterboards.ca.gov

RE: Comments Regarding the SWRCB Kern County Subbasin Probationary Hearing Final Staff Report

Dear Chair Esquivel and Members of the Board,

The Kern County Subbasin Plan Manager submits these comments on behalf of all the Kern County Subbasin Groundwater Sustainability Agencies (Subbasin) in response to the State Water Resources Control Board (SWRCB) Kern County Subbasin Probationary Hearing Final Staff Report released on January 21, 2025 (Final Staff Report).

On May 28, 2024, the Subbasin submitted the draft Kern County Subbasin Groundwater Sustainability Plans (draft 2024 Plan)[1] to the SWRCB for review. Subsequently, on December 16, 2024, the Subbasin submitted the adopted, final 2024 Plan to SWRCB staff. As a result of discussions between SWRCB staff and the Subbasin's Technical Working Group, the final 2024 Plan included significant changes to address concerns regarding the draft 2024 Plan.

As SWRCB staff has noted, their review of the final 2024 Plan is "preliminary" and remains ongoing; the Final Staff Report provides evaluation of the draft 2024 Plan and a "tentative evaluation" of the final 2024 Plan[2] (Final Staff Report, p. 20, and also alternative Draft SWRCB Resolution para. 21). Because the SWRCB staff's review remains ongoing, the Subbasin is providing additional information, (Attachments "A", "B" and "C"), regarding how individual items raised in the Final Staff Report have been or are being addressed. The attachments include a narrative response (Attachment "A"), a summary matrix (Attachment "B") and an updated preliminary schedule (Attachment "C") from the Subbasin's February, 20, 2025, public hearing panel presentation (slide 81) which includes time for continuing coordination with SWRCB staff aimed at resolving outstanding concerns in concurrence with the alternative Draft SWRCB Resolution. The Subbasin greatly appreciates and is committed to continuing discussions with

[1] The "2024 Plan" was submitted as multiple plans with a Coordination Agreement. The Kern County Subbasin Groundwater Sustainability Plan (GSP) was adopted by fourteen (14) Groundwater Sustainability Agencies (GSAs), which collectively manage the majority of the Subbasin (67.6 percent). Six (6) GSAs separately adopted a version of the Kern Subbasin GSP that includes supplemental information specific to the portion of the Subbasin it manages. This supplemental information is provided on blue-colored pages so differences between the versions can be readily identified by reviewers. This letter and associated attachments will utilize the terminology adopted in the final 2024 Plan. It is noted that the Final Staff Report did not use the same terminology and that the summaries of SWRCB staff comments associated with the 2024 Plan were modified to be consistent with the terminology adopted in the final 2024 Plan for consistency purposes.

[2] Based on the Final Staff Report, the language associated with SWRCB staff's tentative evaluation of the final 2024 Plan does not clarify whether SWRCB staff reviewed each of the seven (7) Groundwater Sustainability Plans (GSPs) submitted to SWRCB staff in December 2024. The Subbasin anticipates that the SWRCB staff will conduct a full review of the seven (7) GSPs submitted, also referred to as the "2024 Plan" (*also see footnote 1 above*).

SWRCB staff to resolve any remaining issues.

The Subbasin respectfully requests the SWRCB adopt the alternative Draft Resolution approving continuance of the hearing to allow its Staff to complete their review of the final 2024 Plan and allow for the continued coordination between SWRCB staff and the Subbasin. This continuance will allow for a full and fair review of the final 2024 Plan, which includes data and analysis developed with SWRCB staff that was not part of the draft 2024 Plan and is not reflected in the Final Staff Report or Draft SWRCB Resolution.

The Subbasin appreciates the ongoing coordination with SWRCB staff and the progress that we have already made. We look forward to additional time before any probationary designation is made to continue working with SWRCB staff to resolve the remaining issues they have identified.

Sincerely,

Kristin Pittack, MS

Kern County Subbasin Plan Manager/Point-of-Contact

Attachment A: Kern County Subbasin Response to Comments on the SWRCB Kern County Subbasin Probationary Hearing Final Staff Report

Attachment B: Kern County Subbasin Response to Comments Matrix

Attachment C: Updated Kern County Subbasin Preliminary Milestones and Timeline

cc:

Natalie Stork, SGMA Director, State Water Resources Control Board

Attachment A

Kern County Subbasin Response to Comments on the SWRCB Kern County Subbasin Probationary Hearing Final Staff Report

SECTION 1: Organization and Format of Responses

This Response to Comments is structured to address the Kern County Subbasin (Subbasin) Groundwater Sustainability Plan (final 2024 Plan) deficiencies using specific references from the State Water Resources Control Board (SWRCB) Kern County Subbasin Final Staff Report (Final Staff Report). Responses are categorized by sustainability indicator as addressed in the Final Staff Report comments. This format provides a succinct approach to frame issues and enables SWRCB members and staff, and stakeholders, to understand how the final 2024 Plan relies on layers of interconnected preventative and protective measures to safeguard beneficial uses and users and is consistent with the intent of the Sustainable Groundwater Management Act (SGMA).

The outline of remaining sections in this Response to Comments is as follows:

SECTION 2: Final Staff Report Deficiencies and Subbasin Responses

The Final Staff Report identified the deficiencies listed in Table 1, which incorporate those identified by the Department of Water Resources (DWR) in their review of the 2022 Groundwater Sustainability Plans (2022 GSPs)[3]. Under each header in this section, SWRCB staff evaluation of the draft 2024 Plan and preliminary evaluation of the final 2024 Plan are summarized for each topic, followed by the Subbasin response.

[3] The Subbasin GSAs submitted five GSPs to DWR in January 2020 (2020 GSPs). DWR designated the 2020 GSPs as "incomplete" in January 2022 and identified three main deficiencies. In July 2022, the GSAs amended and resubmitted six GSPs to DWR to address the identified deficiencies (2022 GSPs). In March 2023, DWR designated the 2022 GSPs as "inadequate" after reviewing the 2022 GSPs.

Table 1. Final Staff Report Deficiencies and Subbasin Responses

Final Staff Report Deficiencies	Subbasin Response to Comments
A. Defining and Avoiding Undesirable Results Related to Coordination in the Subbasin (Deficiency CRD – Section 4.1.1)	Page 5
B. Defining and Avoiding Undesirable Results Related to Chronic Lowering of Groundwater Levels (Deficiency GL – Section 4.1.2)	Page 6
C. Defining and Avoiding Undesirable Results Related to Land Subsidence (Deficiency LS – Section 4.1.3)	Page 8
D. Defining and Avoiding Undesirable Results Related to Degraded Groundwater Quality (Deficiency GWQ – Section 4.1.4)	Page 9
E. Defining and Avoiding Undesirable Results Related to Interconnected Surface Water (Deficiency ISW – Section 4.1.5)	Page 11

A. Defining and Avoiding Undesirable Results Related to Coordination in the Subbasin (Deficiency CRD – Section 4.1.1)

The following are summaries of the SWRCB evaluations and detailed Subbasin responses.

SWRCB Draft 2024 Plan Evaluation

SWRCB staff believe that the draft 2024 Plan and amended Coordination Agreement have resolved some coordination deficiencies identified in previous plans and the previous Coordination Agreement. However, in correcting the coordination deficiencies, the draft 2024 Plan has created sustainability-indicator-specific technical deficiencies that result in inconsistent management action triggers across defined boundaries within the subbasin (HCM Area boundaries and GSA jurisdictional boundaries). SWRCB staff are concerned that some SMCs in the draft 2024 Plan, although coordinated, are disparate across management or administrative boundaries, and thus unprotective of beneficial users at a local scale (Section 4.1.1, pg. 86).

SWRCB Final 2024 Plan Tentative Evaluation

SWRCB staff believe that the Subbasin has taken significant action in addressing DWR's coordination deficiencies through tentative evaluation of the final 2024 Plan and amended Coordination Agreement. However, SWRCB staff find that two (CRD-2b and CRD-3) of the five identified deficiencies associated with CRD are not sufficiently addressed in the final 2024 Plan and may continue to hinder the Subbasin's progress towards sustainability. These deficiencies include: (CRD-2b) the Subbasin does not explain how the multiple plans will satisfy SGMA requirements, particularly for management areas; and (CRD-3) the GSAs in the Subbasin have not demonstrated basin-wide management. Specific to deficiency CRD-2b, SWRCB staff's remaining concern is with the use of HCM Areas to set SMC in a manner that may not be protective of beneficial uses and users. Specific to deficiency CRD-3, it remains unclear to SWRCB staff if the Kern Non-Districted Land Authority is an official GSA that has the authority to manage groundwater in non-districted areas under the current Joint Exercise of Powers Agreement.

Subbasin Response

Specific to *CRD-2b*, the Hydrogeologic Conceptual Model (HCM) Area approach is foundational to establish coordinated Sustainable Management Criteria (SMCs) across the Subbasin, using consistent data sets and coordinated methodologies. The SMCs developed based on the HCM Area approach are protective of significant and unreasonable effects on Subbasin beneficial uses and users caused due to groundwater conditions across the basin (3 CCR §354.12 to 354.20). The Subbasin appreciates the continued engagement with SWRCB staff on this issue. Based on subsequent correspondence following the issuance of the Final Staff Report, the Subbasin has further clarified and developed a shared understanding of the importance of the coordinated HCM Area approach with SWRCB staff. The Subbasin is coordinating with SWRCB staff to identify concerns related to local hydrogeologic variability and address through refinements to the SMCs, as needed.

Specific to *CRD-3*, the Kern Non-Districted Lands Authority (KNDLA) is an amended and restated joint powers agreement amongst public entities. The Kern County Water Agency (KCWA) is a member of the KNDLA, formerly known as the Kern Groundwater Authority, which is a GSA formed through a joint powers authority agreement, as permitted under SGMA, CA Water Code § 10723.6(a)(1). A joint powers authority can exercise any of the powers of its members within the combined geographical areas of its member agencies. KCWA's enabling act provided the Agency jurisdiction over all the territory within the boundaries of Kern County and jurisdiction over water matters generally. Since the Subbasin lies within the county boundaries, KNDLA has jurisdiction over the non-districted lands. Furthermore, all KNDLA member agencies are public agencies with the authority to implement SGMA.

B. Defining and Avoiding Undesirable Results Related to Chronic Lowering of Groundwater Levels (Deficiency GL – Section 4.1.2)

The following are summaries of the SWRCB evaluations and detailed Subbasin responses.

SWRCB Draft 2024 Plan Evaluation

The draft 2024 Plan has significant deficiencies in addressing the chronic lowering of groundwater levels. They lack clear definitions of undesirable results and sustainable management criteria aligned with SGMA, have incomplete monitoring networks and mitigation plans, and fail to outline a feasible strategy for halting groundwater decline through water budgets or demand management. Additionally, the draft 2024 Plan does not establish sustainable criteria for groundwater storage. While efforts were made to resolve previous issues, new concerns emerged, leaving key deficiencies unresolved and hindering progress toward sustainability.

SWRCB Final 2024 Plan Tentative Evaluation

A preliminary review of the final 2024 Plan shows some improvements but ongoing shortcomings. The Subbasin did not revise the definition of undesirable results or sustainable management criteria to meet SGMA, and while some monitoring data gaps were identified, key details and funding for mitigation remain unclear. Additional water budget data was included, but gaps persist, making the feasibility of proposed management actions uncertain. The methodology for calculating groundwater storage remains unchanged. These unresolved

deficiencies raise concerns about the Subbasins' ability to achieve sustainable groundwater management, requiring further revisions for SGMA compliance.

Subbasin Response

State regulations (23 CCR § 354.28) require that Minimum Thresholds (MTs) be developed to "avoid undesirable results" (i.e., "significant and unreasonable effects… caused by groundwater conditions occurring throughout a subbasin" [23 CCR § 354.26]). The final 2024 Plan includes undesirable results (URs) and SMC definitions that are consistent with the requirements of SGMA and rely on consistent data and coordinated methodologies that are meant to avoid significant and unreasonable effects across the Subbasin.

The final 2024 Plan has consistent and clear definitions of URs that are Subbasin-wide. Clear plain language definitions of URs are provided and supplemented with very specific quantitative criteria (based on impacts to beneficial uses and users) that would trigger an UR.

The final 2024 Plan defines that a UR for water levels would occur if one of the following conditions exists: (1) More than 15 drinking water wells are reported dry in any given year, with more than 255 drinking water wells cumulatively impacted by 2040, or (2) MTs exceed at least 25% of RMW-WLs over a single year (i.e., two consecutive seasonal measurements).

This approach was developed in coordination with SWRCB staff and provides for coverage over both Subbasin-wide issues and potential local issues (i.e., a concentration of dry wells). The UR criteria are extremely conservative and protective of beneficial uses and users. For example, a UR would be triggered if more than 15 drinking water wells went dry in a single year across a 1.8-million-acre basin that pumps an average of around 2 million acre-feet per year (AFY) from over 7,200 wells.

Based on the well impacts analyses included in the final 2024 Plan, which conservatively assumed a dewatered depth of 80% of total well depth and included all dewatered wells within identified domestic well monitoring data gap hexagonal areas as part of the impacted well counts, a total of 260 to 307 drinking water wells may be dewatered if *all* (100%) of the RMW-WLs simultaneously exceeded the MTs. This scenario is the worst case as URs for water levels would be triggered at just 15 drinking water wells reported dry or 25% of RMW-WLs. The Subbasin is currently verifying the existence of the wells identified as potentially impacted in the final 2024 Plan. To the extent that those wells exist, the Subbasin is prepared to take proactive action through implementation of projects and management actions (P/MAs) to avoid an MT exceedance and associated impacts.

Separate analysis conducted within the final 2024 Plan indicates that with implementation of the P/MAs, URs will not be triggered. Further, technical analysis included in the final 2024 Plan demonstrates that the MTs would not result in significant and unreasonable subsidence, reduction in groundwater storage, or water quality degradation. Groundwater dependent ecosystems and interconnected surface waters were not found to be an issue in the Subbasin, as documented in the final 2024 Plan, and therefore are not impacted by the MTs.

Central to the final 2024 Plan is a series of protective measures, including an MT Exceedance Policy (Appendix W of the final 2024 Plan), which requires an investigation and proactive action following a single MT exceedance, and a comprehensive Well Mitigation Program (Appendix K of the final 2024 Plan) that addresses mitigation of impacts to domestic well users and technical

assistance for municipal, industrial and small community well owners. The Subbasin appreciates the continued engagement with SWRCB staff to further discuss and clarify the groundwater level SMC methodology (as well as associated P/MAs, exceedance policies, and mitigation plans). The Subbasin is committed to working with SWRCB staff to identify pending concerns and addressing these through refinements to the GWL SMCs, as needed, with the goal to be even more protective of beneficial uses and users within the Subbasin.

C. Defining and Avoiding Undesirable Results Related to Land Subsidence (Deficiency LS – Section 4.1.3)

The following are summaries of the SWRCB evaluations and detailed Subbasin responses.

SWRCB Draft 2024 Plan Evaluation

The SWRCB staff's evaluation of the draft 2024 Plan indicates progress in addressing land subsidence by identifying critical infrastructure, refining undesirable results and sustainable management criteria, and adopting consistent data and measurement methods. However, key deficiencies remain, including inconsistencies in sustainable management criteria, the inability to quantify Subbasin contributions to subsidence impacts, and a lack of detailed plans to reduce and mitigate subsidence risks to infrastructure. These gaps leave uncertainty about how subsidence will be managed and prevented from interfering with surface land uses.

SWRCB Final 2024 Plan Tentative Evaluation

The Board's preliminary review of the final 2024 Plan indicates partial improvements but unresolved issues. While the updated plain-language definition of undesirable results is improved, interim milestones exceed measurable objectives near critical infrastructure, requiring adjustments. Additionally, the Subbasin subsidence action plan focuses on monitoring but lacks repair or retrofitting measures for affected infrastructure. The GSAs' subsidence mitigation plan is specifically for addressing impacts on drinking water wells. The GSPs do not address how groundwater extracted for oil and gas operations will be managed to ensure subsidence does not worsen.

Subbasin Response

The Subbasin received and responded to comments on the draft 2024 Plan from DWR/SWP which can be found in Appendix AA of the final 2024 Plan. As stated in the Subbasin's detailed response to DWR/SWP comments, the final 2024 Plan has been extensively updated and revised. Therefore, the draft 2024 Plan and associated materials reviewed by the DWR/SWP are now obsolete.

Notable subsidence topic revisions to the final 2024 Plan include a revamped definition of subsidence undesirable results and data-driven Subbasin-wide subsidence SMC approach. The Subbasin has developed and refined a coordinated Subbasin-wide Action Plan for Subsidence IM & MT exceedances that requires the Subbasin to evaluate and initiate targeted P/MAs to reduce GSA-related subsidence (Appendix S of the final 2024 Plan). For example, as part of this P/MA, GSAs located within or proximate to the California Aqueduct Subsidence Project (CASP) 5-mile Monitoring Corridor along the California Aqueduct may initiate targeted P/MAs should future observed subsidence rates exceed IMs and/or MTs. These targeted P/MAs may include: (1) well registry, (2) metered well extraction volume reporting, (3) net zero well drilling

moratorium, (4) targeted pumping reductions, and (5) pumping limitations, as deemed needed following analysis undertaken from the five-step Subsidence Action Plan. In response to MT exceedances, all of these P/MAs were implemented by the Westside District Water Authority GSA in 2024 in consultation with CASP along the Aqueduct between Mile Posts 195 and 215. GSA-specific details on targeted P/MAs within close proximity to the California Aqueduct are found in the final 2024 Plan and/or the relevant GSA GSP supplemental materials with blue-colored pages. Additionally, a P/MA has been developed for the Friant-Kern Canal (FKC) in coordination with the Friant Water Authority (FWA). To address post-2020 subsidence, a subsidence mitigation program consisting of raising the sides (liner) of the canal and upgrading associated facilities/infrastructure is proposed (Appendix T of the final 2024 plan). The FKC subsidence mitigation program would be funded by GSAs as needed within the Subbasin, based on the relative impact of post-2020 pumping and groundwater overdraft on subsidence along the FKC. As part of this P/MA, the Subbasin would implement the following: (1) participate in a program that monitors and tracks ongoing subsidence regionally within the Subbasin and locally along the FKC, (2) compare observed rates of subsidence to established SMCs along the FKC and take action such as pumping reductions should future observed subsidence rates exceed interim milestones and the minimum threshold, (3) collaborate with FWA to develop costs estimates for the Lower Reach Capacity Correction and evaluate the degree of post-2020 lost capacity attributable to subsidence, (4) develop an attribution analysis of post-2020 subsidence impacts using either a numerical model to perform predictive analysis or other suitable tool, (5) participate in developing a value of water analysis in cooperation with FWA, and (6) develop and implement a funding mechanism based on the subsidence attribution analysis to pay for post-2020 conveyance impacts on the FKC attributable to subsidence.

Based on communication and correspondence following the issuance of the Final Staff Report, the Subbasin believes that SWRCB staff's pending concerns on the final 2024 Plan can be addressed through additional discussion and clarification. For example, the 2040 IMs and MOs have been resolved by correcting data entries in GSP tables. We have also clarified that the subsidence mitigation program for the FKC is distinct from the Well Mitigation program (which focuses on drinking water wells). The Subbasin appreciates the continued engagement with SWRCB staff to identify and address these remaining concerns expeditiously.

D. Defining and Avoiding Undesirable Results Related to Degraded Groundwater Quality (Deficiency GWQ – Section 4.1.4)

The following are summaries of the SWRCB evaluations and detailed Subbasin responses.

SWRCB Draft 2024 Plan Evaluation

The SWRCB staff's evaluation of the draft 2024 Plan recognizes improvement in using a coordinated approach for defining undesirable results and establishing sustainable management criteria. Key deficiencies are related to the quantitative definition of minimum threshold exceedances in three representative wells per HCM Area as portions of the Subbasin could experience degradation without triggering an undesirable result that could cause disproportionate impacts in different areas. Additionally, staff are looking for more details on the driving mechanisms that cause degradation, and the plans do not provide adequate response measures for water quality exceedances. These deficiencies leave uncertainty about how

impacts will be addressed.

SWRCB Final 2024 Plan Tentative Evaluation

The SWRCB staff's tentative evaluation of the final 2024 Plan finds that progress on groundwater quality management remains insufficient. The final 2024 Plan methodology for assessing water quality impacts lacks clarity and fails to consider driving mechanisms for each constituent of concern. The monitoring network remains incomplete, and without well construction information, staff cannot evaluate whether the monitoring network adequately represents beneficial uses and users. It is unclear whether the representative monitoring wells will be sufficient to identify impacts to domestic wells since no groundwater quality specific impact analysis was completed.

Staff also express concerns related to impacts on beneficial users. Impacts may be unrecognized because of the Exceedance Policy's insufficient procedure. And, while a mitigation plan for domestic wells has been introduced, it lacks an appropriate method for evaluating whether groundwater quality degradation may be due to groundwater management activities or actions.

An overarching theme of the Final Staff Report is the importance of protecting beneficial uses and users from degraded groundwater quality. Staff emphasize concern for impacts to small communities and domestic well owners. Section 3.5.1.1 of the Final Staff Report references the Safe and Affordable Funding for Equity and Resilience (SAFER) Program drinking water needs assessment report that identifies failing and at-risk water systems and domestic wells. Staff also cite San Joaquin Valley publications to define disproportionate impacts to domestic well owners, disadvantaged communities, and communities of color in rural unincorporated areas without infrastructure to support clean drinking water. These issues are directly tied to addressing the SWRCB's "goal to ensure every Californian has safe and affordable drinking water" (pg. 32, para. 3) and its concern for small community water systems that are more susceptible to water quality issues (pg. 42, para. 3).

Subbasin Response

The final 2024 Plan recognizes the role and responsibilities that the Subbasin has related to protecting groundwater quality for current and future beneficial uses and users. Through the Subbasin's Standard Operating Procedures, MT Exceedance Policy and Action Plan, and the Well Mitigation Program, the Subbasin has structured its water quality monitoring and management actions with layers of preventative and protective measures that focus on: (1) avoiding, or limiting degradation if avoidance isn't achievable, and (2) administering a monitoring and reporting program that is consistent with drinking water protocols.

The Subbasin has identified 52 representative monitoring wells (RMWs) to be sampled for six constituents of concern (COCs) including 1,2,3-trichloropropane, arsenic, nitrate as nitrogen, nitrite, total dissolved solids, and uranium. The Water Quality Standard Operating Procedure (Appendix Z of the final 2024 Plan) provides guidance for collecting samples that are representative of groundwater conditions within a two-week timeframe of semiannual water level measurements in the same or nearby well. Obtaining data on groundwater levels and quality within this short timeframe enables Subbasin to directly evaluate the relationship between water levels and degraded water quality. Of the 52 wells that represent water quality, 35 are also used

for water levels. Wells designated exclusively for water quality are typically near a representative well that is designated for water levels that will be used to evaluate the relationship between water levels (as a surrogate for groundwater management) and water quality.

The MT Exceedance Policy and Action Plan (Appendix W of the final 2024 Plan) provides protocols and guidelines for Subbasin to investigate the cause and contributing factors of a single MT exceedance of any sustainability indicator. The Action Plan for MT exceedances related to Degraded Water Quality (Appendix W, Section 4 of the final 2024 Plan) outlines actions to investigate the exceedance, review contributing factors, evaluate root cause conditions, and recommends applicable corrective actions as well as notification procedures for stakeholders and potentially impacted users. Actions outlined in the MT Exceedance Policy and Action Plan aim to halt or at least limit water quality degradation by understanding the root cause issue and implementing corrective actions before there is a widespread problem, or UR.

These layers of preventative measures and protective actions are structured with routine monitoring protocols, an action plan to avoid or limit water degraded water quality and establish mitigation measures as a backstop (see Appendix K, Well Mitigation Program, of the final 2024 Plan). The Subbasin has done extensive work to characterize groundwater conditions, understand the driving mechanisms for degraded water quality, define baseline conditions, and quantify beneficial users. The work completed to date provides a strong foundation for the remaining efforts to refine the Subbasin's quantitative UR definition and describe conditions that would cause an MT exceedance. As expressed throughout this response to comments, the Subbasin is committed to continuing work with SWRCB staff to address remaining concerns as outlined in the accompanying matrix (Attachment B).

E. Defining and Avoiding Undesirable Results Related to Interconnected Surface Water (Deficiency ISW – Section 4.1.5)

The following are summaries of the SWRCB evaluations and detailed Subbasin responses.

SWRCB Draft 2024 Plan Evaluation

The SWRCB staff's evaluation of the draft 2024 Plan indicates that while the Subbasin applied coordinated and consistent methodologies to assess interconnected surface water, they did not use the best available data to justify their conclusions. As a result, the draft 2024 Plan does not adequately demonstrate whether interconnected surface water, either ephemeral or perennial, exists in the subbasin. Without a clear determination, it is uncertain whether sustainable management criteria and a monitoring network should be established to comply with SGMA. This lack of comprehensive analysis raises concerns about potential impacts on surface water uses and groundwater-dependent ecosystems.

SWRCB Final 2024 Plan Tentative Evaluation

This deficiency appears to be addressed. The final 2024 Plan provides a satisfactory explanation of the methodology used to conclude that interconnected surface water is not present in the subbasin. Additionally, the conditional deficiency regarding the absence of a plan to mitigate impacts does not apply if the final 2024 Plan adequately supports the claim that interconnected surface water does not exist. If further review confirms the validity of this

conclusion, no additional corrective action will be necessary.

Subbasin Response

The final 2024 Plan documents that interconnected surface water and groundwater dependent ecosystems do not exist in the Subbasin and therefore no SMCs or URs were defined. The Subbasin will continue to monitor water levels and surface water to confirm these conclusions.

SECTION 3: Final Staff Report Deficiencies and Potential Actions to Address Deficiencies, and Subbasin Responses

The Final Staff Report provided detailed discussion of each identified deficiency listed in Table 2 below. Under each header in this section, SWRCB staff evaluation of the draft 2024 Plan and preliminary evaluation of the final 2024 Plan are summarized for each topic, followed by the Subbasin response. *Several of the identified deficiencies in the Final Staff Report are omitted due to SWRCB staff recommendation that the deficiency has been resolved, and no further action is necessary.*

Table 2. Final Staff Report Deficiencies and Potential Actions, and Subbasin Responses

Final Staff Report Deficiencies and Potential Actions	Subbasin Response
F. Deficiency Coordination 1 (CRD-1) – Undesirable results and sustainable management criteria are not coordinated	Page 15
• Deficiency CRD-1a – Undesirable results are poorly described, unworkably complex, and inconsistently implemented.	*Omitted per Final Staff Report*
• Deficiency CRD-1b – Sustainable management criteria rely on inconsistent datasets and methodologies.	*Omitted per Final Staff Report*
G. Deficiency CRD-2 – The Coordination Agreement, GSPs, and Management Area Plans lack key details necessary for coordinated implementation.	Page 16
• Deficiency CRD-2a – The Coordination Agreement is not sufficient to address disputes.	*Omitted per Final Staff Report*
• Deficiency CRD-2b – The Subbasin does not explain how the multiple plans will satisfy SGMA requirements, particularly for management areas.	Page 16
○ Potential Action CRD-2b – The Subbasin should revise plans to demonstrate the necessity and compliance of management areas.	Page 17
H. Deficiency CRD-3 – The Subbasin in the subbasin have not demonstrated basin-wide management.	Page 17
○ Potential Action CRD-3 – The Subbasin should clearly define relationships and responsibilities consistent with SGMA requirements.	Page 18
I. Deficiency Groundwater Levels - 1 (GL-1) – Groundwater level undesirable results and sustainable management criteria are not defined consistent with the requirements of SGMA.	Page 18
• Deficiency GL-1a – Undesirable results are not protective of beneficial uses and users.	*Omitted per Final Staff Report*
• Deficiency GL-1b – Sustainable management criteria were not established consistent with the requirements of SGMA.	Page 18

Final Staff Report Deficiencies and Potential Actions	Subbasin Response
○ Potential Action GL-1b – Revise sustainable management criteria consistent with requirements of SGMA.	Page 21
• Deficiency GL-2 – The GSPs' monitoring network and mitigation plan are incomplete.	Page 23
• Deficiency GL-2a – The monitoring network was not developed consistent with the requirements of SGMA.	Page 23
○ Potential Action GL-2a – Develop a monitoring network consistent with SGMA requirements.	Page 24
• Deficiency GL-2b – The well impact mitigation plan is incomplete.	Page 25
○ Potential Action GL-2b – Establish an appropriate well impact mitigation program.	Page 26
J. Deficiency GL-3 – The GSPs do not describe a feasible path for halting chronic lowering of groundwater levels.	Page 27
○ Potential Action GL-3a – Evaluate the feasibility of proposed supply augmentation projects.	Page 28
○ Potential Action GL-3b – Identify key indicator wells in each aquifer, with sufficient spatial coverage to represent beneficial uses and users in each aquifer and identify groundwater levels that will trigger specific demand management.	Page 29
K. Deficiency GL-4 – The GSPs do not define groundwater storage sustainable management criteria consistent with the requirements of SGMA.	Page 30
○ Potential Action GL-4 – Redefine undesirable result for reduction of storage.	Page 31
L. Deficiency Land Subsidence 1 (LS-1) – Land subsidence undesirable results and sustainable management criteria are not defined consistent with the requirements of SGMA.	Page 31
• Deficiency LS-1a – Undesirable results are poorly described, unworkably complex, and inconsistently implemented.	Page 32
○ Potential Action LS-1a – Develop consistent, clear undesirable results.	Page 32
• Deficiency LS-1b – Sustainable management criteria were not established consistent with the requirements of SGMA.	Page 33
○ Potential Action LS-1b – Use consistent data and methods to develop subsidence sustainable management criteria.	Page 33
• Deficiency LS-2 – The GSPs do not provide adequate implementation details.	Page 34
○ Potential Action LS-2a – Develop and implement a plan to trigger sufficient management actions when subsidence exceeds defined thresholds, especially near critical infrastructure or facilities.	Page 35
○ Potential Action LS-2b – Reduce pumping and do not allow new wells in areas where subsidence threatens critical infrastructure.	Page 36
○ Potential Action LS-2c - Develop infrastructure mitigation programs with clear triggers, eligibility requirements, metrics, and funding sources.	Page 36
M. Deficiency Groundwater Quality 1 (GWQ-1) – The GSPs do not establish undesirable results and sustainable management criteria consistent with the requirements of SGMA.	Page 37
• Deficiency GWQ-1a – Undesirable result definitions are not protective of beneficial uses and users.	Page 37

Final Staff Report Deficiencies and Potential Actions	Subbasin Response
○ Potential Action GWQ-1a – Develop undesirable results consistent with SGMA using best available science and considering all beneficial uses and users.	Page 38
• Deficiency GWQ-1b – The GSPs are missing critical information about how the Subbasin will determine whether an undesirable result has occurred.	Page 39
○ Potential Action GWQ-1b – The GSPs should include consistent data and methods to develop groundwater quality minimum thresholds.	Page 40
N. Deficiency GWQ-2 – Groundwater quality monitoring network is not consistent with the requirements of SGMA.	Page 42
• Deficiency GWQ-2a – The monitoring network is not protective of all beneficial uses and users in the subbasin.	Page 42
○ Potential Action GWQ-2a – The Subbasin should evaluate the existing monitoring network and add additional wells to monitoring well network to ensure all beneficial uses and users are represented.	Page 43
• Deficiency GWQ-2b – Water quality sampling frequencies are sometimes insufficient.	*Omitted per Final Staff Report*
• Deficiency GWQ-2c – It is unclear how the Subbasin will assess the impacts of projects and management actions.	Page 44
○ Potential Action GWQ-2c – The Subbasin should better define how they will ensure projects and management actions do not degrade groundwater quality.	Page 45
O. Deficiency GWQ-3 – Management actions are not responsive to water quality degradation.	Page 45
• Deficiency GWQ-3a – Management actions are not protective of beneficial uses and users once a minimum threshold exceedance is triggered.	Page 45
○ Potential Action GWQ-3a – Develop a method to determine the impact of an exceedance to beneficial uses and users and clarify how the public will be notified should a minimum threshold exceedance occur.	Page 46
• Deficiency GWQ-3b – The well mitigation plan does not address water quality degradation.	Page 47

F. Deficiency CRD-1: Undesirable results and sustainable management criteria are not coordinated

The following are summaries of the SWRCB evaluations and detailed Subbasin responses.

SWRCB Draft 2024 Plan Evaluation

The draft 2024 Plan implements consistent and clear plain language definitions of undesirable results and SMC. SWRCB staff does not recommend further action specific to Deficiency CRD-1a or 1b but still note a fragmented approach for defining undesirable results and SMC across the Hydrogeologic Conceptual Model (HCM) Areas.

SWRCB Final 2024 Plan Tentative Evaluation

These deficiencies (CRD-1a and 1b) were addressed in the draft 2024 Plan based on SWRCB staff's full review.

Subbasin Response

No response. SWRCB staff identified CRD-1a and 1b were addressed in the draft 2024 Plan based on their full review.

G. Deficiency CRD-2: The Coordination Agreement, GSPs, and Management Area Plans lack key details necessary for coordinated implementation.

The following are summaries of the SWRCB evaluations and detailed Subbasin responses.

Deficiency CRD-2a. The Coordination Agreement is not sufficient to address disputes.

SWRCB Draft 2024 Plan Evaluation

The Subbasin has developed an MT Exceedance Policy that describes how MT exceedances will be investigated by GSAs and reported to the Subbasin Coordination Committee for recommended actions. This policy guides the Subbasin to determine the cause(s) of the exceedance including operations in adjacent GSAs. With this revision, SWRCB staff does not recommend further action specific to deficiency CRD-2a.

SWRCB Final 2024 Plan Tentative Evaluation

This deficiency (CRD-2a) was addressed in the draft 2024 Plan based on SWRCB staff's review.

Subbasin Response

No response. SWRCB staff found that CRD-2a was addressed in the draft 2024 Plan based on their full review.

Deficiency CRD-2b. The Subbasin does not explain how the multiple plans will satisfy SGMA requirements, particularly for management areas.

SWRCB Draft 2024 Plan Evaluation

SWRCB staff does not agree with the justification of some SMC and undesirable results established based on HCM Areas in the draft 2024 Plan. The Subbasin has therefore implemented HCM Areas consistent with GSP Regulations but have not resolved this deficiency.

SWRCB Final 2024 Plan Tentative Evaluation

This deficiency does not appear to be addressed. The final 2024 Plan continues to use HCM Areas to set SMCs in a manner that may not be protective of beneficial uses and users.

Subbasin Response

As discussed in the response to *CRD-3* in Section 2 above, the HCM Area approach is foundational to coordinated SMCs across the Subbasin, using consistent datasets and methodologies. The SMCs developed based on the HCM Area approach are protective of

significant and unreasonable effects on Subbasin beneficial uses and users caused due to groundwater conditions across the basin (23 CCR §354.12 to 354.20).

As discussed in the response to *CRD-2b* in Section 2 above, the Subbasin appreciates the continued engagement with SWRCB staff on this issue. Based on subsequent communications and correspondence following the issuance of the Final Staff Report, the Subbasin has further clarified and developed a shared understanding of the importance of the coordinated HCM Area approach with SWRCB staff. The Subbasin is currently working with SWRCB staff to identify concerns related to local hydrogeologic variability and address through refinements to the SMCs, as needed.

Potential Action CRD-2b. The Subbasin should revise plans to demonstrate the necessity and compliance of management areas.

The Subbasin should revise the final 2024 Plan SMCs for GL-1, LS-1 and GWQ-1. The final 2024 Plan should also demonstrate how HCM Areas will avoid impacts to beneficial users and achieve sustainability within the subbasin. The Subbasin should revise methodologies that result in incompatible SMCs across various boundaries within the Subbasin.

Subbasin Response

See responses to *CRD-3* and *CRD-2b* in Sections 2 and 3 above.

H. Deficiency CRD-3. GSAs in the subbasin have not demonstrated basin-wide management.

The following are summaries of the SWRCB evaluations and detailed Subbasin responses.

SWRCB Draft 2024 Plan Evaluation

GSAs in the subbasin have not demonstrated basin-wide GSA coverage.

SWRCB Final 2024 Plan Tentative Evaluation

This deficiency does not appear to be addressed. It is still unclear to SWRCB staff whether the Kern Non-Districted Land Authority is an official GSA that has the authority to manage groundwater in non-districted areas under the current Joint Exercise of Powers Agreement.

Subbasin Response

See the Subbasin response to *CRD-2b* in Sections 2 and 3 above regarding KNDLA GSA authority to manage groundwater in non-districted areas under the KNDLA GSA's Joint Exercise of Powers Agreement (Appendix D of the final 2024 Plan).

Potential Action CRD-3. GSAs should clearly define relationships and responsibilities consistent with SGMA requirements.

The potential action requires that the Subbasin clearly define their authorities and responsibilities in accordance with SGMA requirements, ensuring they possess the necessary legal authority to enforce SGMA within their respective management areas. The Coordination Agreement should be updated with maps and table indicating SGMA authority coverage across the subbasin.

Subbasin Response

See the Subbasin responses to *CRD-2* and *CRD-2b* in Sections 2 and 3 above regarding KNDLA GSA authority to manage groundwater in non-districted areas under the KNDLA GSA's Joint Exercise of Powers Agreement (Appendix D of the final 2024 Plan).

I. Deficiency GL-1: Groundwater level undesirable results and SMC are not defined consistent with the requirements of SGMA

The following are summaries of the SWRCB evaluations and detailed Subbasin responses.

Deficiency GL-1a – Undesirable results are not protective of beneficial uses and users.

SWRCB Draft 2024 Plan Evaluation

This deficiency appears to be addressed. SWRCB staff believe that resolving deficiencies GL-1b and GL-2a may resolve the remainder of this GL-1a deficiency.

SWRCB Final 2024 Plan Tentative Evaluation

This deficiency was addressed in the draft 2024 Plan based on SWRCB staff's full review.

Subbasin Response

No response. SWRCB staff found that GL-2a was addressed in the draft 2024 Plan based on their full review.

Deficiency GL-1b – Sustainable management criteria were not established consistent with the requirements of SGMA.

SWRCB Draft 2024 Plan Evaluation

The draft 2024 Plan does not establish undesirable results and sustainable management criteria for groundwater levels consistent with the requirements of SGMA in that: (1) the trends that inform MTs are based on broad spatial averages rather than well-specific data and therefore do not represent local conditions of depletion of supply that may cause undesirable results and result in MTs that vary substantially across HCM Area boundaries, (2) some MTs would never be reached unless pumping accelerated, and (3) the MTs and the trends that inform MTs do not differentiate between upper and lower portions of the aquifer system.

SWRCB Final 2024 Plan Tentative Evaluation

This deficiency does not appear to be addressed. While the subbasin did revise undesirable results definition and methodology for establishing MTs in a more coordinated approach, the MTs may still result in disproportionate impacts, especially across HCM Area boundaries.

Subbasin Response

Consistent with the requirements of SGMA, each sustainability indicator has a consistent UR, MT, and Measurable Objective (MO) definition across the Subbasin, all of which are demonstrated to be significantly more protective of (and avoid significant and unreasonable

impacts to) beneficial uses and users than the 2020 and 2022 GSPs[4].

The SMCs were developed using consistent data and methodologies across the Subbasin. For example, the groundwater level SMCs rely on the same method using one compiled dataset of available historical well-specific data, while necessarily reflecting the differing conditions across the largest basin in California that includes highly variable and complex geology and water use patterns and conditions and distribution of beneficial users.

The final 2024 Plan presents analysis that shows that the variation in Water Level MTs across HCM Area boundaries mimics current water level variations that are observed across the Subbasin as a result of hydrogeologic and water use variability across the Subbasin.

The Subbasin has identified local P/MAs as part of their commitment to manage water levels above the MTs and avoid URs locally and Subbasin-wide.

A robust Subbasin-wide well impacts analysis has been conducted using the revised MTs and the Subbasin well inventory to quantify potential impacts to beneficial users at the MTs as compared to the Chronic Lowering of Groundwater Levels URs definition. The impacts analysis conservatively assumed a dewatered depth of 80% of total well depth and included all dewatered wells within identified domestic well monitoring data gap hexagonal areas as part of the impacted well counts. The worst-case scenario suggests that between 260 and 307 drinking water wells will potentially be impacted if all RMW-WLs reach their MTs simultaneously, while the more likely scenario shows between 66 and 73 drinking water wells being potentially impacted by 2040. These potential impacts can be addressed effectively by the Well Mitigation Program. The Subbasin also calculated the “depletion of supply” for the worst case scenario to quantify the percentage of urban supply that may be impacted at MTs and the UR definition. Even under the worst-case scenario, less than one percent of the total estimated urban water supply would be impacted by 2040. With implementation of the proposed P/MAs, the model shows that between 25 and 72 drinking water wells would potentially be dewatered, which corresponds to less than one percent of the Subbasin’s urban pumping.

The lists of potentially impacted wells have been provided to each GSA. The Subbasin is actively using this information as part of adaptive management to: (1) verify if these wells actually exist, and (2) identify areas that need to be proactively managed to avoid triggering MTs and associated local impacts.

State regulations (23 CCR §354.28) require that MTs be developed based on “the rate of groundwater elevation decline based on historical trends” and be “supported by information provided in the basin setting, and other data or models as appropriate”. In other words, the regulations expressly require and anticipate the use of trends in the development of a MT methodology and that the trends may be different in different portions of a basin. The regulations further fully anticipate that the same methodology could result in different values in different parts of a basin based on the local groundwater conditions. That is why unique MT values are anticipated at each RMW (i.e., an MT “quantifies] groundwater conditions for each applicable sustainability indicator at each monitoring site”).

[4] See footnote 3 above regarding the Subbasin history of 2020 and 2022 GSPs.

The Subbasin developed the MTs in a fully coordinated fashion and consistent with the GSP regulations and the intent of SGMA (i.e., to avoid URs). The Subbasin applied a consistent dataset and coordinated MT methodology across the Subbasin. The exact values plugged into the formula for each RMW represent the unique conditions in that portion of the Subbasin (as represented by the actual historical water level data at that RMW and the water level trends within the applicable HCM Area). Then a series of transparent, detailed and reproducible analyses were conducted to ensure that the resultant MTs would not create URs in the Subbasin.

Pursuant to State regulations (23 CCR § 354.28), the MT methodology development process that was employed for the final 2024 Plan directly considered the beneficial uses and users of groundwater. At the outset of the revision process (i.e., in July 2023), the Subbasin determined that it would be significant and unreasonable to have more than 255 drinking water wells go dry by 2040 (or no more than 15 per year) based on an assessment of the previously impacted and successfully mitigated wells in the Subbasin since 2010, the associated costs for past mitigation efforts, and the economic feasibility of funding a Subbasin-wide Well Mitigation Program. We note that 255 wells are equivalent by count to less than 5% of the production wells in the Subbasin. The Subbasin then conceptualized more than 11 different potential MT methodologies, including some of the methods that were used in the 2022 GSPs that DWR had approved in other basins (e.g., White Wolf Subbasin and Kings Subbasin).

The Subbasin's Technical Working Group applied each candidate MT method across the Subbasin at the RMWs and assessed the well impacts, gradients, and the margin of operational flexibility. Following this rigorous and iterative process, the Subbasin selected the MT methodology which contains both trend-dominated and range-dominated calculation criteria, and a cap at 61 feet below historical lows, and has been shown to: (1) be protective of beneficial uses and users, (2) result in reasonable gradients across the Subbasin and between subbasins, (3) be consistent with the SMCs for the other Sustainability Indicators, and (4) not impact adjacent subbasins from achieving their Sustainability Goal. This approach is in alignment with State regulations for MTs (23 CCR § 354.28).

On average across the Subbasin, the MTs were raised by 33 feet compared to the 2022 GSPs. Some MTs increased substantially, including over 20 RMWs where the MTs increased by more than 100 feet.

A Subbasin-wide well impacts analysis was conducted using the revised MTs and the Subbasin well inventory to quantify potential impacts to beneficial users at the MTs as compared to the Chronic Lowering of Groundwater Levels URs definition. This analysis conservatively assumed a dewatered depth of 80% of total well depth and included all dewatered wells within identified domestic well monitoring data gap hexagonal areas as part of the impacted well counts. The worst-case scenario suggests that between 260 and 307 drinking water wells will potentially be impacted under a worse case condition wherein all RMWs simultaneously reach their MTs, while the more likely scenario shows between 66 and 73 drinking water wells being potentially impacted by 2040. These potential impacts can be addressed effectively by the Well Mitigation Program. The Subbasin also calculated the "depletion of supply" for this scenario to quantify the percentage of urban supply that may be impacted at MTs and the UR definition. Even under the worst-case scenario, less than one percent of the total estimated urban water supply would be impacted by 2040. With implementation of the proposed P/MAs, the model shows that between

25 and 72 drinking water wells would potentially be dewatered, which corresponds to less than one percent of the Subbasin's urban pumping.

The lists of potentially impacted wells have been provided to each Subbasin GSA. Subbasin GSAs are actively using this information as part of adaptive management to: (1) verify if these wells actually exist, and (2) identify areas that need to be proactively managed to avoid triggering MTs and associated local impacts.

Furthermore, the MT Exceedance Policy is triggered for a single MT exceedance, requiring Subbasin GSA action (Appendix W of the final 2024 Plan). In response to the 2023 DWR letter, the Subbasin enabled Subbasin-wide notifications for when a reported seasonal groundwater level measurement exceeds the MT. This ensures that the Subbasin GSAs are held accountable for investigating the MT exceedance and initiating P/MAs to address, as warranted.

Notwithstanding the above, the Subbasin is communicating and coordinating with SWRCB staff to review and potentially refine selected MTs with the goal to be even more protective of beneficial users.

Potential Action GL-1b. Revise sustainable management criteria consistent with requirements of SGMA.

The deficiency was partially addressed in the final 2024 Plan; the remaining potential action (GL-1b) is to revise SMCs.

Subbasin Response

As part of the development of the final 2024 Plan, extensive analysis was completed to define three distinct principal aquifers and associated Representative Monitoring Networks (RMN). It was on this basis that the SMCs were established.

For the final 2024 Plan, the alluvium was defined as a single principal aquifer rather than subdividing it into upper and lower principal aquifers based on the actual mapping and analysis of the extent and thickness of the E-Clay. Utilizing maps of the E-Clay extent from the USGS and other sources (Croft 1972, pg. 1983, 1986; PGA 1991), it was determined that the E-Clay is absent in over 60% of the Subbasin. In another 30%, the E-Clay is either discontinuous or near the margins, so that zones above and below the E-Clay are hydraulically connected. Thus, given the limited and discontinuous nature of the E-clay, the aquifer system functions as a single principal aquifer with some local zonation influenced by the E-Clay and other clay layers and was appropriately defined as such.

A distinct separation in groundwater levels due to the E-Clay is observed in an area along the boundary with the Tule and Tulare Lake Subbasins, covering about 10% of the Subbasin. Here, groundwater flows southeastward towards regions where the E-Clay is discontinuous, merging with groundwater below. This area is designated as a conservation easement for the Kern National Wildlife Refuge, which is supported by surface water. Given the lack of groundwater use in this area, it does not qualify as a separate principal aquifer. In contrast, the adjacent Tule and Tulare Lake Subbasins define upper and lower principal aquifers due to the continuous presence of the E-Clay, forming a continuous layer over 60% and 100% of their respective areas. Furthermore, in these other basins, both the upper and lower principal aquifers contribute

to agricultural and municipal water supplies.

While the variability of the E-Clay justifies establishing a single principal aquifer for the alluvial sediments, the confined Olcese and Santa Margarita Principal Aquifers in the northeast region of the Subbasin were identified as representing Miocene sandstone aquifers that are hydraulically separate from the Primary Alluvial Principal Aquifer. The 2024 Plans identify and include monitoring for each of these three principal aquifers.

In 2020, the Subbasin recognized that a more comprehensive understanding of the Subbasin hydrogeology was needed. With support from a DWR grant, the Subbasin initiated a Basin Study (P/MA KSB-4, Section 14.2.3 of the final 2024 Plan) in early 2023. In the final 2024 Plan under Section 6, the Basin Setting is described and is the result of in-depth research and model refinement which has provided a comprehensive understanding of the Subbasin.

In the Subbasin's Well Impact Analysis by Well Type (Appendix Q in the final 2024 Plan), domestic wells in the areas of the Subbasin that were identified as having RMN data gaps were conservatively assumed to be impacted and included in the potential impacted well count.

The Subbasin has committed to improving the RMN as part of adaptive management. Further, the Subbasin is currently working with SWRCB staff to further review and potentially refine the SMCs as applicable.

J. *Deficiency GL-2. The GSPs' monitoring network and mitigation plan are incomplete*

The following are summaries of the SWRCB evaluations and detailed Subbasin responses.

Deficiency GL-2a – The monitoring network was not developed consistent with the requirements of SGMA.

SWRCB Draft 2024 Plan Evaluation

The draft 2024 Plan's groundwater level monitoring network does not adequately monitor the upper and lower portions of the aquifer and well construction data are not disclosed.

SWRCB Final 2024 Plan Tentative Evaluation

This deficiency does not appear to be addressed. The final 2024 Plan identified some data gaps for shallow monitoring wells with a plan to address them within a year, but additional work to identify and address data gaps may be warranted. Monitoring well construction information (depths and screen intervals) is still missing. The final 2024 Plan includes a mitigation plan that could repair or replace domestic wells impacted by declining water levels, but the feasibility of the mitigation plan is unclear because of technical issues with the well impact analysis and limited funding based on that analysis.

Subbasin Response

The Subbasin relied upon DWR's Best Management Practices (BMPs), specifically the Hopkins methodology from the California Statewide Groundwater Evaluation Monitoring (CASGEM) guidelines, as well as an analysis of variations in groundwater pumping across the Subbasin to

develop the RMN. The analysis ensured adequate monitoring based on the amount and location of groundwater pumping, i.e. beneficial use. The Subbasin also evaluated the RMN to ensure adequate monitoring of the Primary Alluvial Principal Aquifer, Santa Margarita Principal Aquifer, and Olcese Sand Principal Aquifer. The resultant monitoring network surpasses the minimum recommended number of monitoring wells per DWR's BMPs' methodology.

The Primary Alluvial Principal Aquifer is separated into an Upper and Lower zone only in the area of the Subbasin where the E-Clay is present, i.e. the Shallow Confining Layer Area in the northern portion of the Subbasin, due to the aquifer being hydraulically connected in the remaining areas. However, the Subbasin accounted for beneficial uses and users of groundwater from varying vertical depths by comparing the RMW well depths and water levels to domestic and agricultural well depths and water levels within each 25 square mile grid cell. The Subbasin compared well construction data, historical groundwater level variations, and differences and trends in RMWs and other wells located within the same grid cell (based on data from the Subbasin Data Management System [DMS] wells). While this analysis evaluated whether the median RMW well depth in the same cell or adjacent cell was within 10 feet of the DMS wells' median depth in each cell, this analysis resulted in a conclusion that RMW wells were representative of all the wells in a cell if the RMWs' water levels were within approximately 100 feet of the DMS wells' water levels in the grid cell. The Subbasin identified a data gap if the RMW water levels deviated by more than 100 ft from the DMS wells' water levels and if; (1) there were more than 3 domestic wells within the grid cell, (2) if more than 3 drinking water wells would go dry at the MT, or (3) there are more than 10 agricultural wells within the grid cell. In the final 2024 Plan analysis, the Subbasin identified nine cells as having data gaps and proposed seven new RMWs to address these gaps (KSB-10 RMW Data Gaps, Section 14.2.3 pgs. 14-22 in the final 2024 Plan).

The Subbasin has committed to continue to improve the RMW network as additional well and water level information becomes available and as part of adaptive management. The Subbasin is currently updating the well DMS through a well inventory review process. Following the completion of that effort within the next two months, an updated well impacts and RMW data gaps analysis will be conducted. This effort will result in a refinement of the RMW network and identification of grid cells where RMWs may be necessary.

On November 14, 2024, the Subbasin provided SWRCB staff with known RMW construction information (depths and screen intervals) within the RMW shapefile. Since November 14, 2024, the Subbasin, through an ongoing update of RMW information, has been developing updated well construction information and location information for the RMWs. This effort has resulted in an update to the RMW location and construction data originally submitted on November 14, 2024. On February 5, 2025, the Subbasin submitted a spreadsheet to SWRCB staff that excerpted the RMW construction and location data from the November 14, 2024, submittal and revised the titles of the dataset columns to describe the RMW construction details requested by SWRCB staff. The Subbasin is also working on revisions to the well inventory entailing ground truthing and verification of potentially impacted domestic wells. The Subbasin intends to complete an updated data gap analysis and subsequent well impact analysis with the updated RMW information and updated well inventory to identify any remaining data gaps or well impacts. Throughout this process, the Subbasin is maintaining close coordination and communication with SWRCB staff to share our data and analysis and get direct feedback on the

methodology and results. The Subbasin appreciates the continued engagement with SWRCB staff as we address the remaining concerns, and work towards an even more protective Plan for the Subbasin.

Potential Action GL-2a. Develop a monitoring network consistent with SGMA requirements.

Revise monitoring network and include construction details of monitoring wells. Re-evaluate the well impact analysis. Establish accessible, comprehensive, and appropriately funded well impact mitigation programs.

Subbasin Response

In the final 2024 Plan, the Subbasin committed to adding seven RMWs to address the nine identified data gaps (PMA KSB-10 RMW Data Gaps, Section 14.2.3 pgs. 14-22 in the final 2024 Plan). The Subbasin continues to improve the RMW network dataset by collecting well information as the RMW network is improved to address data gaps and in response to adaptive management efforts. Additionally, the Subbasin continues to collect well information for the well inventory to improve the overall accuracy of the data gap analysis and well impact analysis. The Subbasin intends to complete an updated data gap analysis and subsequent well impact analysis with the updated RMW information and updated well inventory to identify any remaining data gaps or well impacts.

On November 14, 2024, the Subbasin provided SWRCB staff with known RMW well construction information (well depths, screen intervals, aquifer zones monitored, and well type) within the Groundwater Level Monitoring Network shapefile sent to SWRCB staff. However, SWRCB staff notified the Subbasin following adoption of the final 2024 Plan in December 2024, that the attribute column headings did not clearly describe the data within the attribute table. On February 5, 2025, the Subbasin sent SWRCB staff a spreadsheet containing the information provided in the attribute table with revised titles for the data columns that clearly identified RMW location and construction data. The Subbasin is also working on revisions to the well inventory entailing ground truthing and verification of potentially impacted domestic wells. The Subbasin is actively communicating and coordinating with SWRCB staff as the Subbasin completes an updated data gap analysis and subsequent well impact analysis (with the updated RMW information and updated well inventory) to identify any remaining data gaps and risk of potential well impacts. The Subbasin appreciates the continued engagement with SWRCB staff as we address the remaining concerns, and work towards refining the RMN and SMCs, as needed, to be even more protective of beneficial use and users in the Subbasin.

Deficiency GL-2b – The well impact mitigation plan is incomplete.

SWRCB Draft 2024 Plan Evaluation

SWRCB staff cannot assess whether the mitigation plan will correct the impacts caused by groundwater management activities, because the monitoring network may not be representative of all beneficial uses and users.

SWRCB Final 2024 Plan Tentative Evaluation

This deficiency appears to be partially addressed. The Subbasin has developed a mitigation

plan that could repair or replace domestic wells impacted by declining water levels and degradation of groundwater quality if determined to be caused by management actions. However, SWRCB staff continues to have concerns regarding potential impacts on beneficial uses and users, because it is unclear whether the impact analysis and subsequent budget are adequate.

Subbasin Response

See the Subbasin response to *GL-2a* in Section 2 above. The well impact analysis and mitigation plan were developed based on the best available data at the time, using a coordinated and consistent basin-wide approach. The Subbasin is working on an updated data gap analysis and subsequent well impact analysis to ensure accurate understanding of potential impacts on beneficial uses and users. Additionally, central to the final 2024 Plan is a series of protective measures, including a MT Exceedance Policy (Appendix W of the final 2024 Plan), which requires an investigation and proactive action following a single MT exceedance, and a comprehensive Well Mitigation Program (Appendix K of the final 2024 Plan) that addresses mitigation of impacts to domestic well users and technical assistance for municipal, industrial and small community well owners.

Potential Action GL-2b – Establish an appropriate well impact mitigation program.

Establish an appropriate well impact mitigation program. Reassess the well impact mitigation plan after updating the analysis of the impacts of MTs on domestic wells to consider the upper and lower portions of the aquifer. Confirm that the Subbasin's proposed funding will cover the expected costs to mitigate impacted wells.

Subbasin Response

Based on correspondence with SWRCB staff following adoption of the final 2024 Plan, SWRCB staff indicated that this concern related to the appropriateness of the Subbasin Well Mitigation Program is related to the RMN (*GL-2a*). The Subbasin is coordinating with SWRCB staff to provide additional information on the RMN and an updated well impact analysis. The Subbasin believes that addressing concerns on *GL-2a* should adequately address *GL-2b*, building confidence in the RMN and the associated well impact analysis, which is the planning basis for the Subbasin Well Mitigation Program. The Subbasin appreciates the continued engagement with SWRCB staff as the Subbasin addresses these remaining concerns, and works towards refining the RMN and SMCs, as needed, to be even more protective of beneficial use and users in the Kern Subbasin.

It is important to reiterate that the final 2024 Plan includes a robust and comprehensive Well Mitigation Program (Appendix K of the final 2024 Plan) that addresses mitigation of impacts to domestic well users and technical assistance for municipal, industrial and small community well owners. The Well Mitigation Program resulted from consultation with SWRCB staff, community water service providers, non-government organizations and the public. It is important to note that the implementation of the Well Mitigation Program is independent of the well impact analysis, and wells will be mitigated based on claims received and on-the-ground impacts and conditions. The Well Mitigation Program is one of the many protective layers that have been built into adaptive management paradigm formulated in the final 2024 Plan to avoid significant and unreasonable impacts on beneficial uses and users. This adaptive management approach

consists of developing an RMN to collect data and monitor conditions, specifying protective SMCs based on best available data, establishing a proactive exceedance policy that evaluates and responds to changing groundwater conditions, MT exceedances, and any associated impacts, and finally a mitigation plan that mitigates well impacts that do occur during GSP implementation. As more data is collected and better understanding of groundwater conditions and potential impacts is developed, the Subbasin will continue to refine and improve the Plan, and associated RMN, SMCs, P/MAs, exceedance policy, and mitigation programs.

K. Deficiency GL-3. The GSPs do not describe a feasible path for halting chronic lowering of groundwater levels.

The following are summaries of the SWRCB evaluations and detailed Subbasin responses.

SWRCB Draft 2024 Plan Evaluation

The Subbasin does not establish that they are on a path to reach sustainability. Demand management projects and management actions (P/MAs) still lack key details and do not appear to be developed for many parts of the subbasin. It is unclear which PMAs are included in projected paths to sustainability or how the Subbasin will stop overdraft in the subbasin and avoid undesirable results. Moreover, SWRCB staff notes key concerns over water budgets that may indicate the need for further P/MAs.

SWRCB Final 2024 Plan Tentative Evaluation

This deficiency appears to be partially addressed. The Subbasin continues to rely on various proposed P/MAs at various stages of implementation to achieve sustainability. SWRCB staff cannot assess the feasibility of the P/MAs without representative water budgets and clarity on P/MAs implementation. The Subbasin included new operational water budgets derived from a mass balance analysis that is inconsistent with overlying crop types and with the Todd Groundwater Model. It remains unclear whether P/MAs, if implemented, are feasible and sufficient to achieve sustainable groundwater management.

Subbasin Response

The Subbasin has developed a portfolio of P/MAs, each with specific projected benefits, implementation triggers, and costs; the portfolio includes 387,000 AFY in demand reduction management actions and 452,000 AFY in water supply augmentation projects (Table 14-1 of the final 2024 Plan). To date, the Subbasin started implementation of 47 percent of P/MAs identified in the final 2024 Plan. In addition to Subbasin-wide P/MAs identified under Section 14.2 of the final 2024 Plan, identified as “KSB-#”, and HCM Area-specific P/MAs identified under 14.1.3, each GSA was charged with developing their respective P/MAs and have customized them to their specific circumstances to increase feasibility rather than a broad brushed Subbasin-wide approach that would likely encounter implementation difficulties (Appendix S of the final 2024 Plan). The P/MAs described in the final 2024 Plan are not concepts but real projects and management actions that the Subbasin has prepared and is working to implement.

The final 2024 Plan includes significantly more P/MAs than are required to address the projected deficit. In the event full estimated P/MA benefits are not ultimately realized, there is a built-in “safety factor” of nearly 2.3 times the needed level of deficit reduction and a plan to ensure the Subbasin projected deficit is reduced by 2040. Furthermore, under the MT

Exceedance Policy, implementation of P/MAs could be triggered and/or accelerated if MT exceedances occur.

Water budget information under projected (future) conditions has also been developed for the Subbasin using C2VSimFG-Kern with DWR-provided inputs for climate variables (i.e., adjusted precipitation and evapotranspiration) and water supply assumptions (i.e., changes to imported water supplies). This approach allows for inclusion of more complex variables, including factors influenced by climate change, resulting in more accurate projections. The projected (future) water budget assesses the magnitude of the net water supply deficit under future conditions that would need to be addressed through P/MAs to prevent Undesirable Results and achieve the Sustainability Goal. Three projected (future) water budget scenarios have been developed for this analysis: (1) a Baseline Scenario, (2) a 2030 Climate Change Scenario, and (3) a 2070 Climate Change Scenario. The P/MAs developed by the Subbasin have also been incorporated into the C2VSimFG-Kern 2030 Climate Change Scenario input files to evaluate their effectiveness in addressing the projected (future) deficit of 372,000 AFY by 2040. To allocate the projected (future) Subbasin deficit new GSA-specific water budgets were developed, for PM/A planning purposes only, that achieve the 372,000 AFY goal.

The modeled simulated results indicate that implementation of planned P/MAs along the projected glide path will successfully achieve sustainability and avoid URs for Groundwater Levels (and by proxy for the other applicable Sustainability Indicators) throughout the Subbasin. Specifically, the projected (future) numerical model scenarios show that without the P/MAs, groundwater levels continually decline across the Subbasin with enough wells falling below their MTs to trigger an UR (Appendix M of the final 2024 Plan). However, the scenarios with P/MA implementation show stabilizing to increasing groundwater levels over the 20-year implementation period so that after 2040, groundwater levels across much of the Subbasin are near or above their MO. However, the projected (future) scenario shows that some areas may have groundwater levels near to the MT. As discussed in the Subbasin Response for *CRD-3* in Section 3 above, the built-in “safety factor” provides capacity to implement additional P/MAs to address areas that are not meeting sustainability goals.

Potential Action GL-3a – Evaluate the feasibility of proposed supply augmentation projects.

The Subbasin should account for a future scenario in which extended droughts occur within the SGMA timeframe. Clarify which P/MAs volumes were considered in the modeled projections and which, if any, were not. The Subbasin should develop programs that would enable demand management now and identify clear triggers for initiating or ramping up groundwater pumping restrictions when periods of drought occur.

Subbasin Response

The projected (future) scenarios are based on the C2VSimFG-Kern model that includes a 50-year base period with varied hydrology that includes multi-year droughts and wet periods. This simulated hydrology base period is representative of long-term conditions in the Subbasin necessary for evaluating the long-term sustainable yield of the Subbasin. The current projected (future) scenarios include simulated P/MAs, a range of demand reduction and supplementary water supplies to provide a volumetric target for developing sufficient P/MAs to achieve the Subbasin’s sustainability goal. Work on improving the C2VSimFG-Kern model and water

budgets in the Subbasin will be ongoing. Currently, a DWR grant funded project is underway to update and address previously identified data gaps in the Subbasin numerical model. Revised projected (future) scenarios are planned with the updated model.

Potential Action GL-3b. Identify key indicator wells in each aquifer, with sufficient spatial coverage to represent beneficial uses and users in each aquifer and identify groundwater levels that will trigger specific demand management.

SWRCB staff recommend the Subbasin develop basin-wide allocations that use groundwater elevations as a key metric. Identify key indicator wells in each of the three subbasin aquifers. Determine pumping cutbacks that will be triggered at specific groundwater elevations in a tiered trigger scheme based on the groundwater conditions on September 1 of each year (or as close to annual low measurements as is possible).

Subbasin Response

Demand management is a key component of the final 2024 Plan. In fact, 387,000 AFY in demand reduction management actions (including allocations in some cases) are already contemplated by the Subbasin GSAs, with an implementation schedule. The final 2024 Plan has included several layers of triggers that will inform the need for adaptive management. These include interim milestones (IMs) and exceedance policies.

All RMWs have MTs, MOs, and IMs associated with them. RMW IMs serve as monitoring triggers allowing the Subbasin to assess performance against the SMCs and progress towards reaching sustainability to adaptively manage and implement P/MAs based on changing groundwater conditions in the future. The IMs include a P/MA implementation Glide Path as shown in Table 14-1 of the final 2024 Plan, the water level MOs at five-year intervals are illustrated on Figure 13-20 of the final 2024 Plan, and the deficit reduction goals are shown on Figures 14-1 and 14-2 of the final 2024 Plan). Further, the final 2024 Plan includes an extensive RMN to monitor groundwater conditions in the three principal aquifers and several triggers that will inform the need for adaptive management. For example, progress relative to the SMCs is evaluated each year as part of the Annual Report process and the MT Exceedance Policy (Appendix W of the final 2024 Plan) requires corrective actions to address any MT exceedances, such as accelerated implementation of P/MAs, including demand management.

L. Deficiency GL-4. The GSPs do not define groundwater storage sustainable management criteria consistent with SGMA requirements.

The following are summaries of the SWRCB evaluations and detailed Subbasin responses.

SWRCB Draft 2024 Plan Evaluation

The draft 2024 Plan does not define groundwater storage sustainable management criteria consistent with SGMA requirements.

SWRCB Final 2024 Plan Tentative Evaluation

This deficiency does not appear to be addressed. The Subbasin has not revised their

methodology used to calculate groundwater storage.

Subbasin Response

The final 2024 Plan refined the definition of the Groundwater Storage SMCs to be consistent with the revised Water Level SMCs, which are used as a proxy as provided by State regulations (23 CCR § 354.28(d) and § 354.30(d)).

Specifically, the regulations require that the MT for reduction of groundwater storage "shall be a total volume of groundwater that can be withdrawn from the basin without causing conditions that may lead to undesirable results". The final 2024 Plan calculates the operational groundwater storage that exists between the water level MOs and MTs in the Subbasin as 3 to 9 percent of the total usable storage in the Subbasin, while recognizing that since the URs for water levels occur if 25% of the RMWs reach their MTs, that total volume of groundwater storage would never be accessed, therefore never causing a UR.

Further, State regulations require that the MTs for reduction of groundwater storage "shall be supported by the sustainable yield of the basin, calculated based on historical trends, water year type, and projected water use in the basin" (23 CCR § 354.28(C)(2)). The final 2024 Plan presents a comparison of the operational groundwater storage between the MOs and the MTs to the groundwater storage changes and trends that occurred during the recent droughts and water year types. This decline in groundwater storage, which allows for a four-year drought, is not unreasonable given the large size of the Subbasin and total usable groundwater storage estimates.

Potential Action GL-4: Redefine undesirable result for reduction of storage.

The Subbasin should establish a quantitative definition of an undesirable result and explain how storage relates to other sustainability indicators.

Subbasin Response

The final 2024 Plan refined the definition of the Groundwater Storage SMCs to be consistent with the revised Water Level SMCs, which are used as a proxy as provided by SGMA (23 CCR § 354.28(d) and § 354.30(d)).

All of the Subbasin, except for the USEPA exempted aquifers[5], is designated as drinking water beneficial use. The volume of usable groundwater storage in the Subbasin was calculated using the Subbasin groundwater model, consistent with other applications of the model for water budgets, estimation of sustainable yield, etc.

A cumulative reduction of 8.5 MAF (up to nine percent) of the total usable groundwater storage in the Subbasin relative to the 2015 baseline equates to the difference in groundwater storage between the MT and MO groundwater levels. This decline in groundwater storage, which allows for a four-year drought, is not unreasonable given the large size of the Subbasin and total usable groundwater storage estimates, and consistent with the requirements of the GSP regulations, reflect historical trends, water year type, and projected water use. For example, the

[5] United States Environmental Protection Agency (USEPA) oil field exempted aquifers are discussed in Section 7.6.5 of the final 2024 Plan.

difference in groundwater storage between the MT and MO groundwater levels is similar to the groundwater storage change observed during recent multi-year droughts without unreasonable dewatering of wells. Therefore, the Chronic Lowering of Groundwater Levels SMCs serve as a reasonable proxy for Reduction of Groundwater Storage. The three to nine percent reduction of total usable groundwater storage is calculated using the Subbasin groundwater model and assuming that all Primary Alluvial Principal Aquifer RMW-WLs exceed the MTs. However, URs for Chronic Lowering of Groundwater Levels are defined to occur when 25 percent of RMW-WLs exceed their MTs, which would correspond to a lower decline in storage than the UR criteria for Reduction of Groundwater Storage, thus sufficiently protecting against impacts to beneficial uses and users.

Planned P/MAs are designed to avoid the Subbasin triggering URs for water levels and groundwater storage by proxy.

M. Deficiency LS-1: Defining and Avoiding Undesirable Results Related to Land Subsidence

The following are summaries of the SWRCB evaluations and detailed Subbasin responses.

In subsequent verbal and written communications Staff requested clarification on three items. These are, 1.) potential impacts due to oil field water supply wells, 2.) details on the subsidence mitigation action plan and, 3.) correction on subsidence MO data in two SMC tables (i.e., tables 13-9 and 13-10). As communicated to Staff, the Subbasin is committed to resolving these and other subsidence items with Staff as quickly as possible. For example, the Subbasin is working with staff on an interagency meeting with CASP, DWR and CalGEM to clarify the status of oil field water supply wells and has already corrected tables 13-9 and 13-10 as requested by Staff. Clarification of the Subbasin-wide Subsidence Action Plan details are provided in the comments below

Deficiency LS-1a – Undesirable results are poorly described, unworkably complex, and inconsistently implemented.

SWRCB Draft 2024 Plan Evaluation

This deficiency was partially addressed. SWRCB staff acknowledge that a more coordinated approach to defining undesirable results and establishing SMCs was used in the Draft Plan.

SWRCB Final 2024 Plan Tentative Evaluation

This deficiency was partially addressed. There remain issues with the quantitative definitions of undesirable results and the MT Exceedance Policy. There are also questions about the methods used to establish Subbasin-wide SMC and the development and implementation of P/MAs to address subsidence.

Subbasin Response

The final 2024 Plan was extensively updated and revised to address SWRCB staff comment on *LS-1a*. As addressed under Sections 8.5, 11, and 13.5 of the final 2024 Plan, the Subbasin established SMCs that identifies the impacts the Subbasin is trying to avoid, are protective of

critical infrastructure in coordination with key beneficial users and are consistent with SGMA. The subsidence management methodology is consistent both along the Critical Infrastructure and across the Subbasin and was developed in coordination with the FWA and the CASP. Notable subsidence topic revisions to the final 2024 Plan include, among others, a revamped definition of subsidence undesirable results, and a data-driven Subbasin subsidence SMC approach.

Additionally, the Subbasin has addressed and responded to subsidence comments received on the draft 2024 Plan from DWR/SWP and are located in Appendix AA of the final 2024 Plan.

Potential Action LS-1a: Develop consistent, clear undesirable results.

Update the final 2024 Plan with a consistent plain-language subsidence undesirable result that clearly describes the significant and unreasonable impacts in the basin that the Subbasin are attempting to avoid.

Subbasin Response

The final 2024 Plan has identified impacts to beneficial users and Critical Infrastructure as URs to be avoided. The Plan provides for a ramp down towards zero GSA-related subsidence by 2040. See the Subbasin response to *Deficiency LS-2* in Section 3 below.

Deficiency LS-1b: Sustainable management criteria were not established consistent with the requirements of SGMA.

SWRCB Draft 2024 Plan Evaluation

SMC should be revised to account for the specific characteristics of the infrastructure they intend to protect and take into account the input of the agencies that manage them.

SWRCB Final 2024 Plan Tentative Evaluation

This deficiency was partially addressed. SMC development is less complicated, and steps were taken to ensure Regional Critical Infrastructure MTs were protective of conveyance capacity in vulnerable areas. SMC values (MTs, MOs, and IMs) now appear to be established consistent with a goal of reducing subsidence as 2040 approaches. Errors in California Aqueduct SMC table need to be addressed.

Subbasin Response

The final 2024 Plan established SMCs that are protective of Critical Infrastructure and surface land uses across the Subbasin in coordination with key beneficial users. The land subsidence SMCs were revised based on feedback from CASP and FWA. The SMCs are data-driven and are based on the best available historical subsidence rates. The subsidence SMC extents/rates were lowered along the California Aqueduct and in areas where operational impacts have been identified. Based on Subbasin analysis, stable groundwater levels will be achieved by 2030, allowing for ramp-down to zero GSA-related subsidence by 2040. The referenced errors in SMC Tables 13-9 and 13-10 (pgs.13-115 and pgs. 13-123, respectively, in the final 2024 Plan), largely due to numerical rounding errors during table formatting, were recently addressed. The IM values in updated SMC Tables 13-9 and 13-10 were ensured to be consistent with MO values.

Potential Action LS-1b – Use consistent data and methods to develop subsidence sustainable management criteria.

Develop MTs using consistent data and methods. Clarify how the established MTs would avoid interference with the operations of Regional Critical Infrastructure.

Subbasin Response

Following adoption of the final 2024 Plan, in subsequent correspondence with SWRCB staff, the Subbasin information was presented that demonstrated consistent data and methods were utilized to establish subsidence MTs and that the SMCs are protective of the California Aqueduct, the FKC and Subbasin beneficial uses and users. The Subbasin appreciates the continued engagement with SWRCB staff to further clarify the coordinated and consistent MT methodology.

N. Deficiency LS-2: The GSPs do not provide adequate implementation details

The following are summaries of the SWRCB evaluations and detailed Subbasin responses.

SWRCB Draft 2024 Plan Evaluation

The draft 2024 Plan lacks adequate implementation details related to P/MAs that address expected, or potential, impacts of subsidence on infrastructure.

SWRCB Final 2024 Plan Tentative Evaluation

This deficiency does not appear to be addressed. A Subsidence Action Plan is included in the final 2024 Plan in Appendix W, but some of its language conflicts with the description of the exceedance policy in Section 13. The proposed P/MAs could help mitigate further subsidence. Overall, the plan still lacks adequate information regarding plans to mitigate subsidence related impacts to infrastructure.

Subbasin Response

The Subbasin developed a coordinated Subbasin-wide Action Plan for Subsidence IM & MT exceedances which requires the individual GSAs to evaluate and initiate targeted P/MAs to reduce GSA-related subsidence (Appendix S in the final 2024 Plan). For example, as part of this P/MA, GSAs located within or proximate to the CASP 5-mile Monitoring Corridor to the California Aqueduct may initiate targeted P/MAs should future observed subsidence rates exceed IMs and MTs. These targeted P/MAs may include: (1) well registry, (2) metered well extraction volume reporting, (3) net zero well drilling moratorium, (4) targeted pumping reductions, and (5) pumping limitations, as deemed informed by the analysis undertaken from the five-step Subsidence Action Plan. Implementation of P/MAs will be coordinated with the appropriate relevant agency (e.g., CASP, DWR, FWA, etc.).

In response to MT exceedances, all of the respective P/MAs mentioned above were implemented by the Westside District Water Authority (WDWA) in 2024 in consultation with CASP along with the Aqueduct between Mile Posts 195 and 215. In a proactive action, Wheeler Ridge-Maricopa (WRM) GSA implemented a well registry and metered well extraction volume

reporting prior to IM or MT exceedances between Mile Posts 253 and 280 (within the CASP 5-mile-wide monitoring zone. GSA-specific details on targeted P/MAs within close proximity to the California Aqueduct are found in the final 2024 Plan and/or the relevant supplemental materials included in the six GSA GSPs submitted, reflected with blue-colored pages[6].

Additionally, a P/MA has been developed for the FKC in coordination with the FWA. To address post-2020 subsidence, a mitigation program consisting of raising the sides (liner) of the canal and upgrading associated facilities/infrastructure is proposed. The mitigation program would be funded as needed by GSAs within the Subbasin, based on the relative impact of post-2020 pumping and groundwater overdraft on subsidence along the FKC. As part of this P/MA, the Subbasin would implement the following: 1) participate in a program that monitors and tracks ongoing subsidence regionally within the Subbasin and locally along the FKC, 2) compare observed rates of subsidence to established SMCs along the FKC and take action such as pumping reductions should future observed subsidence rates exceed interim milestones and the minimum threshold, 3) collaborate with FWA to develop costs estimates for the Lower Reach Capacity Correction and evaluate the degree of post-2020 lost capacity attributable to subsidence, 4) develop an attribution analysis of post-2020 subsidence impacts using either a numerical model to perform predictive analysis or other suitable tool, 5) participate in developing a value of water analysis in cooperation with FWA and 6) develop and implement a funding mechanism based on the subsidence attribution analysis to pay for post-2020 conveyance impacts on the FKC attributable to subsidence.

The Subbasin will review and resolve the potential conflict in language between the Subsidence Action Plan and Section 13 of the final 2024 Plan.

Potential Action LS-2a: Develop and implement a plan to trigger sufficient management actions when subsidence exceeds defined thresholds, especially near critical infrastructure or facilities.

Include detailed demand management plans for the entire subbasin to provide contingency in case future conditions are more difficult than anticipated. Develop and implement reasonable actions (e.g., pumping reductions for nearby wells) to halt subsidence along critical infrastructure when it exceeds defined thresholds, and ensure these thresholds are established in a manner that avoids undesirable results.

Subbasin Response

As described in the response to *LS-2* in Section 3 above, the Subbasin has developed a coordinated Subbasin-wide Action Plan for Subsidence IM & MT exceedances which requires GSAs to proactively evaluate and initiate targeted P/MAs to reduce GSA-related subsidence (Appendix W of the final 2024 Plan).

In response to MT exceedances, the WDWA GSA has implemented elements of the P/MAs with consultation of CASP in 2024 described above along of the Aqueduct between Mile Posts 195 and 215. In a proactive action, WRM GSA implemented a well registry and metered well extraction volume reporting prior to IM or MT exceedances between Mile Posts 253 and 280

[6] See footnotes 1 and 2.

within the CASP 5-mile-wide monitoring zone. GSA-specific details on targeted P/MAs within close proximity to the California Aqueduct are found in the final 2024 Plan and/or the relevant supplemental materials included in the six additional plans, reflected with blue-colored pages.

Work is ongoing to further develop P/MAs for the FKC in consultation with FWA (Appendix T in the Final 2024 Plan). This includes developing relevant GSA funding contributions determined by the subsidence attribution analysis for post-2020 impacts and implementing mitigation measures as previously described.

Potential Action LS-2b: Reduce pumping and do not allow new wells in areas where subsidence threatens critical infrastructure

Develop a well registration program to prevent new non-de minimis wells from being installed near and move existing non-de minimis wells away from critical infrastructure. Analyze the ongoing impacts of subsidence on critical infrastructure to determine not just where new wells should not be installed, but also where existing wells should be relocated or decommissioned to protect essential infrastructure.

Subbasin Response

The Subbasin has developed and implemented pumping restrictions along portions of the California Aqueduct as previously described in the Subbasin response to *LS-2a* in Section 3 above. Similar measures will be planned and implemented along other portions of Critical Infrastructure as necessary. Appendix S in the final 2024 Plan provides the individual GSA P/MAs.

Potential Action LS-2c: Develop infrastructure mitigation programs with clear triggers, eligibility requirements, metrics, and funding sources.

Develop mitigation plans to repair infrastructure damaged by subsidence.

Subbasin Response

See the Subbasin responses to *LS-1a, LS-1b, LS-2, LS-2a, LS-2b* in Section 3 above. The Subbasin Land Subsidence Action Plan establishes the framework to monitor and manage subsidence to proactively identify and assess potential undesirable subsidence results (Appendix S of the final 2024 Plan). Together, the MT Exceedance Plan (Appendix W of the final 2024 Plan) and the Subsidence Action Plan provide a logical and science-based approach to evaluate the causes of a subsidence MT exceedance and trigger appropriate additional P/MAs, as needed. For example, in consultation with CASP, MT exceedances within the 5-mile wide CASP monitoring zone adjacent to the Aqueduct would trigger P/MAs to:

- Develop well registration program(s)
- Measure groundwater extractions using flow meters
- Reduce pumping and/or prohibit installation of new wells where subsidence threatens Critical Infrastructure (e.g., Appendix S in the final 2024 Plan and the WDWA GSP[7]

[7] Westside District Water Authority (WDWA) submitted a separate Groundwater Sustainability Plan (GSP) with additional materials, reflect with blue-colored pages.

relevant supplemental materials, reflected with blue-colored pages).

All of these P/MAs, including a moratorium on groundwater pumping, were adopted and implemented in 2024 by the WDWA GSA to ameliorate any potential Subbasin (GSA-related) contribution to the causes of subsidence identified between Aqueduct Mile Posts 195 and 215 near the Lost Hills Oil Field. In a proactive action, WRM GSA implemented a well registry and metered well extraction volume reporting prior to IM or MT exceedances between Mile Posts 253 and 280 within the CASP 5-mile-wide monitoring zone (Appendix S in the final 2024 Plan provides the individual GSA P/MAs).

Additionally, the Subbasin has initiated the assessment of mitigation measures along the FKC in coordination with the FWA. While the Subbasin cannot explicitly implement any engineering mitigation on infrastructure under the jurisdiction of a government agency, it will continue to act in good faith by assisting in the amelioration of undesirable results within its purview and support mitigation measures implemented by a government agency as necessary. Mitigation of the identified subsidence impacts on the FKC consists of liner raises and upgrades to associated facilities/infrastructure. To support this engineering mitigation, the adjacent GSAs have executed a cost sharing agreement based on a subsidence attribution analysis as outlined above (Appendix T in the final 2024 Plan provides additional details).

Results from these mitigation measures will inform implementation of P/MAs, if necessary, for future subsidence impacts to critical infrastructure.

O. Deficiency GWQ-1: The GSPs do not establish undesirable results and sustainable management criteria consistent with the requirements of SGMA

The following are summaries of the SWRCB evaluations and detailed Subbasin responses.

Deficiency GWQ-1a – Undesirable result definitions are not protective of beneficial uses and users.

SWRCB Draft 2024 Plan Evaluation

The quantitative definition of an undesirable result is defined as MT exceedances in three representative monitoring wells in an HCM area. Staff concerns include: (1) significant portions of the subbasin could experience degradation of groundwater quality without triggering an undesirable result may cause disproportionate impacts in different areas in the subbasin.

SWRCB Final 2024 Plan Tentative Evaluation

This deficiency does not appear to be addressed. The updated undesirable result definition still lacks the detail necessary to determine whether all beneficial uses and users have been considered.

Subbasin Response

The following revisions were incorporated into the final 2024 Plan to update the UR definition for applicable COCs that would be triggered, if either of the following two conditions is met:

1. Expanded the HCM Area definition so that an undesirable result would be triggered if a groundwater quality MT exceedance occurs in one of the two groundwater quality RMW in the Western Fold Belt, or consistent with the original definition of three wells in the North Basin, Kern River Fan, South Basin, or East Margin HCM Areas.
2. Added a Subbasin-wide definition of five small community wells sampled under the Division of Drinking Water requirements and have a confirmed MCL exceedance of a groundwater quality COC that can be attributed based on technical analysis to groundwater management actions (e.g. groundwater level changes, implementation of P/MAs).

Additionally, the DMS imports water quality data from GAMA's Open Data Portal, which enables the Subbasin and stakeholders to easily review and monitor groundwater quality data across the Subbasin.

The Subbasin is currently working with SWRCB staff to further review and potentially refine the UR definition with the goal to be even more protective of beneficial uses and users.

Potential Action GWQ-1a – Develop undesirable results consistent with SGMA using best available science and considering all beneficial uses and users.

Considering all beneficial uses and users, develop quantitative undesirable results that clearly describe the combination of MT exceedances and represent the conditions that would cause the plain-language undesirable result.

Subbasin Response

The Subbasin's plain-language definition of UR for degraded groundwater quality is: *The point at which significant and unreasonable impacts occur over the planning and implementation horizon, as caused by water management actions, that affect the reasonable and beneficial use of, and access to groundwater by overlying users.* Since the monitoring network density correlates with pumping and beneficial user density, the Subbasin's objective in establishing UR by HCM Area is to account for geologic and water use variability across the Subbasin. Table 3 below summarizes the distribution of groundwater quality representative monitoring, domestic, and small community wells by HCM Area to show that the RMN for groundwater quality is commensurate with the distribution of beneficial users.

Table 3. Distribution of RMWs-WQ, Domestic and Small Community Wells by HCM Area

HCM Area	# of RMWs-WQ	Domestic Wells[1]	Small Community Wells
Western Fold Belt[2]	1	6	0
North Basin	13	644	10
Kern River Fan	15	639	28
South Basin	13	950	13
East Margin	9	154	1

[1] Domestic well count based on Subbasin November 2024 well inventory (reference Table 5-8).
[2] All urban areas in the Western Fold Belt HCM area rely on groundwater pumped from the North Basin and South Basin HCM Areas. Refer to the final 2024 Plan, Section 5.6.4 for additional details.

The component of the UR criteria requiring groundwater quality MT exceedances in three representative wells in an HCM Area was selected to balance localized issues with being

sufficiently protective of all beneficial uses and users. With this definition, a maximum of 8 of the 52 RMWs could have an MT exceedance Subbasin-wide before an UR is triggered.

The additional criteria for 5 small community water system wells with a new MCL exceedance was established to be responsive to SWRCB staff feedback and public comments on the draft 2024 Plan. Incorporating this publicly available community water system data into the UR criteria aligns with the Subbasin's partnership approach with local water suppliers in implementing SGMA. It also enhances awareness of the issues that small community water systems in rural residential areas may be experiencing, as outlined in publications referenced in the Final Staff Report (Section 3.5.1). Most importantly, these community water systems are generally surrounded by, and are representative of, wells used by non-public (2-4 residences on a shared well system) and domestic well owners.

The Subbasin is currently working with SWRCB staff to further review and potentially refine the UR definition with the goal to be even more protective of beneficial uses and users.

Deficiency GWQ-1b – The GSPs are missing critical information about how the Subbasin will determine whether an undesirable result has occurred.

SWRCB Draft 2024 Plan Evaluation

Lack of clarity and detail regarding how management activities may lead to significant and unreasonable impacts to beneficial uses and users. Certain constituents have the potential to be influenced by groundwater management in ways other than groundwater level declines.

SWRCB Final 2024 Plan Tentative Evaluation

This deficiency does not appear to be addressed. The final 2024 Plan has not provided the necessary information needed to determine whether an undesirable result will occur. The technical analysis process developed by the Subbasin fails to consider all driving mechanisms for each COC.

Subbasin Response

Section 8.4 of the final 2024 Plan addresses the physical driving mechanisms that exacerbate contaminant concentrations for each constituent of concern (COC). To determine changes in groundwater quality over time, a network of RMWs was established with a Water Quality Sampling Standard Operating Procedure (Appendix Z of the final 2024 Plan) to implement a systematic monitoring program for the Subbasin's COC. Refer to the Subbasin response to *Deficiency GWQ-2* for additional information on the water quality monitoring network.

Other driving mechanisms, such as geochemical processes (redox conditions and radioactive decay) are only briefly addressed in the final 2024 Plan since these phenomena are triggered when a new water source is introduced to the aquifer system. The Subbasin has been implementing groundwater recharge and conjunctive use programs (collectively groundwater management programs) for several decades; the same primary water sources are used today and are proposed as the future supply to P/MAs. With the long history of water resources monitoring and management programs in the Subbasin, extensive technical reports evaluating the geochemical factors have been produced, which are referenced throughout the final 2024 Plan.

Many – if not all – of the existing banking programs are required to conduct routine monitoring of their surface water supplies and groundwater quality and publish reports on groundwater conditions. The Kern Fan Monitoring Committee published its most recent operations report in 2024, which documents water quality improvements observed in the Subbasin from importing high-quality surface waters for its banking and recovery operations.[8] Reports have been published every three to five years and include annual and some semi-annual data for groundwater quality. The following reports are available as early as 1991 and continuing to the present (final 2024 Plan, Section 5.7.5):

- Report on Water Conditions prepared by Kern County Water Agency Improvement District No. 4.
- Kern Fan Area Operations and Monitoring Report produced by the Kern Fan Monitoring Committee.
- Biennial Monitoring Reports published by the Semitropic Water Storage District Water Banking Project Monitoring Committee.

Any new projects must undergo the regulatory processes for projects under the California Environmental Quality Act (CEQA). New groundwater recharge and banking projects require a water supply analysis of potential impacts on groundwater quality, including changes in contaminant levels due to recharge activities with particular focus on whether the project could introduce pollutants or alter existing water quality within the aquifer, and consider how those changes may affect future beneficial users. Since geochemical driving mechanisms are addressed in the CEQA analysis, outside of SGMA, the final 2024 Plan only references existing reports. This approach should not be identified as a failure to consider driving mechanisms. Existing conditions are known and documented, and technical reports on banking projects and operations in the Subbasin are referenced throughout and document that groundwater quality is improved (Sections 5.5 and 5.7 of the final 2024 Plan).

Potential Action GWQ-1b – The GSPs should include consistent data and methods to develop groundwater quality minimum thresholds.

Evaluate more than groundwater level correlations to determine whether water quality degradation is due to management activities. Using an inverse correlation between groundwater levels and groundwater quality may not be sufficient, especially for redox-sensitive or depth-dependent constituents.

Subbasin Response

A detailed response addressing redox-sensitive conditions and analysis of the driving mechanisms is provided under *Deficiency GWQ-1b in Section 3 above*. In the final 2024 Plan, Section 8.4.2 Constituents of Concern, provides extensive discussion on both the geochemical and physical driving mechanisms for each constituent of concern. Since the majority of the Subbasin has relied on imported surface waters for several decades, geochemical influences that liberate arsenic or hexavalent chromium from the soils, or radioactive decay that releases alpha particles and ultimately increases uranium concentrations would be revealed through the data trending analysis as a continuously increasing trend. Instead, trend results show fluctuating

[8] The latest Operations Report is available here: Kern Fan Operations Report.

contaminant concentrations that correlate with geology and local aquifer conditions, and well construction and operation.

In the final 2024 Plan under Section 8.4.2, Connecting Constituents of Concern to Undesirable Results, provides a detailed analysis of the geochemical and physical driving mechanisms for 1,2,3-trichloropropane, arsenic, nitrate and nitrite, total dissolved solids, and uranium. The literature review and data trending analysis for each constituent is followed by a Driving Mechanisms for Exacerbating Contaminant Concentrations and Conclusion Statement section to clearly summarize findings. Results and conclusions are also provided in Section 13.3.2.4, Impacts to Beneficial Users, to explain where each constituent is most prevalent and the driving mechanism for increasing constituent concentrations.

In the final 2024 Plan under Section 8.4.2.2, Arsenic, references several technical studies that address redox conditions where the E-clay is present since these areas are redox-sensitive based on the pyrites bound in its particles. The basis for using an inverse correlation between groundwater levels and groundwater quality as the most representative technique to evaluate arsenic conditions that show the most significant correlation to increased contaminant concentrations is based on findings of the referenced studies. The following excerpt is from pgs. 8-75 to 8-76.

> *Schmidt and Associates, 2007, conducted a study of arsenic concentrations in the Delano-McFarland area. Vertical distribution of arsenic in groundwater from pilot hole isolation zone sampling, public supply wells, and the color of subsurface deposits for six wells were evaluated to characterize groundwater conditions. Based on this study, arsenic concentrations increased with depth and are generally higher below depths ranging from 900 to 1000 feet bgs where blue-green deposits are present, indicative of reduced groundwater conditions. The study concluded that in the Delano-McFarland area, groundwater above a depth of 900 feet bgs have oxidized conditions and usually contain arsenic concentrations below 10 ppb.*

Another physical driving mechanism for degraded groundwater quality is improperly constructed or sealed wells that may act as conduits to confined and unconfined aquifers. The most vulnerable COCs are 1,2,3-trichloropropane (Section 8.4.2.1) and nitrate (Section 8.4.2.6). These constituents are not commonly found in wells with deep screen intervals where the E-clay is present. In the final 2024 Plan under Section 5.8.4, Well Permitting Process, explains the Kern County Environmental Health Services (KCEHS) well ordinance that requires wells to be drilled where regionally confining clay is present are sealed to avoid contaminant migration between the locally confined aquifer zones. The KCEHS well permitting program is administered in cooperation with local agencies and includes several conditions that trigger a well to be constructed in a manner that protects against groundwater contamination (i.e., depth of sanitary seal, distance from public supply wells, radius from a proposed groundwater recharge/recovery facility, distance from an active dairy or other contaminated site or area of poor water quality).

The final physical driving mechanism for degraded groundwater quality is overdraft conditions that result in subsidence and may expel pore water from compacted clay layers, increasing arsenic concentrations. In the final 2024 Plan under Section 13.5.2.3, Relationship with Other Sustainability Indicators, explains (pgs. 13-134, para. 2):

> *Studies suggest that consolidation of subsurface layers with high clay content may liberate arsenic and degrade groundwater quality (Smith et al., 2018). However, this has not been observed in most of the Central Valley, including the Subbasin (Haugen et al., 2021). Concentrations of arsenic were plotted against annual InSAR subsidence rates at two RMW-WQs in the North Basin HCM Area near the northern Subbasin boundary. Arsenic concentration trends in these RMW-WQs showed weak and opposite correlations with subsidence, supporting the finding that a correlation between arsenic and subsidence has not been observed in the Subbasin. Potential increases in arsenic due to subsidence will be monitored and managed per the SMCs established for Degraded Water Quality. There has been no observed correlation between Land Subsidence and other water quality COCs in the Subbasin.*

In the final 2024 Plan under Section 8.4.3, Point-Source Contamination Sites, this section addresses and potential migration due to changes in groundwater gradients. A total of 86 contaminant sites were identified, but limited vulnerability for migrating a contaminant plume through changing groundwater gradients or implementation of P/MAs based on the contaminant type or site status. Any new P/MA will require an Environmental Site Assessment and CEQA review prior to implementing a project. These existing regulatory requirements limit the potential for future impacts to groundwater quality.

P. Deficiency GWQ-2: Groundwater quality monitoring network is not consistent with the requirements of SGMA

The following are summaries of the SWRCB evaluations and detailed Subbasin responses.

Deficiency GWQ-2a – The monitoring network is not protective of all beneficial uses and users in the subbasin.

SWRCB Draft 2024 Plan Evaluation

The horizontal extent of the monitoring network is not protective of all beneficial uses and users. It does not result in spatial or temporal coverage sufficient for characterizing groundwater quality conditions or changes to those conditions that may occur throughout the implementation period.

SWRCB Final 2024 Plan Tentative Evaluation

The final 2024 Plan does not include depths or screen intervals of any representative monitoring wells. Without this information, SWRCB staff cannot evaluate whether the monitoring network adequately represents beneficial uses and users.

Subbasin Response

The groundwater quality monitoring network is largely a subset of the groundwater level RMWs. Of the 187 RMWs used for groundwater levels, 33 are used to represent at least one additional sustainability indicator which enables the Subbasin to evaluate the relationship between sustainability indicators (Appendix X of the final 2024 Plan). There are 52 wells designated to represent water quality (Appendix X of the final 2024 Plan).

Section 14.2.3 of the final 2024 Plan lists measures to fill monitoring network data gaps through a Subbasin-wide P/MA (KSB-10 RMW Data Gaps). The Subbasin has been actively working to

fill monitoring network data gaps. On February 5, 2025, the Subbasin sent SWRCB staff a spreadsheet containing all available well construction information for the current RMW network, which contains a total of 210 RMWs. Of the 210 designated RMWs, only 26 have missing information related to screen intervals and total completed depth. We appreciate the continued engagement with SWRCB Staff to assess and potentially refine the RMN, as needed, to build an even more robust and protective monitoring program.

Potential Action GWQ-2a – The Subbasin should evaluate the existing monitoring network and add additional wells to the monitoring well network to ensure all beneficial uses and users are represented.

Evaluate the existing monitoring network and add additional wells to ensure all beneficial uses and users are represented.

Subbasin Response

As discussed under *GWQ-2a*, in Section 3 above, Section 14.2.3 of the final 2024 Plan lists measures to fill monitoring network data gaps through a Subbasin-wide P/MA (KSB-10 RMW Data Gaps).In Section 15, an assessment of the Subbasin Groundwater Level Monitoring Network was conducted to ensure the network was monitoring beneficial users located at different depths. This analysis yielded data gaps in nine grid cells for domestic beneficial users. To address these data gaps, the Subbasin will augment the Groundwater Level Monitoring Network with seven additional wells. Two of the seven additional wells will be addressing data gaps in two grid cells each. The timeline for addressing this data gap is one year. This timeframe is required to provide GSAs with adequate time to identify and field vet potential monitoring wells. In cases where no existing wells can be identified or access secured, new monitoring wells will be drilled to address these data gaps. The existing monitoring network will be evaluated on an annual basis as part of annual reporting to document newly identified data gaps and recommend steps needed to fill them.

Deficiency GWQ-2b – Water quality sampling frequencies are sometimes insufficient.

SWRCB Draft 2024 Plan Evaluation

This deficiency appears to be addressed. SWRCB staff have determined the sampling frequencies are sufficient and will capture seasonal fluctuations in groundwater concentrations

SWRCB Final 2024 Plan Tentative Evaluation

This deficiency was addressed in the draft 2024 Plan based on SWRCB staff's full review.

Subbasin Response

No response. SWRCB staff identified GWQ-2b was addressed in the draft 2024 Plan based on their full review.

Deficiency GWQ-2c – It is unclear how the Subbasin will assess the impacts of

projects and management actions.

SWRCB Draft 2024 Plan Evaluation

Unclear whether the monitoring network coverage is sufficient to detect degradation of groundwater quality due to P/MAs, including recharge or water banking projects.

SWRCB Final 2024 Plan Tentative Evaluation

The Subbasin should better define how they will ensure projects and management actions do not degrade groundwater quality.

Subbasin Response

As explained in the response to *Potential Action GWQ-1b* in Section 3 above, baseline groundwater quality conditions were established (Sections 8.4 and 13.3.2.4 of the final 2024 Plan). The Subbasin's RMN includes 35 wells designated for groundwater level and quality monitoring. Semi-annual sampling will be used to compare baseline conditions and evaluate compliance with SMCs. Banking projects have additional monitoring programs that have been developed to evaluate the relationship between groundwater levels, quality, banking, and subsidence. Four wells from the banking projects monitoring programs have been included in the Subbasin's RMN. The Subbasin will evaluate monitoring results and changes in groundwater conditions available from available programs to determine if implementation of P/MAs result in degraded groundwater quality. As part of the Subbasin's adaptive management efforts described under Section 14.2.4 of the final 2024 Plan, to the extent that projects and management actions are unable to prevent MT Exceedances that are caused by activities under GSA authority, further actions will be evaluated and considered as directed by KSB-3 MT Exceedance Policy (Appendix W of the final 2024 Plan). If either the projects or management actions are unable to produce the projected benefits, or other better options are found that prove more cost-effective, the GSA may deviate from the actions as described above. At each 5-year planning window, each previously described P/MA benefits will be evaluated. P/MAs may also be evaluated and included at the planning window and added if estimated benefits are unrealized. Progress on the glide path's implementation will be presented annually via the Kern County Subbasin Annual Report and inform adaptive management efforts.

Potential Action GWQ-2c – The Subbasin should better define how they will ensure projects and management actions do not degrade groundwater quality.

Define and describe which P/MAs may influence groundwater quality, especially where recharge is occurring, and describe how they propose to monitor for potential degradation of groundwater quality.

Subbasin Response

As described in the Subbasin response to *Potential Action GWQ-1b* in Section 3 above, the majority of the Subbasin has relied on imported surface waters for several decades. Any geochemical influences caused by introducing surface water to the groundwater system would have likely occurred decades ago and would be revealed through the data trending analysis as a continuously increasing trend. Existing conditions are known and well documented; technical reports on banking projects and operations in the Subbasin are referenced and document that groundwater quality is improved as a result of importing and recharging high-quality water. The

Subbasin response to *Deficiency GWQ-2c* in Section 3 above explains that four RMWs are designated to represent banking projects, how the Subbasin will evaluate monitoring results and changes in groundwater conditions to determine if implementation of P/MAs result in degraded groundwater quality, and a detailed description of the Subbasin's adaptive management efforts described under Section 14.2.4 of the final 2024 Plan.

Q. Deficiency GWQ-3: Management actions are not responsive to water quality degradation.

The following are summaries of the SWRCB evaluations and detailed Subbasin responses.

Deficiency GWQ-3a – Management actions are not protective of beneficial uses and users once a minimum threshold exceedance is triggered.

SWRCB Draft 2024 Plan Evaluation

The updated management actions still do not trigger additional monitoring to better characterize risks to beneficial uses and users. Additionally, the timeframe is unclear for when the Subbasin will respond to exceedances and when the Subbasin will notify users and whether or not they will provide testing for users who may be impacted.

SWRCB Final 2024 Plan Tentative Evaluation

This deficiency appears to be partially addressed. SWRCB staff are still concerned that beneficial uses and users may be impacted prior to an undesirable result occurring due to the Exceedance Policy's insufficient correlation procedure (Appendix W).

Subbasin Response

As explained in the Subbasin response to *Potential Action GWQ-1b* in Section 3 above, a thorough literature review and data trending analysis were conducted to evaluate both geochemical and physical driving mechanisms that may cause degraded groundwater quality. The basis for using inverse correlation trends to define when beneficial users may be impacted by declining groundwater levels is supported by the data presented in Section 8.4 of the final 2024 Plan, which demonstrates inverse correlation is the most representative technique for evaluating impacts to beneficial uses and users.

The Subbasin's Standard Operating Procedures (Appendix Z of the final 2024 Plan), MT Exceedance Policy and Action Plan (Appendix W of the final 2024 Plan) and the Well Mitigation Program (Appendix K of the final 2024 Plan) were developed to ensure water quality monitoring and management actions have layers of preventative and protective measures that 1) focus on avoiding, or limiting degradation if avoidance isn't achievable; and 2) administering a monitoring and reporting program that is consistent with drinking water protocols.

Potential Action GWQ-3a – Develop a method to determine the impact of an exceedance to beneficial uses and users and clarify how the public will be notified should a minimum threshold exceedance occur.

Increase sampling frequency when MTs are exceeded. This is especially true for exceedances of regulatory threshold MCLs, as elevated concentrations of these thresholds can severely

impact human health.

Subbasin Response

The Subbasin has done extensive work to characterize groundwater conditions, understand the driving mechanisms for degraded water quality, define baseline conditions, and quantify beneficial uses and users. The occurrence of a single MT exceedance would trigger the Subbasin's MT Exceedance Policy, MT Exceedance Investigation SOP (Appendix W of the final 2024 Plan) and SOP for Water Quality Sampling and Reporting (Appendix Z of the final 2024 Plan) which requires: (1) collection of a confirmation sample to ensure the first measurement is not erroneous, and (2) investigation of groundwater conditions in the area to determine if degradation is occurring as a result of groundwater management actions (i.e., declining water levels, influence from a nearby managed recharge facility). An investigation would include statistical and/or spatial analyses between water levels and water quality to determine causation. Procedures outlined in the MT Exceedance Investigation SOP provide procedures to evaluate and determine the root cause of the MT exceedance and guide corrective actions that should halt further degradation and avoid triggering an undesirable result.

Deficiency GWQ-3b – The well mitigation plan does not address water quality degradation.

SWRCB Draft 2024 Plan Evaluation

Staff cannot assess whether the mitigation plan will adequately address the degradation of water quality. Neither the draft 2024 Plan nor the letter of intent with Self-Help Enterprises located in Appendix K includes information on funding or methods of mitigation to be provided.

SWRCB Final 2024 Plan Tentative Evaluation

This deficiency appears to be partially addressed. The final 2024 Plan still lacks an appropriate method for evaluating whether groundwater quality degradation may be due to groundwater management activities or actions.

Subbasin Response

The Subbasin Well Mitigation Program addresses water quality as stated in the description of the program (pg. 28 Appendix K in the final 2024 Plan). The Subbasin Well Mitigation Program is intended to mitigate or provide technical assistance for adverse impacts associated with groundwater management activities of a GSA (e.g. sustainable management criteria and P/MAs); therefore, groundwater quality issues must be related to chronic lowering of groundwater levels, localized recharge and banking activities, or other groundwater management activity that results in increases in concentrations of COC in groundwater to be considered for mitigation qualification.

As detailed in the Subbasin Response to *GWQ-1b* in Section 3 above, CEQA has been performed for historical management activities including extensive groundwater banking operations that have occurred in the Subbasin for decades. In limited circumstances, mitigation has already been implemented as necessary to address adverse impacts due to migration of degraded water quality.

Based on the analysis of the Subbasin's COCs in Section 8.4.1 of the final 2024 Plan, and

understanding of the physical driving mechanisms that lead to increasing constituent concentrations, the primary COC identified in the Subbasin that are likely to result in an MT exceedance are arsenic and nitrate. In the final 2024 Plan under Section 13.3.2.4, Impacts to Beneficial Users, describes the conditions and potential triggers for arsenic and nitrate (pgs. 13-84). The Subbasin is committed to collecting and evaluating necessary data to determine the cause of degraded groundwater quality through the MT Exceedance Policy and SOP for MT Exceedance Investigation Action Plan (Appendix W of the final 2024 Plan) and mitigate impacts in accordance with the Well Mitigation Program (Appendix K of the final 2024 Plan). Section 4 of the MT Exceedance Investigation Action Plan outlines actions to investigate the exceedance, review contributing factors, evaluate root cause conditions, and recommends applicable corrective actions as well as notification procedures. Actions outlined in the MT Exceedance Policy and Action Plan aim to halt or at least limit water quality degradation by understanding the root cause issue and implementing corrective actions before there is a widespread problem, or UR. The Well Mitigation Program addresses mitigation of impacts including groundwater degradation to domestic well users and technical assistance for municipal, industrial and small community well owners. The mitigation track under the Well Mitigation Program includes multiple steps including outreach, need for mitigation assessment conducted by with the Subbasin's partner, Self-Help Enterprises, interim drinking supplies, mitigation assessment, funding assessment, mitigation selection, approval for funding, funding transaction coordination through Self-Help Enterprises and well stewardship education.

Attachment B

Deficiency	What SGMA & SGMA Regulations Require	Deficiency Summary	Potential SWRCB Suggested Actions to Correct the Deficiency	Status
Deficiency Coordination 1 (CRD)-1: Undesirable results and sustainable management criteria are not coordinated. • **Deficiency CRD-1a:** Undesirable results are poorly described, unworkably complex, and inconsistently implemented. • **Deficiency CRD-1b:** Sustainable management criteria rely on inconsistent datasets and methodologies.	The GSP regulations require that "Agencies intending to develop and implement multiple plans pursuant to Water Code § 10727(b)(3) shall enter into a coordination agreement to ensure that the Plans are developed and implemented utilizing the same data and methodologies…", and that "elements of the Plans necessary to achieve the sustainability goal for the basin are based upon consistent interpretations of the basin setting" (Cal.Code Regs., tit. 23, § 357.4, subd. (a)). In defining undesirable results, GSAs are required to "describe in its Plan the processes and criteria relied upon to define undesirable results applicable to the basin" (Cal. Code Regs., tit. 23, § 354.26, subd. (a)). The undesirable result definition must include the cause of groundwater conditions occurring throughout the subbasin that has or may lead to an undesirable result, the criteria used to define when and where the effects of groundwater conditions cause undesirable results, and the impacts on beneficial uses and users (Cal.Code Regs., tit. 23, § 354.26 subd. (b)). In establishing sustainable management criteria (SMC), GSAs must "establish minimum thresholds that quantify groundwater conditions for each applicable sustainability indicator at each monitoring site or representative monitoring site established pursuant to Section 354.36. The numeric value used to define minimum thresholds shall represent a point in the basin that, if exceeded, may cause undesirable results as described in Section 354.26" (Cal. Code Regs. tit. 23 § 354.28). Discussion of the MTs should include the "relationship between the minimum thresholds for each sustainability indicator, including an explanation of how the Agency has determined that basin conditions at each minimum threshold will avoid undesirable results for each of the sustainability indicators" (Cal. Code Regs. tit. 23 § 354.28). Undesirable results and SMC should be consistent with key details in the coordination agreement. GSAs should describe how they use the same data and methodologies for assumptions described in Water Code § 10727.6 by including monitoring objectives, a coordinated basin water budget, and sustainable yield for the basin supported by a description of an undesirable result for the basin, and an explanation of how the minimum threshold and measurable objectives relate to the undesirable result (Cal. Code Regs., tit. 23, § 357.4, subd. (b)(3)). Additionally, "The coordination agreement shall explain how the Plans implemented together, satisfy the requirements of the Act…" (Cal. Code Regs., tit. 23, § 357.4, subd. (c)).	**2024 Final GSPs Tentative Evaluation**: These deficiencies (CRD-1a and 1b) were addressed in the 2024 Draft GSPs based on Board staff's full review.	**Potential Action CRD-1a:** No further action is necessary. **Potential Action CRD-1b:** No further action is necessary.	**No further action is required; the deficiency has been resolved.**

Deficiency	What SGMA & SGMA Regulations Require	Deficiency Summary	ntial Actions to Correct the Deficiency	Status
Deficiency CRD-2: The Coordination Agreement, GSPs, and Management Area Plans lack key details necessary for coordinated implementation. • **Deficiency CRD-2a:** The Coordination Agreement is not sufficient to address disputes. • **Deficiency CRD-2b:** The GSAs do not explain how the multiple plans will satisfy SGMA requirements, particularly for management areas.	The coordination agreement should be adopted by all relevant parties, explain how the multiple plans will satisfy SGMA requirements, should ensure that the agreement is binding on all parties and sufficient to address any disputes, and satisfies SGMA regulation requirements (Code Regs., tit. 23, § 355.4, subd. (b)(8) and Cal. Code Regs., tit. 23, §357.4). GSP Regulations allow agencies to define "one or more management areas within a basin if the Agency has determined that creation of management areas will facilitate implementation of the Plan. Management areas may define different minimum thresholds and be operated to different measurable objectives than the basin at large, provided that undesirable results are defined consistently throughout the basin" (Cal. Code Regs., tit. 23, § 354.20).	**2024 Final GSPs Tentative Evaluation CRD-2a:** This deficiency was addressed in the 2024 Draft GSPs. **2024 Final GSPs Tentative Evaluation CRD-2b:** This deficiency does not appear to be addressed. The GSPs continue to use HCM Areas to set SMC in a manner that may not be protective of beneficial uses and users.	**Potential Action CRD-2a:** No further action is necessary. **Potential Action CRD-2b:** Revise methodologies that result in incompatible SMC across HCM Area boundaries. Sustainability-indicator-specific technical deficiencies resulted from these methodologies are described in sections GL-1, LS-1 and GWQ-1.	**CRD-2a: No further action is required; the deficiency has been resolved.** **CRD-2b:** The SMCs were developed consistent with SGMA requirements and to address varied conditions across the Subbasin. The Hydrogeologic Conceptual Model (HCM) Area approach is foundational to coordinated Sustainable Management Criteria (SMCs) across the Subbasin, using consistent data sets and coordinated methodologies. The SMCs, based on the HCM Area, approach are protective of significant and unreasonable effects on Subbasin beneficial uses and users caused due to groundwater conditions across the basin (3 CCR §354.12 to 354.20). Based on subsequent correspondence following the issuance of the Final Staff Report, the Subbasin has further clarified and developed a shared understanding of the importance of the coordinated HCM Area approach with SWRCB staff. The Subbasin is coordinating with SWRCB staff to identify concerns related to local hydrogeologic variability and address through refinements to the SMCs, as needed.

Deficiency	What SGMA & SGMA Regulations Require	Deficiency Summary	Potential Actions to Correct the Deficiency	Status
Deficiency CRD-3: The GSAs in the subbasin have not demonstrated basin-wide management.	Any local public agency, or combination of local agencies, overlying a groundwater basin with water supply, water management, or land use responsibilities may decide to become a GSA for that basin (Wat. Code, § 10721, subd. (n)), 10723, subd. (a)). SGMA allows some private and non-governmental water entities to participate in a GSA but does not provide these entities with any additional authorities (Wat. Code, § 10723.6, subd. (b)). Private entities, therefore, do not have governmental authorities to manage the subbasin, so all areas of a GSA must still be covered by a local agency. GSAs are required to develop "one or more groundwater sustainability plans that will collectively serve as a groundwater sustainability plan for the entire basin" (Water Code § 10735.2, subd. (a)(1)(B)). Portions of high- and medium-priority basins not within the management area of a GSA are considered unmanaged (Water Code § 10724.6, subd. (a)). Groundwater extractors in unmanaged areas must report extractions and pay fees to the State Water Board (Water Code § 10724.6, subd. (b)).	**2024 Final GSPs Tentative Evaluation:** This deficiency does not appear to be addressed. It is still unclear to Board staff if the Kern Non-Districted Land Authority is an official GSA that has the authority to manage groundwater in non-districted areas under the current Joint Exercise of Powers Agreement.	**Potential Action CRD-3:** The GSAs should clearly define authorities and responsibilities consistent with SGMA requirements. Ensure that the GSAs have the proper authorities to enforce SGMA within their respective management areas.	**CRD-3:** The Kern Non-Districted Lands Authority (KNDLA) is an amended and restated joint powers agreement amongst public entities. The Kern County Water Agency (KCWA) is a member of the KNDLA, formerly known as the Kern Groundwater Authority, which is a GSA formed through a joint powers authority agreement, as permitted under SGMA, CA Water Code § 10723.6(a)(1).

Deficiency	What SGMA & SGMA Regulations Require	Deficiency Summary	Potential Actions to Correct the Deficiency	Status
Deficiency Groundwater Level 1 (GL-1): Groundwater level undesirable results and SMC are not defined consistent with the requirements of SGMA. • **Deficiency GL-1a:** Undesirable results are not protective of beneficial uses and users. • **Deficiency GL-1b:** Sustainable management criteria were not established consistent with the requirements of SGMA.	The GSP regulations require that "Agencies intending to develop and implement multiple plans pursuant to Water Code § 10727(b)(3) shall enter into a coordination agreement to ensure that the Plans are developed and implemented utilizing the same data and methodologies…", and require that "elements of the Plans necessary to achieve the sustainability goal for the basin are based upon consistent interpretations of the basin setting" (Cal. Code Regs., tit. 23, § 357.4, subd. (a)). This must describe how each of the GSAs use the same data and methodologies for assumptions in Water Code § 10727.6 for "groundwater elevation data, supported by the quality, frequency, and spatial distribution of data in monitoring network and the objectives as described in Subarticle 4 of Article 5" (Cal. Code Regs., tit. 23, § 357.4, subd. (b)(3)). In defining undesirable results, GSAs are required to "describe in its Plan the processes and criteria relied upon to define undesirable results applicable to the basin" (Cal. Code Regs., tit. 23, § 354.26, subd. (a)). The undesirable result definition must include the cause of groundwater conditions occurring throughout the subbasin that has or may lead to an undesirable result, the criteria used to define when and where the effects of groundwater conditions cause undesirable results, and the impacts on beneficial uses and users (Cal. Code Regs., tit. 23, § 354.26 subd. (b)). "Each Agency shall establish minimum thresholds that quantify groundwater conditions [...] at each monitoring site or representative monitoring site established pursuant to 354.36. The numeric value [...] shall represent a point in the basin that, if exceeded, may cause undesirable results..." (Cal. Code Regs., tit. 23, § 354.28). The description of minimum thresholds must include: (1) justification for the value supported by information provided in the basin setting, (2) relationship between the value and the sustainability indicator, (3) explanation of how the Agency determined the conditions at each minimum threshold will avoid undesirable results, (4) how the value will avoid causing undesirable results in adjacent basins, (5) how beneficial uses and users will be impacted, (6) affects to state, federal, and local standards, (6) and how each will be measured consistent with monitoring network requirements (ibid). The minimum threshold for chronic lowering of groundwater levels "shall be the groundwater elevation indicating a depletion of supply at a given location that may lead to undesirable results" and shall be supported by historical trends, water year type, and projected water	**2024 Final GSPs Tentative Evaluation GL- 1a:** This deficiency was addressed in the 2024 Draft GSPs. **2024 Final GSPs Tentative Evaluation GL- 1b:** This deficiency does not appear to be addressed. Although some MTs were improved, the identified issues in the deficiency remain.	**Potential Action GL-1a:** No further action is necessary. **Potential Action GL-1b:** Revise SMC consistent with requirements of SGMA. Establish MTs for representative monitoring wells in the upper and lower portions of the aquifer system separately considering spatial variations of hydrogeological conditions in the subbasin. Demonstrate MTs would not result in an undesirable result and impacts to beneficial users during prolonged periods of drought and water banking recovery operations.	**GL-1a: No further action is required; the deficiency has been resolved.** **GL-1b:** The MTs were developed consistent with SGMA requirements using the best available data and a coordinated basin-wide methodology. However, the Subbasin is actively coordinating with SWRCB staff to make targeted refinements to MTs and UR definition to address potential localized risks.

	use in the basin and potential effects on other sustainability indicators (Cal. Code Regs., tit. 23, § 354.28 subd. (c)). “Each Agency shall establish measurable objectives, including interim milestones in increments of five years, to achieve the sustainability goal for the basin within 20 years of Plan implementation and to continue to sustainably manage the groundwater basin over the planning and implementation horizon” (Cal. Code Regs., tit. 23, § 354.30 subd. (a)). “Measurable objectives shall provide a reasonable margin of operational flexibility under adverse conditions which shall take into consideration components such as historical waterbudgets, seasonal and long-term trends, and periods of drought, and be commensurate with levels of uncertainty” (Cal. Code Regs., tit. 23, § 354.30 subd. (c)). GSP Regulations allow agencies to create “one or more management areas within a basin if the Agency has determined that creation of management areas will facilitate implementation of the Plan. Management areas may define different minimum thresholds and be operated to different measurable objectives than the basin at large, provided that undesirable results are defined consistently throughout the basin” (Cal. Code Regs., tit. 23, § 354.20).			

Deficiency	What SGMA & SGMA Regulations Require	Deficiency Summary	Potential Actions to Correct the Deficiency	Status
Deficiency GL-2: The GSPs' monitoring network and mitigation plans are incomplete. **Deficiency GL-2a:** The monitoring network was not developed consistent with the requirement of SGMA. **Deficiency GL-2b:** The well impact mitigation plan is incomplete.	GSPs are required to include monitoring protocols developed according to best management practices (Cal. Code Regs., tit. 23, § 352.2) and include a summary of monitoring information such as well depth, screened intervals, aquifer zones monitored, and a summary of the type of well(s) relied on for the information including public, irrigation, domestic, industrial, and monitoring wells (Wat. Code § 10727.2, subd. (e)). Although SGMA and the GSP Regulations do not require development of a well impact mitigation plan, the State Water Board considers them to be an important component of SGMA implementation to ensure for availability of water for all beneficial uses and users in the subbasin.	**2024 Final GSPs Tentative Evaluation GL-2a:** This deficiency does not appear to be addressed. The GSAs identified some data gaps for shallow monitoring wells to be addressed within a year, but it remains unclear if they have addressed all areas that may have separate shallow and deep groundwater users. **2024 Final GSPs Tentative Evaluation GL-2b:** This deficiency appears to be partially addressed. The GSAs have developed a mitigation plan, however, Board staff has concerns regarding potential impacts on beneficial uses and users, because it is unclear whether the impact analysis and subsequent budget are adequate.	**Potential Action GL-2a:** Develop a monitoring network consistent with SGMA requirements. Provide a summary of monitoring well information such as well depths, screened intervals, aquifer zones monitored, and well type, including public, irrigation, domestic, industrial, and monitoring wells. **Potential Action GL-2b:** Establish an appropriate well impact mitigation program. Reassess the well impact mitigation plan after updating the analysis of the impacts of MTs on domestic wells to consider the upper and lower portions of the aquifer. Confirm that the GSAs' proposed funding will cover the expected costs to mitigate impacted wells.	**GL-2a:** The Subbasin committed to adding seven RMWs to address the nine identified data gaps. The Subbasin continues to improve the RMW network dataset by collecting well information as the RMW network is improved to address data gaps and in response to adaptive management efforts. **GL-2b:** The well impact analysis and mitigation plan were developed based on the best available data at the time, using a coordinated and consistent basin-wide approach. The Subbasin established series of protective measures, including a MT Exceedance Policy, which requires an investigation and proactive action following a single MT exceedance, and a comprehensive Well Mitigation Program that addresses mitigation of impacts to domestic well users and technical assistance for municipal, industrial and small community well owners.

Deficiency	What SGMA & SGMA Regulations Require	Deficiency Summary	Potential Actions to Correct the Deficiency	Status

Deficiency GL-3: The GSPs do not describe a feasible path for halting chronic lowering of groundwater levels.	Each GSP is required to include a description of the projects and management actions the GSA has determined will achieve groundwater sustainability in the basin. The description must include project and management actions, a summary of data used to support proposed actions, and a review of the uncertainty associated with the basin setting when developing projects or management actions. The GSP must also describe the criteria that would trigger implementing or stopping a project or management action and the process for determining whether that trigger has occurred (Cal. Code Regs., tit. 23, § 354.44). More fundamentally, for basins in a condition of overdraft, the GSP "shall describe projects or management actions, including a quantification of demand reduction or other methods, for the mitigation of overdraft" (Cal. Code Regs., tit. 23, § 354.44, subd. (b)(2)) GSPs need to include a description of the management of groundwater extractions and recharge to ensure that chronic lowering of groundwater levels or depletion of supply during periods of drought is offset by increases in groundwater levels or storage during other periods (Cal. Code Regs., tit. 23, § 354.44, subd. (b)(9)). In reviewing GSPs, DWR must consider, among other questions, "whether sustainable management criteria and projects and management actions are commensurate with the level of understanding of the basin setting, based on the level of uncertainty, as reflected in the plan" and "whether the projects and management actions are feasible and likely to prevent undesirable results and ensure that the basin is operated within its sustainable yield" (Cal. Code Regs., tit. 23, § 355.4, subds. (b)(3), (5)).	**2024 Final GSPs Tentative Evaluation:** This deficiency appears to be partially addressed. The GSAs continue to rely on various proposed PMAs at various stages of implementation to reach sustainability. Board staff cannot assess the feasibility of the PMAs without representative water budgets and clarity on PMAs implementation. The GSAs included new operational water budgets derived from a mass balance analysis that is inconsistent with overlying crop types and with the Todd Groundwater Model. It remains unclear whether PMAs, if implemented, are feasible and sufficient to achieve sustainable groundwater management.	**Potential Action GL-3a:** Evaluate the feasibility of proposed supply augmentation projects. **Potential Action GL-3b:** Identify key indicator wells in each aquifer, with sufficient spatial coverage to represent beneficial uses and users in each aquifer and identify groundwater levels that will trigger specific demand management actions.	**GL-3a:** The Subbasin has developed a portfolio of P/MAs, each with specific projected benefits, implementation triggers, and costs; the portfolio includes 387,000 AFY in demand reduction management actions and 452,000 AFY in water supply augmentation projects. To date, the Subbasin started implementation of 47 percent of P/MAs. In addition to Subbasin-wide P/MAs, and HCM Area-specific P/MAs, each GSA was charged with developing their respective P/MAs. The current projected (future) scenarios include simulated P/MAs, a range of demand reduction and supplementary water supplies to provide a volumetric target for developing sufficient P/MAs to achieve the Subbasin's sustainability goal. **GL-3b:** All RMWs have MTs, MOs, and IMs associated with them. RMW IMs serve as monitoring triggers allowing the Subbasin to assess performance against the SMCs and progress towards reaching sustainability to adaptively manage and implement P/MAs based on changing groundwater conditions in the future. The final 2024 Plan has included several layers of triggers that will inform the need for adaptive management. These include a) interim milestones (P/MAs implementation,

				measurable objectives, and deficit reduction goals), b) exceedance policies, and c) a robust RMW monitoring network.

Deficiency	What SGMA & SGMA Regulations Require	Deficiency Summary	Potential Actions to Correct the Deficiency	Status
Deficiency GL-4: The GSPs do not define groundwater storage sustainable management criteria consistent with SGMA requirements.	"The minimum threshold for reduction of groundwater storage shall be a total volume of groundwater that can be withdrawn from the basin without causing conditions that may lead to undesirable results. Minimum thresholds for reduction of groundwater storage shall be supported by the sustainable yield of the basin, calculated based on historical trends, water year type, and projected water use in the basin" (Cal. Code Regs., tit. 23, § 354.28 subd. (c)(2)).	**2024 Final GSPs Tentative Evaluation:** This deficiency does not appear to be addressed. The GSAs have not revised their methodology used to calculate groundwater storage.	**Potential Action GL-4:** Redefine the undesirable result for reduction of groundwater storage. Quantitatively define the undesirable result as a total volume of groundwater that can be withdrawn without causing significant and unreasonable impacts. Usable storage should only include aquifers where groundwater is being extracted for beneficial uses and users. Describe the assumptions that result in a usable storage range from 90 MAF to 260 MAF. Explain how storage relates to other sustainability indicators.	**GL-4:** The final 2024 Plan refined the definition of the Groundwater Storage SMCs to be consistent with the revised Water Level SMCs, which are used as a proxy as provided by State regulations. The MTs/URs were developed consistent with SGMA requirements and designated beneficial use of groundwater in the Subbasin. However, the Subbasin is actively coordinating with SWRCB staff to make targeted refinements to water level MTs and UR definition which may result in some refinement of the groundwater storage SMCs.

Deficiency	What SGMA & SGMA Regulations Require	Deficiency Summary	Potential Actions to Correct the Deficiency	Status
Deficiency Land Subsidence 1 (LS-1): Land Subsidence undesirable results and SMC are not defined consistent with the requirements of SGMA • **Deficiency LS-1a:** Undesirable results are poorly described, unworkably complex, and inconsistently implemented. • **Deficiency LS-1b:** Sustainable management criteria were not established consistent with the requirements of SGMA.	In defining undesirable results, GSAs are required to "describe in its Plan the processes and criteria relied upon to define undesirable results applicable to the basin" (Cal. Code Regs., tit. 23, § 354.26, subd. (a)). The undesirable result definition must include the cause of groundwater conditions occurring throughout the subbasin that has or may lead to an undesirable result, the criteria used to define when and where the effects of groundwater conditions cause undesirable results, and the impacts on beneficial uses and users (Cal. Code Regs., tit. 23, § 354.26 subd. (b) In establishing SMC, GSAs must "establish minimum thresholds that quantify groundwater conditions for each applicable sustainability indicator at each monitoring site or representative monitoring site established pursuant to Section 354.36. The numeric value used to define minimum thresholds shall represent a point in the basin that, if exceeded, may cause undesirable results as described in Section 354.26" (Cal. Code Regs. tit. 23 § 354.28). Discussion of the MTs should include among other things the "relationship between the minimum thresholds for each sustainability indicator, including an explanation of how the Agency has determined that basin conditions at each minimum threshold will avoid undesirable results for each of the sustainability indicators" (Cal. Code Regs. tit. 23 § 354.28). Undesirable results and SMC should be consistent with key details in the coordination agreement. GSAs should describe how they use the same data and methodologies for assumptions described in Water Code § 10727.6 by including monitoring objectives, coordinated basin water budget, and sustainable yield for the basin supported by a description of an undesirable result for the basin, and an explanation of how the minimum threshold and measurable objectives relate to the undesirable result (Cal. Code Regs., tit. 23, § 357.4, subd. (b)(3)). Additionally, "The coordination agreement shall explain how the Plans implemented together, satisfy the requirements of the Act…" (Cal. Code Regs., tit. 23, § 357.4, subd. (c)). GSP Regulations allow agencies to create "one or more management areas within a basin if the Agency has determined that creation of management areas will facilitate implementation of the Plan. Management areas may define different minimum thresholds and be operated to different measurable objectives than the basin at large, provided that undesirable results are defined consistently throughout	**2024 Final GSPs Tentative Evaluation LS-1a:** This deficiency appears to be partially addressed. The updated plain-language undesirable result definition no longer hinges on the economic feasibility of retrofitting or replacement of infrastructure on the part of beneficial users. The updated definition also indicates that GSAs will be responsible for mitigating losses of infrastructure functionality. Changes were made to the MT exceedance policy, but it is not clear if they are sufficiently protective of all beneficial uses and users. The MT exceedance language in the undesirable result criteria differs from what is in the MT exceedance policy. **2024 Final GSPs Tentative Evaluation LS-1b:** This deficiency appears to be partially addressed. SMC development is less complicated, and Regional Critical Infrastructure MTs appear to be protective of conveyance capacity in vulnerable areas. SMC values are now established consistently with a goal of reducing subsidence as 2040 approaches. However, Board staff is concerned that the HCM Area 2040 interim milestones (IMs) for subsidence extents exceed the MOs in three of the five HCM Areas, and 2040 IM extents for the Friant-Kern Canal and California Aqueduct exceed the MOs.	**Potential Action LS-1a:** Develop consistent, clear undesirable results. If the undesirable result definition requires a distinction between GSA and non-GSA caused subsidence, the GSAs must be capable of quantifying their contribution to subsidence in areas where both GSA and non-GSA activities are culpable. Since the quantitative undesirable results definition relies on MT exceedances, and the MT exceedance policy may not be sufficiently protective of beneficial users, the MT exceedance policy should be revised. **Potential Action LS-1b:** Use consistent data and methods to develop subsidence SMC. Redevelop subsidence MOs, MTs and IMs. MTs must provide operational flexibility below MOs. Ensure that MO and MT rates do not exceed their extents, and that IMs will enable GSAs to achieve MOs and not surpass MTs.	**LS-1a:** The subsidence IMs/ MTs/URs approach for ameliorating Subbasin GSA-related subsidence were revised and developed in coordination with CASP and the FWA and are consistent with SGMA requirements, provide operational flexibility, and are protective of beneficial users across the Subbasin and of Critical Infrastructure. **LS-1b:** The final 2024 Plan was extensively revised and updated. Consistent data and methodology used to develop subsidence IMs, MOs and MTs which provide for Subbasin operational flexibility and are protective of Critical Infrastructure and beneficial uses and users. Stable groundwater levels by 2030 allow for ramp-down to zero Subbasin GSA-related subsidence by 2040.

	the basin” (Cal. Code Regs., tit. 23, § 354.20).			

Deficiency	What SGMA & SGMA Regulations Require	Deficiency Summary	Potential Actions to Correct the Deficiency	Status
Deficiency Land Subsidence 2 (LS-2): GSPs do not provide adequate implementation details • **Deficiency LS-2a:** Undesirable results are poorly described, unworkably complex, and inconsistently implemented. • **Deficiency LS-2b:** Sustainable management criteria were not established consistent with the requirements of SGMA. • **Deficiency LS-2c:** Undesirable results are poorly described, unworkably complex, and inconsistently implemented.	Each GSP is required to include a description of the projects and management actions the GSA has determined will achieve groundwater sustainability in the basin. The description must include project management actions, summary of data used to support proposed actions, and a review of the uncertainty associated with the basin setting when developing projects or management actions (Cal. Code Regs., tit. 23, § 354.44). In reviewing GSPs, DWR must consider, among other questions, "whether [SMC] and projects and management actions are commensurate with the level of understanding of the basin setting, based on the level of uncertainty, as reflected in the plan" and "whether the projects and management actions are feasible and likely to prevent undesirable results and ensure that the basin is operated within its sustainable yield" (Cal. Code Regs., tit. 23, § 355.4, subd. (b)(3), (5)).	**2024 Final GSPs Tentative Evaluation:** This deficiency does not appear to be addressed. The Final GSPs include a subsidence exceedance "Action Plan" and a mitigation plan. A $3.5 million mitigation fund is discussed in the mitigation plan, but it is specific to mitigating impacts to wells caused by declining groundwater levels, not subsidence, and there is no mention of infrastructure mitigation. GSPs state that GSAs do not anticipate subsidence to cause significant impacts to wells. The subsidence action plan is initiated if: (1) one subsidence IM rate or extent exceedance occurs at a California Aqueduct or Friant-Kern Canal monitoring location or (2) a subsidence IM rate or extent is exceeded for a GSA or HCM Area average after six consecutive quarterly sampling events. This language conflicts with the description of the exceedance policy in Section 13.5.1.4 of the GSPs, where it states that action is triggered by exceedances of the MT rate. **2024 Final GSPs Tentative Evaluation LS-2a:** See LS-2 text, above**.** **2024 Final GSPs Tentative Evaluation LS-2b:** See LS-2 text, above. 2024 Final GSPs **Tentative Evaluation LS-2c:** See LS-2 text, above.	**Potential Action LS-2a:** Develop and implement a plan to trigger sufficient management actions when subsidence exceeds defined thresholds, especially near critical infrastructure or facilities. **Potential Action LS-2b:** Reduce pumping and do not allow new wells in areas where subsidence threatens critical infrastructure. **Potential Action LS-2c:** Develop infrastructure mitigation programs with clear triggers, eligibility requirements, metrics, and funding sources.	**LS-2a and LS-2b:** The Subbasin has developed and refined a coordinated Subbasin-wide Action Plan for Subsidence IM & MT Exceedance which requires GSAs to evaluate and initiate targeted P/MAs to reduce Subbasin GSA-related subsidence. For example, as part of this P/MA, GSAs located within or proximate to the CASP 5-mile Monitoring Corridor to the California Aqueduct may initiate targeted P/MAs should future observed subsidence rates exceed IMs and MTs. These targeted P/MAs may include: (1) well registry, (2) metered well extraction volume reporting, (3) net zero well drilling moratorium, (4) targeted pumping reductions, and (5) pumping limitations, as deemed informed by the analysis undertaken from the five-step Subsidence Action Plan. Conflicting language in Section 13.5.1.4 of the final 2024 Plan will be revised in coordination with SWRCB staff. **LS-2c:** The Subbasin Land Subsidence Action Plan establishes the framework to monitor and manage subsidence to proactively identify and assess potential undesirable subsidence results. Together, the MT Exceedance Policy and the Subsidence

		.		Action Plan provide a logical and science-based approach to evaluate the causes of a subsidence MT exceedance and trigger appropriate additional P/MAs, as needed. The Subbasin is committed to working with SWRCB staff to further refine the Subsidence Action Plan.

Deficiency	What SGMA & SGMA Regulations Require	Deficiency Summary	Potential Actions to Correct the Deficiency	Status
Deficiency Groundwater Quality 1 (GWQ-1): The GSPs do not establish undesirable results and sustainable management criteria consistent with the requirements of SGMA. • **Deficiency GWQ-1a:** Undesirable result definitions are not protective of beneficial uses and users. • **Deficiency GWQ-1b:** The GSPs are missing critical information about how GSAs will determine whether an undesirable result has occurred.	The GSP regulations require that "Agencies intending to develop and implement multiple plans pursuant to Water Code § 10727(b)(3) shall enter into a coordination agreement to ensure that the Plans are developed and implemented utilizing the same data and methodologies…", and that "elements of the Plans necessary to achieve the sustainability goal for the basin are based upon consistent interpretations of the basin setting" (Cal. Code Regs., tit. 23, § 357.4, subd. (a)). In defining undesirable results, GSA are required to "describe in its Plan the processes and criteria relied upon to define undesirable results applicable to the basin" (Cal. Code Regs., tit. 23, § 354.26, subd. (a)). The undesirable result definition must include the cause of groundwater conditions occurring throughout the subbasin that has or may lead to an undesirable result, the criteria used to define when and where the effects of groundwater conditions cause undesirable results, and the impacts on beneficial uses and users (Cal. Code Regs., tit. 23, § 354.26 subd. (b)). In establishing SMC, GSAs must "establish minimum thresholds that quantify groundwater conditions for each applicable sustainability indicator at each monitoring site or representative monitoring site established pursuant to Section 354.36. The numeric value used to define minimum thresholds shall represent a point in the basin that, if exceeded, may cause undesirable results as described in Section 354.26" (Cal. Code Regs. tit. 23 § 354.28). Discussion of the MTs should include among other things the "relationship between the minimum thresholds for each sustainability indicator, including an explanation of how the Agency has determined that basin conditions at each minimum threshold will avoid undesirable results for each of the sustainability indicators" (Cal. Code Regs. tit. 23 § 354.28). Undesirable results and SMC should be consistent with key details in the coordination agreement. GSAs should describe how they use the same data and methodologies for assumptions described in Water Code § 10727.6 by including monitoring objectives, coordinated basin water budget, and sustainable yield for the basin supported by a description of an undesirable result for the basin, and an explanation of how the minimum threshold and measurable objectives relate to the undesirable result (Cal. Code Regs., tit. 23, § 357.4, subd. (b)(3)). Additionally, "The coordination agreement shall explain how the Plans implemented together, satisfy the requirements of the Act" (Cal. Code Regs., tit. 23,	**2024 Final GSPs Tentative Evaluation GWQ-1a:** The deficiency does not appear to be addressed. The updated undesirable result definition still lacks the detail necessary to determine whether all beneficial uses and users have been considered. **2024 Final GSPs Tentative Evaluation GWQ-1b:** The deficiency does not appear to be addressed. The technical analysis process developed by the GSAs fails to consider driving mechanisms for each COC.	**Potential Action GWQ-1a:** Develop undesirable results consistent with SGMA using best available science and considering all beneficial uses and users. Develop quantitative undesirable results that clearly describe the combination of MT exceedances and represent the conditions that would cause the plain-language undesirable result. **Potential Action GWQ-1b:** The GSPs should include consistent data and methods to develop groundwater quality MTs. Evaluate more than groundwater level correlations to determine whether water quality degradation is caused by management activities. Using an inverse correlation between groundwater levels and groundwater quality may not be sufficient, especially for redox-sensitive or depth-dependent constituents.	**GWQ-1a:** The Subbasin's plain-language definition of UR for degraded groundwater quality is: *The point at which significant and unreasonable impacts occur over the planning and implementation horizon, as caused by water management actions, that affect the reasonable and beneficial use of, and access to groundwater by overlying users*. Since the monitoring network density correlates with pumping and beneficial user density, the Subbasin's objective in establishing UR by HCM Area is to account for geologic and water use variability across the Subbasin. The Subbasin is currently working with SWRCB staff to further review and potentially refine the UR definition with the goal to be even more protective of beneficial uses and users. **GWQ-1b**: The final 2024 Plan updated to be consistent with SGMA requirements. Extensive discussion on both the geochemical and physical driving mechanisms for 1,2,3-trichloropropane, arsenic, nitrate and nitrite, total dissolved solids, and uranium were added. The literature review and data trending analysis conducted for each constituent is followed by a section addressing Driving Mechanisms for Exacerbating Contaminant Concentrations and Conclusion Statement to

	§ 357.4, subd. (c)). GSP Regulations allow agencies to create “one or more management areas within a basin if the Agency has determined that creation of management areas will facilitate implementation of the Plan. Management areas may define different minimum thresholds and be operated to different measurable objectives than the basin at large, provided that undesirable results are defined consistently throughout the basin” (Cal. Code Regs., tit. 23, § 354.20).			clearly summarize findings. Results and conclusions are also provided in the final 2024 Plan to explain where each constituent is most prevalent and the driving mechanism for increasing constituent concentrations.

Deficiency	What SGMA & SGMA Regulations Require	Deficiency Summary	Potential Actions to Correct the Deficiency	Status
Deficiency GWQ-2: Groundwater quality monitoring network is not consistent with the requirements of SGMA. • **Deficiency GWQ-2a:** The monitoring network is not protective of all beneficial uses and users in the subbasin. • **Deficiency GWQ-2b:** Water quality sampling frequencies are sometimes insufficient. • **Deficiency GWQ-2c:** It is unclear how the GSAs will assess the impacts of projects and management actions.	The GSP Regulations require GSPs to include a description of the monitoring network objectives for the basin including how the GSA will "monitor impacts to the beneficial uses or users of groundwater" (Cal. Code Regs., tit. 23, § 354.34, subd. (b)(2)). The monitoring network must be "capable of collecting sufficient data to demonstrate short-term, seasonal, and long-term trends in groundwater and related surface conditions, and yield representative information about groundwater conditions as necessary to evaluate Plan implementation" (Cal. Code Regs., tit. 23, § 354.34, subd. (a)). Data collected must be of "sufficient quality, frequency, and distribution" to characterize and evaluate groundwater conditions (Cal. Code Regs., tit. 23, § 354.32). GSAs "may designate a subset of monitoring sites as representative of conditions in the basin or an area of the basin...", known as RMSs (Cal. Code Regs., tit. 23, § 354.36). GSAs identify MTs, MOs, and IMs at these sites. "The designation of [an RMS] shall be supported by adequate evidence demonstrating that the site reflects general conditions in the area" (Cal. Code Regs., tit. 23, § 354.36, subds. (a) & (c)).	**2024 Final GSPs Tentative Evaluation GWQ-2a:** This deficiency does not appear to be addressed. The GSPs do not include depths or screen intervals of any representative monitoring wells. Without this information, Board staff cannot evaluate whether the monitoring network adequately represents beneficial uses and users. It is unclear whether the representative monitoring wells will be sufficient to identify impacts to domestic wells since no groundwater quality- specific impact analysis was not completed. **2024 Final GSPs Tentative Evaluation GWQ-2b:** This deficiency was addressed in the 2024 Draft GSPs. **2024 Final GSPs Tentative Evaluation GWQ-2c:** This deficiency does not appear to be addressed. It is unclear how the monitoring network is evaluating the potential impacts of PMAs.	**Potential Action GWQ-2a:** The GSAs should evaluate the existing monitoring network and add additional wells to the monitoring well network to ensure all beneficial uses and users are represented. **Potential Action GWQ-2b:** No further action is necessary. **Potential Action GWQ-2c:** The GSAs should better define how they will ensure projects and management actions do not degrade groundwater quality.	**GWQ-2a:** The final 2024 Plan lists measures to fill monitoring network data gaps through a Subbasin-wide P/MA (KSB-10 RMW Data Gaps). In Section 15, an assessment of the Subbasin Groundwater Level Monitoring Network was conducted to ensure the network was monitoring beneficial users located at different depths. This analysis yielded data gaps in nine grid cells for domestic beneficial users. To address these data gaps, the Subbasin will augment the Groundwater Level Monitoring Network with seven additional wells. The Subbasin has been actively working to fill monitoring network data gaps. **GWQ-2b: No further action is required; the deficiency has been resolved.** **GWQ-2c:** The Subbasin's RMN includes 35 wells designated for groundwater level and quality monitoring. Semi-annual sampling will be used to compare baseline conditions and evaluate compliance with SMCs. Banking projects have additional monitoring programs that have been developed to evaluate the relationship between groundwater levels, quality, banking, and subsidence. Four wells from the banking projects monitoring programs have been included in the Subbasin's RMN. The Subbasin will evaluate monitoring results and changes

				in groundwater conditions to determine if implementation of P/MAs result in degraded groundwater quality. P/MAs may also be evaluated and included at the planning window and added if estimated benefits are unrealized. Progress on the glide path's implementation will be presented annually via the Kern County Subbasin Annual Report and inform adaptive management efforts.

Deficiency	What SGMA & SGMA Regulations Require	Deficiency Summary	Potential Actions to Correct the Deficiency	Status
Deficiency GWQ-3: Management actions are not responsive to water quality degradation. • **Deficiency GWQ-3a:** Management actions are not protective of beneficial uses and users once a minimum threshold exceedance is triggered. • **Deficiency GWQ-3b:** Well mitigation plan does not address water quality degradation.	Each GSP is required to include a description of the projects and management actions the GSA has determined will achieve groundwater sustainability in the basin. The GSAs must include projects and management actions "that may be utilized to meet interim milestones, the exceedance of minimum thresholds, or where undesirable results have occurred or are imminent" (Cal. Code Regs., tit. 23, § 354.44, subd. (b)(1)). The description must include project and management actions, a summary of data used to support proposed actions, and a review of the uncertainty associated with the basin setting when developing projects or management actions (Cal. Code Regs., tit. 23, § 354.44). In reviewing GSPs, DWR must consider, among other questions, "whether sustainable management criteria and projects and management actions are commensurate with the level of understanding of the basin setting, based on the level of uncertainty, as reflected in the plan" (Cal. Code Regs., tit. 23, § 355.4, subd. (b)(3)).	**2024 Final GSPs Tentative Evaluation GWQ-3a:** This deficiency appears to be partially addressed. Board staff is still concerned that beneficial uses and users may be impacted prior to an undesirable result occurring due to the Exceedance Policy's insufficient correlation procedure. **2024 Final GSPs Tentative Evaluation GWQ-3b:** This deficiency appears to be partially addressed. The GSPs still lack an appropriate method for evaluating whether groundwater quality degradation may be due to groundwater management activities or actions. Without a clear understanding of potential impacts, Board staff cannot determine if the well mitigation plan will address the degradation of water quality.	**Potential Action GWQ-3a:** Develop a method to determine the impact of an exceedance to beneficial uses and users and clarify how the public will be notified should an MT exceedance occur. **Potential Action GWQ-3b:** See Potential Action GL-2b.	**GWQ-3a:** Consistent with SGMA requirements, the Subbasin has done extensive work to characterize groundwater conditions, understand the driving mechanisms for degraded water quality, define baseline conditions, and quantify beneficial users. Procedures outlined in the MT Exceedance Investigation SOP (Appendix W in the final 2024 Plan) provide procedures to evaluate and determine the root cause of the MT exceedance and guide corrective actions that should halt further degradation and avoid triggering an undesirable result. In addition to conducting the investigation and taking corrective action, the Subbasin GSAs will use their well registry (P/MA KSB-7) to identify and notify potentially impacted well owners. **GWQ-3b: See GWQ-3a response.**

Deficiency	What SGMA & SGMA Regulations Require	Deficiency Summary	Potential Actions to Correct the Deficiency	Status
Deficiency Interconnected Surface Water 1 (ISW-1a and ISW-1b): Interconnected Surface Water Undesirable results and SMC are not coordinated.	SGMA requires that "Agencies intending to develop and implement multiple plans pursuant to Water Code § 10727(b)(3) shall enter into a coordination agreement to ensure that the Plans are developed and implemented utilizing the same data and methodologies…", and Regulations requires that "elements of the Plans necessary to achieve the sustainability goal for the basin are based upon consistent interpretations of the basin setting" (Cal. Code Regs., tit. 23, § 357.4, subd. (a)).	**2024 Final GSPs Tentative Evaluation:** This deficiency was addressed in the 2024 Final GSPs.	**Potential Action ISW-1a and ISW-1b:** Board staff does not have further concerns related to Deficiencies ISW-1a and 1b.	**ISW-1a and 1b: No action needed; deficiency has been addressed**
Deficiency ISW-2: GSAs do not adequately demonstrate that undesirable results related to the depletion of ISW are not present and are not likely to occur.	The GSP regulations require GSAs to "provide a description of current and historical groundwater conditions in the basin…based on the best available information" (Cal. Code Regs., tit. 23, § 354.16). This information includes: "Identification of interconnected surface water systems within the basin and an estimate of the quantity and timing of depletions of those systems, utilizing data available from the Department, as specified in Section 353.2, or the best available information" (Cal. Code Regs., tit. 23, § 354.16, subd. (f)). The GSP regulations define interconnected surface water as "surface water that is hydraulically connected at any point by a continuous saturated zone to the underlying aquifer and the overlying surface water is not completely depleted" (Cal. Code Regs., tit. 23, § 351, subd. (o)). The GSP regulations specify that a GSP must describe the groundwater and surface water model used to quantify surface water depletion and, "If a numerical groundwater and surface water model is not used to quantify surface water depletion, the Plan shall identify and describe an equally effective method, tool, or analytical model" (Cal. Code Regs., tit. 23, § 354.28, subd. (6)(B)). "An agency that is able to demonstrate that undesirable results related to one or more sustainability indicators are not present and are not likely to occur in a basin shall not be required to establish criteria for undesirable results related to those sustainability indicators" (Cal. Code Regs., tit. 23, § 354.26, subd. (d)). GSP Regulations allow GSAs to create "one or more management areas within a basin if the [GSA] has determined that creation of management areas will facilitate implementation of the Plan. Management areas may define different minimum thresholds and be operated to different measurable objectives than the basin at large, provided that undesirable results are defined consistently throughout the basin" (Cal. Code Regs., tit. 23, § 354.20).	**2024 Final GSPs Tentative Evaluation:** This deficiency appears to be addressed. The 2024 Final GSPs include a more robust description of the methodology used to conclude the absence of ISW and GDE in the subbasin.	**Potential Considerations ISW-2:** Continue using the best available information to evaluate potential ISW in the subbasin.	**ISW-2: No action needed; deficiency has been addressed**

Attachment C

Continuance Resolution Timeline*

Feb. 2025

- Resolve RMS/DMS Data Issues
- Revise Subsidence IM/MO Table
- Clarify Subsidence Exceedance and Mitigation Plans

Mar. 2025

- Develop Recommendations for additional RMWs
- Refine GWQ URs
- Agree on GWQ Technical Analysis for Exceedance Policy

Apr. 2025

- Identify and analyze areas with local GWL variability and potential impacts
- Finalize additional RMWs

June 2025

- Refine local GWL MT values and well impact analyses (as needed)
- Document GSP changes and submit for Staff Review

Sep. 2025

Continue Kern Subbasin Hearing

**Preliminary Timeline includes our best guess of time required by SWRCB Staff to review/approve GSP refinements*