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Santa Ynez River Valley Groundwater Basin - Eastern Management Area

Groundwater Sustainability Plan Periodic Evaluation

Date to be determined, late 2026

Prepared for: Santa Ynez River Valley Groundwater Basin - Eastern Management Area Groundwater Sustainability Agency

EMA
Santa Ynez River Valley Groundwater Basin
Eastern Management Area
Groundwater Sustainability Agency

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December 2026

Prepared for:

Santa Ynez River Valley Groundwater Basin
Eastern Management Area Groundwater Sustainability Agency
P.O. Box 719
Santa Ynez, CA 93460

GSI Water Solutions, Inc., is pleased to submit this Groundwater Sustainability Plan Periodic Evaluation, prepared in accordance with California Code of Regulations, Title 23, Water, Division 2. Department of Water Resources, Chapter 1.5. Groundwater Mangement, Subchapter 2. Groundwater Sustainability Plans.

The Periodic Evaluation was prepared by the following authors:

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Abbreviations and Acronyms

AEM	airborne electromagnetic
AFY	acre-feet per year
AMT	audio-frequency magnetotellurics
Basin	Santa Ynez River Valley Groundwater Basin
CAG	Citizens Advisory Group
CASGEM	California Statewide Groundwater Elevation Monitoring
CCR	California Code of Regulations
CGPS	Continuous Global Positioning System
CMA	Santa Ynez River Valley Groundwater Basin - Central Management Area
COC	constituent of concern
COGG	California Oil, Gas, and Groundwater
CWC	California Water Code
DDW	Division of Drinking Water
DMS	Data Management System
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
EMA	Santa Ynez River Valley Groundwater Basin - Eastern Management Area
ET	evapotranspiration
ft/ft	feet per foot
GAMA	Groundwater Ambient Monitoring and Assessment
GDE	groundwater-dependent ecosystem
gpm	gallons per minute
GSA	Groundwater Sustainability Agency
GSI	GSI Water Solutions, Inc.
GSP	Groundwater Sustainability Plan
HCM	Hydrogeologic Conceptual Model
ID No. 1	Santa Ynez River Water Conservation District, Improvement District No. 1
ILRP	Irrigated Lands Regulatory Program
InSAR	Interferometric Synthetic Aperture Radar
JPA	Joint Exercise of Powers Agreement
MCL	maximum contaminant level
mg/L	milligrams per liter
MO	measurable objective
MT	minimum threshold

NWIS	National Water Information System
Plan	Groundwater Sustainability Plan
PMAs	projects and management actions
RCA	Recommended Corrective Action
RMS	representative monitoring site
RWQCB	Regional Water Quality Control Board
San Antonio Groundwater Basin	San Antonio Creek Valley Groundwater Basin
SDWIS	Safe Drinking Water Information System
SGMA	Sustainable Groundwater Management Act
SMCs	sustainable management criteria
SMCL	secondary maximum contaminant level
SWRCB	State Water Resources Control Board
SYRWCD	Santa Ynez River Water Conservation District
TDS	total dissolved solids
TEM	transient electromagnetic
UNAVCO	University NAVSTAR Consortium
USGS	U.S. Geological Survey
WMA	Santa Ynez River Valley Groundwater Basin - Western Management Area
WQO	water quality objective

Executive Summary

ES-1 Introduction

The Periodic Evaluation functions as the primary tool for documenting implementation of the EMA's Groundwater Sustainability Plan (Plan) since adoption in 2022. This Periodic Evaluation presents a written assessment of how the EMA is implementing its groundwater sustainability program, with focus on meeting the EMA's sustainability goal. To this end, this Periodic Evaluation presents recent basin conditions in relation to the Plan's sustainable management criteria (SMC), recent implementation of projects and management actions, responses to DWR's recent recommended corrective actions (RCAs), and other required information as specified in SGMA (Water Code §10728.2) and the GSP Regulations[1]. Findings which necessitate potential revisions to individual Plan elements are recommended in this Periodic Evaluation; however if the EMA GSA Board decides that revisions to the Plan are warranted, all changes will be addressed in a Plan Amendment.

This Periodic Evaluation presents these elements for the period that has occurred since Plan adoption on January 16, 2022, which included groundwater conditions through water year 2018. The evaluation therefore focuses on the period since then, including the six water years from 2019 through 2024. This period was selected in coordination with parallel efforts underway in the other two management areas in the Basin. This Periodic Evaluation also presents some of the GSA's more recent activities that have occurred since Plan adoption through all of water year 2025 and also portions of water year 2026, as available. This Periodic Evaluation will be submitted to the DWR by January 19, 2027, 5 years since the Plan was submitted in 2022.

This Periodic Evaluation is accompanied by an amended Plan.

ES-2 New Information Collected

Significant new data the GSA has been acquired during the evaluation cycle following Plan adoption. Since Plan adoption, the GSA has actively implemented the PMAs documented in the Plan, compiled and responded to new data, sought and engaged stakeholder input, and complied with ongoing regulatory guidance.

Enhanced Geologic Understanding / Geophysical Investigations: The EMA GSA has completed new geophysical investigations across the EMA, including seismic surveys and seismic refraction profiling and electromagnetic surveys (tTEM and helicopter-borne SkyTEM methods).

Updated Climate and Hydrologic Data: Since Plan adoption, variable climate conditions have provided valuable new data on the response of groundwater conditions within the EMA's principal aquifers to these hydrologic conditions.

Updated Water Budgets: The recent hydrologic data have provided an updated understanding of the EMA's water budgets and numeric model inputs, improving estimates of net recharge and percolation under both drought and wet conditions. Since plan adoption, the EMA GSA has produced updated annual water budget calculations for each of the water years between 2019 and 2025.

[1] SGMA in its entirety can be found in Division 6, Part 2.74, of the California Water Code Section 10720. The GSP Regulations are found in Subchapter 2 of Chapter 1.5, Division 2 of Title 23 of the California Code of Regulations (CCR)

Groundwater Model Update: The numerical groundwater model developed in support of the Plan was updated based on the data from the recent increasingly variable hydrologic conditions.

Annual Reporting: With the preparation and upload of the annual reports for water years 2019 through 2025, the EMA's understanding of hydrogeologic conditions has benefited.

Potential Groundwater-Dependent Ecosystem Surveys: Field surveys of potential groundwater-dependent ecosystems (GDEs) were conducted in 2025.

More Frequent Groundwater Monitoring: At the time of the Plan adoption, water levels within approximately 45 wells were measured by Santa Barbara County Water Agency staff throughout the EMA during the spring months, while only three wells were monitored during the fall months. Beginning in 2020, the fall groundwater monitoring effort was expanded to include more groundwater monitoring locations, such that in October 2020 water levels in a total of 20 EMA wells were measured.

Monitoring Network Expansion and Data Improvements: Since 2022, the EMA GSA has progressed in enhancing and refining its monitoring networks.

Improved Basin-wide Coordination with Formation of Joint Exercise of Power of Authority: Each of the three management areas (i.e., WMA, CMA, EMA) is governed by a separate GSA that was created and exists pursuant to a separate Joint Exercise of Powers Agreement (JPA). Since Plan adoption, the GSAs have initiated implementation of the Plan throughout the Basin under grant funding awarded by DWR.

Implement Above Narrows Well Inventory and Outreach Action Plan: Late in 2023, the GSAs developed and approved an action plan to identify pumpers in the Santa Ynez River alluvial system upstream of the Lompoc Narrows in response to DWR's review of the 2022 Plans for the three management areas.

Appointment of Executive Director: The EMA GSA has hired a dedicated Executive Director in 2025 to manage GSA operations.

Appointment of Agricultural Representative on the GSA Board: The EMA JPA provides for a five-member GSA Board, including one Director from each of the four public agency members, and a fifth non-member Director to specifically represent the agricultural interests within the EMA.

New Policies and Programs: The EMA GSA has developed new policies and programs that enable PMAs to be identified in the Plan, notably the following:

- Well registration, metering, and reporting program, including adoption of a Well Registration Ordinance (No. 2025-01) and a Well Metering and Reporting Ordinance (No. 2025-03).
- Extraction fee study and implementation of a pumping fee.
- Coordination with Santa Barbara County on well permit review procedures consistent with the Governor's 2022 Executive Order between 2022 and 2024.

ES-3 Groundwater Conditions Relative to Sustainable Management Criteria

This Periodic Evaluation assesses groundwater conditions in the EMA relative to sustainable management criteria (SMCs) established in the Plan during the recent period between Water Years 2019 and 2024 for the five sustainability indicators applicable to the EMA. Groundwater levels in the Paso Robles Formation and Careaga Sand generally declined relative to spring 2018 baseline conditions through much of the evaluation period, though wet conditions in water years 2023 and 2024 drove notable recovery, with average rises of 8

feet between spring 2023 and 2024. Groundwater elevations dropped below minimum thresholds (MTs) in 50 percent or more of wells for either principal aquifer during several individual seasons, but never for the two consecutive years (as required to trigger an undesirable result).

Groundwater storage similarly fluctuated with precipitation, increasing by roughly 6,000 acre-feet during the wet 2024 water year but showing a net cumulative decline of about 15,200 acre-feet since 2015. Water quality monitoring identified salts and nutrients generally within acceptable limits, with the exception of sulfate and sodium. Sulfate and sodium concentrations exceeded MTs in roughly half of wells within the monitoring network, though these exceedances are not attributed to groundwater management activities nor trigger undesirable results. Land subsidence has remained below the regulatory threshold. Data on the extent of potential interconnected surface water depletion in the EMA is undergoing additional analysis through the installation of new monitoring piezometers.

In January 2024, DWR approved the EMA's Plan while issuing seven Recommended Corrective Actions (RCAs) to be addressed in this first Periodic Evaluation, spanning potential revisions to sustainable management criteria for groundwater levels, storage, water quality, and subsidence, as well as improved characterization of the Santa Ynez River Alluvium's relationship to the principal aquifers and estimation of stream depletion impacts.

Recommendations for potential Plan amendments are presented within this document to address RCAs 4, 5, and 6 for the consideration and potential approval by the EMA GSA Board. These amendments may include changes to several sustainability indicators including:

- Chronic decline in groundwater levels in response to RCA 4 (including potentially removing non-drought-year contingencies from undesirable results definitions and shifting to seasonally based (fall) monitoring criteria),
- Degraded water quality in response to RCA 5 including revisions to the SMC,
- Land Subsidence in response to RCA 5 including revisions to SMCs.

All seven of the RCAs are addressed within this Periodic Evaluation.

As discussed in this Periodic Evaluation, the EMA GSA has made demonstrable progress implementing the Plan, including progressing on expansion of the monitoring networks to close data gaps, and implement management actions consistent with the Plan to maintain long-term sustainability within the 20-year SGMA planning horizon.

ES-4 Projects and Management Actions

The EMA GSA is making substantial progress implementing Group 1 management actions identified in the Plan. Governance actions include formation of the Joint Exercise of Powers Agreement (JPA), hiring of an Executive Director, appointment of a dedicated Agricultural Director to the GSA Board, and continued engagement of the Citizen Advisory Group. Completed or ongoing projects include well permit reviews for new and replacement wells consistent with the Governor's 2022 drought-related Executive Orders (no longer in effect), a Well Registration and Metering Program, an Extraction Fee Study, and implementation of a groundwater pumping fee.

In coordination with the Central Management Area (CMA) and Western Management Area (WMA) GSAs, the EMA GSA also adopted and submitted an Above Narrows Action Plan in January 2024 to identify and engage previously unmonitored pumpers along the Santa Ynez River alluvium.

Group 2 management actions and Group 3 projects actions remain available for future implementation as conditions warrant.

ES-5 Basin Setting Based on New Information or Changes in Water Use

Since adoption of the Groundwater Sustainability Plan (Plan or GSP), the EMA's understanding of the groundwater basin has been refined as a result of conducting a series of hydrogeologic investigations. Firstly, targeted geophysical investigations were conducted using both land- and aerial-based geophysical survey methods (audio-frequency magnetotellurics [AMT] and P-wave refraction in 2020; tTEM and SkyTEM in 2021). These surveys revealed greater structural complexity than previously understood, including new fault mapping near the Zaca Oil Field and the northern Basin boundary, refined depth-to-bedrock estimates, and improved characterization of the contact between the Paso Robles Formation and Careaga Sand Formation. The results of this work were then used to revise the Hydrogeologic Conceptual Model (HCM) of the Basin.

Subsequently, the revised HCM was used to refine the numerical groundwater model (Model) of the Basin along with results of expanded spring and fall groundwater level data. Collectively, these models' refinements allowed for an improved ability to represent seasonal aquifer response.

Separately, two U.S. Geological Survey studies (USGS, 2021, 2022) of the adjacent San Antonio Creek Valley Groundwater Basin confirmed that subsurface inflow across the shared northwestern boundary is negligible to non-existent, effectively closing a data gap identified in the original Plan.

ES-6 Monitoring Networks

The EMA GSA completed a comprehensive review of its groundwater elevation monitoring network, with the intent of filling data gaps for well construction and aquifer completion at most of the 24 representative sites. Two wells have been identified for removal (one no longer accessible below current water levels, one completed across multiple aquifer units), and potential new monitoring locations have been identified to fill remaining data gaps near Santa Agueda Creek, Marre Canyon, Happy Canyon, and the Zaca/Alamo Pintado Creek area. The EMA is in process of installing a new dedicated well at one of these locations, as well as two piezometers for monitoring potential groundwater-dependent ecosystem (GDE) and interconnected surface water. Construction of these new monitoring points is planned for fall of 2026.

Interconnected surface water and water quality monitoring remain ongoing efforts under the Basin's Group 1 management actions.

ES-7 GSA Authorities and Enforcement Actions

The EMA GSA adopted its Plan in January 2022 and has since exercised its authorities under the California Water Code to implement well permit review procedures, a well registration, metering, and production reporting program, and a groundwater extraction fee. To date, no formal enforcement actions have been necessary or undertaken by the EMA GSA.

ES-8 Outreach, Engagement, and Coordination with Other Agencies

During the period since Plan adoption, the GSA has used multiple forms of outreach to communicate SGMA-related information and solicit input from EMA users. The EMA GSA continued public engagement and provided opportunities for participation throughout the Plan implementation process. During this period, outreach and engagement efforts included:

- Presenting key decisions, implementation measures, and projects at GSA Board meetings.
- Posting agendas and materials online in advance of each meeting.
- Allowing public comment during each Board session.

- Increased engagement of the EMA Citizens Advisory Group

ES-9 Other Information

Coordination with other management areas in the Basin, the WMA and CMA GSAs, has remained frequent, open, and ongoing throughout the reporting period.

Among the most significant challenges facing the GSA and Plan implementation are:

- More frequent crop mapping and associated water use estimates until adequate flow meters are installed for direct measurement of groundwater extraction.
- More widespread groundwater elevation monitoring within the Paso Robles Formation with the use of more dedicated monitoring wells.
- Addressing these data collection challenges is important for improving the accuracy of the EMA's water budget and HCM.

To date, Plan implementation has not been impeded or otherwise affected by any legal challenges.

ES-10 Recommended Corrective Actions

DWR issued seven RCAs across the five sustainability indicators (lowering of groundwater levels, reduction of groundwater in storage, groundwater quality, land subsidence, and interconnected surface water). These RCAs primarily request removal of non-drought-year conditions from undesirable result definitions, clarification of minimum threshold methodologies, basin-wide water budget consistency among the three GSAs, and continued data collection.

Responses to each RCA are proposed within Section 3 for consideration by the EMA GSA Board.

Table ES 1. Summary of DWR Recommended Corrective Actions

Recommended Corrective Action Number	Subject	Relevant Sustainability Indicator	Result in Change to Plan
1	Action Plan for Management of All Well Production Along the Lower Santa Ynez River	Depletion of interconnected surface water	No
2	Relationship between Santa Ynez River Alluvium and principal aquifers	Depletion of interconnected surface water	No
3	Re-evaluation of water budgets for consistency	Reduction of groundwater in storage	No
4	Re-evaluation of SMCs for chronic lowering of water levels	Chronic lowering of water levels	Yes[1]
5	Re-evaluation of SMCs for water quality	Degraded water quality	Yes[1]
6	Re-evaluation of SMCs for land subsidence	Land subsidence	Yes[1]
7	Estimation of location, quantity and timing of stream depletion	Depletion of interconnected surface water	No

Notes: 1 The decision to amend the Plan will be determined by the EMA GSA Board.

Chronic Lowering of Groundwater Levels Sustainability Indicator (RCA 4)

With regard to the Chronic Lowering of Groundwater Levels sustainability indicator, DWR recommendations that they would like to be addressed as part of this Periodic Evaluation, including

- Revision of the definition of undesirable results and language pertaining to significant and unreasonable chronic lowering of groundwater levels to remove the non-drought year condition.
- Revision of the sustainable management criteria to be based on seasonal low groundwater levels, and
- Completion of an updated well impact analysis.

Changes to the sustainability criteria based on DWR's corrective actions for groundwater level decline are recommended to both maintain compliance with DWR requirements and recommendations for corrective actions, and also to maintain responsive local groundwater management.

To that end, we recommend that the EMA GSA Board consider these responses with regard to possible Plan Amendments regarding groundwater elevations:

RCA 4a "remove the non-drought year condition" (one of two options):

1. Remove the non-drought condition and subsequently lower the MT for each well accordingly, or
2. Remove the non-drought condition but delay adjusting the MT until a thorough well impact analysis could be conducted following completion of the well registration, which is in process.

RCA 4b "revise the sustainable management criteria to be based on seasonal low groundwater levels":

1. Delay making any changes to the SMC based on seasonal low groundwater levels (RCA 4b), until a full 10 years of paired spring and fall water level measurements are available for review.

RCA 4c Conduct well impact analysis:

1. Conduct a well impact analysis at a later time after the well registration is completed and consider changes to the MTs at that time.

Degraded Groundwater Quality Sustainability Indicator (RCA 5)

With regard to the water quality sustainability indicator, DWR provided one multi-part recommendation to be addressed as part of this Periodic Evaluation.

Changes to the sustainability criteria based on DWR's corrective actions for groundwater quality are recommended to both maintain compliance with DWR requirements and maintain responsive local groundwater management. To that end, we suggest that the EMA GSA Board consider a Plan Amendment regarding groundwater quality as follows.

RCA 5a "The EMA GSA should reevaluate the quantitative definition of undesirable results related to degradation of water quality, which should incorporate a combination of minimum threshold exceedances…"

and

RCA 5d "Clearly convey the minimum threshold values for each representative monitoring well"

We recommend that the minimum threshold for water quality at each representative well be redefined as:

- The concentration of salt and nutrient constituent in each representative well equal to either 120 percent of the historic (baseline) concentration, the MCL for Nitrate as N, or the WQO for the Santa Rita subarea of the Santa Ynez River Valley Basin, whichever is greater (Table 3-8, Appendix F).

We propose that the undesirable result be revised as:

- More than 50 percent of these minimum thresholds in each well exceeding each minimum threshold for each 5-year evaluation period (in response to RCA 5a).

RCA 5b "Provide an assessment of when and how GSA activities may impact water quality"

- Since the Plan's adoption, the GSA has not conducted any project or management actions which could have impacted water quality. There have also been no comments by any beneficial users in the EMA regarding degraded water quality during the evaluation period. In future evaluation cycles, any degradation of water quality that can be attributed to the GSA and are distinct from "other causes of increased salts and nutrients" as sited in the Plan are proposed to be defined by the revised definition of an undesirable result.

RCA 5c "GSAs should revise the definition of undesirable results and language pertaining to significant and unreasonable degradation of water quality to remove the non-drought year condition"

- The EMA's Plan does not include any reference to water year type with regard to the water quality degradation Sustainability Indicator.

Land Subsidence Sustainability Indicator (RCA 6)

With regard to the land subsidence sustainability indicator, DWR provided a single recommendation to be addressed as part of this Periodic Evaluation.

We recommend that the EMA consider a change to Plan to clarify the relationship between the MT and Undesirable Results as follows:

> The minimum threshold for land subsidence shall be a lowering of ground surface elevations at a rate of 0.08 feet per year or greater based on measurements from both the InSAR network throughout the EMA and the single UNAVCO Continuous Global Positioning Systems (CGPS) station located in the EMA near the Santa Ynez airport.
>
> The undesirable result for subsidence shall be this rate of subsidence of 0.08 feet per year or greater observed for 3 consecutive years, or subsidence that causes significant and unreasonable damage to or substantially interferes with groundwater supply, land uses, infrastructure, and property interests.

1 Introduction

The Sustainable Groundwater Management Act (SGMA) was enacted by the State of California in 2014 to establish a statewide framework for achieving long-term groundwater sustainability in response to declining groundwater levels, chronic overdraft, land subsidence, and other adverse impacts in many groundwater basins across the state. To implement SGMA, local agencies in medium- and high-priority basins were required to form Groundwater Sustainability Agencies (GSAs) to develop and carry out GSPs with an aim to achieve local management of groundwater resources.

The Santa Ynez River Valley Groundwater Basin (Basin) is a medium-priority groundwater basin managed by three separate management areas: the Western Management Area (WMA), the Central Management Area (CMA), and the Eastern Management Area (EMA). Each management area is managed by its own GSA and Groundwater Sustainability Plan. In the EMA, the Santa Ynez River Water Conservation District (SYRWCD), Santa Barbara County Water Agency, the City of Solvang, and the SYRWCD Improvement District No. 1 (ID No. 1) are the signatory parties to a joint powers agreement that governs the EMA GSA (Figure 1-1).

To demonstrate implementation of the EMA's Groundwater Sustainability Plan (Plan), this Periodic Evaluation provides a comprehensive periodic assessment of the early phases of the 20-year implementation period and demonstrates progress toward maintaining groundwater sustainability in the Eastern Management Area (EMA). In particular, this evaluation documents (a) new information collected since the Plan was adopted in 2022, (b) presents an evaluation of the current groundwater conditions relative to the Plan's sustainable management criteria (SMC) for each sustainability indicator, (c) summarizes the steps taken by the EMA Groundwater Sustainability Agency (GSA) to implement actions and address data gaps identified in the Plan and whether revisions to the Plan are necessary (d) responds to recommended corrective actions separately as identified by the California Department of Water Resources (DWR).

This Periodic Evaluation is organized as follows:

Section 1 – Introduction: An introduction to this Periodic Evaluation, including a description of its purpose and contents.

Section 2 – New Information Collected: Presents a summary of new information collected since Plan adoption.

Section 3 – Groundwater Conditions Relative to Sustainable Management Criteria. Presents current conditions relative to the Plan's SMC for each sustainability indicator. This section also presents the DWR's Recommended Corrective Actions (RCAs) along with recommendations for how the EMA could respond to each of the RCAs, and whether any of these responses will require a Plan amendment.

Section 4 – Status of Projects and Management Actions: Presents the steps taken by the EMA GSA to implement projects and management actions (PMAs) and address issues identified in the Plan and by DWR.

Section 5 – Basin Setting Based on New Information or Changes in Water Use: Describes updates to the basin setting based on new technical information, including geophysical survey results, refined hydrogeologic understanding, and changes in water use that may affect groundwater management.

Section 6 – Monitoring Networks: Describes the monitoring networks used to track groundwater conditions, evaluates their adequacy, and summarizes efforts to expand and improve monitoring coverage for SGMA implementation and compliance.

Section 7 – GSA Authorities and Enforcement Actions: Summarizes changes in governance, policies, funding mechanisms, and other administrative actions that affect implementation of the Plan.

Section 8 – Outreach, Engagement, and Coordination with Other Agencies: Describes public outreach and engagement activities undertaken during implementation of the Plan and summarizes coordination with other agencies involved in Plan implementation.

Section 9 – Other Information: Presents any additional information relevant to the Periodic Evaluation that is not addressed in the preceding sections.

Section 10 – Summary of Proposed or Completed Revisions to Plan Elements: Summarizes proposed and completed revisions to the Plan elements based on new information, updated evaluations, and implementation progress.

Section 11 – References: Lists the technical reports, plans, guidance documents, and other sources cited in this Periodic Evaluation.

As required by SGMA, this Periodic Evaluation presents these elements for the period that has occurred since Plan adoption on January 16, 2022, which included groundwater conditions through water year 2018. The evaluation therefore focuses on the period since then, including the six water years from 2019 through 2024. This period was selected in coordination with parallel efforts underway in the other two management areas in the Basin. This Periodic Evaluation also presents some of the GSA's more recent activities that have occurred since Plan adoption through all of water year 2025 and also portions of water year 2026, as available. This Periodic Evaluation will be submitted to the DWR by January 19, 2027, 5 years since the Plan was submitted in 2022.

DWR has used several terms to describe this type of document, including Plan Update, Five-Year Update, and Periodic Update. Following DWR's guidance and consistency with the GSP Regulations, this document is referred to as a Periodic Evaluation. "Plan amendment" refers to "a revision made by a GSA to its previously adopted GSP, often to make warranted changes to ensure the GSP reflects the most current groundwater management approaches" (DWR, 2023).

Figure 1-1. Santa Ynez River Valley Groundwater Basin

2 New Information Collected

This section provides a description of new information, including significant new data that the GSA has acquired during the evaluation cycle following Plan adoption, including the six water years from 2019 through 2024. Since Plan adoption, the GSA has actively implemented the PMAs documented in the Plan, compiled and responded to new data, sought and engaged stakeholder input, and complied with ongoing regulatory guidance.

Key types of new information acquired include the following categories:

2.1 Basin Setting Information

Enhanced Geologic Understanding / Geophysical Investigations: The EMA GSA has completed new geophysical investigations across the EMA, including seismic surveys and seismic refraction profiling and electromagnetic surveys (tTEM and helicopter-borne SkyTEM methods). These geophysical investigations were completed during Plan preparation, but the results were not available for inclusion in the Plan. The results have improved the EMA's hydrogeologic conceptual model by refining the understanding of subsurface stratigraphy and principal aquifer extents. The key findings of these investigations were to confirm and clarify the characteristics of the Paso Robles Formation and Careaga Sand aquifers, offering greater detail on formation thickness and the continuity of key units (including shallow alluvial deposits near the Santa Ynez River). This new information supports ongoing efforts to address DWR's recommendations for further analysis of aquifer properties and interconnected surface water interactions (Recommended Corrective Action #2 in DWR's Plan assessment). As detailed in Section 5 of this Periodic Evaluation, these surveys have been integrated into the basin setting and will guide future monitoring and modeling efforts.

Updated Climate and Hydrologic Data: Since Plan adoption, variable climate conditions have provided valuable new data on the response of groundwater conditions within the EMA's principal aquifers to these hydrologic conditions. Specifically, hydrologic conditions during water years 2020 through 2022 included a drought, culminating in exceptionally dry conditions (with water year 2022 classified as a Critical water year type), followed by two very wet years (water years 2023 and 2024). The annual precipitation in the Santa Ynez Valley ranged from about 8 inches during water year 2021 (Dry) to over 33 inches in 2023 (Wet), resulting in a pronounced hydrologic variability.

Updated Water Budgets: The recent hydrologic data have provided an updated understanding of the EMA's water budgets and numeric model inputs, improving estimates of net recharge and percolation under both drought and wet conditions. Since plan adoption, the EMA GSA has produced updated annual water budget calculations for each of the water years between 2019 and 2025. For the period through water year 2024, these data show that groundwater in storage has declined modestly during the multi-year drought through 2022 (annual pumping exceeded recharge), but partial recovery occurred during the above normal to wet years of water years 2023 through 2024.

Water budgets prepared annually since Plan adoption have been appended to the hydrologically balanced historical period presented in Plan for the period (water years 1982 through 2018). The cumulative change of groundwater in storage since Plan adoption has improved the groundwater model calibration and contributed to a significant addition to the "best available science" for the EMA.

Groundwater Model Update: The numerical groundwater model developed in support of the Plan was updated based on the data from the recent increasingly variable hydrologic conditions. While the updated modeling was not representative of a balanced period, the modeling update benefited from the additional recent spring and fall groundwater measurements. The addition of the new fall groundwater measurement

data, which were not widely available throughout the EMA for most of the historical period included in the original Plan document, represent a significant additional and beneficial dataset.

Annual Reporting: With the preparation and upload of the annual reports for water years 2019 through 2025, the EMA's understanding of hydrogeologic conditions has benefited, and DWR's Data Management System (DMS) has been improved. With the updated water level, pumpage, recharge, and associated data now linked with DWR's online SGMA data tools, the DMS benefits from up-to-date water level, water quality, and pumping data that are consistently archived and available for analysis.

Potential Groundwater-Dependent Ecosystem Surveys: Field surveys of potential groundwater-dependent ecosystems (GDEs) were conducted in 2025. The results of these surveys are intended to be used to refine groundwater budgets for future evaluations.

Additional Data Sources and Methodologies: Some updated guidance and communications have been received, which are hereby incorporated by reference. These include:

DWR 2023 SGMA Implementation Guidance (clarifying reporting expectations for Periodic Evaluations and Plan Amendments).

DWR's Plan Assessment Determination and Recommended Corrective Actions (RCAs) issued in January 2024 for the entire Basin, including the EMA.

The EMA's responses to DWR's RCAs, which are addressed throughout this evaluation and summarized in Section 3, have refined the data-gathering priorities mentioned above (i.e., refining water budget and SMC definitions).

2.2 Monitoring Network Information

More Frequent Groundwater Monitoring: At the time of the Plan adoption, water levels within approximately 45 wells were measured by Santa Barbara County Water Agency staff throughout the EMA during the spring months, while only three wells were monitored during the fall months. Beginning in 2020, the fall groundwater monitoring effort was expanded to include more groundwater monitoring locations, such that in October 2020 water levels in a total of 20 EMA wells were measured. This more frequent monitoring improves the EMA's understanding of seasonal high and low groundwater levels. These twice-per-year monitoring efforts are valuable because groundwater elevations in the fall are generally lower than in the spring, which is a response to reduced rainfall recharge and increased pumping to satisfy irrigation demand in the warmer summer and early fall months. These fall groundwater level measurements represent the seasonal low groundwater levels in the EMA,

Monitoring Network Expansion and Data Improvements: Since 2022, the EMA GSA has progressed in enhancing and refining its monitoring networks through the following actions:

- The groundwater-level monitoring network is being augmented with a new monitoring well (planned installation under Proposition 68 SGMA implementation grant funding) to address one of the two identified spatial data gap areas in the EMA.
- The GSA has identified and begun measuring water levels within additional existing wells (where access was arranged). These additions to the monitoring program will improve spatial coverage for the representative monitoring site well network used to track SMC compliance.
- The network for identification of potential GDEs is being augmented with the installation of two new dedicated piezometers to support the evaluation of the relationship between groundwater and potential GDEs in certain areas, as described in the Plan.

These improvements, along with integration of DWR's Interferometric Synthetic Aperture Radar (InSAR) satellite data for land subsidence monitoring and expanded groundwater quality data compilation (including the Division of Drinking Water (DDW) and Irrigated Lands Regulatory Program (ILRP) water quality databases), provide a more robust dataset for evaluating groundwater conditions than was available when the Plan was adopted.

2.3 Plan Implementation / Governance and Policy

Improved Basin-wide Coordination with Formation of Joint Exercise of Power of Authority: To be consistent with the California legislature's findings that "Groundwater resources are most effectively managed at the local or regional level," the public water agencies divided the Basin into three local management areas based on the geography and extent of local aquifers. Each of the three management areas (i.e., WMA, CMA, EMA) is governed by a separate GSA that was created and exists pursuant to a separate Joint Exercise of Powers Agreement (JPA). Each management area and associated GSA is independent regarding management decisions and responsibility for collecting groundwater and related data within their respective areas. Since Plan adoption, the GSAs have initiated implementation of the Plan throughout the Basin under grant funding awarded by DWR (See Section 4.2.1, Table 4-1).

Implement Above Narrows Well Inventory and Outreach Action Plan: Late in 2023, the GSAs developed and approved an action plan to identify pumpers in the Santa Ynez River alluvial system upstream of the Lompoc Narrows in response to DWR's review of the 2022 Plans for the three management areas. The action plan (submitted January 2024) commits to identifying and inventorying all wells in the river alluvium (including those outside GSA-member boundaries), conducting targeted outreach and educational workshops for those pumpers, with the goal of ensuring their water use is reported either to a GSA or to the State Water Board and SYRWCD.

Appointment of Executive Director: The EMA GSA has hired a dedicated Executive Director in 2025 to manage GSA operations. Regular EMA GSA Board meetings have been conducted at a local community venue, ensuring consistent stakeholder and public engagement.

Appointment of Agricultural Representative on the GSA Board: The EMA JPA provides for a five-member GSA Board, including one Director from each of the four public agency members, and a fifth non-member Director to specifically represent the agricultural interests within the EMA. This fifth member is the Agricultural Director who is appointed by the four agency member Directors under a process specified in the JPA.

Increased Engagement of the Citizens Advisory Group: The EMA Citizens Advisory Group (CAG) was established in 2019 and was active in the preparation of the Plan. The EMA GSA Board continues to regularly consult the CAG on key implementation actions, including reviewing draft well registration, metering, and production reporting ordinances, groundwater production fees, reviewing technical studies, and policy matters decided by the Board. The EMA CAG has also been fully engaged in the preparation and review of this evaluation.

2.4 Projects and Management Actions

New Policies and Programs: The EMA GSA has developed new policies and programs that enable PMAs to be identified in the Plan, notably the following:

- Well registration, metering, and reporting program, including adoption of a Well Registration Ordinance (No. 2025-01) and a Well Metering and Reporting Ordinance (No. 2025-03), both of which were adopted by the EMA GSA Board in 2025.

- Extraction fee study and implementation of a pumping fee (completed during 2025).
- Coordination with Santa Barbara County on well permit review procedures consistent with the Governor's 2022 Executive Order between 2022 and 2024.

These efforts yield new information on groundwater use patterns and well infrastructure in the EMA that was previously unavailable.

The principal elements of the new information collected since Plan adoption are summarized in Table 2-1.

Table 2-1. Summary of New Information Since Plan Adoption

Significant New Information	Description	Aspects of Plan Affected
Enhanced Geologic Understanding / Geophysical Investigations	Targeted geophysical investigations completed during Plan preparation, the results of which are presented herein.	Basin Setting / HCM
Updated Climate and Hydrologic Data	Recent hydrologic conditions have improved understanding of response of groundwater conditions to variable climate patterns.	Basin Setting / HCM
Updated Water Budgets	Updated water budgets for annual reporting improve understanding of the EMA's implementation of sustainability goal and related programs.	Basin Setting / HCM
Groundwater Model Update	Updated groundwater flow model with recent hydrology from water years 2019 through 2024.	Basin Setting / HCM
Annual Reporting	Six years of annual reports from water years 2019 through 2025 improve the EMA's understanding of groundwater conditions.	Basin Setting / HCM
Potential GDE Survey	Designed and conducted field survey for potential GDEs identified within the Plan.	Basin Setting / HCM
More frequent groundwater monitoring	Implemented fall season groundwater level monitoring in water year 2020.	HCM/Basin Setting
Monitoring Network Expansion and Data Improvements: Monitoring Well	Grant-funded effort to locate, and design a dedicated deep monitoring well to improve understanding of groundwater conditions.	HCM/Basin Setting
Monitoring Network Expansion and Data Improvements: GDE Piezometers	Grant-funded effort to locate, and design dedicated piezometers to improve understanding of groundwater conditions on potential GDEs and ISWs.	HCM/Basin Setting
Joint Powers Authority	Formation of an EMA JPA for the purpose of SGMA implementation.	Governance and Plan Implementation
Implement Above Narrows Action Plan	Identify all wells within the Above Narrows area within the Santa Ynez River alluvium.	Plan Implementation
Appointment of Executive Director	Appointment of executive director allowed for efficient SGMA implementation.	Plan Implementation

Significant New Information	Description	Aspects of Plan Affected
Appointment of Agricultural Representative to Board	Appointment of director to represent agriculture on the GSA board.	Plan Implementation
Continued Involvement of the EMA Citizen Advisory Group	Role of EMA CAG continued for all important GSA actions and policy decisions.	Plan Implementation
Well Registration and Metering Program	Developed ordinance to register wells and document pumping for wells within EMA.	Projects and Management Actions
Extraction Fee Study and Implementation of Pumping Fee	Grant-funded effort to implement revenue generation to fund Plan implementation and management activities.	Projects and Management Actions
Well Permit Reviews for New and Replacement Well	Reviews for new and replacement wells consistent with the Governor's 2022 Executive Order.	Projects and Management Actions

Notes

CAG = Citizens Advisory Group

EMA = Santa Ynez River Valley Groundwater Basin - Eastern Management Area

GDE = groundwater-dependent ecosystem

GSA = Groundwater Sustainability Agency

HCM = Hydrogeologic Conceptual Model

ISW = interconnected surface waters

JPA = Joint Exercise of Powers Agreement

SGMA = Sustainable Groundwater Management Act

3 Groundwater Conditions Relative to Sustainable Management Criteria

This section discusses current conditions within the EMA for each sustainability indicator in relation to the measurable objectives (MOs) and minimum thresholds (MTs) for these sustainability indicators. This section describes groundwater elevations in the EMA since the fall of 2018, which marked the end of the analyses completed for the Plan. Since this period, the annual reports presented groundwater conditions for water years 2019 through 2025.

The two principal aquifers in the EMA are the Paso Robles Formation and the Careaga Sand. The base of these water-bearing formations is an irregular surface formed as the result of folding, faulting, and erosion, which extends to a maximum depth of approximately 3,500 feet in some areas. The Paso Robles Formation shows strong vertical variability, with coarse-grained layers producing higher well yields than finer-grained zones, and wells in this formation can produce from less than 100 to 1,500 gallons per minute (gpm). The Careaga Sand is generally thinner and less extensive, supports fewer wells and has yields of 12 to 325 gpm. Both aquifers are recharged primarily by mountain front recharge, streamflow percolation, direct percolation of precipitation, and irrigation return flow. The largest component of groundwater outflow is pumping of groundwater from wells. The regional direction of groundwater flow in both principal aquifers is generally from the north to the south-southwest.

The monitoring network is composed of aquifer-specific wells that are screened in one of the two principal aquifers in the EMA (the Paso Robles Formation or the Careaga Sand). A total of 24 representative wells were identified as representative monitoring sites to document groundwater conditions in each of the principal aquifers; these constitute the groundwater level monitoring network in the EMA. Representative wells were selected based on several criteria including being spatially distributed to provide information across most of the EMA, having a reasonably long record of data so that trends can be determined, and having hydrograph signatures that are representative of groundwater levels in wells in the surrounding area.

DWR provided approval of the EMA GSA's Plan on January 18, 2024, which is included in Appendix A. Along with providing approval of the three Plans for the Basin, the letter presented seven Recommended Corrective Actions (RCAs) intended to be considered and addressed at the time of this first Periodic Evaluation. Responses to these recommended actions are presented together in Section 7 of this evaluation.

3.1 Evaluation of Current Groundwater Conditions for Each Sustainability Indicator

The following sections address current groundwater conditions related to each of the sustainability indicators in the EMA. Section 3.1.1 addresses groundwater levels with reference to current conditions, MOs, interim milestones, MTs, DWR RCAs, and progress in maintaining sustainability. Of the six total sustainability indicators identified in SGMA and the SGMA Regs (§10720(x); §354.28(c)), five are relevant to potential undesirable results in the EMA:

1. **Chronic Lowering of Groundwater Levels** indicating a significant and unreasonable depletion of supply if continued over the planning and implementation horizon
2. Significant and Unreasonable **Reduction of Groundwater Storage**
3. Significant and Unreasonable **Degraded Water Quality**
4. Significant and Unreasonable **Land Subsidence** and

5. **Depletion of Interconnected Surface Water** that have significant and unreasonable adverse impacts on beneficial uses of the surface water.

The sustainability indicator pertaining to seawater intrusion is not relevant in the EMA.

This section includes a discussion of each of seven recommended corrective actions provided by the DWR in each respective subsection of Section 3. A summary of the seven principal recommended corrective actions is summarized on Table 3-1, along with an estimation of whether any change to the Plan (as amendments) may be desired, pending the direction of the EMA GSA Board.

Table 3-1. Summary of DWR Recommended Corrective Actions

Recommended Corrective Action Number	Subject	Relevant Sustainability Indicator	Result in Change to Plan
1	Action Plan for Management of All Well Production Along the Lower Santa Ynez River	Depletion of interconnected surface water	No
2	Relationship between Santa Ynez River Alluvium and principal aquifers	Depletion of interconnected surface water	No
3	Re-evaluation of water budgets for consistency	Reduction of groundwater in storage	No
4	Re-evaluation of SMCs for chronic lowering of water levels	Chronic lowering of water levels	Yes[1]
5	Re-evaluation of SMCs for water quality	Degraded water quality	Yes[1]
6	Re-evaluation of SMCs for land subsidence	Land subsidence	Yes[1]
7	Estimation of location, quantity and timing of stream depletion	Depletion of interconnected surface water	No

Notes

1 The decision to amend the Plan will be determined by the EMA GSA Board.

Plan Groundwater Sustainability Plan

SMCs Sustainable Management Criteria

The EMA GSA Board is encouraged to review and consider whether the suggested revisions to the Plan with regard to the sustainability indicates relevant to water levels (RCA 4), water quality (RCA 5), and land subsidence (RCA 6) are warranted at this time. This section includes a summary of the seven RCAs and recommended changes for these three sustainability indicators.

3.1.1 Chronic Lowering of Groundwater Levels Sustainability Indicator

This section discusses the Chronic Lowering of Groundwater Levels sustainability indicator with particular emphasis on (a) the recent groundwater conditions in the EMA since the Plan was adopted through water year 2024 and (b) the relationship of the recent groundwater conditions in relation to the SMCs established in the Plan.

The EMA is committed to managing groundwater levels in accordance with the sustainability goal objective presented in the Plan in Section 5.2.1 to "Maintain groundwater levels that continue to support current and ongoing beneficial uses and users of groundwater use in the EMA (GSI, 2022)."

3.1.1.1 Current Conditions

Groundwater conditions are monitored by wells in the representative groundwater level monitoring network, which are shown on Figure 3-1. The groundwater elevations in these representative wells over the past 6 water years (2019 through 2024, inclusive) are presented in Table 3-2 along with their respective MTs, MOs, and 2027 Interim Milestones.

The wells included in the representative monitoring network documented in the Plan are subject to change during the Plan's implementation period.

- Specifically, one of the representative Paso Robles Formation wells (-08P01) is no longer considered to be representative of groundwater conditions within the Paso Robles Formation because water level measurements were not able to be measured since March of 2019.We understand that the water levels in this well have been measured at lower levels in the long past (1960s and 1970s). However, because a nearby well is available to monitor groundwater elevations in this area (08P02), which has been monitored since 1968, well 08P01 is not considered to be relevant and therefore has been removed from the representative monitoring network.
- Likewise, another well (-30M01) is no longer able to be measured due to obstructions within this irrigation well since the spring of 2023 and therefore has been removed from the representative monitoring network.

Both production wells have exhibited similar recent declining groundwater levels trends prior to experiencing difficulties with collecting groundwater level measurements. When possible, the water levels in these wells will continue to be measured. Note these wells can be re-incorporated into the groundwater elevation monitoring network and forthcoming data used to monitor progress towards maintaining sustainability if future measurements are able to collected.

Additional wells have been identified and are being considered for incorporation into the monitoring network, and at least one additional monitoring well will be installed within the northwestern data gap area as part of the SGMA implementation grant.

Figure 3-1. Groundwater Level Monitoring Network

Table 3-2. Summary of Groundwater Elevation Data, Water Years 2019 – 2024

(All elevations are in feet NAVD 88)

Well ID	Principal Aquifer	Ground Surface Elevation	MO	MT	IM (2027)[3]	Spring 2019	Fall 2019	Spring 2020	Fall 2020	Spring 2021	Fall 2021	Spring 2022	Fall 2022	Spring 2023	Fall 2023	Spring 2024	Fall 2024
7N/31W-34M02	Careaga Sand	671	505	482	484	494	NM	493	NM	491	488	489	486	488	486	488	486
6N/31W-03A01	Careaga Sand	738	598	573	581	585	NM	582	575	579	**572**	575	**568**	578	**568**	580	**570**
6N/31W-04A01	Careaga Sand	601	506	481	492	493	NM	492	489	490	487	488	485	487	485	487	485
6N/31W-09Q02	Careaga Sand	756	476	446	476	480	478	481	479	473	469	469	463	469	**444**	**433**	463
6N/31W-10F01	Careaga Sand	555	483	463	472	475	NM	473	470	471	468	468	466	474	467	470	468
6N/31W-11D04	Careaga Sand	565	526	502	502	518	NM	516	508	506	**497**	**498**	**496**	510	516	517	516
6N/31W-16N07	Careaga Sand	479	352	377	395	395	394	388	392	394	392	392	391	397	402	398	403
6N/31W-xxxx	Careaga Sand	503	484	467	473	479	476	474	473	471	**466**	468	**462**	471	469	473	468
Solvang HCA	Careaga Sand	397	360	320	328	342	346	344	333	333	336	341	325	347	349	359	352

Table 3-2. Summary of Groundwater Elevation Data, Water Years 2019 – 2024 (Continued)

Well ID	Principal Aquifer	Ground Surface Elevation	MO	MT	IM (2027)[3]	Spring 2019	Fall 2019	Spring 2020	Fall 2020	Spring 2021	Fall 2021	Spring 2022	Fall 2022	Spring 2023	Fall 2023	Spring 2024	Fall 2024
6N/29W-07L01	Paso Robles Formation	868	681	637	641	658	NM	**623**	NM	639	**612**	**610**	**599**	**625**	**610**	**626**	**615**
6N/29W-08P01 [1]	Paso Robles Formation	896	712	676	686	686	NM	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
6N/29W-08P02	Paso Robles Formation	896	686	653	654	663	NM	**652**	**649**	653	**641**	**640**	**630**	**639**	**631**	**636**	**627**
6N/30W-07G05	Paso Robles Formation	604	554	515	523	528	NM	524	NM	520	**513**	**514**	**510**	**510**	**506**	**512**	**509**
6N/30W-07G06	Paso Robles Formation	602	552	511	521	526	NM	523	NM	519	512	513	**500**	**509**	**505**	511	**508**
6N/30W-11G04	Paso Robles Formation	681	609	510	516	529	NM	520	**496**	514	**475**	**494**	**459**	**505**	540	554	547
6N/31W-01P03	Paso Robles Formation	633	556	516	523	529	NM	525	NM	521	**515**	**515**	**505**	**511**	**509**	**515**	**513**
6N/31W-02K01	Paso Robles Formation	619	592	556	563	571	NM	568	566	567	564	564	562	572	578	581	579
6N/31W-13D01	Paso Robles Formation	625	520	495	506	508	NM	508	507	507	504	504	503	507	510	512	512
6N/31W-16B01	Paso Robles Formation	1,066	1,047	1,018	1,043	1,032	1,035	1,039	1,040	1,040	1,037	1,035	1,032	1,031	1,043	1,051	1,053
7N/30W-19H01	Paso Robles Formation	1,090	932	896	927	911	NM	912	911	911	911	911	910	910	912	913	914
7N/30W-29D01	Paso Robles Formation	917	893	849	862	866	NM	861	860	861	858	858	856	893	866	890	863
7N/30W-30M01 [2]	Paso Robles Formation	806	669	559	561	567	NM	561	NM	**545**	NM	NM	NM	NM	NM	NM	NM
7N/30W-33M01	Paso Robles Formation	764	565	514	526	528	NM	526	NM	520	NM	**513**	**495**	**509**	**498**	515	**499**
7N/31W-36L02	Paso Robles Formation	722	681	616	614[4]	626	NM	620	**606**	**613**	**599**	**604**	**592**	**603**	NM	617	**616**

Notes

[1] Well -08P01 has not been measurable (apparently dry) since issuance of the Plan and is not considered to be representative of the Paso Robles Formation. It has therefore been removed from the representative monitoring well network for water levels within this principal aquifer.

[2] Water level data in Well -30M01 has been difficult to measure for many years. As shown, water level measurements were not available during water years 2022 to 2024.

[3] Interim milestones for Year 5 (spring 2027) based on spring 2021 measurements.

[4] Value is below minimum threshold.

Bolded values shaded in red are below the minimum threshold value.

MO = measurable objective

MT = minimum threshold

NM = not measured

IM = Interim Milestone

NAVD 88 = North American Vertical Datum of 1988

Relative to the conditions reported in the Plan, recent data through water year 2024 data indicate that groundwater elevations in the Paso Robles Formation have generally declined during this period relative to the elevations of the spring 2018 period.

The interim milestones presented on Table 3-2 are relevant to spring water year 2027 conditions, which are not yet available and are therefore not presented in this Periodic Evaluation. However, it is notable that approximately half of the groundwater elevations in the representative wells in each of the principal aquifers were below these forthcoming interim milestones as of both spring and fall of water year 2024.

Within the EMA, the lowering of groundwater levels within the two principal aquifers may cause undesirable results, as described in Section 5.5.1 of the Plan. Along with other indicators, the lowering of groundwater levels that are likely to cause undesirable results are characterized based on groundwater elevation levels that "remain below minimum thresholds … in 50 percent of representative wells." When this occurs in fewer than 50 percent of the wells, the lowering of groundwater levels is unlikely to cause undesirable results. The proportions of these wells in each principal aquifer that have had groundwater levels below the minimum threshold since the period covered by the EMA Plan ended in water year 2018 are shown on Table 3-2. When 50 percent of the representative wells have water levels below the minimum thresholds, the cells in Table 3-2 are shaded tan.

Table 3-3. Proportion of Representative Wells with Groundwater Levels Below the Minimum Threshold

Water Year	Water Year Type	Period	Paso Robles Formation Wells	Careaga Sand Wells
2019	Above Normal	Spring	0%	0%
2020	Above Normal	Spring	14%	0%
		Fall	38%	NA
2021	Dry	Spring	14%	11%
		Fall	**50%**	22%
2022	Critical	Spring	**54%**	11%
		Fall	**62%**	33%
2023	Wet	Spring	**62%**	0%
		Fall	**50%**	22%
2024	Wet	Spring	31%	11%
		Fall	46%	11%

Notes

Values represent percentage of representative wells below the minimum threshold

NA = not available

Wells 08P01 and 30M01 are not considered to be representative wells and, when not measured, are not included in calculation.

As shown, during this six-year period, spring water elevations dropped slightly below the minimum thresholds in 50% or more of the wells in the Paso Robles Formation wells during water year 2022 and 2023. Likewise, fall water levels during fall periods, representative of seasonal low water levels, dropped slightly below the minimum thresholds in 50% or more of the wells in the Paso Robles Formation wells during all three years between 2021 through 2023. Nonetheless, during the fall of water year 2023, average groundwater elevations in these wells remained 5 feet above the average minimum threshold elevations (elevation of 642 feet on average in fall of 2023 compared to 637 feet average elevation of the minimum threshold

values). During these periods presented on the table above, the average groundwater elevation only dipped below the average minimum threshold elevation once during fall of 2022.

During this six-year period, groundwater elevations dropped below minimum thresholds in 50% or more of the wells during four consecutive years between water year 2020 and 2023. During this period, from a precipitation standpoint, water year 2020 was an "above normal" year and 2023 was a "wet" year. The intervening years of 2021 and 2022 were "dry" and "critical," respectively. Therefore, this does constitute a condition that is likely to cause undesirable results as described in Section 5.6.1 in the Plan:

> "Groundwater levels in the Paso Robles Formation or Careaga Sand aquifers fall below minimum thresholds (see Section 5.5.2) after 2 consecutive years of average and above-average precipitation in 50 percent of representative wells

The groundwater elevations in the Careaga Sand wells have remained above the minimum thresholds during this period.

The undesirable result for this sustainability indicator is discussed further below relative to potential changes via a Plan Amendment.

Relative to the conditions reported in the Plan, groundwater elevations in the Paso Robles Formation during the final water year of this analysis in 2024 have generally risen relative to the previous spring, but on average remain below the spring 2018 elevations. During the spring of water year 2024, a total of 31 percent of the representative wells within the Paso Robles Formation wells (4 of 13 with water level data) remained below the minimum threshold values, as shown on Table 3-3. In the Careaga Sand, the water elevations in 11 percent of the representative Careaga Sand wells (1 of 9) were below the minimum threshold values in spring 2024.

Hydrographs. Groundwater elevation hydrographs are used to evaluate groundwater behavior in each principal aquifer. Changes in groundwater elevation in the EMA can result from many factors, which may include changing hydrologic trends, seasonal variations in precipitation, varying groundwater extractions, changing inflows and outflows, and influence from localized pumping.

Groundwater elevation hydrographs and associated location maps for the 22 representative wells are presented in Appendix B. Thirteen of the representative wells are completed in the Paso Robles Formation and nine wells are completed within the Careaga Sand. The hydrographs include available well construction data and indicate the MO and MT values that were developed during the preparation of the Plan. Climatic variation is one of the most significant factors affecting groundwater elevations over time. For this reason, the hydrographs also display water year type categorized as wet, above normal, below normal, dry, or critically dry.

As described in the Plan, the MOs at the representative wells were selected as the groundwater levels measured during spring 2012, and MTs were set relative to spring of 2018 groundwater elevations.[2] Of the 15 representative wells in the Paso Robles Formation presented in Appendix B, water levels have usually been able to be measured in 13 of these wells during recent years.

Reported Dry and Replaced Wells. The DWR Dry Well Reporting System[3] was used to assess whether any dry wells were reported within the EMA[3]. For the period through water year 2024, there have not been any

[2] The minimum threshold values presented have been corrected relative to the Plan based on revisions to the reference point elevations. The rationale for determining minimum thresholds remain unchanged from those described in the Plan (based on spring 2018 groundwater elevations).
[3] The DWR Dry Well Reporting System is available at https://mydrywell.water.ca.gov/report/publicpage.

reported dry wells within the management area since the implementation of the Plan. One representative well has been reported as "dry" not by the well owner but by EMA staff who measure the well; this well may not have been used for production for many decades since production has predominantly been from a nearby well that serves the same property.

3.1.1.2 Sustainable Management Criteria

This section discusses the SMCs related to Chronic Lowering of Water Levels presented in the adopted Plan including MOs, MTs, Interim Milestones, and Undesirable Results.

Measurable Objectives

Measurable objectives are goals that the GSA and stakeholders have agreed are reasonable conditions that reflect sustainability in the EMA. There are no regulatory implications upon the GSA if MOs are not achieved at the 5-year evaluation milestone.

Measurable Objectives for the representative wells completed within the Paso Robles Formation and Careaga Sand are defined as the average groundwater levels measured at each representative well prior to the recent drought beginning in water year 2012.

At this time, with the GSA implementing actions to maintain sustainability within the 20-year SGMA planning period, there are no proposed changes to these Measurable Objectives for the sustainability indicator related to Chronic Lowering of Groundwater Levels.

Minimum Thresholds

The minimum thresholds for the Chronic Lowering of Groundwater Levels sustainability indicator were defined to be 15 feet below spring 2018 groundwater levels for the Paso Robles Formation representative wells, and 12 feet below spring 2018 groundwater levels for the Careaga Sand representative wells.

As is discussed in Section 6 of this evaluation, the EMA is currently in process of expanding the monitoring network. When this effort is complete, the GSA intends to re-visit the appropriateness of the MTs for these wells for the Chronic Lowering of Groundwater Levels sustainability indicator, pending further direction from the EMA GSA Board.

Undesirable Results

Undesirable results were defined in the Plan as conditions in the EMA that could lead to significant and unreasonable effects on groundwater levels (Section 5.6.1 in the Plan). Briefly, these included:

- **Extended drought.** Extensive droughts may lead to excessively low groundwater levels and;
- **High rate of pumping in the Paso Robles Formation or Careaga Sand.** If the amount of pumping in either principal aquifer exceeds the long-term rate of recharge, then groundwater levels may decline, which could affect well production and result in depletion of supply, a reduction in groundwater discharge to interconnected surface water, and potential impacts to GDEs.

The Plan describes lowering of groundwater levels that are likely to cause undesirable results as follows (Section 5.5.1 of the Plan):

- *"Groundwater levels in the Paso Robles Formation or Careaga Sand aquifers remain below minimum thresholds (see Section 5.5.2 [of the Plan]) after 2 consecutive years of average and above-average precipitation in 50 percent of representative wells.*

- *Existing agricultural, municipal, and domestic wells are unable to produce the estimated sustainable yield of the EMA due to chronic decline in groundwater levels caused by groundwater conditions occurring throughout the EMA (e.g., significant and unreasonable depletion of supply)."*

Interim Milestones

Interim Milestones are intended to serve as interim goals to be evaluated at regular intervals during the 20-year SGMA implementation planning period to track progress toward sustainability with regard to the status of groundwater conditions relative to the sustainability goal and metrics set forth in the Plan. As such, it is generally intended that interim milestones lie between the MT and the MO for each representative well in the monitoring network, representative of interim conditions between the two sustainability indicators, as presented in in the Plan. Interim milestones show how the GSA would move from current conditions to meeting the measurable objectives in the 20-year Plan implementation horizon by 2042.

During the recent years, approximately half of the groundwater elevations in the representative wells in each of the principal aquifers were below these forthcoming interim milestones as of both spring and fall of water year 2024.

3.1.1.3 DWR Recommended Corrective Actions

With regard to the Chronic Lowering of Groundwater Levels sustainability indicator, DWR provided a single recommendation in multiple parts that they would like to be addressed as part of this Periodic Evaluation.

Recommended Corrective Action 4

For this sustainability indicator, the relevant recommendation includes addressing the following items:

a. **Revise the definition of undesirable results and language pertaining to significant and unreasonable chronic lowering of groundwater levels to remove the non-drought year condition** and discuss how extractions and recharge will be managed as necessary to ensure that reductions in groundwater levels or storage during dry years are offset by increases in groundwater levels or storage during other years within the sustainable management criteria for the chronic lowering of groundwater levels.
b. **Revise the sustainable management criteria to be based on seasonal low groundwater levels** to ensure potential impacts to beneficial uses and users are considered.
c. Through a **well impact analysis**, describe where the proposed minimum thresholds are set relative to well construction information that would indicate whether or not more substantial impacts to beneficial users are occurring. This assessment should include evaluating how the sustainable management criteria may affect production wells relative to the depth of pump intake, bottom of the screen interval, and well dewatering, as applicable. This information should be clearly reported in the Plan … including quantities of wells that may be impacted and the approximate locations of where any potential impacts may occur.

Changes to the Sustainability Criteria

Changes to the sustainability criteria based on DWR's corrective actions for groundwater level decline are recommended to both maintain compliance with DWR requirements and recommendations for corrective actions, and also to maintain responsive local groundwater management.

To that end, we suggest that the EMA GSA Board consider these responses with regard to possible Plan Amendments regarding groundwater elevations:

RCA 4a "remove the non-drought year condition" (one of two options):

3. Remove the non-drought condition and subsequently lower the MT for each well accordingly, or
4. Remove the non-drought condition but delay adjusting the MT until a thorough well impact analysis could be conducted following completion of the well registration, which is in process.

RCA 4b "revise the sustainable management criteria to be based on seasonal low groundwater levels":

2. Delay making any changes to the SMC based on seasonal low groundwater levels (RCA 4b), until a full 10 years of paired spring and fall water level measurements are available for review. We suggest that adjustments to the SMC based on seasonal low groundwater levels (RCA 4b) be considered concurrent with adjustments to the removal of the non-drought year condition (RCA 4a).

RCA 4c Conduct well impact analysis:

2. Conduct a well impact analysis at a later time after the well registration is completed and consider changes to the MTs at that time.

RCA 4a Discussion. With regard to the recommendations provided by DWR as RCA 4a, the removal of the contingency based on non-drought conditions may be considered for removal pending the direction of the EMA GSA Board. Specifically, the GSA may remove the contingency of undesirable results occurring "after 2 consecutive years of average and above-average precipitation." The effects of removing the non-drought condition contingency are unknown pending completion of a further analysis. This analysis would include an estimate the effects of two years of drought on each of the representative wells and subsequent recovery during normal and wet periods, which would be used to estimate appropriate revised minimum threshold values for each well. This suggested evaluation, perhaps along with an updated well impact analysis, could be conducted if the EMA GSA board decides to amend the plan to remove the non-drought year condition in response to the DWR's recommendation.

Notably, while groundwater elevations have triggered the MT during water years 2021 through 2023 within the Paso Robles Formation representative wells, the average groundwater elevations within the representative wells remained above the average minimum threshold elevations. During water year 2023, average spring groundwater elevations remained 4 feet above the MT elevations; and average fall groundwater elevations remained 15 feet above the MT elevations. These data suggest that perhaps undesirable results have not occurred within the EMA.

RCA 4b Discussion. With regard to revisions to the SMCs based on "seasonal low" groundwater levels during the fall instead of the spring period water level measurements (RCA 4b) may be developed in the future in response to the DWR's recommendation. In the interest of continued coordination throughout the Basin (with the WMA and CMA), these potential changes may be considered following at least 10 years of paired spring and fall measurements, which started in 2020. Therefore, this change could be made following the fall of 2029. Notably as described in the EMA's Plan, the definition of the MT was set relative to spring conditions, but compliance with the SMCs for water levels are not currently achieved only during the spring months, but also during the fall months.

RCA 4c Discussion. With regard to conducting an updated well impact analysis (RCA 4c), we recommend delaying this until the well registration is completed. The existing well impact analysis could be used if desired. No dry wells have been reported within the EMA (Figure 3-2). Current groundwater management is not creating "substantial impacts to beneficial users are occurring," (RCA 4c)

Minor revisions to the representative well networks for each of the two principal aquifers are currently being planned. When those changes to the well networks are implemented, and additional data have been collected to support meaningful analysis, changes to the sustainability criteria may be considered, within the context of a Plan Amendment.

Figure 3-2. County Reported Dry and Replaced Wells (2015 - 2024)

3.1.1.4 Progress Toward Maintaining Sustainability

This report represents the first 5-year evaluation of the progress of implementation of the Plan along the 20-year SGMA planning horizon. As is discussed in Sections 4, 5, and 9, significant progress has been made since the adoption of the Plan toward maintaining sustainability in the EMA. Several PMAs have been initiated to improve aquifer monitoring networks and fill data gaps. The EMA GSA has implemented numerous other groundwater management actions, policies, ordinances, and projects described in the Plan. Proceeding in accordance with the Plan is resulting in demonstrable and significant progress for maintaining sustainability within the 20-year SGMA implementation timeline.

Adaptive Management Approaches

The status of PMAs that influence groundwater elevations are presented in Section 4.

Impacts to Beneficial Uses and Users of Groundwater

Beneficial uses and users of groundwater in the EMA include agricultural, environmental, domestic, municipal, and commercial users. Groundwater elevations that remain above the MTs are anticipated to improve beneficial uses of each of the principal aquifers by avoiding significant and unreasonable lowering of groundwater elevations.

No undesirable results have occurred within the EMA since groundwater elevations have not been below the MTs in more than 50 percent of the representative wells for 2 consecutive years after 2 consecutive years of average and above-average groundwater elevations.

3.1.2 Reduction of Groundwater in Storage Sustainability Indicator

This section of the evaluation addresses the Reduction of Groundwater in Storage sustainability indicator.

This section focuses on the relevant sustainability goal objective in the EMA as presented in the Plan in presented in Section 5.2.1 to “maintain sufficient groundwater volumes in storage to sustain current and ongoing beneficial uses and users of groundwater which maintains access to groundwater supplies, including during prolonged drought conditions while avoiding permanent degradation of GDEs resulting from groundwater conditions occurring throughout the EMA.” (GSI, 2022)

3.1.2.1 Current Conditions

In each annual report, calculations of the change of groundwater in storage for each principal aquifer are presented. The current groundwater monitoring network for the Paso Robles Formation is being expanded to improve spatial distribution to better represent groundwater conditions throughout the entire Santa Ynez Uplands area. While the monitoring network for documenting the current conditions within the Careaga Sand may be expanded in the future, the current extent of the Careaga Sand monitoring network is understood to be sufficient.

While the groundwater monitoring network wells used for contouring groundwater elevations for water year 2018 for both principal aquifers provided sufficient spatial coverage of the EMA at the time the Plan was developed, the monitoring network for subsequent water years through water year 2025 is significantly smaller in spatial extent in the Paso Robles Formation. This is in part due to the loss of access to certain groundwater wells.

The groundwater elevation changes depicted on the maps presented in this section are used, along with the aquifer’s storage coefficient, to calculate the proportion of that change that is due to changes in

groundwater in storage[4]. This method has been used for the Careaga Sand during both the period presented in the Plan and since during the implementation period. For the Paso Robles Formation, this method has not been used since water year 2018, as presented in the Plan, due to lack of sufficient spatial distribution of water level data since that time.

The recent groundwater elevation contour maps for the Paso Robles Formation and Careaga Sand in the EMA for the spring and fall 2024 are presented in Figure 3-3 through Figure 3-6. Groundwater elevation maps for water years 2019 through 2024, previously included in the annual reports, are provided in Appendix C.

[4] The portion of void space in the aquifer that can be utilized for groundwater storage is represented by an aquifer storage coefficient, which is similar to porosity and is a unitless factor that is multiplied by the total volume change between water years.

Figure 3-3. Paso Robles Formation Groundwater Elevation Contours, Spring 2024

Figure 3-4. Careaga Sand Groundwater Elevation Contours, Spring 2024

Figure 3-5. Paso Robles Formation Groundwater Elevation Contours, Fall 2024

Figure 3-6. Careaga Sand Groundwater Elevation Contours, Fall 2024

Groundwater conditions are based on the available groundwater elevation data for each aquifer, although well construction information is incomplete for some wells. These data were uploaded to DWR's Monitoring Network Module, which has replaced the California Statewide Groundwater Elevation Monitoring (CASGEM) Program.

The contour maps were developed using data collected by the Santa Barbara County Water Agency, ID No. 1, and City of Solvang staff. The number of wells in the Representative Monitoring Network has decreased since 2018. Monitoring of several Careaga Sand wells in the northwestern EMA ended after 2018 due to loss of access. Two Paso Robles Formation wells included in the Plan and monitored through 2018 are also no longer accessible. This reduction in monitored wells limits the accuracy of groundwater condition assessments and estimates of changes in groundwater in storage. The EMA GSA is currently working to add new monitoring wells to address these data gaps.

3.1.2.1.1 Paso Robles Formation

Overall, groundwater in the Paso Robles Formation flow towards the south and southwest from the San Rafael Mountains, which is consistent with the Plan. The horizontal groundwater gradients during these periods are relatively unchanged from year to year and range between 0.02 feet per foot (ft/ft) throughout most of the Santa Ynez Uplands to approximately 0.05 ft/ft in limited areas.

Groundwater elevations within the Paso Robles Formation have generally risen during water year 2024 relative to the previous spring in response to increased precipitation. Specifically, the groundwater elevations in the Paso Robles Formation representative monitoring wells have risen by an average of 8 feet between the spring periods of 2023 and 2024. During this period, water elevations in 11 of 13 Paso Robles Formation representative wells rose by as much as 49 feet.

Between the fall periods of 2023 and 2024, the water levels in the representative Paso Robles Formation wells have risen by an average of 3 feet. During this period, groundwater elevations rose in 10 of 12 representative wells with water level data.

The limited extent of the groundwater monitoring network that are used to prepare groundwater elevation contours within the Paso Robles Formation is evident in Figure 3-3 and Figure 3-5. Although the existing groundwater level monitoring network satisfies DWR's well density guidance in the portion of the Basin that wells are currently accessible, there are two areas identified within the EMA both in the northwest and the eastern portion of the EMA, where the addition of monitoring wells would improve the hydrogeologic conceptual model (HCM), as discussed in the Plan. The EMA GSA is currently working to address these identified data gaps.

3.1.2.1.2 Careaga Sand

Groundwater in the Careaga Sand continues to flow towards the southwest in the area below the communities of Ballard, Santa Ynez, and Solvang, as presented in Figure 3-4 and Figure 3-6 during the spring and fall of 2024. These trends are consistent with contours presented in the Plan. The horizontal groundwater gradients during these periods are relatively unchanged from those presented in the Plan and range between 0.01 to 0.02 ft/ft.

Groundwater elevations in the representative Careaga Sand wells have declined during water year 2024 relative to the previous spring by an average of approximately 1 foot, with a decline of as much as 36 feet in a single well. However, water levels in the other Careaga Sand wells rose during this period by an average of approximately 4 feet. Between the fall periods of 2023 and 2024, groundwater elevations have risen by an average of 3 feet, with rise of as much as 19 feet in a single well.

Groundwater elevation hydrographs of the wells presented on the map are included in Appendix B and indicate that groundwater levels tend to be lower in the fall compared to the spring, with a slight seasonal rise in the representative Careaga Sand wells of approximately 1 foot in 2024.

3.1.2.1.3 Annual and Cumulative Change in Groundwater in Storage Calculations

The change in storage for the Paso Robles Formation is calculated by the water budget method described in the water year 2024 Annual Report. The change in storage calculation for the Careaga Sand is based on changes in groundwater elevations. The EMA-wide annual change of groundwater in storage for both principal aquifers for water year 2024 are presented in Table 3-4.

The volume of groundwater in storage increased by approximately 6,000 acre-feet per year (AFY) during the wet water year 2024, when rainfall totaled 30 percent above average. The volume of groundwater in storage increases during wet years increased during both wet water years 2023 and 2024. This annual increase in groundwater in storage during water year 2024 approximates similar increases in storage that occurred in similarly wet years with approximately 20 inches of rain, including water years 2010, 2017, and 2019. The average increase in groundwater in storage during these four similar years was approximately 4,000 AFY. Increases of groundwater in storage, sometimes modestly so, occurred during all water years that received 17 inches or more of precipitation.

Table 3-4. Change in Groundwater in Storage, Water Years 2015 to 2024

(Values in acre-feet)

Water Year	Water Year Type	Change in Storage (Paso Robles Formation)	Change in Storage (Careaga Sand)	Total Annual Change in Storage
2019	Above Normal	3,047	996	4,043
2020	Above Normal	-1,662	-477	-2,139
2021	Dry	-12,737	-825	-13,562
2022	Critical	-10,983	-495	-11,478
2023	Wet	17,677	307	17,984
2024	**Wet**	**6,737**	**-623**	**6,114**

A summary of the average inflows and outflows associated with each component of the water budget within the EMA during the most recent water year in 2024 is presented in Figure 3-7.

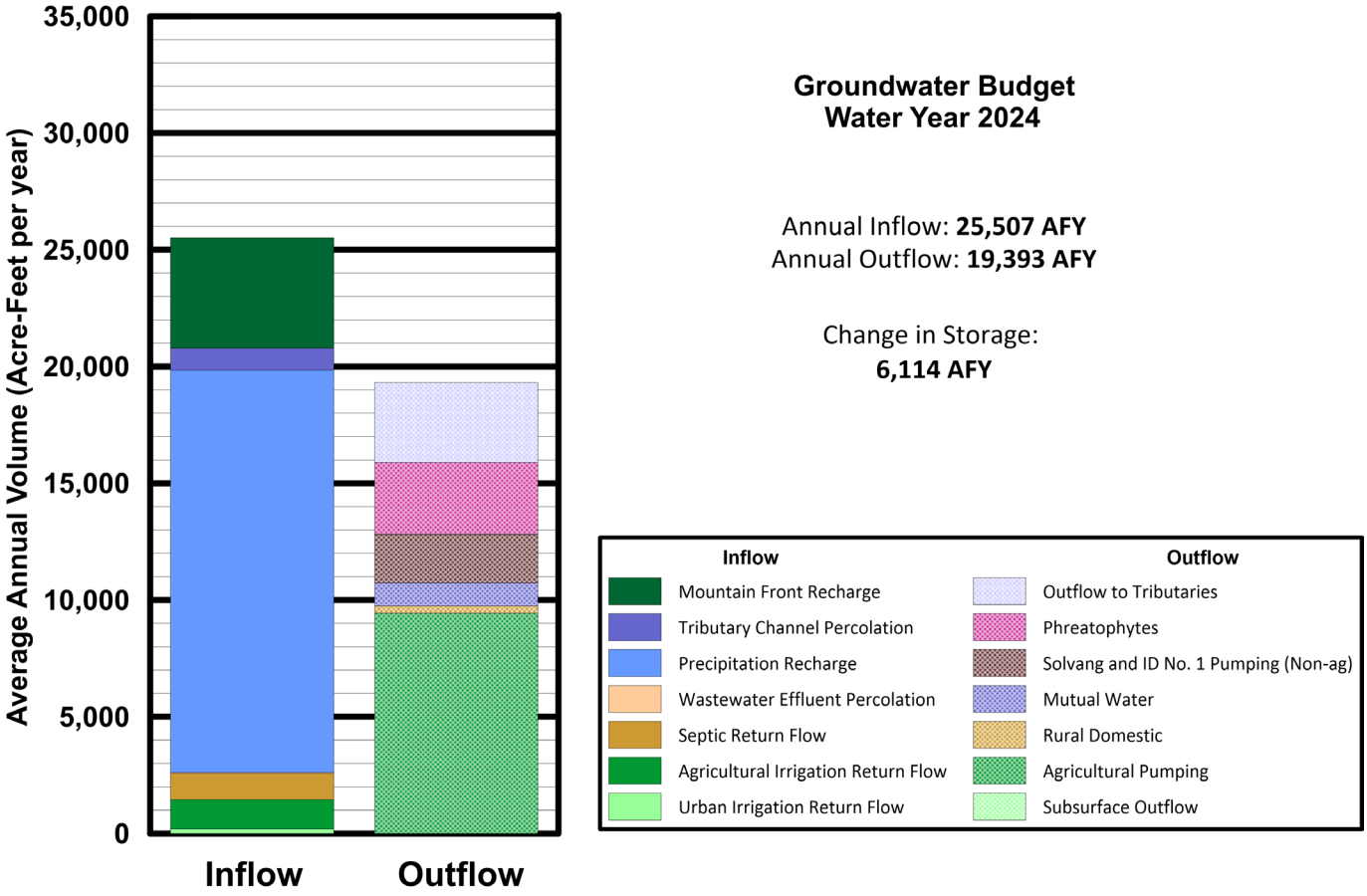

Figure 3-7. Groundwater Budget Volumes, Water Year 2024

While the overall volume of groundwater in storage rose during water year 2024, the net volume of groundwater in storage has declined by approximately 15,200 acre-feet between water years 2015 and 2024. The cumulative change in groundwater in storage since water year 1981 is presented on Figure 3-8.

3.1.2.2 Sustainable Management Criteria

Changes to volumes of groundwater in storage are directly related to groundwater elevations. Therefore, groundwater elevations are used as a proxy for SMCs associated with the Reduction in Groundwater in Storage sustainability indicator. The MOs and MTs that are established for the Chronic Lowering of Groundwater Levels sustainability indicator are also used as SMC for the Reduction in Groundwater in Storage sustainability indicator.

Figure 3-8. Cumulative Change in Groundwater in Storage

3.1.2.3 DWR Recommended Corrective Actions

With regard to the reduction of groundwater in storage sustainability indicator, DWR provided a single recommendation in two parts to be addressed as part of this Periodic Evaluation.

Recommended Corrective Action 3

For this sustainability indicator, the relevant recommendation includes **revaluating the water budgets for consistency** across all three GSAs (including the EMA GSA), which includes addressing the following two items:

a. Collectively, in the coordination agreement or otherwise, collaboratively and consistently assess the Basin's hydrologic conditions, develop consistent groundwater inflows and outflows, assess associated data gaps effecting the water budget (like groundwater level information), and **refine the water budgets** to show how projected GSA PMAs will improve the current and projected groundwater deficits. This assessment should be conducted for the Basin as a whole, and not just the individual management areas.
b. Adopt and employ consistent time periods, methods, terminologies, and definitions for the various physical components of the Basin that inform the Basin-wide water budget including the sustainable yield and groundwater change in storage. For example, the GSAs should collectively use the same time periods for the development of their sustainable yields and should clearly explain how releases from Lake Cachuma are managed to effectively regulate the surface water and groundwater system through each of the three management areas.

In response to RCA 3, we clarify that the water budget prepared for the EMA, and updated annually in support of each Annual Report, were prepared in coordination with the adjacent Western Management Area. To the extent possible, the elements of the water budget including the elements listed in RCA 3 were developed collaboratively and based on the best available science. The water budgets benefitted by the available groundwater, surface water, climatic, and geologic data and are considered to be adequate to estimate the groundwater conditions within the EMA.

A summary of the collaboration between the management areas with regard to water budget preparation is included the "Joint Presentation of Santa Ynez River Valley Groundwater Basin Water Budgets Showing Consistency" prepared by Stetson Engineers as Appendix D.

No changes in the SMC for the Reduction in Groundwater in Storage sustainability indicator are proposed at the time of this evaluation.

3.1.3 Degraded Groundwater Quality Sustainability Indicator

This section discusses the Degradation of Water Quality sustainability indicator. As presented in the Plan (Section 5.2.1), the EMA is committed to the objectives of groundwater quality sustainability goal to:

- "*maintain groundwater access to suitable water quality for all beneficial uses to ensure sustainability of groundwater drinking water supplies for all beneficial uses" and;*
- *"evaluate changes in groundwater quality resulting from groundwater conditions occurring throughout the EMA (GSI, 2022)".*

3.1.3.1 Baseline Conditions

The water quality monitoring network within the EMA includes 26 municipal wells (monitored by the SWRCB DDW program) and 35 agricultural and domestic wells (monitored by the SWRCB ILRP) within principal aquifers that have been regularly sampled since at least 2015 for groundwater quality. At the time of

adoption, the current groundwater quality monitoring network was of adequate spatial distribution to map or supplement mapping of any known contaminants.

The Basin Plan water quality objectives (WQOs) for the salt and nutrients as presented in the Plan are presented in Table 3-5. The WQOs for each constituent (and the maximum contaminant level [MCL] for nitrate as N) are considered the minimum thresholds for salts and nutrients unless the baseline water quality exceeds that concentration in any representative well. In cases where the baseline water quality concentration exceeds the WQO (or MCL for nitrate (as N)), the baseline water quality concentration is considered the minimum threshold; per-well baseline concentrations and minimum thresholds are provided in Appendix E (in response to RCA 5d).

As reported in Section 4.6.2 of the Plan, principal aquifers are not assigned to 58 of 61 wells in the water quality monitoring network due to a lack of construction information (GSI, 2022). Construction information regarding the representative monitoring network for water quality has not been improved during this evaluation cycle. Therefore, all water quality presented in this evaluation, including baseline and current conditions, is treated as representative of both the Careaga and Paso Robles aquifers.

Table 3-5. Summary of Water Quality in Rep. Network for Baseline Conditions (2015-2018)

Constituent	MCL[1] (mg/L)	WQO[2] (mg/L)	Baseline WQ[3] (mg/L)	MT[4] (mg/L)	Basis for MT	Baseline Conditions (2015-2018)		
						No. Samples	Maximum Concentration (mg/L)	Average Concentration (mg/L)
Total Dissolved Solids	—	600	550	600	WQO	56	1,065	553
Chloride	—	50	55	50	WQO	55	114	51
Sulfate	—	10	93	10	WQO	56	300	104
Boron	—	0.5	0.16	0.5	WQO	55	0.3	0.14
Sodium	—	20	49	20	WQO	56	157	46
Nitrate (as N)	10	1	4.3	10	MCL (baseline > WQO)	57	8.0	3

Notes:

[1]Nitrate concentration measured as nitrogen (U.S. EPA MCL).

[2]WQO is the median groundwater quality objective for the RWQCB's Santa Ynez sub-area of the Santa Ynez River Valley Basin (RWQCB, 2019).

[3]GSI, 2022, Section 3.2.3.

[4]Where the baseline water quality concentration exceeds the WQO (or MCL for nitrate), the baseline water quality concentration is considered the minimum threshold; per-well minimum thresholds are provided in Appendix E.

[5] Water quality summary reflects all representative monitoring wells network identified in Table 4-4 , Section 4.6.1 in the Plan (GSI, 2022). This includes public water system, municipal, domestic, and agricultural wells.

3.1.3.2 Current Conditions

Current conditions are defined by January 1st, 2019 through December 31st, 2024 for the representative network. A summary of the average water quality and number of exceedances for each of the six constituents during the current period (water years 2019 through 2024) is presented in Table 3-6. In response to DWR's RCA 5, data for each representative well during baseline and current conditions are compared to the minimum threshold values Appendix E.

Table 3-6. Summary of Water Quality in Rep. Network for Current Conditions (2019-2024)

Constituent	Minimum Threshold (mg/L)	Baseline Conditions (2015-2018)		Current Conditions (2019-2024)		
		# of Wells	Average (mg/L)	No. of Wells[1]	Average (mg/L)	Undesirable Result
Total Dissolved Solids	600	56	553	34	569	No
Chloride	50	55	51	16	56	No
Sulfate	10	56	104	17	107	Possible[2]
Boron	0.5	55	0.1	11	0.2	No
Sodium	20	56	46	18	50	Possible[2]
Nitrate (as N)	10	57	3	24	3	No

Notes: Exceedances of minimum thresholds compared to water quality in each well during the baseline period or water quality objective (WQO) (or maximum contaminant level [MCL] for nitrate), whichever is greater.

[1]There are 61 representative wells within the monitoring network.

[2]Three consecutive events have not yet occurred as defined by the Plan on p5-44.

Current water quality conditions in the representative monitoring network were generally consistent between baseline (2015–2018) and current (2019–2024) periods for TDS, chloride, boron, and nitrate. No undesirable results were triggered for these constituents.

- **TDS:** concentration remained below the MT in 26 of 34 representative wells with data during the current period (34 percent exceeded the MT).
- **Chloride:** concentrations have remained below the MT in 11 of 16 representative wells (31 percent exceeded the MT).
- **Boron:** concentrations remained below the MT in all representative wells during the current period.
- **Nitrate:** concentrations remained below the MT in 23 of 24 representative wells (4 percent exceeded the MT).

Sulfate and sodium increased over the evaluation period and exceeded their minimum thresholds (MTs) in a majority of wells with data. These are flagged as "possible" undesirable results, since the Plan's definition requires three consecutive exceedance events, which have not yet occurred.

- **Sulfate:** concentrations remained below the MT in 7 of 17 representative wells (59 percent exceeded the MT). Sulfate concentrations in these wells rose slightly, from 104 mg/L during the baseline period to 107 mg/L during the current period.
- **Sodium:** concentrations remained below the MT in 9 of 18 representative wells (50 percent exceeded the MT). Sodium concentrations in these wells rose slightly, from 46 mg/L during the baseline period to 50 mg/L during the current period.

While current data show exceedances of the minimum thresholds, changes to these thresholds are recommended based on best available science and DWR's Recommended Corrective Action 5, discussed below.

3.1.3.3 DWR Recommended Corrective Actions and Modifications

With regard to the water quality sustainability indicator, DWR provided one multi-part recommendation to be addressed as part of this Periodic Evaluation.

Recommended Corrective Action 5

For this sustainability indicator, DWR recommends the following:

a. The EMA GSP should reevaluate the quantitative definition of undesirable results related to degradation of water quality. The quantitative definition of an undesirable result should incorporate a combination of minimum threshold exceedances. Furthermore, the EMA shouldclearly explain how that quantitative criteria represents significant and unreasonable conditions occurring throughout the management area.
b. Provide an assessment of when and how GSA activities may impact water quality and how the GSAs will discern whether or not the increased degradation of water quality is distinct from the "other causes of increase salt and nutrients" as noted in the Plan.
c. Similar to the [recommendations relevant to] chronic lowering of groundwater levels sustainable management criteria and other sustainability indicators, the GSAs should not include water year type criteria when defining undesirable results. The GSAs should revise the definition of undesirable results and language pertaining to significant and unreasonable degradation of water quality to remove the non-drought year condition.
d. Clearly convey the minimum threshold values for each representative monitoring well including explaining which methodology was used (i.e., WQO, MCL, current conditions) to derive the minimum threshold values. The GSAs should also provide more detail regarding how average concentrations (i.e., between 2015 and 2018), January 2015 baseline conditions, and "current conditions" were derived, which should be presented for each well in a tabular format indicating the minimum threshold value and any comparative averages and baseline conditions for the entire Basin.

Changes to the Sustainability Criteria

Changes to the sustainability criteria based on DWR's corrective actions for groundwater quality are recommended to both maintain compliance with DWR requirements and maintain responsive local groundwater management. To that end, we suggest that the EMA GSA Board consider a Plan Amendment regarding groundwater quality as follows.

RCA 5a "The EMA GSA should reevaluate the quantitative definition of undesirable results related to degradation of water quality, which should incorporate a combination of minimum threshold exceedances…"

and

RCA 5d "Clearly convey the minimum threshold values for each representative monitoring well"

We recommend that the minimum threshold for water quality at each representative well be redefined as:

- The concentration of salt and nutrient constituent in each representative well equal to either 120 percent of the historic (baseline) concentration, the MCL for Nitrate as N, or the WQO for the Santa Rita subarea of the Santa Ynez River Valley Basin, whichever is greater (Table 3-8, Appendix F).

We propose that the undesirable result be revised as:

- More than 50 percent of these minimum thresholds in each well exceeding each minimum threshold for each 5-year evaluation period (in response to RCA 5a).

RCA 5b "Provide an assessment of when and how GSA activities may impact water quality"

- Since the Plan's adoption, the GSA has not conducted any project or management actions which could have impacted water quality. There have also been no comments by any beneficial users in the EMA regarding degraded water quality during the evaluation period. In future evaluation cycles, any degradation of water quality that can be attributed to the GSA and are distinct from "other causes of increased salts and nutrients" as sited in the Plan are proposed to be defined by the revised definition of an undesirable result.

RCA 5c "GSAs should revise the definition of undesirable results and language pertaining to significant and unreasonable degradation of water quality to remove the non-drought year condition"

- The EMA's Plan does not include any reference to water year type with regard to the water quality degradation Sustainability Indicator.

No interim milestones are being proposed with a Plan Amendment as part of this evaluation.

Minimum Thresholds

The minimum threshold for degraded groundwater quality in the EMA pertaining to salts and nutrients are presented in the Plan as follows: concentrations of TDS, chloride, sulfate, boron, sodium, and nitrate are equal to or greater than WQOs in 50 percent of representative wells or are equal to concentrations present when SGMA was enacted (January 2015) for three consecutive monitoring events. The WQOs for each constituent presented in Appendix E are considered the minimum thresholds for salts and nutrients for each well alongside current and baseline water quality (in response to RCA 5d). In cases where the ambient (prior to January 2015) water quality exceeds the WQO, the ambient water quality is considered the minimum threshold.

The current MTs for salts and nutrients presented in the Plan are based on Basin Plan water quality objectives (WQOs) for the RWQCB's Santa Ynez subbasin of the Santa Ynez Valley Basin. As presented in Table 3-7, the current WQO for the Santa Ynez sub-area, which includes a majority of the EMA's upland area, reflect regulatory water quality objectives similar to surface water. It appears that these WQOs pertains to the surface water within the southern portion of the RWQCB's Santa Ynez sub-basin's Santa Ynez River alluvium. The Santa Ynez uplands, however, are not influenced by the Santa Ynez River. Therefore, these WQOs do not represent native groundwater conditions in the EMA.

It's also understood that RWQCB's WQO boundaries have not been drawn in agreement with DWR Bulletin 118 basin boundaries and are anticipated to be reconsidered by RWQCB in the future.

Table 3-7. Comparison of Basin Plan Water Quality Objectives

Constituent	Groundwater WQO[1]		Surface Water WQO[1]
	Santa Ynez Sub-area	Santa Rita Sub-area	Santa Ynez Hydrologic Unit[2]
TDS	600	1,500	600 – 1,000
Chloride	50	150	20 - 100
Sulfate	10	700	220 - 350
Boron	0.5	0.5	0.4
Sodium	20	100	50 - 100

[1] RWQCB, 2019

[2] Santa Ynez Sub-basin or Hydrologic unit is composed of Cachuma Reservoir, Solvang, Lompoc subunits.

Note: Nitrate (as N) is not included on this table as the MT for nitrate as (N) has already been defined by the MCL, as defined in the Plan.

The EMA's groundwater WQO for sulfate (10 mg/L) based on the Santa Ynez Sub-area is a small fraction of both the Santa Rita Sub-area WQO (700 mg/L) and the surface water range in the area (220 to 350 mg/L). Sodium concentrations follow the same pattern: the EMA's WQO (20 mg/L) presented in the Plan is well below the Santa Rita Sub-area WQO (100 mg/L) and the surface water range in the area (50 to 100 mg/L).

Furthermore, no adverse impacts have been reported by beneficial users in the EMA since the time of adoption.

The water quality objectives for the Santa Rita sub-area more closely reflect groundwater conditions within the upland portion of the EMA and provide a more representative basis for the minimum threshold.

Table 3-8. Proposed Revision to Water Quality Minimum Threshold

Constituent	Minimum Threshold (mg/L)	
	Current	Proposed
TDS	600	1,500
Chloride	50	150
Sulfate	10	700
Boron	0.5	0.5
Sodium	20	100
Nitrate (as N)	10	10

Note:

Individual thresholds are presented in Appendix F.

The only well in the network has a baseline concentration which exceeds WQOs for Santa Rita. This well is AGL020007594-MIDDLE WELL and has the only unique minimum threshold for sodium at 157 mg/L.

It's also of note that none of the proposed MT listed in Table 3-8, exceed secondary MCLs or are categorized by irrigation limits outlined in RWQCB (2019) Table 3-1: *Guidelines for Interpretation of Quality of Water for Irrigation* to cause "increasing problems" or "severe" effects on crops and soils.

Undesirable Results

The Plan's definition of undesirable results was interrelated with minimum thresholds, which the DWR has recommended be revised. We propose that the undesirable result should be revised as more than 50 percent of these minimum thresholds in each well exceeding each minimum threshold for each 5-year evaluation period (in response to RCA 5a and 5c).

Measurable Objectives

Measurable objectives for groundwater quality degradation include categories relating to both non-point source contaminants (relevant to potable water wells) and salts and nutrients (relevant to agricultural and domestic [private] wells) within the groundwater quality monitoring network.

With regard to salts and nutrients, the measurable objective is to "maintain groundwater quality equal to or below WQOs presented in the relevant Water Quality Control Boards local Basin Plan, or equal to or below concentrations present in groundwater when SGMA was enacted in 2015" (per the Plan's Section 5.8.3.2).

Quantitatively, the measurable objectives are equal to the minimum thresholds presented in Appendix E.

Interim Milestones

In Section 5.8.4 of the Plan, interim milestones were not proposed (GSI, 2022). No interim milestones are being proposed with a Plan Amendment as part of this evaluation.

3.1.4 Land Subsidence Sustainability Indicator

This section addresses the Land Subsidence sustainability indicator with particular focus on the relevant sustainability goal objective in the EMA to "reduce or prevent land subsidence that causes significant and unreasonable effects to groundwater supply, current land uses, and water supply infrastructure, and property interests."

3.1.4.1 Current Conditions

Land subsidence caused by groundwater extraction is monitored as part of Plan implementation. Subsidence is estimated using InSAR data provided by DWR. Minor subsidence has been observed in the EMA using InSAR data provided by DWR for June 2015 through October 2025. These data show that an average subsidence of approximately 0.018 feet per year has occurred in certain parts of the EMA over the period of record.

This is considered a minor rate of land surface elevation change and is relatively insignificant and not a major concern for the EMA GSA. The documented subsidence could be due to tectonic activity, groundwater extraction, oil and gas extraction, or a combination of the three and is not considered to be significant and unreasonable.

The EMA GSA will continue to monitor annual land surface elevation change using InSAR and UNAVCO satellite systems.

3.1.4.2 Sustainable Management Criteria

Land subsidence that does not exceed the minimum threshold value defined in the Plan is not significant and not a major concern for the EMA. The EMA GSA will continue to monitor and report annually on any subsidence.

According to the Plan as adopted, the significant and unreasonable conditions for land subsidence are:

1. Land subsidence rates exceeding rates estimated by using InSAR data processed by TRE ALTAMIRA, Inc. for the period from June 13, 2015, through the most recent water year as presented in each annual report; and
2. Land subsidence that causes significant and unreasonable damage to or substantially interferes with groundwater supply, land uses, infrastructure, and property interests.

Total measured (negative) rate change in land surface elevation in the EMA based on these sources has been less than 0.06 foot, or 0.015 feet per year. The minimum threshold (per Section 5.9.2 of the Plan) for subsidence as measured by InSAR is a rate of subsidence that "does not exceed 0.08 feet (1 inch) per year for 3 consecutive years."

3.1.4.3 DWR Recommended Corrective Actions

With regard to the land subsidence sustainability indicator, DWR provided a single recommendation to be addressed as part of this Periodic Evaluation.

Recommended Corrective Action 6

For this sustainability indicator, the relevant recommendation includes addressing the following items:

> Reevaluate the sustainable management criteria for land subsidence and clarify in the GSP what specifically the GSA considers the quantitative definition of an undesirable results.

DWR clarifies that "the GSA appears to conflate the undesirable result with the minimum threshold.

Changes to the Sustainability Criteria

Relative to the Land Subsidence sustainability indicator, we suggest the EMA consider a change to Plan to clarify the relationship between the MT and Undesirable Results as follows:

> The minimum threshold for land subsidence shall be a lowering of ground surface elevations at a rate of 0.08 feet per year or greater based on measurements from both the InSAR network throughout the EMA and the single UNAVCO Continuous Global Positioning Systems (CGPS) station located in the EMA near the Santa Ynez airport.
>
> The undesirable result for subsidence shall be this rate of subsidence of 0.08 feet per year or greater observed for 3 consecutive years, or subsidence that causes significant and unreasonable damage to or substantially interferes with groundwater supply, land uses, infrastructure, and property interests.

This analysis of whether the minimum thresholds and undesirable results are triggered would be assessed annually during each annual reporting period and each Periodic Evaluation.

3.1.4.4 Progress Toward Maintaining Sustainability

Implementation of the Plan to date has been effective in avoiding significant and unreasonable groundwater elevation declines and, by extension, has prevented groundwater-related land subsidence in the EMA.

No undesirable results caused by groundwater pumping or implementation of PMAs have occurred in the EMA.

Figure 3-9. Land Subsidence (2015 to 2024)

3.1.5 Depletion of Interconnected Surface Water Sustainability Indicator

This section discusses the Depletion of Interconnected Surface Water sustainability indicator with particular emphasis on two of the relevant sustainability goal objectives in the EMA as state in the Plan to: "avoid depletions of interconnected surface water that have significant and unreasonable adverse impacts to beneficial uses of the surface water, including GDEs, caused by groundwater conditions occurring throughout the EMA" and to "maintain sufficient groundwater levels to maintain areas of interconnected surface water existing as of January 2015 when SGMA was enacted."

The adopted Plan identifies potential interactions between groundwater below the tributary alluvium, including areas that have identified potential groundwater dependent ecosystems (potential GDEs). The areas were referred to as Category A GDE areas. Based on this understanding, potential GDEs in the Category A GDE area, if confirmed, would be a beneficial use of interconnected surface water in the upland area.

As presented in the Plan, the minimum threshold for this sustainability indicator is: groundwater levels measured at piezometers proposed to be installed in the potential GDE areas of Alamo Pintado and Zanja de Cota Creek are 15 feet or less below the stream bed.

At this time, the degree of interconnectivity between surface water and groundwater is being further evaluated through the installation of two new piezometers near the potential GDE areas within in the EMA.

3.1.5.1 Current Conditions

Potential GDEs associated with one of the principal aquifers were identified on the distal ends of Alamo Pintado Creek and Zanja de Cota Creek where groundwater may be interconnected with surface water. As described in Section 2, the EMA GSA has installed two new piezometers in the potential GDE areas shown in EMA Plan Section 4 to assess whether and, if so, to what extent depletion of interconnected surface water may be occurring. These piezometers should be able to assess whether significant and unreasonable adverse impacts to GDEs or reductions in discharge of interconnected surface water to the Santa Ynez River may be occurring because of groundwater conditions.

3.1.5.2 Sustainable Management Criteria

At the time of this evaluation, the EMA GSA is improving the monitoring network for interconnected surface water. As discussed above, this effort is currently ongoing, and additional data is being collected. The EMA also intends to further evaluate this matter in accordance with forthcoming DWR guidance regarding methods and approaches to evaluate the rate, timing, and volume of depletions of interconnected surface water. Based on the foregoing, the EMA currently does not propose to develop new SMCs for the depletion of interconnected surface water.

3.1.5.3 DWR Recommended Corrective Actions

With regard to the depletion of interconnected surface water sustainability indicator, DWR provided three recommendations in multiple parts that they would like addressed as part of this Periodic Evaluation.

Recommended Corrective Action 1

For this sustainability indicator, recommendation 1 includes addressing two items:

- Incorporating the *Action Plan for Management of All Well Production Along the Lower Santa Ynez River, Above the Lompoc Narrows*, which was developed in response to a series of meetings

between the GSAs, DWR, and the State Water Board regarding the management of water pumped from the Santa Ynez River Alluvium, and

- Document the implementation of the action plan in future Periodic Evaluations of the Plan.

Recommended Corrective Action 2

For this sustainability indicator, recommendation 2 includes a request to address the need to provide additional analysis and description that more clearly delineates the physical properties of the principal aquifers and the physical relationship of the Santa Ynez River Alluvium with the two principal aquifers within the EMA.

Furthermore, the DWR has requested an analysis and description be provided to indicate improved understanding of the hydrogeologic contact, lateral flow, and vertical flow of groundwater between the principal aquifers, the river alluvium, and various surface streams – including tributaries. This analysis should inform the GSA's continued effort to understand interconnected surface water and the approach to manage depletions of interconnected surface water due to pumping.

Recommended Corrective Action 7

For this sustainability indicator, recommendation 7 includes a multi-part recommendation focused on estimating the location, quantity, and timing of stream depletion due to ongoing pumping. To this end, the GSA has been asked to address the following items:

a. Provide additional details to demonstrate how the proposed minimum thresholds and measurable objectives for interconnected surface water will avoid an unreasonable depletion of surface water, supported by an analysis of the potential impacts to beneficial uses and users. Additionally, staff recommend that the GSAs eliminate the non-drought year condition in the definition of the undesirable result for depletions of interconnected surface water. The GSAs should also use fall or seasonal low groundwater levels to assess minimum thresholds and quantify undesirable results.
b. Continue to fill data gaps, collect additional monitoring data, and implement the current strategy to understand and manage depletions of interconnected surface water and define segments of interconnectivity and timing.
c. Prioritize collaborating and coordinating with local, state, and federal regulatory agencies as well as interested parties to better understand the full suite of beneficial uses and users that may be impacted by pumping induced surface water depletion within the GSA's jurisdictional area.
d. Consider utilizing the interconnected surface water guidance, as appropriate, when issued by the Department to establish quantifiable minimum thresholds, measurable objectives, and management actions.

In response to these three RCAs we recommend that the EMA further evaluate this matter at a later time in accordance with forthcoming DWR guidance.

4 Status of Projects and Management Actions

The EMA GSA developed a portfolio of PMAs to implement and maintain the Basin's sustainability goal. These PMAs can be implemented in a phased manner as the conditions in the EMA dictate and in accordance with the SGMA regulations (§354.42 and §354.44). In the context of the Plan, projects are activities supporting groundwater sustainability that require infrastructure, whereas groundwater management actions refer to activities that support groundwater sustainability through policy and regulations without infrastructure. The potential need for PMAs is based on the groundwater conditions in the EMA.

The EMA GSA developed a ranking system of PMAs to be implemented in a phased manner as the conditions in the EMA dictate:

- Group 1 management actions were to be implemented within 1 year of Plan adoption and submittal.
- Group 2 management actions and Group 3 projects may be considered for implementation in the future as conditions in the Basin dictate and the effectiveness of the other management actions are assessed.

As noted in the Plan, the Group 2 management actions and Group 3 projects may not be necessary if the implementation of the Group 1 management actions results in conditions within the EMA that are trending toward meeting the EMA GSA sustainability goals and measurable objectives.

Table 4-1. Project, Management Actions, and Governance Summary

Project or Management Action Name	Description	Target Sustainability Indicator	Group No.	Project Status	Expected Schedule (Start)	Benefits Observed to Date or Anticipated Benefits	Estimated Accrued Benefits at Completion
Management Actions							
Joint Powers Authority	Formation of an EMA-wide JPA for the purpose of SGMA implementation.	All	NA	Complete	Fall 2024	Strengthen groundwater management	Coordinated EMA-Wide Governance
Implement Above Narrows Action Plan	Identify all wells within the Above Narrows area within the Santa Ynez River alluvium.	Depletion of Interconnected Surface Water	NA	Complete	Winter 2024	Improve understanding of groundwater extractions throughout EMA	Groundwater Levels & Well Registration
Appointment of Executive Director	Appointment of executive director allowed for efficient SGMA implementation.	All	NA	Complete	Fall 2024	Improved governance	Administrative Efficiency
Appointment of Agricultural Representative to Board	Appointment of director to represent agriculture on the GSA board.	All	NA	Complete	Fall 2024	Improvement of agricultural representation in groundwater management	Stakeholder Representation & Engagement
Increased Reliance on the Citizen Advisory Group	Role of CAG elevated in lieu of agency representatives' meeting, which have been terminated.	All	NA	Complete	Fall 2024	Improved governance	Public Engagement & Transparency
Address Data Gaps							

Project or Management Action Name	Description	Target Sustainability Indicator	Group No.	Project Status	Expected Schedule (Start)	Benefits Observed to Date or Anticipated Benefits	Estimated Accrued Benefits at Completion
More Frequent Groundwater Monitoring	Implemented fall season groundwater level monitoring in water year 2020.	Groundwater Levels	1	Ongoing	Fall 2018	Increased understanding of seasonal change in groundwater elevations	Increased understanding of seasonal change in groundwater elevations
Monitoring Network Expansion and Data Improvements: Monitoring Well	Grant-funded effort to locate, and design dedicated deep monitoring well to improve understanding of groundwater conditions.	Groundwater Levels & Storage	1	Ongoing	Summer 2025	Improved understanding of groundwater conditions	Improved understanding of groundwater conditions
Monitoring Network Expansion and Data Improvements: GDE Piezometers	Grant-funded effort to locate, and design dedicated piezometers to improve understanding of groundwater conditions on potential GDE.	Interconnected Surface Water & Ecosystem Monitoring	1	Ongoing	Fall 2026	Improved understanding of interconnected surface water conditions	Improved understanding of interconnected surface water conditions

Project or Management Action Name	Description	Target Sustainability Indicator	Group No.	Project Status	Expected Schedule (Start)	Benefits Observed to Date or Anticipated Benefits	Estimated Accrued Benefits at Completion
Projects							
Well Registration and Metering Program	Developed ordinance to register wells and document pumping for wells within EMA.	Groundwater Levels & Storage	1	Ongoing	Winter 2025	Improved understanding of groundwater users, refined groundwater extraction data	Improved understanding of groundwater users, refined groundwater extraction data
Extraction Fee Study and Implementation of Pumping Fee	Grant-funded effort to implement revenue generation to fund Plan implementation and management activities.	Groundwater Levels & Storage	1	Completed and Ongoing	Winter 2025	Decreased extraction encouraged	Decreased extraction encouraged
Well Permit Reviews for New and Replacement Wells	Reviews for new and replacement wells consistent with the Governor's 2022 Executive Order.	Groundwater Levels & Storage	1	Complete	Spring 2022	Quantify new groundwater users	Quantify new groundwater users

Notes

CAG = Citizens Advisory Group

EMA = Santa Ynez River Valley Groundwater Basin - Eastern Management Area

GDE = groundwater-dependent ecosystem

GSA = Groundwater Sustainability Agency

JPA = Joint Exercise of Powers Agreement

SGMA = Sustainable Groundwater Management Act

4.1 Management Actions

The following is a summary of the status of implementation of management actions during the 5-year evaluation period. Management actions described herein are non-structural programs or policies that are intended to reduce or optimize local groundwater use.

4.1.1 Joint Powers Authority

As authorized by SGMA, the Santa Ynez River Groundwater Basin is organized as three distinct management areas—delineated according to the geographic boundaries and characteristics of the underlying local aquifers. These three areas (the WMA, CMA, and EMA) are each overseen by an independent GSA and formed under independent JPAs. Each GSA retains full authority over management decisions within its jurisdiction and is responsible for collecting groundwater and related data specific to its area. Since the Plan's adoption, the GSAs have begun implementing Plan actions using grant funding provided by DWR as presented in Table 4-2.

Expected Benefits and Evaluation of Benefits

The EMA governance structure strengthens groundwater management by allowing the GSA to tailor monitoring, data collection, and management actions to the specific hydrogeologic and operational conditions within its management area. Benefits include more responsive local decision-making, improved data quality and relevance through area-specific monitoring priorities, and greater stakeholder engagement as the GSA works directly within its own community.

Table 4-2. Grant Implementation Schedule

To be provided prior to submission.

4.1.2 Implement Above Narrows Action Plan

In late 2023, in response to DWR's review of the 2022 Plans submitted by the three management areas, the GSAs developed and adopted an action plan to identify groundwater pumpers within the Santa Ynez River alluvial system located upstream of the Lompoc Narrows. Submitted to DWR in January 2024, the action plan commits the GSAs to identifying and cataloging all wells within the river alluvium—including those located outside GSA-member boundaries—and to conducting targeted outreach and educational workshops for these pumpers. The overarching goal is to encourage that water use in this area is consistently reported, either to a GSA or to the State Water Board and the SYRWCD.

Expected Benefits and Evaluation of Benefits

This action plan is helping close data gaps in the above-Narrows alluvium area, thereby improving the completeness and accuracy of groundwater extraction estimates used in water budget calculations. By extending outreach to pumpers outside GSA-member boundaries, the effort also reduces the risk of unreported or undocumented extraction, supports more equitable data coverage across the EMA, and strengthens relationships between the GSAs and water users.

4.1.3 Appointment of Executive Director

The EMA GSA has hired a dedicated Executive Director to oversee day-to-day GSA operations. Regular Board meetings continue to be held at a local community venue, helping to maintain consistent engagement with stakeholders and the public.

Expected Benefits and Evaluation of Benefits

Hiring a dedicated Executive Director has improved the EMA GSA's operational efficiency and continuity by providing focused, day-to-day leadership for Plan implementation, rather than relying solely on Board members' limited availability. This role also strengthens communication and follow-through on management actions, data collection efforts, and stakeholder outreach. Holding Board meetings at a consistent, accessible local venue supports ongoing transparency and encourages sustained public participation in GSA decision-making.

4.1.4 Appointment of Agricultural Representative to Board

The EMA JPA establishes a five-member GSA Board, consisting of one Director appointed by each of the four public agency members, along with a fifth, non-member Director specifically designated to represent the EMA's agricultural interests. This Agricultural Director is selected by the four member-agency Directors through a process outlined in the JPA.

Expected Benefits and Evaluation of Benefits

Providing dedicated representation for agricultural interests on the GSA Board is intended to ensure that this key groundwater-use sector has a direct and consistent voice in EMA decision-making, independent of any single member agency's boundaries or priorities. This structure helps improve the balance and diversity of interests in Board decisions by incorporating agricultural perspectives on issues such as extraction management, fee structures, and well registration requirements, while also building trust and cooperation between the agricultural community and the GSA.

4.1.5 Increased Engagement of the Citizen Advisory Group

Established in 2019, the EMA CAG played an active role in the development of the Plan. The EMA GSA Board continues to regularly consult the CAG on key implementation matters, including well registration, metering, and production reporting ordinances; groundwater production fees; technical studies; and various policy decisions brought before the Board. The CAG has also been fully involved in the preparation and review of this evaluation.

Expected Benefits and Evaluation of Benefits

Regular and substantive engagement with the CAG is expected to improve the quality and public acceptance of GSA decisions by incorporating diverse community input before key actions—such as ordinances, fee proposals, and technical studies—are finalized. This ongoing consultation also serves as an early feedback mechanism, allowing the GSA Board to identify and address stakeholder concerns proactively rather than after decisions have already been made, thereby reducing the likelihood of later disputes or opposition.

4.2 Projects

4.2.1 Well Registration and Metering Program

This program has led to the adoption of two EMA GSA ordinances for well registration, metering, and production reporting for wells within EMA.

Realized Benefits

Implementation of the well registration, metering, and production reporting ordinances (EMA Ordinance Nos. 2025-01 and 2025-03) will improve the EMA GSA's ability to identify and document groundwater users and their extraction volumes, providing a more complete dataset of pumping activity within the EMA than was previously available.

Expected Benefits

Continued enforcement and expansion of the well registration and metering program is expected to further improve the accuracy of extraction data used in water budget calculations and model calibration, supporting more precise tracking of progress toward sustainability goals.

4.2.2 Extraction Fee Study and Implementation of Pumping Fee

This program consists of a grant-funded effort to implement revenue generation to fund Plan implementation and management activities.

Realized Benefits

The extraction fee study and subsequent implementation of a pumping fee have provided the EMA GSA with a dedicated funding mechanism to support ongoing Plan implementation, reducing reliance on grant funding alone and improving the GSA's financial sustainability.

Expected Benefits

This funding mechanism is expected to provide a stable, long-term revenue source to support continued monitoring, data collection, model updates, and management actions, helping the EMA GSA consistently fund Plan implementation activities even as grant funding opportunities fluctuate or expire.

4.2.3 Well Permit Reviews for New and Replacement Wells

This program provided for reviews of proposed new and replacement wells to ensure compliance with the Governor's 2022 drought-related Executive Orders while they were in effect (EO N-7-22 and EO N-5-23).

Realized Benefits

Implementing well permit reviews consistent with the Governor's drought-related Executive Orders allowed the EMA GSA to evaluate proposed new and replacement wells for consistency with the Plan's sustainability goals prior to construction, helping prevent new pumping impacts that could undermine progress toward sustainability. Those Executive Orders are no longer in effect at this time.

5 Basin Setting Based on New Information or Changes in Water Use

This section focuses on how the EMA's understanding of the basin setting has changed based on new information (as presented in Section 2) and changes in water use. Whereas Section 2 presents a summary of the new information the GSA collected about the EMA, this section briefly presents the original basin setting and hydrogeologic conceptual model in the EMA, then focuses on the effects of significant new changes in the understanding of the basin setting on the EMA's ability to sustainably manage groundwater.

5.1 Hydrogeologic Conceptual Model

The Plan presented the EMA's understanding of the physical setting and characteristics of the EMA groundwater system, which is referred to as the HCM. The EMA's HCM allowed for the identification and description of the two principal aquifers within the EMA, the groundwater conditions within those aquifers, and finally in the data gaps that "could affect the ability of the Plan to achieve the sustainability goal" (§ 354.38 [a]).

The Basin is located within the Santa Ynez River watershed in Santa Barbara County and covers 319 square miles, with the EMA comprising the easternmost 150 square miles. Only the Uplands groundwater system is regulated under SGMA.

The EMA is a structurally complex, fault-bounded depression shaped by tectonic activity, containing a thick sedimentary sequence including the Monterey, Careaga Sand, and Paso Robles formations. The EMA is bounded by the San Rafael and Santa Ynez Mountains, the Purisima Hills, and a divide shared with the San Antonio Creek Valley Groundwater Basin (San Antonio Groundwater Basin). The two principal aquifers—the Paso Robles Formation and Careaga Sand—together extend over 1,500 feet deep (up to 3,500 feet maximum) and are overlain by Older Alluvium. The Paso Robles Formation shows significant heterogeneity, with well yields ranging from under 100 to 1,500 gpm; the Careaga Sand, roughly 800 feet thick on average, yields 12 to 325 gpm.

Recharge sources include mountain front recharge, streamflow percolation, precipitation, and irrigation return flow; discharge occurs via springs, evapotranspiration (ET), and primarily pumping. Groundwater flows generally north to south-southwest.

5.1.1 Updates to Hydrogeologic Conceptual Model

This section summarizes new data and analysis related to the revised understanding of the HCM, including:

- Improvements to understanding of the physical setting and characteristics of the principal aquifers
- Water use and supply
- Climate variations
- Implementation of PMAs

The numerical groundwater model was originally developed in support of the Plan and has since been updated based on data from recent, increasingly variable hydrologic conditions. The model update has benefited from additional recent spring and fall groundwater measurements. Fall groundwater measurements were not widely available throughout the EMA for most of the historical period included in the original Plan; therefore, their inclusion has already improved the model's ability to represent seasonal groundwater level fluctuations and aquifer response.

Incorporating this expanded seasonal dataset is expected to improve the model's overall calibration and predictive reliability going forward, particularly in representing seasonal high and low groundwater conditions across the EMA. As additional years of spring and fall data are collected, subsequent model refinements will strengthen the model's utility for evaluating sustainability indicators, refining water budgets, and supporting future management decisions. The previously identified data gaps and how these gaps were addressed are also presented.

5.1.2 Physical Setting and Characteristics of the Principal Aquifers

5.1.2.1 Geophysical Surveys

During preparation of the EMA's Plan a series of geophysical investigations were conducted to improve subsurface understanding across all three management areas. Within the EMA, these geophysical surveys were conducted to provide additional information about water bearing deposits within the EMA, with particular focus on:

- The nature of the boundary between the EMA and CMA.
- The nature of the connection between several of the north-south trending tributaries (e.g., Alamo Pintado Creek) within the Santa Ynez Uplands and the Santa Ynez River Alluvium.
- Improving the understanding of the subsurface conditions in the Santa Ynez Uplands.

During the fall of 2019, planning for this survey was underway to delineate aquifer extents and connectivity between the management areas. Consistent coordination with the other management areas was conducted to confirm consistent aquifer properties and boundary flows between the management areas within the Basin. These geophysical surveys were completed in 2020 and 2021 and included land-based methods conducted by hydroGEOPHYSICS, Inc., and a combination of both aerial (helicopter based) and additional land-based methods conducted by Ramboll. The results are used to further refine the EMA's HCM. The results of the geophysical surveys were not available at the time of the preparation of the Plan.

The methods included seismic refraction and transient electromagnetic (TEM) surveys that were conducted in September 2020. Hydrogeophysics conducted both audio-frequency magnetotellurics (AMT) and P-wave refraction surveys.

The following year, the EMA deployed aerial (SkyTEM) and ground-based geophysical tools to provide higher-resolution, depth-penetrating electromagnetic data, allowing for more detailed characterization of the EMA's lithologic variations to refine the geologic conceptual model.

5.1.2.1.1 Seismic Survey (AMT and P-Wave Refraction)

In 2020, a seismic geophysical investigation was conducted in the EMA to characterize depth to bedrock and alluvial thickness. Two survey methods were used:

- P-wave refraction
- AMT

The results showed the distribution of principal aquifers and underlying bedrock across the southernmost portion of the EMA (HGI, 2020; included as Appendix G).

The results support the EMA's understanding of the geology containing the principal aquifers in the uplands. The results indicate the presence of three distinct materials consisting of:

- The uppermost near-surface (low-velocity) materials corresponding to unconsolidated alluvial sediments composed of a mixture of gravel, sand, and clay.

- Underlying (intermediate-velocity) layer representing the Paso Robles Formation and Careaga Sand.
- The bottommost (high-velocity) layer interpreted as weathered Monterey Shale.

The depth to bedrock in this southern portion of the EMA varies between approximately 35 and 200 feet below ground, and lateral variability in seismic velocities suggests significant heterogeneity in lithology and depositional characteristics. In regions with shallow bedrock, groundwater may become surface water in the distal ends of tributaries These findings refined the HCM presented in the Plan by providing spatially resolved constraints on formation thicknesses and transitions.

5.1.2.1.2 Geophysical Survey (tTEM and SkyTEM)

In 2021, Ramboll conducted a geophysical survey of the EMA to support geological interpretations and address Plan data gaps. The study area was surveyed using two investigatory methods:

- Tow-transient electromagnetic (tTEM) surveying.
- Airborne electromagnetic (AEM) surveying, which is referred to as SkyTEM due to its aerial nature.

The geophysical survey provided a detailed 3D resistivity model to depths of approximately 1,000 feet across a large portion of the Santa Ynez River Valley, revealing significantly greater structural complexity than reflected in the existing HCM. Numerous faults, especially in areas such as the Zaca Oil Field and along the northern basin boundary near the San Rafael Mountains, were both confirmed and refined relative to the previous understanding of these features.

The survey provided the following information, which confirms and improves the understanding of the geologic structure:

- West of Los Olivos and east of the La Purisima Hills, the Careaga Sand is observed at or near the surface (outcropping) as expected.
- Near the area of the Zaca Oil field, the depth to the Careaga Sand is somewhat shallower than previously understood.
- Where the Careaga Sand is absent, the Paso Robles Formation is present to the ground surface, which dominates much of the EMA.
- The Paso Robles Formation is composed of relatively shallow coarse-grained zones and deeper fine-grained layers. The upper portions of the Paso Robles Formation are interpreted as being of non-marine origin while it is likely that the deepest parts of the Paso Robles formation are of marine origins.
- The Careaga Formation at relatively shallow depths in the area of the Zaca Oil Field area.
- Near the shared border of the San Antonio Basin and near the northern edge of the EMA, the coarse-filled synclines north of the Zaca Oil Field may have reduced hydraulic connectivity toward the south due to structural impediments such as folded and faulted clay layers.

5.1.3 Groundwater Conditions

Since Plan adoption, the understanding of the groundwater conditions have been refined. They are updated annually in the EMA's annual reporting of both spring and fall conditions in each principal aquifer and are described in Section 3.

In addition to the measured data as described, two reports have been published by the U.S. Geological Survey (USGS) focused on the adjacent San Antonio Groundwater Basin in 2021 and 2022. These reports include:

- Simulation of Groundwater and Surface-Water Resources of the San Antonio Creek Valley Watershed, Santa Barbara County, California (USGS, 2021)
- Hydrogeologic Characterization of the San Antonio Creek Valley Watershed, Santa Barbara County, California (USGS, 2021)

These reports confirm the understanding, as presented in the Plan, that it is unlikely that groundwater flows across this shared border. According to these reports:

> "… subsurface inflow [into the San Antonio Basin] from the adjacent Santa Maria and Santa Maria Ynez River Valley groundwater basins is negligible" (USGS, 2022).
>
> Furthermore "a substantial reduction in groundwater levels in the San Antonio Creek Valley Watershed could potentially induce subsurface flow through saturated aquifer materials, but the topography and underlying structure… may prevent such an occurrence" (USGS, 2022).
>
> "The groundwater in the San Antonio Basin is separated from the Santa Ynez River Valley groundwater basin by the Purisima Hills to the south" (USGS, 2022).

Groundwater modeling conducted for San Antonio Basin suggest that a small amount of groundwater flow across this shared boundary may be possible.

> "This groundwater modeling simulated a source of water outside the model area that supplied water to two cells along the eastern boundary adjacent to the EMA based on groundwater conditions within a single well 8N/31W-21J1, which is the only well with relatively long-term water-level data in the area. Pumping in this well was assumed to induce groundwater flow from the Santa Ynez groundwater basin through hydrologically connected aquifer material."

Together, these documents suggest that the flow across the basin boundary limited. These recent reports, while focused on the adjacent basin, effectively close the data gap in the understanding of the subsurface flow along that shared border.

5.1.4 Water Supply and Use

Metered groundwater production data accuracy has not changed significantly during the Periodic Evaluation period. Metered municipal production from the City of Solvang and ID No. 1 is of high accuracy self-reported pumping from SYRWCD growers and mutual water companies remains medium accuracy due to the current paucity of calibrated flow meters.

The EMA GSA's Well Registration and Meter Installation Program is intended to close this data gap going forward. Agricultural water use continues to be estimated using OpenET data. Refinements introduced during the water year 2025 rate study — including revised irrigation efficiency assumptions and reclassification of certain unirrigated crop types — reflect evolving on-the-ground conditions, though these methodology updates have only been partially incorporated into annual reporting to date.

5.1.5 Water Quality

Constituents of concern in the EMA are based on existing MCLs and secondary maximum contaminant levels (SMCLs) for drinking water and, for agricultural uses, on water quality objectives in the RWQCB's Basin Plan (2019).

The USGS/SWRCB California Oil, Gas, and Groundwater (COGG) Program is evaluating whether nearby oil and gas activity (Zaca Oil Field) could affect groundwater quality; results are not yet available, but findings

will be considered as part of the EMA's monitoring program once released and included in subsequent Annual Reports.

5.1.6 Groundwater Dependent Ecosystems

As described in the Plan, potential Category A GDEs have been identified at the downstream ends of Alamo Pintado Creek and Zanja de Cota Creek, where groundwater may be interconnected with surface water. The EMA GSA continues to analyze this matter and has installed two new piezometers in these potential GDE areas to further assess the interconnectivity between surface water and groundwater and whether adverse impacts to potential GDEs are occurring. No new information regarding GDEs has become available during the reporting period that would necessitate revisions to the Plan.

5.1.7 Depletion of Interconnected Surface Water

At this time, the GSA does not propose to develop new SMCs for the Depletion of Interconnected Surface Water. As the monitoring networks, tools, and data are updated, this matter will continue to be evaluated and addressed by the EMA. For further discussion, refer to Section 3.1.5. No new information regarding interconnected surface water has become available during the reporting period that would necessitate revisions to the Plan.

5.2 Water Use Changes and Associated Water Budget

As discussed in the Plan, the EMA GSA has developed water budgets to provide a quantitative account of water entering and leaving the EMA, including historical, current, and projected conditions related to hydrology, water demand, water supply, land use, groundwater and surface water interaction, and subsurface groundwater flow. Trends in water use, groundwater in storage, and related conditions over the water year 2019 through 2024 evaluation cycle are presented in Section 3.1.2.

While minor changes to land use or cropping patterns have occurred within the EMA with changes to the total acreage planted and irrigated in several crop categories, these changes have not materially changed water demands for agriculture during this evaluation period.

However, the methodology used to estimate agricultural water use has been refined over the period relative to the estimate of ET by remote sensing methods (principally OpenET), implementation of the EMA GSA's Well Registration and Meter Installation Program and an associated water use reporting program. Agricultural water estimation using OpenET data have been refined during the water year 2025 based on further evaluation associated with the extraction fee rate study, which included revisions to irrigation efficiency assumptions and reclassification of certain unirrigated crop types. Together, these changes have improved the accuracy of water use estimates, and further improvement is in progress.

Surface water reliability has not changed significantly during the evaluation cycle and remains an integral portion of the water supply portfolio available to the two municipal purveyors of ID No. 1 and the City of Solvang.

The sustainable yield of the EMA (12,870 AFY) has not changed since adoption of the Plan. While the EMA has benefited from several additional years of hydrogeologic data since the balanced historical period presented in the Plan, the additional years of data have not been evaluated as a similarly balanced period, which would be required to reconsider and potentially revise the sustainable yield within the EMA.

While groundwater pumping recently exceeds the sustainable yield, as evidenced by slightly declining groundwater elevations and declining storage trends, these declines have not been significant and

unreasonable. The EMA has not experienced any undesirable results for either the Chronic Lowering of Groundwater Levels or the Reduction of Groundwater in Storage sustainability indicators.

A discussion of the current water budget during this implementation period is presented in Section 3.1.2.

5.3 Model Update

The EMA has updated the existing numerical groundwater flow model. The model update focused on incorporation of updated datasets including water level data available since the existing model period through water year 2018. The numerical groundwater model was used to inform the water budget and storage calculations presented in Section 3.1.2, along with the HCM, which was discussed in Section 5.1.1.

Groundwater level data through water year 2024 from the representative wells within the Careaga Sand and Paso Robles Formation principal aquifers and other water wells were incorporated into the model inputs as available. Likewise, climatic conditions, including precipitation, evaporation, runoff, and available streamflow data, were incorporated. Based on these updates, GSI conducted a post-audit of the model to evaluate the previous calibration results to assess the post-2018 model performance and to support water budget preparation.

6 Monitoring Networks

6.1 Assessment of Plan Monitoring Networks

Since adoption of the Plan, the GSA has conducted a review of all of the monitoring networks. Based on that review, several adjustments have been made to the wells included in the monitoring networks, as discussed below.

6.1.1 Groundwater Levels/Groundwater in Storage

Review of groundwater level / groundwater in storage monitoring network data included compilation of well construction records from USGS National Water Information System (NWIS), County, and City databases and the DWR's Online System for Well Completion Reports. This was conducted to fill previously identified data gaps regarding well depth and perforated intervals for the 24 representative monitoring sites. Based on this assessment, several data gaps were successfully filled, including confirmation of aquifer completion for most wells and refined depth information for several wells such as 6N/29W-08P01, 7N/30W-16B01, and 7N/30W-29D01. However, some data gaps remain for a subset of wells (e.g., 7N/30W-19H01, -30M01, 7N/31W-36L02, 7N/31W-34M02, and 6N/31W-03A01) where construction records were not available. These wells have been prioritized for future video logging, contingent on available grant funding, to further resolve their aquifer of completion.

At the time of the Plan submission, 24 representative wells were identified to define SMCs and to use to manage the EMA; 15 in the Paso Robles Formation and nine in the Careaga Formation. During the subsequent bi-annual groundwater monitoring events that have historically been conducted by the County, an additional set of wells are measured to obtain water level data. However, under the confidentiality conditions in the County's legacy access agreements with owners of these wells, the GSAs are precluded from displaying the locations of these wells in public reports. New access agreements being established under efforts to expand the monitoring networks include permission to post well data and locations in reports. Figure 6-1 presents the representative wells used in recent water level monitoring efforts.

After submission and approval of the Plan, the GSAs worked to add wells to the water level monitoring network to improve sustainable management. The following sections document the various GSA and consultant efforts and additional efforts among stakeholders and GSAs in the EMA to improve the monitoring networks.

The adjustments made to the wells included in the monitoring networks include:

- Well 6N/29W-08P01 is no longer representative of the Paso Robles Formation because water levels have declined below the well's depth since spring 2020, and it is recommended for removal from the water level monitoring network, while nearby well -08P02 should be retained to adequately represent the same area.
- Well 7N/30W-16B01 on Sedgewick Ranch was determined to be completed across both the Paso Robles Formation and the overlying tributary alluvium (not a principal aquifer) and is likewise recommended for removal from the water level monitoring network, consistent with SGMA's requirement that representative wells characterize a single principal aquifer.

Three wells previously used near the San Antonio Groundwater Basin border (22M01, 22N01, 22J01) are being reevaluated for continued inclusion in the water level monitoring network.

Several candidate replacement and augmentation wells have been identified, including privately owned wells at Star Lane Vineyards and the San Lorenzo Seminary and wells near Santa Agueda Creek, Marre Canyon, Happy Canyon, and the area near Zaca and Alamo Pintado Creeks.

A dedicated monitoring well is being installed along Foxen Canyon Road, which will be completed solely within the Paso Robles Formation to a planned depth of approximately 300 feet and incorporated into the water level monitoring network.

Remaining actions include completing video logging of the prioritized wells, finalizing agreements with willing well owners for network inclusion, and constructing the proposed dedicated monitoring well and piezometers, which will take place in fall 2026. No changes to monitoring frequency have been made at this time. The GSA will continue bi-annual water level measurements and will incorporate all network updates, well additions/removals, and revised piezometer locations into the Monitoring Network Module upon finalization.

6.1.2 Interconnected Surface Water

Interconnected surface water monitoring remains an ongoing effort. Expansion of the groundwater monitoring network to support GDE and interconnected surface water characterization, including installation of the piezometers (Section 4.1), falls under the Basin's Group 1 management actions (Address Data Gaps / Monitoring Improvement and Expansion), meaning it is already underway but not yet fully implemented. As with the other Group 1 actions, the network to characterize interconnected surface water conditions should be considered a work in progress that will continue to be refined when new piezometers are installed and additional data become available (see Figure 6-2).

The monitoring network for interconnected surface water is being developed through the identification and design of two dedicated piezometers near Category A potential GDEs at the confluences of Alamo Pintado Creek and Zanja de Cota Creek with the Santa Ynez River. They are pending installation and will be incorporated into the interconnected surface water network.

Figure 6-1. Groundwater Level Monitoring Network

Figure 6-2. Interconnected Surface Water Monitoring Network

Degraded Water Quality

The existing Water Quality Monitoring Network, as defined in the Plan, is presented in Figure 6-3. The network is composed of existing wells that are currently sampled for water quality under existing non-SGMA programs (i.e., public water supply well regulations).

Since Plan adoption, the GSA has evaluated the water quality monitoring network documented in the Plan using data compiled from USGS NWIS and Safe Drinking Water Information System (SDWIS). The current analysis compared baseline conditions (water years 2015 through 2018) against current conditions (water years 2019 through 2024) for the six constituents tied to sustainable management criteria: TDS, chloride, sulfate, boron, sodium, and nitrate (Section 3.1.2). The network consists of 61 wells, composed of public supply, agricultural, municipal, and domestic wells.

The data gap identified in the Plan regarding a lack of well construction information for these wells has not been filled for the majority of the network; a total of 58 of the 61 total wells have an" unknown" aquifer designation associated with an unknown depth and perforation depths (though completion information is forthcoming from a well registration program that is underway). Most of the wells are presumed to be completed within the Paso Robles Formation with some completed in the underlying Careaga Sand aquifer. Three wells were confirmed to be completed in the Careaga Sand (4210013-001, -006, and -015). Well logs, drillers' reports, or video logging would be required to confirm aquifer completion at the remaining sites.

The groundwater quality network is monitored under several different programs and agencies, including:

- The USGS, which collects water quality data on a routine basis under the Groundwater Ambient Monitoring and Assessment (GAMA) program and the NWIS. These data are stored in SWRCB's GeoTracker GAMA Program database.
- The City of Solvang and ID No. 1 which gather and use data from sampled supply wells for their annual water quality reports to comply with their water supply permits and California Safe Drinking Water Act requirements and reports to DDW and their customers.
- Multiple sites that are used to monitor groundwater quality as part of investigation or compliance monitoring programs through the Central Coast RWQCB.
- The Santa Barabara County Water Agency which monitors water quality for several wells in conjunction with water level measurements collected within the Basin.
- Constituent-specific sampling for the monitoring network is inconsistent and relatively incomplete, with boron in particular reported at far fewer wells than nitrate, TDS, chloride, sodium, or sulfate. The relative lack of boron samples limits the EMA's ability to evaluate sustainable management criteria for boron at most representative sites.

The monitoring network for water quality is being amended to remove four wells. Four wells in the water quality monitoring network had no reported data for any of the six constituents in either period (4200612-006, 4210020-011, AGL020012024-CAMP4_DOM, and AGL020012024-CAMP4_IRR); therefore, these four wells are being removed from the water quality monitoring network.

Figure 6-3. Groundwater Quality Monitoring Network

6.1.3 Land Subsidence

Land subsidence within the EMA is monitored using InSAR and CGPS operated through the NAVSTAR Consortium (UNAVCO). Together, these two systems constitute the EMA's land subsidence monitoring network and are considered sufficient to adequately measure and document subsidence conditions throughout the EMA.

Because the subsidence data collected to date do not show any significant changes, the GSA does not propose modifying either the methodology used to evaluate subsidence or the monitoring network itself as part of this evaluation.

7 GSA Authorities and Enforcement Actions

The GSA has taken several actions during the evaluation cycle related to the 2023 California Water Code (CWC) to implement the Plan. This section describes the enforcement or legal actions taken to further the sustainability goal, including funding and fee actions, and adoption of ordinances requiring well registration and installation of volumetric measuring devices on wells (i.e., flow meters). Applicable CWC sections and related actions taken by the GSA are presented in Table 7-1.

Table 7-1. Applicable Authorities and Actions

Legal Authority	Description	Update for the Periodic Evaluation
CWC § 10723.2	The groundwater sustainability agency shall consider the interests of all beneficial uses and users of groundwater, as well as those responsible for implementing groundwater sustainability plans. These interests include, but are not limited to, all of the following: (a) Holders of overlying groundwater rights, including: (1) Agricultural users, including farmers, ranchers, and dairy professionals. (2) Domestic well owners. (b) Municipal well operators. (c) Public water systems. (d) Local land use planning agencies. (e) Environmental users of groundwater. (f) Surface water users, if there is a hydrologic connection between surface and groundwater bodies. (g) The federal government, including, but not limited to, the military and managers of federal lands. (h) California Native American tribes. (i) Disadvantaged communities, including, but not limited to, those served by private domestic wells or small community water systems. (j) Entities listed in Section 10927 that are monitoring and reporting groundwater elevations in all or a part of a groundwater basin managed by the groundwater sustainability agency.	The EMA GSA adopted the Plan in January 2022.
CWC § 10723.6	(a) A combination of local agencies may form a groundwater sustainability agency by using any of the following methods: (1) A joint powers agreement. (2) A memorandum of agreement or other legal agreement. (b) A water corporation regulated by the Public Utilities Commission or a mutual water company may participate in a groundwater sustainability agency through a memorandum of agreement or other legal agreement. The authority provided by this subdivision does not confer any additional powers to a non-governmental entity.	A Joint Powers Agreement was formed for the EMA by four local agencies (see more details in Section 4.1.1).

Legal Authority	Description	Update for the Periodic Evaluation
CWC § 10725.2	(a) A groundwater sustainability agency may exercise any of the powers described in this chapter in implementing this part, in addition to, and not as a limitation on, any existing authority, if the groundwater sustainability agency adopts and submits to the department a groundwater sustainability plan or prescribed alternative documentation in accordance with Section 10733.6. (b) A groundwater sustainability agency has and may use the powers in this chapter to provide the maximum degree of local control and flexibility consistent with the sustainability goals of this part.	The EMA GSA adopted the Plan in January 2022.
CWC § 10725.4	(a) A groundwater sustainability agency may conduct an investigation for the purposes of this part, including, but not limited to, investigations for the following: (1) To determine the need for groundwater management. (2) To prepare and adopt a groundwater sustainability plan and implementing rules and regulations. (3) To propose and update fees. (4) To monitor compliance and enforcement. (b) An investigation may include surface waters and surface water rights as well as groundwater and groundwater rights. (c) In connection with an investigation, a groundwater sustainability agency may inspect the property or facilities of a person or entity to ascertain whether the purposes of this part are being met and compliance with this part. The local agency may conduct an inspection pursuant to this section upon obtaining any necessary consent or obtaining an inspection warrant pursuant to the procedure set forth in Title 13 (commencing with Section 1822.50) of Part 3 of the Code of Civil Procedure.	No enforcement actions or other legal actions have been taken with respect to the EMA.
CWC § 10725.6	A groundwater sustainability agency may require registration of a groundwater extraction facility within the management area of the groundwater sustainability agency.	The EMA GSA implemented a well registration program (Section 4.2.1)

Legal Authority	Description	Update for the Periodic Evaluation
CWC § 10725.8	(a) A groundwater sustainability agency may require through its groundwater sustainability plan that the use of every groundwater extraction facility within the management area of the groundwater sustainability agency be measured by a water-measuring device satisfactory to the groundwater sustainability agency. (b) All costs associated with the purchase and installation of the water-measuring device shall be borne by the owner or operator of each groundwater extraction facility. The water-measuring devices shall be installed by the groundwater sustainability agency or, at the groundwater sustainability agency's option, by the owner or operator of the groundwater extraction facility. Water-measuring devices shall be calibrated on a reasonable schedule as may be determined by the groundwater sustainability agency. (c) A groundwater sustainability agency may require, through its groundwater sustainability plan, that the owner or operator of a groundwater extraction facility within the groundwater sustainability agency file an annual statement with the groundwater sustainability agency setting forth the total extraction in acre-feet of groundwater from the facility during the previous water year. (d) In addition to the measurement of groundwater extractions pursuant to subdivision (a), a groundwater sustainability agency may use any other reasonable method to determine groundwater extraction. (e) This section does not apply to de minimis extractors	The EMA GSA implemented a well metering program (Section 4.2.1).
CWC § 10731(a)	Following an investigation pursuant to Section 10725.4, the governing body may make a determination fixing the amount of groundwater production from the groundwater extraction facility at an amount not to exceed the maximum production capacity of the facility for purposes of levying a groundwater charge. If a water-measuring device is permanently attached to the groundwater extraction facility, the record of production as disclosed by the water-measuring device shall be presumed to be accurate unless the contrary is established by the groundwater sustainability agency after investigation.	The EMA GSA implemented a well metering program (Section 4.2.1).

Legal Authority	Description	Update for the Periodic Evaluation
Executive Orders N-7-22 and N-5-23	9. To protect health, safety, and the environment during this drought emergency, a county, city, or other public agency shall not: a. Approve a permit for a new groundwater well or for alteration of an existing well in a basin subject to the Sustainable Groundwater Management Act and classified as medium- or high-priority without first obtaining written verification from a Groundwater Sustainability Agency managing the basin or area of the basin where the well is proposed to be located that groundwater extraction by the proposed well would not be inconsistent with any sustainable groundwater management program established in any applicable Groundwater Sustainability Plan adopted by that Groundwater Sustainability Agency and would not decrease the likelihood of achieving a sustainability goal for the basin covered by such a plan; or b. Issue a permit for a new groundwater well or for alteration of an existing well without first determining that extraction of groundwater from the proposed well is (1) not likely to interfere with the production and functioning of existing nearby wells, and (2) not likely to cause subsidence that would adversely impact or damage nearby infrastructure. This paragraph shall not apply to permits for wells that will provide less than two acre-feet per year of groundwater for individual domestic users, or that will exclusively provide groundwater to public water supply systems as defined in section 116275 of the Health and Safety Code.	The EMA GSA implemented well permit reviews for new and replacement wells (Section 4.2.3). Drought-related Executive Orders are no longer in place at this time.

Notes

CMA = Santa Ynez River Valley Groundwater Basin - Central Management Area

CWC = California Water Code

EMA = Santa Ynez River Valley Groundwater Basin - Eastern Management Area

GSA = Groundwater Sustainability Agency

WMA = Santa Ynez River Valley Groundwater Basin - Western Management Area

8 Outreach, Engagement, and Coordination with Other Agencies

This section discusses outreach, engagement, and coordination among agencies that occurred throughout Plan implementation to date (§356.4(k)).

8.1 Outreach and Engagement

During the period since Plan adoption, the GSA has used multiple forms of outreach to communicate SGMA-related information and solicit input from EMA users. The EMA GSA continued public engagement and provided opportunities for participation throughout the Plan implementation process. During this period, outreach and engagement efforts included:

- Presenting key decisions, implementation measures, and projects at GSA Board meetings.
- Posting agendas and materials online in advance of each meeting.
- Allowing public comment during each Board session.
- Increased engagement of the EMA Citizens Advisory Group

The EMA GSA Board meets on an at-minimum quarterly basis and has received presentations on progress toward sustainability, including groundwater levels, the rate study, GSA authority structures, and other major initiatives. A summary of these meetings is provided in Table 8-1.

The GSA continues broad engagement in various ways, including the EMA GSA's SGMA website.[5] The website is updated regularly to boost accessibility and transparency for the public.

8.2 Responsibilities of GSA Board

Successful implementation of the Plan requires (1) an engaged and informed GSA Board and the constituents they represent and (2) active coordination among the three GSAs in the Basin. Relevant studies, options, decisions, and implementation measures are considered by the EMA GSA Board. A list of the key dates since adoption of the Plan are presented on Table 8-1.

[5] https://www.ema-santaynezwater.org/

Table 8-1. Summary of GSA Meetings Since Plan Adoption

Date	Meeting	Primary Topics and Actions
Thursday, January 6, 2022	Special	Held public hearing on *Final EMA Plan* and adopted Plan via Resolution EMA-2022-001; discussed future governance options and engaged the CAG on governance input; initiated first Annual Report implementation (issued consultant contract and resolved cost-share with CMA/WMA).
Thursday, February 24, 2022	Regular	Authorized continued teleconference meetings under AB 36; approved prior meeting minutes (Nov 18 & Dec 9, 2021; Jan 6, 2022); approved financial reports (FY21-22 Q2 statements & warrants); requested status update on grant funds, including Prop 1 retention and new implementation grants.
Thursday, March 24, 2022	Special	Continued teleconference meeting authorization (AB 361; Reso EMA-2021-001); welcomed new County staff support (Marliez Diaz) to EMA GSA; initiated planning for return to in-person meetings (post-COVID).
Thursday, May 26, 2022	Regular	Continued teleconference meeting authorization (AB 361; Reso EMA-2021-001); approved Q3 financials (FY21-22); received update on Annual Report submittal (no action; first Annual Report delivered to DWR Apr 2022); confirmed next meeting dates and hybrid format planning.
Thursday, June 30, 2022	Special	Established interim process for new well permit reviews under Executive Order N-7-22 (approved *process/criteria*, *indemnification & reimbursement agreements*, and *acknowledgment form* for GSA well verifications); authorized public notice of intent to adopt a well permit review fee (per EO N-7-22); approved additional consulting budget for DWR data portal submissions.
Thursday, July 21, 2022	Special	Approved final program documents for EMA GSA well permit verifications under EO N-7-22 (process criteria, indemnification & reimbursement agreements, acknowledgment form); adopted Resolution EMA-2022-003 establishing a well permit review fee & deposit for new well verifications; authorized EMA's consultant (GSI) to begin technical evaluations of submitted well permit applications.
Thursday, August 25, 2022	Regular	Conducted biennial review of GSA's Conflict of Interest Code (no changes); approved financial reports (FY21-22 year-end) and warrant list; received update on *EO N-7-22 well verifications* (requests received; consultant support contract); acknowledged receipt of Santa Ynez Water Group's letter regarding EMA GSA governance structure (no action).

Date	Meeting	Primary Topics and Actions
Thursday, November 17, 2022	Regular	Received Prop 1 grant closure letter from DWR (Plan funding summary); reviewed summary of well permit verification requests and actions to date under EO N-7-22; approved FY22-23 Q1 financials and cumulative warrant list (Proposition 68 grant pending).
Thursday, January 26, 2023	Special	Welcomed new Committee members (City of Solvang appointee Elizabeth Orona, replacing Mark Infanti); reaffirmed remote meeting status under AB 361 (final use of COVID teleconference exception); heard public comments recommending adding an agricultural representative on the future GSA Board (no formal action).
Thursday, February 23, 2023	Regular	Continued remote meeting authorization under AB 361 for February; briefed Committee on new Brown Act teleconference rules (AB 2449) effective Mar 2023; agreed to resume in-person meetings beginning March 2023 at Santa Ynez CSD offices.
Thursday, March 23, 2023	Regular	Approved EMA's Second Annual Report (Groundwater conditions for WY 2019-2022) for submittal to DWR; considered request for GSA *written verification* of a new agricultural well under EO N-7-22 (approved with conditions).
Thursday, April 27, 2023	Regular	Reviewed draft policy options for well permit verifications; considered request for *new well verification* (action deferred pending revisions); finalized schedule for fully in-person meetings going forward (effective June 2023).
Thursday, June 22, 2023	Regular	Received spring 2023 water level update; *approved consultant upload of Spring 2023 monitoring data* to SGMA Portal; received public comment from stakeholder raising concerns about new irrigation wells and GSA review criteria (no action).
Thursday, August 10, 2023	Special	Held joint workshop with Central & Western GSAs (all-CAG & public invited) on Basin-wide Groundwater Conditions (2022 drought impacts); received update on City of Solvang staffing changes affecting the GSA (interim utilities manager).
Thursday, August 24, 2023	Regular	Received stakeholder input from Santa Ynez Water Group on upcoming Plan 5-Year Update, emphasizing data transparency and inclusion of landowner input; confirmed timeline for RSA (JPA) finalization and selection of agricultural Board member (to occur in 2024); approved grant-funded scope for Proposition 68 Monitoring Network improvements (2 new multi-completion wells).

Date	Meeting	Primary Topics and Actions
Thursday, September 28, 2023	Regular	Reviewed Plan implementation progress (Year 1-2 tasks) and draft EMA GSA Joint Powers Agreement (JPA) for future governance; approved Third Annual Report (WY 2022-2023) for submittal to DWR; continued discussion of Sustainable Management Criteria (SMCs) refinements for 5-Year Plan Update (no formal actions).
Thursday, November 16, 2023	Regular	Approved final EMA Joint Powers Agreement (JPA) for execution by member agencies (transitioning GSA from MOA Committee to JPA Board); reviewed draft EMA GSA bylaws; received update on Proposition 68 grant award and Basin-wide cost-share agreement.
Thursday, December 14, 2023	Special	Reviewed pending new well permit applications under revised Executive Order N-5-23 criteria (one replacement well, one new well); considered staff recommendations on each verification request and approved issuing two well verification letters.
Thursday, February 22, 2024	Regular	Final meeting of EMA GSA Committee under MOA (JPA formation imminent); approved EMA's Third Annual Report (WY 2023) for DWR submittal; authorized member agencies to execute JPA agreement establishing the EMA GSA as an independent Joint Powers Authority.
Thursday, March 28, 2024	Special	Concluded GSA Committee business prior to JPA transition (no major actions; supported JPA adoption by member agencies).
Thursday, September 26, 2024	Special	First meeting of EMA GSA JPA Board (new governance body); elected Board officers (Brett Marymee as Chair); approved initial financial actions (bank account setup, fund transition from MOA to JPA) ; participated in Basin-wide Joint GSA session (with CMA & WMA) on Basin coordination matters (via special meeting on Sept 6, 2024).
Thursday, October 24, 2024	Regular	Selected new Agricultural Director & Alternate to join EMA GSA Board (appointed Doug Circle and Mary Heyden); approved contract with GSI for preparation of EMA's Water Year 2024 Annual Report (aligning with Basin-wide reporting).
Thursday, December 19, 2024	Special	Finalized EMA JPA organizational matters (adopted consent items for prior minutes & Q1 FY 2024/25 financials); approved new Proposition 68 implementation projects (monitoring wells; stormwater recharge study) and authorized cost-share allocations.

Date	Meeting	Primary Topics and Actions
Thursday, January 23, 2025	Regular	Adopted EMA GSA Board Bylaws (operating rules) and set regular meeting schedule (quarterly meetings, with special sessions as needed); approved FY 2024/25 Q2 financial statements (Proposition 68 reimbursements received); initiated development of well registration & metering program (presented timeline and directed CAG involvement).
Thursday, February 27, 2025	Regular	Approved EMA GSA Budget for FY 2025-26; approved Proposition 218 notice for a proposed groundwater extraction fee and scheduled a public hearing on June 26, 2025; reviewed applicant responses to Request for Proposals (RFP) for Proposition 68 monitoring well installations (selected final consultant pending legal review).
Thursday, March 20, 2025	Special and CAG Workshop	Public workshop on proposed groundwater extraction fee rate study, with presentation by rate consultant and facilitated discussion (collected stakeholder feedback; no formal action)
Thursday, April 17, 2025	Special	Authorized Proposition 218 proceedings (approved public notice & mail-out for extraction fee vote) ; confirmed date and procedures for extraction fee Public Hearing on June 26, 2025.
Thursday, May 22, 2025	Regular	Reviewed advisory materials (draft FAQs and outreach plan) for upcoming extraction fee Public Hearing; received update on Proposition 68 implementation projects (monitoring well siting study underway); approved filing of EMA's Fourth Annual Report (WY 2024).
Thursday, June 26, 2025	Regular	Held formal Public Hearing on the proposed Groundwater Extraction Fee (Prop 218 process); adopted Resolution establishing an annual per-acre-foot pumping fee for all non-de minimis groundwater extraction in the EMA; initiated formation of a *Groundwater Fees Appeal Committee* (to address any contested fee issues).
Thursday, August 28, 2025	Regular	Resumed regular Board meeting schedule; Approved amendment to EMA GSA Well Registration Ordinance No. 2025-01.
Thursday, September 25, 2025	Regular	Awarded consulting contract to GSI for conducting the EMA Plan 5-Year Plan Evaluation (to be completed in 2026); reviewed status of well metering program development and planned ordinance (CAG feedback pending).

Date	Meeting	Primary Topics and Actions
Thursday, November 20, 2025	Regular	Added financial administration services to Executive Director's contract; appointed new CAG member (to fill a vacancy); adopted EMA GSA Well Metering and Production Reporting Ordinance No. 2025-03.
Thursday, January 22, 2026	Regular	Approved consultant contracts to prepare the EMA Water Year 2025 Annual Report (GSI) and Basin-wide consolidated Annual Report (Stetson Engineers/GSI Water Solutions); approved Q2 FY 2024/25 financial statements.
Thursday, February 26, 2026	Special	Engaged independent auditor (contract with firm for FY 2025 financial audit); adopted 2026 meeting schedule (quarterly Board meetings, with special sessions for SGMA deadlines); adjusted CAG meeting calendar to coordinate with Board schedule.

Notes

AB = Assembly Bill

CAG = Citizens Advisory Group

CMA = Santa Ynez River Valley Groundwater Basin - Central Management Area

CSD = Community Services District

DWR = California Department of Water Resources

EMA = Santa Ynez River Valley Groundwater Basin - Eastern Management Area

FY = Fiscal Year

GSI = GSI Water Solutions, Inc.

SGMA = Sustainable Groundwater Management Act

WMA = Santa Ynez River Valley Groundwater Basin - Western Management Area

WY = Water Year

8.3 Coordination with Other Agencies

This section addresses the EMA GSA's coordination with other agencies within the EMA involved in Plan implementation, including the WMA and CMA, as well as tribal, federal, state, and local agencies with land use, well permitting, or water management responsibilities. In addition, this section describes the inter-agency agreements and any potential changes being considered.

8.3.1 Joint Powers Authority

Since 2022, the EMA GSA has maintained ongoing coordination within, particularly around shared financial and reporting obligations. Early efforts focused on resolving cost-share agreements and consultant contracts, reflecting a practical need to align budgets and technical work across the three management areas from the outset of Plan implementation. Meetings leading up to and after the formation of the JPA include:

On **August 10, 2023**, the EMA GSA held a joint workshop with the CMA and WMA GSAs on drought impacts.

On **March 28, 2024**, the GSA Committee concluded remaining business related to the JPA transition and supported JPA adoption by EMA member agencies.

On **September 26, 2024**, the new JPA Board held its first meeting and elected officers.

On **December 19, 2024,** the EMA GSA finalized JPA organizational matters and approved new Proposition 68 projects.

More recently, inter-agency coordination among the three GSAs in the Basin has centered on shared administrative and reporting functions. In January 2026, the GSAs approved a consultant contract for a consolidated, Basin-wide Annual Report, which demonstrates an ongoing effort to streamline reporting and present a single report to DWR, alongside the EMA's annual reporting obligations. Inter-basin coordination is also discussed in Section 2.3.

9 Other Information

This section presents supplemental information not addressed elsewhere in this Periodic Evaluation that helps describe progress made toward achieving the sustainability goals in the EMA. DWR has requested supplemental information from GSAs to include in Periodic Evaluations, as necessary. This section includes requested inter-basin coordination, the relationship of the principal aquifers to the adjacent groundwater basin, technical and financial challenges relevant to Plan implementation, and any legal challenges affecting the Plan.

9.1 Consideration of Adjacent Basins

Coordination efforts with adjacent San Antonio Creek Valley (SACV) Basin have not been formally documented, as the physical and hydrogeologic conditions of the EMA suggest that these groundwater Basins do not interact (see Section 5.1.3 above). Therefore, formal coordination with the SACV basin has not been needed, consistent with the inter-basin coordination with the SACV basin has not been needed provisions of 23 California Code of Regulations (CCR) § 354.38.

Management of the EMA, including its MTs and MOs, has not been developed in coordination with the management criteria of the SACV basin, as no shared groundwater resource exists that would necessitate such alignment. Similarly, potential impacts from an adjacent basin to the EMA, or from the EMA to an adjacent basin, have not been identified or documented. Neither monitoring data nor modeling results collected during the current reporting period have shown any indication that EMA conditions are influencing groundwater conditions in the neighboring basin, or vice versa, consistent with the review of potential impacts to adjacent basins under 23 CCR § 355.4(b)(7).

Furthermore, evidence has not been found suggesting that Plan implementation within the Basin is affecting, positively or negatively, the ability of any adjacent basin to achieve its own sustainability goal. This determination is consistent with the finding that the basins do not share a common groundwater system.

Coordination with other management areas in the Basin, the WMA and CMA GSAs, has remained frequent, open, and ongoing throughout the reporting period.

9.2 Challenges Not Previously Discussed

The Periodic Evaluation process offers the GSA an opportunity to identify technical and financial challenges that may inform DWR's future assistance or services. Among the most significant challenges facing the GSA and Plan implementation are:

- More frequent crop mapping and associated water use estimates until adequate flow meters are installed for direct measurement of groundwater extraction.
- More widespread groundwater elevation monitoring within the Paso Robles Formation with the use of more dedicated monitoring wells.
- Addressing these data collection challenges is important for improving the accuracy of the EMA's water budget and HCM.

In addition to these technical considerations, the GSA has evaluated how the Plan, or any amended Plan, may affect relevant City and County general plans related to water resources management, as well as other natural resource and land use planning programs, consistent with Water Code § 10727.2(g) and § 10727.4(k)(l). [Describe specific general plan elements, jurisdictions, or planning programs affected, e.g., land use element updates, conflicts/synergies with county water resources policies]. [Describe outcome or

coordination status, e.g., ongoing coordination with City/County planning departments, no significant conflicts identified, etc.].

9.3 Legal Challenges

To date, Plan implementation has not been impeded or otherwise affected by any legal challenges.

10 Summary of Proposed or Completed Revisions to Plan Elements

This section will be finalized pending EMA GSA Board approval of recommendations for potential Plan Amendments presented in Section 3.

Based on the findings of this Periodic Evaluation, DWR's Recommended Corrective Actions, and the results of the monitoring network review, the EMA GSA has identified several Plan elements that may warrant revision. These potential amendments are pending further analysis and direction from the EMA GSA Board, and, where applicable, coordination with the CMA and WMA GSAs. No changes to SMCs are being adopted at this time; the items below represent candidate revisions under consideration.

Chronic Lowering of Groundwater Levels Sustainable Management Criteria. In response to RCA 4 and the findings of the monitoring network review (Section 6), potential revisions may include: removing two representative wells no longer considered representative of their principal aquifer (one due to declining water levels below the well's depth, one due to completion across multiple aquifer units); incorporating new replacement and augmentation wells identified near data gap areas (Santa Agueda Creek, Marre Canyon, Happy Canyon, and the Zaca/Alamo Pintado Creek area); removal of the contingency based on non-drought conditions, and re-evaluating minimum thresholds based on seasonal low (fall) groundwater levels and well construction/impact analysis (after fall 2029). These potential revisions may be delayed pending completion of a well registration survey currently underway and collection of more fall groundwater elevation data through the fall of 2029.

Degraded Groundwater Quality Sustainable Management Criteria. In response to RCA 5, potential revisions may include adopting revised minimum threshold values and methodology (WQO, MCL, or current conditions basis) for each representative monitoring well in tabular form, and revising the quantitative definitions of minimum thresholds and undesirable results for degraded groundwater quality.

Land Subsidence Sustainable Management Criteria. In response to RCA 6, a potential revision may clarify the quantitative definition of minimum thresholds and undesirable result for land subsidence, specifically defining the minimum threshold as an annual subsidence rate (0.08 feet/year) and the undesirable result as that rate persisting for three consecutive years, consistent with both the InSAR network and the UNAVCO CGPS station data.

These proposed revisions may be developed collaboratively with the CMA and WMA GSAs where relevant, and, if finalized and supported by Board direction, would be incorporated into the Plan through a future Plan Amendment.

11 References

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