NOTICE AND AGENDA OF REGULAR MEETING

GROUNDWATER SUSTAINABILITY AGENCY FOR THE EASTERN MANAGEMENT AREA
IN THE SANTA YNEZ RIVER GROUNDWATER BASIN

HELD AT
SANTA YNEZ COMMUNITY SERVICES DISTRICT, MEETING ROOM
1070 FARADAY STREET, SANTA YNEZ, CALIFORNIA
6:30 P.M., THURSDAY, FEBRUARY 22, 2024

EMA GSA Alternate Committee Member Steve Jordan will be attending the meeting via teleconference from the following location: 46250 East El Dorado, Indian Wells, CA 92210. Members of the public may join Director Jordan at that location.

Optional remote public participation is available via Telephone or ZOOM

To access the meeting via telephone, please dial: 1-669-900-6833 or 1-669-444-9171
or via the Web at: **http://join.zoom.us**

"Join a Meeting" - **Meeting ID 842 5092 2697 Meeting Passcode: 665113**

***** Please Note *****

The above teleconference option for public participation is being offered as a convenience only and may limit or otherwise prevent your access to and participation in the meeting due to disruption or unavailability of the teleconference line. If any such disruption of unavailability occurs for any reason the meeting will not be suspended, terminated, or continued. Therefore in-person attendance of the meeting is strongly encouraged.

AGENDA OF REGULAR MEETING

1. Call to Order and Roll Call
2. Additions or Deletions to the Agenda
3. Public Comment (Any member of the public may address the Committee relating to any non-agenda matter within the Committee's jurisdiction. The total time for all public comment shall not exceed fifteen minutes and the time allotted for each individual shall not exceed five minutes. No action will be taken by the Committee at this meeting on any public comment item.)
4. Review and consider approval of meeting minutes of December 14, 2023, and meeting minutes of Joint GSAs meeting of January 5, 2024
5. Review and consider approval of Financial Statements and Warrant List
6. Review and consider requests for EMA GSA Written Verifications under Executive Order N-7-22 revised under Executive Order N-5-23 in the EMA for the following parcels:
    a. APN 141-100-055 1640 Rolling Hills Rd. Santa Ynez (Cameron Sinai)
    b. APN 133-151-053 5200 Foxen Canyon Rd. Los Olivos (William Taylor)
7. Receive update on change of DWR Point of Contact for the Santa Ynez Basin
8. Receive update on the Groundwater Sustainability Plan for the EMA
9. Receive update on DWR Sustainable Groundwater Management Implementation Grant
10. Receive update on the SGMA Third Annual Report for the EMA.
11. Receive update on SGMA Governance and Draft Joint Powers Agreement for the EMA

12. Review and discuss meeting schedule for next two months. All meetings held at 6:30 PM, Santa Ynez CSD Meeting Room, 1070 Faraday St., Santa Ynez
    a. Next Special EMA GSA Committee meeting, Thursday, March 28, 2024
    b. Tentative Special EMA GSA Committee meeting Thursday, April 25, 2024
    c. Next Regular EMA GSA Committee meeting, Thursday, May 23, 2024
13. DWR Groundwater Awareness Week, March 10-16, 2024
14. EMA GSA Committee reports and requests for future agenda items
15. Adjournment

[This agenda was posted 72 hours prior to the scheduled regular meeting at 3669 Sagunto Street, Suite 101, Santa Ynez, California, and SantaYnezWater.org in accordance with Government Code Section 54954. In compliance with the Americans with Disabilities Act, if you need special assistance to review agenda materials or participate in this meeting, please contact the Santa Ynez River Water Conservation District at (805) 693-1156. Advanced notification as far as practicable prior to the meeting will enable the GSA to make reasonable arrangements to ensure accessibility to this meeting.]

DRAFT

MEETING MINUTES

Groundwater Sustainability Agency for the Eastern Management Area in the Santa Ynez River Groundwater Basin
December 14, 2023

A regular meeting of the Groundwater Sustainability Agency (GSA) for the Eastern Management Area (EMA) in the Santa Ynez River Groundwater Basin was held on Thursday, December 14, 2023, at 6:30 p.m. at Santa Ynez Community Services District Community Room, 1070 Faraday Street, Santa Ynez, California.

EMA GSA Alternate Committee Member Steve Jordan attended the meeting via teleconference from 46000 Fairway Drive, Indian Wells, CA 92210. This remote participation location was properly noticed on the agenda and the agenda was posted at the remote location, in compliance with Gov. Code Section 54950 et seq. No members of the public joined Director Jordan at the location.

EMA GSA Committee Members Present: Brad Joos, Brett Marymee, and Elizabeth Orona

EMA GSA Alternate Committee Members Present (in-person): Meighan Dietenhofer (Acting Alternate) and Mike Burchardi

EMA GSA Alternate Committee Members Present (remote): Steve Jordan

Member Agency Staff Present (in-person): Paeter Garcia, Randy Murphy, and Amber Thompson

Member Agency Staff Present (remote): Bill Buelow and Matt Young

Others Present (in-person): Mary Heyden and Gay Infanti

Others Present (remote): Steve Anderson, Anita Regmi (DWR), and Jerry (no last name provided)

1. Call to Order and Roll Call

EMA GSA Committee Chair Brett Marymee called the meeting to order at 6:32 p.m. and asked Ms. Thompson to call roll. Three EMA GSA Committee Members and one Acting Alternate Committee Member were present providing a quorum. Two Alternate Committee Member were also present.

2. Additions or Deletions to the Agenda

No additions or deletions were made.

3. Public Comment

There was no public comment.

4. Review and Consider Approval of Meeting Minutes of November 16, 2023

The minutes of the EMA GSA Committee meeting on November 16, 2023, were presented for GSA Committee approval. There was no discussion or public comment.

EMA GSA Committee Member Brad Joos made a MOTION to approve the minutes of November 16, 2023, as presented. GSA Committee Member Elizabeth Orona seconded the motion. There was no discussion and the motion passed 4-0-0 by voice vote.

5. Review and Consider Requests for EMA GSA Written Verifications under Executive Order N-7-22 revised under Executive Order N-5-23 in the EMA for the following parcels:

EMA GSA Committee Chair Brett Marymee suggested the committee consider Item No. 5.b, the replacement well, before Item No. 5.a., the new well. There was unanimous consensus by the Committee and proceeded with discussing Item No. 5.b. then Item No. 5.a.

a. APN 137-100-062, 1250 Roble Blanco Rd., Solvang, CA (Desser)

Mr. Garcia reviewed the Review of Well Application in the Santa Ynez River Valley Groundwater Basin, Eastern Management Area (EMA), APN: 137-100- 062 (WP# EH-LUA-23-000006) – Desser, dated December 6, 2023, provided by GSI Water Solutions for a new well. Discussion followed. Public comment was received. There was an additional committee discussion.

EMA GSA Committee Member Brad Joos made a MOTION to issue a well verification letter for APN: 137-100- 062 (WP# EH-LUA-23-000006) – Desser. GSA Committee Chair Brett Marymee seconded the motion. There was no discussion and the motion passed unanimously by roll call vote.

b. APN 137-390-003, 1235 Quail Ridge Rd., Solvang, CA (Liebman)

Mr. Garcia reviewed the Review of Well Application in the Santa Ynez River Valley Groundwater Basin, Eastern Management Area (EMA), APN: 137-390-003 (EH-LUA-23-000218) – Liebman, dated December 7, 2023, provided by GSI Water Solutions for a replacement well. Discussion followed. Public comment was received. There was an additional committee discussion.

EMA GSA Committee Member Brad Joos made a MOTION to issue a well verification letter for APN: 137-390-003 (EH-LUA-23-000218) - Liebman. GSA Committee Member Elizabeth Orona seconded the motion. There was no discussion and the motion passed unanimously by roll call vote.

6. Update on SGMA Governance and Draft Joint Powers Agreement for the EMA

Mr. Garcia summarized the progress made toward SGMA Governance and the preparation of a draft Joint Powers Agreement for the EMA. Discussion followed. There was no public comment.

EMA GSA Committee Member Brad Joos recommended the EMA Citizens Advisory Group be engaged during the JPA preparation process.

EMA GSA Alternate Committee Member Steve Jordan recommended an Ag Representative be elected by the Ag landowners.

EMA GSA Committee Member Elizabeth Orona asked staff what other issues are holding up the JPA process and asked staff for a new estimated time for JPA completion. She encouraged proceeding without additional delay.

7. Update on WY 2022-2023 EMA Annual Report

Mr. Young reported that the EMA GSA requested the County Water Agency to contract with GSI Water Solutions to prepare the WY 2022-2023 Annual Report. He indicated that GSI initially proposed a contract with a not-to-exceed amount of $57,670, and that per the EMA GSA Committee's request, the County Water Agency was able to renegotiate the contract for a lower not-to-exceed amount of $49,758 with a 10% contingency, if needed. The County Water Agency issued a notice to proceed to GSI to begin work on the Annual Report. The Annual Report will be completed before the April 1, 2024 deadline. There was no discussion, public comment, or action.

8. Receive Update on Proposition 68 Grant Award

Mr. Buelow provided an update on the Proposition 68 Grant Award. The dates range of eligible projects is October 2022 through April 2026. There is not a cost match requirement. SYRWCD was authorized by the three GSAs to act as grantee on behalf of the GSAs for this grant. After a review by SYRWCD staff and legal counsel, the draft grant agreement has been returned to DWR with minor comments and revisions. Discussion followed. There was no public comment or action.

- GSA Committee Member Brad Joos requested that staff provide the amount of the grant which is earmarked for the EMA GSA projects.

- GSA Committee Member Elizabeth Orona requested staff provide an assessment of EMA GSA projects, what can be started ASAP, and the anticipated burn rate.

Mr. Buelow announced that there will be a photo opportunity with DWR representatives and member agencies elected officials, possibly in January 2024. Mr. Buelow requested the committee members to advise SYRWCD of available dates in January and February. Discussion followed. There was no public comment or action.

9. Next EMA GSA Committee Special Meeting, Thursday, January 25, 2024, at 6:30 p.m. at Santa Ynez CSD

Mr. Buelow announced that January 25, 2024, at 6:30 p.m. is the saved date and time for holding a special meeting of the EMA GSA, if one is needed. Discussion followed. GSA Committee Member Brad Joos recommended that the EMA GSA Committee continue

to have monthly meetings until the JPA is finalized. GSA Committee Member Elizabeth Orona agreed.

10. Next EMA GSA Committee Regular Meeting, Thursday, February 22, 2024, at 6:30 p.m. at Santa Ynez CSD

EMA GSA Committee Chair Brett Marymee announced the next EMA GSA Committee regular meeting will be Thursday, February 22, 2024, at 6:30 p.m. at the Santa Ynez Community Services District Community Room, 1070 Faraday Street, Santa Ynez, CA.

11. EMA GSA Committee Reports and Requests for Future Agenda Items

There were no reports or requests.

12. Adjournment

GSA Committee Chair Brett Marymee adjourned the meeting at 8:00 p.m.

Brett Marymee, Chairman

William J. Buelow, Secretary

DRAFT

JOINT MEETING MINUTES

Groundwater Sustainability Agency for the Central Management Area in the Santa Ynez River Groundwater Basin
and
Groundwater Sustainability Agency for the Eastern Management Area in the Santa Ynez River Groundwater Basin
and
Groundwater Sustainability Agency for the Western Management Area in the Santa Ynez River Groundwater Basin

January 5, 2024

A joint special meeting of the Groundwater Sustainability Agency (GSA) for the Central Management Area (CMA) in the Santa Ynez River Groundwater Basin, the Groundwater Sustainability Agency (GSA) for the Eastern Management Area (EMA) in the Santa Ynez River Groundwater Basin, and the Groundwater Sustainability Agency (GSA) for the Western Management Area (WMA) in the Santa Ynez River Groundwater Basin was held on Friday, January 5, 2024, at 10:00 a.m. at the City of Buellton City Council Chambers, 140 West Highway 246, Buellton, California.

WMA GSA Committee Member and EMA GSA Alternate Committee Member Steve Jordan attended the meeting via teleconference from 46250 East El Dorado, Indian Wells, CA 92210. This remote participation location was properly noticed on the agenda and the agenda was posted at the remote location, in compliance with Gov. Code Section 54950 et seq. No members of the public joined Director Jordan at the location.

CMA GSA Committee Members Present: Larry Lahr, John Sanchez, and Joan Hartmann (non-voting)

EMA GSA Committee Members Present: Joan Hartmann, Brad Joos, Acting Alternate David Brown, and Acting Alternate Steve Jordan (participating remotely)

WMA GSA Committee Members Present: Jeremy Ball, Chris Brooks, Myron Heavin, Steve Jordan (participating remotely), and Joan Hartmann (non-voting)

WMA GSA Alternate Committee Members Present: Ron Stassi and Kristin Worthley

Member Agency Staff Present (In Person): Cynthia Allen, Bill Buelow, Paeter Garcia, Randy Murphy, Amber Thompson, and Matt Young

Member Agency Staff Present (Remote): Rose Hess

Others Present (In Person): Carol Redhead

Others Present (Remote): Steve Anderson, Doug Circle, Sean Diggins, Cindy Douglas, Aaron Ferguson, John Fio (EKI Consulting) Dan Heimel, Gay Infanti, Deby Laranjo, Steve Torigiani (Young Wooldridge LLP), and Al Wagner,

1. Call to Order

CMA, EMA, and WMA Committee Member Joan Hartmann called the meeting to order at 10:00 a.m.

2. Roll Call

Mr. Buelow called roll.

Two CMA GSA Committee Members and one non-voting Committee Member were present providing a quorum. In addition, one Alternate Committee Member was present.

Two EMA GSA Committee Members and one Acting Alternate Committee Member were present in person and one Acting Alternate Committee Member was present remotely providing a quorum.

Three WMA GSA Committee Members and one non-voting Committee Member were present in person and one Committee Member was present remotely providing a quorum. In addition, two Alternate Committee Members were present.

3. Consider Appointment of Moderator to Facilitate Joint GSA Meeting

CMA, EMA, and WMA Committee Member Joan Hartmann volunteered to moderate the joint meeting. There was unanimous consensus by all other GSA Committee Members.

4. Public Comment

There was no public comment. Ms. Thompson announced that no public comments were received in advance of the meeting.

5. Review and approve the Action Plan for Management of All Well Production Along the Lower Santa Ynez River, Above the Lompoc Narrows, as response to SWRCB staff comments received on CMA, EMA, and WMA GSPs for posting on SGMA Portal

Mr. Buelow introduced Mr. Steve Torigiani of Young Wooldridge LLP, legal counsel for Santa Ynez River Water Conservation District, and asked that Mr. Torigian review the comment received regarding all three Groundwater Sustainability Plans (GSPs) of the Santa Ynez River Valley Groundwater Basin (SYRVGB), the process that followed, and the Action Plan for the GSA Committees to consider adding to the GSPs.

Mr. Torigiani recapped the comments received via DWR's SGMA portal from State Water Resources Control Board (SWRCB) staff regarding the CMA GSP, EMA GSP and WMA GSP. He presented the details of the Action Plan. He reported that member agency staff, consultants, and legal counsels from member agencies worked together to develop an Action Plan, attended multiple meetings with DWR staff and SWRCB staff to further

develop the Action Plan. He reported that, at the last meeting, DWR staff seemed appreciative of the Action Plan and no changes to the Action Plan had been received from SWRCB staff, to date. He recommended that each GSA Committee approve the Action Plan and direct staff to post the Action Plan to the SGMA portal as the response to the comment received for each GSP before DWR's January 18, 2024 deadline to issue their review of the GSPs for the SYRVGB.

Discussion followed and public comment was received.

a. Central Management Area GSA

CMA GSA Committee Member John Sanchez made a MOTION to approve the Action Plan and authorize the SGMA Point of Contact or his designee to transmit to DWR and post to the Portal the Transmittal Letter and Action Plan, in substantially the form presented, as a further response to SWRCB staff comments on behalf of the CMA GSA. CMA GSA Committee Member Larry Lahr seconded the motion. There was no discussion or public comment. The motion passed unanimously by Roll Call vote.

b. Eastern Management Area GSA

EMA GSA Committee Member Brad Joos made a MOTION to approve the Action Plan and authorize the SGMA Point of Contact or his designee to transmit to DWR and post to the Portal the Transmittal Letter and Action Plan, in substantially the form presented, as a further response to SWRCB staff comments on behalf of the EMA GSA. EMA GSA Committee Member Joan Hartmann seconded the motion. There was no discussion or public comment. The motion passed unanimously by Roll Call vote.

c. Western Management Area GSA

WMA GSA Committee Member Chris Brooks made a MOTION to approve the Action Plan and authorize the SGMA Point of Contact or his designee to transmit to DWR and post to the Portal the Transmittal Letter and Action Plan, in substantially the form presented, as a further response to SWRCB staff comments on behalf of the WMA GSA. WMA GSA Committee Member Jeremy Ball seconded the motion. There was no discussion or public comment. The motion passed unanimously by Roll Call vote.

6. Update Proposition 68 Grant Award Presentation

Mr. Buelow announced that a "Big Check Ceremony" is scheduled for Thursday, February 8, 2024, at 11:30 am at River View Park in Buellton. A representative from the Department of Water Resources will present a ceremonial check for the SGMA Implementation grand award. All GSA Committee Members, other representatives and staff for all member agencies, and the public are invited to attend. In the case of inclement weather, the ceremony location will be moved to an indoor location, to be announced later, if needed. There was no discussion or public comment.

7. Next GSA Tentative Special Meetings

Mr. Buelow announced the three GSAs have dates saved in January for possible special meetings, if needed.

- CMA GSA Committee reserved Monday, January 22, 2024, at 10:00 a.m. at Buellton City Council Chambers, 140 West Highway 246, Buellton.
- WMA GSA Committee reserved Wednesday, January 24, 2024, at 10:00 a.m. at Village Community Services District, Meeting Room, 3745 Constellation Rd, Lompoc.
- EMA GSA Committee reserved Thursday, January 25, 2024, at 6:30 p.m. at Santa Ynez Community Services District Meeting Room, 1070 Faraday Street, Santa Ynez.

He reported that, if a GSA does not have any well verifications to consider or other business causing the need for January special meetings, then email notices will be sent to GSA committee members and interested parties notifying all that the GSA special meeting will not be scheduled. He announced the regular quarterly business meetings for each GSA will be held in February, according to the regular meeting schedules. There was no discussion or public comment.

8. GSA Committee Comments

EMA GSA Committee Member Joan Hartmann asked if more joint GSA meetings are anticipated in the future. She requested that joint GSA meetings be preemptively scheduled, possibly once a quarter. Committee members from each GSA agreed that would be a good idea.

9. Adjournment

Meeting Moderator Joan Hartmann adjourned the meeting at 10:46 a.m.

CMA GSA Committee:

John Sanchez, Vice Chair

EMA GSA Committee:

Brad Joos, Vice Chair

WMA GSA Committee:

Chris Brooks, Chair

ATTEST:

William J. Buelow, Secretary

EMA GSA
Balance Sheet
As of December 31, 2023

	Dec 31, 23
ASSETS	
Current Assets	
Checking/Savings	
1150 · Five Star Bank Checking #5951	6,637.96
Total Checking/Savings	6,637.96
Total Current Assets	6,637.96
TOTAL ASSETS	**6,637.96**
LIABILITIES & EQUITY	
Liabilities	
Current Liabilities	
Other Current Liabilities	
2300 · Deposits - Well Verification	4,662.50
Total Other Current Liabilities	4,662.50
Total Current Liabilities	4,662.50
Total Liabilities	4,662.50
Equity	
3000 · Ret Earnings	2,425.67
32000 · Unrestricted Net Assets	10,121.34
Net Income	-10,571.55
Total Equity	1,975.46
TOTAL LIABILITIES & EQUITY	**6,637.96**

EMA GSA
Profit & Loss YTD Comparison
October through December 2023

	Oct - Dec 23	Jul - Dec 23
Income		
4000 · Oper Assess fr Member Agencies	1,257.00	3,771.00
4600 · Interest Income	2.26	4.91
Total Income	1,259.26	3,775.91
Expense		
5330 · Outside Staff Support	300.00	600.00
5350 · Public Relations	75.00	486.36
6400 · Annual Report	1,256.00	13,261.10
Total Expense	1,631.00	14,347.46
Net Income	**-371.74**	**-10,571.55**

EMA GSA
Transaction Detail by Account
October through December 2023

	Type	Date	Num	Name	Memo	Split	Payments ONLY	Deposits Received	Amount	Balance
2300 · Deposits - Well Verification										
						Beginning Balance				**5,107.50**
	General Journal	10/02/2023	Desser		Deposit Wm Howard Desser Rev Trust	1150 · Five Star Bank Checking #5951		2,200.00	2,200.00	7,307.50
	Bill	11/13/2023	02019.001-8	GSI Water Solutions, Inc.	Kelly Mattei Road	2000 · Accounts Payable	-705.00		-705.00	6,602.50
	Bill	11/13/2023	02019.001-8	GSI Water Solutions, Inc.	Palma	2000 · Accounts Payable	-2,167.50		-2,167.50	4,435.00
	Bill	11/13/2023	02019.001-9	GSI Water Solutions, Inc.	Kelly Mattei Rd	2000 · Accounts Payable	-2.50		-2.50	4,432.50
	Bill	11/13/2023	02019.001-9	GSI Water Solutions, Inc.	Palma	2000 · Accounts Payable	-32.50		-32.50	4,400.00
	Bill	11/13/2023	02019.001-9	GSI Water Solutions, Inc.	Liebman	2000 · Accounts Payable	-1,882.50		-1,882.50	2,517.50
	Bill	11/14/2023	02019.001-10	GSI Water Solutions, Inc.	1235 Quail Ridge Road	2000 · Accounts Payable	-55.00		-55.00	2,462.50
	Bill	11/14/2023	02019.001-10	GSI Water Solutions, Inc.	Desser	2000 · Accounts Payable	-2,200.00		-2,200.00	262.50
	General Journal	11/28/2023	Deposit		Deposit Taylor Brooks Ranch	1150 · Five Star Bank Checking #5951		2,200.00	2,200.00	2,462.50
	General Journal	12/20/2023	Deposit		Deposit Sinai	1150 · Five Star Bank Checking #5951		2,200.00	2,200.00	4,662.50
Total 2300 · Deposits - Well Verification							-7,045.00	6,600.00	-445.00	4,662.50
TOTAL							**-7,045.00**	**6,600.00**	**-445.00**	**4,662.50**

GROUNDWATER SUSTAINABILTY AGENCY FOR THE

EASTERN MANAGEMENT AREA (EMA)

IN THE SANTA YNEZ RIVER VALLEY GROUNDWATER BASIN

OCTOBER 2023 WARRANT LIST FOR COMMITTEE APPROVAL

NUMBER	DATE	PAYEE	DESCRIPTION		AMOUNT
			NONE		
			MONTH TOTAL	**$**	**-**

NOVEMBER 2023 WARRANT LIST FOR COMMITTEE APPROVAL

NUMBER	DATE	PAYEE	DESCRIPTION		AMOUNT
1025	11/13/23	GSI Water Solutions	August 2023 Review for Well Verifications (paid by Well Owner Deposits)	$	2,872.50
1026	11/13/23	GSI Water Solutions	September 2023 Review for Well Verifications (paid by Well Owner Deposits)	$	1,917.50
1027	11/13/23	GSI Water Solutions	April-May 2023 EMA Annual Report WY 2021-2022 Measuring Point & Groundwater Elevation Error Task (Balance Due of Invoice 515.005-8)	$	1,256.00
			MONTH TOTAL	**$**	**6,046.00**

DECEMBER 2023 WARRANT LIST FOR COMMITTEE APPROVAL

NUMBER	DATE	PAYEE	DESCRIPTION		AMOUNT
1028	12/14/23	GSI Water Solutions	October 2023 Review for Well Verifications (paid by Well Owner Deposits)	$	2,255.00
1029	12/14/23	Santa Ynez CSD	Conference Room Rental (11/16/23 EMA GSA Meeting)	$	75.00
1030	12/31/23	Valley Bookkeeping	2023 4th Quarter Bookkeeping (October, November, December 2023)	$	300.00
			MONTH TOTAL	**$**	**2,630.00**

TOTAL CHECKS THIS QUARTER: $ 8,676.00

Review of Well Application in the Santa Ynez River Valley Groundwater Basin, Eastern Management Area (EMA)
APN: 141-100-055 (WP # EH-LUA-23-000172) Sinai

To: Santa Ynez River Valley EMA GSA Parties

From: Tim Nicely, PG, CHg and Katie O'Malley, GSI Water Solutions, Inc.

Date: February 20, 2024

This memorandum presents our review of an application to install new a well within the Eastern Management Area (EMA). Our review was conducted on behalf of the Santa Ynez River Valley Groundwater Basin EMA Groundwater Sustainability Agency (GSA). Under Paragraph 9 of Governor Newsom's Executive Order N-7-22 and the County Board of Supervisors Urgency Ordinance No. 5158 dated May 24, 2022, the County of Santa Barbara Department of Environmental Health Services shall not approve a permit for a new groundwater well or for alteration of an existing well in a medium or high-priority basin subject to the Sustainable Groundwater Management Act (SGMA) without first obtaining written verification from the GSA that groundwater extraction by the proposed new well[1]:

1. would not be "inconsistent with any sustainable groundwater management program" established by the Groundwater Sustainability Plan (Plan) adopted by the GSA, and
2. would not decrease the likelihood of achieving a sustainability goal for the basin covered by the Plan.

Paragraph 9 of Executive Order N-7-22 does 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 application being reviewed (Sinai) is for a domestic and irrigation supply well completed to a depth of 600 feet below ground surface (bgs). The planned water production reported by the applicant is up to 9 acre feet per year (AFY). The application estimates a pumping rate of up to 60 gallons per minute (gpm) and an average daily runtime of 3 hours per day for an average of five days per week. This planned production of up to 9 AFY exceeds the 2 AFY definition of an exempt well.

[1] Santa Barbara County Urgency Ordinance No. 5158 defines a "New well" as "a new groundwater well or replacement of an existing well with a new well that exceeds the production capacity of the existing well as originally permitted or constructed. This definition shall not include geothermal heat exchange wells, cathodic protection wells, or wells constructed for the purpose of monitoring or abating contaminants in underground waters that are associated with a hazardous materials release." (Ordinance No. 5158, Sec. 34A-23(5).)

Summary of Findings

The proposed well has the following properties:

- Well location:
    - The proposed well is on Assessor's Parcel Number 141-100-055, which is located at 1640 Rolling Hills Road in Santa Ynez within the Santa Ynez Upland area of the EMA.
    - The parcel is within a public water system.
- Proposed well construction and use information:
    - The proposed new well will be completed to a depth of 600 feet bgs, with perforations starting at 300 feet bgs.
    - The well will be used for both domestic purposes and irrigation of fruit trees and a vineyard on a 5.46 acre parcel. The planned pumping rate will be as much as 60 gpm for 3 hours per day for 5 days a week, which would equate to 9 AFY.
- Assess groundwater and related conditions:
    - Based on the depth of the proposed well, the produced groundwater will be derived from the Paso Robles Formation, which is a principal aquifer within the EMA.
    - Water quality recorded in the last five years (between 2018 and 2023) within a 1,000 feet radius of the proposed well site were compiled from the United States Environmental Protection Agency's Water Quality Portal, the results of which did not demonstrate any constituents that exceed maximum contaminant levels. There are no potential point sources of groundwater contamination, such as active leaking underground storage tank sites within 1,000 feet of the proposed well.
    - No potential land subsidence is anticipated based on modelling results conducted by the applicant's hired geologist, which considered pumping usage and local geology. This analysis was not reviewed as part of this memorandum.
- Would the well increase production within the EMA?
    - Production from this well would increase production from a principal aquifer within the EMA. However, the well would not cause an exceedance of minimum thresholds or cause undesirable results measured at representative wells, as defined in the Plan.
    - This additional minor volume of production from the subject property will increase the total area of irrigated acreage within the EMA. A variety of factors must be considered to determine whether installation of a new well and corresponding increases in production would cause any potential undesirable results within the EMA. These factors include the total area of irrigated agriculture relative to the then-current and projected acres presented in the Plan (Table 3-33) as well as the groundwater production from these irrigated areas presented in the plan (Table 3-35) and updated for preparation of subsequent annual reports through water year 2022. Furthermore, the presence, immanence, or absence of undesirable results within the EMA must also be considered in this assessment to determine whether the additional production would be likely to cause any undesirable results.
    - Compared to the projected production presented in the Plan, which were rough estimates based on the then-current agricultural land use trends, the planned production and usage of groundwater from the proposed new well would add a small amount of additional irrigated

acreage beyond the total area estimated in the Plan. Notably, the estimate of irrigated acres was exceeded beyond the Plan's estimate for projected irrigated acreage soon after issuance of the Plan in January 2022.

- However, there have been no reported undesirable results within the EMA as presented in the most recent annual report. This indicates that the proposed minor increase in production from the proposed well would not be inconsistent with the sustainable groundwater management of the EMA.
- The well would not contribute to significant and unreasonable conditions leading to undesirable results related to the sustainability indicators:
  - Chronic water level decline
  - Reduction of groundwater in storage
  - Degradation of water quality
  - Land subsidence
  - Depletion of interconnected surface water and impacts to GDEs.

- Projects and Management Actions:
  - This planned production and use of the well is not inconsistent with any implemented projects and management actions of the EMA's GSA. As a condition of issuance of a written verification, the well applicant must agree to register the well with and report production semi-annually to the EMA GSA.

Summary

Based upon the location and planned production from the proposed new well, which will be completed within a principal aquifer managed by the EMA, production from the well would not be "inconsistent with any sustainable groundwater management program" established by the GSA and would therefore NOT decrease the likelihood of achieving a sustainability goal for the basin.

In our opinion, the GSA should provide a written verification to the County of Santa Barbara Department of Environmental Health for this application.

Indemnification and Limitations of Liability

GSI Water Solutions does not warrant or guarantee that the well will produce the expected amount of water nor that the GSA will not require that extraction from the well be reduced in the future in accordance with its authority to manage the EMA within the sustainability goal presented in EMA's Plan.

GSI Water Solutions is not responsible for or otherwise liable for any costs, investments, lost revenue, or payments related to any groundwater well permitted or not permitted by the County, including well drilling costs, pumping fees, extraction limits, costs related to well failure, well deepening, increased maintenance, replacement, or operational costs.

The GSA's issuance of a written verification and the County's issuance of a well permit to Applicant does not guarantee the extraction of any specific amount of water now or in the future or any defined water level or water quality.

Review of Well Application in the Santa Ynez River Valley Groundwater Basin, Eastern Management Area (EMA)
APN: 133-151-053 (WP # EH-LUA-23-000006) William Taylor

To: Santa Ynez River Valley EMA GSA Parties

From: Tim Nicely, PG, CHg and Katie O'Malley, GSI Water Solutions, Inc.

Date: February 19, 2024

This memorandum presents our review of an application to install a replacement within the EMA. Our review was conducted on behalf of the Santa Ynez River Valley Groundwater Basin EMA Groundwater Sustainability Agency (GSA). Under Paragraph 9 of Governor Newsom's Executive Order N-7-22 and the County Board of Supervisors Urgency Ordinance No. 5158 dated May 24, 2022, the County of Santa Barbara Department of Environmental Health Services shall not approve a permit for a new groundwater well or for alteration of an existing well in a medium or high-priority basin subject to the Sustainable Groundwater Management Act (SGMA) without first obtaining written verification from the GSA that groundwater extraction by the proposed replacement well[1]:

1. would not be "inconsistent with any sustainable groundwater management program" established by the Groundwater Sustainability Plan (Plan) adopted by the GSA, and
2. would not decrease the likelihood of achieving a sustainability goal for the basin covered by the Plan.

Documentation provided by the County of Santa Barbara Department of Environmental Health Services documenting that the proposed well is a replacement for another well on the property is attached.

Paragraph 9 of Executive Order N-7-22 does 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 application being reviewed (William Taylor) is for a replacement irrigation supply well proposed to be completed to a depth of 800 feet below ground surface (bgs). The anticipated water production reported by the applicant is up to 331 acre feet per year (AFY). The application estimates a production rate of up to 1,000 gallons per minute (gpm) and an average daily runtime of 6 hours per day for 300 days per year. This planned production of up to 331 AFY exceeds the 2 AFY definition of an exempt well.

[1] Santa Barbara County Urgency Ordinance No. 5158 defines a "Replacement Well" as follows: "[A] water well to be constructed of equal or less production capacity as an existing well as originally permitted or constructed, when said existing well shall be destroyed under permit within 90 days of completion of the replacement well. This definition does not apply to individual domestic or public water supply wells." (Ordinance No. 5158, Sec. 34A-23(8).)

Summary of Findings

The proposed well has the following properties:

- Well location:
    - The proposed well is located on Assessor's Parcel Number 133-151-053, which is located at 5200 Foxen Canyon Road near Los Olivos within the Santa Ynez Upland area of the EMA.
    - The parcel is not located within a public water system.
    - The applicant has confirmed that there are two other wells on the property including an active agricultural well irrigating 40 acres of grass and grape vineyards and a second well that is an active domestic well that serves five people. The irrigated portion of the parcel consists of a 40-acre portion of the overall 60-acre parcel. The existing agricultural well is failing due to increased sand production and will be destroyed.
- Proposed well construction and use information:
    - The proposed William Taylor well will be completed to a depth of 800 feet bgs, with perforations unreported.
    - The well will be used for irrigation of some portion of a 60 acre parcel. The planned pumping rate will be 1,000 gallons per minute for 6 hours per day for 300 days per year, which equates to 331 AFY. This total production of 331 AFY is likely much higher than would be required to irrigate the parcel with these crops. Pumping at this production rate for the proposed duration would apply over 8 AFY per acre on the 40-acre irrigated portion of the parcel, which is much higher than the typical crop water requirements for grass and vineyards. The existing crops likely use up to 2 AFY per acre, or a quarter of the proposed production if the well is pumped at the schedule proposed.
- Assess groundwater and related conditions:
    - Based on the depth of the proposed well, the produced groundwater will be derived from the Careaga Sand, and/or possibly from the overlying Paso Robles Formation, both of which are principal aquifers within the EMA.
    - The applicant reports that the existing agricultural well located near the proposed well site is failing as it is producing sand, and that the well will be destroyed.
- Would the well increase production within the EMA?
    - Production from this replacement well would not increase production from a principal aquifer within the EMA if it is used to irrigate the same parcel as the original well to a similar degree. Therefore, the replacement well would not cause an exceedance of minimum thresholds or cause undesirable results measured at representative wells, as defined in the Plan.
    - The proposed replacement well would not contribute to significant and unreasonable conditions leading to undesirable results related to the sustainability indicators:
        - Chronic water level decline
        - Reduction of groundwater in storage
        - Degradation of water quality
        - Land subsidence
        - Depletion of interconnected surface water and impacts to GDEs.

Summary

Based upon the location and planned production from the proposed replacement well, which will be completed within a principal aquifer managed by the EMA. Production from the well would not be "inconsistent with any sustainable groundwater management program" established by the GSA and would therefore NOT decrease the likelihood of achieving a sustainability goal for the basin.

In our opinion, the GSA should provide a written verification to the County of Santa Barbara Department of Environmental Health for this application.

Indemnification and Limitations of Liability

GSI Water Solutions does not warrant or guarantee that the replacement well will produce the expected amount of water nor that the GSA will not require that extraction from the well be reduced in the future in accordance with its authority to manage the EMA within the sustainability goal presented in EMA's Plan.

GSI Water Solutions is not responsible for or otherwise liable for any costs, investments, lost revenue, or payments related to any groundwater well permitted or not permitted by the County, including well drilling costs, pumping fees, extraction limits, costs related to well failure, well deepening, increased maintenance, replacement, or operational costs.

The GSA's issuance of a written verification and the County's issuance of a well permit to Applicant does not guarantee the extraction of any specific amount of water now or in the future or any defined water level or water quality.

From: Johnston, Jason
To: Selena McCalip; ema
Subject: [CAUTION: SUSPECT SENDER] Water Wells - William Taylor- APN 133-151-053
Date: Friday, February 16, 2024 11:23:17 AM
Attachments: EH-LUA-23-000207.pdf
EH-LUA-24-000040.pdf
APN 133-151-053.pdf

Good morning,

EHS has reviewed the proposed destruction permit (EH-LUA-24-000040), and will approve concurrently with the permit application to construct the new, replacement well (EH-LUA-23-000207), upon receiving written verification from the GSA. Both applications are attached here. EHS does not have a record of the original well, however the completion report for the domestic well (located near the structures) notes it is the 2nd well on the property when it was constructed in 1981. County well permitting began in late 1975. As the new well is proposed to be a 16" casing, it would be considered a replacement as the well to be destroyed was a 16" casing at original construction.

Thank you,
Jason Johnston
805-346-7348
www.countyofsb.org/phd/ehs

CALIFORNIA DEPARTMENT OF WATER RESOURCES
SUSTAINABLE GROUNDWATER MANAGEMENT OFFICE
715 P Street, 8th Floor | Sacramento, CA 95814 | P.O. Box 942836 | Sacramento, CA 94236-0001

January 18, 2024

Bill Buelow
Santa Ynez River Valley Basin Western Management Area GSA
PO Box 719
Santa Ynez, CA 93460
bbuelow@syrwcd.com

RE: Santa Ynez River Valley Basin - 2022 Groundwater Sustainability Plans

Dear Bill Buelow,

The Department of Water Resources (Department) has evaluated the three groundwater sustainability plans (GSPs) submitted for the Santa Ynez River Valley Basin (Basin), as well as the materials considered to be part of the required coordination agreement. Collectively, the three GSPs and the coordination agreement are referred to as the Plan for the Basin. The Department has determined the Plan is approved. The approval is based on recommendations from the Staff Report, included as an exhibit to the attached Statement of Findings, which describes that the Basin GSPs satisfy the objectives of the Sustainable Groundwater Management Act (SGMA) and substantially comply with the GSP Regulations. The Staff Report also proposes recommended corrective actions that the Department believes will enhance the Plan and facilitate future evaluation by the Department. The Department strongly encourages the recommended corrective actions be given due consideration and suggests incorporating all resulting changes to the GSPs in future updates.

Recognizing SGMA sets a long-term horizon for groundwater sustainability agencies (GSAs) to achieve their basin sustainability goals, monitoring progress is fundamental for successful implementation. GSAs are required to evaluate their GSPs at least every five years and whenever the Plan is amended, and to provide a written assessment to the Department. Accordingly, the Department will evaluate approved GSPs and issue an assessment at least every five years. The Department will initiate the first periodic review of the Basin GSP no later than January 20, 2027.

Please contact Sustainable Groundwater Management staff by emailing sgmps@water.ca.gov if you have any questions related to the Department's assessment or implementation of your GSP.

Thank You,

Paul Gosselin

Paul Gosselin
Deputy Director
Sustainable Groundwater Management

Attachment:

1. Statement of Findings Regarding the Approval of the Santa Ynez River Valley Basin Groundwater Sustainability Plan

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

STATEMENT OF FINDINGS REGARDING THE APPROVAL OF THE SANTA YNEZ RIVER VALLEY BASIN GROUNDWATER SUSTAINABILITY PLAN

The Department of Water Resources (Department) is required to evaluate whether a submitted groundwater sustainability plan (GSP or Plan) conforms to specific requirements of the Sustainable Groundwater Management Act (SGMA or Act), is likely to achieve the sustainability goal for the Basin covered by the Plan, and whether the Plan adversely affects the ability of an adjacent basin to implement its GSP or impedes achievement of sustainability goals in an adjacent basin. (Water Code § 10733.) The Department is directed to issue an assessment of the Plan within two years of its submission. (Water Code § 10733.4.) This Statement of Findings explains the Department's decision regarding the three GSPs (collectively referred to as "the Plan") submitted by the Western Management Area, Central Management Area, and Eastern Management Area Groundwater Sustainability Agencies (GSAs or Agencies) for the Santa Ynez River Valley Basin (No. 3-015).

Department management has discussed the Plan with staff and has reviewed the Department Staff Report, entitled Sustainable Groundwater Management Program Groundwater Sustainability Plan Assessment Staff Report, attached as Exhibit A, recommending approval of the Plan. Department management is satisfied that staff have conducted a thorough evaluation and assessment of the Plan and concurs with staff's recommendation and all the recommended corrective actions. The Department therefore **APPROVES** the Plan and makes the following findings:

A. The Plan satisfies the required conditions as outlined in § 355.4(a) of the GSP Regulations (23 CCR § 350 et seq.):

    1. The Plan was submitted within the statutory deadline of January 31, 2022. (Water Code § 10720.7(a); 23 CCR § 355.4(a)(1).)

    2. The Plan was complete, meaning it generally appeared to include the information required by the Act and the GSP Regulations sufficient to warrant a thorough evaluation and issuance of an assessment by the Department. (23 CCR § 355.4(a)(2).)

    3. The Plan, either on its own or in coordination with other Plans, covers the entire Basin. (23 CCR § 355.4(a)(3).)

B. The general standards the Department applied in its evaluation and assessment of the Plan are: (1) "conformance" with the specified statutory requirements, (2) "substantial compliance" with the GSP Regulations, (3) whether the Plan is likely

to achieve the sustainability goal for the Basin within 20 years of the implementation of the Plan, and (4) whether the Plan adversely affects the ability of an adjacent basin to implement its GSP or impedes achievement of sustainability goals in an adjacent basin. (Water Code § 10733.) Application of these standards requires exercise of the Department's expertise, judgment, and discretion when making its determination of whether a Plan should be deemed "approved," "incomplete," or "inadequate."

The statutes and GSP Regulations require Plans to include and address a multitude and wide range of informational and technical components. The Department has observed a diverse array of approaches to addressing these technical and informational components being used by GSAs in different basins throughout the state. The Department does not apply a set formula or criterion that would require a particular outcome based on how a Plan addresses any one of SGMA's numerous informational and technical components. The Department finds that affording flexibility and discretion to local GSAs is consistent with the standards identified above; the state policy that sustainable groundwater management is best achieved locally through the development, implementation, and updating of local plans and programs (Water Code § 113); and the Legislature's express intent under SGMA that groundwater basins be managed through the actions of local governmental agencies to the greatest extent feasible, while minimizing state intervention to only when necessary to ensure that local agencies manage groundwater in a sustainable manner. (Water Code § 10720.1(h).) The Department's final determination is made based on the entirety of the Plan's contents on a case-by-case basis, considering and weighing factors relevant to the particular Plan and Basin under review.

C. In making these findings and Plan determination, the Department also recognized that: (1) the Department maintains continuing oversight and jurisdiction to ensure the Plan is adequately implemented; (2) the Legislature intended SGMA to be implemented over many years; (3) SGMA provides Plans 20 years of implementation to achieve the sustainability goal in a Basin (with the possibility that the Department may grant GSAs an additional five years upon request if the GSA has made satisfactory progress toward sustainability); and, (4) local agencies acting as GSAs are authorized, but not required, to address undesirable results that occurred prior to enactment of SGMA. (Water Code §§ 10721(r); 10727.2(b); 10733(a); 10733.8.)

D. The Plan conforms with Water Code §§ 10727.2 and 10727.4, substantially complies with 23 CCR § 355.4, and appears likely to achieve the sustainability goal for the Basin. It does not appear at this time that the Plan will adversely affect the ability of adjacent basins to implement their GSPs or impede achievement of sustainability goals.

1. The sustainable management criteria that have been established for chronic lowering of groundwater levels, reduction of groundwater storage, seawater intrusion, degraded water quality, land subsidence, and interconnected surface water are reasonable. While Department staff have identified multiple recommended corrective actions to improve the sustainable management criteria, they do not believe that these issues should preclude Plan approval. The GSPs rely on credible information and science, such as historical groundwater elevation data, well impacts analyses, historical groundwater quality data, and groundwater quality regulatory thresholds to quantify the groundwater conditions that the Plan seeks to avoid and to provide an objective way to determine whether the Basin is being managed sustainably in accordance with SGMA. (23 CCR § 355.4(b)(1).)

2. The Plan identifies data gaps related to monitoring networks, the hydrogeologic conceptual model, interconnected surface water, and understanding pumping from the Santa Ynez River Alluvium. The Plan contains potential projects and management actions associated with filling data gaps, including but not limited to installing monitoring wells, refining the hydrogeological conceptual model, and improving the understanding of groundwater conditions. (23 CCR § 355.4(b)(2).)

3. The projects and management actions proposed in the Plan are designed to eliminate long-term overdraft conditions in the Basin through target demand reduction, increased groundwater or surface water supply, filling data gaps, improving groundwater quality, and possibly implementing a credit or trading program. The projects and management actions appear reasonable and commensurate with the level of understanding of the Basin setting. The projects and management actions described in the Plan provide a feasible approach to achieving the Basin's sustainability goal and should provide the GSAs with greater versatility to adapt and respond to changing conditions and future challenges during GSP implementation. (23 CCR § 355.4(b)(3).)

4. The Plan provides a detailed explanation of how the varied interests of groundwater uses and users in the Basin were considered in developing the sustainable management criteria and conducts well analyses to show how those interests, such as domestic, municipal, and agricultural well users, would be impacted by the chosen minimum thresholds. (23 CCR § 355.4(b)(4).)

5. The Plan's projects and management actions appear feasible at this time and capable of preventing undesirable results and ensuring that the Basin is operated within its sustainable yield within 20 years. The Department

will continue to monitor Plan implementation and reserves the right to change its determination if projects and management actions are not implemented or appear unlikely to prevent undesirable results or achieve sustainability within SGMA timeframes. (23 CCR § 355.4(b)(5).)

6. The Plan includes a reasonable assessment of overdraft conditions and includes reasonable means to mitigate overdraft, if present. (23 CCR § 355.4(b)(6).)

7. At this time, it does not appear that the Plan will adversely affect the ability of an adjacent basin to implement its GSP or impede achievement of sustainability goals in an adjacent basin (23 CCR § 355.4(b)(7).)

8. A satisfactory coordination agreement has been adopted by all relevant parties. (23 CCR § 355.4(b)(8).)

9. The member agencies of the GSAs include the City of Lompoc, Vandenberg Village Community Services District, Mission Hills Community Services District, Santa Ynez River Water Conservation District, and Santa Barbara County Water Agency in the Western Management Area GSA; the Santa Ynez River Water Conservation District, Santa Barbara County Water Agency, and City of Buellton in the Central Management Area GSA; and the Santa Ynez River Water Conservation District; Santa Barbara County Water Agency; City of Solvang; and Santa Ynez River Water Conservation District, Improvement District No. 1 in the Eastern Management Area GSA. The member agencies have historically developed and implemented water management plans, water management programs, and water resource monitoring within their respective management areas. The GSAs' member agencies and their history of groundwater management provide a reasonable level of confidence that the GSAs have the legal authority and financial resources necessary to implement the Plan. (23 CCR § 355.4(b)(9).)

10. Through review of the Plan and consideration of public comments, the Department determines that the GSAs adequately responded to comments that raised credible technical or policy issues with the Plan, sufficient to warrant approval of the Plan at this time. The Department also notes that the recommended corrective actions included in the Staff Report are important to addressing certain technical or policy issues that were raised and, if not addressed before future, subsequent plan evaluations, may preclude approval of the Plan in those future evaluations. (23 CCR § 355.4(b)(10).)

E. In addition to the grounds listed above, DWR also finds that:

1. The Department developed its GSP Regulations consistent with and intending to further the State's human right to water policy through implementation of SGMA and the Regulations, primarily by achieving sustainable groundwater management in a basin. By ensuring substantial compliance with the GSP Regulations, the Department has considered the state policy regarding the human right to water in its evaluation of the Plan. (Water Code § 106.3; 23 CCR § 350.4(g).)

2. The Plan acknowledges and identifies interconnected surface waters within the Basin. The GSAs propose initial sustainable management criteria to manage this sustainability indicator and provide measures to improve understanding and management of interconnected surface water. The GSAs acknowledge, and the Department agrees, that many data gaps related to interconnected surface water exist. The GSAs should continue filling data gaps, collecting additional monitoring data, and coordinating with resources agencies and interested parties to understand beneficial uses and users that may be impacted by depletions of interconnected surface water caused by groundwater pumping. Future periodic evaluations of the Plan and amendments to the Plan should aim to improve the initial sustainable management criteria as more information and improved methodology becomes available.

3. Projections of future basin extractions are likely to stay within current and historic ranges, at least until the next periodic evaluation by the GSAs and the Department. Basin groundwater levels and other SGMA sustainability indicators are unlikely to substantially deteriorate while the GSAs implement the Department's recommended corrective actions. State intervention is not necessary at this time to ensure that local agencies manage groundwater in a sustainable manner. (Wat. Code § 10720.1(h).)

4. The California Environmental Quality Act (Public Resources Code § 21000 *et seq*.) does not apply to the Department's evaluation and assessment of the Plan.

Accordingly, the GSP submitted by the Agencies for the Santa Ynez River Valley Basin is hereby **APPROVED.** The recommended corrective actions identified in the Staff Report will assist the Department's future review of the Plan's implementation for consistency with SGMA and the Department therefore recommends the Agencies address them by the time of the Department's periodic review, which is set to begin on January 18, 2027, as required by Water Code § 10733.8. Failure to address the Department's recommended corrective actions before future, subsequent plan evaluations, may lead to a Plan being determined incomplete or inadequate.

Signed:

Karla Nemeth

Karla Nemeth, Director
Date: January 18, 2024

Exhibit A: Groundwater Sustainability Plan Assessment Staff Report – Santa Ynez River Valley Basin

State of California
Department of Water Resources
Sustainable Groundwater Management Program
Groundwater Sustainability Plan Assessment
Staff Report

Groundwater Basin Name:	Santa Ynez River Valley Basin (No. 3-015)
Submitting Agencies:	Western Management Area Groundwater Sustainability Agency, Central Management Area Groundwater Sustainability Agency, Eastern Area Groundwater Sustainability Agency
Submittal Type:	Initial GSP Submission
Submittal Date:	January 18-19, 2022
Recommendation:	Approved
Date:	January 18, 2024

Multiple groundwater sustainability agencies (GSAs) submitted multiple groundwater sustainability plans (GSPs or Plans) for the entire Santa Ynez River Valley Basin (Basin), which are coordinated pursuant to a required coordination agreement, to the Department of Water Resources (Department) for evaluation and assessment as required by the Sustainable Groundwater Management Act (SGMA)[1] and GSP Regulations.[2] In total, three GSPs have been adopted and are being implemented by the three respective GSAs. Collectively, all GSPs and the coordination agreement are, for evaluation and assessment purposes, treated and referred to as the Plan for the Basin. Individually, the GSPs include the following:

- Western Management Area GSP – prepared by Western Management Area GSA (WMA)
- Central Management Area GSP – prepared by Central Management Area GSA (CMA)
- Eastern Management Area GSP – prepared by Eastern Management Area GSA (EMA)

After evaluation and assessment, Department staff conclude that the Plan includes the required components of a GSP, demonstrates a thorough understanding of the Basin based on what appears to be the best available science and information, sets well explained, supported, and reasonable sustainable management criteria to prevent undesirable results as defined in the Plan, and proposes a set of projects and

[1] Water Code § 10720 *et seq*.
[2] 23 CCR § 350 *et seq*.

management actions that will likely achieve the sustainability goal defined for the Basin.[3] Department staff will continue to monitor and evaluate the Basin's progress toward achieving the sustainability goal through annual reporting and future periodic evaluations of the GSPs and their implementation.

- ***Based on the current evaluation of the Plan, Department staff recommend the GSP be approved with the recommended corrective actions described herein.***

This assessment includes five sections:

- **Section 1 – Summary:** Provides an overview of Department staff's assessment and recommendations.
- **Section 2 – Evaluation Criteria:** Describes the legislative requirements and the Department's evaluation criteria.
- **Section 3 – Required Conditions:** Describes the submission requirements, Plan completeness, and basin coverage required for a GSP to be evaluated by the Department.
- **Section 4 – Plan Evaluation:** Provides an assessment of the contents included in the GSP organized by each Subarticle outlined in the GSP Regulations.
- **Section 5 – Staff Recommendation:** Includes the staff recommendation for the Plan and any recommended or required corrective actions, as applicable.

1 SUMMARY

Department staff recommend approval of the Plan. The GSAs have identified areas for improvement of their Plan (e.g., better understanding pumping from the Santa Ynez River Alluvium, filling data gaps related to interconnected surface water). Department staff concur that those items are important and recommend the GSAs address them as soon as possible. Department staff have also identified additional recommended corrective actions within this assessment that the GSAs should consider addressing by the first periodic evaluation of the Plan. The recommended corrective actions generally focus on the following:

(1) Incorporating the action plan associated with the management of the Santa Ynez River Alluvium into the GSP and GSP implementation.
(2) Filling data gaps and better understanding the principal aquifers.
(3) Evaluating methodologies and terminology in the water budgets for better consistency across the three management areas.
(4) Reevaluating the sustainable management criteria for the chronic lowering of groundwater levels.
(5) Reevaluating the sustainable management criteria for the degradation of water quality.

[3] 23 CCR § 350 *et seq*.

(6) Addressing inconsistencies in the sustainable management criteria for land subsidence.
(7) Reevaluating the sustainable management criteria for the depletions of interconnected surface water.

Addressing the recommended corrective actions identified in Section 5 of this assessment will be important to demonstrate, on an ongoing basis, that implementation of the Plan is likely to achieve the sustainability goal.

2 EVALUATION CRITERIA

The GSAs submitted multiple GSPs to the Department to evaluate whether the Plans conforms to specified SGMA requirements[4] and is likely to achieve the sustainability goal for the Santa Ynez River Valley Basin.[5] To achieve the sustainability goal for the Basin, the GSP must demonstrate that implementation of the Plans will lead to sustainable groundwater management, which means the management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results.[6] Undesirable results must be defined quantitatively by the GSAs.[7] The Department is also required to evaluate whether the Plans will adversely affect the ability of an adjacent basin to implement its GSP or achieve its sustainability goal.[8]

For the GSPs to be evaluated by the Department, it must first be determined that the Plans were submitted by the statutory deadline,[9] and that they are complete and cover the entire basin.[10] If these conditions are satisfied, the Department evaluates the Plans to determine whether they comply with specific SGMA requirements and substantially comply with the GSP Regulations.[11] Substantial compliance means that the supporting information is sufficiently detailed and the analyses sufficiently thorough and reasonable, in the judgment of the Department, to evaluate the Plans, and the Department determines that any discrepancy would not materially affect the ability of the Agency to achieve the sustainability goal for the basin, or the ability of the Department to evaluate the likelihood of the Plans to attain that goal.[12]

When evaluating whether the Plans are likely to achieve the sustainability goal for the Basin, Department staff reviewed the information provided and relied upon in the Plans for sufficiency, credibility, and consistency with scientific and engineering professional

[4] Water Code §§ 10727.2, 10727.4.
[5] Water Code § 10733(a).
[6] Water Code § 10721(v).
[7] 23 CCR § 354.26 *et seq.*
[8] Water Code § 10733(c).
[9] 23 CCR § 355.4(a)(1).
[10] 23 CCR §§ 355.4(a)(2), 355.4(a)(3).
[11] 23 CCR § 350 *et seq.*
[12] 23 CCR § 355.4(b).

standards of practice.[13] The Department's review considers whether there is a reasonable relationship between the information provided and the assumptions and conclusions made by the GSAs, including whether the interests of the beneficial uses and users of groundwater in the basin have been considered; whether sustainable management criteria and projects and management actions described in the Plans are commensurate with the level of understanding of the basin setting; and whether those projects and management actions are feasible and likely to prevent undesirable results.[14]

The Department also considers whether the GSAs have the legal authority and financial resources necessary to implement the Plans.[15]

To the extent overdraft is present in a basin, the Department evaluates whether the Plans provide a reasonable assessment of the overdraft and includes reasonable means to mitigate the overdraft.[16] The Department also considers whether the Plans provide reasonable measures and schedules to eliminate identified data gaps.[17] Lastly, the Department's review considers the comments submitted on the Plans and evaluates whether the GSAs adequately responded to the comments that raise credible technical or policy issues with the Plans.[18]

The Department is required to evaluate the GSPs within two years of their submittal date and issue a written assessment of the Plan.[19] The assessment is required to include a determination of the Plan's status.[20] The GSP Regulations define the three options for determining the status of a Plan: Approved,[21] Incomplete,[22] or Inadequate.[23]

Even when review indicates that the Plans satisfy the requirements of SGMA and are in substantial compliance with the GSP Regulations, the Department may recommend corrective actions.[24] Recommended corrective actions are intended to facilitate progress in achieving the sustainability goal within the basin and the Department's future evaluations, and to allow the Department to better evaluate whether the Plans adversely affect adjacent basins. While the issues addressed by the recommended corrective actions do not, at this time, preclude approval of the Plans, the Department recommends that the issues be addressed to ensure the Plan's implementation continues to be consistent with SGMA and the Department is able to assess progress in achieving the

[13] 23 CCR § 351(h).
[14] 23 CCR §§ 355.4(b)(1), (3), (4), and (5).
[15] 23 CCR § 355.4(b)(9).
[16] 23 CCR § 355.4(b)(6).
[17] 23 CCR § 355.4(b)(2).
[18] 23 CCR § 355.4(b)(10).
[19] Water Code § 10733.4(d); 23 CCR § 355.2(e).
[20] Water Code § 10733.4(d); 23 CCR § 355.2(e).
[21] 23 CCR § 355.2(e)(1).
[22] 23 CCR § 355.2(e)(2).
[23] 23 CCR § 355.2(e)(3).
[24] Water Code § 10733.4(d).

sustainability goal within the basin.[25] Unless otherwise noted, the Department proposes that recommended corrective actions be addressed by the submission date for the first periodic evaluation.[26]

The staff assessment of the Plans involves the review of information presented by the GSAs, including models and assumptions, and an evaluation of that information based on scientific reasonableness, including standard or accepted professional and scientific methods and practices. The assessment does not require Department staff to recalculate or reevaluate technical information provided in the Plans or to perform their own geologic or engineering analysis of that information. The staff recommendation to approve the Plans does not signify that Department staff, were they to exercise the professional judgment required to develop a GSP for the basin, would make the same assumptions and interpretations as those contained in the Plans, but simply that Department staff have determined that the assumptions and interpretations relied upon by the submitting GSAs are supported by adequate, credible evidence, and are scientifically reasonable.

Lastly, the Department's review and approval of the Plans is a continual process. Both SGMA and the GSP Regulations provide the Department with the ongoing authority and duty to review the implementation of the Plans.[27] Also, GSAs have an ongoing duty to provide reports to the Department, periodically reassess their Plans, and, when necessary, update or amend their plans.[28] The passage of time or new information may make what is reasonable and feasible at the time of this review to not be so in the future. The emphasis of the Department's periodic reviews will be to assess the progress toward achieving the sustainability goal for the basin and whether Plans implementation adversely affects the ability of adjacent basins to achieve their sustainability goals.

3 REQUIRED CONDITIONS

A GSP, to be evaluated by the Department, must be submitted within the applicable statutory deadline. The GSP must also be complete and must, either on its own or in coordination with other GSPs, cover the entire basin.

3.1 SUBMISSION DEADLINE

SGMA required basins categorized as high- or medium-priority and not subject to critical conditions of overdraft to submit a GSP no later than January 31, 2022.[29]

The GSAs submitted their Plans between January 18 and 19, 2022.

[25] Water Code § 10733.8.
[26] 23 CCR § 356.4 *et seq*.
[27] Water Code § 10733.8; 23 CCR § 355.6.
[28] Water Code §§ 10728 *et seq.*, 10728.2.
[29] Water Code § 10720.7(a)(2).

3.2 COMPLETENESS

GSP Regulations specify that the Department shall evaluate a GSP if that GSP is complete and includes the information required by SGMA and the GSP Regulations.[30]

The GSAs submitted adopted GSPs for the entire Basin. After an initial, preliminary review, Department staff found the GSPs to be complete and appearing to include the required information, sufficient to warrant a thorough evaluation by the Department.[31] The Department posted the GSPs to its website on January 31, 2022.[32]

3.3 BASIN COVERAGE

A GSP, either on its own or in coordination with other GSPs, must cover the entire basin.[33] A GSP that is intended to cover the entire basin may be presumed to do so if the basin is fully contained within the jurisdictional boundaries of the submitting GSA(s).

The jurisdictional boundary of the submitting GSAs fully contains the Basin,[34] and the CMA GSP asserts "[t]he entire [Basin] is covered by one of [the coordinated plans] prepared for the Basin."[35] Elsewhere, however, the Plan expressly indicates the GSAs do not intend to manage a portion of the Basin termed the Santa Ynez River Alluvium, because the GSAs claim that the "[a]lluvium is considered surface water under the regulatory jurisdiction of the [State Water Resources Control Board (SWRCB)] and is not managed under SGMA."[36] The coordinated GSPs state that the Santa Ynez River Alluvium area "is not [to] be managed by the CMA GSA" and "is not managed by the EMA GSA under SGMA," respectively.[37] During the review period, the Department received a comment letter from the SWRCB stating "the assertion that all underground water in the Santa Ynez River Alluvium is surface water managed by the [SWRCB] is not correct, and it appears that it will be necessary to treat this area as an unmanaged area under [SGMA]."[38] Thus, there appears to be a jurisdictional question or dispute regarding the legal characterization and jurisdiction over extraction of water from beneath the ground by wells in the alluvium area along the Santa Ynez River. Department staff are not

[30] 23 CCR § 355.4(a)(2).
[31] The Department undertakes a preliminary completeness review of a submitted Plan under section 355.4(a) of the GSP Regulations to determine whether the elements of a Plan required by SGMA and the Regulations have been provided, which is different from a determination, upon review, that a Plan is "incomplete" for purposes of section 355.2(e)(2) of the Regulations.
[32] https://sgma.water.ca.gov/portal/gsp/preview/80, https://sgma.water.ca.gov/portal/gsp/preview/79, https://sgma.water.ca.gov/portal/gsp/preview/78.
[33] Water Code § 10727(b); 23 CCR § 355.4(a)(3).
[34] Santa Ynez River Valley Western Management Area GSP, Section 1d.1-2, p. 101; Santa Ynez River Valley Central Management Area GSP, Section 1d.1-2, p. 94; Santa Ynez River Valley Eastern Management Area GSP, Section 2.2, p. 62.
[35] Santa Ynez River Valley Central Management Area GSP, Section 1d.1-2, p. 94.
[36] Santa Ynez River Valley Eastern Management Area GSP, Executive Summary, p. ES-3.
[37] Santa Ynez River Valley Central Management Area GSP, Executive Summary, p. ES-2; Santa Ynez River Valley Eastern Management Area GSP, Executive Summary, p. ES-6.
[38] SWRCB April 14, 2023 comment letter submitted to the Department's SGMA Portal https://sgma.water.ca.gov/portal/service/gspdocument/download/9653

required to and cannot resolve this issue. However, Department staff remain concerned that extraction by wells in the alluvium area—if left unmanaged and unaccounted for—could affect implementation of the GSP and affect the likelihood of achieving sustainability in the Basin, because it appears that these wells are numerous and extract substantial amounts of water. After a series of meetings between the Department, the State Water Board, and the Agencies, the GSAs (by letter dated January 5, 2024) indicated they developed and intend to implement an action plan designed to gather detailed information and eliminate regulatory uncertainty regarding the wells and pumping in the Santa Ynez River Alluvium area.[39] The SWRCB commented (by letter dated January 16, 2024) that "[i]mplementation of the action plan should help to develop information needed to sustainably manage the basin and provide a better understanding of interconnections and interactions between groundwater and surface water in the Santa Ynez River watershed." At this time, the GSAs' commitment to implement the proposed action plan assuages Department staff's concerns, but Department staff recommend including implementation of this program as a recommended corrective action and will track progress through review of annual reports and in the Department's periodic review (see Recommended Corrective Action 1).

4 PLAN EVALUATION

As stated in Section 355.4 of the GSP Regulations, a basin "shall be sustainably managed within 20 years of the applicable statutory deadline consistent with the objectives of the Act." The Department's assessment is based on a number of related factors including whether the elements of the GSPs were developed in the manner required by the GSP Regulations, whether the GSPs were developed using appropriate data and methodologies and whether their conclusions are scientifically reasonable, and whether the GSPs, through the implementation of clearly defined and technically feasible projects and management actions, are likely to achieve a tenable sustainability goal for the basin. The Department staff's evaluation of the likelihood of the Plans to attain the sustainability goal for the Basin is provided below.

4.1 ADMINISTRATIVE INFORMATION

The GSP Regulations require each Plan to include administrative information identifying the submitting Agency, its decision-making process, and its legal authority;[40] a description of the Plan area and identification of beneficial uses and users in the Plan area;[41] and a

[39] Action Plan for Management of All Well Production Along the Lower Santa Ynez River, Above the Lompoc Narrows: https://sgma.water.ca.gov/portal/service/gspdocument/download/9990
[40] 23 CCR § 354.6 *et seq*.
[41] 23 CCR § 354.8 *et seq*.

description of the ability of the submitting Agency to develop and implement a Plan for that area.[42]

The Santa Ynez River Valley Basin is divided into three management areas (Figure 1): the Western Management Area managed by Western Management Area Groundwater Sustainability Agency (WMA GSA), the Central Management Area managed by Central Management Area Groundwater Sustainability Agency (CMA GSA), and the Eastern Management Area managed by Eastern Management Area Groundwater Sustainability Agency (EMA GSA). Each of the three GSAs have individually developed a GSP which is coordinated pursuant to a single coordination agreement.[43]

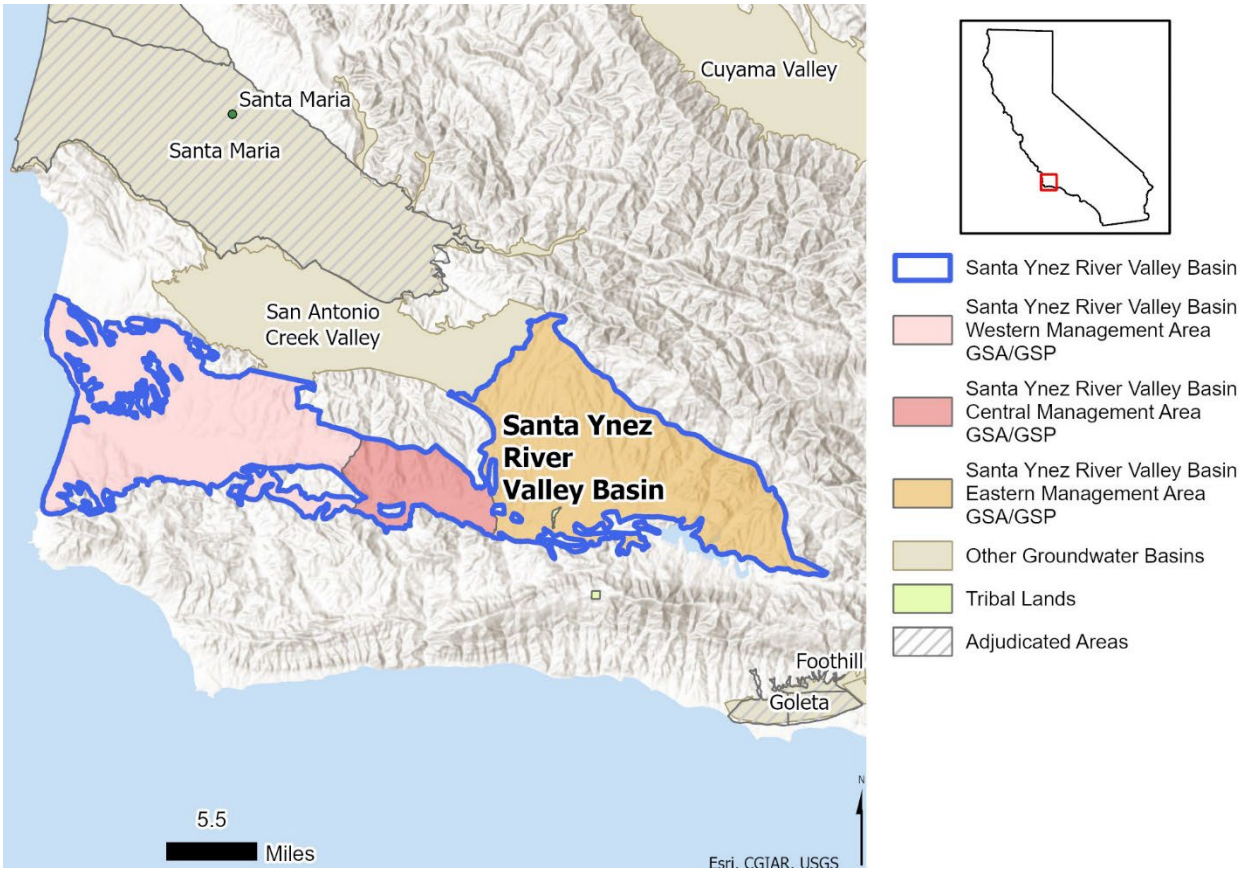

Figure 1: Santa Ynez River Valley Basin and GSP Location Map.

The Basin underlies the cities of Solvang, Buellton, and Lompoc, and the unincorporated communities of Santa Ynez, Ballard, Los Olivos, Acorn, Mission Hills, and Vandenberg Village. The Basin is bounded by the Pacific Ocean on the west, the Purisima Hills and San Rafael Mountains on the north, the Santa Ynez Mountains on the south, and consolidated non-water-bearing rocks of Mesozoic and Tertiary age on the east. These consolidated rocks underlie the unconsolidated water-bearing deposits of Tertiary and

[42] 23 CCR § 354.6(e).
[43] Santa Ynez River Valley Western Management Area GSP, Appendix 1b-D, pp. 779-793.

Quaternary age that comprise the Basin and define the Basin's lower boundary (bottom of basin). To the north, the Basin boundary is also coincident with the boundary of the San Antonio Creek Valley Groundwater Basin (No. 3-014), for portions of the WMA and EMA management areas.[44]

The WMA encompasses the westernmost approximately 133.7 square miles (85,595.5 acres) of the Basin. The WMA is divided into six subareas based on hydrogeologic and topographic characteristics: Lompoc Plain, Lompoc Terrace, Lompoc Upland, Santa Rita Upland, Santa Ynez River Alluvium, and Burton Mesa.[45]

The member agencies for the WMA GSA are the City of Lompoc, the Vandenberg Village Community Services District, the Mission Hills Community Services District, the Santa Ynez River Water Conservation District, and the Santa Barbara County Water Agency.[46] The WMA is governed by a committee of representatives from each member agency which has four voting committee members and one non-voting committee member. The Santa Ynez River Water Conservation District representative has four votes, the City of Lompoc representative has two votes, and the Vandenberg Village Community Services District and Mission Hills Community Services District representatives each have one vote. The Santa Barbara County Water Agency representative is a non-voting member of the GSA. The Santa Barbara County Water Agency is represented by the Board of Supervisors for Santa Barbara County, serving as Water Agency Directors.[47]

The Plan notes that beneficial uses and users in the WMA Plan Area include, but are not limited to, holders of overlying groundwater rights; municipal, domestic and agricultural well operators; public water systems; local land use planning agencies; environmental users of groundwater; surface water users; federal government; and disadvantaged communities.[48] Surface water flows of the Santa Ynez River are managed by the SWRCB under Order WR 2019-0148.[49]

The CMA encompasses approximately 32.8 square miles (21,023.8 acres) of the center of the Basin. The Plan explains that the CMA is divided into two subareas based on hydrogeologic and topographic characteristics: Buellton Upland and Santa Ynez River Alluvium.[50]

The member agencies for the CMA GSA are the Santa Ynez River Water Conservation District, the Santa Barbara County Water Agency, and the City of Buellton.[51] The CMA GSA is governed by a committee of representatives from each member agency. There are two voting committee members representing the Santa Ynez River Water

[44] Santa Ynez River Valley Western Management Area GSP, Section 1d.1-1, p. 101.
[45] Santa Ynez River Valley Western Management Area GSP, Section 1d.1-3, p. 101.
[46] Santa Ynez River Valley Western Management Area GSP, Section 1a, p. 65.
[47] Santa Ynez River Valley Western Management Area GSP, Section 1b.1-2, p. 81.
[48] Santa Ynez River Valley Western Management Area GSP, Section 1d.5-1-1, pp. 144-145.
[49] Santa Ynez River Valley Western Management Area GSP, Section 2a.4-6-1, p. 296.
[50] Santa Ynez River Valley Central Management Area GSP, Section 1d.1-3, p. 93.
[51] Santa Ynez River Valley Central Management Area GSP, Section 1a, p. 61.

Conservation District and City of Buellton, and one non-voting committee member representing the Santa Barbara County Water Agency. The Plan states that the Santa Barbara County Water Agency is represented by a person or persons as appointed by the Board of Supervisors for Santa Barbara County, serving as Water Agency Directors.[52] The GSA indicates their legal authority comes from obtaining GSA status for the management area.[53]

The Plan notes that beneficial uses and users in the CMA Plan Area include, but are not limited to, holders of overlying groundwater rights; municipal, domestic, and agricultural well operators; public water systems; local land use planning agencies; environmental users of groundwater; surface water users; federal government; and disadvantaged communities.[54]

The EMA encompasses approximately 150 square miles (96,000 acres).[55] The EMA Plan area is divided into two main areas: the Santa Ynez Uplands and the Santa Ynez River areas. The Plan states that the "Santa Ynez Uplands covers a majority of the EMA, including the northern 130 square miles (87 percent) of the 150 square miles of the EMA."[56]

The member agencies for the EMA GSA are the Santa Ynez River Water Conservation District; the Santa Barbara County Water Agency; the City of Solvang; and the Santa Ynez River Water Conservation District, Improvement District No. 1.[57] The EMA GSA is governed by a five-member board of directors. Directors are elected by the registered voters in Santa Ynez River Water Conservation District boundaries to staggered 4-year terms.[58] The 2017 memorandum of agreement for the GSA Committee granted it authority to have "all powers that a GSA is authorized to exercise as provided by SGMA."[59]

The Plan notes that the beneficial uses and users in the EMA Plan Area include holders of overlying groundwater rights; municipal, domestic, and agricultural well operators; public water systems; environmental users of groundwater; surface water users; and the Santa Ynez Band of Chumash Indians.[60] No disadvantaged communities were identified within the EMA. The Plan states that "currently, the Chumash tribal government is participating in the SGMA process for the EMA GSA through its representation on the Citizens Advisory Group."[61] Regarding environmental users of surface water, the EMA GSA notes that it is "fully supportive of the comprehensive and ongoing efforts … to

[52] Santa Ynez River Valley Central Management Area GSP, Section 1b.1-2, p. 77.
[53] Santa Ynez River Valley Central Management Area GSP, Section 1b.1-3, p. 77.
[54] Santa Ynez River Valley Central Management Area GSP, Section 1d.5-1-1, p. 133.
[55] Santa Ynez River Valley Eastern Management Area GSP, Section 3.1.1, p. 104.
[56] Santa Ynez River Valley Eastern Management Area GSP, Section 3.1.1, p. 105.
[57] Santa Ynez River Valley Eastern Management Area GSP, Section 2.1, p. 57.
[58] Santa Ynez River Valley Eastern Management Area GSP, Section 2.1.2.1, p. 58.
[59] Santa Ynez River Valley Eastern Management Area GSP, Section 2.1.4, p. 61.
[60] Santa Ynez River Valley Eastern Management Area GSP, Section 2.3.1, p. 94.
[61] Santa Ynez River Valley Eastern Management Area GSP, Section 2.2.1.4, p. 67.

develop and implement surface flow and non-flow measures in the mainstem lower Santa Ynez River and certain tributaries for the protection of public trust resources, including but not limited to steelhead and its critical habitat within the Santa Ynez River."[62]

The Plan cites several potential options for funding GSP implementation — such as cost sharing, extraction fees, grants, etc.

Department staff conclude the Plan's discussion and presentation of administrative material covers the specific items listed in the GSP Regulations[63] in an understandable format using appropriate information. Staff are aware of no significant inconsistencies or contrary information to that presented in the Plan and therefore have no significant concerns regarding the quality and discussion of the administrative section the Plan.

4.2 Basin Setting

GSP Regulations require information about the physical setting and characteristics of the basin and current conditions of the basin, including a hydrogeologic conceptual model; a description of historical and current groundwater conditions; and a water budget accounting for total annual volume of groundwater and surface water entering and leaving the basin, including historical, current, and projected water budget conditions.[64]

4.2.1 Hydrogeologic Conceptual Model

The hydrogeologic conceptual model is a non-numerical model of the physical setting, characteristics, and processes that govern groundwater occurrence within a basin, and represents a local agency's understanding of the geology and hydrology of the basin that support the geologic assumptions used in developing mathematical models, such as those that allow for quantification of the water budget.[65] The GSP Regulations require a descriptive hydrogeologic conceptual model that includes a written description of geologic conditions, supported by cross sections and maps,[66] and includes a description of basin boundaries and the bottom of the basin,[67] principal aquifers and aquitards,[68] and data gaps.[69]

The Plan describes the Santa Ynez River Valley Basin as an "east/west-trending, linear, irregular structural depression between rugged mountain ranges and hills in Santa

[62] Santa Ynez River Valley Eastern Management Area GSP, Section 3.2.6, p. 189.
[63] 23 CCR §§ 354.6, 354.8, 354.10.
[64] 23 CCR § 354.12.
[65] DWR Best Management Practices for the Sustainable Management of Groundwater: Hydrogeologic Conceptual Model, December 2016: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Sustainable-Groundwater-Management/Best-Management-Practices-and-Guidance-Documents/Files/BMP-3-Hydrogeologic-Conceptual-Model_ay_19.pdf.
[66] 23 CCR §§ 354.14 (a), 354.14 (c).
[67] 23 CCR §§ 354.14 (b)(2-3).
[68] 23 CCR § 354.14 (b)(4) *et seq.*
[69] 23 CCR § 354.14 (b)(5).

Barbara County, California."[70] The Basin spans approximately 317 square miles[71] and is bounded by the Purisima Hills on the northwest, the San Rafael Mountains on the northeast, the Santa Ynez Mountains on the south, and the Pacific Ocean on the west.[72] The Plan notes that the Basin is primarily filled with alluvial deposits and has large anticline-syncline pairs as primary structural features.[73] Unconsolidated sediments form much of the water-bearing principal aquifers within the Basin.[74]

Western Management Area GSP

The Plan states that the WMA boundary encompasses the westernmost approximately 133.7 square miles (85,595.5 acres) of the Basin.[75] The WMA Plan identifies two principal aquifers that are referred to as the Upper Aquifer and the Lower Aquifer.[76] The WMA Plan describes in detail the various deposits, formations, and structures within the Plan area. The significant unconsolidated units and their aquifer assignment are as follows:[77]

Upper Aquifer units:

- River Channel Deposits (Qg): within the modern-day Santa Ynez River channel and consists of fine-to-coarse sand, gravels, and thin discontinuous lenses of clay and silt.
- Alluvium (fluvial-Qal): composed of a coarse sand upper member and a fine sand lower member.

Lower Aquifer units

- Terrace Deposits / Older Alluvium (fluvial-Qoa): consists of unconsolidated to poorly consolidated sands and gravels with common silt and clay zones.
- Orcutt Sand (eolian/nonmarine-Qo): consists of unconsolidated, well sorted, coarse to medium sand and clayey sand with scattered pebbles and gravel stringers.
- Paso Robles Formation (Alluvial fans-QTp): consists of poorly consolidated to unconsolidated, poorly sorted, gravels, sands, silts, and clays.
- Careaga Sand (marine-Tca): consists of massive, fine-to-coarse sand, with lenses of gravel and fossil shells. Often differentiated into the upper coarse

[70] Santa Ynez River Valley Western Management Area GSP, Section 2a.1, p. 191.
[71] Santa Ynez River Valley Western Management Area GSP, Executive Summary, p. 50.
[72] Santa Ynez River Valley Western Management Area GSP, Appendix 2a-A, p. 984.
[73] Santa Ynez River Valley Western Management Area GSP, Appendix 2a-A, pp. 984-986.
[74] Santa Ynez River Valley Western Management Area GSP, Section 2a, pp. 195-210.
[75] Santa Ynez River Valley Western Management Area GSP, Section 1d.1-3, p. 101.
[76] Santa Ynez River Valley Western Management Area GSP, Section 2a.2, p. 209, Section 2a.2-2, p. 211, Section 2a.4, p. 296, Section 2b.6-3, p. 415.
[77] Santa Ynez River Valley Western Management Area GSP, Appendix 2a-A, Section 1.1, pp. 984-988.

sand Graciosa Member (Tcag) and the lower, fine sand Cebada Member (Tcac).

Bottom of Basin - The bottom of the Basin in the WMA Plan area is defined as the contact between consolidated Tertiary-Mesozoic age deposits or rock and the overlying unconsolidated deposits (younger than or equal to the Careaga Formation).[78]

The Plan provides a map[79] depicting the aerial extent of the principal aquifers as well as an isopach map[80] depicting aquifer thickness within the WMA, which ranges from 500 feet thick around much of the perimeter to 2,000 feet in the eastern portion of the Plan area. The Plan used borehole data distributed across the Basin from publicly available resources (i.e., well records from DWR, California Department of Public Health, California Geologic Energy Management Division, and existing literature and reports) to create the Regional Geology and 3D Geologic Model that was used to generate the associated maps.[81]

The Plan explains that the "Lower Aquifer units are older and more consolidated than younger alluvial formations that make up the Upper Aquifer" and that the "Lower Aquifer units lie unconformably beneath the Upper Aquifer units." The Plan notes that both the upper and lower aquifers are used for agriculture, domestic, municipal, and industrial purposes.[82] The Upper Aquifer is found in the Lompoc Plain and partially in the Lompoc Terrace adjacent to the Lompoc Plain.[83] The Plan states that most groundwater extracted from the Upper Aquifer is from the alluvial area (Qa) of the Lompoc Plain. The Lower Aquifer consists primarily of the Paso Robles and Careaga Sand formations.[84] The Graciosa Member of the Careaga Sand Formation is described as the main producer of groundwater in the Lower Aquifer. The Lower Aquifer is the primary aquifer in the Lompoc Terrace and Lompoc Upland. The Plan states that groundwater in the Lower Aquifer ranges from unconfined to confined in the Lompoc Upland and is confined in the Lompoc Plain.[85]

The Plan includes five cross-sections that depict stratigraphic and structural features in the Plan area.[86] However, Department staff note that the cross-sections lack sufficient detail for analysis and could be improved with increased vertical exaggeration. The Plan also provides sufficiently detailed maps that depict topography, surficial geology, soil characteristics, recharge areas, surface water bodies, and source and point of delivery of

[78] Santa Ynez River Valley Western Management Area GSP, Section 2a.2, p. 210.
[79] Santa Ynez River Valley Western Management Area GSP, Figure 2a.2-3, p. 217.
[80] Santa Ynez River Valley Western Management Area GSP, Figure 2a.2-2, p. 215.
[81] Santa Ynez River Valley Western Management Area GSP, Appendix 2a-A, pp. 988-995.
[82] Santa Ynez River Valley Western Management Area GSP, Section 2a.4, p. 273.
[83] Santa Ynez River Valley Western Management Area GSP, Section 2a.2-2-1, p. 212.
[84] Santa Ynez River Valley Western Management Area GSP, Section 2a.2-2-1, p. 212.
[85] Santa Ynez River Valley Western Management Area GSP, Section 2a.2-2-2, p. 233.
[86] Santa Ynez River Valley Western Management Area GSP, Figures 2a.1-3a through 2a.1-3c, pp. 203-207.

imported water supplies that characterizes the physical components and interaction of the surface water and groundwater systems in the Plan area.[87]

The Plan acknowledges that the amount of surface water leaving the WMA Plan area (entering the Pacific Ocean) is a data gap in the Hydrogeologic Conceptual Model.[88] The Plan notes that a gauge is proposed for installation near the mouth of the Santa Ynez River.[89]

Central Management Area GSP

The CMA boundary encompasses approximately 32.8 square miles (21,023.8 acres) of the center of the Basin.[90] The Plan identifies one principal aquifer for the CMA, referred to as the Buellton Aquifer. The CMA Plan describes in detail the various deposits, formations, and structures within the Plan area. The significant unconsolidated units and their aquifer assignment are as follows:[91]

- River Channel Deposits (Qg): within the modern-day Santa Ynez River channel and consists of fine-to-coarse sand, gravels, and thin discontinuous lenses of clay and silt.
- Alluvium (fluvial-Qal): composed of a coarse sand upper member and a fine sand lower member.
- Terrace Deposits / Older Alluvium (fluvial-Qoa): consists of unconsolidated to poorly consolidated sands and gravels with common silt and clay zones.
- Orcutt Sand (eolian/nonmarine-Qo): consists of unconsolidated, well sorted, coarse to medium sand and clayey sand with scattered pebbles and gravel stringers.

<u>Buellton Aquifer</u>

- Paso Robles Formation (Alluvial fans-QTp): consists of poorly consolidated to unconsolidated, poorly sorted, gravels, sands, silts, and clays.
- Careaga Sand (marine-Tca): consists of massive, fine-to-coarse sand, with lenses of gravel and fossil shells. Often differentiated into the upper coarse sand Graciosa Member (Tcag) and the lower, fine sand Cebada Member (Tcac).

<u>Bottom of Basin</u> - The bottom of the Basin in the CMA Plan area is defined as the contact between consolidated Tertiary-Mesozoic age deposits or rock and the

[87] Santa Ynez River Valley Western Management Area GSP, Figure 2a.1-2, p. 201, Figure 2a.3-1, p. 243, Figure 2a.3-4, p. 249, Figures 2a.3-9 through 2a.3-10, pp. 265-267.
[88] Santa Ynez River Valley Western Management Area GSP, Section 2a.5, p. 298.
[89] Santa Ynez River Valley Western Management Area GSP, Section 5a.2-4, p. 662.
[90] Santa Ynez River Valley Central Management Area GSP, Section 1d.1-3, p. 94.
[91] Santa Ynez River Valley Central Management Area GSP, Section 2a.1-1-1, pp. 179-182.

overlying unconsolidated deposits (younger than or equal to the Careaga Formation).[92]

The combined thickness of the portion of the Basin (i.e., depth of unconsolidated deposits) within the CMA Plan area ranges from "less than 100 feet along the border of the synclinal structure to over 2,000 feet along the approximate axis of the Santa Rita Syncline in the Buellton Upland."[93] The Plan explains that the Buellton Aquifer is not present in the southern portion of Plan area referred to as the Santa Ynez River Alluvium (west of the Santa Ynez River's Buellton Bend). The Plan references a shale bedrock that underlies the river alluvium in the area.[94]

The Buellton Aquifer consists of the non-marine Paso Robles Formation and the underlying marine Careaga Formation and has similarities to the Lower Aquifer in the WMA of the Basin.[95] Wells completed in the Paso Robles Formation yield from 200 to 1,000 gallons per minute. In the upland deposits, the Paso Robles Formation is described as often completely unsaturated.[96] The Careaga Formation has two sub-members including the upper Graciosa Member and the lower Cebada Member. The Graciosa Member is the main producer of groundwater in the Buellton Aquifer.

The Plan does not include Alluvium (Qal) or Older Alluvium (Qoa) as part of the Buellton Aquifer nor designate them as a separate principal aquifer. Department staff note that Alluvium (Qal) is described as the principal source of groundwater in the Lompoc Plain area within the WMA Plan area,[97] yet no explanation is provided for why the various alluvial deposits are excluded from the principal aquifer within the CMA. Department staff suggest the GSP include additional information to explain the rationale for excluding alluvial deposits from the principal aquifer designation in the CMA.

The Plan includes four cross-sections that depict stratigraphic and structural features in the Plan area.[98] However, the cross-sections lack sufficient detail for analysis and could be improved with increased vertical exaggeration. The GSP also provides sufficiently detailed maps that depict topography, surficial geology, soil characteristics, recharge areas, surface water bodies, and source and point of delivery of imported water supplies that characterizes the physical components and interaction of the surface water and groundwater systems in the CMA.[99]

The Plan identifies the following data gaps in the Hydrogeologic Conceptual Model for the CMA: uncertainty of the geologic structure and model in the eastern portion of Plan area

[92] Santa Ynez River Valley Central Management Area GSP, Section 2a.2-1-1, pp. 197-198.
[93] Santa Ynez River Valley Central Management Area GSP, Section 2a.2-1-1, p. 198.
[94] Santa Ynez River Valley Central Management Area GSP, Figure 2b.6-3, p. 365.
[95] Santa Ynez River Valley Central Management Area GSP, Section 2a.2, pp. 203 - 211.
[96] Santa Ynez River Valley Central Management Area GSP, Section 2a.2-2-1, p. 203.
[97] Santa Ynez River Valley Central Management Area GSP, Section 2a.1-1-1, p. 180.
[98] Santa Ynez River Valley Central Management Area GSP, Figures 2a.1-2 through 2a.1-3c, pp. 185-191.
[99] Santa Ynez River Valley Central Management Area GSP, Figure 2a.1-1, p. 177, Figure 2a.2-6, p. 213; Figures 2a.3-1 through 2a.3-10, pp. 223-251.

due to limited borehole or well information deeper than 120 feet;[100] limited geologic mapping in the Buellton Upland subarea of the contact between the coarser Careaga Graciosa Member (upper unit) and less permeable Careaga Cebada Member;[101] lack of water level data to document the hydraulic gradient between the Buellton Upland and the Santa Rita subarea to the west, between the Buellton Upland and Santa Ynez River Alluvium to the south, and between the Buellton Upland and the Santa Ynez Upland to the east;[102] and lack of precise understanding of conditions in the Buellton Aquifer in the Santa Ynez River Alluvium subarea.[103]

The Plan's implementation section includes activities associated with filling one or more of the above data gaps. Projects like airborne geophysics,[104] adding additional wells[105] and dedicated monitoring wells[106] aim to better characterize the subsurface and groundwater levels.

Eastern Management Area GSP

The EMA boundary encompasses approximately 130 square miles (83,200 acres) at the eastern end of the Basin.[107] The Plan identifies two principal aquifers, referred to as the Paso Robles Formation, which includes Older Alluvium, and the Careaga Sand.[108] The EMA Plan describes in detail the various deposits, formations, and structures within the Plan area. The significant unconsolidated units and their aquifer assignments are as follows:

Paso Robles Formation Aquifer (includes Older Alluvium)

- Terrace Deposits / Older Alluvium (fluvial-Qoa): consists of unconsolidated to poorly consolidated sands and gravels with common silt and clay zones.
- Paso Robles Formation (Alluvial fans- QTp): consists of poorly consolidated to unconsolidated, poorly sorted, gravels, sands, silts, and clays.

Careaga Sand Aquifer

- Careaga Sand (marine-Tca): consists of massive, fine-to-coarse sand.

Bottom of Basin - The CMA defines the bottom of the Basin Plan area as the contact between the base of the water-bearing formations (includes the Paso Robles Formation and/or Careaga Sand) and the top of the Monterey Shale

[100] Santa Ynez River Valley Central Management Area GSP, Section 2a.5, p. 281.
[101] Santa Ynez River Valley Central Management Area GSP, Section 2a.5-1, p. 281.
[102] Santa Ynez River Valley Central Management Area GSP, Section 2a.5-2, p. 282.
[103] Santa Ynez River Valley Central Management Area GSP, Section 2a.2-2-1, p. 207.
[104] Santa Ynez River Valley Central Management Area GSP, Section 5a.1-2, p. 574.
[105] Santa Ynez River Valley Central Management Area GSP, Section 5a.2-2, pp. 576-577.
[106] Santa Ynez River Valley Central Management Area GSP, Section 5a.2-3, pp. 577-578.
[107] Santa Ynez River Valley Eastern Management Area GSP, Section 1.2, p. 53.
[108] Santa Ynez River Valley Eastern Management Area GSP, Section 3.1.4.1, p. 130.

bedrock. The aquifer extends to a maximum depth of approximately 3,500 feet in some areas.[109]

The Plan states that in the Santa Ynez uplands, which covers the majority of the EMA, the "principal aquifers are separated from the topographically lower Santa Ynez River and associated Alluvium to the south by a ridge of low permeability rocks (e.g., Monterey Formation), except in areas where tributaries to the Santa Ynez River cut through."[110] The Plan notes that the Paso Robles Formation and Older Alluvium have similar hydrogeologic characteristics and were therefore combined, and are being managed, as a single principal aquifer for the purposes of the GSP.[111] The Plan provides a table that describes the physical properties of both aquifers that incudes lateral and vertical extents, hydrologic conductivity, storativity, and porosity.[112]

The Plan states that "groundwater from both principal aquifers has many beneficial uses within the EMA including agricultural use, municipal and industrial use, domestic use, and environmental uses, particularly where groundwater is connected to surface water that supports groundwater dependent ecosystems."[113]

The Plan provides nine cross-sections that depict stratigraphic and structural features in the Plan area.[114] However, Department staff note that the cross-sections are difficult to evaluate in detail due to the limited vertical exaggeration applied when constructing the cross-sections.

The Plan identifies limited fall groundwater elevation data, fault influence on groundwater flow, well completion data, and a lack of subsidence monitoring data as data gaps for the EMA.[115] A few of the Plan's potential projects and management actions are associated with filling one or more of the above data gaps.[116]

While Department staff pointed out a few areas for clarification and improvements, such as the rationale for the omission of alluvium in the principal aquifers and greater detail on the cross-sections, the hydrogeologic conceptual model presented in the Plan generally complies with GSP Requirements by providing information about the Basin's geologic structures, principal aquifers, and basin boundaries. Department staff recommend the GSAs 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 those principal aquifers. The analysis and description should indicate improved understanding of the hydrogeologic contact, lateral flow, and vertical flow of groundwater between the principal aquifers, the river alluvium, and various surface

[109] Santa Ynez River Valley Eastern Management Area GSP, Section 3.1.4.2, pp. 131-133.
[110] Santa Ynez River Valley Eastern Management Area GSP, Section 3.1.1.1, p. 105.
[111] Santa Ynez River Valley Eastern Management Area GSP, Section 3.1.4.1, p. 130.
[112] Santa Ynez River Valley Eastern Management Area GSP, Table 3-4, p. 139.
[113] Santa Ynez River Valley Eastern Management Area GSP, Section 3-1.4.7, p. 146.
[114] Santa Ynez River Valley Eastern Management Area GSP, Figures 3-5 through 3-14, pp. 118-129.
[115] Santa Ynez River Valley Eastern Management Area GSP, Section 3-1.5, pp. 147-149.
[116] Santa Ynez River Valley Eastern Management Area GSP, Section 6-1, p. 393.

streams (including tributaries to the Santa Ynez River) across the entire Basin (see Recommended Corrective Action 2).

4.2.2 Groundwater Conditions

The GSP Regulations require a written description of historical and current groundwater conditions for each of the applicable sustainability indicators and groundwater dependent ecosystems (GDEs) that includes the following: groundwater elevation contour maps and hydrographs,[117] a graph depicting change in groundwater storage,[118] maps and cross-sections of the seawater intrusion front,[119] maps of groundwater contamination sites and plumes,[120] maps depicting total subsidence,[121] identification of interconnected surface water systems and an estimate of the quantity and timing of depletions of those systems,[122] and identification of GDEs.[123]

Western Management Area GSP

The Plan provides a total of 15 hydrographs that depict long-term groundwater elevation trends for the defined principal aquifers and one hydrograph that depicts long-term trends for the Santa Ynez River Alluvium area (classified by the GSP as "underflow").[124] Of the 15 hydrographs, eight are representative of the Lompoc Plain subarea, one is representative of the Lompoc Terrace subarea, two are representative of the Lompoc Upland subarea, and four are representative of the Santa Rita Upland subarea. The periods of record for the hydrographs varies, but generally begin in or prior to the 1980s (with a few having records starting as early as the mid-1920s) and extending through 2022. For discussion purposes, the Plan defines "historical conditions" as groundwater conditions observed between 1924 through 2020, and "current conditions" as groundwater conditions occurring between 2015-2020.[125] The Plan notes that hydrographs representing groundwater conditions in the Upper and Lower aquifers indicate that groundwater elevations generally increased throughout the WMA during the 1990-2000 wet period and decreased during the 2005-2020 dry period.[126]

The Plan states that there is significant agricultural groundwater use in the western portion of the Lompoc Plain.[127] Department staff note that representative wells in this area generally exhibit stable to slightly decreasing trends.[128] The Plan states that groundwater

[117] 23 CCR §§ 354.16 (a)(1-2).
[118] 23 CCR § 354.16 (b).
[119] 23 CCR § 354.16 (c).
[120] 23 CCR § 354.16 (d).
[121] 23 CCR § 354.16 (e).
[122] 23 CCR § 354.16 (f).
[123] 23 CCR § 354.16 (g).
[124] Santa Ynez River Valley Western Management Area GSP, Section 2b.1-3, pp. 310-337.
[125] Santa Ynez River Valley Western Management Area GSP, Section 2B, p. 299.
[126] Santa Ynez River Valley Western Management Area GSP, Section 2b.1-3, p. 313.
[127] Santa Ynez River Valley Western Management Area GSP, Section 2b.1-3-1, p. 323.
[128] Santa Ynez River Valley Western Management Area GSP, Figures 2b.1-4B through 2b.1-4E, pp. 315-319.

in the eastern portion of the Lompoc Plain is used to meet a mix of municipal, industrial, and limited agricultural demands. The hydrograph for the only well representing the Lower Aquifer in this area (7N/34W-24N1) shows a consistent, long-term groundwater elevation decline dating back to approximately 1925.[129] The groundwater elevations in the Lompoc Terrace subarea[130] appear to have remained stable during the historical period, and the Plan states that there is no significant groundwater use in the Burton Mesa subarea (land owned by Vandenberg Space Force Base).[131] The Plan notes that groundwater in the Lompoc Upland and Santa Rita Upland subareas are used for a mix of agricultural and domestic purposes. Both representative wells in the Lompoc Upland subarea, which are screened within the lower aquifer, exhibit long-term declining groundwater elevation trends over the historical period.[132] The Lower aquifer in the Santa Rita Upland subarea has experienced a net decline in groundwater elevations of approximately 20-50 feet over the historical period, with the oldest period of record dating as far back as the 1960s.[133] Department staff generally agree with the GSA's assessment of groundwater levels; however, staff are concerned with the steady and significant declines in Lower Aquifer groundwater levels in the eastern Lompoc Plain, Lompoc Uplands, and Santa Rita Upland subareas. It is evident that prolonged droughts and wet periods have little to no effect on the steady declines.[134]

The Plan includes a description of the change in groundwater storage and charts depicting the change in storage demonstrating the annual and cumulative change in volume of groundwater storage, with water year type (wet, normal, dry) indicated. The Plan notes that the annual and cumulative change in groundwater storage volumes are based on the annual groundwater reports produced by the Santa Ynez River Water Conservation District. The Plan states that between 1982 and 2018, the historical total estimated groundwater storage loss for the WMA was estimated to be approximately 15,000 acre-feet.[135]

Moreover, to estimate the change in groundwater storage for the Lompoc Upland, Lompoc Terrace, and Santa Rita Upland subareas, the Plan indicates that the GSA used a method similar to the one used by the US Bureau of Reclamation to determine the quantity of dewatered storage beneath the forebay on the Lompoc Plain Plan area and in the Santa Ynez River alluvial deposits — in connection with the SWRCB Order No. 2019-0148. However, the Plan does not provide any actual details on the process used.[136] Department staff note that the calculated change in groundwater storage included in the

[129] Santa Ynez River Valley Western Management Area GSP, Section 2b.1-3-1, p. 324.
[130] Santa Ynez River Valley Western Management Area GSP, Section 2b.1-3-2, pp. 324-325.
[131] Santa Ynez River Valley Western Management Area GSP, Section 2b.1-3-3, p. 325.
[132] Santa Ynez River Valley Western Management Area GSP, Figures 2b.1-6A through 2b.1-6B, p. 329.
[133] Santa Ynez River Valley Western Management Area GSP, Section 2b.1-3-5, pp. 326, 335.
[134] Santa Ynez River Valley Western Management Area GSP, Figure 2b.1-4H, p. 321, Figure 2b.1-6B, p. 329, Figure 2b.1-7B, p. 331.
[135] Santa Ynez River Valley Western Management Area GSP, Section 2b.2-1, p. 339.
[136] Santa Ynez River Valley Western Management Area GSP, Section 2b.2-1, p. 339.

groundwater conditions section of the GSP (a net decline of approximately 15,000 acre-feet for the WMA), differs significantly from the estimated groundwater change in storage presented in the water budget section of the Plan. Both estimates utilize the same historical period (1982 to 2018); however, the water budget estimates the groundwater change in storage over the historical period to be an approximate net loss of 37,000 acre-feet for the Plan area.[137] Refer to the Section 4.2.3 (Water Budget) for additional details.

The Plan includes a description of current and historical groundwater quality issues and has identified several constituents of interest based on potential effects on the established beneficial groundwater uses in the WMA.[138] The GSA states that groundwater quality is "suitable for potable and agricultural uses."[139]

The Plan provides descriptions, tables, and maps for groundwater quality in the WMA using water quality data (collected between 2015 and 2018) for total dissolved solids (TDS), chloride, sulfate, boron, sodium, and nitrate as nitrogen. The Lompoc Plains subarea has a significant number of wells with elevated TDS (42 out of 74 wells sampled exceeded the 2019 Central Coast Basin Plan water quality objectives [WQOs]),[140] chloride (27 out 75 wells exceeded WQOs),[141] and nitrate as nitrogen (31 out 75 wells exceeded WQOs).[142] The Santa Ynez River area has wells with elevated levels of sulfate (15 out of 15 wells sampled exceeded WQOs)[143] and sodium (6 out of 15 wells exceeded WQOs).[144] The known contaminant sites and plumes within the management area are described and mapped.[145] The majority of plumes in the WMA are generally attributed to either leaking underground storage tank sites or the Vandenberg Space Force Base and associated launch complexes.[146]

The Plan states that only the Upper Aquifer is hydrologically connected to the Pacific Ocean (in the Santa Ynez River estuary). The Plan notes that the Lower Aquifer is absent in the western portion of the WMA and that the Upper Aquifer is underlain by non-water bearing consolidated formations along the coast, creating a possible barrier between the ocean and the Lower Aquifer's Paso Robles and Careaga Formations.[147] The GSA states that seawater intrusion is not observed, nor expected to occur in the Lower Aquifer due to the geology[148] and only the Upper Aquifer is hydrologically connected to the Pacific Ocean in the Santa Ynez River Estuary. The Plan presents data and figures describing

[137] Santa Ynez River Valley Western Management Area GSP, Figure 2b.3-5, p. 473, Table 2c.3-6, p. 475.
[138] Santa Ynez River Valley Western Management Area GSP, Section 2b.3-1, pp. 351-352.
[139] Santa Ynez River Valley Western Management Area GSP, Section 2b.3-2, p. 353.
[140] Santa Ynez River Valley Western Management Area GSP, Table 2b.3-3, p. 362.
[141] Santa Ynez River Valley Western Management Area GSP, Table 2b.3-4, p. 367.
[142] Santa Ynez River Valley Western Management Area GSP, Table 2b.3-8, p. 377.
[143] Santa Ynez River Valley Western Management Area GSP, Table 2b.3-5, p. 368.
[144] Santa Ynez River Valley Western Management Area GSP, Table 2b.3-7, p. 374.
[145] Santa Ynez River Valley Western Management Area GSP, Section 2b.3-3, pp. 355-356.
[146] Santa Ynez River Valley Western Management Area GSP, Figure 2b.3-2, p. 359.
[147] Santa Ynez River Valley Western Management Area GSP, Section 2a.2-2-2, p. 233, Section 2b.4-1-1, p. 382.
[148] Santa Ynez River Valley Western Management Area GSP, Section 3a.2-4, p. 518.

the current seawater intrusion front in the Upper Aquifer.[149] Elevated chloride concentrations are currently observed in the estuary area (which is naturally brackish) located at the mouth the Santa Ynez River.[150]

The Plan does not discuss historical seawater intrusion that may have occurred in the past but does provide historical monitoring sites that are located throughout the Plan area. Based on review of the SWRCB's Groundwater Ambient Monitoring and Assessment (GAMA) water quality interactive database, Department staff noted monitoring wells further inland with elevated concentrations of chloride and TDS, with measurements dating back to the 1950s. However, there was not enough consistent data to indicate that there have been prior issues with seawater intrusion.[151]

The Plan discusses data regarding land subsidence and concludes that land subsidence due to groundwater extraction has not occurred within either the current or historical conditions periods. The GSA believes that most if not all of subsidence or uplift is a result of fault movement in the tectonically active area.[152]

The Plan identifies a portion of the Santa Ynez River, occurring between the Lompoc Narrows and the Pacific Ocean, as having seasonally interconnected surface water and groundwater.[153] As described in the Plan, "[d]uring periods of high flows, the groundwater levels in the Upper Aquifer are hydraulically connected to the channel thalweg in the Santa Ynez River. The reach is considered seasonally interconnected because the Santa Ynez River is dry for significant periods of time during the year…".[154]

The Plan also includes a discussion on GDEs, with emphasis on the periodic release of water into the Santa Ynez River during steelhead spawning season mandated by SWRCB Order WR 2019-0148.[155] The Plan identifies other potential GDEs but concludes that the periodic water release renders these non-vulnerable.[156]

Central Management Area GSP

The Plan provides a total of six hydrographs that depict long-term groundwater elevation trends in the CMA.[157] The period of record for the hydrographs varies, but generally begin in or prior to the 1980s (some dating back to as early as the mid-1940s) and extending through 2022. Like the WMA, the historical conditions period is defined as 1924 through

[149] Santa Ynez River Valley Western Management Area GSP, Section 2b.4-1-1, pp. 382-391.
[150] Santa Ynez River Valley Western Management Area GSP, Figure 2b.4-3, p. 387.
[151] California Water Resources Control Board, GAMA Groundwater Information System, https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/, Accessed on November 29, 2023.
[152] Santa Ynez River Valley Western Management Area GSP, Section 2b.5, pp. 397-398.
[153] Santa Ynez River Valley Western Management Area GSP, Figure 2b.6-1, p. 407.
[154] Santa Ynez River Valley Western Management Area GSP, Section 2b.6-1, p. 405.
[155] Santa Ynez River Valley Western Management Area GSP, Section 2b.6-3, pp. 415-416.
[156] Santa Ynez River Valley Western Management Area GSP, Section 2b.6-3, p. 417.
[157] Santa Ynez River Valley Central Management Area GSP, Figures 2b.1-4AB through 2b.1-5CD, pp. 299, 303, and 305.

2020, and the current conditions period is defined as 2015-2020.[158] The two hydrographs representing groundwater conditions in the Buellton Aquifer within the Buellton Upland subarea indicate groundwater elevations that generally increase throughout the management area during the 1990-2000 wet period and decrease throughout the management area during the 2005-2020 dry period. Department staff note that most of the Buellton Uplands subarea is without groundwater monitoring wells, thus it is impossible to sufficiently characterize the groundwater level conditions for the area.[159] The Plan does indicate this is a data gap that the GSA intends to fill.[160] Regarding the Santa Ynez River Alluvium subarea,[161] the Plan notes that wells 6N/32W-12K1/2 and 6N/31W-7F1 are deep wells perforated in the Careaga Sand Formation that represent long-term conditions of the Buellton Aquifer (the other two wells in this subarea, 6N/32W-17J2 and 6N/31W-17D1, are attributed to Santa Ynez River underflow).[162] As described in the Plan, water levels in both these wells declined 6 to 9 feet during the period 1985-1992 and then increased by 8 to 12 feet from the mid-1990s to the mid-2000s. After 2005 and 2006, water levels declined by 26 to 27 feet by the year 2016. The Plan indicates that this latest period has the largest water level decline that has been observed historically in the CMA.[163] Water levels in both wells have since recovered by 12 to 17 feet during the period from 2017 to 2020.

The Plan provides spring 2020 and fall 2019 groundwater elevation contour maps[164] for the CMA; however, contouring is only depicted for the Santa Ynez River Alluvium subarea due to the lack of available data in the Buellton Uplands.[165] Due to the data gaps in the CMA, Department staff are unable evaluate groundwater level conditions in the area and recommend the GSA expeditiously work towards filling the groundwater level data gaps in the Buellton Uplands by the next periodic evaluation.

The Plan includes a description of the change in groundwater storage and charts depicting the annual and cumulative change in volume of groundwater storage, with water year type (wet, normal, or dry) indicated. Between 1982 and 2018, the Plan states that the total estimated change in groundwater storage was a gain of approximately 900 acre-feet.[166]

The Plan states the area is not hydrologically connected to the Pacific Ocean and that seawater intrusion is not a relevant sustainability indicator for the management area.[167]

[158] Santa Ynez River Valley Central Management Area GSP, Section 2b, p. 283.
[159] Santa Ynez River Valley Central Management Area GSP, Section 2b.1-2, p. 287.
[160] Santa Ynez River Valley Central Management Area GSP, Section 2b.1-2, p. 287.
[161] Santa Ynez River Valley Central Management Area GSP, Figure 2b.1-3, p. 297.
[162] Santa Ynez River Valley Central Management Area GSP, Section 2b.1-3-2, p. 301.
[163] Santa Ynez River Valley Central Management Area GSP, Section 2b.1-3-2, p. 301, Figure 2b-5A and B, p. 303.
[164] Santa Ynez River Valley Central Management Area GSP, Figure 2b.1-1, p. 291.
[165] Santa Ynez River Valley Central Management Area GSP, Section 2b.1-2, p. 288, Figure 2b.1-3, p. 297.
[166] Santa Ynez River Valley Central Management Area GSP, Section 2b.2-1, p. 307.
[167] Santa Ynez River Valley Central Management Area GSP, Section 2b.4, p. 349.

The Plan includes a description of current and historical groundwater quality issues. The Plan identifies several constituents of interest based on potential effects on the established beneficial groundwater uses in the management area.[168] The Plan states that groundwater quality is generally "suitable for potable and agricultural uses."[169] The Plan provides descriptions, tables, and maps for groundwater quality in the CMA using water quality data (collected between 2015 and 2018) for TDS, chloride, sulfate, boron, sodium, and nitrate as nitrogen. Only water samples from the Santa Ynez River area wells have elevated levels of sodium (nine wells exceeding WQOs out of 26 tested).[170] Both the Bulletin Upland and Santa Ynez River areas had elevated concentrations of nitrate as nitrogen (10 out of 13 wells and 17 out of 32 wells exceeding WQOs, respectively).[171] The known contaminant sites and plumes within the management area are described and mapped.[172]

The GSA discusses land subsidence data within the management area and concludes that land subsidence due to groundwater extraction has not occurred recently or historically. The GSA believes that most if not all of subsidence or uplift is a result of fault movement in the tectonically active area.[173]

The Plan only identifies a portion of the Buellton Aquifer underling the Santa Ynez River as being potentially interconnected with surface water within the CMA.[174] The Plan indicates that if there is a connection between the Buellton Aquifer and the River, it would be minimal. However, the Plan states that "the extent of the Buellton Aquifer underneath the underflow deposits east of the Buellton Bend, and the quantity and timing of water flowing from the Buellton Aquifer to the underflow deposits of the Santa Ynez River and indirectly to the surface flow is a data gap." The portion of the Santa Ynez River west of the Buellton Bend, is described as separated from the Buellton Aquifer by bedrock.[175] Department staff believe, based on information provided in the Plan, that there is likely some degree of interconnection between the Buellton Aquifer and the Santa Ynez River east of the Buellton Bend. Department staff recommend the GSA take the necessary steps to resolve the data gaps and confirm the locations of interconnected surface water in the CMA.

The Plan includes a discussion on GDEs within the management area. The Plan notes that habitat along the Santa Ynez River is not currently vulnerable due, in part, to the periodic release of water into the Santa Ynez River during steelhead spawning season,

[168] Santa Ynez River Valley Central Management Area GSP, Sections 2b.3-1 through 2b.3-2-3, pp. 319-322.
[169] Santa Ynez River Valley Central Management Area GSP, Section 2b.3-2, p. 321.
[170] Santa Ynez River Valley Central Management Area GSP, Table 2b.3-7, p. 340.
[171] Santa Ynez River Valley Central Management Area GSP, Table 2b.3-8, p. 345.
[172] Santa Ynez River Valley Central Management Area GSP, Section 2b.3-3, pp.323-324, Figure 2b.3-1, p. 325, Figure 2b3-2, p. 327.
[173] Santa Ynez River Valley Central Management Area GSP, Section 2b.5, p. 350.
[174] Santa Ynez River Valley Central Management Area GSP, Figure 2b.6-3, p. 365.
[175] Santa Ynez River Valley Central Management Area GSP, Section 2b.6-2, p. 364.

as mandated by SWRCB Order WR 2019-0148. [176] However, the GSP notes that GDEs along the Santa Ynez River, may still be impacted by the lowering of groundwater levels in the Buellton Aquifer in areas where the River overlies the Buellton Aquifer (i.e., east of Buellton Bend). Additionally, the Plan acknowledges that the data gaps in the monitoring network limit the GSA's ability to evaluate GDEs — in particular for the area identified at the distal end of the Santa Rosa Creek, near the confluence with the Santa Ynez River.[177]

Eastern Management Area GSP

The Plan provides a description of current and historical groundwater conditions. The Plan includes hydrographs for 24 representative monitoring sites.[178] The GSP provides groundwater level contour maps representing spring 2018 conditions for each of the two principal aquifers.[179] The Plan states that there is limited groundwater monitoring that has been conducted in the fall which precluded the creation of fall contour maps.[180] Review of the WY2022 annual report for the Basin shows that the GSA has made progress on collecting the fall measurements and created fall contour maps.[181] In reviewing the contour map provided in the Plan for the Careaga Sand principal aquifer, Department staff noted that only the western portion of the EMA was represented. Regarding this issue, the Plan states that "[a]ll of the known groundwater wells that are completed in the Careaga Sand are located in the western portion of the EMA."[182]

The Plan provides details on groundwater in storage in Section 3.3 - Water Budget.[183] Per the water budget, between the historical period of 1982 and 2018, the change in groundwater storage was an approximate net decline of 62,100 acre-feet.[184] The storage loss in the Plan area is projected to continue through 2040.[185]

The Plan area is located far from coastal areas and seawater intrusion is not a relevant sustainability indicator for the Plan area.[186]

The Plan identifies TDS, chloride, sulfate, boron, sodium, and nitrate as N as constituents of interest for the EMA and includes a discussion on groundwater quality in the area supported by data from 1984 through 2021. The Plan states that reported TDS concentrations have ranged from 290 to 1,700 milligrams per liter (mg/L) in the EMA, with an average of 551 mg/L. The Plan notes that TDS concentrations reported in wells

[176] Santa Ynez River Valley Central Management Area GSP, Section 2b.6-4, p. 369.
[177] Santa Ynez River Valley Central Management Area GSP, Section 2b.6-4, p. 369.
[178] Santa Ynez River Valley Eastern Management Area GSP, Appendix D, pp. 577-603.
[179] Santa Ynez River Valley Eastern Management Area GSP, Figure 3-20, p. 153, Figure 3-21, p. 155.
[180] Santa Ynez River Valley Eastern Management Area GSP, Section 3.2.1.1, p. 150.
[181] California Department of Water Resources, SGMA GSP Portal, Santa Ynez River Valley Eastern Management Area Water Year 2022 Annual Report, https://sgma.water.ca.gov/portal/gspar/preview/274.
[182] Santa Ynez River Valley Eastern Management Area GSP, Section 3.2.1.1, p. 154.
[183] Santa Ynez River Valley Eastern Management Area GSP, Section 3.2.3, p. 161.
[184] Santa Ynez River Valley Eastern Management Area GSP, Section 3.3.3.6, p. 247.
[185] Santa Ynez River Valley Eastern Management Area GSP, Section 3.3.3.6, p. 247.
[186] Santa Ynez River Valley Eastern Management Area GSP, Section 3.2, p. 150.

screened within the Careaga Sand are elevated due to the formation's marine origin.[187] Additionally, the Plan states that elevated concentrations of boron, chloride, and sodium have been reported in wells within the CMA. The Plan describes these constituents as being "generally associated with salt-containing minerals that are naturally present in the watershed."[188]

A description of subsidence conditions in the EMA is provided along with maps[189] of recent land subsidence. InSAR data, collected between 2015 to 2019, shows some vertical displacement in the EMA ranging from an elevation decrease of up to 0.07 feet to as much as 0.09 feet of uplift.[190] However, the minor amount of land surface elevation change appears to be relatively insignificant and likely a result of tectonic activity in the region. The GSP states that there has probably been some subsidence from groundwater pumping that occurred historically, but there are no reports of documented impacts.[191]

The Plan includes a subsidence susceptibility analysis which includes an evaluation of the potential subsidence that could occur from lowering groundwater levels below historical levels.[192] Based on the analysis, two representative well locations showed an estimated total potential for subsidence of between 0.5 to 3 feet over the next 20 years. However, the plan adds that it is "unlikely that the full amount of estimated subsidence would be observed, unless groundwater elevations declined significantly below what has been observed historically and did not recover for an extended period."[193]

The Plan describes the southern ends of Alamo Pintado and Zanja de Cota Creeks, at the confluence with the Santa Ynez River, as having a continuous saturated zone between surface water and the regional groundwater table and notes that groundwater discharges to surface water at these locations.[194]

The Plan explains the Santa Ynez River is exempt from SGMA and that the water in the river-channel deposits and the Younger Alluvium downstream of Lake Cachuma and upstream of the Lompoc Narrows constitutes underflow in a relatively impermeable bed and banks.[195] As explained above, the legal characterization of the Santa Ynez River Alluvium area appears to be disputed between the GSAs and the SWRCB and Department staff have no expertise or authority to resolve that issue in this Plan assessment. However, regardless of that issue, the Plan fails to account for the process of groundwater discharge to the river in its evaluation of interconnected surface water.[196]

[187] Santa Ynez River Valley Eastern Management Area GSP, Section 3.2.3, p. 168.
[188] Santa Ynez River Valley Eastern Management Area GSP, Section 3.2.3, p. 162.
[189] Santa Ynez River Valley Eastern Management Area GSP, Figures 3-32 and 3-33, pp. 181-182.
[190] Santa Ynez River Valley Eastern Management Area GSP, Section, 3.2.4, p. 183.
[191] Santa Ynez River Valley Eastern Management Area GSP, Section, 3.2.4, p. 184.
[192] Santa Ynez River Valley Eastern Management Area GSP, Section, 3.2.4, p. 183.
[193] Santa Ynez River Valley Eastern Management Area GSP, Section, 3.2.4, pp. 183-184.
[194] Santa Ynez River Valley Eastern Management Area GSP, Section 3.2.5.1, p. 185.
[195] Santa Ynez River Valley Eastern Management Area GSP, Appendix K, p 1098.
[196] Santa Ynez River Valley Eastern Management Area GSP, Section 3.1, pp. 102-103.

As described in the Plan "discharge from the Paso Robles Formation occurs either as surface water or groundwater flow from the alluvium present in the tributaries to the Santa Ynez River. Very small quantities of groundwater flow may occur through fractures in the bedrock in consolidated rocks in the Ballard Canyon area and maybe less than 100 AFY. Surface water also discharges from the EMA as groundwater flow from the Santa Ynez River alluvium that crosses into the CMA."[197] The Plan does not identify the quantity or location of depletions. Department staff conclude that the GSA should consider the interconnectivity of the surrounding Plan area and the Santa Ynez River by clearly identifying the locations of groundwater discharge and those areas groundwater discharge that may by impacted by groundwater pumping.

The Plan describes the process used for identifying GDEs within the Plan area. After mapping the potential GDEs in the Plan area using the Department's Natural Communities data set, [198] the GSA used the process developed by The Nature Conservancy[199] to map and characterize the GDEs.[200] The GSA then used greater than 30 feet to groundwater to filter out data that most likely were not GDEs.[201] The GSA then created two categories of GDEs – (A) those GDEs associated with a principal aquifer and are potentially affected by groundwater management activities, and (B) those GDEs that are unlikely to be affected by pumping and groundwater management activities. [202] The result shows the majority of the GDEs are located along the various tributaries to the Santa Ynez River in the Plan area.[203] Additionally, the Plan includes the mapping of Special-Status Species and their ecosystem conditions.[204]

This staff report identified several areas that the GSAs need to improve such as monitoring data gaps in the Buellton Aquifer, preparing seasonal low assessments (contours) and further assessing groundwater interconnection with surface water. Aside from these areas of needed improvement, the Plan adequately describe the Basin's historical and current groundwater conditions. Department staff conclude that the Plan substantially complies with the groundwater conditions requirements outlined in the GSP Regulations.

[197] Santa Ynez River Valley Eastern Management Area GSP, Section 3.1.4.5, p. 143.
[198] Santa Ynez River Valley Eastern Management Area GSP, Figure 3-36, p. 194.
[199] Rohde, M.M., S. Matsumoto, J. Howard, S. Liu, L. Riege, and E.J. Remson. 2018. Groundwater Dependent Ecosystems under the Sustainable Groundwater Management Act: Guidance for Preparing Groundwater Sustainability Plans. Published by The Nature Conservancy. San Francisco, California. Available at https://groundwaterresourcehub.org/sgma-tools/gsp-guidance-document/.
[200] Santa Ynez River Valley Eastern Management Area GSP, Section 3.2.6.1, p. 189.
[201] Santa Ynez River Valley Eastern Management Area GSP, Figure 3-37, p. 195, Figure 3-38, p. 196.
[202] Santa Ynez River Valley Eastern Management Area GSP, Section 3.2.6.1, p.197.
[203] Santa Ynez River Valley Eastern Management Area GSP, Figure 3-39, p. 198.
[204] Santa Ynez River Valley Eastern Management Area GSP, Section 3.2.6.3, p. 201, Figures 3-40 to 3-42, pp. 202-204.

4.2.3 Water Budget

GSP Regulations require a water budget for the basin that provides an accounting and assessment of the total annual volume of groundwater and surface water entering and leaving the basin, including historical; current; and projected water budget conditions,[205] and the sustainable yield.[206]

To develop its water budgets, the Western Management Area and the Central Management Area coordinated the development of a common numerical model referred to as WMA/CMA Model.[207] The Eastern Management Area developed its own numerical model referred to as Santa Ynez Eastern Management Area Hydrologic Model. In both cases MODFLOW-USG was used. The three Plans coordinated the water budgets for the Basin, relying on common assumptions and sources of data such as precipitation and streamflow data; groundwater level data; State Water Project and Cachuma Project deliveries, diversions and use of Santa Ynez River water; groundwater flux between management areas; and base periods.[208] Per the coordination agreement, each GSP uses the same three water year periods of analysis to assess historical (1982-2018), current (2011-2018), and projected (2018-2072) water budget conditions.[209]

The Plans provides historical water budgets for the period spanning from water year 1982 to water year 2018. The historical period includes two major droughts,1985-1991 and 2012-2018.[210] A water year type was assigned to each year based on precipitation data.[211] The historical water budget information is provided in tabular and graphical forms in each of the three Plans.

Department staff reviewed inflows and outflows for surface water and groundwater to evaluate the level of coordination that occurred between each of the management areas when establishing the historical water budgets. When comparing surface water outflows from the EMA with inflows to WMA, Department staff noted that surface water increased by approximately 6,000 AFY. Groundwater inflows and outflows are somewhat similar between the Plans. Department staff conclude that even though there is general agreement between the three management areas historical water budgets, there is still room for improvement by further refining the outflows and inflows between the management areas.

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[205] 23 CCR §§ 354.18 (a), 354.18 (c) *et seq*.
[206] 23 CCR § 354.18 (b)(7).
[207] Santa Ynez River Valley Western Management Area GSP, Appendix 2c-A, Section 1.0, p. 1029; Santa Ynez River Valley Eastern Management Area GSP, Appendix 2c-A, Section 1.0, p. 923.
[208] California Department of Water Resources, SGMA Portal, "Santa Ynez River Valley Groundwater Basin Coordination Agreement", https://sgma.water.ca.gov/portal/service/gspdocument/download/6013.
[209] Santa Ynez River Valley Basin Coordination Agreement, California Department of Water Resources SGMA Portal, https://sgma.water.ca.gov/portal/service/gspdocument/download/6013.
[210] Santa Ynez River Valley Western Management Area GSP, Figure 2c.1-2, p. 430.
[211] Santa Ynez River Valley Western Management Area GSP, Table 2c.1-1, p. 429.

The reported historical change in groundwater storage for WMA was a decrease of 36,734 acre-feet, [212] CMA reported 60 acre-feet increase, [213] and EMA reported a decrease of 62,110 acre-feet.[214] This has resulted in an estimated overall groundwater storage deficit of 98,784 acre-feet for the Basin for the years 1982 to 2018. Department staff believe that data gaps related to the lack of groundwater level data in CMA's Buellton Aquifer may refine the estimate of historic groundwater storage change. Refer to the Section 4.2.2 (Groundwater Conditions) and Section 4.4 (Monitoring Network) for more information on the issue.

The Plans include a current water budget using water years 2011-2018.[215] This 8-year period includes the most recent hydrology, water supply, water demand, and land use information. Current conditions are considered very dry but includes 2011 which was a wet year. This period is part of the historical period (1982-2018), and hence, all the abovementioned statements about the historical water budget are true for the current water budget as well.

The reported change in groundwater storage during the current period for WMA was a decrease of 45,541 acre-feet,[216] CMA reported a decrease of 11,004 acre-feet,[217] and EMA reported a decrease of 53,100 acre-feet. [218] This has resulted in an overall groundwater storage deficit of 109,645 acre-feet for the Basin during the years 2011 to 2018. Most of the groundwater storage deficit for the Basin has occurred over the last eight years. During the years 1982-2010 there was an estimated 10,861 acre-feet increase in groundwater storage for the Basin.

The projected water budget in the Plan is estimated and evaluated using estimated future population forecasts and projected climatic conditions provided by DWR for the period 2030 through 2072.[219] Groundwater supplies are projected to be about the same under projected conditions, while overall groundwater demand (pumping) is projected to increase slightly because of a combination of increased temperatures due to climate change and anticipated population growth. As a result, the average annual change in

[212] Santa Ynez River Valley Western Management Area GSP, Table 2c.3-6, p. 475.
[213] Santa Ynez River Valley Central Management Area GSP, Table 2c.3-6, p. 425.
[214] Santa Ynez River Valley Eastern Management Area GSP, Table 3-27, p. 244.
[215] Santa Ynez River Valley Western Management Area GSP, Section 2c.4, p, 489; Santa Ynez River Valley Central Management Area GSP, Section 2c.4, p. 429; Santa Ynez River Valley Eastern Management Area GSP, Section 3.3.3, p. 235.
[216] Santa Ynez River Valley Western Management Area GSP, Table 2c.3-6, p. 475.
[217] Santa Ynez River Valley Central Management Area GSP, Table 2c.3-6, p. 425.
[218] Santa Ynez River Valley Eastern Management Area GSP, Table 3-27, p. 244.
[219] Santa Ynez River Valley Western Management Area GSP, Section 2c.5-1, p, 489; Santa Ynez River Valley Central Management Area GSP, Section 2c.5-1, p. 438; Santa Ynez River Valley Eastern Management Area GSP, Section 3.3.5.1, pp. 256-257.

storage for the Basin is forecasted to be -4,810 AFY under the Plan's 2042 climate change scenario and -6,042 AFY under the 2072 climate change scenario.[220]

Department staff noted a discrepancy between the estimated change in storage reported in the WMA Plan's groundwater conditions section and the WMA Plan's water budget section. Both estimates were applied over the period from 1982 to 2018. However, while approximately 15,000 acre-feet of decline is reported in the groundwater conditions section, the water budget inconsistently estimates the change in storage to be approximately 37,000 acre-feet of decline for the Plan area.[221] Department staff are unable to determine which of these two estimates should be used to assess the conditions in the Plan area and the Basin. Department staff encourage the GSA to review their data and reconcile these differing estimates of change in storage.

The sustainable yield (referred to as "perennial yield" in the WMA and CMA) has been defined for each of the management areas. It is calculated by the GSAs as the estimated historical average annual pumping plus the average annual change in storage (which was negative for the WMA and EMA). For the WMA the sustainable yield is 26,280 AFY,[222] the CMA sustainable yield is approximately 2,800 AFY,[223] and the EMA sustainable yield is 12,870 AFY.[224] This represents a total sustainable yield for the Basin of 41,950 AFY. Additionally, Department staff note that the WMA used the years 2002-2011 to calculate its sustainable yield while CMA and EMA used 1982-2018. This demonstrates a lack of coordination and consistency in preparing water budgets and sustainable yield estimates for the Basin.

The sustainable yield presented in the three Plans appears to be a simple accounting and reconciling of water inputs and outputs (e.g., pumping) in the Basin. This methodology does not consider the potential impacts and undesirable results to be avoided when managing the Basin. The distinction is important because SGMA's definition of sustainable yield in a basin is directly tied to undesirable results. As established in SGMA, sustainable yield means the maximum quantity of water, calculated over a base period representative of long-term conditions in a basin and including any temporary surplus, that can be withdrawn annually from a groundwater supply without causing an undesirable result.[225] While the Plan's current water budgets show recent "deficits" in groundwater storage that appear likely to continue into the future, based on projected conditions, the GSAs claim that their respective management areas are not in a state of overdraft. Department staff question this assertion as the basin has experienced declining

[220] Santa Ynez River Valley Western Management Area GSP, Table 2c.5-3, p. 497; Santa Ynez River Valley Central Management Area GSP, Table 2c.5-3, p. 449; Santa Ynez River Valley Eastern Management Area GSP, Table 3-38, p. 266.
[221] Santa Ynez River Valley Western Management Area GSP, Section 2b.2-1, p. 339, Figure 2b.3-5, p. 473, Table 2c.3-6, p. 475.
[222] Santa Ynez River Valley Western Management Area GSP, Table 2c.3-8, p. 478.
[223] Santa Ynez River Valley Central Management Area GSP, Section 2c.3-3, p. 427.
[224] Santa Ynez River Valley Eastern Management Area GSP, Section 3.3.3.6, p. 247.
[225] Water Code § 10721(w).

groundwater levels. Department staff recommend the GSAs revise the Basin's sustainable yield as the maximum quantity of water, calculated over a base period representative of long-term conditions in the Subbasin and including any temporary surplus, that can be withdrawn annually without causing undesirable results in the Subbasin.[226] Department staff recommend that the GSAs collaboratively and consistently assess the Basin's hydrologic conditions, groundwater inflows and outflows, associated data gaps, and projected GSA management actions to continue to improve and refine the water budgets – including any groundwater deficits or overdraft – for the Basin as a whole, and not just the individual management areas (see Recommended Corrective Action 3).

Despite the inclusion of a recommended corrective action regarding the changes in storage and sustainable yield for the Basin, Department staff conclude the historical, current, and projected water budgets included in the Plan substantially comply with the requirements of the GSP Regulations. The GSPs provides the required historical, current, and future accounting and assessment of the total annual volume of groundwater and surface water entering and leaving the management area and projected future water demands.

4.2.4 Management Areas

The GSP Regulations provide the option for one or more management areas to be defined within a basin if the GSA has determined that the creation of the management areas will facilitate implementation of the Plan. Management areas may employ different minimum thresholds and be operated to different measurable objectives, provided that undesirable results are defined consistently throughout the basin.[227]

On May 23, 2016, the Santa Ynez River Valley Groundwater Basin public water agencies executed a Memorandum of Understanding (MOU) which organized the Basin according to three separate management areas, creating the Western Management Area, Central Management Area, and Eastern Management Area.[228]

4.3 Sustainable Management Criteria

GSP Regulations require each Plan to include a sustainability goal for the basin and to characterize and establish undesirable results, minimum thresholds, and measurable objectives for each applicable sustainability indicator, as appropriate. The GSP Regulations require each Plan to define conditions that constitute sustainable groundwater management for the basin including the process by which the GSA

[226] Water Code § 10721(w).
[227] 23 CCR § 354.20.
[228] Santa Ynez River Valley Western Management Area, Section 1b.1, p. 77; Santa Ynez River Valley Central Management Area, Section 1b.1, p. 72; Santa Ynez River Valley Eastern Management Area, Section 2.1, p. 57.

characterizes undesirable results and establishes minimum thresholds and measurable objectives for each applicable sustainability indicator.[229]

4.3.1 Sustainability Goal

GSP Regulations require that GSAs establish a sustainability goal for the basin. The sustainability goal should be based on information provided in the GSP's basin setting and should include an explanation of how the sustainability goal is likely to be achieved within 20 years of Plan implementation.[230]

The three GSAs established a coordinated sustainability goal for the Basin "to sustainably manage the groundwater resources in the Western, Central, and Eastern Management Areas to ensure that the Basin is operated within its sustainable yield for the protection of reasonable and beneficial uses and users of groundwater."[231] The Plan also states that the absence of undesirable results will be indicative of the sustainability goal being achieved. The Plan states that the GSAs will apply an adaptive management approach regarding proposed projects and management actions to avoid undesirable results.

According to the Plan, the Basin intends to achieve the sustainability goal by ensuring:

- Long-term groundwater elevations are adequate to support existing and future reasonable and beneficial uses throughout the Basin,
- A sufficient volume of groundwater storage remains available during drought conditions and recovers during wet conditions,
- Groundwater production and projects & management actions undertaken through SGMA do not degrade water quality conditions in order to support ongoing reasonable and beneficial uses of groundwater for agricultural, municipal, domestic, industrial, and environmental purposes.

The Plan sufficiently describes the sustainability goal and the information included in the Plan substantially complies with the requirements outlined in the GSP Regulations.

4.3.2 Sustainability Indicators

Sustainability indicators are defined as any of the effects caused by groundwater conditions occurring throughout the basin that, when significant and unreasonable, cause undesirable results.[232] Sustainability indicators thus correspond with the six undesirable results: (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 seawater intrusion, (4) significant and unreasonable degraded water

[229] 23 CCR § 354.22 *et seq*.
[230] 23 CCR § 354.24.
[231] Santa Ynez River Valley Western Management Area GSP, Section 3b.1, p. 547; Santa Ynez River Valley Central Management Area GSP, Section 3b.1, p. 484; Santa Ynez River Valley Eastern Management Area GSP, Section 5.2, p. 327.
[232] 23 CCR § 351(ah).

quality, including the migration of contaminant plumes that impair water supplies, (5) land subsidence that substantially interferes with surface land uses, and (6) depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water.[233] Sustainability indicators refer to groundwater conditions that are not, in and of themselves, significant and unreasonable. Rather, sustainability indicators refer to the effects caused by changing groundwater conditions that are monitored, and for which criteria in the form of minimum thresholds are established by the agency to define when these effects become significant and unreasonable, constituting an undesirable result.

GSP Regulations require that GSAs provide descriptions of undesirable results including defining what are significant and unreasonable potential effects to beneficial uses and users for each sustainability indicator.[234] GSP Regulations also require GSPs provide the criteria used to define when and where the effects of the groundwater conditions cause undesirable results for each applicable sustainability indicator. The criteria shall be based on a quantitative description of the combination of minimum threshold exceedances that cause significant and unreasonable effects in the basin.[235]

GSP Regulations require that the description of minimum thresholds include the information and criteria relied upon to establish and justify the minimum threshold for each sustainability indicator.[236] GSAs are required to describe how conditions at minimum thresholds may affect beneficial uses and users,[237] and the relationship between the minimum thresholds for each sustainability indicator, including an explanation for how the GSA has determined conditions at each minimum threshold will avoid causing undesirable results for other sustainability indicators.[238]

GSP Regulations require that GSPs include a description of the criteria used to select measurable objectives, including interim milestones, to achieve the sustainability goal within 20 years.[239] GSP Regulations also require that the measurable objectives be established based on the same metrics and monitoring sites as those used to define minimum thresholds.[240]

The following subsections consolidate these three facets of sustainable management criteria: undesirable results, minimum thresholds, and measurable objectives. Information, as presented in the Plan, pertaining to the processes and criteria relied upon to define undesirable results applicable to the basin, as quantified through the establishment of minimum thresholds, are addressed for each applicable sustainability

[233] Water Code § 10721(x).
[234] 23 CCR §§ 354.26 (a), 354.26 (b)(c).
[235] 23 CCR § 354.26 (b)(2).
[236] 23 CCR § 354.28 (b)(1).
[237] 23 CCR § 354.28 (b)(4).
[238] 23 CCR § 354.28 (b)(2).
[239] 23 CCR § 354.30 (a).
[240] 23 CCR § 354.30 (b).

indicator. A submitting agency is not required to establish criteria for undesirable results that the agency can demonstrate are not present and are not likely to occur in a basin.[241]

4.3.2.1 Chronic Lowering of Groundwater Levels

In addition to components identified in 23 CCR §§ 354.28 (a-b), for the chronic lowering of groundwater, the GSP Regulations require the minimum threshold for chronic lowering of groundwater levels to be the groundwater elevation indicating a depletion of supply at a given location that may lead to undesirable results that is supported by information about groundwater elevation conditions and potential effects on other sustainability indicators.[242]

Western Management Area (WMA) GSP

The WMA GSP states an undesirable result would occur when groundwater levels in more than 50% of the representative monitoring wells in either the Upper or Lower Aquifer exceed their specific minimum threshold over two consecutive spring measurements during non-drought years.[243] For the purpose of this definition, the WMA GSP states that "drought years" are classified as two or more consecutive years that are "Dry" or "Critically Dry" — based on the method for water year type characterization described in the Plan.[244] The Plan explains that the requirement of the non-drought year criterion was established to avoid drought-related groundwater declines, better confirming groundwater level declines are attributed to extractions within the management area. The Plan states that utilizing 50% of the representative monitoring wells in determining the occurrence of an undesirable result allows the GSA to focus on regional groundwater levels compared to localized groundwater levels.

The GSP establishes minimum thresholds for the chronic lowering of groundwater levels at 26 representative monitoring wells. The GSP explains that the minimum threshold set at each representative monitoring well was selected based on the following factors:

- Minimum thresholds will be established at groundwater elevations that limit impacts on existing groundwater well screen intervals, and
- Minimum thresholds should not be greater than 20-feet below Basin-wide historically low water levels[245]

The WMA GSP states that historical low groundwater elevations were 40 and 20 feet below current elevations in the Upper and Lower Aquifers, respectively. The Plan notes that, based on available "well activity data," groundwater supply has remained relatively stable since the 1980s and, therefore, the Plan concludes that historical low conditions did not create an unreasonable depletion of supply for domestic, municipal, and

[241] 23 CCR § 354.26 (d).
[242] 23 CCR § 354.28(c)(1) *et seq*.
[243] Santa Ynez River Valley Western Management Area GSP, Section 3b.2-1, p. 552.
[244] Santa Ynez River Valley Western Management Area GSP, Section 2b.2-2, p. 340.
[245] Santa Ynez River Valley Western Management Area GSP, Section 3b.2-1, p. 581.

agricultural beneficial users. Additionally, the Plan states that available chloride data (corresponding to historical low conditions) indicates that unreasonable seawater intrusion did not occur, nor is it believed that these conditions significantly impacted GDEs.[246]

The GSA conducted a well impact analysis to evaluate potential impacts of groundwater elevation declines on beneficial uses and users of groundwater. The well impact analysis evaluated 2020 groundwater elevations and the top of well screens within the Upper and Lower Aquifers. The well impact analysis concluded that 2020 groundwater elevations were equal to or below the top of well screens in 34% of domestic wells, 21% of municipal wells, and 25% of agricultural wells in the Lower Aquifer. In the Upper Aquifer, 2020 groundwater elevations were at or below the top of well screens in 10% of domestic wells, 15% of municipal wells, and 2% of agricultural wells.[247]

Based on the result of the well impact analysis, the WMA GSP established minimum thresholds at 10 and 20 feet below 2020 groundwater elevations in the Upper and Lower Aquifers, respectively.[248] The WMA GSP established separate minimum thresholds for representative monitoring wells located in the western portion of the management area, where wells in the Upper Aquifer would induce seawater intrusion if set 10 feet below 2020 groundwater levels. Minimum thresholds at these locations were set equal to mean sea level to prevent undesirable results associated with seawater intrusion. The GSP explains that the minimum thresholds for the Lower Aquifer were selected because groundwater levels within 20-feet of 2020 elevations would limit impacts to less than 40% of domestic wells and maintain groundwater elevations close to historical water levels to avoid unreasonable impacts to beneficial uses and users. The Plan states that the minimum thresholds for the Upper Aquifer were selected to be more conservative than those in the Lower Aquifer because “municipal wells are more sensitive to water level decline in the Upper Aquifer.”[249]

The GSP establishes “trigger points” for each monitoring location as a preemptive warning that groundwater elevations are approaching minimum thresholds. One trigger point would activate when groundwater elevations are observed at 5 feet above the minimum threshold in 50% of representative monitoring wells over one year. Another trigger point would activate when municipal water supplies are impacted by greater than a 20% reduction in total well pumping capacity. The WMA GSP states that if the trigger point conditions were to occur, the GSA would implement early management actions such as requesting additional releases of water from the Cachuma Reservoir that the GSA has rights to.[250]

[246] Santa Ynez River Valley Western Management Area GSP, Section 3b.2-1, p. 584.
[247] Santa Ynez River Valley Western Management Area GSP, Section 3b.2-1, p. 584.
[248] Santa Ynez River Valley Western Management Area GSP, Section 3b.3-1, p. 589.
[249] Santa Ynez River Valley Western Management Area GSP, Section 3b.3-1, p. 589.
[250] Santa Ynez River Valley Western Management Area GSP, Section 3b.3-1-1, p. 590.

The WMA GSP discusses the impacts of the minimum thresholds on the other sustainability indicators, such as groundwater storage, seawater intrusion, water quality, land subsidence, and interconnected surface water. By establishing minimum thresholds near historically low groundwater elevations, the WMA GSP intends to minimize the potential for undesirable results for the other sustainability indicators.[251]

The WMA GSP defines measurable objectives for the representative monitoring wells as the spring 2011 groundwater elevations. According to the Plan, "spring 2011 preceded recent drought conditions and followed a ten-year period of near normal climate." In the Upper Aquifer, measurable objectives are approximately 5 to 10 feet lower than historically high groundwater elevations and generally correlate to current (i.e., 2020) groundwater levels. In the Lower Aquifer, measurable objectives are at 5 to 10 feet above current groundwater levels.[252]

Central Management Area (CMA) GSP

The CMA GSP states an undesirable result would occur when groundwater levels in more than 50% of the representative monitoring wells exceed their specific minimum threshold over two consecutive spring measurements during non-drought years.[253] For the purpose of this definition, the GSP states that "drought years" are classified as two or more consecutive years that are "Dry" or "Critically Dry" — based on the method for water year type characterization described in the Plan. The Plan explains that utilizing 50% of the representative monitoring wells in determining the occurrence of an undesirable result allows the GSA to focus on regional groundwater levels compared to localized groundwater levels. The GSP states that the requirement of two consecutive non-drought year measurements was established to avoid drought-related groundwater declines and instead identify and focus on groundwater level declines caused by extractions within the management area.

The CMA GSP describes potential effects of undesirable results for chronic lowering of groundwater levels as significantly and unreasonably reducing the total volume of groundwater storage, thus eliminating or reducing the ability of production wells to economically access groundwater or causing disconnections between interconnected surface water bodies that sustain GDEs. If undesirable results were to occur, the CMA GSP states that the potential effects to beneficial uses and users, such as agricultural; municipal; and domestic supply wells, includes risk of pump failure.[254]

The GSP defines minimum thresholds for the chronic lowering of groundwater levels at four representative monitoring wells. The GSP explains that the minimum thresholds were selected to achieve the following:

[251] Santa Ynez River Valley Western Management Area GSP, Section 3b.2-1, p. 589.
[252] Santa Ynez River Valley Western Management Area GSP, Section 3b.4-1, p. 597.
[253] Santa Ynez River Valley Central Management Area GSP, Section 3b.2-1, p. 497.
[254] Santa Ynez River Valley Central Management Area GSP, Section 3b.2-1, p. 497.

- Protect municipal, agricultural, and domestic groundwater users and supply,
- Prevent potential land subsidence,
- Maintain 2015 levels of water quality and surface water-groundwater connection along the Santa Ynez River.

Minimum thresholds set at each representative monitoring well were selected based on two components:

- Minimum thresholds will be established at groundwater elevations that limit impacts on existing groundwater well screen intervals, and
- Minimum thresholds should not be lower than 15-feet below Basin-wide 2020 water levels, which the GSP describes as within historical low groundwater conditions.[255]

The CMA GSA conducted a well impact analysis to evaluate potential impacts of groundwater elevation declines on beneficial uses and users of groundwater. The well impact analysis evaluated groundwater elevations 15 feet below the current (i.e., 2020) groundwater levels in comparison to the top of well screens. Based on the well impact analysis the CMA GSP concluded that "15 feet below 2020 groundwater elevations is the level at which 30 percent of domestic and municipal wells would begin to entrain air into the screens." The CMA GSP also estimates that 10% of agricultural wells would be impacted at 15 feet below the 2020 groundwater levels. [256]

As a result, the CMA GSP established minimum thresholds at 15 feet below 2020 groundwater levels which, as mentioned, are near historical lows. The CMA GSP further states that undesirable results were not occurring when the groundwater levels reached historical lows (i.e., 15 to 20 feet below 2020 groundwater levels).[257] The CMA GSP identifies data gaps in the Buellton Upland subarea and proposes to add two additional representative monitoring wells.[258]

The CMA GSP establishes "trigger points" for each monitoring location as a preemptive warning that groundwater elevations are approaching minimum thresholds. The trigger point is set at 5 feet above the minimum threshold and a management response is activated when water levels reach the trigger point in half of the representative monitoring wells over a one-year period. Another trigger point would also be activated when municipal water supplies are impacted by more than a 20% reduction in total well pumping capacity. The GSP states that if the trigger point conditions were to occur the GSA would implement early management actions such as requesting additional releases of water from the Cachuma Reservoir that the GSA has rights to. [259]

[255] Santa Ynez River Valley Central Management Area GSP, Section 3b.3-1, p. 518.
[256] Santa Ynez River Valley Central Management Area GSP, Section 3b.3-1, p. 518.
[257] Santa Ynez River Valley Central Management Area GSP, Section 3b.3-1, p. 518.
[258] Santa Ynez River Valley Central Management Area GSP, Section 3b.3-1, p. 519.
[259] Santa Ynez River Valley Central Management Area GSP, Section 3b.3-1, pp. 519-520.

The CMA GSP discusses the impacts of the minimum thresholds on the other sustainability indicators, such as groundwater storage, seawater intrusion, water quality, land subsidence, and interconnected surface water.[260] The Plan states that there are no neighboring groundwater basins bordering the management area that could be impacted by the minimum thresholds. Although, the Plan does acknowledge subsurface flow between the management area and the Western and Eastern management areas.

The GSP defines measurable objectives for the chronic lowering of groundwater levels as the spring 2011 groundwater elevations (which represent historically high to near historically high groundwater levels in the Buellton Aquifer). The GSP notes the measurable objectives are achieved when half of the representative monitoring wells reach these levels.[261]

Eastern Management Area (EMA) GSP

The sustainable management criteria for the chronic lowering of groundwater levels were developed with the goal of maintaining groundwater levels that continue to support current ongoing beneficial uses and users in the management area.

The GSP defines undesirable results as when either of the following scenarios occurs:

- Groundwater levels in either principal aquifer remain below minimum thresholds after two consecutive years of average and above-average precipitation in 50% of representative monitoring sites, and
- Existing agricultural, municipal, and domestic wells are unable to produce the estimated sustainable yield of the management area due to chronic groundwater level decline caused by groundwater conditions occurring throughout the management area.[262]

The GSP states that significant or unreasonable effects associated with groundwater decline have not occurred in the management area based on groundwater users' input and assessment of available water level data; however, the GSP acknowledges that if groundwater extraction rates continue at historic rates and dry conditions persist, undesirable results may occur in the future. The GSP explains that potential causes of undesirable results for chronic lowering of groundwater levels are extended periods of drought and elevated rates of extraction from the management area's principal aquifers.[263]

The EMA GSP explains that the minimum thresholds were established while considering the following guiding principles:

- Thresholds should be adaptive to observed conditions,

[260] Santa Ynez River Valley Central Management Area GSP, Section 3b.3-1, pp. 518-519.
[261] Santa Ynez River Valley Central Management Area GSP, Section 3b.4-1, p. 525.
[262] Santa Ynez River Valley Eastern Management Area GSP, Section 5.5.1, p. 336.
[263] Santa Ynez River Valley Eastern Management Area GSP, Section 5.5.1, pp. 335-336.

- Learn from other basins' GSPs that have significant groundwater issues and what must be avoided,
- Utilize the same minimum thresholds for all well types,
- Protect the most vulnerable beneficial uses and users,
- The historic and projected deficit in groundwater storage,
- Potential impacts to domestic, municipal, and agricultural wells if groundwater levels continue to decline, and
- Potential for depletion of interconnected surface water and impacts to GDEs.[264]

The EMA GSA conducted a well impact analysis to identify undesirable results and establish minimum thresholds for groundwater levels. The well impact analysis evaluated spring 2018 groundwater elevations and compared them to the top of well screen elevations for 487 agricultural, municipal, and domestic wells. The well impact analysis utilized spring 2018 data because this period contained the greatest amount of available data. The GSP states that groundwater levels that fall below the top of the screen are indicative of a significant and unreasonable depletion of supply. The well impact analysis concluded that spring 2018 groundwater elevations were below the top of well screens in approximately 28% of domestic wells and 34% of agricultural wells in the Paso Robles Formation aquifer (and no municipal wells screens were above these elevations). Spring 2018 groundwater elevations were below the top of well screens in 35% of domestic wells, 17% of municipal wells, and 28% of agricultural wells in the Careaga Sand aquifer.[265]

Based on the result of the well impact analysis, the GSP established minimum thresholds in the Paso Robles Formation aquifer and Careaga Sand aquifer as 15 feet[266] and 12 feet[267] below spring 2018 groundwater levels, respectively. The GSP states minimum thresholds in either aquifer are not expected to cause a significant and unreasonable depletion of supply to beneficial uses and users or cause a significant and unreasonable reduction of groundwater in storage.

The EMA GSP discusses the impacts of the minimum thresholds on the other sustainability indicators, such as water quality, land subsidence, and interconnected surface water.[268] The EMA GSP also discusses the impacts of the minimum thresholds for chronic lowering of groundwater on other management areas and basins in the vicinity of the management area. The EMA GSP states that flow between the neighboring San Antonio Creek Groundwater Basin and the EMA is limited due to observed groundwater gradients, thus the minimum thresholds in the EMA are not anticipated to affect the neighboring basin. However, Department staff note that groundwater monitoring along this basin boundary is a data gap and, therefore, believe that additional information is likely needed to determine if the following statement is true. The EMA GSP acknowledges

[264] Santa Ynez River Valley Eastern Management Area GSP, Section 5.5.2, pp. 337-338.
[265] Santa Ynez River Valley Eastern Management Area GSP, Section 5.5.2, pp. 338-339.
[266] Santa Ynez River Valley Eastern Management Area GSP, Section 5.5.2.1, p. 343.
[267] Santa Ynez River Valley Eastern Management Area GSP, Section 5.5.2.2, p. 343.
[268] Santa Ynez River Valley Eastern Management Area GSP, Section 5.5.2.3, pp. 343-345.

subsurface interactions between the management area and downgradient Central Management Area through the Careaga Sand aquifer and that minimum thresholds could reduce groundwater flow into the Central Management Area. However, the EMA GSP does not anticipate the minimum thresholds will cause significant and unreasonable impacts to the Central Management Area because the combined groundwater and surface water outflow was less than 2,000 AFY.[269] The EMA GSP states that outflow to the Central Management Area is negligible in relation to annual variations of groundwater extraction rates and climate-driven variations that contribute to the Central Management Area's water budget.

The EMA GSP defines measurable objectives for the chronic lowering of groundwater levels as the average groundwater elevations measured at each representative monitoring well prior to the last drought beginning in water year 2012. The measurable objectives were established to ensure that there is enough groundwater in storage to get through a multi-year drought (as was observed from water years 2012 to 2021 with two wet years in water year 2017 and 2019) without undesirable results.[270]

The EMA GSP states that the interim milestones are based on the observed declines in groundwater elevations and groundwater storage deficit that resulted from the latest drought event. The interim milestones were established to ensure that the GSA is projected to eliminate the groundwater storage deficit as it implements the Plan. Interim milestones vary depending on the representative monitoring well, however, show a general increase in groundwater elevation during each 5-year increment.[271]

The Plans excludes dry and critically dry years in the definition of undesirable results even though the Plan recognizes undesirable results due to chronic lowering of groundwater levels may occur if groundwater pumping exceeds the sustainable yield regardless of water year type.[272] Department staff note that SGMA includes a provision which states, "overdraft during a period of drought is not sufficient to establish a chronic lowering of groundwater levels if extractions and recharge are managed as necessary to ensure that reductions in groundwater levels or storage during a period of drought are offset by increases in groundwater levels or storage during other periods."[273] If the GSAs intend to incorporate this concept into their definition of the undesirable result for chronic lowering of groundwater levels, the GSPs must identify specific extraction and groundwater recharge management actions the GSAs would implement or otherwise describe how the Basin would be managed to offset – by increases in groundwater levels or storage during

[269] Santa Ynez River Valley Eastern Management Area GSP, Section 5.5.2.4, p. 345.
[270] Santa Ynez River Valley Eastern Management Area GSP, Section 5.5.3, p. 348.
[271] Santa Ynez River Valley Eastern Management Area GSP, Section 5.5.4, pp. 348-349, Table 5-2, pp. 350-351.
[272] Santa Ynez River Valley Western Management Area GSP, Section 3b.2-1, p. 551; Santa Ynez River Valley Central Management Area GSP, Section 3b.2-1, p. 488; Santa Ynez River Valley Eastern Management Area GSP, Section 5.5.1, p. 336.
[273] Water Code § 10721(x)(1).

non-drought periods – dry year reductions of groundwater storage.[274] The GSPs identify potential management actions and projects that, once implemented, may lead to the elimination of long-term overdraft conditions in the Basin. However, the GSPs state that only a select number of management actions described as "General Management PMAs" [275] or "basic GSP implementation requirements" [276] will be immediately implemented. The Plans do not provide sufficient detail on how these projects and management actions, in conjunction with the proposed chronic lowering of groundwater levels sustainable management criteria, will offset drought-related groundwater reductions and avoid significant and unreasonable impacts when groundwater level minimum thresholds are potentially exceeded for an extended period in the absence of two consecutive non-dry years. Department staff recommend the GSAs revise their definition of undesirable results to include all water year types and further evaluate how the proposed projects and management actions may offset any potential overdraft conditions (see Recommended Corrective Action 4a).

In addition to the non-drought year criteria, the quantitative definition of undesirable results for chronic lowering of groundwater levels in the WMA GSP and the CMA GSP includes the criteria that two consecutive spring measurements must exceed the minimum threshold to qualify as an undesirable result. The GSPs do not explain why spring measurements – presumably the seasonal high-water level – are applied to the undesirable result definition rather than fall measurements or the seasonal low water level. The use of spring measurements in the quantitative criteria conflicts with the GSPs stating that undesirable results associated with groundwater levels will be defined by analyzing semi-annual (i.e., spring and fall) groundwater elevation measurements.[277] In the EMA GSP, the minimum thresholds are established based on comparing spring 2018 water level measurements to well infrastructure in the management area.[278] However, the EMA GSP does not discuss how fall or seasonal low groundwater level conditions relate to the well infrastructure or the established minimum thresholds. In the WMA GSP and the CMA GSP, the minimum thresholds are established relative to "current 2020 levels" with no reference to the seasonal measurements. Department staff recommend the GSAs revise the sustainable management criteria to be based on seasonal low groundwater levels to ensure potential impacts to beneficial uses and users are considered (see Recommended Corrective Action 4b).

Each GSP conducted a well impact analysis to determine where to establish the minimum thresholds for groundwater levels and how those groundwater levels may impact beneficial uses and users. The well impact analyses compared "current 2020 levels" or

[274] 23 CCR § 354.44 (b)(9).
[275] Santa Ynez River Valley Western Management Area GSP, Section 4a, p. 610; Santa Ynez River Valley Central Management Area GSP, Section 4a, p. 534.
[276] Santa Ynez River Valley Eastern Management Area GSP, Section 6.2, p. 397.
[277] Santa Ynez River Valley Western Management Area GSP, Section 3b.2-1, p. 552; Santa Ynez River Valley Central Management Area GSP, Section 3b.2-1, p. 497.
[278] Santa Ynez River Valley Eastern Management Area GSP, Section 5.5.2, p. 338.

the spring 2018 water levels to available well infrastructure. As documented in the Plans and discussed above, the well impact analyses predicted various percentages of agricultural wells, municipal wells, and domestic wells that would have their "performance affected" which the Plan describes as water levels falling below the top of the well screens at minimum threshold levels. Although the Plans document the potential effects on well performance, the Plans do not describe or explicitly assess the quantity of wells that may be more permanently impacted such as lowering water levels below pump intakes or wells going completely dry. The EMA GSP does note, however, that there have been no reports from stakeholders of wells needing to be deepened or replaced and the Department's Dry Well Reporting System does not show any reported dry wells in the management area.[279] The WMA GSP and CMA GSP do not indicate if dry wells have been reported to the GSAs directly or on the Department's reporting system. Department staff recommend the GSAs analyze 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 (i.e., depth of pump intake, bottom of the screen interval, well dewatering) (see Recommended Corrective Action 4c).

The Plan's approach to maintain groundwater level conditions at or near historical lows and the consideration of the Basin's water well infrastructure in the development of the minimum thresholds appears reasonable and will likely help avoid a significant and unreasonable depletion of supply in the Basin. However, as highlighted in the recommended corrective action above, the Plan should include additional supporting technical details that provides further description and disclosure regarding how the minimum thresholds and related definition of undesirable results for groundwater levels will help the GSA achieve its sustainability goal and avoid a depletion of supply.

4.3.2.2 Reduction of Groundwater Storage

In addition to components identified in 23 CCR §§ 354.28 (a-b), for the reduction of groundwater storage, the GSP Regulations require the minimum threshold for the reduction of groundwater storage to be a total volume of groundwater that can be withdrawn from the basin without causing conditions that may lead to undesirable results. Minimum thresholds for reduction of groundwater storage shall be supported by the sustainable yield of the basin, calculated based on historical trends, water year type, and projected water use in the basin.[280]

Western Management Area (WMA) and Central Management Area (CMA) GSPs

The WMA and CMA GSPs describe significant and unreasonable reduction of groundwater storage as conditions when water is not physically present to be extracted for beneficial use. The Plan explains that a significant and unreasonable reduction may

[279] Santa Ynez River Valley Eastern Management Area GSP, Section 5.5.1, p. 336.
[280] 23 CCR § 354.28(c)(2).

occur when groundwater extraction exceeds the management area's sustainable yield over a period containing both wet and dry water year types. [281]

Regarding the WMA, the Plan estimates that approximately 27,300 AFY of groundwater is extracted from this management area, with most extractions occurring in the Lompoc Plain subarea. While the estimated annual groundwater extractions occurring in the management area are approximately 1,000 AFY higher than the perennial yield (i.e., sustainable yield); the GSP states that undesirable results related to chronic lowering of groundwater levels, seawater intrusion, water quality, land subsidence, and interconnected surface water sustainability indicators have not occurred.[282]

The Plan uses groundwater levels as a proxy for the reduction of groundwater storage sustainability indicator in both the WMA and CMA. The sustainable management criteria and monitoring network for reduction of groundwater storage are the same as those established for the chronic lowering of groundwater.[283] Therefore, an undesirable result for the reduction of groundwater in storage will occur if over 50% of the representative monitoring wells in the principal aquifer, either the Upper or Lower Aquifer for the WMA, exceed their specific minimum threshold over two consecutive spring measurements during non-drought years.[284]

Being that groundwater levels are used as a proxy for reduction in groundwater storage, the WMA GSP and CMA GSP should be revised to reflect any modifications to the chronic lowering of groundwater levels sustainable management criteria.

Eastern Management Area (EMA) GSP

The EMA GSP describes conditions that could lead to significant and unreasonable reduction of groundwater storage (i.e., an undesirable result) as extended drought and elevated rates of groundwater extraction in the Paso Robles and Careaga Sand aquifers. [285] The Plan explains that the significant and unreasonable conditions constituting an undesirable result include agricultural, municipal, and domestic wells being unable to produce historical average quantities of groundwater due to chronic decline in groundwater levels.[286]

The GSP states that significant or unreasonable effects associated with groundwater decline have not occurred in the management area based on groundwater users' input; however, the GSP acknowledges that if groundwater extraction rates continue at historic rates and drought conditions persist, undesirable results may occur in the future.

[281] Santa Ynez River Valley Western Management Area GSP, Section 3b.2-2, p. 558; Santa Ynez River Valley Central Management Area GSP, Section 3b.2-2, p. 499.
[282] Santa Ynez River Valley Western Management Area GSP, Section 3b.2-2, p. 558.
[283] Santa Ynez River Valley Western Management Area GSP, Section 3b.2-2, p. 558.
[284] Santa Ynez River Valley Western Management Area GSP, Section 3b.2-2, pp. 558-559; Santa Ynez River Valley Central Management Area GSP, Section 3b.2-2, p. 499.
[285] Santa Ynez River Valley Eastern Management Area GSP, Section 5.6.1, p. 352.
[286] Santa Ynez River Valley Eastern Management Area GSP, Section 5.6.1, p. 353.

The Plan uses groundwater levels as a proxy for the reduction of groundwater storage sustainability indicator in the EMA. The sustainable management criteria and monitoring network for reduction of groundwater storage are the same as those established for the chronic lowering of groundwater.[287]

Being that groundwater levels are used as a proxy for reduction in groundwater storage, the EMA GSP should be revised to reflect any modifications to the chronic lowering of groundwater levels sustainable management criteria.

4.3.2.3 Seawater Intrusion

In addition to components identified in 23 CCR §§ 354.28 (a-b), for seawater intrusion, the GSP Regulations require the minimum threshold for seawater intrusion to be defined by a chloride concentration isocontour for each principal aquifer where seawater intrusion may lead to undesirable results.[288]

The WMA GSA borders the Pacific Ocean. The GSP states that seawater intrusion is not actively occurring within the management area. The GSP also states that groundwater production from the Lompoc Terrace and Burton Mesa is minimal, and that the subarea is under federal jurisdiction of the Vandenberg Space Force Base. The WMA GSP notes that chloride concentrations are historically greater than 650 mg/L in samples from wells within the extent of the Santa Ynez River Estuary, due to Santa Ynez River water mixing with seawater. Moreover, further inland, wells near the areas of groundwater production in the Lompoc Plain (i.e., approximately 2 miles from the coast) indicate stable chloride concentrations with the most recent measurement from August 2020 resulting in a chloride concentration of 490 mg/L. [289]

The GSP states that a potential undesirable result may occur if monitoring locations in the Upper Aquifer show landward migration of chloride isocontours, along with increasing groundwater chloride concentrations. To observe seawater intrusion conditions the WMA GSP describes a monitoring network consisting of 4 monitoring wells along the Santa Ynez River, one of which is located in the Santa Ynez River Estuary. The WMA GSP provides a map depicting the estuary, the 4 monitoring wells, and chloride isocontours.[290]

The GSP states that the current 500 mg/L chloride isocontour is located within the jurisdictional boundary of the Vandenberg Space Force Base which is not subject to SGMA. The WMA GSP describes the minimum threshold and effectively the undesirable result as "…the migration of the 500 mg/L chloride isocontour from a mile west of the Vandenberg Space Force Base boundary, to an eighth of a mile east of the Vandenberg Space Force Base boundary and into the primary production zone of the Lompoc Plain."[291] The GSP describes the process to annually evaluate and update the chloride

[287] Santa Ynez River Valley Eastern Management Area GSP, Sections 5.6.2 through 5.6.4, pp. 353-359.
[288] 23 CCR § 354.28(c)(3).
[289] Santa Ynez River Valley Western Management Area GSP, Section 3b.2-3, pp. 559-561.
[290] Santa Ynez River Valley Western Management Area GSP, Section 3b.2-3, pp. 562-563.
[291] Santa Ynez River Valley Western Management Area GSP, Section 3b.3-3, p. 591.

isocontour to determine the effects of groundwater production in the Lompoc Plain on the possible migration of seawater inland beyond the Vanderberg Space Force Base.[292]

As a result of current chloride concentrations in monitoring wells adjacent to the estuary being reflective of natural conditions, the measurable objective for seawater intrusion is the current location of the 500 mg/L chloride concentration.[293] The interim milestone is equivalent to the measurable objective.[294]

Department staff conclude that the GSP's discussion and presentation of information on seawater intrusion covers the specific items listed in the GSP Regulations in an understandable format using appropriate data. Department staff do suggest coordinating with the Vandenberg Space Force Base to the extent possible, especially being that seawater intrusion could continue to encroach inland within the jurisdictional boundary of the Space Force Base before a minimum threshold exceedance or an undesirable result occurrence.

4.3.2.4 Degraded Water Quality

In addition to components identified in 23 CCR §§ 354.28 (a-b), for degraded water quality, the GSP Regulations require the minimum threshold for degraded water quality to be the degradation of water quality, including the migration of contaminant plumes that impair water supplies or other indicator of water quality as determined by the Agency that may lead to undesirable results. The minimum threshold shall be based on the number of supply wells, a volume of water, or a location of an isocontour that exceeds concentrations of constituents determined by the Agency to be of concern for the basin. In setting minimum thresholds for degraded water quality, the Agency shall consider local, state, and federal water quality standards applicable to the basin.[295]

Western Management Area GSP

The WMA GSP highlights a statement from the Central Coast Regional Water Quality Control Board's Central Coastal Basin Plan which describes water quality in the management area as in a state of "adverse salt balance because of municipal and agricultural discharges."[296] Based on the Water Quality Objectives (WQOs) from the Central Coastal Basin Plan, the GSP identifies TDS, chloride, sulfate, boron, sodium, and nitrogen as constituents of concern. The WMA GSP also states that the GSA is only responsible for water quality degradation that is a result of groundwater pumping or GSP implementation.[297]

The WMA GSP explains that, for much of the management area, the average concentrations of constituents of concern (from samples collected between 2015 to 2018)

[292] Santa Ynez River Valley Western Management Area GSP, Section 3b.3-3, pp. 590-591.
[293] Santa Ynez River Valley Western Management Area GSP, Section 3b.4-3, p. 600.
[294] Santa Ynez River Valley Western Management Area GSP, Section 3b.5-3, p. 604.
[295] 23 CCR § 354.28(c)(4).
[296] Santa Ynez River Valley Western Management Area GSP, Section 3b.2-4, p. 565.
[297] Santa Ynez River Valley Western Management Area GSP, Section 3b.2-4, p. 567.

exceeded the WQOs listed in the Central Coastal Basin Plan. The WMA GSP presents the median WQOs for the four subareas used to delineate water quality conditions in the management area (i.e., Lompoc Plain, Lompoc Upland, Lompoc Terrace, and Santa Rita Upland) in comparison to the average concentrations of the constituents of concern between 2015 and 2018.[298] The WMA GSP states that "during the last forty years pumping has been relatively constant in the WMA, but recent trends indicate increasing nitrate, arsenic, and total dissolved solids in 22% to 36% of all wells in the Lompoc Plain." A water quality assessment study referenced in the GSP indicates that these recent trends may be a result of discharged treated wastewater, agriculture, and industrial sources.[299] However, the WMA GSP does not describe or evaluate in detail how or why these potential sources have led to the degradation of water quality or how they are distinct from activities within the GSA's jurisdiction such as pumping and implementation of projects and management actions.

The GSP states "[g]roundwater management decisions and pumping can influence local well water quality. Hence, minimum threshold exceedances for individual constituents in more than 50% of the representative monitoring wells for two or more consecutive years is considered an undesirable result associated with degradation of water quality in the WMA." The WMA GSP also qualifies this definition by noting that only non-drought years will be considered in evaluating undesirable results.[300] As previously discussed with the undesirable definition for the chronic lowering of groundwater levels, Department staff conclude that the GSA should not include water year type exclusions in the quantitative definition of undesirable results for degradation of water quality.

For the Lompoc Terrace and Santa Rita Upland subareas, the Plan states that average concentrations between 2015-2018 for the constituents of concern are currently below the WQOs. Therefore, for these two subareas, the GSP establishes the minimum thresholds for degraded water quality for all constituents of concern, apart from nitrate, at the median WQOs from the Central Coastal Basin Plan.[301] The Plan states that salt and nutrient concentrations in the Lompoc Plain and Lompoc Upland currently exceed the WQOs. Therefore, the minimum thresholds for these areas are set "near" current concentrations.[302] The Plan states that minimum thresholds in these subareas were established to "improve groundwater quality within the WMA and provide operational flexibility for beneficial users of groundwater…". The minimum threshold established at each individual well is depicted on the water quality trend graphs included in Appendix 3b-D.[303] However, the Plan does not provide an explanation for how these minimum threshold concentrations were derived. Furthermore, within the appendix, Department staff noted that there are also trend graphs for wells in the Santa Rita Uplands which

[298] Santa Ynez River Valley Western Management Area GSP, Table 2b.3-1, pp. 565-566.
[299] Santa Ynez River Valley Western Management Area GSP, Section 3b.2-4, p. 567.
[300] Santa Ynez River Valley Western Management Area GSP, Section 3b.2-4, p. 568.
[301] Santa Ynez River Valley Western Management Area GSP, Section 3b.3-4, p. 591.
[302] Santa Ynez River Valley Western Management Area GSP, Section 3b.3-4, p. 592.
[303] Santa Ynez River Valley Western Management Area GSP, Appendix 3B-D, pp. 1241-1296.

depict different minimum thresholds than those described in the text of the GSP (i.e. the WQOs, as discussed above). Similarly, the Plan notes that the minimum threshold for nitrate is set equivalent to the Maximum Contaminant Level (MCL) of 10 mg/L — which, based on the Plan's description,[304] Department staff understood would be applied to all wells in the WMA. However, upon review of the trend graphs in Appendix 3b-D and the values listed in Table 3b.3-1,[305] it does not appear that any wells are assigned a minimum threshold of 10 mg/L for nitrate (nor does Table 3b.3-1 represent the water quality objectives as the minimum thresholds for the other constituents in wells located within the Santa Rita Uplands). Based on these discrepancies, it is unclear to Department staff what the actual minimum thresholds are for most wells in the WMA. Department staff recommend that the Plan reconcile these discrepancies by clearly defining the minimum thresholds for each representative monitoring well as well as explain the methodology used to derive the minimum thresholds (where they are established "near" current conditions). Further, given the lack of clarity on this issue —and that the minimum thresholds for the WMA currently have to be discerned from multiple graphs, tables, and text — Department staff recommend that the GSA compile the minimum thresholds; measurable objectives; and interim milestones for each well in the WMA in tabular format which also clearly indicates the rationale for each minimum threshold selected (i.e., WQO, MCL, or current condition).

The WMA GSP states that the measurable objectives[306] and interim milestones[307] for the degraded water quality sustainability indicator are set "equal to the minimum of the secondary maximum contaminant level (where applicable) and the 2015 groundwater concentration." [308] Department staff note that the Plan's measurable objective narrative appears to be inconsistent with the actual values listed in Table 3b.4-1.[309] Therefore, staff reiterate the need to have this information clearly and consistently presented and described in the Plan.

Central Management Area GSP

Like the WMA, the CMA GSP states that the GSA is only responsible for addressing degraded water quality caused by groundwater extraction or GSP implementation. The CMA GSP states that the relationship between groundwater extraction and water quality is a data gap and there may be multiple causes of groundwater quality degradation in the management area.[310] The Plan identifies TDS, chloride, sulfate, boron, sodium, and nitrate as constituents of concern for the CMA.[311] Table 3b.2-1 in the GSP indicates that

[304] Santa Ynez River Valley Western Management Area GSP, Section 3b.3-4-1, p. 592.
[305] Santa Ynez River Valley Western Management Area GSP, Table 3b.3-1, pp. 582-583.
[306] Santa Ynez River Valley Western Management Area GSP, Section 3b.4-4, p. 600.
[307] Santa Ynez River Valley Western Management Area GSP, Section 3b.5-4, p. 604.
[308] Santa Ynez River Valley Western Management Area GSP, Section 3b.4-4, p. 600.
[309] Santa Ynez River Valley Western Management Area GSP, Table 3b.4-1, pp. 598-599.
[310] Santa Ynez River Valley Central Management Area GSP, Section 3b.2-4, pp. 500-501.
[311] Santa Ynez River Valley Central Management Area GSP, Section 3b.2-4-2, p. 501.

the average concentrations for constituents of concern (collected between 2015-2018) were below the WQO or MCL for the Basin.[312]

The GSP states that "[g]roundwater management decisions and pumping can influence local well water quality. Hence, minimum threshold exceedances for individual constituents in more than 50% of the representative monitoring wells for two or more consecutive years is considered an undesirable result associated with degradation of water quality in the WMA."[313] The CMA GSP also qualifies this definition by noting that only non-drought years will be considered in evaluating undesirable results. Department staff conclude that the GSA should not include water year type exclusions in the quantitative definition of undesirable results for degradation of water quality.

The GSP discusses the effects of undesirable results related to degraded water quality on beneficial uses and users. The Plan notes potential effects include impacts to crop production as well as increased municipal water treatment costs for drinking water suppliers.[314]

Minimum thresholds for degraded water quality constituents of concern, excluding TDS and nitrate, are set at the median WQOs established in the Central Coastal Basin Plan.[315] Minimum thresholds for TDS and nitrate are equivalent to the Secondary Maximum Contaminant Level (SMCL) of 1,000 mg/L and MCL of 10 mg/L, respectively.[316] The GSP states that the degraded water quality minimum thresholds will not negatively impact beneficial uses and users as they are near current salt and nutrient concentrations.

The GSP states that the measurable objectives[317] and interim milestones[318] for the degraded water quality sustainability indicator are equivalent to the WQOs, or in the case of TDS and nitrate, the SMCL and MCL. However, the GSP does not clearly explain the rationale for setting the measurable objective equal to the minimum threshold but acknowledges that, essentially, "measurable objectives are not specifically set for water quality." The GSP explains that minimum thresholds will be reevaluated if constituents of concern exhibit an increasing trend in concentration over the GSP implementation period.

Eastern Management Area (EMA) GSP

The GSP states that conditions potentially associated with an undesirable result for degraded water include:

[312] Santa Ynez River Valley Central Management Area GSP, Table 3b.2-1, p. 503.
[313] Santa Ynez River Valley Central Management Area GSP, Section 3b.2-4-2, p. 508.
[314] Santa Ynez River Valley Central Management Area GSP, Section 3b.2-4-2, p. 508.
[315] Santa Ynez River Valley Central Management Area GSP, Section 3b.3-4, p. 521.
[316] Santa Ynez River Valley Central Management Area GSP, Table 3b.3-1, p. 517, Section 3b.3-4, p. 522.
[317] Santa Ynez River Valley Western Management Area GSP, Section 3b.4-4, p. 526.
[318] Santa Ynez River Valley Western Management Area GSP, Section 3b.5-4, p. 529.

- Concentrations of regulated contaminants in untreated groundwater extracted from private domestic wells, agricultural wells, or municipal wells exceed regulatory thresholds as a result of pumping or GSA activities.
- Groundwater pumping or GSA activities cause concentrations of identified constituents of concern to exceed WQOs and are greater than concentrations since SGMA was enacted in January 2015.[319]

The EMA GSP does not explicitly establish a quantitative definition of undesirable results related to the degradation of water quality. Rather, the GSA intends to "avoid increased degradation of groundwater quality from baseline concentrations since enactment of SGMA in January 2015." The EMA GSP states the minimum thresholds for the constituents of concern (i.e., TDS, chloride, sulfate, boron, sodium, and nitrate) are set at the WQO or MCL concentration or "the concentrations present when SGMA was enacted (January 2015)." [320] The GSA further explains that the minimum threshold for the constituents is triggered if 50% of the representative monitoring sites are equal to or exceed the WQO, MCL, or January 2015 concentration. It appears to Department staff that the GSA is conflating the establishment of minimum thresholds with defining quantitative criteria for undesirable results.

Department staff believe using the WQO, MCL, or the January 2015 concentration for the constituents of concern is effective as the basis for the minimum threshold for degraded water quality. Meaning, if the concentration in a representative monitoring site were to exceed those previously defined regulatory limits, then that monitoring location would be exceeding its minimum threshold. The GSP Regulations, however, require the GSAs to evaluate the conditions the agency deems significant and unreasonable and set quantitative metrics using a combination of minimum threshold exceedances to determine when those conditions or undesirable results are occurring. The EMA GSP indicates that the GSA evaluated the significant and unreasonable conditions as described in the two bulleted items above in relation to the undesirable result. The GSA also appears to consider local, state, and federal water quality standards as minimum thresholds. However, while the GSP states that minimum thresholds are "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),"[321] it does not provide the rationale for the metric requiring 50% of representative wells to exceed minimum thresholds to define undesirable results. Nor does it explain how that proportion of well exceedances represents the point where significant and unreasonable conditions would occur, which the GSA is trying to avoid.

The GSP states that the measurable objectives for degraded water quality are equivalent to or below the WQOs or concentrations present in groundwater when SGMA was

[319] Santa Ynez River Valley Eastern Management Area GSP, Section 5.8.1, pp. 360-361.
[320] Santa Ynez River Valley Eastern Management Area GSP, Section 5.8.2.2, p. 364.
[321] Santa Ynez River Valley Eastern Management Area GSP, Section 5.8.2.2, p. 364.

enacted.[322] The GSP states that interim milestones were not established for degraded water quality because no significant or unreasonable results have been observed in the management area.[323]

The EMA GSP currently establishes a minimum threshold for degraded groundwater quality as 50% of representative monitoring sites equaling or exceeding the WQO, MCL, or January 2015 concentration for the constituents of concern. The GSP, while describing conditions that may lead to undesirable results, does not provide a quantitative description of the combination of minimum threshold exceedances that would be expected to cause significant and unreasonable effects in the Basin, as required by the GSP Regulations.[324] Department staff do not believe this oversight should preclude GSP approval at this time, because the GSP states the goal of the GSA's management is to avoid increased degradation of groundwater quality beyond January 2015 conditions and incorporates the Central Coastal Basin Plan WQOs and MCLs as sustainable management criteria. Department staff suggest that the EMA GSA revisit the quantitative definition of an undesirable result to incorporate a combination of minimum threshold exceedances, similar to the WMA GSP and CMA GSP (see Recommended Corrective Action 5a).

As described above, the Plan does not describe or evaluate in detail how or why the potential other causes of increased salt and nutrients described in the GSPs (i.e., treated wastewater, agriculture, industrial sources, etc.), would be contributing to degradation of water quality. Additionally, the Plan does not describe how or why those causes are distinct from GSA activities (i.e., pumping and projects and management actions) including an evaluation of how GSA activities could influence degradation of water quality. The GSAs should provide an assessment of when and how GSA activities may impact water quality and how the GSA may decern whether or not the increased degradation of water quality is distinct from the “other causes of increase salt and nutrients” as noted in the Plans (see Recommended Corrective Action 5b).

The WMA GSP and CMA GSP state an undesirable result for the degraded water quality sustainability indicator would occur when minimum thresholds for each constituent of concern is exceeded at 50% or more of representative monitoring wells for two or more consecutive years, as a result of groundwater extraction or GSP implementation. The WMA GSP and CMA GSP implies that an undesirable result will only be considered in non-drought years. As previously discussed with the undesirable definition for the chronic lowering of groundwater levels, Department staff conclude that the GSA should not include water year type exclusions in the quantitative definition of undesirable results for degradation of water quality. (see Recommended Corrective Action 5c).

[322] Santa Ynez River Valley Eastern Management Area GSP, Section 5.8.3, pp. 367-368.
[323] Santa Ynez River Valley Eastern Management Area GSP, Section 5.8.4, p. 368.
[324] 23 CCR § 354.26(b)(2).

Both the WMA GSP and the CMA GSP compare WQOs to average concentrations of constituents of concern from 2015 to 2018. Both plans, however, do not explain how those average 2015 to 2018 concentrations were derived (i.e., total amount of measurements analyzed, from what wells, location of wells, etc.) and how those concentrations relate to the WQO values for the various constituents of concern. Additionally, while the EMA GSP presents a table with the WQOs for the various constituents of concern, the GSP does not include concentrations observed in January 2015 which the EMA GSP describes as the "baseline concentrations since enactment of SGMA in January 2015."[325] The Plans also do not 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 thresholds – especially where they are established "near" current conditions. Further, given the lack of clarity on this issue — and being that Department staff have evaluated the minimum thresholds for the WMA and CMA from multiple graphs, tables, and text — Department staff recommend the GSA compile the minimum thresholds; measurable objectives; and interim milestones for each well in a tabular format indicating the minimum threshold value and any comparative averages and baseline conditions. The presentation of this information should also clearly indicate the rationale for how each minimum threshold was selected (see Recommended Corrective Action 5d).

Department staff conclude that the sustainable management criteria for the degradation of water quality are generally commensurate with the understanding of the basin setting, responsive to comments from interested parties, and reasonably consider the groundwater uses and users in the Basin. However, Department staff have identified a recommended corrective action for the GSA to reevaluate and potentially revise the components of the sustainable management criteria for degraded water quality by the first Periodic Evaluation.

4.3.2.5 Land Subsidence

In addition to components identified in 23 CCR §§ 354.28 (a-b), the GSP Regulations require the minimum threshold for land subsidence to be the rate and extent of subsidence that substantially interferes with surface land uses and may lead to undesirable results.[326] Minimum thresholds for land subsidence shall be supported by identification of land uses and property interests that have been affected or are likely to be affected by land subsidence in the basin, including an explanation of how the Agency has determined and considered those uses and interests, the Agency's rationale for establishing minimum thresholds in light of those effects, and maps and graphs showing the extent and rate of land subsidence in the basin that defines the minimum thresholds and measurable objectives.[327]

[325] Santa Ynez River Valley Eastern Management Area GSP, Section 5.8.2, p. 361.
[326] 23 CCR § 354.28(c)(5).
[327] 23 CCR §§ 354.28(c)(5)(A-B).

Western Management Area (WMA) GSP

The WMA GSP states that undesirable results due to inelastic land subsidence are not occurring nor likely to occur in the future because of little to no evidence of impacted infrastructure, land use, or beneficial use of groundwater.[328] The WMA GSP states that the principal aquifers in the management area consist of primarily coarser material (i.e., up to 70 percent coarse material)[329] and do not pose a risk of inelastic subsidence. The GSP further explains that for at least the last 100 years impacts to infrastructure or surface land uses due to subsidence have not been observed or reported.[330] The WMA contains one continuous global positioning system station that has indicated minimal to no vertical displacement since May 2015. The GSP also provides a brief discussion of InSAR data collected in the management area from January 2015 to September 2019 which indicates a maximum cumulative vertical displacement of approximately 1 inch in some areas of the management area.[331]

As mentioned above, the WMA GSP states that "[l]and subsidence from groundwater extraction is not expected to become an undesirable result within the WMA due to hydrogeologic conditions that are not conducive to land subsidence and because SMCs for other sustainability indicators will preclude the lowering of groundwater levels below the historical low elevation."[332] The WMA GSP establishes the undesirable result and minimum threshold at 0.5 feet of cumulative subsidence, due to groundwater extraction, that "interferes with land uses or infrastructure." The WMA GSP states the GSA will observe subsidence conditions via InSAR data provided by the Department and the continuous GPS station located in the management area. [333]

Central Management Area (CMA) GSP

The CMA GSP states that inelastic land subsidence is not an issue of concern in the management area. The CMA GSP explains that the principal aquifers in the management area consist of primarily coarser material (i.e., up to 70 percent coarse material) and do not pose a risk of inelastic subsidence. The CMA contains one continuous global positioning system station that has indicated minimal to no vertical displacement since January 2015. The GSP also provides a brief discussion of InSAR data collected in the management area from January 2015 to September 2019 which indicates a general range of vertical displacement for most of the management area between an estimated increase of 0.5 inch to a decrease of 0.5 inch.[334]

[328] Santa Ynez River Valley Western Management Area GSP, Section 3b.2-5, p. 568.
[329] Santa Ynez River Valley Western Management Area GSP, Section 2b.5-1, p. 398.
[330] Santa Ynez River Valley Western Management Area GSP, Section 2b.5-2, p. 398.
[331] Santa Ynez River Valley Western Management Area GSP, Section 2b.5, pp. 398-403.
[332] Santa Ynez River Valley Western Management Area GSP, Section 3b.2-5, p. 573.
[333] Santa Ynez River Valley Western Management Area GSP, Section 3b.2-5, p. 573, Section 3b.3-5, p. 592.
[334] Santa Ynez River Valley Central Management Area GSP, Section 2b.5, pp. 350-355.

The CMA GSP establishes the undesirable result and minimum threshold at 0.5 feet of cumulative subsidence, due to groundwater extraction, that "interferes with land uses or infrastructure." The CMA GSP states the GSA will observe subsidence conditions via InSAR data provided by the Department and the continuous GPS station located in the management area.[335]

Eastern Management Area (EMA) GSP

The EMA GSP states that available data indicates that the geologic materials that comprise the Basin are not susceptible to subsidence. The GSP explains that InSAR and UNAVCO data indicate land surface elevations declined on average 0.015 feet annually from 2015 to 2019. The analysis of the UNAVCO GPS Stations estimated that land surface elevations surrounding the Basin declined approximately 0.03 feet from 2001 to 2020.[336] In addition to these analyses, the GSA conducted an evaluation to supplement the InSAR and UNAVCO data by assessing the long-term land surface elevation changes caused specifically by groundwater extraction. This evaluation included the development stratigraphic profiles from well logs and an estimation of potential long-term subsidence effects associated with changes in groundwater elevation.[337]

The subsidence evaluation states that "there has been no reported historical or anecdotal information regarding land subsidence as a result of groundwater extractions. There may be, and likely has been some subsidence as a result of groundwater extraction, but we are not aware of documented impacts to surface features." However, the evaluation also indicates that, based on the review of well driller's logs, soil type varies across the management area and that there are "relatively thick sections of clayey materials." Based on the clay material in the aquifer system, the subsidence evaluation analytical model estimated that 0.5 to 3 feet of potential subsidence could occur as a result of groundwater elevation change. However, the evaluation concludes that reaching 3 feet of subsidence is unlikely to occur, unless groundwater elevations were to significantly decline.[338] The subsidence evaluation recommends that, because future declines in groundwater could lead to subsidence, the GSA should maintain groundwater levels at or above historical lows.[339]

The EMA GSP states that an undesirable result would occur if "significant and unreasonable subsidence caused by groundwater extraction exceeds the minimum threshold and causes damage to structures and infrastructure and substantially interferes with surface land uses."[340] The minimum threshold for land subsidence is established as exceeding 0.08 feet per year of subsidence for 3 consecutive years which equates to a

[335] Santa Ynez River Valley Central Management Area GSP, Section 3b.3-5, p. 521.
[336] Santa Ynez River Valley Eastern Management Area GSP, Section 5.9.1, p. 370.
[337] Santa Ynez River Valley Eastern Management Area GSP, Appendix E, pp. 604-628.
[338] Santa Ynez River Valley Eastern Management Area GSP, Appendix E, p. 610.
[339] Santa Ynez River Valley Eastern Management Area GSP, Appendix E, p. 613.
[340] Santa Ynez River Valley Eastern Management Area GSP, Section 5.9.1, p. 370.

minimum of 0.24 feet of cumulative of subsidence over that three-year period.[341] Department staff note that the GSA appears to conflate the undesirable result with the minimum threshold. According to the GSP Regulations, the minimum threshold for subsidence should be a rate or total amount of subsidence set at a monitoring location that if exceeded could lead to undesirable results (e.g. 0.08 feet per year). Per the Regulations, an 'undesirable result' should be quantified based on a "combination of minimum threshold exceedances that cause significant and unreasonable effects in the basin" (e.g., 3 years of minimum threshold exceedances — indicating significant and unreasonable conditions are occurring throughout the basin). The EMA GSP does indicate in Table 5-4 that the minimum threshold for land subsidence is equal to 0.08 feet per year as observed via InSAR or UNAVCO GSP station.[342] Therefore, Department staff's understanding is that if the GSA were to observe 0.08 feet per year of subsidence than that constitutes a minimum threshold exceedance and then if that 0.08 feet per year were to be observed for 3 consecutive years that would indicate an undesirable result. However, Department staff conclude that each of the GSPs should clarify what specifically the GSA considers an undesirable result for land subsidence (see Recommended Corrective Action 6).

Department staff have identified components of the sustainable management criteria for subsidence that should be revised or clarified by the first periodic evaluation of the Plan, as discussed above and highlighted in the recommended corrective actions included in Section 5. However, Department staff conclude that the sustainable management criteria for land subsidence are generally commensurate with the understanding of the basin setting, responsive to interested party feedback, and reasonably consider the groundwater uses and users in the Basin. Considering the Basin has not historically observed impacts to land use due to subsidence nor have the GSAs measured subsidence at rates that exceed the level of uncertainty in the measurement of both InSAR and ground-based monitoring sites, Department staff believe the Plan's approach to manage subsidence is reasonable and well supported. Department staff also note that the GSAs have set groundwater level minimum thresholds generally at or near historic lows indicating that new significant subsidence is unlikely to occur, as was concluded in the EMA subsidence evaluation.

4.3.2.6 Depletions of Interconnected Surface Water

SGMA defines undesirable results for the depletion of interconnected surface water as those that have significant and unreasonable adverse impacts on beneficial uses of surface water and are caused by groundwater conditions occurring throughout the basin.[343] The GSP Regulations require that a Plan identify the presence of interconnected surface water systems in the basin and estimate the quantity and timing of depletions of

[341] Santa Ynez River Valley Eastern Management Area GSP, Section 5.9.2, p. 372.
[342] Santa Ynez River Valley Eastern Management Area GSP, Section 5.9.2, p. 372.
[343] Water Code § 10721(x)(6).

those systems.[344] The GSP Regulations further require that minimum thresholds be set based on the rate or volume of surface water depletions caused by groundwater use, supported by information including the location, quantity, and timing of depletions, that adversely impact beneficial uses of the surface water and may lead to undesirable results.[345]

The Plan acknowledges the presence of interconnected surface waters in the Basin.

Western Management Area (WMA) GSP

The WMA GSP does not quantify the rate or volume of surface water depletions due to groundwater pumping as the sustainable management criteria as required by the GSP Regulations.[346] Instead, the GSP proposes to utilize groundwater levels as a proxy for interconnected surface waters.

The GSP states that an undesirable result for the depletion of interconnected surface water sustainability indicator may occur when surface water replaces extracted groundwater as a result of reduced baseflow. The WMA GSP identifies the Santa Ynez River as the primary interconnected surface water body within the management area.[347]

The GSP defines the occurrence of an undesirable result for interconnected surface water as "…groundwater elevations in the Upper Aquifer that drop to 10 feet below 2020 groundwater elevations in two out of the three representative monitoring wells for two consecutive non-drought years."[348] Undesirable results were evaluated using historical groundwater extraction and management information to understand surface water depletion prior to 2015. The Plan states that undesirable results could occur if Santa Ynez River flows are reduced below pre-2015 conditions or if the groundwater table in the upper aquifer is lowered to pre-2015 levels.[349] The WMA GSP explains that conditions associated with an undesirable result for interconnected surface water include lowered "groundwater elevations that impact habitat health and enhance surface water depletion rates along the Santa Ynez River."[350] The GSP states that undesirable results associated with a depletion of interconnected surface water by groundwater pumping has not historically occurred, nor is currently occurring, within the management area.[351]

The WMA GSP describes several GDEs and species associated with the Santa Ynez River including seasonally flooded wetland habitats, riparian mixed hardwood, coast live oak, willow, southwestern willow flycatcher, and southern California steelhead trout. Two key species were identified in the GSP, the southwestern willow flycatcher and the

[344] 23 CCR § 354.16 (f).
[345] 23 CCR § 354.28 (c)(6).
[346] 23 CCR § 354.28 (c)(6).
[347] Santa Ynez River Valley Western Management Area GSP, Section 3b.2-6, p. 574.
[348] Santa Ynez River Valley Western Management Area GSP, Section 3b.2-6, p. 576.
[349] Santa Ynez River Valley Western Management Area GSP, Section 3b.2-6, pp. 576-579.
[350] Santa Ynez River Valley Western Management Area GSP, Section 3b.2-6, pp. 576-579.
[351] Santa Ynez River Valley Western Management Area GSP, Section 3b.2-6, p. 575.

southern California steelhead. Qualitatively, the Plan explains that an undesirable result for southwestern willow flycatchers would occur if groundwater elevations fell below pre-2015 levels and cause a decrease in quantity and density of vegetation used by the species or a decrease in surface water habitat during its nesting season.[352] An undesirable result for the southern California steelhead would likely occur if groundwater elevations fell below pre-2015 levels; however, the Plan notes that multiple factors contribute to steelhead habitat that are not completely known by the GSA. As a result, the GSP intends to manage groundwater extraction in a manner that avoids depletions of interconnected surface water impacts greater than those observed prior to 2015.[353] Outside of the listed GDEs, the GSP does not discuss impacts of the depletion of interconnected surface undesirable results on beneficial uses and users.

The GSP uses groundwater levels as a proxy for establishing the minimum threshold for the depletion of interconnected surface water. Three representative monitoring wells, each located in the Upper Aquifer and adjacent to the Santa Ynez River, have minimum thresholds established 10 feet below spring 2020 groundwater elevations. The GSP states that the minimum thresholds will allow the water table to drop within historical conditions and maintain water levels within typical rooting depths for GDEs.[354]

The measurable objectives for the depletion of interconnected surface water were established at five feet below the channel thalweg of the Santa Ynez River. The WMA GSP states the measurable objectives ensure that soil would remain wet to support GDEs along the riparian corridor.[355] The interim milestones for interconnected surface water are equivalent to the measurable objectives.[356]

Central Management Area (CMA) GSP

The CMA GSP states that the Santa Ynez River, and channel alluvium, is underlain by bedrock west of the Buellton Bend (thus not in contact with the Buellton Aquifer).[357] The GSP acknowledges that a data gap exists between the Buellton Aquifer and the underflow deposits east of Buellton Bend, specifically the quantity and timing of surface water flow from Buellton Aquifer to these deposits.[358] The Plan states that this data gap will be evaluated as part of the Plan's projects and management actions.

For the sustainable management criteria, the GSP does not quantify the rate or volume of surface water depletions due to groundwater pumping as required by the GSP

[352] Santa Ynez River Valley Western Management Area GSP, Section 3b.2-6, p. 579.
[353] Santa Ynez River Valley Western Management Area GSP, Section 3b.2-6, p. 580.
[354] Santa Ynez River Valley Western Management Area GSP, Section 3b.3-6, p. 595.
[355] Santa Ynez River Valley Western Management Area GSP, Section 3b.4-6, p. 601.
[356] Santa Ynez River Valley Western Management Area GSP, Section 3b.5-6, p. 604.
[357] Santa Ynez River Valley Central Management Area GSP, Section 2b.6-2, p. 364.
[358] Santa Ynez River Valley Central Management Area GSP, Section 3b.2-6, p. 511.

Regulations.[359] Instead, the GSP proposes to utilize groundwater levels as a proxy for interconnected surface water.

The CMA GSP states that an undesirable result for the depletion of interconnected surface water sustainability indicator in the management area may occur when surface water replaces extracted groundwater as a result of reduced baseflow.[360] The GSP defines the occurrence of an undesirable result for interconnected surface water as "…groundwater elevations that drop 15 feet below the channel thalweg elevations in two out of the three representative monitoring wells for two consecutive non-drought years."[361] Undesirable results were evaluated using historical groundwater extraction and management information and an established baseline. The baseline was established by determining groundwater extraction and management that caused surface water depletion prior to 2015.

Similar to the WMA GSP, the CMA GSP discusses undesirable result for GDEs, which would occur when groundwater elevations fall below the root zone and are no longer able to support the ecosystem.[362] Two key species were identified in the GSP, the southwestern willow flycatcher and the southern California steelhead. Qualitatively, the Plan explains that an undesirable result for southwestern willow flycatchers would occur if groundwater elevations fell below pre-2015 levels and caused a decrease in quantity and density of vegetation used by the species or a decrease in surface water habitat during its nesting season.[363] An undesirable result for the southern California steelhead would likely occur if groundwater elevations fell below pre-2015 levels due to groundwater extractions that cause a decrease in surface flow below one of the flow requirements for any life stage.[364] The GSP does not discuss or reference the flow requirements needed for the southern California steelhead during its life stages. Outside of the listed GDEs and key species, the GSP does not discuss impacts on beneficial uses and users resulting from the depletion of interconnected surface water.

The CMA GSP plans to use groundwater levels as a proxy for depletion of interconnected surface water minimum thresholds. It is the Department's understanding that at each of the three representative monitoring locations for interconnected surface water in the CMA, the minimum threshold is set at groundwater elevations 15 feet below the river channel thalweg. However, Department staff note that the Plan's description of minimum thresholds is confusing as the Plan also discusses potential minimum thresholds for GDEs which will be set 15 feet below ground surface and includes a conditional statement that a threshold exceedance must also "correspond with a decline in GDE health."[365]

[359] 23 CCR § 354.28 (c)(6).
[360] Santa Ynez River Valley Central Management Area GSP, Section 3b.2-6, p. 510.
[361] Santa Ynez River Valley Central Management Area GSP, Section 3b.2-6, p. 513.
[362] Santa Ynez River Valley Central Management Area GSP, Section 3b.2-6-1, pp. 511-512.
[363] Santa Ynez River Valley Central Management Area GSP, Section 3b.2-6, pp. 514.
[364] Santa Ynez River Valley Central Management Area GSP, Section 3b.3-6, pp. 522.
[365] Santa Ynez River Valley Central Management Area GSP, Section 3b.3-6, pp. 522.

Department staff believe that some of the confusion comes from the Plan conflating developing management criteria for interconnected surface water with observing impacts to GDEs.

It is the Department's understanding that at each of the three representative monitoring locations for interconnected surface water in the CMA, the measurable objective is set at groundwater elevations 5 feet below the river channel thalweg. However, again this was somewhat confusing given the Plan's description of the measurable objective in relation to both GDEs and interconnected surface water.[366] The interim milestones for interconnected surface water are equivalent to the measurable objectives (i.e., groundwater levels five feet below the Santa Ynez River channel thalweg).[367]

Eastern Management Area (EMA) GSP

The EMA GSP states that an undesirable result for the depletion of interconnected surface water may occur when groundwater levels decline as a result of groundwater extraction in areas of interconnectedness and during periods of severe drought.[368] The GSP identifies portions of the Alamo Pintado and Zanja De Cota creeks, near the confluence of the Santa Ynez River, as areas where groundwater and surface water are interconnected.

The Plan does not provide a quantitative description of an undesirable result based on a combination of minimum threshold exceedances that cause significant and unreasonable effects in the basin, as required by the GSP Regulations. The GSP describes an undesirable result for interconnected surface water as "[p]ermanent loss or significant and unreasonable adverse impacts to existing native riparian or aquatic habitat in the Category A GDE area [i.e., GDEs associated with a principal aquifer] due to lowered groundwater levels caused by pumping."[369] The Plan utilized GDE data, interconnected surface water locations, groundwater elevation data, and a groundwater flow model to define the undesirable result.[370] The GSP states that a sustained drop in groundwater elevations below the root zones of the identified GDEs could result in permanent loss of GDEs and reduce surface water discharge to the Santa Ynez River.

The EMA GSP plans to use groundwater levels as a proxy for the depletions of interconnected surface water. A numerical groundwater model was used to assess the timing and magnitude of potential depletions of interconnected surface water as well as projected land use, groundwater extraction, and climate impacts on beneficial users. The results of the numerical model concluded that surface water discharges would decrease less than 25 AFY in the Alamo Pintado Creek[371] over the GSP implementation horizon

[366] Santa Ynez River Valley Central Management Area GSP, Section 3b.4-6, pp. 526-527.
[367] Santa Ynez River Valley Central Management Area GSP, Section 3b.5-6, p. 529.
[368] Santa Ynez River Valley Eastern Management Area GSP, Section 5.10.1, pp. 377-378.
[369] Santa Ynez River Valley Eastern Management Area GSP, Section 5.10.1, p. 379.
[370] Santa Ynez River Valley Eastern Management Area GSP, Section 5.10.1, p. 378.
[371] Santa Ynez River Valley Eastern Management Area GSP, Figure 5-4, p. 382.

while discharges would decrease by approximately 100 AFY in the Zanja de Cota Creek[372] during the same period. The GSP acknowledges that climate change will greatly impact the modeled surface water discharges, particularly the years post-2050. Based on the results of the numerical groundwater model and information on identified GDEs, the minimum thresholds will be established for interconnected surface water at 15 feet below the bottom of the stream beds of the Alamo Pintado and Zanja de Cota Creek (as measured by piezometers proposed to be installed in areas containing GDEs).[373] The GSA intends to review and reevaluate the interconnected surface water minimum thresholds as data gaps are filled and the proposed monitoring locations are installed.

The GSP concludes that the numerical groundwater model results indicate the minimum thresholds will continue to support flows to the Central Management Area.[374] The interconnected surface water minimum thresholds are not anticipated to negatively impact beneficial uses and users; however, the GSP acknowledges that the results of the numerical groundwater model indicate that future climate change may have an effect on these uses and users.[375]

The measurable objectives for the depletion interconnected surface water are groundwater elevations five feet below the stream bed in Alamo Pintado and Zanja de Cota creeks.[376] The Plan states that the measurable objective was selected based on the GDE root zones depths. Category A GDEs are described as having root zone depths well beyond five feet below the streambed. Interim milestones were not established for interconnected surface water based on the lack of known or documented significant and unreasonable impacts to beneficial uses and users.[377] While the GSP concludes that significant and unreasonable impacts are not anticipated to occur, Department staff recommend that the GSP consider establishing interim milestones for interconnected surface water.

Department staff do not understand the Plan's rationale for establishing both minimum thresholds and measurable objectives below the thalweg or the Santa Ynez River in the WMA and CMA, and below tributary stream beds in the EMA. Department staff note that if the GSAs were to manage groundwater levels within the operational range between the measurable objective and minimum threshold this would result in conditions where surface water is being lost to the groundwater system (likely increasing current depletion rates). Furthermore, the Plan states that undesirable results could occur if groundwater levels fell below pre-2015 levels or historical low levels. To this point, Department staff note that the hydrographs for representative monitoring wells in the WMA[378] and CMA[379]

[372] Santa Ynez River Valley Eastern Management Area GSP, Figure 5-5, p. 383.
[373] Santa Ynez River Valley Eastern Management Area GSP, Section 5.10.2, pp. 384-385.
[374] Santa Ynez River Valley Eastern Management Area GSP, Section 5.10.2.2, p. 386.
[375] Santa Ynez River Valley Eastern Management Area GSP, Section 5.10.2.3, p. 386.
[376] Santa Ynez River Valley Eastern Management Area GSP, Section 5.10.3, p. 388.
[377] Santa Ynez River Valley Eastern Management Area GSP, Section 5.10.4, p. 389.
[378] Santa Ynez River Valley Western Management Area GSP, Appendix 3B-E, pp. 1209-1302.
[379] Santa Ynez River Valley Central Management Area GSP, Appendix 3B-D, pp. 1121-1124.

indicate that historical groundwater elevation trends have generally been much more closely aligned with the elevation of the channel thalweg. In general, it appears that if groundwater levels were maintained between the measurable objective and minimum threshold, this would result in groundwater levels typically lower than historical conditions (thus increasing depletions of interconnected surface water in excess of historical rates). However, the Plan does not provide an explanation for how the proposed sustainable management criteria will avoid a significant and unreasonable depletion of interconnected surface water, nor does it adequately evaluate how potential depletions associated with the minimum thresholds might affect beneficial uses and users of interconnected surface water. Department staff conclude that additional analysis should be conducted, and an explanation should be provided, to demonstrate how these thresholds will avoid an unreasonable depletion of surface water impacting beneficial uses and users. Also, consistent with previous recommendations, Department staff also recommend that the GSAs eliminate the non-drought year condition in the undesirable result definition and use fall (seasonal low) measurements in the evaluation of undesirable results (see Recommended Corrective Action 7a).

Department staff conclude that, at this time the GSP has not demonstrated, with adequate evidence, that the use of groundwater elevations as a proxy for depletions of interconnected surface water is sufficient to quantify the location, quantity, and timing of depletions, as required by GSP Regulations. Department staff encourage the GSA to re-evaluate both the monitoring network and sustainability criteria for interconnected surface water, to better align with the GSP Regulations, in the next periodic evaluation of the Plan.

Department staff understand that quantifying depletions of surface water from groundwater extractions is a complex task that likely requires developing new, specialized tools, models, and methods to understand local hydrogeologic conditions, interactions, and responses. During the initial review of GSPs, Department staff have observed that most GSAs have struggled with this new requirement of SGMA. However, staff believe that most GSAs will more fully comply with regulatory requirements after several years of Plan implementation that includes projects and management actions to address data gaps and other issues necessary to understand, quantify, and manage depletions of interconnected surface waters. Accordingly, Department staff believe that affording GSAs adequate time to refine their Plans to address interconnected surface waters is appropriate and remains consistent with SGMA's timelines and local control preferences.

The Department will continue to support GSAs in this regard by providing, as appropriate, financial and technical assistance to GSAs, including the development of guidance describing appropriate methods and approaches to evaluate the rate, timing, and volume of depletions of interconnected surface water caused by groundwater extractions. Once the Department's guidance related to depletions of interconnected surface water is publicly available, the GSA, where applicable, should consider incorporating appropriate guidance approaches into their future periodic updates to the GSP (See Recommended Corrective Action 7b). GSAs should consider availing themselves of the Department's

financial or technical assistance, but in any event must continue to fill data gaps, collect additional monitoring data, and implement strategies to better understand and manage depletions of interconnected surface water caused by groundwater extractions and define segments of interconnectivity and timing within their jurisdictional area (See Recommended Corrective Action 7c). Furthermore, GSAs should coordinate with local, state, and federal resources 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 (See Recommended Corrective Action 7d).

4.4 MONITORING NETWORK

The GSP Regulations describe the monitoring network that must be developed for each sustainability indicator including monitoring objectives, monitoring protocols, and data reporting requirements. Collecting monitoring data of sufficient quality and quantity is necessary for the successful implementation of a groundwater sustainability plan. The GSP Regulations require a monitoring network of sufficient quality, frequency, and distribution to characterize groundwater and related surface water conditions in the basin and evaluate changing conditions that occur through implementation of the Plan.[380] Specifically, a monitoring network must be able to monitor impacts to beneficial uses and users,[381] monitor changes in groundwater conditions relative to measurable objectives and minimum thresholds,[382] capture seasonal low and high conditions,[383] include required information such as location and well construction and include maps and tables clearly showing the monitoring site type, location, and frequency.[384] Department staff encourage GSAs to collect monitoring data as specified in the GSP, follow SGMA data and reporting standards,[385] fill data gaps identified in the GSP prior to the first periodic evaluation,[386] update monitoring network information as needed, follow monitoring best management practices,[387] and submit all monitoring data to the Department's Monitoring Network Module immediately after collection including any additional groundwater monitoring data that is collected within the Plan area that is used for groundwater management decisions. Department staff note that if GSAs do not fill their identified data gaps, the GSA's basin understanding may not represent the best available science for use to monitor basin conditions.

Groundwater Level Monitoring Network

The WMA Plan identifies 117 monitoring wells in the monitoring network for groundwater levels. Of the 117 wells in the groundwater level monitoring network, 74 wells are

[380] 23 CCR § 354.32.
[381] 23 CCR § 354.34(b)(2).
[382] 23 CCR § 354.34(b)(3).
[383] 23 CCR § 354.34(c)(1)(B).
[384] 23 CCR §§ 354.34(g-h).
[385] 23 CCR § 352.4 *et seq*.
[386] 23 CCR § 354.38(d).
[387] Department of Water Resources, 2016, Best Management Practices and Guidance Documents.

identified as screened in the principal Upper Aquifer; 29 wells are identified as screened in the principal Lower Aquifer; and 14 wells are identified for monitoring groundwater in the Santa Ynez River Alluvium (underflow) subarea. [388] There are 26 groundwater level representative monitoring sites, 13 in each of the principal aquifers.[389] Department staff note that the representative monitoring sites match DWR's Monitoring Network Module on the SGMA Portal. Department staff determined the density of groundwater level monitoring wells exceeds the range (0.2 to 10 wells per 100 square miles) recommended by the Department's Best Management Practices.[390]

The proposed frequency for collecting groundwater level measurements varies by the collecting agency and includes monthly, semi-annual, and annual measurements.[391] The measurement frequency for representative monitoring wells is semi-annual (spring and fall). [392] Since the data collection frequency varies by agency, Department staff recommend that the WMA GSA update the Plan to include the timing and frequency of data collection for each groundwater level monitoring site by the next periodic evaluation.

The CMA Plan identifies 22 monitoring wells in the monitoring network for groundwater levels. Four of the wells are screened in the Buellton Aquifer, the only principal aquifer identified in the Plan area, and 18 are screened in the Santa Ynez River Alluvium.[393] Department staff calculated the density of the four representative monitoring wells in the Buellton Aquifer to be equivalent to 18 wells per 100 square miles. While this exceeds the range (0.2 to 10 wells per 100 square miles) recommended by the Department's Best Management Practices,[394] Department staff believe the inconsistent spatial distribution of the monitoring sites is not sufficient to adequately characterize groundwater conditions across the Buellton Aquifer.[395] Two of the representative monitoring wells are located in the far western portion of the Plan area and the remaining two representative monitoring wells are located approximately 5 miles to the east in the City of Buellton, leaving most of the Buellton Aquifer without any groundwater level monitoring. The Plan states that there is not enough groundwater level data for the Buellton Aquifer to create contour maps[396] and recognizes the limited number of monitoring sites as a data gap in the HCM.[397] Department staff suggest the CMA GSA continue to work towards resolving the groundwater level monitoring data gap in the Buellton Aquifer by the next periodic evaluation.

[388] Santa Ynez River Valley Western Management Area GSP, Table 3a.2-1, p. 509.
[389] Santa Ynez River Valley Western Management Area GSP, Table 3a.3-1, pp. 527-528, Figure 3a.3-1, p. 529.
[390] Department of Water Resources, 2016, Monitoring Networks and Identification of Data Gaps BMP.
[391] Santa Ynez River Valley Western Management Area GSP, Table 3a.2-1, p. 509.
[392] Santa Ynez River Valley Western Management Area GSP, Section 3b.2-1, p. 552.
[393] Santa Ynez River Valley Central Management Area GSP, Table 3a.2-1, p. 455.
[394] Department of Water Resources, 2016, Monitoring Networks and Identification of Data Gaps BMP.
[395] 23 CCR §§ 354.34(c)(1)(A-B) & (c)(2).
[396] Santa Ynez River Valley Central Management Area GSP, Section 2b1-2-1, p. 288.
[397] Santa Ynez River Valley Central Management Area GSP, Section 2a.5-2, p. 282.

The proposed frequency for collecting groundwater level measurements in the monitoring network varies by the collecting agency and includes monthly, semi-annual, and annual measurements.[398] The measurement frequency for representative monitoring wells is semiannually, occurring in the spring and fall.[399] Department staff encourage the CMA GSA to update the Plan to include the timing and frequency of each monitoring site by the next periodic evaluation.

The EMA Plan identifies 24 representative monitoring wells in the Plan area for the monitoring of groundwater levels.[400] Of the 24 wells in the monitoring network, 15 wells are identified as screened in the Paso Robles Formation principal aquifer, and nine wells are identified as screened in the underlying Careaga Sand principal aquifer.[401] The calculated well density of the monitoring networks is 10 wells and six wells per 100 square miles for the Paso Robles Formation and the Careaga Sand Formation, respectively.[402] The density of groundwater level monitoring wells exceeds the range recommended by the Department's Best Management Practices.[403]

The proposed frequency for collecting groundwater levels is semi-annually in the spring and fall.[404] Department staff recommend that the GSA update the Plan to include the timing and frequency of each monitoring site. Additionally, the Plan describes fall measurement collection as a historical data gap to be addressed.[405] Department staff agree with this and recommend the GSA clearly describe and identify the wells that are monitored each spring and fall by the next periodic evaluation.

Groundwater Storage Monitoring Network

Each of the three Plans proposes to use the groundwater level monitoring network as a proxy for the groundwater storage monitoring network, based on the understanding that changes in groundwater storage are directly dependent on changes in groundwater levels.[406] Since the GSA intends to use the same groundwater level network, Department staff reiterate that the spatial distribution of the monitoring network in the CMA is likely insufficient for monitoring changes in storage in the Buellton Aquifer. Therefore, Department staff suggest the CMA GSA continue to work towards resolving the groundwater level monitoring data gap in the Buellton Aquifer by the next periodic evaluation.

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[398] Santa Ynez River Valley Central Management Area GSP, Table 3a.2-1, p. 456.
[399] Santa Ynez River Valley Central Management Area GSP, Table 3a.3-2, p. 471, Section 3b.2-1, p. 497.
[400] Santa Ynez River Valley Eastern Management Area GSP, Table 4-2, pp. 281-282, Section 4.3, pp. 278-280, Figure 4-1, p. 283, Section 4.9, p. 316.
[401] Santa Ynez River Valley Eastern Management Area GSP, Section 4.3, p. 280.
[402] Santa Ynez River Valley Eastern Management Area GSP, Section 4.3.2, p. 286.
[403] Department of Water Resources, 2016, Monitoring Networks and Identification of Data Gaps BMP.
[404] Santa Ynez River Valley Eastern Management Area GSP, Executive Summary, p. 40; Table 4-3, p. 287.
[405] Santa Ynez River Valley Eastern Management Area GSP, Section 3.1.5.1, p. 147.
[406] Santa Ynez River Valley Western Management Area GSP, Section 3a.2-2, p. 517; Santa Ynez River Valley Central Management Area GSP, Section 3a.2-2, p. 460; Santa Ynez River Valley Eastern Management Area GSP, Section 4.4, p. 291.

Seawater Intrusion Monitoring Network

In two of the three plans, CMA[407] and EMA[408], the GSAs indicate that the seawater intrusion sustainability indicator is not applicable to the Plan area. Department staff agree that seawater intrusion is not occurring and is not likely to occur in these two Plan areas in the future.

As discussed in Section 4.2.2 (Groundwater Conditions), the Upper Aquifer in the WMA is in contact with the Pacific Ocean.[409] The Plan provides a figure depicting the location of recent chloride isocontour lines in the WMA. The 500 mg/L contour, which represents the minimum threshold, is shown to be near the eastern boundary of the Santa Ynez River Estuary.[410]

The WMA Plan explains that a subset of two wells (17K20 and 26F4) from the existing groundwater quality monitoring network will be used to monitor for seawater intrusion.[411] However, across different sections of the Plan, the precise identification, quantity, and locations of monitoring sites is inconsistent or unclear. For example, Table 3a.3-1, which lists all the representative monitoring sites in the WMA, identifies two sites for seawater intrusion monitoring (17K20 and 21G2).[412] The Plan also provides a seawater intrusion monitoring network map that shows four sites, with the two additional sites (22A3 and 27F1) located in the vicinity of the 500 mg/L chloride isocontour.[413] In the sustainable management criteria section of the GSP, the Plan also identifies two additional wells (17M1 and 22A1) that will be used to track seawater intrusion further inland.[414] Due to these discrepancies, Department staff cannot determine the true representative monitoring sites. Therefore, staff encourage the WMA GSA to revise the Plan, throughout, to explicitly and consistently identify the intended seawater intrusion representative and non-representative monitoring sites.

Moreover, the WMA Plan does not clearly identify the frequency of measurements for each well in the seawater intrusion monitoring network. As mentioned in the Plan, the monitoring frequency for the USGS monitoring network, which appears may include wells used by the GSA to track seawater intrusion, ranges from annually to triennially. While the GSA states that it intends to measure monitoring sites annually to update the chloride minimum threshold isocontour, it does not specify which sites it intends to monitor annually for this purpose or at what time of year this will occur.[415] Given the range of

[407] Santa Ynez River Valley Central Management Area GSP, Section 2b.4, p. 349, Section 3a, p. 452, Section 3b.2-3, p. 500.
[408] Santa Ynez River Valley Eastern Management Area GSP, Section 3.2, p. 150, Section 4.2.1, p. 277, Section 4.5, p. 294.
[409] Santa Ynez River Valley Western Management Area GSP, Figure 2b.4-4. p. 389.
[410] Santa Ynez River Valley Western Management Area GSP, Section 3a.2-4, p. 518, Figure 2b.4-3, p. 387.
[411] Santa Ynez River Valley Western Management Area GSP, Section 3a.2-4, p. 518.
[412] Santa Ynez River Valley Western Management Area GSP, Table 3a.3-1, pp. 527-528.
[413] Santa Ynez River Valley Western Management Area GSP, Figure 3a.3-3, p. 535.
[414] Santa Ynez River Valley Western Management Area GSP, Section 3b.3-3, p. 591.
[415] Santa Ynez River Valley Western Management Area GSP, Section 3b.3-3, p. 591.

monitoring frequencies and limited (and unclear) number of monitoring sites, Department staff are unsure if the network is sufficient to detect changes in seawater intrusion early enough for the GSA to respond with management actions to avoid undesirable results. For these reasons, Department staff conclude that the Plan should clearly define the monitoring frequency for each site. By the next periodic evaluation of the Plan, Department staff suggest the GSA create a table to clearly identify seawater intrusion monitoring sites depicting the measurement frequency and timing of each site.

Groundwater Quality Monitoring Network

The WMA and CMA GSPs propose to use groundwater quality data from three existing monitoring programs, a USGS monitoring program; agricultural wells as part of the Central Coast Water Quality Control Board's Irrigated Lands Regulatory Program; and public supply wells as reported to the United States Environmental Protection Agency's Safe Drinking Water Information System and the SWRCB Division of Drinking Water. The Plan notes that these datasets are publicly available on the SWRCB GAMA website.[416] The WMA and CMA GSPs identify six constituents of concern with established sustainable management criteria (TDS, chloride, sulfate, boron, sodium, and total nitrogen) that they will be monitoring for.

The monitoring well locations, and associated monitoring program for each site, are shown on Figure 3a.2-2.[417] Table 3a.2-3 shows the number of wells in each monitoring program, the frequency of monitoring, and the aquifer that is monitored.[418] The Plan also discusses the frequency of monitoring based on the constituent.[419]

The EMA Plan proposes to use groundwater quality data from existing monitoring programs as well. The Plan includes 61 wells in the groundwater quality monitoring network.[420] The Plan states that 26 of these are municipal and public water system wells screened in one of the two principal aquifers that were sampled for at least one of the constituents of concern since 2015.[421] However, despite stating that the wells are screened in a principal aquifer, Department staff note that 58 of the 61 sites listed on Table 4-4 are characterized as having an "unknown" aquifer designation and many wells are missing critical construction information required by the GSP Regulations, such as depth of well and screen interval information.[422] Department staff suggest the EMA GSA

[416] Santa Ynez River Valley Western Management Area GSP, Section 3a.2-3, pp. 517-518; Santa Ynez River Valley Central Management Area GSP Section 3a.2-3, pp. 460-465.
[417] Santa Ynez River Valley Western Management Area GSP, Figure 3a.2-2, p. 519; Santa Ynez River Valley Central Management Area GSP, Figure 3a.2-2, p. 461.
[418] Santa Ynez River Valley Western Management Area GSP, Section 3a.2-3, pp. 517-518, Table 3a.2-3, p. 518; Santa Ynez River Valley Central Management Area GSP, Section 3a.2-3, p. 460, Table 3a.2-3, p. 465.
[419] Santa Ynez River Valley Western Management Area GSP, Section 1d.5-3, p. 147; Santa Ynez River Valley Central Management Area GSP, Section 1d.5-3, pp. 134-135.
[420] Santa Ynez River Valley Eastern Management Area GSP, Table 4-4, pp. 298-301.
[421] Santa Ynez River Valley Eastern Management Area GSP, Section 4.6, p. 296-297.
[422] Santa Ynez River Valley Eastern Management Area GSP, Table 4-4, pp. 298-301.

develop a plan to fill the well parameter data gap and include the aquifers being monitored by the next periodic evaluation.

The EMA GSP identifies the same constituents of concern as the WMA and CMA (TDS, chloride, sulfate, boron, sodium, and total nitrogen). The Plan includes a map depicting the groundwater quality network well locations and well type.[423] Aside from wells that are in the Irrigated Lands Regulatory Program,[424] the sampling frequency for the water quality monitoring network is not discussed in the Plan. Department staff suggest the EMA GSA update the Plan to include the specific frequency of the water quality monitoring network by the next periodic evaluation.

Subsidence Monitoring Network

The three GSPs state that InSAR data will be used in addition to continuous GPS stations to monitor subsidence. The WMA[425] and CMA[426] Plans will each use a single continuous GPS station for this purpose (each with a station within their respective plan area). The EMA will use three continuous GPS sites for this purpose — two sites located outside the Plan area (and Basin) and one site within the Plan area.[427] However, the Plans do not provide the timing or frequency with which the data from InSAR or the continuous GPS stations will be analyzed. The GSAs for the three Plan areas should coordinate and adopt a clear protocol for when these data will be collected and analyzed.

Interconnected Surface Water Monitoring Network

WMA GSA proposes to use a combination of stream gauges and groundwater level sites to monitor surface water flows and depletions of interconnected surface water, respectively. The Plan identifies three stream gauges with two currently on the Santa Ynez River and the third outside the Basin on the Salsipuedes Creek.[428] The Plan notes that the Santa Ynez River flows perennially downstream of the discharge from the Lompoc Regional Wastewater Treatment Plant to the Santa Ynez River estuary and Pacific Ocean.[429] The Plan indicates that a stream gauge is proposed near the mouth to the Santa Ynez River to increase the GSAs' understanding of total outflow of the River (which is identified as a data gap).[430] Department staff note that there is a project for

[423] Santa Ynez River Valley Eastern Management Area GSP, Figure 4-3, p. 302.
[424] Santa Ynez River Valley Eastern Management Area GSP, Section 4.6, p. 296.
[425] Santa Ynez River Valley Western Management Area GSP, Section 3a.2-5, p. 521, Section 3a.3-5, p. 532, Figure 3a.2-3, p. 523.
[426] Santa Ynez River Valley Central Management Area GSP, Section 3a.2-5, pp. 465-466, Section 3a.3-5, p. 477, Figure 2b.5-1, p. 353.
[427] Santa Ynez River Valley Eastern Management Area GSP, Figure 3-33, p. 182, Section 3.2.4, pp. 180-184.
[428] Santa Ynez River Valley Western Management Area GSP, Figure 3a.3-5, p. 541.
[429] Santa Ynez River Valley Western Management Area GSP, Section 2a.4-5-1, p. 293.
[430] Santa Ynez River Valley Western Management Area GSP, Section 3a.3-6, p. 540.

installing this new gauge near the mouth of the River in the WMA GSP's "Plan Implementation" section.[431]

The WMA GSP states that groundwater level data will be used as a proxy to "evaluate potential Surface Water Depletions and potential impacts to Groundwater Dependent Ecosystems."[432] Depletion of interconnected surface water and groundwater will be quantified by measuring groundwater elevations semi-annually at three representative monitoring points located adjacent to the Santa Ynez River.[433] While minimum thresholds and measurable objectives for water levels in the WMA (and CMA) are set in consideration of the channel thalweg, the Plan is missing details on how they will be used to determine the depletion of surface water.

The CMA does discuss the use of a numerical model to estimate depletions of interconnected surface water. However, it appears the model is not yet functional because there are data gaps in monitoring groundwater levels and stream gauges.[434] The CMA monitors surface water flows and interconnected surface water depletions via a combination of stream gauges and groundwater levels as a proxy for interconnected surface water depletions.

The CMA is planning to use three active stream gauges operated by the USGS; however, they are not located in the Plan area. Two of the gauges are found along the Santa Ynez River (one is located approximately one mile upstream from the CMA Plan area within the EMA Plan area and the second is located 12 miles downstream from the CMA Plan area within the WMA Plan area). The third gauge is located outside the Plan area on the tributary Zaca Creek that flows into the Plan area from the north and ultimately drains into the Santa Ynez River.[435] The GSA considers the downstream gauge a data gap and is proposing to take spot flow measurements of the surface water outflow from the CMA area for a period of one year to develop a correlation with the gauge. Department staff note the WMA GSA should consider activating the USGS gauge (11131000) which is on the western border of the Plan area.

The CMA Plan provides a map showing the location of three representative monitoring wells and other monitoring locations simply referred to as "existing monitoring sites."[436] The Plan does not include any details on two of the three representative monitoring wells (i.e., well depth, screening, etc.). Figure 3a.3-3 also shows the spatial relationship between wells and potential GDEs and depicts the general location of a proposed

[431] Santa Ynez River Valley Western Management Area GSP, Section 5a.2-4, p. 662.
[432] Santa Ynez River Valley Western Management Area GSP, Section 3a.3-6, p. 539.
[433] Santa Ynez River Valley Western Management Area GSP, Section 3b.2-6, p. 576.
[434] Santa Ynez River Valley Western Management Area GSP, Section 3a.3-6, p. 478.
[435] Santa Ynez River Valley Central Management Area GSP, Figure 2b.6-1, p. 359.
[436] Santa Ynez River Valley Central Management Area GSP, Figure 3a.3-3, p. 479.

piezometer that will be used to evaluate GDEs along the Santa Rosa Creek (a current data gap noted in the Plan).[437]

The EMA takes a similar approach using groundwater levels as a proxy for depletion of interconnected surface waters. The GSA intends to install two representative monitoring wells at the confluences of the Alamo Pintado and Zanja de Cota Creeks with the Santa Ynez River, which is also the general location of existing GDEs.[438] The Plan explains that groundwater elevations near the potential GDEs will be used as a proxy for the depletion of interconnected surface water sustainability indicator.[439] Department staff find the monitoring of groundwater levels in the vicinity of the GDEs (beneficial users of groundwater) to be reasonable; however, believe the GSA has not provided sufficient evidence to demonstrate that these two monitoring wells will satisfy all of the requirements from the GSP Regulations regarding the monitoring of depletions of interconnected surface water, especially for the Santa Ynez River.

The Plan states that "[d]iversions from the Santa Ynez River alluvium are regulated by the SWRCB because it is considered underflow associated with the Santa Ynez River. Therefore, the EMA GSA will not be responsible for managing any aspect of the Santa Ynez River."[440] As discussed above in the Basin Coverage section (Section 3.3), whether the SWRCB or the GSAs have jurisdiction and will manage this area is uncertain and appears largely to be a legal issue. Department staff cannot resolve this issue but have included a recommended corrective action that the GSAs implement their proposed program to address data gaps and ensure that data regarding this area will be incorporated into Basin management. However, separate from this issue, Department staff believe that the EMA GSA has not fully assessed the impacts to the River from groundwater extractions occurring in the Paso Robles Formation aquifer (which is hydrologically connected, and discharges to the to the River, via tributaries as surface flows and underflows). Staff note that there is a significant number of domestic,[441] agricultural,[442] and urban[443] wells within the Older Alluvium and Paso Robles Formation. As a result, the EMA GSA should establish monitoring approaches that would gather data to support the depletions of interconnected surface water resulting from extractions in the principal aquifer.

Each of the Plans omitted required details such as well construction information, aquifers being monitored by well, and specific frequencies and timing of monitoring. There are also gaps in monitoring that, unless resolved, will likely impact the GSAs' hydrogeologic conceptual models, understanding of groundwater conditions, water budgets, and ability

[437] Santa Ynez River Valley Central Management Area GSP, Figure 3a.3-3, p. 479.
[438] Santa Ynez River Valley Eastern Management Area GSP, Section 4.8, p. 313, Figure 4-4, p. 314.
[439] Santa Ynez River Valley Eastern Management Area GSP, Section 4.8, p. 313.
[440] Santa Ynez River Valley Eastern Management Area GSP, Section 4.8, p. 312.
[441] Santa Ynez River Valley Eastern Management Area GSP, Figure 2-8, p. 76.
[442] Santa Ynez River Valley Eastern Management Area GSP, Figure 2-9, p. 77.
[443] Santa Ynez River Valley Eastern Management Area GSP, Figure 2-10, p. 78

to detect and avoid undesirable results. However, Department staff consider these issues relatively easy to resolve and, therefore, do not believe they should preclude Plan approval, provided the GSAs implement plans to resolve these issues by the next periodic evaluation.

4.5 PROJECTS AND MANAGEMENT ACTIONS

The GSP Regulations require a description of the projects and management actions the submitting Agency has determined will achieve the sustainability goal for the basin, including projects and management actions to respond to changing conditions in the basin.[444] Each Plan's description of projects and management actions must include details such as: how projects and management actions in the GSP will achieve sustainability, the implementation process and expected benefits, and prioritization and criteria used to initiate projects and management actions. [445]

The three GSPs offer a host of project and management actions that target demand reduction, increased groundwater or surface water supply, filling data gaps, improving groundwater quality, and possibly implementing a credit or trading program.

Project and management actions are planned for the WMA and CMA to address drought-related declining groundwater level trends and to achieve a net gain of approximately 500 AFY (WMA) and 200 AFY (CMA) in the water budget. Otherwise, the Plans indicate that groundwater storage could continue to decline by 500 AF or 200 AF each year (based on 2018 demands)[446], and water levels in some monitoring sites may fall beneath their minimum thresholds. Similarly, additional projects and management actions are identified to adaptively address possible changes in water demand and climate changes to achieve a potential net gain of up to 3,000 AFY (WMA) and 600 AFY (CMA) in the water budget by the year 2072.[447] The EMA does not provide specific quantitative benefits it hopes to achieve from its projects and management actions.

The three Plans organized their projects and management actions into multiple groups. WMA and CMA have four similar groups, EMA has three. Each of the GSAs intends to implement all "Group 1" (general management) activities early during GSP implementation. Regarding the other groups, the WMA and CMA identify "Group 2" as actions that can be implemented if groundwater conditions begin to approach minimum thresholds; "Group 3" actions can be implemented if minimum thresholds are exceeded; and finally, "Group 4" actions can be implemented if the prior group actions are insufficient to maintain the sustainability goal for the Basin.[448] The Plan explains that EMA Group 2

[444] 23 CCR § 354.44 (a).
[445] 23 CCR § 354.44 (b) *et seq.*
[446] Santa Ynez River Valley Western Management Area GSP, Table 2c.5-3, p. 497.
[447] Santa Ynez River Valley Western Management Area GSP, Section 4a, p. 609; Santa Ynez River Valley Central Management Area GSP, Section 4a, p. 533.
[448] Santa Ynez River Valley Western Management Area GSP, Section 4a, pp. 610-611; Santa Ynez River Valley Central Management Area GSP, Section 4a, pp. 534-435.

and 3 actions will be implemented if Group 1 activities do not make sufficient progress toward sustainability goals.

The three GSPs intend to implement group 1 actions right after GSP adoption. This group includes the following demand reduction projects: developing voluntary or rebate-incentivized conservation efforts for municipal, agricultural, and domestic uses to augment existing conservation efforts in the WMA [449] and in the CMA, [450] and implementation of water use efficiency programs in the EMA.[451] The WMA and CMA predict that the benefit from conservation will be a reduction of approximately 10-20% (2,000 to 4,000 AFY) and 10-30% (300 to 900 AFY) from current groundwater production in the WMA and CMA, respectively, when implemented in conjunction with another demand reduction effort imposing extraction fees with mandatory well metering and well registration.[452] The EMA GSA estimates a benefit of approximately 1,450 AFY from its water efficiency program, based on the assumption of an EMA-wide 10 percent pumping reduction.[453] The EMA is exploring a pumping fee structure that the GSA hopes will encourage reduction in extractions by an estimated 725 AFY.[454] Combined, the demand reduction from the three Plans is projected to be in the approximate range of 4,500-7,000 AFY.

The WMA Plan is proposing supply enhancements via the increased use of recycled water that could result in up to an approximate 3,800 AFY reduction in groundwater pumping. Both WMA and CMA also propose to increase stormwater recharge. WMA expects the benefit from this to be approximately 170 AFY[455] while CMA estimates a benefit of approximately 20 AFY.[456]

The remaining Group 1 actions in the WMA Plan area includes a ban on self-regenerating water softeners with the expectation that this effort will significantly improve groundwater quality by reducing TDS, chloride, and sodium loads in groundwater.[457] The EMA GSA has an action to address data gaps that includes installing monitoring wells, updating cropping factors to improve the water budget, refining the hydrogeologic conceptual model, and improving its understanding of groundwater conditions.[458] A well registration and well meter installation program is planned in the EMA to better understand water

[449] Santa Ynez River Valley Western Management Area GSP, Section 4B.1-1, pp. 619-621.
[450] Santa Ynez River Valley Central Management Area GSP, Section 4B.1-1, pp. 543-545.
[451] Santa Ynez River Valley Eastern Management Area GSP, Section 6.6, pp. 421-428.
[452] Santa Ynez River Valley Central Management Area GSP, Section 4B.2-1, pp. 549-550; Santa Ynez River Valley Western Management Area GSP, Section 4B.2-1, pp. 625-626.
[453] Santa Ynez River Valley Eastern Management Area GSP, Section 6.6.7, p. 426.
[454] Santa Ynez River Valley Eastern Management Area GSP, Section 6.4.7, p. 412.
[455] Santa Ynez River Valley Western Management Area GSP, Section 4B.4-2, p. 635.
[456] Santa Ynez River Valley Central Management Area GSP, Section 4B.4-2, p. 557.
[457] Santa Ynez River Valley Western Management Area GSP, Section 4B.5-2, p. 638.
[458] Santa Ynez River Valley Eastern Management Area GSP, Section 6.3.9, p. 404.

usage, refine the hydrogeologic conceptual model and water budget, and encourage pumping reduction from users.[459]

The WMA and CMA Group 2 actions include situational water rights releases and imposing conditions on new wells. If early warning triggers are exceeded, the GSA may request releases of water from the Cachuma reservoir under the "Below Narrows Account" water rights.[460] Department staff are concerned that releases under this water right may only generate temporary relief from exceedances of early warning triggers rather than mitigate any potential overdraft. The Plan does not explain how the GSAs and Santa Ynez Water Conservation District intend to manage water under this water right to ensure there will be water available for releases when early warning triggers are exceeded again.

The WMA and CMA GSAs propose to implement ordinances limiting groundwater extraction from new wells if early warning triggers (within five feet of the minimum thresholds) are exceeded in more than 50% of the representative monitoring sites.[461] The benefit from this management action in the WMA and CMA is estimated at 50-500 AFY and 20-200 AFY, respectively.[462] However, this benefit is dependent on the expected number of new wells.

The EMA Group 2 actions include implementation of a groundwater pumping allocation program to equitably allocate a groundwater volume of water to be pumped annually, [463] a groundwater extraction credit marketing and trading program to provide extractors with flexibility in using their pumping allocation,[464] and finally a crop fallowing and crop conversion program to preserve water rights for producers that choose to fallow or convert lands and reduce groundwater extraction.[465]

The WMA and CMA Group 3 action includes implementing an annual pumping allocation plan. The GSAs may implement annual pumping allocations if Group 1 and 2 projects and management actions are not implemented or do not achieve the expected results of maintaining groundwater production within the sustainable yield or if minim thresholds are exceeded.[466] The EMA projects in group 3 focus on augmenting supplies in the EMA.[467] These projects include distributed stormwater managed aquifer recharge; recycled water and reuse projects; a precipitation enhancement program; conjunctive use - MAR projects using supplemental (State Water Project and Santa Ynez River) water; in lieu recharge projects to deliver unused and surplus supplemental water to offset groundwater

[459] Santa Ynez River Valley Eastern Management Area GSP, Section 6.5, pp. 414-420.
[460] Santa Ynez River Valley Western Management Area GSP, Section 4C.1-1, p. 642.
[461] Santa Ynez River Valley Western Management Area GSP, Sections 4C.2-1 through 4C.2-2, p. 644.
[462] Santa Ynez River Valley Western Management Area GSP, Table 4a.1-2, p. 615.
[463] Santa Ynez River Valley Eastern Management Area GSP, Section 6.7, pp. 428-435.
[464] Santa Ynez River Valley Eastern Management Area GSP, Section 6.8, pp. 435-442.
[465] Santa Ynez River Valley Eastern Management Area GSP, Section 6.9, pp. 442-449.
[466] Santa Ynez River Valley Central Management Area GSP, Section 4C, p. 561, Section 4C.3-1, p. 566.
[467] Santa Ynez River Valley Eastern Management Area GSP, Section 6.10, pp. 449-457.

extractions; and aquifer storage and recovery projects. The direct benefits from these projects are not provided because the GSP currently has no plan to initiate them.

The WMA and CMA Group 4 actions list several "supply" and "demand" related supplemental projects and management actions that could be implemented in the future; however, limited information if provided for these actions as they are not currently be considered by the GSAs.[468]

For each of the projects and management actions in groups 1-3, the Plans present the necessary information required by the GSP Regulations including their description, potential benefits to measurable objectives and overdraft mitigation, justification, implementation triggers, cost and funding, relevant permitting and regulatory processes, public notice process, implementation process and timetable, and legal authority.

4.6 Consideration of Adjacent Basins/Subbasins

SGMA requires the Department to "…evaluate whether a groundwater sustainability plan adversely affects the ability of an adjacent basin to implement their groundwater sustainability plan or impedes achievement of sustainability goals in an adjacent basin."[469] Furthermore, the GSP Regulations state that minimum thresholds defined in each GSP be designed to avoid causing undesirable results in adjacent basins or affecting the ability of adjacent basins to achieve sustainability goals.[470]

The WMA Plan area is adjacent to the San Antonio Creek Valley Groundwater Basin.[471] The Basin is bounded to the north by the Purisima Hills and Purisima Anticline, which limits connectivity between the principal aquifers in the WMA and the San Antonio Creek Valley Groundwater Basin.[472] It is noted that the Vandenberg Space Force base has a State Water Project allocation of up to 6,050 AFY. However, the GSP reports that recent reductions in deliveries during the dry period from 2011 to 2018 resulted in the Vandenberg Space Force base only receiving approximately 1,600 AFY. To augment the reduced surface water supply, the Vandenberg Space Force base pumped from the adjacent San Antonio Creek Valley Groundwater Basin.[473] Review of the current water budget has identified the approximate 1,600 AFY in the surface inflows.[474] However, there does not appear to be an accounting of the groundwater pumped in the adjacent San Antonio Creek Valley Basin that may have been used in the Santa Ynez River Valley Basin. Department staff recommend the GSA account for this water in future water budgets if groundwater from the San Antonio Creek Valley is being used within the Basin.

[468] Santa Ynez River Valley Western Management Area GSP, Sections 4D, pp. 651-652; Santa Ynez River Valley Central Management Area GSP, Sections 4D, p. 570.
[469] Water Code § 10733(c).
[470] 23 CCR § 354.28(b)(3).
[471] Santa Ynez River Valley Western Management Area GSP, Figure 1a.1-2, p. 69
[472] Santa Ynez River Valley Western Management Area GSP, Section 3b.6, p. 607.
[473] Santa Ynez River Valley Eastern Management Area GSP, Section 2c.3-4, p. 480.
[474] Santa Ynez River Valley Western Management Area GSP, Table 2c.4-1, p. 482.

The CMA Plan area does not have any hydrologic connection to the San Antonio Creek Valley Groundwater Basin or any other basin.

The EMA Plan area is adjacent to the San Antonio Creek Valley Basin.[475] In the Plan's discussion on the effects of minimum thresholds on the San Antonio Creek Valley Basin, the EMA GSA claims that there is no hydrologic connection between the two areas but further later clarifies that groundwater gradients at the boundary indicate that groundwater does not flow between the areas. However, this assessment is based on limited available information. The GSA does acknowledge that if production wells are in proximity of the boundary, then it may be possible the gradient can change in either direction.[476] Department staff agree with the GSA that additional monitoring wells may be needed along the boundary to increase the understanding of the connectivity between the basins and to monitor for potential impacts related to pumping and GSP implementation.

Department staff conclude that the Plan substantially addressed the GSP Regulations for this section. Department staff will continue to review Periodic Evaluations of the Plan to assess whether implementation of the Plan is potentially impacting the adjacent basin.

4.7 Consideration of Climate Change and Future Conditions

The GSP Regulations require a GSA to consider future conditions and project how future water use may change due to multiple factors including climate change.[477]

Since the GSP was adopted and submitted, climate change conditions have advanced faster and more dramatically. It is anticipated that the hotter, drier conditions will result in a loss of 10% of California's water supply. As California adapts to a hotter, drier climate, GSAs should be preparing for these changing conditions as they work to sustainably manage groundwater within their jurisdictional areas. Specifically, the Department encourages GSAs to:

1. Explore how their proposed groundwater level thresholds have been established in consideration of groundwater level conditions in the basin based on current and future drought conditions.
2. Explore how groundwater level data from the existing monitoring network will be used to make progress towards sustainable management of the basin given increasing aridification and effects of climate change, such as prolonged drought.
3. Take into consideration changes to surface water reliability and that impact on groundwater conditions.
4. Evaluate updated watershed studies that may modify assumed frequency and magnitude of recharge projects, if applicable, and

[475] Santa Ynez River Valley Central Management Area GSP, Figure 1-1, p. 54.
[476] Santa Ynez River Valley Eastern Management Area GSP, Section 5.5.2.4, p. 345.
[477] 23 CCR § 354.18.

5. Continually coordinate with the appropriate groundwater users, including but not limited to domestic well owners and state small water systems, and the appropriate overlying county jurisdictions developing drought plans and establishing local drought task forces to evaluate how their Plan's groundwater management strategy aligns with drought planning, response, and mitigation efforts within the basin.

5 STAFF RECOMMENDATION

Department staff recommend approval of the GSP with the recommended corrective actions listed below. The Santa Ynez River Valley Basin GSP conforms with Water Code Sections 10727.2 and 10727.4 of SGMA and substantially complies with the GSP Regulations. At this time, it appears that implementation of the GSP will likely achieve the sustainability goal for the Santa Ynez River Valley Basin. The GSAs have identified several areas for improvement of their Plans and Department staff concur that those items are important and should be addressed as soon as possible. Department staff have also identified additional recommended corrective actions that should be considered by the GSAs for the first periodic assessment of the GSPs.

These recommended corrective actions apply to all three of the GSPs in the Basin (unless otherwise stated) and should be addressed in a coordinated manner. Addressing these recommended corrective actions will be important to demonstrate that implementation of the Plan is likely to achieve the sustainability goal for the Basin consistent with SGMA timeframes. The recommended corrective actions include:

RECOMMENDED CORRECTIVE ACTION 1

In response to a series of meetings between the GSAs, the Department, and the State Water Board regarding the management of water pumped from the Santa Ynez River Alluvium, the GSAs prepared and transmitted an action plan via the Department's SGMA Portal titled *Action Plan for Management of All Well Production Along the Lower Santa Ynez River, Above the Lompoc Narrows.* Department staff recommend incorporating the action plan (as described in the GSAs' January 5, 2024, letter) into the Plan for the Basin and document the implementation of the action plan in future periodic evaluations of the Plan. The Department will track progress through review of annual reports and periodic evaluations.

RECOMMENDED CORRECTIVE ACTION 2

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 those principal aquifers. The analysis and description should 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 – in the entire Basin. 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 3

The GSAs need to reevaluate the water budgets for consistency:

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 projects and management actions 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.

RECOMMENDED CORRECTIVE ACTION 4

The GSAs need to reevaluate the sustainable management criteria for the chronic lowering of water levels and address 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 for the entire Basin including quantities of wells that may be impacted and the approximate locations of where any potential impacts may occur.

RECOMMENDED CORRECTIVE ACTION 5

The GSAs need to reevaluate the sustainable management criteria for water quality and address the following items:

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, similar to the WMA GSP and CMA GSP, and clearly explain how that quantitative criteria represents significant and unreasonable conditions occurring throughout the management area and Basin.
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 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. The GSAs should compile this information – including the minimum thresholds; measurable objectives; and interim milestones – for each well in a tabular format indicating the minimum threshold value and any comparative averages and baseline conditions for the entire Basin.

RECOMMENDED CORRECTIVE ACTION 6

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.

RECOMMENDED CORRECTIVE ACTION 7

Department staff understand that estimating the location, quantity, and timing of stream depletion due to ongoing, Basin-wide pumping is a complex task and that developing suitable tools may take additional time; however, it is critical for the Department’s ongoing

and future evaluations of whether GSP implementation is on track to achieve sustainable groundwater management. The Department plans to provide guidance on methods and approaches to evaluate the rate, timing, and volume of depletions of interconnected surface water and support for establishing specific sustainable management criteria in the near future. This guidance is intended to assist GSAs in understanding and sustainably managing depletions of interconnected surface water.

The GSA should work to address the following items by the first periodic evaluation:

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.

Join DWR as we celebrate the
10th Anniversary of SGMA during

Groundwater Awareness Week
March 10-16, 2024

SAVE THE DATE

Online events will take place March 11–March 15, 2024

Monday, March 11, 11:00 a.m. –12:30 p.m.

Hear about the progress made over the first 10 years of the Sustainable Groundwater Management Act (SGMA). State-local partnerships and innovative projects are putting more water into the ground and are helping to ensure current and long-term water supply resiliency for communities, businesses and environmental habitats that are dependent on groundwater.

Speakers include DWR Director, Karla Nemeth and SGMO Deputy Director, Paul Gosselin

GSA Trainings

Tuesday, March 12, 10:00 –11:30 a.m.

Community Outreach and Engagement Training for GSAs

Wednesday, March 13, 10:00 –11:30 a.m.

Community Outreach and Engagement Training for GSAs

Thursday, March 14, noon –1:00 p.m.

Learn about the groundwater sustainability plan reporting and submittal process

Friday, March 15, noon –1:00 p.m.

Planning ahead for the next decade of SGMA, Data Collection, and Modeling

Registration for these events will be coming soon—watch your inbox!
Be sure to follow DWR's social media channels during Groundwater Awareness Week!