AGENDA

REGULAR MEETING OF
THE BOARD OF DIRECTORS OF
CARPINTERIA GROUNDWATER SUSTAINABILITY AGENCY

CARPINTERIA CITY HALL
5775 CARPINTERIA AVENUE
CARPINTERIA, CA 93013

Wednesday, March 26, 2025 at 5:35 p.m.

Join Zoom Meeting
https://us06web.zoom.us/j/82908997355?pwd=MeDx2Onb995W4s9Wh1yXvmGwcZdwy8.1

Meeting ID: 829 0899 7355
Passcode: 006395
or
Dial by Phone: 1-669-444-9171

1. **CALL TO ORDER**

2. **PUBLIC FORUM (Any person may address the Board of Directors on any matter within its jurisdiction which is not on the agenda).**

3. **CONSENT AGENDA**

   A. ****Minutes for the Regular Meeting of the Board held on February 26, 2025**
   B. ****Disbursement Report for February 11, 2025 – March 10, 2025**

4. **UNFINISHED BUSINESS – none**

5. **NEW BUSINESS –**

   A. ****Consider Appointment of General Counsel, Junajoy Frianeza of Myers, Widders, Gibson, Jones & Feingold, LLP; and alternate: Steven Lee (for action, Executive Director McDonald)**

   B. **** Consider approval by DWR of Groundwater Sustainability Plan (for action, Executive Director McDonald)**

6. **EXECUTIVE DIRECTOR REPORTS (for information) –**

   A. ****Financials**

7. **ADJOURNMENT**

**Indicates attachment of document to agenda packet.

The above matters are the only items scheduled to be considered at this meeting.

Note: The above Agenda was posted at Carpinteria Valley Water District Administrative Office in view of the public no later than 5:00 p.m., March 23, 2025. The Americans with Disabilities Act provides that no qualified individual with a disability shall be excluded from participation in, or denied benefits of, the District's programs, services, or activities because of any disability. If you need special assistance to participate in this meeting, please contact the District Office at (805) 684-2816. Notification at least twenty-four (24) hours prior to the meeting will enable the District to make appropriate arrangements. Materials related to an item on this Agenda submitted to the Board of Directors after distribution of the agenda packet are available for public inspection in the Carpinteria Valley Water district offices located at 1301 Santa Ynez Avenue, Carpinteria during normal business hours, from 8 am to 5 pm.

**Indicates attachment of document to agenda packet.

	MINUTES OF THE REGULAR MEETING OF THE BOARD OF DIRECTORS OF CARPINTERIA GROUNDWATER SUSTAINABILITY AGENCY
	February 26, 2025
	Chairman Van Wingerden called the Regular meeting of the Carpinteria Groundwater Sustainability Agency Board of Directors held in the Carpinteria Valley Water District board room to order at 5:36 p.m., Wednesday February 26, 2025
	Directors Present; O'Connor, Balch, Holcombe, Roberts and Van Wingerden
	Others Present: Bob McDonald
	Junajoy Frianeza Norma Rosales Lisa Silva Rob Morrow Amy Stevens Alan Soicher Bob Franco Will Carleton Carolyn Frary Shirley Johnson Kadie McShirley
PUBLIC FORUM	Carolyn Frary addressed the Board regarding estimates of groundwater charges versus actual usage as per tax bill. Alan Soicher also addressed the Board mentioning the Coastal View News article on the use of Nature-based Groundwater Recharge opportunities in addition to the CAPP project.
CONSENT AGENDA	Director O'Connor moved, and Director Roberts seconded the motion to approve the consent agenda. The motion carried by a 5-0 vote. The motion was approved by roll call as follows; Ayes: O'Connor, Holcombe, Balch, Roberts and Van Wingerden Nayes : none Absent: none
STAKEHOLDER ENGAGEMENT FOR METERING PROGRAM	Executive Director McDonald presented to consider presentation on Stakeholder Engagement for CGSA Metering program. <u>Listening Session topics to include:</u> - Timeline to implement programs - Meter accuracy and testing program - Meter configuration - Compliance metrics - CGSA collection and/or access to meter reads - Enforcement - Unique well situations - Exemptions to program For Information.

ADJOURNMENT	Chairman Van Wingerden adjourned the meeting at 6:06 p.m.
	Lisa Silva, Board Secretary

Monthly Disbursement Report
Carpinteria Groundwater Sustainability Agency

Payment Date: 02/11/25 - 03/10/25

Disbursement Report

Carpinteria Groundwater Sustainability Agency Account

Vendor	Description	Payment Number	Payment Date	Payment
BARTLETT, PRINGLE & WOLF, LLP				**3,150.00**
	AUDIT SERVICES - 063024	2164	2/12/2025	3,150.00
FRUIT GROWERS LABORATORY, INC				**808.00**
	EL CARRO MONITORING WELL - INORGANIC ANALYSIS	2167	3/5/2025	203.00
	SENTRY WELL - GENERAL MINERAL	2167	3/5/2025	605.00
MYERS, WIDDERS, GIBSON JONES & FEINGOLD, LLP				**1,227.31**
	GENERAL COUNSEL - JANUARY	2165	2/12/2025	1,227.31
PACIFIC SURVEYS, LLC				**4,106.25**
	SENTRY WELL	2168	3/5/2025	2,161.25
	~~LAT 30 PUMPS~~ Reclass to CVWD	~~2168~~	~~3/5/2025~~	~~1,945.00~~
PUEBLO WATER RESOURCES, INC				**6,020.00**
	PROP68 PUEBLO WATER RESOURCES	2166	3/5/2025	6,020.00
SHOWSCAPES INC.				**5,710.00**
	ECW MONITORING WELL LAWN RESTORATION	2163	2/12/2025	5,710.00
US BANK				**331.64**
	02 2025 BANK ANALYSIS FEE	DFT0001973	2/14/2025	331.64
			Total: $	~~**21,353.20**~~
			Total:	$19,408.20

MYERS WIDDERS GIBSON JONES & FEINGOLD LLP

Attorneys at Law Since 1971

ATTORNEY FEE AGREEMENT
General Counsel

THIS LEGAL SERVICES AGREEMENT (this "Agreement") is made between ***MYERS, WIDDERS, GIBSON, JONES & FEINGOLD, L.L.P.***, a California limited liability partnership ("Attorney"), and ***CARPINTERIA GROUNDWATER SUSTAINABILITY AGENCY***, a California county water district ("Client").

1. Purpose of Representation. Attorney will represent Client in connection with general counsel matters, as needed (the "Matter"). ***JUNAJOY V. FRIANEZA***, a member of Attorney, has been specifically designated by Client to act as General Counsel ("General Counsel"). General Counsel or her delegee within Attorney shall perform the services set forth in this Agreement.

2. Scope of Services.

2.1 Scope. Attorney shall provide the following legal services to Client:

2.1.1. Legal advice, consultation and opinions.

2.1.2. Preparation of all resolutions, agreements, contracts, deeds and other documents of a similar nature.

2.1.3. Attendance at:

(i) All Board of Directors meetings, regular, special and closed.

(ii) Such Staff meetings as the General Manager deems necessary.

2.1.4. Monitoring of all State and federal legislation as well as current court cases which might have a possible effect on the activities of Client and advise Client's Staff with respect to same.

2.1.5. Representation of Client in connection with litigation involving Client, including preparation of pleadings and responses thereto, briefs and other documents as well as making court appearances; provided, however, that Attorney shall not be required to represent Client in any criminal enforcement proceeding brought by Client.

2.2 Bond Opinions. Review of bond documents and requests for bond opinions will be referred to outside counsel.

3. Responsibilities of Attorney and Client. Attorney will perform the legal services called for under this Agreement, keep Client informed of progress and developments, and respond promptly to Client's inquiries and communications. Client will be truthful and cooperative with Attorney; keep Attorney reasonably informed of developments and of Client's address, telephone number, and whereabouts; and timely make any payments required by this Agreement.

4. Attorney's Fees. Attorney shall be compensated by Client for legal services as follows:

4.1 Non-litigation Services. All non-litigation services shall be billed at the rate of Two Hundred Forty-Five Dollars ($245.00) per hour for partners and associates. Services provided by Attorney's legal assistants and paralegals will be charged at an hourly rate of One Hundred Eighty Dollars ($180.00). All rates are subject to periodic review and change of which Client will receive notice. Attorney will charge in increments of one-tenth (1/10) of an hour, rounded off for each particular activity to the nearest one-tenth (1/10) of an hour. The minimum time charged for any particular activity will be one-tenth (1/10) of an hour.

4.2 Litigation Services.

4.2.1 Litigation services shall be billed at a twenty percent (20%) discount from the current standard hourly rates of Attorney. In no event shall such litigation services charged to Client exceed Three Hundred Dollars ($300.00) per hour.

4.2.2 Litigation services shall not be rendered to Client by Attorney unless and until first authorized by the Board of Directors. A prior written statement of the estimated costs of such services shall be rendered upon request of the General Manager.

4.3 Increase in Fees. Unless the Parties otherwise agree, the hourly rate charged to Client shall be increased by five percent (5%) every three years after the five percent (5%) increase scheduled for January 1, 2026. As such, the hourly rate charged to Client for non-litigation services will increase to Two Hundred Fifty-Seven Dollars and Twenty-Five Cents ($257.25) on January 1, 2026, and thereafter increase to Two Hundred Seventy Dollars and Eleven Cents ($270.11) on January 1, 2029.

4.4 Charges. Attorney normally charges for all activities undertaken in providing legal services to Client under this Agreement, including, but not limited to, the following: conferences, including preparation and participation; preparation and review of contracts, legal memoranda, correspondence, including e-mails, and other documents; legal research and telephone calls, including calls with Client, other attorneys or persons involved with the Matter, and governmental agencies. The legal personnel assigned to the Matter will confer among themselves about the Matter, as required. When they do confer, each person will charge for the time expended. Likewise, if more than one of Attorney's

legal personnel attends a meeting or other proceeding, each will charge for the time spent. Attorney will charge for travel time, both local and out of town.

Client acknowledges that Attorney has made no promises about the total amount of attorney's fees to be incurred by Client under this Agreement.

5. Costs. Client will pay all "costs" in connection with Attorney's representation of Client under this Agreement. Costs include, but are not limited to, long-distance telephone charges, messenger service fees, photocopying expenses, copying by outside copying services and postage. Attorney sometimes will make payment for, and then bill Client for reimbursement of, smaller items such as photocopying services, recording fees, and messenger service fees. When substantial expenditures involving outside vendors are to be incurred, or when substantial out-of-pocket expenditures (such as extended field expenses, or large outside copying jobs) occur, Attorney may require that Client pays those sums to Attorney before Attorney expends them, that Client provides an advance deposit for such expenditures, or that Client directly contracts with and pays the outside vendor.

Travel expenses shall be billed at the applicable Internal Revenue Service rate; provided, however, that travel expenses to Client's office or the Board of Directors meetings shall not be billed.

6. Deposit. Currently, no deposit is being required. However, at any time, Attorney may request Client to deposit funds with Attorney in advance of services being performed. The amount of any future deposit will be determined by the anticipated scope of the work to be performed and other factors Attorney believes to be relevant, such as Client's payment history. Attorney will deposit these funds in Attorney's client trust account. Payment for Attorney's hourly fees and costs will be drawn from this account. If Client fails to provide a deposit within ten (10) calendar days after it is requested by Attorney, Attorney has the right to resign immediately from further representation of Client.

Any interest earned on funds in Attorney's client trust account will be paid, as required by law, to the State Bar of California to fund legal services for indigent persons.

7. Statements and Payments. Attorney will send Client monthly statements indicating attorney's fees and costs incurred and their basis, any amounts applied from the deposit, if any, and any current balance owed. If no attorney's fees or costs are incurred for a particular month, or if they are minimal, the statement may be held and combined with that for the following month unless a statement is requested by Client. Hourly fees and costs will be billed to Client on a monthly basis and shall be paid within thirty (30) calendar days. If not so paid, a late charge of one and one-half percent (1½%) per month shall be assessed until the delinquent sums are paid. All check payments should be made payable to "Myers, Widders, Gibson, Jones & Feingold, L.L.P." Client may elect to pay via credit card through Attorney's online payment portal system.

Attorney specifically reserves the right to withdraw from representation of Client and to cease immediately performing all services if Attorney does not receive full payment of any amounts owed to it within thirty (30) calendar days of any statement.

It is Attorney's intent that Client is satisfied not only with Attorney's legal representation and services, but also with the reasonableness of Attorney's charges. Therefore, if Client should have any questions about or objections to a monthly statement, Attorney's services or charges, Client should raise them promptly for discussion. If Client objects only to a portion of the charges on a statement, Client agrees to pay the remainder, which will not constitute a waiver of Client's objection.

8. Professional Liability Insurance. Attorney agrees that at all times it is providing services to Client pursuant to this Agreement it shall maintain professional liability insurance for protection against claims arising out of the negligent acts, errors or omissions of Attorney's operations under this Agreement in an amount of not less than One Million Dollars ($1,000,000.00). Attorney shall provide a certificate of insurance coverage required herein upon the request of Client.

9. Approval Necessary for Settlement. No settlement of any nature shall be made for any of Client's legal matters without Client's complete approval.

10. Association of Other Attorneys. Attorney may, after consultation with Client and with Client's approval, associate other attorneys who may have expertise in particular areas of the law in representing Client.

11. Attorney's Authority. Client gives Attorney the power and authority to execute any and all pleadings, claims, settlements, drafts, checks, compromises, releases, dismissals, deposits and orders and other papers which Client would properly execute and to receive on Client's behalf any moneys or other things of value to which Client may be entitled because of any judgment rendered or any settlement agreement reached in connection with any legal matters of Client.

12. Dispute Resolution. In the unfortunate event Client makes a claim against Attorney based upon alleged errors or omissions in rendering or failing to render professional services, the parties will first attempt to resolve said claim in good faith by mediation through a single mediator to be mutually agreed upon. Each party shall pay one-half (½) of the mediator's fees. If the claim is not resolved through mediation, it shall be submitted to binding arbitration pursuant to California Code of Civil Procedure Sections 1280, *et seq.*, before a single arbitrator to be mutually agreed upon. Each party shall initially be responsible for paying one-half (½) of the arbitration fees. The losing party in any arbitration proceeding shall pay the prevailing party's costs and attorney's fees, except that any party who has refused a demand for mediation shall not be entitled to recover any costs or attorney's fees, even if said party prevails at arbitration. In arbitration, the parties shall have the right to discovery in accordance with Code of Civil Procedure Section 1283.05. This paragraph shall not limit Client's right to file an application with the Ventura County Bar Association for mandatory arbitration of any fee dispute.

Explained, Read, and Approved: _____ (**Client's Initials**)

13. Mutual Trust and Confidence. The attorney-client relationship is one of mutual trust and confidence. If Client has any questions or concerns about the provisions of this Agreement or Attorney's services, Client should discuss them with Attorney.

14. Withdrawal from Representation. If Client does not meet Client's obligation of timely payments or deposits under this Agreement, Attorney reserves the right to withdraw from Client's representation on that basis alone, subject, of course, to any required judicial, administrative, or other approvals.

This Agreement is also subject to termination by either party upon reasonable notice for any reason. If there were to be such a termination, however, Client would remain liable for all unpaid charges for services provided and expenditures advanced or incurred.

15. Duties upon Termination of Active Representation. Upon termination of Attorney's active involvement in a particular matter for which Attorney had previously been engaged, Attorney will have no further duty to inform Client of future developments or changes in law which may be relevant to such matter in which Attorney's representation has terminated. Further, unless Client and Attorney agree in writing to the contrary, Attorney will have no obligation to monitor renewal or notice dates or similar deadlines that may arise from the matters for which Attorney had been engaged.

16. Indemnification.

16.1 Indemnification by Attorney. Attorney shall indemnify, defend, and hold harmless Client, its boards, officers, employees, and agents from any and all claims, demands, losses, damages, and expenses, including legal fees and costs, arising out of or related to Attorney's performance of its services pursuant to this Agreement, save and except for any such claim, liability or expense arising out of the sole negligence or concurrent active negligence of Client and/or Client's boards, officers, employees or agents.

16.2 Indemnification by Client. Client shall indemnify, defend, and hold harmless Attorney, its employees, and its agents from any and all claims, demands, losses, damages, and expenses, including legal fees and costs arising out of or related to Client's performance of its obligations pursuant to this Agreement, save and except for any such claim, liability or expense arising out of the sole negligence or concurrent active negligence of Attorney and/or Attorney's employees or agents.

17. Document Storage Policies. Attorney's policy with regard to documents and other materials at the conclusion of a matter is to maintain them in storage for a period of no more than seven (7) years. All documents and other materials in Attorney's file will then be destroyed or discarded without notice to Client. Accordingly, if there are any documents or other materials Client wishes to have retrieved from Client's file at the conclusion of a matter, it will be necessary for Client to advise Attorney of that request to ensure that they are not destroyed.

18. Consent to Electronic Communications. In order to maximize efficiency in the Matter, Attorney intends to use state of the art communications devices to the fullest extent possible (*e.g.*, e-mail, document transfer by computer, cellular telephones, *etc*.). The use of such devices under current technology may place Client's confidences and privileges at risk. However, Attorney believes the effectiveness involved in use of these devices outweighs the risk of accidental disclosure. By signing this Agreement, Client acknowledges Client's consent to the use of these devices.

19. Disclaimer of Guarantee. Nothing in this Agreement should be construed as a promise or guarantee about the outcome of any matter which Attorney is handling on Client's behalf. Attorney's comments about the outcome of the Matter are expressions of opinion only. If Attorney should provide Client with an estimate of the fees and costs which may be incurred in connection with Attorney's representation of Client, it is important that Client understands, and Client hereby acknowledges, that any such estimate is merely an estimate based on numerous assumptions which may or may not prove to be correct and that any estimate is not a guarantee or agreement of what the maximum amount of fees and/or costs will be.

20. Future Matters. Unless Client and Attorney otherwise agree in writing, all other matters referred to Attorney for representation shall be governed by the terms of this Agreement. However, Attorney's obligation to represent Client in such matters shall consist of an obligation to furnish appropriate representation with reasonable diligence as applicable to the particular matter in question.

21. Client. Attorney's client, or clients, for the purpose of representation is, or are, only the person(s) and/or entities identified in the preamble hereto. Unless expressly agreed, Attorney is not undertaking the representation of any related or affiliated person or entity, nor any parent, sibling, officer, director, agent, or employee.

22. Authorization to Sign. The person signing this Agreement on behalf of Client represents that they have authority to so act.

23. Term. This Agreement shall be effective as of January 1, 2025, and shall continue until December 31, 2025. Notwithstanding, this Agreement shall automatically renew for additional periods of one (1) year unless either party hereto gives the other at least sixty (60) days' prior written notice of termination or non-renewal.

24. Signature. Each Party may adopt as its signature an electronic identification consisting of a symbol or code which must be affixed to this Agreement where indicated ("Signature"). Each Party agrees that any Signature of such party affixed to or contained in this Agreement will be sufficient to verify that such party executed such document.

25. Miscellaneous Provisions. This Agreement shall be binding upon and shall inure to the benefit of Attorney, Client and their respective partners, heirs, successors, representatives, and assigns. This Agreement is made and entered into in the State of California and shall be interpreted, applied, and enforced under and pursuant to the laws of the State of California. Each party has cooperated in the drafting and preparation of this Agreement. Accordingly, this

Agreement shall be construed as if all parties prepared it. This Agreement may be executed in counterparts and, as executed, shall constitute one agreement which shall be binding on the parties. No distinction shall be made between an originally-typed document and faxed or machine-copied documents, provided that the faxes or electronic copies contain a copy of the original signatures. This is the entire agreement between the parties with respect to the subject matter hereof and it supersedes all prior and contemporaneous oral and written agreements and discussions. This Agreement may be amended only by an agreement in writing.

* * *

EXECUTED on the _____ day of March, 2025.

CARPINTERIA GROUNDWATER
SUSTAINABILITY AGENCY

By: _____
Case Van Wingerden, Chairman

"Client"

MYERS, WIDDERS, GIBSON,
JONES & FEINGOLD, L.L.P.

By: _____
James E. Perero, Managing Partner

"Attorney"

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

February 27, 2025

Robert McDonald
Carpinteria Valley Water District
1301 Santa Ynez Avenue
Carpinteria, CA 93013
bob@cvwd.net

RE: Carpinteria Basin - 2024 Groundwater Sustainability Plan

Dear Robert McDonald,

The Department of Water Resources (Department) has evaluated the groundwater sustainability plan (GSP or Plan) submitted for the Carpinteria Basin and has determined the GSP 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 Carpinteria Basin GSP satisfies the objectives of the Sustainable Groundwater Management Act (SGMA) and substantially complies with the GSP Regulations. The Staff Report also proposes recommended corrective actions that the Department believes will enhance the GSP 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 GSP 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 GSAs are required to submit their periodic evaluation of the Carpinteria Basin GSP no later than February 13, 2029.

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 Carprinteria Basin 2024 Groundwater Sustainability Plan

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

STATEMENT OF FINDINGS REGARDING THE APPROVAL OF THE CARPINTERIA 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 Plan submitted by the Carpinteria Groundwater Sustainability Agency (GSA or Agency) for the Carpinteria Basin (Basin No. 3-018).

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 GSP. Department management is satisfied that staff have conducted a thorough evaluation and assessment of the Plan and concurs with staff's recommendations 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.):

B. The Plan was submitted within the appropriate statutory deadline. The Basin was originally designated as a low-priority basin but was subsequently reprioritized as a high-priority basin in 2019. Therefore, the Plan's submittal date of February 13, 2024 was timely. (Water Code §§ 10722.4(d)(2); 10720.7(a); 23 CCR § 355.4(a)(1).)

    1. 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).)

    2. 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 and the Plan's goal "to ensure that beneficial uses and basin users have access to a safe and reliable groundwater supply that meets current and future demands without causing undesirable results. The absence of undesirable results, as defined by SGMA and the Groundwater Sustainability Plan (Plan), will indicate that the sustainability goal has been achieved"[1] are sufficiently justified and explained. The Plan relies on credible information and science to quantify the groundwater conditions that the Plan seeks to avoid and provides 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 a reasonable understanding of data gaps limiting the GSA's ability to refine the hydrogeological model and further evaluate seawater intrusion and groundwater dependent ecosystems in the Basin.[2] The Plan provides a reasonable commitment to addressing these data gaps through projects and management actions and plan to incorporate new information to update the Basin numerical model (23 CCR § 355.4(b)(2).)

3. The projects and management actions proposed in the Plan are developed for implementation in a phased approach warranted by Basin conditions to achieve and maintain Basin sustainability. The projects and management actions are 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 GSA 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 how those interests, including municipal, agricultural, domestic and ecological,[3] 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

[1] Carpinteria GSP, Section 5.3.1, p. 294.
[2] Carpinteria GSP, Sections 3.1.4, 3.2.7 and 5.7.2.1, pp. 118, 171 and 335.
[3] Carpinteria GSP, Section 5.5.2.4, p. 316.

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. The Plan does not anticipate any impacts to adjacent basins resulting from the minimum thresholds defined in the Plan and maintains a cooperative working relationship with the adjacent Montecito Groundwater Basin Groundwater Sustainability Agency.[4] (23 CCR § 355.4(b)(7).)

8. Because a single plan was submitted for the Basin, a coordination agreement was not required. (23 CCR § 355.4(b)(8).)

9. The GSA has historically developed and implemented a groundwater management plan and Basin management objectives in support of the groundwater management plan. The GSA's member agencies and their history of groundwater management provide a reasonable level of confidence that the GSA has 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 GSA has 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 address certain technical or policy issues that were raised and, if not addressed before future and 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

[4] Carpinteria GSP, Section 5.6.2.3, p. 325.

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 has provided an evaluation demonstrating the lack of interconnected surface water systems in the Basin and therefore does not provide sustainable management criteria for interconnected surface water.[5] The Department believes that the GSA has provided adequate data in the Plan to support that interconnected surface water does not exist the Basin, but the GSA should continue to evaluate the potential for interconnected surface water as more information and improved methodology becomes available and provide updates to assess interconnected surface water in future periodic evaluations of the Plan and amendments to the Plan.

3. Projections of future Basin extractions are likely to stay within current and historic ranges, at least until the next periodic evaluation by the GSA and the Department. Basin groundwater levels and other SGMA sustainability indicators appear unlikely to substantially deteriorate while the GSA implements the Department's recommended corrective actions. The California Environmental Quality Act (Public Resources Code § 21000 *et seq*.) does not apply to the Department's evaluation and assessment of the Plan.

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.

[5] Carpinteria GSP, Section 5.10, p. 359.

Accordingly, the GSP submitted by the Agency for the Carpinteria 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 Agency address them in the next Periodic Evaluation, which is set to be submitted by February 13, 2029, 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: February 27, 2025

Exhibit A: Groundwater Sustainability Plan Assessment 2025 Staff Report – Carpinteria Basin

State of California
Department of Water Resources
Sustainable Groundwater Management Program
Groundwater Sustainability Plan Assessment
2025 Staff Report

Groundwater Basin Name:	Carpinteria Basin (No. 3-018)
Submitting Agency:	Carpinteria Groundwater Sustainability Agency
Submittal Type:	Initial Groundwater Sustainability Plan Submission
Submittal Date:	February 13, 2024
Recommendation:	Approve
Date:	February 27, 2025

The Carpinteria Groundwater Sustainability Agency (GSA or Agency) submitted the Carpinteria Groundwater Sustainability Plan (GSP or Plan) for the Carpinteria Basin (Basin) to the Department of Water Resources (Department or DWR) for evaluation and assessment as required by the Sustainable Groundwater Management Act (SGMA)[1] and GSP Regulations.[2] The GSP covers the entire Basin for the implementation of SGMA.

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 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 GSP and its 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.

[1] Water Code § 10720 *et seq*.
[2] 23 CCR § 350 *et seq*.
[3] 23 CCR § 350 *et seq*.

- **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 Carpinteria GSP. The GSA has identified areas for improvement of its Plan (e.g., such as addressing specific data gaps, that were identified by the GSA, establishing a subsidence monitoring network). Department staff concur that those items are important and recommend the GSA address them as soon as possible. Department staff have also identified additional recommended corrective actions within this assessment that the GSA should consider addressing by the first periodic evaluation of the Plan. The recommended corrective actions generally focus on the following:

1. Revising the quantitative definition of chronic lowering of groundwater levels,
2. Revising the definition of undesirable results for degraded water quality,
3. continuing to fill data gaps, collecting additional monitoring data, 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, and potentially refine sustainable management criteria, and
4. Establishing a subsidence monitoring network.

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 GSA submitted a single GSP to the Department to evaluate whether the Plan conforms to specified SGMA requirements[4] and is likely to achieve the sustainability goal for the Carpinteria Basin.[5] To achieve the sustainability goal for the Basin, the GSP must demonstrate that implementation of the Plan 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 GSP will adversely affect the ability of an adjacent basin to implement its GSP or achieve its sustainability goal.[8]

For the GSP to be evaluated by the Department, it must first be determined that the Plan was submitted by the statutory deadline,[9] and that it is complete and covers the entire basin.[10] If these conditions are satisfied, the Department evaluates the Plan to determine whether it complies with specific SGMA requirements and substantially complies 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 Plan, 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 Plan to attain that goal.[12]

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

[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).
[13] 23 CCR § 351(h).
[14] 23 CCR §§ 355.4(b)(1), (3), (4), and (5).

The Department also considers whether the GSA has the legal authority and financial resources necessary to implement the Plan.[15]

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

The Department is required to evaluate the Plan within two years of its 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 GSP satisfies the requirements of SGMA and is 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 Plan adversely affects adjacent basins. While the issues addressed by the recommended corrective actions do not, at this time, preclude approval of the Plan, 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 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 GSP involves the review of information presented by the GSA, 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 Plan or to perform its own geologic or

[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).
[25] Water Code § 10733.8.
[26] 23 CCR § 356.4 *et seq*.

engineering analysis of that information. The staff recommendation to approve a Plan 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 Plan, but simply that Department staff have determined that the assumptions and interpretations relied upon by the submitting GSA are supported by adequate, credible evidence, and are scientifically reasonable.

Lastly, the Department's review and approval of the Plan 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 Plan.[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 Plan implementation adversely affects the ability of adjacent basins to achieve their sustainability goals.

[27] Water Code § 10733.8; 23 CCR § 355.6.
[28] Water Code §§ 10728 *et seq.*, 10728.2.

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 Basin was originally designated as a low-priority basin but was subsequently reprioritized as a high-priority basin in 2019. Therefore, the Plan's submittal date of February 13, 2024 was submitted within the statutory deadline.

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 GSA submitted an adopted GSP for the entire Basin. After an initial, preliminary review, Department staff found the GSP to be complete and appears to include the required information, sufficient to warrant a thorough evaluation by the Department.[31] The Department posted the GSP to its website on February 29, 2024.[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 GSAs.

The GSP states that it intends to manage the entire Carpinteria Basin and the jurisdictional boundary of the submitting GSA fully contains the Basin.[34]

[29] Water Code § 10720.7(a)(2).
[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/157.
[33] Water Code § 10727(b); 23 CCR § 355.4(a)(3).
[34] Carpinteria Basin GSP, Section 2.4, p. 57.

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 a GSP were developed in the manner required by the GSP Regulations, whether the GSP was developed using appropriate data and methodologies and whether its conclusions are scientifically reasonable, and whether the GSP, through the implementation of clearly defined and technically feasible projects and management actions, is likely to achieve a tenable sustainability goal for the basin. The Department staff's evaluation of the likelihood of the Plan 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;[35] a description of the Plan area and identification of beneficial uses and users in the Plan area;[36] and a description of the ability of the submitting Agency to develop and implement a Plan for that area.[37]

On January 31, 2020, the Carpinteria GSA was formed through a Joint Exercise of Powers Agreement (JPA) between the Carpinteria Valley Water District (CVWD), the City of Carpinteria, the Santa Barbara County Water Agency (Water Agency), and the County of Ventura. On February 7, 2020, the Carpinteria GSA Board of Directors adopted Resolution 0001 "declaring its intent to designate itself to DWR as the recognized GSA for the Basin" and submitted the required documents to the Department the same month.[38] The GSA's formation documents are provided in Appendix B of the GSP.[39] The GSP also provides a description of the organization and management structure of the Agency.[40] The legal authority of the GSA is described in the GSP.[41]

The Carpinteria Basin is a 7,801 acre (12.7 square miles) coastal basin that encompasses the City of Carpinteria and parts of Santa Barbara and Ventura counties. The Basin is bounded by the Pacific Ocean in the south, the edge of the CVWD service area along Toro Canyon adjacent to the Montecito Basin in the west, and "at the geologic contact with the Coldwater Sandstone and Sespe Formations in the foothills of the Santa Ynez

[35] 23 CCR § 354.6 *et seq*.
[36] 23 CCR § 354.8 *et seq*.
[37] 23 CCR § 354.6(e).
[38] Carpinteria Basin GSP, Section 2.1, p. 55.
[39] Carpinteria Basin GSP, Appendix B, pp. 465-487.
[40] Carpinteria Basin GSP, Section 2.4, p. 57.
[41] Carpinteria Basin GSP, Section 2.4.2, p. 58.

mountains" in the north. The eastern boundary of the Basin "underlies Rincon Creek near Laguna Ridge"[42] (see Figure 1).

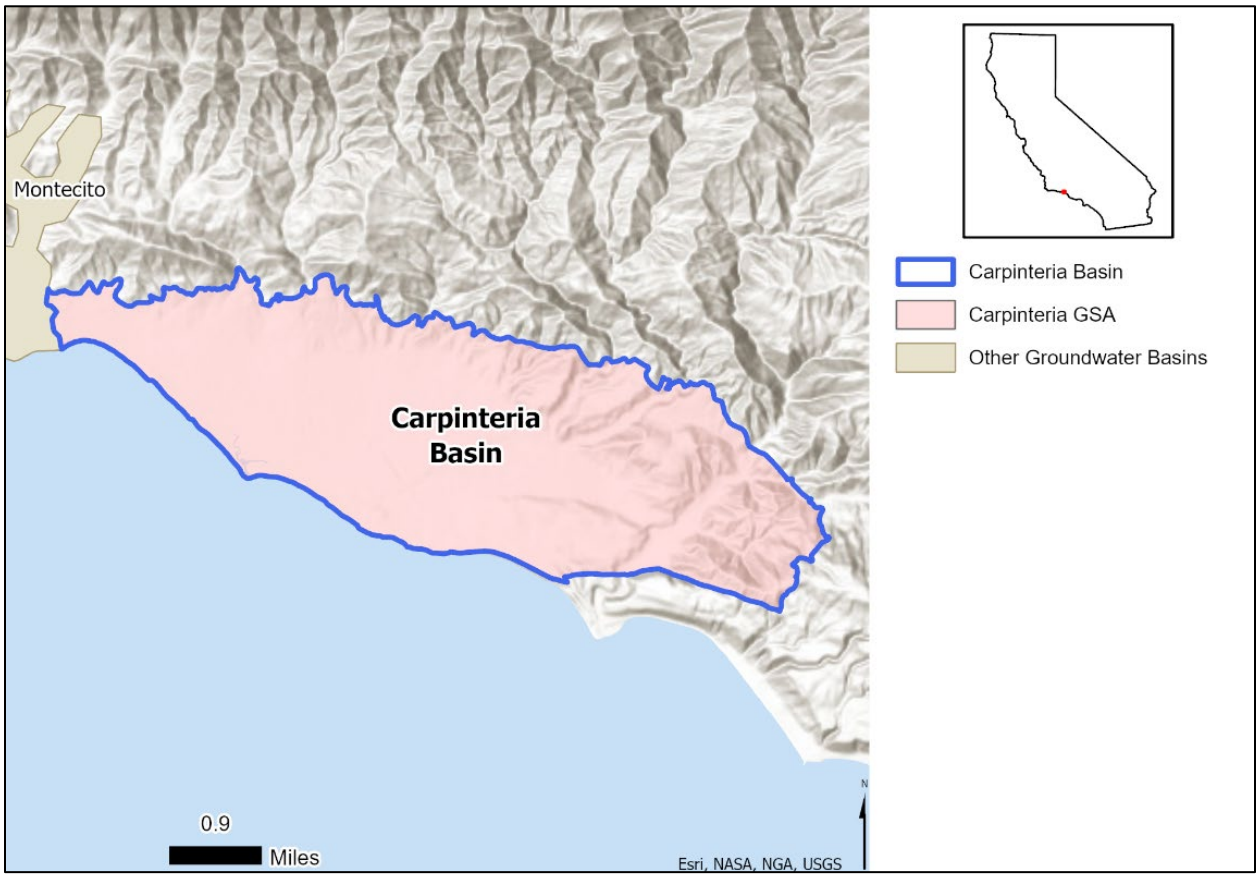

Figure 1: Carpinteria Basin Location Map.

The GSP states that "the primary land uses in the Basin are agriculture, urban areas, and undeveloped land"[43] according to 2018 land use date prepared by Land IQ, LLC and provided to the Department. The Plan provides a summary of current land uses in Table 2-1[44] and a map in Figure 2-2.[45] Both the table and figure show the amount of land occupied by agricultural crop type. In addition, the Plan provides the zoning designations within the City of Carpinteria boundaries from the City of Carpinteria's General Plan/Local Use Plan (General Plan) that was updated in 2003: Three Residential categories; Planned Unit Development; General Commercial and Visitor-serving Commercial; Three Industrial categories; Public Facility; Open Space or Recreation; Agriculture; and Transportation Corridor.[46] Department staff note that, while no Native American tribes are identified in the GSP, "California Native American tribes" is listed as a beneficial uses and users in

[42] Carpinteria Basin GSP, Section 2.5, p. 60.
[43] Carpinteria Basin GSP, Section 2.5.1.1, p. 61.
[44] Carpinteria Basin GSP, Section 2.5.1, Table 2-1, p. 62.
[45] Carpinteria Basin GSP, Section 2.5.1, Figure 2-2, p. 63.
[46] Carpinteria Basin GSP, Sections 2.5.1.1 and 2.5.3.1, pp. 64 and 75.

the Basin[47] and as a stakeholder in the GSA's Stakeholder Communications and Engagement Plan (Appendix C).[48]

The GSP includes a description of the beneficial uses and users of groundwater in the Basin. The beneficial uses and users are identified as: agricultural users, domestic well owners, municipal well operators, public water systems, local land use planning agencies, environmental users of groundwater, surface water users, the federal government, California Native American tribes, and Disadvantaged Communities (DACs). Two DACs have been identified based on several datasets, specifically in the Ventura County portion of the Basin and a census block group in the City of Carpinteria; and entities "listed in Section 10927 that are monitoring and reporting groundwater elevations in all or a part of the groundwater basin managed by the GSA."[49]

The GSP provides an estimate of the planning-level costs of implementing the Plan, including for projects, management actions, and annual management and operation.[50] The cost estimates for each group are: ranging from 69.5 million dollars to 122 million dollars for project implementation,[51] an average annualized cost of 140,000 dollars per year for management actions,[52] and ranging from 353,000 dollars to 455,000 dollars for annual management and operation.[53]

The GSP's discussion and presentation of administrative information covers the specific items listed in the GSP Regulations in an understandable format using appropriate data. Department staff are aware of no significant inconsistencies or contrary information presented in the GSP and therefore have no significant concerns regarding the quality, data, and discussion of this subject in the GSP. The administrative information included in the Plan substantially complies with the requirements outlined in the GSP Regulations.

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.[54]

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

[47] Carpinteria Basin GSP, Section 2.6.1, p. 84.
[48] Carpinteria Basin GSP, Appendix C, p. 494.
[49] Carpinteria Basin GSP, Section 2.6.1, pp. 83-84.
[50] Carpinteria Basin GSP, Sections 7.6-7.7, pp. 433-435.
[51] Carpinteria Basin GSP, Section 7.6, Table 7-1, p. 433.
[52] Carpinteria Basin GSP, Section 7.6, Table 7-2, p. 434.
[53] Carpinteria Basin GSP, Section 7.7, Table 7-3, p. 435.
[54] 23 CCR § 354.12.

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.[55] The GSP Regulations require a descriptive hydrogeologic conceptual model that includes a written description of geologic conditions, supported by cross sections and maps,[56] and includes a description of basin boundaries and the bottom of the basin,[57] principal aquifers and aquitards,[58] and data gaps.[59]

The Basin consists of a low-lying alluvial plain located on the south flank of the Santa Ynez Mountains, one of the east-west trending ridges of the Transverse Range Geomorphic Province.[60] The GSP describes that the Basin is approximately seven miles long in an east-west direction and extends a maximum of two miles northward from the coastline with an approximate topographic relief of 650 feet.[61] The GSP describes the Basin to represent the north limb of a synclinal geologic structure, the deepest parts of which terminate against the traces of the Rincon Creek Thrust Fault.[62] The GSP discusses that the structural depression has subsequently been filled by younger Quaternary age unconsolidated and semi-consolidated sediments, with older consolidated and generally non-water bearing rocks forming the definable Basin boundaries.[63]

The GSP identifies the Quaternary Age water-bearing Basin deposits to primarily consist of alluvial deposits, the Carpinteria Formation, the Casitas Formation, and the Santa Barbara Formation.[64] The consolidated and non-water bearing rocks forming the definable Basin boundaries consist of the Sisquoc Formation, Monterey Formation, Rincon Shale, Vaqueros Formation, Sespe Formation, and the Coldwater Sandstone.[65] The Rincon Creek Fault extends westerly across the Basin from the Ventura County side of Rincon Creek, through El Estero, and then offshore.[66] The Basin is bounded to the west by the Montecito Groundwater Basin by an administrative boundary and to the southwest by the Pacific Ocean.[67] The northern and southeastern lateral boundaries are

[55] 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.
[56] 23 CCR §§ 354.14 (a), 354.14 (c).
[57] 23 CCR §§ 354.14 (b)(2-3).
[58] 23 CCR § 354.14 (b)(4) *et seq.*
[59] 23 CCR § 354.14 (b)(5).
[60] Carpinteria GSP, Section 3.1.2, pp. 87 and 92.
[61] Carpinteria GSP, Section 3.1.1.1, p. 87.
[62] Carpinteria GSP, Section 3.1.2, p. 92.
[63] Carpinteria GSP, Section 3.1.2, p. 92.
[64] Carpinteria GSP, Section 3.1.2, p. 92.
[65] Carpinteria GSP, Section 3.1.2, p. 92.
[66] Carpinteria GSP, Section 3.1.2, p. 110.
[67] Carpinteria GSP, Section 3.1.2, p. 92.

delineated by the geologic contact between Quaternary Age unconsolidated water-bearing deposits and Tertiary Age bedrock formations.[68]

Additionally, the GSP states that the Rincon Creek Thrust Fault impedes subsurface groundwater movement and the fault has been used to segregate the Basin into two Storage Units: Storage Unit-1 is on the north side of the fault trace, and Storage Unit-2 is to the south.[69] The GSP provides evidence of the fault's nature as a barrier to flow, showing geologic offset in the geologic map[70] and cross sections E-E' and F-F' which include borehole indicators of geologic conditions on either side of the fault.[71] Department staff note that the fault's status as a barrier to flow is important to the GSA's management of seawater intrusion, as the GSP proposes limited monitoring in areas near the fault. Staff note that the GSP does not provide technical details supporting the GSP's description of the fault as a barrier, such as boring logs with location data or hydrographs of wells positioned on opposite sides of the fault. Staff conclude the fault is likely a barrier to flow based on information presented but recommend the GSA provide the technical information it used to make the determination of the fault as a barrier to flow.

The GSP states that the top of the bedrock marks the bottom of the Basin.[72] This is depicted by Bedrock Structural Contour maps and several cross sections that note the depths of bedrock.[73] Per the GSP, the deepest portion of the bedrock is located 4,000 feet below sea level in Storage Unit-1 and the highest portion of the bedrock is approximately 500 feet above sea level, near the northern boundary of the Basin.[74] The GSP states that in Storage Unit-2, where there is relatively little geologic control, bedrock is estimated to reach a depth of approximately 1,000 feet below sea level.[75] Department staff note that the Bedrock Contour Maps, Figures 3-7 and 3-8, show different depths to bedrock for Storage Unit-2.[76] Figure 3-7 shows the maximum depth at 4,000 feet below sea level while Figure 3-8 shows it at 1,000 feet below sea level.[77] Department staff recommend the GSA rectify this inconsistency.

The GSP states that a single principal aquifer is present in the Basin, composed of unconsolidated and semi-consolidated sediments of the Casitas Formation.[78] In some local alluvial valleys, wells penetrate and may possibly screen the sediments of younger alluvium, but the best available data indicates that the wells are usually screened in the Casitas Formation, which provides most of the productive yield.[79] The GSP states that

[68] Carpinteria GSP, Section 3.1.2, p. 92.
[69] Carpinteria GSP, Section 3.12, p. 93.
[70] Carpinteria GSP, Figure 3-4, p. 94.
[71] Carpinteria GSP, Figures 3-14, 3-15, pp. 108-109.
[72] Carpinteria GSP, Section 3.1.3.1, p. 98.
[73] Carpinteria GSP, Figures 3-7, 3-8 and 3-10 to 3-15, pp. 99-100 and 104-109.
[74] Carpinteria GSP, Section 3.1.3.1, p. 98.
[75] Carpinteria GSP, Section 3.1.3.1, p. 98.
[76] Carpinteria GSP, Figures 3-7 and 3-8, pp. 99-100.
[77] Carpinteria GSP, Figures 3-7 and 3-8, pp. 99-100.
[78] Carpinteria GSP, Section 3.1.3, p. 97.
[79] Carpinteria GSP, Section 3.1.3, p. 97.

there is no consistent low permeability strata separating the alluvium from the Casitas Formation, and both the alluvium and Casitas Formation function as a single hydrogeologic unit.[80] The Casitas Formation is described as consisting of poorly to moderately consolidated clayey to gravelly sand with variable amounts of silt and cobbles reaching substantial thicknesses of 2,300 to 2,500 feet in Storage Unit-1.[81] The Casitas Formation is underlain by the marine Santa Barbara Formation, which unconformably overlies all the older consolidated rocks in the Basin.[82] The Santa Barbara Formation is described as consisting of poorly to moderately consolidated, soft, and massive sandstone and siltstone with abundant clay shale, and is indicated to be 750 to 1,250 feet thick in Storage Unit-1.[83] In Storage Unit-2, the Santa Barbara Formation is at least 1,500 feet thick.[84] The GSP further discusses that the Santa Barbara Formation may represent a potential water-bearing deposit; however, no water wells are known to penetrate it and no major aquifers have been discerned within it.[85]

The GSP refers to the central alluvial plain of the Basin as the Confined Area because of the presence of fine-grained strata of silt and clay, which form a series of aquitards between the primary producing zones.[86] These fined grained strata are generally thick, laterally extensive, and confine water under artesian pressure.[87] The GSP delineates the coarse-grained strata in the principal aquifer into four primary water producing zones as the A, B, C, and D Zones within the Casitas Formation.[88] The A through D Zones are generally 50 to 100 feet thick each within the Confined Area of the Basin but become laterally discontinuous and generally non-correlatable outside the confined area.[89] The GSP identifies the area outside the Confined Area as the Recharge Area.[90] The primary sources of recharge to the Basin are percolation of precipitation, subsurface inflow, and percolation of irrigation water. Groundwater flow within the principal aquifer of Storage Unit-1 does not discharge to the ocean in the southeastern portion of the Basin due to the overlying confining layers and the Rincon Creek Thrust Fault.[91] The GSP states that the subsurface outflow is believed to occur in the general area from Serena Park to Sand Point, where there is no fault barrier between the basin sediments and the Pacific Ocean.[92] The GSP also states that significant subsurface outflow is not believed to occur

[80] Carpinteria GSP, Section 3.1.3, p. 97.
[81] Carpinteria GSP, Section 3.1.3.1, p. 101 and Figure 3-9, p.103.
[82] Carpinteria GSP, Section 3.1.3, p. 97.
[83] Carpinteria GSP, Section 3.1.3, p. 97.
[84] Carpinteria GSP, Section 3.1.3, p. 97.
[85] Carpinteria GSP, Section 3.1.3, p. 97.
[86] Carpinteria GSP, Section 3.1.3.1, p. 101.
[87] Carpinteria GSP, Section 3.1.3.1, p. 101.
[88] Carpinteria GSP, Section 3.1.3, p. 97.
[89] Carpinteria GSP, Section 3.1.3 and 3.1.3.1, pp. 97 and 101.
[90] Carpinteria GSP, Section 3.1.3.1, p. 101 and Figure 3-9, p.103.
[91] Carpinteria GSP, Section 3.1.3.2, p. 111.
[92] Carpinteria GSP, Section 3.1.3.2, p. 111.

due to the onshore contact of unconsolidated water-bearing materials with bedrock, which effectively isolates Storage Unit-2 from the ocean.[93]

The GSP states that controlled pumping tests are relatively limited in the Basin, and data available to most previous investigations was generally limited to specific capacity data.[94] Transmissivities were estimated using the pump test data when available; where such data were lacking, specific capacity data were utilized following the methods presented in Driscoll (1995).[95] The GSP states that transmissivities in the Confined Area range between approximately 5,500 and 21,600 gallons per day per foot (gpd/ft), with an average of approximately 12,100 gpd/ft.[96] The average storage coefficient for the Confined Area is approximately 6.5×10^{-4} (dimensionless), and the estimated hydraulic conductivities range between 9 and 18 feet per day (ft/day). The GSP estimates that transmissivities in the unconfined area range between approximately 400 and 18,000 gpd/ft, with an average of 3,200 gpd/ft.[97] Hydraulic conductivities range between 0.2 and 7 ft/day, with an average of 1.4 ft/day.[98] Per the GSP, storage coefficients were not calculated for the unconfined area due to a lack of nearby monitoring wells.[99] Department staff recommend GSA provide the storativity data for unconfined areas of the Basin.

The primary uses of the principal aquifer in the Basin are municipal and agricultural water supply.[100] The GSP states that non-municipal small domestic wells are considered to be de minimis and historically have not been quantified.[101] The GSP states that the average proportion of pumping from the water years 1985 through 2020 of municipal use is 36 percent and agricultural use is 64 percent.[102] Municipal pumping by the CVWD is metered and agricultural pumping is estimated by the CVWD via annual land use surveys.[103] The GSP provides well density maps for domestic, public, and agricultural wells.[104]

The GSA or the CVWD has been monitoring groundwater in the Basin to comply with Assembly Bill 3030 since 1994.[105] The GSA developed and implemented a Groundwater Management Plan, which includes the analysis of samples collected from 25 wells and six surface water stations.[106] In general, the groundwater chemistry in the Basin has a calcium-bicarbonate character.[107] Per the GSP, nitrate concentrations (as NO_3) in the

[93] Carpinteria GSP, Section 3.1.3.2, p. 111.
[94] Carpinteria GSP, Section 3.1.3.1, p. 110.
[95] Carpinteria GSP, Section 3.1.3.1, p. 111.
[96] Carpinteria GSP, Section 3.1.3.1, p. 111.
[97] Carpinteria GSP, Section 3.1.3.1, p. 111.
[98] Carpinteria GSP, Section 3.1.3.1, p. 111.
[99] Carpinteria GSP, Section 3.1.3.1, p. 111.
[100] Carpinteria GSP, Section 3.1.3.4, p. 116.
[101] Carpinteria GSP, Section 3.1.3.4, p. 116.
[102] Carpinteria GSP, Section 3.1.3.4, p. 116.
[103] Carpinteria GSP, Section 3.1.3.4, p. 116.
[104] Carpinteria GSP, Figures 2-5 to 2-7, pp. 78-80.
[105] Carpinteria GSP, Sections 2.2.1 and 3.1.3.3, pp. 55 and 112.
[106] Carpinteria GSP, Section 3.1.3.3, p. 112.
[107] Carpinteria GSP, Section 3.1.3.3, p. 112.

Basin are generally lower in wells that are completed in relatively deep aquifers units, and higher in shallow wells located in agricultural areas.[108]

The Plan identifies the following data gaps and uncertainties associated with the hydrogeological conceptual model:[109]

- The stratigraphy of Basin sediments, offshore geometry of the A-D Zones, and the nature of the connection with the Pacific Ocean. [110]
- The structure and aquifer parameters of Storage Unit-2 due to the lack of wells drilled and pumping tests.[111]
- The structure, aquifer parameters, and amounts of pumping in the Ventura County portion of the Basin, due to the lack of previous hydrogeologic investigation and the area being outside the boundaries of the CVWD. [112]
- The hydraulic parameters of the individual A through D Zones because most wells in the Basin penetrate two or more main producing zones and the data developed from the pumping tests represent a composite of all the zones. [113]

The GSP includes suggestions for the GSA to eliminate data gaps. For example, the GSA should endeavor to eliminate unknown information about wells by performing video surveys, or at a minimum to determine the depth of the well casing.[114] However, the GSP does not discuss if or when these data gaps related to wells will be resolved. To obtain a better understanding of the groundwater condition in the coastal area of the Basin, the GSA has plans to install additional depth-discrete monitoring well clusters along the coast.[115] To address the data gap regarding the western part of the Basin bordering the Montecito Groundwater Basin and the eastern part of the Basin in Ventura County, the GSP discusses that it is anticipated that wells be identified to collect water level data during the GSP implementation period.[116] Additionally, the GSP states that it is expected that the GSA will proceed with activities to address data gaps in the initial 5-year of GSP implementation period.[117] Additional discussion regarding projects and management actions can be found in Section 4.5 below. Department staff recommend the GSA should continue seeking opportunities to improve the understanding of the Basin and eliminate the data gap related to the hydrogeologic conceptual model by investigating the areas of improvement acknowledged in the Plan.

Department staff conclude that the information provided in the GSP regarding the hydrogeologic conceptual model substantially complies with the requirements outlined in

[108] Carpinteria GSP, Section 3.1.3.3, p. 115.
[109] Carpinteria GSP, Section 3.1.4, p. 118.
[110] Carpinteria GSP, Section 3.1.4, p. 118.
[111] Carpinteria GSP, Section 3.1.4, p. 118.
[112] Carpinteria GSP, Section 3.1.4, p. 118.
[113] Carpinteria GSP, Section 3.1.4, p. 118.
[114] Carpinteria GSP, Section 4.4.1.2, p. 263.
[115] Carpinteria GSP, Section 4.4.1.2, p. 264.
[116] Carpinteria GSP, Section 4.4.1.2, p. 264.
[117] Carpinteria GSP, Section 6.14.3, p. 421.

the GSP Regulations. In general, the Plan's descriptions of the regional geologic setting, the Basin's physical characteristics, the principal aquifer, and hydrogeologic conceptual model appear to utilize the best available science. Department staff are aware of no significant inconsistencies or contrary technical information presented in the Plan.

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 that includes the following: groundwater elevation contour maps and hydrographs,[118] a graph depicting change in groundwater storage,[119] maps and cross-sections of the seawater intrusion front,[120] maps of groundwater contamination sites and plumes,[121] maps depicting total subsidence,[122] identification of interconnected surface water systems and an estimate of the quantity and timing of depletions of those systems,[123] and identification of groundwater dependent ecosystems.[124]

The GSP provides 43 hydrographs depicting long-term groundwater elevations from the 1940s to 2020 in the Basin.[125] Among the 43 wells, 40 wells are located in Storage Unit-1, and three are located in Storage Unit-2. The GSP identifies that the most notable trends occurred during the late-1940s through the mid-1950s when water levels in the Basin declined substantially, and between approximately the early 1960s and about 1975 water levels in the basin increased significantly.[126] The GSP states that water levels declined relatively sharply starting at the beginning of 1985 through the fall of 1991, which corresponded to the six-year drought of 1987-1992 and it was then followed by a relatively steep upward trend in water levels peaking around spring of 1998, which was the wettest year on record.[127] The GSP identifies the groundwater level observed in Fall 1991 as the historical low, and Spring 1998 as the historical high for the water budget base period.[128] The GSP identifies the period between 1985 and 2020 as the water budget base period.[129]

Based on Department staff review of the hydrographs, it appears that historical lows for the entire period of record occurred in the early to mid-1950s, while the historical highs occurred in the early to mid-1980s.[130] After 1998, water levels in the Basin declined until the early to mid-2000s. They then stabilized until around 2012, but a sharp decline was

[118] 23 CCR §§ 354.16 (a)(1-2).
[119] 23 CCR § 354.16 (b).
[120] 23 CCR § 354.16 (c).
[121] 23 CCR § 354.16 (d).
[122] 23 CCR § 354.16 (e).
[123] 23 CCR § 354.16 (f).
[124] 23 CCR § 354.16 (g).
[125] Carpinteria GSP, Appendix D, pp. 503-545.
[126] Carpinteria GSP, Section 3.2.1.2, p. 125.
[127] Carpinteria GSP, Section 3.2.1.2, p. 125.
[128] Carpinteria GSP, Section 3.2.1.1, p. 119.
[129] Carpinteria GSP, Section 3.2.1.1, p. 119.
[130] Carpinteria GSP, Appendix D, pp. 503-545.

observed between 2012 and 2016 due to the drought during that period.[131] Since 2016, groundwater levels in some wells have stabilized, some have slightly risen while others continue to decline.[132] The GSP states that the recent (2020) water levels at many locations are at lower elevations than those experienced during the 1987-1992 drought period and are approaching the historical lows observed during the 1950s at some locations.[133]

Department staff reviewed hydrographs for Storage Unit-2. Staff note that the water level in one of the wells appears to have stabilized or slightly increased from approximately 2010 to 2020, while the water level in another well appears to have declined from 2010 and slightly increased for the current year (2020).[134] The hydrograph for the third well does not provide any data after 2012.[135] Therefore, there are no apparent groundwater level trends observed in the wells located in Storage Unit-2.

Department staff note that in the water year (WY) 2023 Annual Report the GSA provided hydrographs indicating a strong recovery in the 2023 water year,[136] and an estimate change in annual storage experienced in the basin of -7,714 AF in WY 2021, -1,179 AF in 2022 and 12,071 AF 2023, showing an increase in groundwater in storage of 3,178 AF over the 2021-2023 period, which includes 2 critically dry drought years.[137]

The GSP includes a description of the change in groundwater storage and a graph depicting the annual and cumulative change in volume of groundwater storage.[138] The GSP states that between water years 1985 and 2020, groundwater in storage declined at the rate of 1,324 acre-feet per year.[139] The GSP also calculates the change in storage between water years 2012 and 2020, which reflects current conditions, showing an average annual decline of 3,275 acre-feet per year.[140]

The GSP summarizes past investigations and concludes that seawater intrusion has not been historically documented in the Basin by previous investigations.[141] The GSP discusses the current conditions of seawater intrusion in the Basin focusing on primary water producing zones of the principal aquifer delineated as the A, B, C, and D Zones.[142] The GSA began groundwater level and quality monitoring, along with quarterly induction logging in 2019, and conducted a geophysical investigation in 2021 to better understand seawater intrusion in the Basin. Water quality monitoring showed increasing chloride

[131] Carpinteria GSP, Section 3.2.1.2, p. 125 and Appendix D, pp. 503-545.
[132] Carpinteria GSP, Appendix D, pp. 503-545.
[133] Carpinteria GSP, Section 3.2.1.2, p. 125.
[134] Carpinteria GSP, Appendix D. pp. 542 and 545.
[135] Carpinteria GSP, Appendix D. p. 541.
[136] https://sgma.water.ca.gov/portal/gspar/preview/375
[137] https://sgma.water.ca.gov/portal/gspar/preview/375
[138] Carpinteria GSP, Section 3.2.2, p. 132 and Figure 3-30, p. 133.
[139] Carpinteria GSP, Section 3.3.3, p. 208.
[140] Carpinteria GSP, Table 3-13, p. 218.
[141] Carpinteria GSP, Section 3.2.3, p. 132 and p.134.
[142] Carpinteria GSP, Section 3.1.3.1, p. 101.

concentration in Zone C, reaching 1,530 mg/L in February 2022.[143] The induction survey results showed rising conductivity trends in Zone C, consistent with the increasing chloride concentrations, suggesting seawater intrusion is likely occurring in this zone.[144] While the geophysical survey profile along the beach indicated high electrical conductivities in Zone A, pointing to the presence of saltwater, the GSP concludes there is no evidence of seawater intrusion in Zones A or B beneath the northern boundary of the salt marsh.[145] According to the GSP, due to various limitations, the geophysical investigation did not survey Zone C.[146] The current water budget for water years 2012 to 2020 indicates approximately 500 acre-feet per year of landward seawater migration into the Basin.[147] Additionally, the GSP notes that water levels in the central portion of the Basin were 50 to 60 feet below sea level during Fall 2020, consistent with the ongoing depletion of groundwater storage.[148]

The GSP includes a description of current and historical groundwater quality issues and includes a map showing the locations of regulatory cleanup sites.[149] The GSP identifies nitrate, arsenic, Total Dissolved Solids (TDS), chloride, and boron as the primary constituents of concern for agricultural and public supply wells.[150] The GSP also provides maps showing the maximum concentrations of all primary constituents of concern for 2015 to 2021, except for arsenic which was not detected in the groundwater samples collected.[151] Department staff note that the concentrations of nitrate, TDS, chloride, and boron have exceeded the respective maximum contaminant level, secondary contaminant level and/or the minimum threshold established.[152] The GSP states that the groundwater quality is “generally good” but there is a recognized area of the Basin in the West near Arroyo Paredon where groundwater is observably more mineralized and of poorer quality.[153]

The GSP states that land subsidence conditions are not known to be present in the Basin and there is no known or anecdotal evidence of subsidence related to groundwater extraction.[154] Based on Interferometric Synthetic Aperture Radar (InSAR) data, the GSP provides a map of total vertical displacement as of July 2022 relative to June 2015, and states the total vertical displacement during this period ranged between approximately -0.129 and 0.0034 feet.[155]

[143] Carpinteria GSP, Section 3.2.3, p. 135.
[144] Carpinteria GSP, Section 3.2.3, p. 140.
[145] Carpinteria GSP, Section 3.2.3, p. 140.
[146] Carpinteria GSP, Section 3.2.3, p. 140.
[147] Carpinteria GSP, Section 3.3.4, p. 215.
[148] Carpinteria GSP, Section 3.3.4, p. 215 and Figure 3-23, p.124.
[149] Carpinteria GSP, Section 3.2.4, p. 148 and Figure 3-41, p.149.
[150] Carpinteria GSP, Sections 3.1.3.3 and 5.8.2.1, pp. 112 and 345.
[151] Carpinteria GSP, Figures 5-11 to 5-14, pp. 346-349.
[152] Carpinteria GSP, Table 5-2, p. 344.
[153] Carpinteria GSP, Section 5.8.2.1, p.345.
[154] Carpinteria GSP, Section 3.2.4, p. 150.
[155] Carpinteria GSP, Section 3.2.4, p. 150 and Figure 3-42, p. 151.

The GSP includes a discussion on groundwater dependent ecosystems (GDEs) in the Basin and includes maps and tables.[156] The GSP initially identified 38 potential GDEs consisting of 20 vegetation and 18 wetland areas.[157] The GSP also presents screening criteria based on confinement of principal aquifer and depth to water data which reduce the number of potential GDEs to four.[158] The GSP acknowledges and Department staff agree that potential GDEs in the Basin need further evaluation and recommend the GSA perform additional studies.[159]

Overall, the Plan sufficiently describes the historical and current groundwater conditions throughout the Basin, and the information included in the Plan substantially complies with the requirements outlined in the GSP Regulations.

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,[160] and the sustainable yield.[161]

The GSP used a groundwater flow model, MODFLOW Newton-Raphson formulation (MODFLOW-NWT)[162], a USGS standalone version of the MODFLOW-2005. The model is used to estimate the interflows between the Pacific Ocean and Montecito Groundwater Basin. The model was recalibrated for the historical water period and temporarily re-decentralized from annual to monthly stress periods. It calculates the water budget components and aggregates the output into annual values. The GSP provides the historical (1985-2020) and current (2012-2020) budget information.[163] Based on the information presented in the GSP, Department staff note the average annual overdraft is -1.230 acre-feet per year based on the historical period.[164] The GSP also calculates the change in storage between WYs 2012 and 2020, which reflects current conditions, showing an average annual decline of 3,275 acre-feet per year.[165]

The GSP provides projected (2024-2073) water budgets using MODFLOW-NWT. The budget is generated by “utilize[ing] 50 years (WY 1953 - 2002) of historical precipitation, evapotranspiration, and streamflow information as the baseline condition for estimating

[156] Carpinteria GSP, Figures 3-47 to 3-53, pp. 159-160 and 166-170 and Tables 3-2 to 3-3, pp. 161 and 164.
[157] Carpinteria GSP, Table 3-2, p. 161.
[158] Carpinteria GSP, Section 3.2.7, p. 163.
[159] Carpinteria GSP, Section 3.2.7, p. 171.
[160] 23 CCR §§ 354.18 (a), 354.18 (c) *et seq*.
[161] 23 CCR § 354.18 (b)(7).
[162] Carpinteria GSP, Section 3.3.2.1, p. 191
[163] Carpinteria GSP, Section 3.3.3 and Table 3-10, p. 210.
[164] Carpinteria GSP, Section 3.3.6.2, pp. 244-245, Table 3-20, p. 245.
[165] Carpinteria GSP, Table 3-13, p. 218.

future hydrology."[166] The GSP estimates that the sustainable yield for the Basin is between 3,600 to 4,000 acre-feet per year.[167]

Department staff conclude that the historical, current, and projected water budgets included in the Plan substantially comply with the requirements outlined in the GSP Regulations.

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 define different minimum thresholds and be operated to different measurable objectives, provided that undesirable results are defined consistently throughout the basin.[168]

The GSP does not define management areas.

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 characterizes undesirable results and establishes minimum thresholds and measurable objectives for each applicable sustainability indicator.[169]

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.[170]

The GSP states the Basin's sustainability goal is "to ensure that beneficial uses and basin users have access to a safe and reliable groundwater supply that meets current and future demands without causing undesirable results. The absence of undesirable results, as defined by SGMA and the Groundwater Sustainability Plan (Plan), will indicate that the sustainability goal has been achieved."[171] The GSP describes that sustainable groundwater management for Basin will ensure that: "1. Long-term groundwater elevations are adequate to support existing and future reasonable and beneficial uses throughout the Basin. 2. A sufficient volume of groundwater storage remains available

[166] Carpinteria GSP, Section 3.3.5, p. 232
[167] Carpinteria GSP, Section 3.3.6.2, p. 246.
[168] 23 CCR § 354.20.
[169] 23 CCR § 354.22 *et seq*.
[170] 23 CCR § 354.24.
[171] Carpinteria GSP, Section 5.3.1, p. 294.

during drought conditions and recovers during wet conditions (as defined using minimum thresholds expressed in terms of water levels). [and] 3. Groundwater production, and projects and management actions undertaken through SGMA, do not degrade water quality conditions to support ongoing reasonable and beneficial uses of groundwater for agricultural, municipal, domestic, industrial, and environmental purposes."[172]

To achieve the sustainability goal, Basin management will be supported through monitoring of the six sustainability indicators and by the "implementation of numerous projects and management actions during the 20-year implementation horizon."[173] The GSA states that several data gaps exist in the hydrogeological model that were identified during development of the Basin's sustainable management criteria. The GSA explains that the sustainable management criteria will be "reevaluated and potentially modified in the future as new data becomes available."[174]

The GSP describes the conditions used for the development of sustainable groundwater management criteria in the Basin and discusses the process of how undesirable results, minimum thresholds, measurable objectives, and interim milestones are defined for each applicable sustainability indicator.[175] The GSP describes a process for sustainable management criteria development that was a deliberate iterative process with stakeholders' involvement. The sustainable management criteria proposals were prepared by the GSA staff, reviewed by the GSA Board and stakeholders, presented and discussed in numerous Board meetings and three GSP workshops, and approved by the GSA Board.[176]

Department staff conclude that the GSP's discussion and presentation of information on the sustainability goal covers the specific items listed in the GSP Regulations in an understandable format using appropriate data.

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.[177] Sustainability indicators thus correspond with the six undesirable results – chronic lowering of groundwater levels indicating a significant and unreasonable depletion of supply if continued over the planning and implementation horizon, significant and unreasonable reduction of groundwater storage, significant and unreasonable seawater intrusion, significant and unreasonable degraded water quality, including the migration of contaminant plumes that impair water supplies, land subsidence that substantially interferes with surface land uses, and depletions of interconnected surface

[172] Carpinteria GSP, Section 5.3.1, p. 294.
[173] Carpinteria GSP, Section 5.3.2, p. 295.
[174] Carpinteria GSP, Section 5.1, p. 291.
[175] Upper Ventura River GSP, Section 4.1, pp. 146-147.
[176] Upper Ventura River GSP, Section 4.3, p. 149.
[177] 23 CCR § 351(ah).

water that have significant and unreasonable adverse impacts on beneficial uses of the surface water[178] – but 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 the effect becomes significant and unreasonable, producing 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.[179] 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.[180]

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.[181] GSAs are required to describe how conditions at minimum thresholds may affect beneficial uses and users,[182] 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.[183]

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.[184] 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.[185]

The following subsections thus consolidate 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 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.[186]

[178] Water Code § 10721(x).
[179] 23 CCR §§ 354.26 (a), 354.26 (b)(c).
[180] 23 CCR § 354.26 (b)(2).
[181] 23 CCR § 354.28 (b)(1).
[182] 23 CCR § 354.28 (b)(4).
[183] 23 CCR § 354.28 (b)(2).
[184] 23 CCR § 354.30 (a).
[185] 23 CCR § 354.30 (b).
[186] 23 CCR § 354.26 (d).

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.[187]

The GSP describes the criteria used to establish undesirable results for the chronic lowering of groundwater levels sustainability indicator as: "if water levels in municipal supply wells decline to the point that it could impact water supply operations at CVWD, or if water levels in agricultural supply wells decline to the point that inadequate supply is available for historical farming operations, requiring fallowing or reduction of operations." [188] The GSP provides a rational for not considering domestic wells: "According to CVWD records, two private domestic well exists within the basin boundary; therefore, conditions in domestic supply wells are not a significant factor to be considered".[189]

Department staff note that the GSP's description of domestic wells in the basin is inconsistent, and note that the GSP shows that there are 53 domestic wells shown in the GSP's map of domestic well density by section,[190] and that the GSP identifies domestic wells as a beneficial user,[191] and are included in the GSP's sustainability goal.[192] Staff are concerned the GSA may not be considering all beneficial uses and users in the basin for the chronic lowering of groundwater sustainability indicator, and recommend the GSA either conclusively show that no domestic wells are present in the subbasin, or modify the criteria used for undesirable results to formally include domestic wells.

The Plan provides a quantitative description to define an undesirable result for the chronic lowering of groundwater levels occurring when "33 percent or more [representative monitoring sites] RMSs for water levels within the Basin display exceedances of the minimum threshold groundwater elevation values for three consecutive fall measurements (bracketing 2 consecutive water years). For the current monitoring network of nine RMS wells, this equates to three wells with minimum threshold exceedances."[193]

The Plan defines causes for undesirable results in the Basin as increased rates of pumping in the aquifer or extended drought.[194] The GSA explains that increased rates of

[187] 23 CCR § 354.28(c)(1) *et seq*.
[188] Carpinteria GSP, Section 5.5.1, p. 298.
[189] Carpinteria GSP, Section 5.5.1.1. p. 299.
[190] Carpinteria GSP, Figure 2-5, p. 78.
[191] Carpinteria GSP, Section 3.1.3.4, p. 116.
[192] Carpinteria GSP, Section 5.3.1, p. 294.
[193] Carpinteria GSP, Section 5.5.1, pp. 298-299.
[194] Carpinteria GSP, Section 5.5.1.2, p. 300.

pumping exceeding Basin recharge could "affect basin well production and result in depletion of supply", and extensive and unanticipated droughts "may lead to excessively low groundwater levels and undesirable results."[195] The Plans states that "[b]ased on input from water users in the Basin and review of available water level data, no significant and unreasonable effects associated with groundwater level declines have been observed in the Basin, including the period since 2015, after SGMA came into effect."[196]

The Plan describes the effects of undesirable results on beneficial uses and users as "a reduction of water supply available for municipal and agricultural users."[197] The occurrence of an undesirable result is defined as, "3 consecutive fall measurements that bracket two calendar years of average and above-average precipitation in 33 percent of representative wells."[198] The GSP adds that "an exceedance at a single RMS well will require investigation to determine the significance, extent, and possible causes of the observed conditions."[199]

The GSP's definition of undesirable results is problematic. The GSP limits the definition of undesirable results to non drought years,[200] which is not consistent with GSP regulations for undesirable results.[201] Department staff note that GSP regulations require GSAs to describe the potential effects on the beneficial uses and users of groundwater, on land uses and property interests, and other potential effects that may occur or are occurring from undesirable results.[202] Department Staff note that the GSP's description of undesirable results is based on a "reduction of water supply available" but does not describe what that reduction is. Staff conclude that the definition of undesirable results is unclear and should be refined to include a quantitative explanation of the conditions that the GSA is managing the basin to avoid. Additionally, The GSP does not explain how the combination of minimum threshold exceedances (33 percent) and the three consecutive exceedances limited to non drought years represents a depletion of supply. Staff note that impacts to beneficial uses and users are more likely to occur during below-average precipitation years, and that GSP regulations require GSAs to provide the criteria used to define when and where the effects of the groundwater conditions cause undesirable results for each applicable sustainability indicator based on a quantitative description of the combination of minimum threshold exceedances that cause significant and unreasonable effects in the basin.[203] Staff note that limiting the criteria to average or above average precipitation years is not a quantitative combination of minimum threshold exceedances, and should be revised. Staff recommend the GSA describe the conditions the GSA is managing the basin to avoid and how the quantitative definition of undesirable results represents this condition (see Recommended Corrective Action 1).

[195] Carpinteria GSP, Section 5.5.1.2, p. 300.
[196] Carpinteria GSP, Section 5.5.1.2, p. 300.
[197] Carpinteria GSP, Section 5.5.1.2, p. 300.
[198] Carpinteria GSP, Section 5.5.1.1, p. 300.
[199] Carpinteria GSP, Section 5.5.1.3, p. 300.
[200] Carpinteria GSP, Section 5.5.1.1, p. 300.
[201] 23 CCR § 354.26 *et seq*.
[202] 23 CCR § 354.26 (b)(3).
[203] 23 CCR § 354.26 (b)(2).

The GSA establishes the minimum thresholds for the chronic lowering of groundwater sustainability indicator as, "set in each RMS well at the observed lowest water level during the recent [2018 to 2022] drought conditions."[204] Minimum thresholds, measurable objectives, and interim milestones are provided in Table 5-1.[205] The GSA describes that the measurement of minimum thresholds for the chronic lowering of groundwater levels will be directly measured from existing RMS wells by collecting of groundwater level measurements during non-pumping (static) conditions.[206] The location of RMS wells are provided in Figure 4-3.[207]

The Plan describes the process of how the minimum thresholds were established by consideration several three factors, which included implementing a well impact study. The well impact study was performed by the GSA to evaluate the possibility of lowering the minimum threshold to below the recent drought elevations.[208] Groundwater elevations from fall of 2018 were used to evaluate the impact to Basin users if minimum thresholds were lowered from 5 to 50 feet.[209] The Plan states that, "a groundwater elevation surface 20 feet lower than the fall 2018 surface would result in an approximately 10 percent increase in the number of wells with water levels intersecting the well screen (18 additional wells), and that these lowered groundwater elevations would result in a 4 percent increase in the number of database wells (7 database wells) having a water column less than 75 percent of the original well water column"[210] The GSA states, "[u]ltimately, the Carpinteria GSA decided not to pursue the approach of defining minimum thresholds lower than recent low water levels."[211]

Measurable objectives for the chronic decline in groundwater elevation "represent average conditions before the recent drought, and conditions observed during non-drought periods in the hydrographs of each RMS well."[212] Measurable objectives for the Basin will consider the natural variations in groundwater levels and so that, "there is enough groundwater in storage to get through a multi-year drought as was observed in water years 2012 to 2021 with 2 wet years in water years 2017 and 2019 without undesirable results."[213]

Impacts of minimum thresholds to beneficial uses and users are described in the GSP to include financial impacts to municipal users for project needs that "could result in assumption of debt and rate increases for the paying customers in their service base"[214] and "could limit the additional amount and type of crops that can be grown in the Basin,

[204] Carpinteria GSP, Section 5.5.1.2, p. 314.
[205] Carpinteria GSP, Table 5-1, p. 299.
[206] Carpinteria GSP, Section 5.5.2.6, p. 318.
[207] Carpinteria GSP, Figure 4-3, p. 261.
[208] Carpinteria GSP, Section 5.5.2.1, p. 313.
[209] Carpinteria GSP, Section 5.5.2.1, p. 313.
[210] Carpinteria GSP, Section 5.5.2.1, p. 302.
[211] Carpinteria GSP, Section 5.5.2.1, p 302.
[212] Carpinteria GSP, Section 5.5.3.2, p. 320.
[213] Carpinteria GSP, Section 5.5.3.1, p. 319.
[214] Carpinteria GSP, Section 5.5.2.4, p. 316.

which could result in capping the economic viability for some properties"[215] if groundwater pumping is limited.

An assessment of the potential impact of minimum thresholds on other sustainability indicators is provided in the GSP. Minimum thresholds are not anticipated to result in significant and unreasonable effects for the other sustainability indicators. However, the GSA explains that "if water levels are maintained at or below the minimum thresholds for significant periods of time without any offsetting projects or management actions, this could lead to conditions of lower water levels at the coast that could induce or fail to halt seawater intrusion from occurring."[216]

Department staff conclude the GSA has developed sustainable management criteria that has considered beneficial uses and users by not allowing groundwater levels to fall below historical low levels and is substantially compliant with the GSP Regulations.

While there is a recommended corrective actions identified related to the definition of the undesirable result in the GSP and understanding more about potential impacts to beneficial uses and users, this does not preclude Plan approval at this time. Due to a history of stable groundwater conditions, rapid recovery of groundwater levels after temporary declines due to the drought, and the GSA's plan to manage the Basin in the future within historical conditions, allowing the GSA time to update the Plan to address these recommended corrective actions by the next periodic evaluation is appropriate. Department staff are not aware of significant inconsistencies or contrary information to that presented in the GSP and have no significant concerns regarding the quality, data, and discussion of this subject in the GSP.

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.[217]

The GSP uses groundwater levels as a proxy for groundwater storage, and the sustainable management criteria for the reduction of groundwater storage are identical to those developed for the chronic lowering of groundwater levels.[218] The GSA describes that groundwater in storage will be evaluated using, "the same RMS network and associated water level minimum thresholds and measurable objectives as the chronic

[215] Carpinteria GSP, Section 5.6.2.4, p. 317.
[216] Carpinteria GSP, Section 5.5.2.2, p. 315.
[217] 23 CCR § 354.28(c)(2).
[218] Carpinteria GSP, Section 5.6.2, p 323.

lowering of groundwater levels [sustainable management criteria]."[219] The GSP states that undesirable results for the reduction of groundwater storage is:

> "(t)he Basin will be considered to have undesirable results if water levels in municipal supply wells decline to the point that they are in the screen, which could impact water supply operations, or if water levels in agricultural supply wells decline to the point that inadequate supply is available for farming operations, requiring fallowing or reduction of operations."[220]

The same definition for the possible occurrence for undesirable results used for chronic lowering of the groundwater levels is referenced in the GSP for reduction in groundwater storage.[221] Department staff note that the GSA must revise its definition of undesirable results for the chronic lowering of groundwater as discussed in Section 4.3.2.1, and that the GSA must update the sustainable management criteria for reduction of groundwater storage after it makes that revision.

Department staff conclude that the GSP's discussion of groundwater storage is substantially compliant with the requirements of GSP Regulations.

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.[222]

The GSA explains that the seawater intrusion sustainability indicator is an important factor for long-term Basin management and a likely driver for future projects and management actions designed to avoid undesirable effects in the Basin.[223] The GSA acknowledges that there are significant data gaps in understanding the seawater intrusion sustainability indicator for the Basin, and additional data will be collected and evaluated during GSP implementation.

Undesirable results for seawater intrusion in the Basin is defined in the GSP as "seawater moving inland [to the Basin] to the point where groundwater produced from currently active wells exhibits increased concentrations of chloride above the established secondary maximum contaminant level for drinking water of 250 ppm."[224] Impacts to beneficial uses and users at an undesirable result for seawater intrusion include reduction

[219] Carpinteria GSP, Section 5.6.1, p. 321.
[220] Carpinteria GSP, Section 5.6.1, p. 321.
[221] Carpinteria GSP, Section 5.6.1, p. 321.
[222] 23 CCR § 354.28(c)(3).
[223] Carpinteria GSP, Section 5.7, p. 329.
[224] Carpinteria GSP, Section 5.7.1.1, p. 330.

of CVWD to deliver water supplies, reduction of agricultural stakeholders to maintain crops, and interference wit other sustainability indicators.[225]

The GSA identifies the potential causes of undesirable results for seawater intrusion as increased rates of pumping in the Basin aquifer and extended drought.[226] The GSA explains that if pumping in the Basin were to significantly increase, "it could lead to groundwater elevations inland from the coast that may exacerbate long-term conditions that allow inland migration of brackish and saline groundwater, if no offsetting projects or management actions are implemented to mitigate against migration of brackish or saline groundwater."[227] Further, the GSA explains that extensive droughts more severe then historically recorded at the Basin "may lead to excessively low groundwater levels, that could allow seawater intrusion if no offsetting projects or management actions are implemented"[228].

Undesirable effects to beneficial users from seaward intrusion include increased salinity in groundwater that could impact both municipal and agricultural beneficial users of the Basin. The GSA explains that undesirable results could impose financial implications to Basin users by requiring "higher levels of treatment with the associated increased cost for supplying potable water to its customer base", could "force an increase in these practices, affecting the economics of the agriculture in the area", and could "result in agricultural stakeholders experiencing reduced crop yields, or necessitating the purchase of additional CVWD water for blending with groundwater."[229]

GSP regulations require GSAs to 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.[230] The GSP does not identify the quantitative combination of minimum threshold exceedances that the GSA would recognize as an undesirable result.[231] Department staff note that without a clearly defined undesirable result condition, the GSA cannot use monitoring and consider its minimum thresholds in a manner that it can use to guide its implementation of projects and management actions necessary to prevent a seawater intrusion undesirable result. Understanding the condition that the GSA is managing the basin to avoid is critical for sustainability (see Recommended Corrective Action 2).

Minimum thresholds for seawater intrusion for the Basin are identified in the GSP "as a chloride isoconcentration contour of 250 mg/L [representative of the secondary maximum

[225] Carpinteria GSP, Section 7.7.1.1, p. 331.
[226] Carpinteria GSP, Section 5.7.1.2, p. 331.
[227] Carpinteria GSP, Section 5.7.1.2, p. 331.
[228] Carpinteria GSP, Section 5.7.1.2, p. 331.
[229] Carpinteria GSP, Section 5.7.1.3. p. 331.
[230] 23 CCR § 354.26 (b)(2).
[231] Carpinteria GSP, Section 5.7.1, pp 330-331.

contaminant level for drinking water] subparallel to the coast along a line defined by currently active wells in the Basin".[232] The GSP includes a Seawater Isoconcentration Contour Map presenting maximum chloride concentrations from years 2015 to 2021 and the location of the minimum threshold isoconcentration contour.[233] The GSA explains that "the isocontour stops at the intersection with the Rincon Creek Thrust Fault, because uplifted fault blocks of bedrock along this fault truncate the productive sedimentary zones of the basin aquifer; therefore, seawater intrusion is not expected southeast of the Rincon Creek Thrust Fault."[234] Data used to establish the minimum thresholds for the seawater intrusion sustainability indicator included "well construction data, groundwater elevation data, and water quality data historically maintained by the CVWD,"[235] however the GSA does not provide the data it used for this consideration in the GSP. The GSA explains that minimum thresholds may be revised as additional data are gathered during the 20-year SGMA implementation period.

Department staff note that the minimum threshold for seawater intrusion is not clearly applied to the geologic conditions in the Basin. The GSP shows that there are three to four zones of aquifer that may be in contact with the Pacific Ocean.[236] The GSP explains that the cross-section depicting that contact is inferred, indicating that the GSA does not possess an understanding of the contact of these zones with the Pacific Ocean.[237] The GSP indicates the GSA is monitoring zones A, B, and C for seawater intrusion in a cluster of monitoring wells,[238] and that chloride concentrations have been increasing in the deep C zone in the sentinel well, fluctuating with water levels.[239]

GSP regulations require GSAs to provide a chloride concentration isocontour for each principal aquifer where seawater intrusion may lead to undesirable results, supported by maps and cross-sections. The GSP has provided a map of the isocontour[240], but Department Staff note that cross sections for seawater intrusion were not included in the GSP. Staff recommend the GSA update the GSP to clearly show that the minimum threshold applies to all aquifer zones that are potentially susceptible to seawater intrusion.

The Plan states that the quantitative measurement of minimum thresholds for seawater intrusion will be measured, "through biannual groundwater sampling for chlorides and general chemistry in the seawater intrusion RMS well network (see Figure 4-4), and through quarterly sampling of the existing Sentinel well cluster."[241]

[232] Carpinteria GSP, Figure 5-10, p. 333.
[233] Carpinteria GSP, Figure 5-10, p. 333.
[234] Carpinteria GSP, Section 5.7.2, p. 332.
[235] Carpinteria GSP, Section 5.7.2.1. p. 334.
[236] Carpinteria GSP, Figure 3-11.
[237] Carpinteria GSP, Section 3.1.3, p. 101.
[238] Carpinteria GSP, Section 3.2.3, p 134, and Table 3-1, p. 134.
[239] Carpinteria GSP, Section 3.2.3, p. 135.
[240] Carpinteria GSP, Figure 5-10, p. 333.
[241] Carpinteria GSP, Section 5.7.2.6, p. 338.

The measurable objective for the Basin is, “along the isocontour line at 150 mg/L” with the same physical location as the minimum threshold isocontour.[242] The GSA describes that fluctuation between 150 mg/L and 250 mg/L along the isoconcentration contour line is acceptable in this GSP during the 20-year SGMA implementation period.[243]

The GSP states that “several significant data gaps to understand the seawater intrusion sustainability indicator exist along the coast.”[244] To address the data gaps, the GSA plans to install additional monitoring wells along the coast as discussed in Section 4.4. The GSA explains that initial model runs were performed to “demonstrate the feasibility of the barrier concept [for the Basin]”, but due to insufficient data modeling efforts were postponed until additional data is collected during the first five years of SGMA implementation.[245]

Impacts of the seawater intrusion minimum thresholds to other sustainability indicators include the potential for seawater intrusion migrating along the coast between the Rincon Creek Thrust Fault and the boundary with the neighboring Montecito Groundwater Basin if lowering of groundwater levels beyond current levels occur and no offsetting projects or management were undertaken.[246]

The GSA discusses impacts of minimum thresholds to beneficial users of the Basin. Three areas with differing land uses in the Basin are identified in the GSP including residential, an ecological reserve (El Estero estuary) and agricultural. The GSP explains that there are no active wells at the residential and ecological reserve areas and therefore no potential impacts from seawater intrusion in that area.[247] The GSA discusses that agricultural operations in the Basin “either use CVWD water to blend, or run their pumped groundwater through reverse osmosis treatment units to maintain the desired water quality necessary for their individual crops” and maintaining “minimum threshold will have a positive impact on beneficial users by maintaining water quality along the coast.”[248] The GSP states, “Hydrogeologic conditions near the basin boundary will be monitored during the initial 5-year SGMA implementation period, and any issues observed that may potentially affect the Montecito Groundwater Basin will be communicated.”[249]

Department staff conclude that the sustainable management criteria defined in the Plan for seawater intrusion are substantially compliant with GSP regulations despite corrective actions. The GSA has expressed a commitment to understanding and managing seawater intrusion and has established a minimum threshold that is protective of drinking water uses.

[242] Carpinteria GSP, Section 5.7.3, p. 339.
[243] Carpinteria GSP, Section 5.7.3, p. 339.
[244] Carpinteria GSP, Section 5.7.2.1, p. 335.
[245] Carpinteria GSP, Section 5.7.2.1, p. 335.
[246] Carpinteria GSP, Section 5.7.2.2, p. 336.
[247] Carpinteria GSP, Section 5.6.2.4, p. 337.
[248] Carpinteria GSP, Section 5.7.2.5, p. 338.
[249] Carpinteria GSP, Section 5.7.2.3, p. 337.

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.[250]

The sustainable management criteria for the degradation of groundwater quality sustainability indicator considers municipal drinking water supplies and agricultural uses of groundwater in the Basin.[251] The criteria to establish undesirable results in the Basin are "reduced capacity of public water supply systems or unreasonably increase costs for public or private water supply, result in constituent concentrations above regulatory primary drinking water standards at supply wells, and reduce crop production." [252] Potential causes of undesirable results include changes to pumping patterns or quantities and active groundwater recharge with imported water or captured runoff.[253] As described in the GSP, changes in pumping rates or quantities and active recharge with imported water or captured runoff could alter the movement of groundwater with elevated concentrations of constituents of concern above historical background concentrations toward supply wells.[254] Potential effects to beneficial uses and users from degraded water quality in the Basin include, "increased water treatment costs for public or private supply wells" and "reduced agricultural production".[255]

The undesirable result for the degradation sustainability indicator is defined as, "if, for any 5-year period during SGMA implementation, an increase in groundwater quality minimum threshold exceedances as a result of groundwater management is observed at 33 percent or more of the representative monitoring sites in the Basin, in relation to 2015 basin conditions."[256] The GSP then clarifies that 'groundwater management' means "as a result of Plan-related groundwater management activities",[257] and that 'any 5-year period' is "the next 5-year management period".[258]

The GSP's definition of undesirable results, which solely focus on water quality impacts caused directly by the GSA implementing an action, represents an improperly narrow

[250] 23 CCR § 354.28(c)(4).
[251] Carpinteria GSP, Section 5.8, p. 340.
[252] Carpinteria Basin, Section 5.8.1, p. 341.
[253] Carpinteria Basin, Section 5.8.1.2, p. 342.
[254] Carpinteria Basin, Section 5.8.1.2, p. 342.
[255] Carpinteria Basin, Section 5.8.1.3, p. 342.
[256] Carpinteria GSP, Section 5.8.1, p. 341.
[257] Carpinteria GSP, Section 5.8.1, p. 341.
[258] Carpinteria GSP, Section 5.8.1, p. 341.

reading of SGMA. SGMA includes in its definition of undesirable results the "significant and unreasonable degraded water quality, including the migration of contaminant plumes that impair water supplies." SGMA specifies that the significant and unreasonable effects are those "caused by groundwater conditions occurring throughout the basin," which does not limit them to only impacts directly caused by a GSA's implementation of physical projects or actions in the basin. SGMA requires GSAs to manage the basin to avoid significant and unreasonable degradation to water quality, including the migration of contaminant plumes that impair water supplies, caused by groundwater conditions occurring throughout the basin. Therefore, degraded water quality caused by groundwater pumping, changes in groundwater levels, changes in the direction of groundwater flow, or changes in horizontal or vertical movement of groundwater within the Subbasin, should be considered in the assessment of undesirable results in the Subbasin. Department staff recommend the GSA revise the description of significant and unreasonable conditions and undesirable results such that groundwater pumping and other factors, whether due to action or inaction of the GSA with respect to Subbasin management, are considered and not excluded (see Recommended Corrective Action 3a).

GSP regulations require GSAs to describe the potential effects on the beneficial uses and users of groundwater, on land uses and property interests, and other potential effects that may occur or are occurring from undesirable results,[259] and that 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.[260] The GSP has identified "an increase in groundwater quality minimum threshold exceedances" over "a 5-year management period" that is "in relation to 2015 basin conditions"[261] as the criteria to define an undesirable result condition. Department staff note that this definition is unclear and does not sufficiently meet GSP regulations. The GSA did not discuss how a 5-year period considers beneficial uses and users, as an impacted well may not be suitable for use in a shorter time frame, nor did it define what an 'increase in exceedances' is, nor what 2015 basin conditions were. Staff recommend the GSA revise the definition of an undesirable result condition to consider beneficial uses and users and be comprised of a quantitative combination of minimum threshold exceedances as required by GSP regulations (see Recommended Corrective Action 3b).

The GSP establishes degraded water quality minimum thresholds were established for contaminants, salts, and nutrients.[262] The Plan established minimum thresholds for supply wells in the basin based on, "federal and state regulatory standards [minimum contaminant level and secondary minimum contaminant level established by the State Water Resources Control Board Division of Drinking Water and U.S. Environmental

[259] 23 CCR § 354.26 (b)(3).
[260] 23 CCR § 354.26 (b)(2).
[261] Carpinteria GSP, Section 5.8.1, p. 341.
[262] Carpinteria Basin, Section 5.8.2, p. 343.

Protection Agency (EPA).”[263] For agricultural uses, minimum thresholds were established using, “water quality objectives presented in the Basin Plan (RWQCB et al., 2019)”.[264] The Plan explains that, “[t]he purpose of the minimum thresholds for constituents of concern in the Basin is to avoid increased degradation of groundwater quality from baseline concentrations since enactment of SGMA in January 2015.” [265] A table presenting a summary of the minimum thresholds and measurable objectives for the water quality degradation sustainability indicator is provided in the GSP.[266]

The GSP identifies the primary constituents of concern for agricultural and public supply wells in the Basin as nitrate, arsenic, TDS, Chloride and Boron[267].” The GSA describes the criteria to establish the minimum thresholds as the following:

- For arsenic, the minimum threshold is 10 µg/L, which is the maximum contaminant level.
- For nitrate, the minimum threshold is 10 mg/L, which is the maximum contaminant level.
- For TDS, the minimum threshold is 1,000 mg/L, which is the secondary maximum contaminant level of.
- For boron, the minimum threshold is 0.75 mg/L, based on review of historical data and RWQCB Basin Plan Median Groundwater objectives for the Central and Southern Coast.”[268]
- For chloride the minimum threshold is set at 142 mg/L, which is “set at the Basin Plan’s “no problem” agricultural threshold.”[269] The GSP also describes this as the “assigned lower minimum threshold chloride concentration… based on agricultural thresholds published in the Basin Plan (RWQCB et al., 2019)”.[270]

Department staff note that the GSP’s minimum thresholds appear to consider domestic, municipal, and agricultural uses in the Basin. By using maximum and secondary maximum contaminant levels, the GSP considers drinking water users, and by using basin plan objectives, the GSP considers agricultural users.

Measurable objectives for the water quality degradation sustainability indicator are set at the same minimum threshold concentrations presented in this GSP. Measurement of minimum thresholds and measurable objectives will be “directly measured from analytical laboratory results for samples collected from RMS wells”.[271] The location of RMS wells for the water quality degradation indicator is presented in Figure 4-5 in the GSP.[272] The

[263] Carpinteria Basin, Section 5.8, p. 340.
[264] Carpinteria Basin, Section 5.8. p. 340.
[265] Carpinteria Basin, Section 5.8.2, p. 343.
[266] Carpinteria Basin, Table 5-2, p. 343.
[267] Carpinteria Basin, Section 5.8.2.1, p. 345.
[268] Carpinteria Basin, Section 5.8.2.1, p. 345.
[269] Carpinteria Basin, Table 5-2, p. 344.
[270] Carpinteria GSP, Section 5.7.2.2, p. 336.
[271] Carpinteria GSP, Section 5.8.2.6, p. 352.
[272] Carpinteria GSP, Figure 4-5, p. 275.

GSA explains that exceedances of regulatory standards and minimum thresholds will be assessed on an annual basis in accordance with the monitoring program."[273]

The GSP discusses the impacts of minimum thresholds to the other sustainability indicators for the Basin. The GSP explains that preventing migration of poor-quality groundwater could theoretically limit activities needed to achieve minimum thresholds for other sustainability indicators,[274] and minimum thresholds could influence the types of water that could potentially be used for Basin recharge to raise groundwater levels.[275]

The GSP discusses the impact of the minimum thresholds on beneficial users of the Basin including municipal users, agricultural users, domestic users and ecological land use. The GSP states, "basin management that prevents the undesirable results from occurring will not constrain the use of groundwater, nor have a negative effect on the beneficial users and uses of groundwater."[276] The GSP describes that the minimum thresholds set for degradation to groundwater will maintain acceptable water quality in the Basin and will benefit the urban water users.[277]

Despite the identification of recommended corrective actions, Department staff conclude that the sustainable management criteria for degraded water quality substantially comply with GSP regulations.

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.[278] 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, and 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.[279]

The GSP states that significant and unreasonable conditions for the land subsidence sustainability indicator considers two related component concepts: land subsidence and land surface fluctuation.[280] The Plan defines land subsidence as, "a gradual settling of the land surface caused by, among other processes, compaction of subsurface materials

[273] Carpinteria GSP, Section 5.8.2.6, p. 352.
[274] Carpinteria GSP, Section 5.8.2.2, p. 350.
[275] Carpinteria GSP, Section 5.8.2.2, p. 350.
[276] Carpinteria GSP, Section 5.8.2.4, p. 351.
[277] Carpinteria GSP, Section 5.8.2.4, p. 351.
[278] 23 CCR § 354.28(c)(5).
[279] 23 CCR §§ 354.28(c)(5)(A-B).
[280] Carpinteria GSP, Section 5.9.1, p. 356.

because of lowering of groundwater levels from groundwater pumping", and land surface fluctuation "can be caused by tectonic activity in the earth, or by local activity such as grading activities, particularly in agricultural areas or housing developments."[281] The GSA states that, "no long-term subsidence impacts on infrastructure (i.e., commercial buildings, homes, and utility infrastructure) because of groundwater management is considered acceptable."[282]

The GSP describes undesirable results for the land subsidence sustainability indicator as a quantitative combination of the two component concepts described above (land subsidence and land surface fluctuation). The two definitions for undesirable results presented in the GSP are the following:

1. Undesirable results for the land subsidence sustainability indicator is, "if measured subsidence using InSAR data, between June of one year and June of the subsequent year, is greater than 0.1 foot in any one year, or a cumulative 0.5 foot in any 5-year period, as a result of groundwater management under the Plan, or any long-term permanent subsidence that is attributable to groundwater management."[283]
2. Undesirable results for the ground surface sustainability indicator is, "[s]ignificant and unreasonable land subsidence caused by groundwater management or extraction exceeds the minimum threshold and causes damage to structures and infrastructure and substantially interferes with surface land uses."[284]

Department staff note that the GSP's description of the undesirable result condition is problematic. By providing two different conditions to define the undesirable result, one of which requires "damage to structures and infrastructure and substantially interferes with surface land uses"[285] yet not defining what 'damage' or substantially' is, the GSP has not quantitatively described how it will identify an undesirable condition. GSP regulations require GSAs to use criteria based on a quantitative description of the combination of minimum threshold exceedances that cause significant and unreasonable effects in the basin,[286] and staff note that undefined terms such as 'damage' and 'significant' are not quantitative and would require an analysis by the GSA to determine if significant damage had occurred. Staff additionally note that that analysis is not described in the GSP. Additionally, the GSP does not define what 'attributable to groundwater management' means, or how the GSA will determine if subsidence is related to 'groundwater management'. Staff recommend the GSA revise its definition of undesirable results to be a quantitative combination of minimum threshold exceedances without qualifiers that require additional analysis (see Recommended Corrective Action 4a).

[281] Carpinteria GSP, Section 5.9.1, p. 356.
[282] Carpinteria GSP, Section 5.9.1, p. 355
[283] Carpinteria GSP, Section 5.9.1, p. 356.
[284] Carpinteria GSP, Section 5.9.1, p. 356.
[285] Carpinteria GSP, Section 5.9.1, p. 356.
[286] 23 CCR § 354.26 (b)(2).

The GSA explains that potential causes of undesirable results include a substantial decline in groundwater levels due to a shift in pumping locations, and a significant shift in the amount of pumping "causing groundwater levels to fall in an area that is susceptible to subsidence, such as certain areas underlying the City of Carpinteria."[287] The effect of undesirable results to beneficial users of the Basin are, "damage to critical infrastructure, and damage to private or commercial structures that would adversely affect their uses."[288]

The GSP states that the minimum thresholds for the land subsidence sustainability indicator is, "[t]he [nterferometric Synthetic Aperture Radar] InSAR-measured subsidence between June of one year and June of the subsequent year shall be no more than 0.1 foot in any single year and a cumulative 0.5 foot in any 5-year period at any location in the Basin, resulting in no measurable permanent subsidence."[289] Minimum thresholds will be measured and monitored using InSAR data which is collected and maintained by DWR. [290] Measurement errors with InSAR data were considered while developing minimum thresholds for the land subsidence sustainability indicator, and the minimum thresholds value took into account "a combined total error of 0.1 foot."[291] The GSP states, "The measurable objective for subsidence is the same as the minimum threshold because land subsidence cannot be detected via InSAR at rates less than selected for the minimum threshold." [292] Department staff note the GSA does not clarify how it will determine that subsidence is "permanent" or how it will evaluate subsidence is being caused by groundwater management.

A legislative intent of SGMA is to avoid or minimize subsidence.[293] Staff also note that multiple years of ongoing subsidence at rates less than 0.1 feet per year may combine to reach significant amounts of subsidence, and note the GSA has not provided a measurable objective aiming for zero subsidence, and that the GSP's minimum thresholds appear to allow up to 0.49 feet of subsidence over 5 years.[294] Staff conclude that the GSP's sustainable management criteria for subsidence do not align with the intent to avoid or minimize subsidence, and recommend the GSA establish criteria that supports the GSA's intent to do so (see Recommended Corrective Action 4b).

The Plan discussed the impact of the minimum thresholds on beneficial users of the Basin and determined that, "[s]taying above the minimum threshold will avoid the land subsidence undesirable result and protect the beneficial uses and users from impacts to infrastructure and interference with surface land uses."[295]

[287] Carpinteria GSP, Section 5.9.1.2, p. 356.
[288] Carpinteria GSP, Section 5.9.1.3, p. 356.
[289] Carpinteria GSP, Section 5.9.2, p. 357.
[290] Carpinteria GSP, Section 5.9.1. p. 355
[291] Carpinteria GSP, Section 5.9.2.1, p. 357.
[292] Carpinteria GSP, Section 5.9.3, p. 358.
[293] CWC § 10720 (e).
[294] Carpinteria GSP, Section 5.9.2, p. 357.
[295] Carpinteria GSP, Section 5.9.2.4, p. 358.

Department staff conclude that the GSP describes the sustainable management criteria and approach to managing land subsidence sufficiently so as not to preclude approval at this time but that further refinement as directed in the recommended corrective action is necessary.

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.[296] 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 those systems.[297] 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.[298]

The GSP states that it was, "concluded that there are no interconnected surface water systems in the Basin" and therefore the GSA did not establish sustainable management criteria for the depletion of interconnected surface water sustainability indicator.[299] The GSA explains that although there is limited stream gage data in the Basin, based on observation streams are ephemeral and flow in response to storm events and are dry during summer months. At the confined area of the Basin the GSP states that the, "creek channel is separated from the groundwater of the principal aquifer by a low-permeability aquitard."[300] At the recharge area of the Basin, the GSA explains that creeks are considered losing creeks and, "are hydraulically disconnected from groundwater because the water table surface is below the bottoms of the creek beds in this area of the Basin."[301]

The GSA performed an analysis to evaluate the potential for interconnected surface water using a Digital Elevation Model (DEM) considering depth to water measurements for three recent water year types were compared to Basin ground surface elevations in the DEM.[302] Water year types used in this analysis included:

- WY 2005 – Wet water year type
- WY 2010 – Normal water year type
- WY 2015 – Critically Dry water year type

[296] Water Code § 10721(x)(6).
[297] 23 CCR § 354.16 (f).
[298] 23 CCR § 354.28 (c)(6).
[299] Carpinteria GSP, Section 5.10, p. 359.
[300] Carpinteria GSP, Section 3.2.6, p. 152.
[301] Carpinteria GSP, Section 3.2.6, p. 152.
[302] Carpinteria GSP, Section 3.2.6, p. 152.

The GSA explained that, “the water table elevations are below the creek bottom elevations at all locations in the Recharge Area during all three water year type conditions” and “If the streams are disconnected from the saturated aquifer, they are, by definition, not considered to be interconnected surface water.”[303] The GSP did note that there are limited areas in the downstream vicinity of Santa Monica and Franklin Creeks where depth-to-water was less than 0 feet below ground surface, but “these areas are in the confined area of the Basin which is hydraulically separated from the principal aquifer by the low-permeability sediments.”[304] The GSA also explains that, “both of these creeks are concrete lined in the Basin.”[305] Figures presenting the results the interconnected surface water analysis are presented in Figures 3-44 through 3-46 in the GSP.[306]

Department staff believe the GSA should continue to evaluate the potential for interconnected surface water to exist based on future studies and data collection.

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 a 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.[307] Specifically, a monitoring network must be able to monitor impacts to beneficial uses and users,[308] monitor changes in groundwater conditions relative to measurable objectives and minimum thresholds,[309] capture seasonal low and high conditions,[310] include required information such as location and well construction and include maps and tables clearly showing the monitoring site type, location, and frequency.[311] Department staff encourage GSAs to collect monitoring data as specified in the GSP, follow SGMA data and reporting standards,[312] fill data gaps identified in the GSP prior to the first periodic evaluation,[313] update monitoring network information as needed, follow monitoring best management practices,[314] and submit all monitoring data to the Department’s Monitoring Network Module immediately after collection including any additional groundwater

[303] Carpinteria GSP, Section 3.2.6, p. 152.
[304] Carpinteria GSP, Section 3.2.6, p. 152.
[305] Carpinteria GSP, Section 3.2.6, p. 152.
[306] Carpinteria GSP, Figures 3-44 - 3-46, pp. 155-157.
[307] 23 CCR § 354.32.
[308] 23 CCR § 354.34(b)(2).
[309] 23 CCR § 354.34(b)(3).
[310] 23 CCR § 354.34(c)(1)(B).
[311] 23 CCR §§ 354.34(g-h).
[312] 23 CCR § 352.4 *et seq*.
[313] 23 CCR § 354.38(d).
[314] Department of Water Resources, 2016, Best Management Practices and Guidance Documents.

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.

The GSP proposes establishing a dedicated groundwater level monitoring network with a total of 69 wells included in the existing monitoring networks for the Basin. Of these, 35 wells are monitored for water levels, 46 wells are monitored for basic water quality parameters, and 12 wells are monitored for both. The GSP has identified 9 monitoring wells in the monitoring network for the chronic lowering of groundwater levels sustainability indicator.[315] The wells are spatially distributed throughout the confined and recharge areas of the Basin. There are 2.25 water level monitoring wells and water quality monitoring wells per square mile within the Basin. The well density for the Basin water level monitoring network significantly exceeds the Best Management Practices provided by the Department.[316].

The GSP uses the groundwater level monitoring network as a proxy for the reduction of groundwater in storage since changes in groundwater storage are directly dependent on changes in groundwater levels.

The GSP includes 8 RMS wells for the seawater intrusion monitoring network. RMS wells for seawater intrusion are located along the chloride isocontour representative of the minimum threshold concentration established for the Basin.[317] The Plan states that to address data gaps to evaluate seawater intrusion additional monitoring wells are planned for installation along the coast and "will be sampled quarterly and outfitted with transducers for continuous monitoring of groundwater elevations."[318]

The GSA plans to track water quality using the existing 38-well groundwater monitoring network. There is a recognized area of the Basin in the west near Arroyo Paredon where the groundwater is observably more highly mineralized and of poorer quality than in other parts of the Basin.[319] Wells will be sampled for the primary Constituents of concern in the Basin including nitrate, arsenic, TDS, chloride, and boron.

The GSP does not establish a dedicated monitoring network for the purposes of assessing sustainable management criteria for land subsidence. Department staff

[315] Carpinteria Basin GSP, Section 4.3.1 and 4.4.1, p. 252 and p. 260.
[316] DWR Best Management Practices for the Sustainable Management of Groundwater: Monitoring Networks and Identification of Data Gaps, 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-2-Monitoring-Networks-and-Identification-of-Data-Gaps_ay_19.pdf.
[317] Carpinteria Basin GSP, Section 5.7.2, p. 332; Figures 4-4 and 5-10 pp. 268 and 333.
[318] Carpinteria GSP, Section 5.7.2.6, p. 338.
[319] Carpinteria Basin GSP, Section 5.8.2.1, p. 345.

recommend the GSA establish a monitoring network for land subsidence (see Recommended Corrective Action 5).

The Department encourages the GSA to continue to evaluate the interconnected surface water sustainability criteria through the efforts outlined within the Plan.

The GSP's discussion of monitoring networks is comprehensive and includes adequate support, justification, and information to understand the GSA's process, analysis, and rationale. In arriving at this conclusion, staff have not determined that the GSA's choices are reasonable or appropriate under the law or that staff would necessarily conduct the same analysis and reach the same conclusions as used in the GSP if staff were to prepare such an analysis itself; staff finds only that the GSP adequately explains how and why the GSA performed the analyses and arrived at the conclusions it did and that this effort is within the range of what staff considers professional and acceptable under the circumstances.

The Department encourages the GSA work during plan implementation to determine well construction information for several of the wells identified in the monitoring network. Department staff find the descriptions of the monitoring networks included in the Plan to substantially comply with the requirements outlined in the GSP Regulations. The Plan describes in sufficient detail a monitoring network that promotes the collection of data of sufficient quality, frequency, and distribution, to characterize groundwater conditions in the Basin and evaluate changing conditions that occur through Plan implementation, except as noted for the proposed interconnected surface water monitoring network. The Plan acknowledges existing data gaps and the GSAs' intention to fill the data gaps and improve the monitoring networks. Staff will evaluate the GSAs' progress of filling data gaps through annual reporting and GSP updates.

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.[320] 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.[321]

The GSP proposed seven projects and six management actions. These projects are categorized as either Tier 1 projects – priority projects expected to be implemented within the first five years – or Tier 2 projects – non-priority projects that were identified for future consideration.[322] The GSP explains that due to the declining groundwater levels during

[320] 23 CCR § 354.44 (a).
[321] 23 CCR § 354.44 (b) *et seq*.
[322] Carpinteria Basin GSP, Section 6.1, p. 361.

the recent drought, the Agency will start the implementation of Tier 1 projects and select management actions within the first five years.[323]

The GSA identified both an average decline of 3,275 acre-feet of water per year between water years 2012 and 2020,[324] and areas with seawater intrusion.[325] The GSA plans to address these sustainability challenges by implementing the following Tier 1 projects and management actions:

- Carpinteria Advanced Purification Project: This project recycles up to 1,100 acre feet per year of purified water for injection into groundwater. It is expected to be completed and be in operation by 2027 and will address reduction in storage and mitigate seawater intrusion by increasing groundwater elevations along the coast. The project is funded and ongoing.
- Sentinel Monitoring Well Network Expansion Project: This project will install monitoring wells to improve understanding of the aquifer zones that may have seawater intrusion. The project is planned to install at least one new cluster of monitoring wells during the first 5-year implementation period. Funding is not secured for this project.
- Local Infrastructure Water System Interties: This project installs 1.5 miles of pipeline and support infrastructure to deliver water from the state water project to the Basin, allowing flexibility in water supply during drought periods. It is planned to be completed during the initial 5-year implementation period, and funding has been secured.

The GSP additionally promises to evaluate and rank Tier 2 projects during the first 5-year implementation period for future evaluation.[326] The GSA plans to adaptively manage the basin by implementing additional projects and management actions if conditions indicate they are needed. Tier 2 projects include: Carpinteria Seawater Intrusion Barrier, Aquifer Storage and Recovery, Recharge Enhancement, and Local Inter-Agency Water Delivery.[327]

The GSA's plan is to continuously monitor and assess the progress toward meeting the sustainable management criteria. The GSP states, "Under conditions where minimum thresholds are projected to be achieved, the Carpinteria GSA will perform assessments to determine whether the trends are related to groundwater pumping, drought conditions, or other factors. If groundwater level data are trending toward reaching minimum thresholds as a direct consequence of groundwater pumping in the Basin, then the Carpinteria GSA will determine which additional project(s) and/or management action(s)

[323] Carpinteria Basin GSP, Section 6.2, p. 364.
[324] Carpinteria GSP, Table 3-13, p. 218.
[325] Carpinteria GSP, Section 3.2.3, p. 140.
[326] Carpinteria GSP, Section 6.1, p. 363.
[327] Carpinteria GSP, Section 6.1, p. 363.

to implement to address these conditions."[328] In general, the progress of implemented projects and management actions will be assessed annually and presented in the Annual Reports.[329] The GSA concludes from the analysis performed during the development of this Plan that "the sustainability goals… can be achieved through implementation as needed, of the projects and management actions".[330]

The GSP states that "not all details for proposed projects are known at the time of adoption of this GSP" and specific details "need to be finalized and negotiated before many of the projects and management actions can be implemented." [331] In addition, the GSP emphasizes that the projects and management actions "should be considered as a list of options that will be refined during Plan implementation".[332]

Department staff conclude that the Plan describes proposed projects and management actions in substantial compliance with GSP regulations. The projects and management actions, present a generally feasible approach to achieving the sustainability goal of the Basin.

4.6 Consideration of Adjacent Basins

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."[333] 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.[334]

The Carpinteria Basin has one adjacent basin, the Montecito Basin. The Plan includes an analysis of potential impacts to adjacent basins with the defined minimum thresholds for each sustainability indicator. The Plan does not anticipate any impacts to adjacent basins resulting from the minimum thresholds defined in the Plan.

Department staff will continue to review periodic evaluations to the Plan to assess whether implementation of the GSP is potentially impacting adjacent basins.

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.[335]

[328] Carpinteria GSP, Section 6.1, p. 362.
[329] Carpinteria GSP, Section 6.2, p. 364.
[330] Carpinteria GSP, Section 6.1, p. 361.
[331] Carpinteria GSP, Section 6.1, p. 362.
[332] Carpinteria GSP, Section 6.1, p. 363.
[333] Water Code § 10733(c).
[334] 23 CCR § 354.28(b)(3).
[335] 23 CCR § 354.18.

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
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 Carpinteria GSP conforms with Water Code Sections 10727.2 and 10727.4 of SGMA and substantially complies with the GSP Regulations. Implementation of the GSP will likely achieve the sustainability goal for the Carpinteria Basin. The GSA has identified several areas for improvement of its Plan 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 GSA for the first periodic evaluation of the GSP. Addressing these recommended corrective actions will be important to demonstrate that implementation of the Plan is likely to achieve the sustainability goal.

The recommended corrective actions include:

RECOMMENDED CORRECTIVE ACTION 1

The GSA should revise its description of undesirable result conditions and revise its criteria to define the undesirable result condition for the chronic lowering of groundwater. The GSA should remove the requirement of an undesirable result only occurring during average and above average water years, and should describe the potential effects on the beneficial uses and users of groundwater, on land uses and property interests, and other potential effects that may occur or are occurring from undesirable results.[336] The GSA should also provide the criteria used to define when and where the effects of the groundwater conditions cause undesirable results for each applicable sustainability indicator based on a quantitative description of the combination of minimum threshold exceedances that cause significant and unreasonable effects in the basin.[337]

RECOMMENDED CORRECTIVE ACTION 2

Provide the criteria used to define when and where the effects of the groundwater conditions cause undesirable results for seawater intrusion. 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.

RECOMMENDED CORRECTIVE ACTION 3

The GSA should revise degraded water quality sustainable management criteria in the following manner:

a. Revise the description of degraded water quality sustainable management criteria so that groundwater conditions, whether caused by direct actions by the GSA to

[336] 23 CCR § 354.26 (b)(3).
[337] 23 CCR § 354.26 (b)(2).

implement this GSP or not, are considered in the assessment of significant and unreasonable conditions in the Basin.

b. Revise the definition of an undesirable result condition to consider beneficial uses and users[338] and be comprised of a quantitative combination of minimum threshold exceedances[339] as required by GSP regulations.

RECOMMENDED CORRECTIVE ACTION 4

The GSA should revise subsidence sustainable management criteria in the following manner:

a. Revise 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.[340]

b. Revise the measurable objective to indicate the GSAs intent to manage the basin to avoid or minimize subsidence.[341]

RECOMMENDED CORRECTIVE ACTION 5

Establish a monitoring network for land subsidence that directly measures land elevation change such as remote sensing data, survey monuments, or global positioning system stations.

[338] 23 CCR § 354.26 (b)(3).
[339] 23 CCR § 354.26 (b)(2).
[340] 23 CCR § 354.26 (b)(3).
[341] CWC § 10720 (e).

Carpinteria Groundwater Sustainability Agency

Statement of Revenues and Expenses

(unaudited)

For Fiscal: 2024-2025 | Period Ending: 1/31/2025

% of Year to Date: 58%

	Account	Name	Current Total Budget	YTD Activity	Budget Remaining	% Earned / Used
OPERATIONS						
Revenues						
	20-4315	ASSESSMENT REVENUE	485,000	438,547	46,453	90.4%
	20-4319	WELL VERIFICATION FEE	-	1,000	(1,000)	-
Revenue Total:			**485,000**	**439,547**	**45,453**	**90.6%**
Expenses						
	20-550-6806	GSA WTR QUALITY & TESTING	30,000	13,191	16,809	44.0%
	20-560-6307	GSA GROUNDWATER PROF SVCS	50,000	8,323	41,677	16.6%
	20-550-6308	GSA ANNUAL REPORTING	30,000	-	30,000	0.0%
	20-560-6607	GSA SUPPLIES & EQUIPMENT	3,708	4,008	(300)	108.1%
	20-570-6009	FICA-SOCIAL SECURITY	-	61	(61)	0.0%
	20-570-6025	GSA PERSONNEL	134,252	77,000	57,252	57.4%
	20-570-6117	GSA DIRECTORS FEES	7,200	4,180	3,020	58.1%
	20-570-6118	GSA ADMINISTRATIVE EXPENSES	4,000	870	3,130	21.7%
	20-570-6309	GSA ADMIN PROF SERVICES	60,000	16,400	43,600	27.3%
	20-570-6310	GSA LEGAL PROFESSIONAL SERVICES	10,000	4,323	5,677	43.2%
	20-599-7313	INTEREST EXPENSE	10,000	-	10,000	0.0%
Expense Total:			**339,160**	**128,356**	**210,804**	**37.8%**
Operating Surplus (Deficit):			**145,840**	**311,191**	**(165,351)**	**213.4%**

GRANT RELATED ACTIVITY			
Revenues			
	21-4317	GSP GRANT FUNDING	-
Revenue Total:			-
Expenses			
	21-560-6311	GSP GROUNDWATER PROF SVCS	-
	21-570-6121	GSP ADMINISTRATIVE EXPENSES	-
Expense Total:			-
Grant Surplus (Deficit):			**-**
COMBINED SURPLUS (DEFICIT):			**311,191**

CASH FLOW	
Cash in Bank, 06/30/2024	**$ 200,708**
Surplus - Operations and Grants	311,191
Decrease in Grants Receivable	701,420
Increase in Accounts Receivable and Prepayments	(8,618)
Decrease in Accounts Payable	(16,288)
Accrued CVWD Labor Allocation	77,000
Increase in CVWD Cash Advances	3,840
Decrease in CVWD Promissory Note	(701,240)
Cash in Bank, 01/31/2025	**$ 568,013**

Carpinteria Groundwater Sustainability Agency

Statement of Net Position
(unaudited)

As Of: 1/31/2025

	Account	Name	Balance	
Assets				
	20-1029	CGSA CHECKING	568,013	
	20-1240	GRANT REIMB RECEIVABLE	191,081	
	20-1245	ASSESSMENTS RECEIVABLE	5,451	
	20-1420	PREPAYMENTS	8,000	
	21-1821	CONSTRUCTION IN PROGRESS	-	
	20-1755	EL CARRO MONITORING WELL	759,314	
		Total Assets:	**1,531,860**	**$ 1,531,860**
Liabilities				
	20-2000	ACCOUNTS PAYABLE - CGSA	4,377	
	20-2032	STATE TAX PAYABLE	-	
	20-2033	FEDERAL TAX PAYABLE	-	
	20-2034	FICA PAYABLE	-	
	20-2205	RETENTIONS PAYABLE	-	
	20-2250	CVWD PROMISSORY NOTE	38,760	
	20-2523	DUE TO CVWD	584,423	
		Total Liability:	**627,560**	
	Fund Balance			
		CGSA FUND BALANCE	593,108	
		Total Fund Balance:	**593,108**	
		Total Beginning Equity:	**593,108**	
	Total Revenue		439,547	
	Total Expense		128,356	
	Revenues Over/Under Expenses		**311,191**	
		Total Equity and Current Surplus (Deficit):	**904,299**	
		Total Liabilities, Equity and Current Surplus (Deficit):		**$ 1,531,860**