UPPER VENTURA RIVER GROUNDWATER AGENCY

NOTICE OF REGULAR MEETING

NOTICE IS HEREBY GIVEN that the Upper Ventura River Groundwater Agency ("Agency") Board of Directors ("Board") will hold a **Regular Board Meeting at 1 P.M. on Thursday, October 14, 2021 via**

ON-LINE OR TELECONFERENCE:

DIAL-IN (US TOLL FREE) 1-669-900-6833
Find your local number: https://us06web.zoom.us/u/kcCkF3q5M3
JOIN BY COMPUTER, TABLET OR SMARTPHONE:
https://us06web.zoom.us/j/85996961956?pwd=em55Rkt3Mm5INWpIa3ZVcnlOVldTZz09
Meeting ID: 859 9696 1956
Passcode: 518690
New to Zoom, go to: https://support.zoom.us/hc/en-us/articles/206175806

Per Resolution No. 2021-05 by the Board of Directors of the Upper Ventura River Groundwater Agency, the Board is authorized to hold public meetings via teleconferencing and to make public meetings accessible telephonically or otherwise electronically to all members of the public seeking to observe and to address the Board. A physical location accessible for the public to participate in the teleconference is not required.

UPPER VENTURA RIVER GROUNDWATER AGENCY BOARD OF DIRECTORS REGULAR MEETING AGENDA

October 14, 2021

1. **MEETING CALL TO ORDER**

2. **PLEDGE OF ALLEGIANCE**

3. **ROLL CALL**

4. **APPROVAL OF AGENDA & RENEWAL OF RESOLUTION NO. 2021-05**
   Pursuant to AB 361, the Board may continue to meet via teleconference, provided it make the findings in section 3 of Resolution No. 2021-05.

5. **PUBLIC COMMENT FOR ITEMS NOT APPEARING ON THE AGENDA**
   The Board will receive public comments on items not appearing on the agenda and within the subject matter jurisdiction of the Agency. The Board will not enter into a detailed discussion or take any action on any items presented during public comments. Such items may only be referred to the Executive Director or other staff for administrative action or scheduled on a subsequent agenda for discussion. Persons wishing to speak on specific agenda items should do so at the time specified for those items. In accordance with Government Code § 54954.3(b)(1), public comment will be limited to three (3) minutes per speaker.

6. CONSENT CALENDAR

All matters listed under the Consent Calendar are considered routine by the Board and will be enacted by one motion. There will be no separate discussion of these items unless a Board member pulls an item from the Calendar. Pulled items will be discussed and acted on separately by the Board. Members of the public who want to comment on a Consent Calendar item should do so under Public Comments.

a. Approve Minutes from September 9, 2021 Regular Board Meeting
b. Approve Minutes from September 23, 2021 Special Board Meeting
c. Approve Financial Report for September 2021
d. Approve Rate Increase for Bondy Groundwater Consulting, Inc.

7. DIRECTOR ANNOUNCEMENTS

Directors may provide oral reports on items not appearing on the agenda.

8. EXECUTIVE DIRECTOR'S REPORT

The Board will receive an update from the Executive Director concerning miscellaneous matters and Agency correspondence. The Board may provide feedback to staff.

9. ADMINISTRATIVE ITEMS

a. Fiscal Year 2021/2022 First Quarter Budget Report
The Board will consider receiving and filing the first quarter budget report.

10. GSP ITEMS

a. Groundwater Sustainability Plan Update (Grant Category (e); Task 12: GSP Reviews and Approvals)
The Board will receive an update from the Executive Director concerning groundwater sustainability plan development and consider providing feedback to staff.

b. Draft Groundwater Sustainability Plan Comments (Grant Category (e); Task 12: GSP Reviews and Approvals)
The Board will receive a summary of Draft GSP comments received and consider providing feedback to staff.

c. Intera, Inc. Work Order No. 3 Budget Modification (Grant Category (a): Grant Administration)
The Board will consider authorizing the Executive Director to increase the not-to-exceed authorization from $418,780 to $463,610 for groundwater sustainability plan and groundwater flow model development professional services.

d. Rincon Consultants, Inc. Work Order No. 1 Budget Modification (Grant Category (a): Grant Administration)
The Board will consider authorizing the Executive Director to increase the not-to-exceed authorization from $77,500 to $92,141 for as-needed services related to groundwater sustainability plan development professional services.

11. COMMITTEE REPORTS

a. Ad Hoc Stakeholder Engagement Committee

The committee will provide an update on Stakeholder Engagement Plan implementation activities since the last Board meeting and receive feedback from the Board.

12. FUTURE AGENDA ITEMS

This is an opportunity for the Directors to request items for future agendas.

13. ADJOURNMENT

The next Regular Board meeting is November 11, 2021.

UPPER VENTURA RIVER GROUNDWATER AGENCY MINUTES OF REGULAR MEETING SEPTEMBER 9, 2021

The Board meeting was held via teleconference, in accordance with California Executive Order N-25-20. Directors present were Bruce Kuebler, Larry Rose, Susan Rungren, Emily Ayala, Pete Kaiser, Glenn Shephard, and Diana Engle. Also, present: Executive Director Bryan Bondy, Agency Counsel Keith Lemieux, and Administrative Assistant Maureen Tucker. Identified public members present: Burt Handy, Jenny Tribo, Mary Bergen (alternate director) and Kelly Dyer.

1) CALL TO ORDER

Chair Engle called the meeting to order at 1:01 p.m.

2) PLEDGE OF ALLEGIANCE

Executive Director Bryan Bondy led the Pledge of Allegiance.

3) ROLL CALL

Executive Director Bondy called roll.

Directors Present: Bruce Kuebler, Larry Rose, Susan Rungren, Pete Kaiser, Glenn Shephard, Diana Engle, and Emily Ayala

Directors Absent: none

4) APPROVAL OF AGENDA

Chair Engle asked for any proposed changes to the agenda. Chair Engle suggested moving Item No. 9a after Item No. 11.

Director Shephard moved agenda approval with the requested change by Chair Engle. Director Rose seconded the motion.

Roll Call Vote:	B. Kuebler – Y	L. Rose – Y	D. Engle – Y	
	S. Rungren – Y	P. Kaiser – Y	E. Ayala – Y	G. Shephard – Y

Directors Absent: none

5) PUBLIC COMMENTS ON ITEMS NOT APPEAR ON THE AGENDA

Chair Engle called for public comments on items not appearing on the agenda. No public comments were offered.

6) CONSENT CALENDAR

a. Approve Minutes from August 12, 2021 Regular Board Meeting
b. Approve Financial Report for August 2021

Director Kaiser moved approval of the consent calendar items. Director Shephard seconded the motion.

Roll Call Vote:	B. Kuebler – Y	L. Rose – Y	D. Engle – Y	
	S. Rungren – Y	P. Kaiser – Y	E. Ayala – Y	G. Shephard – Y

Directors Absent: none

7) DIRECTORS ANNOUNCEMENTS

a. Directors may provide oral report on items note appearing on the agenda.
b. Directors shall report time spent on cost-sharing eligible activities for the 2017 Proposition 1 Sustainable Groundwater Management Planning (SGWP) Grant.

Director Kuebler:	No time. No report.
Director Rungren:	No time. No report.
Director Rose:	No time. No report.
Director Shephard:	No time. No report.
Director Kaiser:	No time. No report.
Director Ayala:	No time. No report
Director Engle:	No time. Reported that she will be presenting the algae study results to the Regional Water Quality Control Board.

8) EXECUTIVE DIRECTOR'S REPORT

Executive Director Bondy reviewed the written staff report concerning updates on non-GSP Agency matters since the last Board meeting.

No questions from the Board

No public comment.

9) ADMINISTRATIVE ITEMS

a. Agency Funding Discussion (Discussion moved to after No. 11)

Executive Director Bondy stated that the staff report includes several references as attachments that the Board may find useful for the funding discussion:

- Q&A sheet based on the August 12 discussions (Attachment A).
- Adopted Long Range Budget (Attachment B)
- Draft GSP Section 7 (Attachment C)
- Agency Counsel's funding options memo (Attachment D)

Chair Engle suggested going through the Q&A sheet first and then discussion. No objections from the other directors.

Director Ayala asked if UVRGA can charge de minimis users a well head fee or some sort of fee?

Agency Counsel explained that there are potential options, but his experience in other basins is that doing so is not practical because the implementation costs exceed the revenue generated.

Director Kaiser suggested a nominal fee for monitoring the status of de minimis users to make sure they stay de minimis. He asked if that is a concern.

Executive Director Bondy explained that it is probably not a big concern. Director Rose concurred.

Director Rose said one year is not enough time to fund the exorbitant reserve.

Executive Director Bondy clarified that the reserve funding would take place over two years, not one.

The Board discussed a nominal fixed cost for all well users for a stable revenue stream.

Executive Director Bondy was asked to explain the reserves. He explained that reserves are needed for two reasons. One reason is to address unanticipated costs. The second is to help address cash flow issues. Cash flow issues are anticipated because UVRGA only invoices twice per year. He said a line of credit deal could address the cash flow issues but would not address unanticipated expenditures.

The Board discussed the pros and cons of reserves and loans.

Director Kaiser asked how the Agency would obtain a loan. Executive Director said the easiest option is an agreement with one of the member agencies.

Director Kuebler asked about the difference between the adopted budget and the monthly finance report. Executive Director Bondy explained that the adopted budget was based on year-end projections, which are different than the year end actuals.

Agency Counsel confirmed that a portion of the fee can be fixed. He added that Proposition 218 says the fee cannot exceed cost of service proportionally to the service received. A volumetric approach is most often used to meet this requirement.

Director Engle suggested a split approach with a portion of the fee being set for reoccurring costs. She wants a perception of fairness for all well users. Managing the basin benefits domestic wells, need to keep that in mind.

Director Kaiser wants to pursue fairness for all well users.

Susan Rungren suggested having the City of Ventura and perhaps the water districts pay their fees up front at the beginning of each year to help minimize cash flow issues. The City supports using a 5-year average for the City and Districts. Private pumpers could be based on meters each year.

Chair Engle asked for a reminder about the basis for the pumping amount in the approved budget. Executive Director Bondy explained that it was a compromise by the Board between the 2017 estimated pumping values and the pumping projections included in the GSP.

The Board continued discussion about fixed versus variable fees. It was noted that UVRGA is too small to absorb big swings in revenue.

Executive Director Bondy offered that the key to revenue stabilization lies with the City of Ventura and the two retail water districts because they pump a most of the groundwater and are, therefore, the primary source of the potential revenue variability. Any approach that addresses the City of Ventura and the two retail water districts will probably be good enough. Other pumpers could be variable if those three provide stabilize revenue. He suggested that the City of Ventura and the retail water districts meet to discuss.

Chair Engle summarized the key issues from the discussion:

1. Do de minimis users have skin in game? Perhaps a well head fee, which could also apply to others.
2. How to manage variability in pumping (revenue certainty)
3. Cash flow management alternatives.
4. Extraction only vs extraction and well head fee?
5. Agricultural users have said they would like to be metered, will the Agency require a specific kind of meter and what does the reporting look like?

The City of Ventura and retail water districts will meet to discuss and report back to the Board.

Public Comments:

Mary Bergen said volatility in pumping amounts is the primary problem.

10) GSP ITEMS

a. Groundwater Sustainability Plan Update (Grant Category (d); Task 11: GSP Development and Preparation)

Executive Director Bondy reviewed the written staff report and attachments with the Board. The draft GSP is out for public comment. Executive Director Bondy summarized recent outreach activities. He issued a special newsletter about the draft GSP comment period and was interviewed by the Ojai Valley News for an article that ran on August 26. The draft GSP was presented at the workshop hosted by the Ventura River Watershed Council.

Director Kuebler expressed concerns about the changes that will be made to the degraded water quality sustainable management criteria outside of the 60-day comment period. Executive Director Bondy said there is no requirement for a 60-day comment period on draft GSP. He offered to highlight the proposed changes on the Agency website with a link to the staff report that details the proposed changes. The Board agreed with the recommendation.

Director Ayala asked if any GSP comments have been received. Executive Director Bondy said no comments have been received.

Director Kaiser asked if the lack of feedback is typical. Executive Director Bondy said that it is typical for comments to be received near the end of the comment period.

Director Engle mentioned that she only saw two agricultural users in attendance at the GSP workshop. She expressed concerns at participation and potential miscommunications. She would like to have the support of the agricultural community on the GSP.

Director Ayala explained that there was a misinterpretation from a water lawyer about the 2-acre foot per year concern. She indicated that there are numerous lawyers stirring

things up in the region. She said she would reach out the agricultural pumpers a few days before the September 23rd workshop.

Executive Director Bondy said he would be happy to meet with any pumpers who have questions or concerns.

No public comments.

11) COMMITTEE REPORTS

a. Ad Hoc Stakeholder Engagement Committee

Director Rose said there is nothing to report.

No public comments.

12) FUTURE AGENDA ITEMS

Executive Director Bondy said that he reserved a room at the Oak View Community Center now that California Executive Order N-25-20 is expiring.

Agency Counsel reported that Assembly Bill 361 was passed by the legislature today. AB 361 will allow for continued use of remote meetings. He briefly summarized the provisions of AB 361. A resolution of the board would be needed to continue meeting remotely, if desired.

The Board briefly discussed the information and requested an item on the next agenda concerning this matter.

13) ADJOURNMENT

Chair Engle adjourned the meeting at 2:56 p.m.

Action: _____

Motion: _____

B.Kuebler__ D.Engle__ P.Kaiser__S. Rungren__ G.Shephard___ E.Ayala___ L.Rose___

UPPER VENTURA RIVER GROUNDWATER AGENCY
MINUTES OF SPECIAL MEETING SEPTEMBER 23, 2021

The Special Board meeting was held via teleconference, in accordance with California Executive Order N-25-20. Directors present were Bruce Kuebler, Larry Rose, Susan Rungren, Emily Ayala, Pete Kaiser, Glenn Shephard, and Diana Engle. Also, present: Executive Director Bryan Bondy, Agency Counsel Keith Lemieux, and Administrative Assistant Maureen Tucker. Identified public members present: Burt Handy, Jenny Tribo, Mary Orr, Kiernan Brtalik, Abhishek Singh, Justin Martinez, Brian Brennan, Betsy Cooper, Jim Kentosh (alternate director), Vivon Crawford, Steven Humphrey, Summer Ward, Burt Rapp (alternate director), and Mike Flood.

1) CALL TO ORDER

Chair Engle called the meeting to order at 1:02 p.m.

2) PLEDGE OF ALLEGIANCE

Executive Director Bryan Bondy led the Pledge of Allegiance.

3) ROLL CALL

Executive Director Bondy called roll.

Directors Present: Bruce Kuebler, Larry Rose, Susan Rungren, Pete Kaiser, Glenn Shephard, Diana Engle, Emily Ayala

Directors Absent: none

4) APPROVAL OF AGENDA

Chair Engle asked for any proposed changes to the agenda. None were provided.

Director Kuebler moved agenda approval.

Director Kaiser seconded the motion.

Roll Call Vote:	B. Kuebler – Y	L. Rose – Y	D. Engle – Y	
	S. Rungren – Y	P. Kaiser – Y	E. Ayala – Y	G. Shephard – Y

Directors Absent: none

5) PUBLIC COMMENTS ON ITEMS NOT APPEAR ON THE AGENDA

Chair Engle called for public comments on items not appearing on the agenda. No public comments were offered.

6) ADMINISTRATIVE ITEMS

a. Resolution No. 2021-05 for Implementation of AB-361 Exemption to Brown Act Teleconferencing Requirements

Agency Counsel Keith Lemieux summarized the draft resolution which, if adopted, would implement the AB-361 exemptions to the Brown Act teleconferencing requirements through as long as 2024. He explained that the Board would be required to reaffirm the findings contained in the resolution every 30-days until the Board finds it is no longer appropriate to meet remotely. He added that, even if the resolution is adopted, it does not mean the Board must meet electronically. An in-person meeting can be held at any point they feel necessary.

Chair Engle asked what happens if there is more than 30 days between meetings. Agency Counsel Lemieux said it could be handled at the beginning of the meeting. He recommends doing this at each meeting during agenda approval.

Director Kaiser asked if there is a way to automatically reaffirm the findings. Agency Counsel Lemieux said that he interprets AB 361 as requiring ongoing action to reaffirm.

Director Rose moved to adopt Resolution 2021-5. Director Ayala seconded the motion.

Roll Call Vote: B. Kuebler – Y L. Rose – Y D. Engle – Y
S. Rungren – Y P. Kaiser – Y E. Ayala – Y G. Shephard – Y

Directors Absent: None.

7) GSP STAKEHOLDER WORKSHOP NO. 4B

Executive Director Bondy introduced Rincon Consultants staff member Kiernan Brtalik and Intera, Inc. staff member Abhishek Singh as members of the GSP development team. Executive Director Bondy explained that the draft GSP was released in early August and the Agency is soliciting comments through October 8. He explained how to make comments on the draft GSP. He then gave a presentation summarizing the draft GSP. The full presentation is posted on the Agency website at https://uvrgroundwater.org/wp-content/uploads/2021/09/20210923-UVRGA-Workshop-No-4b.pdf.

Following the presentation, several questions were asked by UVRGA Directors and the public.

Chair Engle asked for clarification that the six indicators are identified by statute, not just invented by the Board. Executive Director Bondy confirmed.

Chair Engle requested an explanation of the temporal disconnect between pumping and effects of indirect depletion on streamflow. Executive Director Bryan Bondy explained how pumping upstream of Foster Park removes groundwater from storage that might otherwise contribute to streamflow later that year or subsequent year.

Chair Engle commented that it may be possible to address indirect depletion through habitat improvements. Executive Director Bondy asked Kiernan Brtalik to confirm the controlling habitat indicator from the 2013 Foster Park study. Kiernan Brtalik said it was depth. Executive Director Bondy said that it seems that perhaps habitat improvements that improve depth might be an example of what Chair Engle is referring to.

Jim Kentosh described concerns about nitrate in groundwater. Meiners Oaks Water District stopped using Well #8 due to nitrate concentrations. He said nitrates are of human origin, not natural, so why is nitrate not considered a contaminant plume in the GSP? Executive Director Bryan Bondy said the distinction is that contaminant plumes are of a point source origin, whereas nitrate is a non-point source groundwater impact.

Jim Kentosh said there appears to be high nitrate in the bedrock aquifer in the eastern part of the Basin and he thinks it is seeping into the alluvium He cited an example with Meiners Oaks Water District Well #4. Executive Director Bondy agreed that nitrate is more prevalent in the bedrock and older alluvium of the eastern part of the Basin, and this is because those units have low permeability and do not get flushed with fresh water recharged by the river. He explained that the variability in Well #4 nitrate concentrations is very likely controlled by how much of the well screen has saturated young alluvium at any given time.

Jim Kentosh said Meiners Oaks Water District hired a consultant to help design a solution for the nitrate in Well #8. He would like to leave that option open for further study. Executive Director Bondy said the GSP does not preclude well owners taking such actions. Water districts can perform treatment independently from the GSP. That is a drinking water management issue, not a SGMA issue. Executive Director Bryan Bondy said he would be happy to share what he has learned about nitrates with Meiners Oaks Water District's consultant.

Jim Kentosh asked about bedrock aquifers and the GSP. He said Casitas MWD and Meiners Oaks Water District are considering bedrock aquifer well projects and wondered if that is an issue. Executive Director Bondy said the GSP does not currently address

bedrock. The GSP focusses on the alluvial deposits. However, if bedrock pumping increases substantially in the future, it could potentially cause water to be drawn out of the alluvium, which could become an issue for UVRGA at some point.

Jim Kentosh asked what happens with the GSP if Lake Casitas dries up? Executive Director Bryan Bondy states that the GSP does not address "extreme" events. However, SGMA requires the Agency to assess the GSP every five years considering actual water supply conditions. UVRGA will be watching and update the plan accordingly.

Jim Kentosh said he has no more questions. He said the GSP is overall a great plan.

Director Ayala asked Jim Kentosh who he works for. Jim Kentosh said he is a Director at Meiners Oaks Water District and Ojai Valley Sanitation District and is the alternate for Chair Engle on the UVRGA Board.

Director Engle asked Executive Director Bryan Bondy to talk about the State Water Resources Control Board and UVRGA numerical flow models. Executive Director Bondy described the two models and compared their scale, resolution, and other key attributes. He said that, ideally, the models would be used together in the future because they have different strengths and, therefore, complement each other well.

Director Engle thanked Executive Director Bondy and the other GSP development team members who put the draft GSP together. Director Engle thanked the attendees and reminded them that they can visit the UVRGA website for more information and to comment on the GSP.

Information item only. The Board took no action.

8) ADJOURNMENT

The meeting was adjourned at 3:08 p.m.

Action: _____

Motion: _____

B.Kuebler__ D.Engle__ P.Kaiser__S. Rungren__ G.Shephard___ E.Ayala___ L.Rose___

UPPER VENTURA RIVER GROUNDWATER AGENCY Item No. 6(c)

DATE: October 6, 2021

TO: Board of Directors

FROM: Carrie Troup C.P.A., Treasurer

SUBJECT: Approve Financial Report for September 2021

August 2021 UVRGA Balance			$	255,197.46
September 2021 Activity:				
Revenues:				
			$	-
September Expenditures Paid:				
			$	-
Checks Pending Signature:				
2246	Bondy Groundwater Consulting, Inc	September services	$	6,763.33
2247	Olivarez Madruga Lemieux O'Neill LLP	August services	$	1,206.40
2248	Carrie Troup, C.P.A.	September services	$	1,457.42
2249	Rincon Consultants Inc	August - Sept. services	$	795.00
2250	Intera Incorporated	September services	$	410.00
Total Expenditures Paid & To Be Paid			$	10,632.15
September 2021 UVRGA Ending Balance:			**$**	**244,565.31**

Action: _____

Motion: _____ Second:_____

B. Kuebler___ G. Shephard___ D. Engle___ P. Kaiser___ S. Rungren___ L. Rose___ E. Ayala___

The financial report omits substantially all disclosures required by accounting principles generally accepted in the United States of America; no assurance is provided on them.

UPPER VENTURA RIVER GROUNDWATER AGENCY Item No. 6(d)

DATE: October 14, 2021

TO: Board of Directors

FROM: Director Kuebler

SUBJECT: Approve Rate Increase for Bondy Groundwater Consulting, Inc.

SUMMARY
Please see Attachment A for proposed rate increase for Bondy Groundwater Consulting, Inc.

RECOMMENDED ACTIONS
Approve the rate increase proposed by Bondy Groundwater Consulting, Inc.

BACKGROUND
Bondy Groundwater Consulting Inc.'s contact was approved by the Board on August 24, 2017.

FISCAL SUMMARY
The agency budget was developed using the proposed rates.

ATTACHMENTS

A. Letter from Bondy Groundwater Consulting, Inc.

Action: _____

Motion:_____ Second: _____

B. Kuebler___ D. Engle___ P. Kaiser___ S. Rungren___ G. Shephard___ E. Ayala___ L. Rose__

September 30, 2021

Director Bruce Kuebler
Director Pete Kaiser
Upper Ventura River Groundwater Agency
202 W. El Roblar Dr.
Ojai, CA 93023

RE: Proposed Fee Increase

Dear Directors,

Bondy Groundwater Consulting, Inc. (BGC) thanks you for the ongoing opportunity to serve UVRGA. As you may be aware, the professional services agreement between BGC and UVRGA provides for annual review of billing rates for reasonable increases reflecting market trends. This review occurs on the contract anniversary each August. As you may recall, BGC has not raised its billing rates since September 1, 2019 (two years). You may also recall that BGC voluntarily decreased the billing rate for non-technical Executive Director activities by 23% at the beginning of the current fiscal year as a courtesy to UVRGA.

I am proposing a cost-of-living adjustment to the labor rates consistent with the Los Angeles area consumer price index for the 12-month period ending August 2021, which is 4.0%. The proposed increase raises the professional service rate from $195/hr to $203/hr (rounded to the nearest dollar). The rate for non-technical Executive Director activities would increase from $150/hr to $156/hr.

BGC has reviewed market conditions and notes that labor rates, particularly for groundwater professionals, have risen significantly in recent years due to the high demand created by the Sustainable Groundwater Management Act and drought conditions. The market rate for professionals with similar education, experience, and skills is approximately $240-$285 per hour, depending on project details. Considering this information, I believe the proposed rate increase is fair to both UVRGA and BGC. I also conclude that UVRGA will continue to receive professional services from BGC at an very competitive rate.

BGS's September invoice (No. 028-50) utilizes the proposed rates. Please contact me with any questions, comments, or concerns. Thank you for the opportunity to be of service.

Sincerely,

Bryan Bondy

Bryan Bondy, PG 7676, CHG 821
President
Bondy Groundwater Consulting, Inc.

UPPER VENTURA RIVER GROUNDWATER AGENCY Item No. 8

DATE: October 14, 2021

TO: Board of Directors

FROM: Executive Director

SUBJECT: Executive Director's Report

SUMMARY

The following are updates on Agency matters since the last Board meeting:

1. Administrative: ***Nothing to report.***

2. Financial:

    a. Groundwater Extraction Fees:

        i. ***The fifth round of semi-annual extraction fee invoices were due in mid-August. Two entities are unpaid, totaling $1,464.46.***

    b. GSP Grant:

        i. ***Grant Progress Report and Invoice No. 9 were submitted to DWR on August 23, 2021. Payment in the amount of $1,316.25 is anticipated following DWR approval and processing.***

3. Legal: ***No reportable activity.***

4. Sustainable Groundwater Management:

    a. Groundwater Sustainability Plan Development: ***Please see Item 10a.***

    b. Groundwater and Surface Water Monitoring:

        i. The property on which well 04N23W20A01S is located changed ownership in early 2021. Staff sent a request for continued access to the new property owner on February 24, 2021. ***The request is still pending.***

    c. Camino Cielo Crossing Surface Water Flow Gauge: ***Due to the lack of rainfall, gauge activation was deferred until Spring 2022.***

5. SWRCB / CDFW Instream Flow Enhancement Coordination: ***No reportable activity.***

6. Ventura River Watershed Instream Flow & Water Resilience Framework (VRIF): ***Meetings were recently scheduled for October 13, November 17, January 12, and February 3.***

7. Miscellaneous: N/A

RECOMMENDED ACTIONS
Receive an update from the Executive Director concerning miscellaneous matters and Agency correspondence. Provide feedback to staff.

BACKGROUND
Not applicable

FISCAL SUMMARY
Not applicable

ATTACHMENTS
None

Action: _____

Motion:_____ Second: _____

B. Kuebler___ D. Engle___ P. Kaiser___ S. Rungren___ G. Shephard___ E. Ayala___ L. Rose__

UPPER VENTURA RIVER GROUNDWATER AGENCY Item No. 9(a)

DATE: October 14, 2021

TO: Board of Directors

FROM: Executive Director and Treasurer

SUBJECT: Fiscal Year 2021/2022 First Quarter Budget Report

SUMMARY:

The fiscal year 2021/2022 first quarter financial reports are attached for Board review. The following is a description of key budget performance items:

- Revenue:
    - Extraction Fee Revenue was in-line with budget projections. The first of two semi-annual extraction fee billings was performed in July.
    - Grant Revenue was 2.69% of budget. However, it is noted that the budgeted grant revenue is incorrect. $60,897.06 that booked during prior fiscal years was accidentally included in the budget. The grant revenue budget should be $20,906.94 and the % of budget should be 10.52%. It is recommended that the budget be updated during the mid-year budget review. Note, this error does not affect cash flow.
- Expenses:
    - Accounting expenses are slightly ahead of budget due to initiation of the annual audit.

RECOMMENDED ACTION

It is recommended that the Board receive and file the first quarter budget report.

BACKGROUND

The Fiscal Year 2021/2022 budget was adopted on May 27, 2021.

FISCAL SUMMARY

Please see Summary and Attachments.

ATTACHMENTS

A. First Quarter Income Statement – Budget vs. Actual
B. First Quarter Statement of Cash Flows
C. First Quarter Balance Sheet

Action: _____

Motion:_____ Second: _____

B. Kuebler___ D. Engle___ P. Kaiser ___ S. Rungren___ G. Shephard___ E. Ayala___ L. Rose___

Upper Ventura River Groundwater Agency
Profit & Loss Budget vs. Actual
July through September 2021

	Jul - Sep 21	FY 22 Budget	$ Over Budget	% of Budget	Comments
Ordinary Income/Expense					
Income					
41000 · Grant Income					
41100 · DWR GSP Grant Income	2,199.75	81,804.00	-79,604.25	2.69%	$60,897.06 of budgeted amount is grant retainer that was already booked during prior fiscal years. This amount will be removed from the FY 22 budget during mid-year budget review. Does not affect cash flow. July-Sept. grant income subject to modification pending DWR review of grant invoice no. 10.
Total 41000 · Grant Income	2,199.75	81,804.00	-79,604.25	2.69%	
43000 · Groundwater Extraction Fee	171,808.87	343,618.00	-171,809.13	50.0%	
Total Income	174,008.62	425,422.00	-251,413.38	40.9%	
Expense					
55000 · Administrative Exp					
55005 · Rent Expense	22.58	0.00	22.58	100.0%	Non-refundable reservation fees for board mtg. room.
55011 · Computer Maintenance	0.00	500.00	-500.00	0.0%	
55015 · Postage & Shipping	341.64	100.00	241.64	341.64%	Costs for supplies and postage to mail letter to all well owners in UVRB re: draft GSP.
55020 · Office Supplies & Software	0.00	500.00	-500.00	0.0%	
55025 · Minor Equipment	0.00	250.00	-250.00	0.0%	
55035 · Advertising and Promotion	0.00	1,000.00	-1,000.00	0.0%	
55055 · Insurance Expense-SDRMA	0.00	4,500.00	-4,500.00	0.0%	
55060 · Memberships-CSDA	0.00	1,600.00	-1,600.00	0.0%	
Total 55000 · Administrative Exp	364.22	8,450.00	-8,085.78	4.31%	
58000 · Professional Fees					
58005 · Executive Director / GSP Manager	5,371.50	21,600.00	-16,228.50	24.87%	
58010 · Legal Fees	8,084.65	35,000.00	-26,915.35	23.1%	
58015 · Website	0.00	3,000.00	-3,000.00	0.0%	
58020 · Accounting	4,766.60	15,000.00	-10,233.40	31.78%	
58030 · Agency Administrator	0.00	0.00	0.00	0.0%	
58040 · Audit Expense	0.00	13,000.00	-13,000.00	0.0%	
58050 · Other Professional Services	76,242.50	382,536.00	-306,293.50	19.93%	Budget includes costs to finalize & submit GSP ($211K) and GSP implementation activities ($172K). BondyGW technical work is now included in this budget line-item.
Total 58000 · Professional Fees	94,465.25	470,136.00	-375,670.75	20.09%	
Total Expense	94,829.47	478,586.00	-383,756.53	19.82%	
Net Ordinary Income	79,179.15	-53,164.00	132,343.15	-148.93%	
Net Income	**79,179.15**	**-53,164.00**	**132,343.15**	**-148.93%**	

Upper Ventura River Groundwater Agency
Statement of Cash Flows
July through September 2021

	Jul - Sep 21
OPERATING ACTIVITIES	
Net Income	79,089.40
Adjustments to reconcile Net Income to net cash provided by operations:	
11000 · Accounts Receivable	1,796.25
20000 · Accounts Payable	805.00
Net cash provided by Operating Activities	81,690.65
Net cash increase for period	81,690.65
Cash at beginning of period	162,874.66
Cash at end of period	**244,565.31**

Upper Ventura River Groundwater Agency
Balance Sheet
As of September 30, 2021

	Sep 30, 21
ASSETS	
Current Assets	
Checking/Savings	
Bank of the Sierra	244,565.31
Total Checking/Savings	244,565.31
Accounts Receivable	
11000 · Accounts Receivable	
11001 · DWR Grant Retention 10%	60,897.06
11000 · Accounts Receivable - Other	2,780.71
Total 11000 · Accounts Receivable	63,677.77
Total Accounts Receivable	63,677.77
Other Current Assets	
13000 · Prepaid Expenses	4,888.67
Total Other Current Assets	4,888.67
Total Current Assets	313,131.75
TOTAL ASSETS	**313,131.75**
LIABILITIES & EQUITY	
Liabilities	
Current Liabilities	
Accounts Payable	
20000 · Accounts Payable	2,110.00
Total Accounts Payable	2,110.00
Total Current Liabilities	2,110.00
Long Term Liabilities	
28000 · Notes Payable	
28100 · Member Agency Zero-Int Loan	90,000.00
Total 28000 · Notes Payable	90,000.00
Total Long Term Liabilities	90,000.00
Total Liabilities	92,110.00
Equity	
32000 · Retained Earnings	141,932.35
Net Income	79,089.40
Total Equity	221,021.75
TOTAL LIABILITIES & EQUITY	**313,131.75**

UPPER VENTURA RIVER GROUNDWATER AGENCY Item No. 10(a)

DATE: October 14, 2021

TO: Board of Directors

FROM: Executive Director

SUBJECT: Groundwater Sustainability Plan Update (Grant Category (d); Task 12: GSP Reviews and Approvals)

SUMMARY

Progress on the Groundwater Sustainability Plan (GSP) since the last update included the following:

1. **GSP**: The draft GSP comment period closed on October 8, 2021. The GSP Development team began their review of comments received.

2. **Outreach**: GSP Workshop 4B was held on September 23 during the special board meeting. The workshop slides were posted on the UVRGA website.

3. **GSP Development Schedule**: The updated GSP Development Schedule is provided in Attachment D.

4. **GSP Budget Status**: Please see Attachment B.

RECOMMENDED ACTIONS

Receive an update from the Executive Director concerning groundwater sustainability plan development and consider providing feedback.

BACKGROUND

Not applicable.

FISCAL SUMMARY

Not applicable.

ATTACHMENTS

A. GSP Development Schedule
B. GSP Development Budget Analysis

Action: _____

Motion:_____ Second: _____

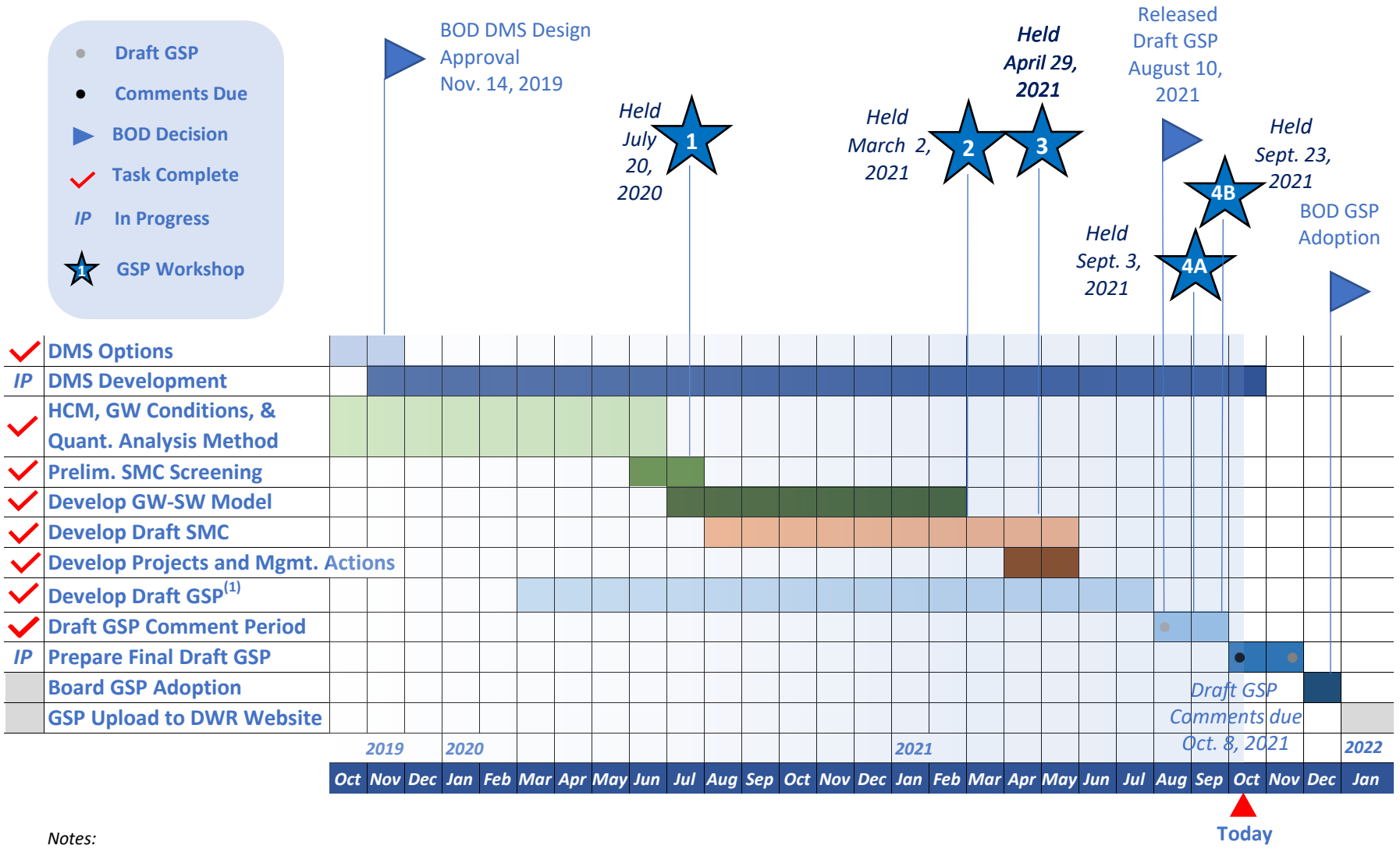
B. Kuebler___ D. Engle___ P. Kaiser___ S. Rungren___ G. Shephard___ E. Ayala___ L. Rose___

Item 10(a)

Attachment A

GSP Development Schedule

Upper Ventura River Groundwater Agency
GSP Development Schedule Updated October 8, 2021



Notes:

(1) GSP topics not listed above generally consist of background or supporting information and will be prepared concurrently with the above-listed tasks.

BOD = Board of Directors; DMS = Data Management System; HCM = Hydrogeologic Conceptual Model; GSA = Groundwater Sustainability Agency;

GSP = Groundwater Sustainability Plan; GW = Groundwater; SW = Surface Water

Item 10(a)

Attachment B

GSP Development Budget Analysis

GSP Development Budget Analysis

Item	Amount	Comment
Budget:		
FY 21/22 GSP Budget	$211,000	
Actual May/June GSP Expense Compared to Yearend Projection	($40,700)	
FY 21/22 Q1 GSP Expenses	($76,200)	
FY 21/22 GSP Budget Balance as of 9/30/21	$94,100	
Projected Expenses:		
Intera, Inc.	$40,980	$50,980 would be available, including contingency, if Item 10(c) contract increase is approved.
Rincon Consultants, Inc.	$15,000	$20,000 would be available, including contingency, if Item 10(d) contract increase is approved.
Bondy Groundwater	$22,500	Existing T&M contract.
Total	$78,480	
Contingency	$15,000	
Total w/ Contingency	$93,480	

UPPER VENTURA RIVER GROUNDWATER AGENCY Item No. 10(b)

DATE: October 14, 2021

TO: Board of Directors

FROM: Executive Director

SUBJECT: Draft Groundwater Sustainability Plan Comments (Grant Category (e); Task 12: GSP Reviews and Approvals)

SUMMARY

The Draft Groundwater Sustainability Plan (GSP) comment period ended on October 8. Comment letters were received from the following entities as of close of business on October 8:

- Edward Johnson (one question) (9/4/21)
- Bert Rapp, Ventura River Water District (mostly edits) (rec'd 9/24/21)
- California Department of Fish & Wildlife (rec'd 10/5/21)
- NGO Consortium (rec'd 10/7/21)
- Ventura County Public Works Agency (rec'd 10/8/21)
- Surfrider Foundation (rec'd 10/8/21)
- City of Ventura (rec'd 10/8/21)
- Santa Barbara Channelkeeper (rec'd 10/8/21)

In addition, two entities pre-arranged for late delivery of comments:

- Meiners Oaks Water District (pre-arranged for late delivery on 10/11/21)
- Casitas MWD (pre-arranged for late delivery on 10/14/21)

The comments are posted on the Agency website at: https://uvrgroundwater.org/sgma-overview/ and are included in Attachment A.

The GSP Development Team is reviewing the comments and will provide a verbal report during the Board meeting. It is requested that the Board members review the comment letters and identify any issues you would like to discuss with Staff and the full Board on October 14. A special Board meeting on October 28 can be utilized to continue discussion, if necessary.

RECOMMENDED ACTIONS

Receive a summary of Draft GSP comments and consider providing feedback to staff.

BACKGROUND

Not applicable.

FISCAL SUMMARY
Not applicable.

ATTACHMENTS
A. Draft GSP Comments

Action: _____

Motion:_____ Second: _____

B. Kuebler___ D. Engle___ P. Kaiser___ S. Rungren___ G. Shephard___ E. Ayala___ L. Rose___

Item 10(b)

Attachment A

Draft GSP Comments

Bryan Bondy

From: Upper Ventura River Groundwater Agency <sward@uvrgroundwater.org>
Sent: Saturday, September 4, 2021 6:15 PM
To: Summer Ward
Subject: GSP Comment/Question

Categories: Red Category

GSP Comment/Question Form

Last Name:	Johnson
First Name:	Edward
Email Address:	[redacted]
Confirm Email Address:	[redacted]
Phone:	
Mailing Address:	[redacted]
GSP Section for Comment/Question:	1.0 Introduction
GSP Comment/Question:	What are the short and long-term mitigation measures that will be applied, if any, to de minimus use(<2 Acre-Feet/Year) domestic well owners if/when a maximum or minimum impact standard is reached in the relevant aquifer zone(Santa Ana, Miramonte/Meiners Oaks, Casitas Springs, etc)
Would you like to join the UVRGA Official Interested Parties List?:	Yes
Beneficial Uses:	

This email was built and sent using Visual Form Builder.

Generally, groundwater flow is from a northern to southern direction, following the surface drainage and the slight but relatively consistent gradient of the basin (SWRCB, 1956; VRWC, 2015) (Figure ES-08). Groundwater levels in the UVRGB fluctuate seasonally with the highest water levels occurring in the winter to early spring and the lowest levels occurring in fall or winter (Figure ES-09). Groundwater levels do not display significant long-term temporal trends. Water level declines are seen during the droughts of the late 1980s and the 2010s (when historical lows were observed); however, the water levels rebound rapidly in the wet years that follow with complete basin refilling. The changes in groundwater storage from rapid cyclical draining and filling of most of the total basin storage is in stark contrast with most Basins in the State, in which the range of storage change is small compared to the total basin storage and storage changes are more gradual over time.

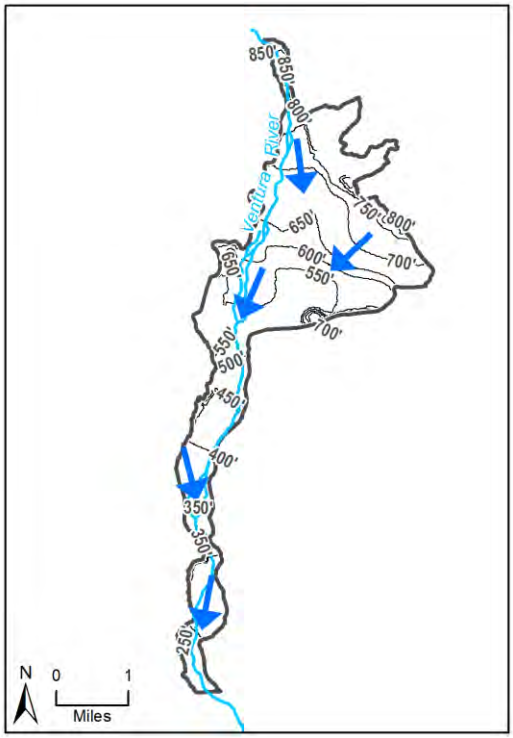


Figure ES-08: Groundwater Elevation Contours and Flow Directions

In general, due to the unconfined conditions of the groundwater, the quality of the groundwater in the UVRGB is heavily influenced by (a) the quality and quantity of surface water runoff that recharges the groundwater basin, (b) leaching of nutrients from fertilizers and manure, and (c) percolation of return flows from applied waters and septic system leachate. Nitrate is the primary groundwater quality concern in the UVRGB with some municipal wells exceeding the nitrate Maximum Contaminant Level in the Mira Monte area. Nitrate concentrations in groundwater within the gaining portions of the Ventura River (Casitas Springs Area and southern portion of the Santa Ana Area) are generally lower than the RWQCB Basin Plan water quality objective of 5 mg/L for surface water.

Possibly from Monterey formation as well?

Vent. Co. Environmental Health was testing nitrates to determine the source. Do they have results?

ES-5 Water Budget

The groundwater flow model was used to quantify water budgets for the historical, current, and projected conditions, including the evaluation of uncertainty due to climate change (Appendix H). As required by SGMA, potential effects of land use change and population growth were evaluated for the projected water budget. It was concluded that these factors are not anticipated to have a material impact on future water demand and the water budgets for the Basin because of land use policies and ordinances that greatly limit the potential for material growth in the Basin.

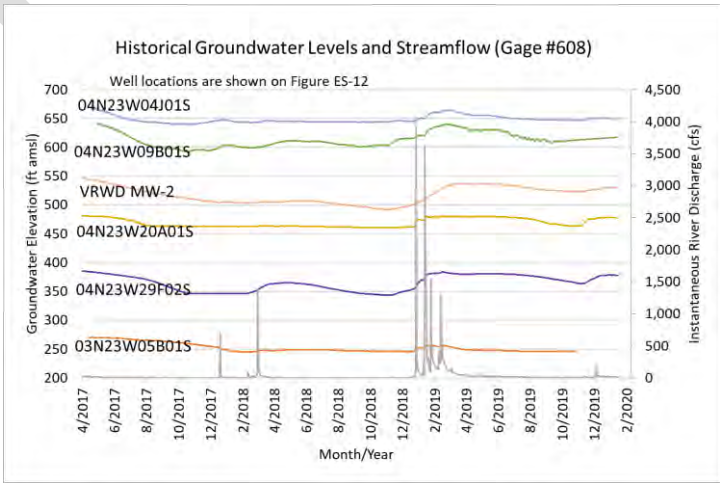


Figure ES-09: Groundwater Level Seasonal Fluctuations

SCM for ISW depletions were developed for the Foster Park Aquatic Habitat Area based on a 2012 field study that is considered to be the best available science for the Foster Park Aquatic Habitat Area (Hopkins 2013). This study established the potential for significant and unreasonable effects on steelhead when surface water flows decline below 2 cubic feet per second, as measured at Casitas Vistas Road Bridge (i.e., the southern basin boundary and location of USGS Stream Site 11118500). The minimum threshold is designed to prevent depletions of ISW that cause a degradation in habitat conditions that may be reasonably expected to lead to substantially stress steelhead and/or potential steelhead mortality (i.e., significant and unreasonable effects). The minimum threshold is ISW depletion that causes stream flow to decline to 2 or less cfs at Casitas Vistas Road bridge (USGS Stream Site 11118500, as shown in Table ES-04 below. The measurable objective is the same as the minimum threshold to minimize impacts on water supply for other beneficial users in the Basin.

Table ES-04: Minimum Thresholds and Measurable Objectives for ISW Depletion, Foster Park Habitat Area

Undepleted Flow (without groundwater pumping – derived from groundwater model)	Depletion Minimum Threshold and Measurable Objective	Goal
> 2 cfs	Undepleted flow minus 2 cfs	The minimum threshold and measurable objective seek to prevent depletions of surface water flow caused by groundwater pumping that would cause surface water flow to be less than 2 cfs when surface water flow would not be less than 2 cfs without pumping
< = 2 cfs	0 cfs	The minimum threshold and measurable objective seek to prevent depletions of surface water flow caused by groundwater pumping when surface water would already be 2 cfs or less without groundwater pumping

Significant and unreasonable effects on recreational beneficial uses are considered to be prevented if significant and unreasonable effects on GDEs are prevented because the presence of GDEs is a major reason for the recreational use of trails, preserves, etc. in the Basin.

ES-7 Monitoring Networks

The GSP Emergency Regulations require monitoring networks be developed to collect data of sufficient quality, frequency, and spatial distribution to characterize groundwater and related surface water conditions in the Basin, evaluate changing conditions that occur during implementation of the GSP, and for implementation of the SMC for the Basin. Monitoring networks should accomplish the following (§354.34(b)):

- **Demonstrate progress toward achieving measurable objectives described in the GSP**
- **Monitor impacts to the beneficial uses and users of groundwater**
- **Monitor changes in groundwater conditions relative to measurable objectives and minimum thresholds**
- **Quantify annual changes in water budget components**

Biological monitoring in the Foster Park Aquatic Habitat Area will be performed to assess performance of the ISW depletions sustainable management criteria. A work plan will be developed during fiscal year 2022 to layout the proposed monitoring activities. It is anticipated that the work plan will include a greater degree of monitoring activities leading up to the first five-year GSP evaluation to establish baseline information, followed by a more limited and streamlined monitoring program for the remainder of the GSP implementation period. The initial four-year "baseline" program may include field monitoring activities (e.g., field observations of instream habitat and aquatic species) and continuous in-situ water quality monitoring. It is anticipated that collected data will be correlated with flow measurements made by USGS and the City of Ventura. The study plan will detail a specific schedule, monitoring parameters, field methods, and data interpretation/evaluation methodology. UVRGA will develop the monitoring plan in coordination with the Ventura Watershed Adjudication parties to seek consistent potential monitoring activities that may be envisioned post-judgment. This monitoring may eventually be performed by others as part of implementation of a judgment to the adjudication. A report will be prepared at the conclusion of the baseline monitoring phase to inform the first five-year GSP evaluation.

Pursuant to section §352.6, monitoring data will be stored in UVRGA's Data Management System (DMS). Data will be transmitted to DWR with the GSP, annual reports, and GSP updates electronically on the forms provided by DWR.

ES-8 Projects and Management Actions

Seawater intrusion and land subsidence are not applicable sustainability indicators for the Basin. Therefore, projects or management actions are not needed to address these sustainability indicators.

Historical data and the modeling projections indicate that the measurable objectives for the chronic lowering of groundwater levels, reduction of groundwater storage, and degraded water quality sustainability indicators will be met without the need projects or management actions. However, there is uncertainty concerning effects on domestic wells in the Basin. Therefore, a management action is included to collect more information about domestic wells. UVRGA will perform additional outreach to and survey domestic well owners in the Basin. The survey will be designed to collect information from the well owners about well status (active, backup, abandoned, destroyed), water uses (drinking water, fire protection, landscape, agricultural, etc.), historical well performance, groundwater levels, groundwater quality, well maintenance issues, and whether alternative sources of water are available. This information will be used to further evaluate potential effects on domestic wells relative to the groundwater level minimum thresholds. The first 5-year GSP evaluation will consider this information and the groundwater level minimum thresholds will be updated, if appropriate.

Projects and/or management actions are needed to meet the measurable objective for depletions of interconnected surface water. Two separate actions are needed to address direct and indirect depletions that could potentially cause undesirable results.

Direct ISW depletion by City of Ventura water extraction facilities in the Foster Park Aquatic Habitat Area will be addressed via the "Foster Park Protocols." The Foster Park Protocols consist of operational protocols for the City of Ventura extraction facilities in the Foster Park Aquatic Habitat Area that will address direct depletion of ISW. The Foster Park Protocols involve monitoring river gages and shutting down the City's extraction facilities when certain surface water flow thresholds are reached. The Foster Park Protocols are implemented pursuant to a settlement agreement between the City of Ventura and Santa Barbara Channelkeeper regarding the action titled Santa Barbara Channelkeeper v. State Water

Definitions of Key SGMA Terms

California Water Code

Sec. 10721

Unless the context otherwise requires, the following definitions govern the construction of this part:

(a) Adjudication action means an action filed in the superior or federal district court to determine the rights to extract groundwater from a basin or store water within a basin, including, but not limited to, actions to quiet title respecting rights to extract or store groundwater or an action brought to impose a physical solution on a basin.

(b) Basin means a groundwater basin or subbasin identified and defined in Bulletin 118 or as modified pursuant to Chapter 3 (commencing with Section 10722).

(c) Bulletin 118 means the department's report entitled California's Groundwater: Bulletin 118 updated in 2003, as it may be subsequently updated or revised in accordance with Section 12924.

(d) Coordination agreement means a legal agreement adopted between two or more groundwater sustainability agencies that provides the basis for coordinating multiple agencies or groundwater sustainability plans within a basin pursuant to this part.

(e) De minimis extractor means a person who extracts, for domestic purposes, two acrefeet or less per year.

(f) Governing body means the legislative body of a groundwater sustainability agency.

(g) Groundwater means water beneath the surface of the earth within the zone below the water table in which the soil is completely saturated with water, but does not include water that flows in known and definite channels.

(h) Groundwater extraction facility means a device or method for extracting groundwater from within a basin.

(i) Groundwater recharge or recharge means the augmentation of groundwater, by natural or artificial means.

(j) Groundwater sustainability agency means one or more local agencies that implement the provisions of this part. For purposes of imposing fees pursuant to Chapter 8 (commencing with Section 10730) or taking action to enforce a groundwater sustainability plan, groundwater sustainability agency also means each local agency comprising the groundwater sustainability agency if the plan authorizes separate agency action.

(k) Groundwater sustainability plan or plan means a plan of a groundwater sustainability agency proposed or adopted pursuant to this part.

(l) Groundwater sustainability program means a coordinated and ongoing activity undertaken to benefit a basin, pursuant to a groundwater sustainability plan.

(m) In-lieu use means the use of surface water by persons that could otherwise extract groundwater in order to leave groundwater in the basin.

(n) Local agency means a local public agency that has water supply, water management, or land use responsibilities within a groundwater basin.

5,700

Ventura River Water District (VRWD)

VRWD is a small water district that supplies water to the area stretching from the southwestern edge of the City of Ojai down to the northern half of Oak View, and in the eastern half of Casitas Springs. VRWD serves a population of approximately 6,000 via approximately 2,150 service connections. Groundwater is VRWD's primary water supply source. VRWD also purchases surface water from CMWD, both as a backup source and as a regular source for customers in certain portions of the VRWD service area. VRWD was established in 1957 as a special district under State law, which gives authorization to exercise water supply and water management authority within its jurisdiction.

2.2 Description of Plan Area [§354.8]

This section provides a description of the plan area, including a summary of jurisdictional areas and existing water-resources monitoring and management programs in the Basin.

2.2.1 Summary of Jurisdictional Areas and Other Features [§354.8(a)(1),(a)(2),(a)(3),(a)(4),(a)(5), and (b)]

§354.8 Description of Plan Area. *Each Plan shall include a description of the geographic areas covered, including the following information:*

(a) One or more maps of the basin that depict the following, as applicable:

(1) The area covered by the Plan, delineating areas managed by the Agency as an exclusive Agency and any areas for which the Agency is not an exclusive Agency, and the name and location of any adjacent basins.

(2) Adjudicated areas, other Agencies within the basin, and areas covered by an Alternative.

(3) Jurisdictional boundaries of federal or state land (including the identity of the agency with jurisdiction over that land), tribal land, cities, counties, agencies with water management responsibilities, and areas covered by relevant general plans.

(4) Existing land use designations and the identification of water use sector and water source type.

(5) The density of wells per square mile, by dasymetric or similar mapping techniques, showing the general distribution of agricultural, industrial, and domestic water supply wells in the basin, including de minimis extractors, and the location and extent of communities dependent upon groundwater, utilizing data provided by the Department, as specified in Section 353.2, or the best available information.

(b) A written description of the Plan area, including a summary of the jurisdictional areas and other features depicted on the map.

The geographic area covered by this GSP and managed by UVRGA includes the entire UVRGB (Department of Water Resources Basin 4-3.01) as defined by DWR Bulletin No. 118, "California's Groundwater," Update 2020 (DWR, 2020). The extent of UVRGB is shown on Figure 2.1-01. The Basin is located in the central portion of the Ventura River Watershed along the Ventura River near the communities of Casitas Springs, Mira Monte, and Meiners Oaks. The UVRGB is bordered by the Ojai and Lower Ventura River Groundwater Basins to the east and south, respectively (DWR Basin Nos. 4-002 and 4-003.02). No groundwater basins exist immediately west and north of UVRGB. The Ojai Basin is managed by the Ojai Basin Groundwater Management Agency (OBGMA). OBGMA is developing a GSP for the Ojai Basin. The Lower Ventura River Basin is a very low priority basin and is therefore not subject SGMA requirements.

Jurisdictional boundaries of various agencies located within UVRGA are depicted on Figure 2.1-02 and include:

Ventura River Watershed Adjudication (titled Santa Barbara Channelkeeper v. State Water Resources Control Board and the City of San Buenaventura (Los Angeles County Superior Court, Case No. 19STCP01176)

In 2014, Santa Barbara Channelkeeper filed a lawsuit against the City of Ventura and the State of California related to the balance between human and non-human use of the Watershed (Appendix D). Specifically, Channelkeeper asserted that the City's use of water from the Foster Park area (located within the UVRGB) violated the Reasonable Use Doctrine because the City's municipal use was harming the Southern California Steelhead. Ultimately, the Court of Appeal held that the reasonableness of the City's use had to be measured against all other users of the Watershed, and therefore allowed the City to bring into the lawsuit everyone currently extracting or who could extract water from the system in the future (cross-complaint).

In 2019, the City of Ventura entered into a settlement agreement with Santa Barbara Channelkeeper that includes certain flow and non-flow measures. The settlement agreement was executed in September 2019 and amended in August 2020. The flow measures are known as the "Foster Park Protocols" and involve monitoring river gages and shutting down the City's extraction facilities when certain surface water flow thresholds are reached. The Foster Park Protocols are relevant to this GSP because they contribute to addressing one of the six SGMA sustainability indicators: depletions of interconnected surface water. The Foster Park Protocols address direct depletion of the Ventura River by the City of Ventura's Foster Park water extraction facilities.

In 2020, certain adjudication parties developed a proposed physical solution to settle the cross-complaint. The proposed physical solution seeks to address the habitat conditions for the Steelhead population in order to return the habitat to good condition, and then maintain it. The Foster Park Protocols are a component of the proposed physical solution. The proposed physical solution has not yet been considered by the Court.

A future judgment will likely include aspects relevant to implementation of the GSP. There is no definitive timeline for a judgment. UVRGA will monitor, and to the extent possible, coordinate with the adjudication process during GSP implementation. Note that UVRGA is not a party to the lawsuit.

2.2.2.3 Conjunctive Use Programs [§354.8(e)]

§354.8 Description of Plan Area. *Each Plan shall include a description of the geographic areas covered, including the following information:*
(e) A description of conjunctive use programs in the basin.

Conjunctive use is a term used to describe the coordinated use of both surface water and groundwater resources. There are no formal conjunctive use programs in the Basin, although it is noted that MOWD and VRWD ~~and~~ operate their wells conjunctively with Lake Casitas surface water supplies. MOWD and VRWD rely principally on groundwater from UVRGB and increasingly utilize surface water from CMWD during dry periods when well yields decline. Variable groundwater pumping rates for MOWD and VRWD were incorporated into the water budgets for this GSP.

Groundwater is MOWD's primary water supply source. Water from CMWD is used as backup, such as during extended drought periods. MOWD was formed in 1948 as a special district under State law, which authorizes it to exercise water supply and water management authority within its jurisdiction. MOWD is a signatory member to the JPA Agreement forming the Agency and is represented on the Agency's Board of Directors.

- Ventura River Water District (VRWD) is a small water district that supplies water to the area stretching from the southwestern edge of the City of Ojai down to the northern half of Oak View, and in the eastern half of Casitas Springs. VRWD serves a population of approximately 6,000 via approximately 2,150 service connections. Groundwater is VRWD's primary water supply source. CMWD water is also used, both as a backup source and as a regular source for customers in some locations. VRWD is a signatory member to the JPA Agreement forming the Agency and is represented on the Agency's Board of Directors.
- Ventura Water (City of San Buenaventura) does not operate a public water system within the Basin boundary but operates wells in the southern portion of the Basin that supply its public water system in the City, which is located approximately 4 miles south of the Basin. The City of San Buenaventura is a signatory member to the JPA Agreement forming the Agency and is represented on the Agency's Board of Directors.

- **Local Land Use Planning Agencies:**
  - The County of Ventura has land use planning authority on unincorporated land overlying the Basin (Figure 2.2-01). The County is a signatory member to the UVRGA JPA Agreement and is represented on the Agency's Board of Directors.
  - The City of Ojai has land use planning authority over a small area (0.75 square miles) in the eastern corner the Basin (Figure 2.2-01). Implementation of the City of Ojai General Plan is expected to have a negligible effect on GSP implementation in the UVRGB because of the limited area within the Basin and because the overlap area and is not considered a primary groundwater recharge area due to the presence of shallow bedrock of the Sespe Formation or Ojai Conglomerate (Figure 3.1-25).
  - The City of San Buenaventura has land use planning authority in a small area (0.13 square miles) of land owned by the City in the southern part of the Basin (Figure 2.2-01). The City is a signatory member to the UVRGA JPA Agreement and is represented on the Agency's Board of Directors.
- **Environmental Users of Groundwater:** Riparian and aquatic habitats in the Basin also rely on groundwater and are referred to as groundwater dependent ecosystems (GDEs) in SGMA.

Two riparian GDE units were identified in the Basin: (1) South Santa Ana GDE Unit and (2) Foster Park GDE Unit. The riparian GDE units consist primarily of mixed hardwood and wetland habitats that are federally designated critical habitat for multiple species and support a number of other special status species.

Five Aquatic GDE areas were identified in areas of the Basin, although only two were determined to be susceptible to potential significant and unreasonable effect related to depletion of interconnected surface water by groundwater extractions. These two areas are the (1) Confluence Aquatic Habitat Area and (2) Foster Park Aquatic Habitat Area. The Confluence Habitat Area occurs in the southern portion of the Basin near the confluence of the Ventura River with San Antonio Creek. This habitat area is characterized by upwelling groundwater and

surface water are intimately interconnected in the Basin. The groundwater budget and flow conditions in the alluvial aquifer are dominated by interaction with the Ventura River, which provides most of the recharge (inflows) to the Basin as stream flow percolation in the northern portion of the Basin and receives most of the discharge (outflows) from the Basin as down valley groundwater flow that feeds springs (i.e., groundwater discharge) in the Ventura River in the southern portion of the Basin (hence, the name of the community of Casitas *Springs*). Groundwater extractions are secondary to groundwater discharge to the Ventura River except during dry periods when the spring flows decrease substantially due to low Ventura River stream flow entering the northern end of the Basin.

The thinness of the aquifer, high permeability, large north-south topographic gradient, and intimate interconnection between groundwater and surface water causes UVRGB to behave materially different than most groundwater basins in the State. The Basin groundwater levels and storage trends closely mimic surface water flows, with groundwater levels and storage exhibiting large and rapid fluctuations relative to the total saturated thickness and total groundwater storage, more so than perhaps any other groundwater basin in the State. During non-drought periods, the Basin fills up on the order of two out of every three years and significant surface water base flow is sustained by rising groundwater in the southern part of the Basin. During droughts, much of the Basin groundwater storage drains out naturally to the Ventura River within the first few years causing a significant decrease in Ventura River base flow in the lower part of the Basin.

To facilitate discussion within the GSP, the Basin has been subdivided into six hydrogeologic areas based on the hydrogeology, stratigraphy, and primary recharge and discharge processes (Figure 3.1-01 and discussed in detail in Sections 3.1.1 and 3.1.3). For ease of discussion, the text will refer to these areas in the following sections. Four of the hydrogeologic areas– the Kennedy, Robles, Santa Ana and Casitas Springs Areas – run north to south along the Ventura River corridor and were delineated primarily based on groundwater-surface water interaction characteristics. The Mira Monte/Meiners Oaks Area located east of the Ventura River underlain by older alluvium that generally above the water table; many wells in this area are believed to extract groundwater from bedrock formations such as the Ojai Conglomerate that do not have significant hydraulic connectivity with the Ventura River. The groundwater-bearing formations in the Mira Monte/Meiners Oaks Area have much lower permeability compared to the younger deposits along the Ventura River. The Terraces Area west of the Ventura River consists of alluvial deposits that are elevated above and separated from the Ventura River floodplain by bedrock; therefore, groundwater in the Terraces Area has very limited hydraulic connection with the rest of the Basin.

3.1.1 Regional Hydrology

3.1.1.1 Precipitation, Topography and Watershed Boundary [§354.14(d)(1)]

§354.14 Hydrogeological Conceptual Model.
(d) Physical characteristics of the basin shall be represented on one or more maps that depict the following:
(1) Topographic information derived from the U.S. Geological Survey or another reliable source.

The UVRGB is located within the Ventura River Watershed and lies under and adjacent to the northern part of the Ventura River. The Ventura River Watershed encompasses about 227 miles in northwest Ventura County with a small portion of the watershed in the southeastern edge of Santa Barbara County (Figure 3.1-02). The Ventura River runs through the center of the watershed, draining numerous

water storage capacity to less than 500 AF (USBR, 2000; Entrix, 2001). The removal of the dam was authorized in 1998, but removal is still pending.

Casitas Reservoir is the largest reservoir within the watershed. The Casitas Dam was constructed in 1959 by the United States Bureau of Reclamation (USBR), providing a maximum storage capacity of ~~254,000~~ AF (Entrix, 2001) with a long-term average demand of 17,500 AF (VRWC, 2015). Water is diverted from the Ventura River via the Robles Diversion and delivered to the reservoir through the Robles Diversion Canal, a concrete-lined 5.4-mile canal (EDAW, 1978). The diversion works consist of a cutoff wall, forebay basin, spillway, fish passage structures, and diversion canal to Casitas Reservoir (CMWD, 2005). Typically, a little less than half of the reservoir supply comes from the Ventura River. Runoff from Coyote and Santa Ana sub-watersheds provides the remainder of its supply (Entrix, 2001). Diversions from Ventura River to Casitas Reservoir are typically from January to March when the river flows are sufficient to meet certain operational regulatory requirements designed to address upstream steelhead migration impediments between the diversion works and just north of the Santa Ana Boulevard bridge. The diversion system has a nominal capacity of 500 cfs (CMWD, 2021). Environmental considerations and physical operating conditions govern operation of the diversion structure under different hydrologic situations. The Biological Opinion (BO) from the National Marine Fisheries Service (adopted in 2004) modified previous requirements for passage of flows for fish habitat. This was further modified during the recent drought to allow increased diversions to the Lake when storage levels in the Lake are low (CMWD, 2021). Within the Migration Period (Jan. 1st to June 30th) outlined in the BO, available flows above 30 cfs up to 500 cfs can be diverted down the Robles Canal, with flows at or below 30 cfs, bypassing the diversion structure and flowing downstream. Additional diversion rules are applied to maintain flows during and after stormflow events within the fish migration season. Outside of the migration period (July 1 to December 31), available flows over 20 cfs up to 500 cfs can be diverted down the Robles Canal.

In addition to the Robles Diversion, there is a privately owned surface water diversion located north of the Robles Diversion (Figure 3.1-08) used for agricultural purposes.

Water from the Lake Casitas Reservoir is the primary water supply for many users in the Basin. Lake Casitas' water is also blended with poorer quality groundwater to improve water quality and extend supplies (VRWC, 2015). The reservoir is carefully managed to maintain supplies during a dry period equivalent to the historical 21-year dry period from 1945 to 1965, the longest dry period on record. While the lake has not yet been put to a "21-year dry period test," it has been a reliable source of water in many multi-year dry periods when numerous wells were dry and there was little flow in the Ventura River (VRWC, 2015).

The Foster Park Subsurface Dam, completed in 1908 by the Ventura County Light and Power Company, is a partial dam extending 973 ft across the Ventura River at a depth ranging between 5 ft to 65 ft with a 300-ft gap on the east side (URS, 2003; USACE, 2004). This partial dam is located just upstream of the boundary between the Upper and Lower Ventura River Groundwater basins. The City of Ventura formerly captured surface flows via a surface diversion. However, this facility has been closed since 2000, due to natural channeling of the Ventura River that has bypassed the structure (Entrix, 2001; VRWC, 2015). The City of Ventura currently extracts water via a subsurface collector consisting of two perforated pipes installed in the subsurface on the upstream side of the dam and several nearby wells (i.e., the "Nye Wells").

3.1.1.3 Imported Water [§354.14(d)(6)]

of the basin (e.g., published geologic maps such as Dibblee, 1987, 1988; and the USGS Earthquake Hazards Program (USGS, 2020). Faulting can offset bedrock and older (deeper) alluvium deposits, potentially form subsurface barriers to water flow, and force groundwater to daylight to ground surface and discharge into surface water channels.

Within this regional setting, the UVRGB extends from just downstream of the confluence of the Matilija Creek and the North Fork Matilija Creek (Ventura River Mile 16.2) to Foster Park (Ventura River Mile 5.9). In the north and west, the UVRGB is bounded by tertiary bedrock outcrops (Figure 3.1-10a). The boundary between the UVRGB and adjacent Ojai Basin is approximately situated between Camp Comfort to the south and Arbolada to the north. South of the Ojai Basin boundary, the UVRGB is bounded by the Arroyo Parida-Santa Ana Fault and bedrock outcrops. The UVRGB is bounded by the Lower Ventura River Groundwater Basin to the south.

Figures 3.1-10a and 3.1-10b show the surface geology and major fault systems within and surrounding the UVRGB (USGS, 2006, 2015). The UVRGB is filled with Quaternary-aged alluvium of largely fluvial origin, with sediment derived from the weathering and erosion of the surrounding mountains. These deposits consist of older late Pleistocene-aged, dissected sediments and younger Holocene-aged sediments. Active sedimentation occurs as stream-channel deposits of sand and gravel, such as along Ventura River and its tributary creeks; alluvial fan deposits of gravel; and floodplain alluvium of clay, silt, sand, and gravel (e.g., Dibblee, 1987, 1988).

The UVRGB extends as a north-south trending narrow and shallow erosional trough, filled with young alluvium deposited by the Ventura River between Camino Cielo Road in the north and the United States Geological Survey (USGS) gauging station at Casitas Vista Bridge in the south. The young alluvial deposits are highly permeable (hydraulic conductivity as high as approximately 3,500 feet per day) and have relatively high storage coefficients (specific yield as high as approximately 14%). North of approximately Highway 150, the young alluvial deposits are typically underlain by older alluvium that has significantly lower permeability and water storage capabilities. South of approximately Highway 150 the Ventura River ~~may~~ has eroded completely through the older alluvium deposits and the young alluvial deposits are in direct contact with the bedrock (as evidenced from the bedrock outcrops along the edges of the river floodplain).

The eastern portion of the UVRGB extends east from the Ventura River encompassing the communities of Meiners Oaks and Mira Monte and is underlain by older alluvium deposits that are generally above the water table and various bedrock formations which have limited hydraulic connectivity with the Ventura River. Many wells in the Mira Monte – Meiners Oaks Area may be screened in the Ojai Conglomerate, a bedrock formation that has low permeability and water storage capability (for example, the hydraulic conductivity at the new VRWD Well No. 6 was estimated to be ~3 ft/day compared to hydraulic conductivity along the Ventura River of >1,000 ft/day). The "Terrace" areas west of the Ventura River is also underlain by older alluvium that is uplifted above the regional water table and, hence, is largely hydraulically disconnected from the principal aquifer of the Basin. Wells in the Terrace Area appear to generally draw water from the underlying Sespe Formation.

The relatively young (Holocene- to late Pleistocene-aged) surficial sediments unconformably overlie older Pleistocene- and Tertiary-aged consolidated sedimentary rocks (discussed in more detail in Section 3.1.3.1 and shown on cross-sections in Figures 3.1-16 through 3.1-18). The older bedrock units consist of sedimentary rocks of dominantly marine deposition, which are exposed to ground surface in the mountainous regions that surround the basins (e.g., Dibblee, 1987; USGS, 2006, 2015).

indicating that these samples may have been collected from wells that produce groundwater from a bedrock formation. Groundwater from the well in the Terraces Area has a sodium-chloride type (and total dissolved solids [TDS] >5,000 milligrams per liter [mg/L]), which is representative of older groundwater. Given the relatively unique water type of this well in the Terraces Area, the geochemistry suggests this area has a low degree of hydraulically connectivity with the remainder of the UVRGB.

Groundwater Quality

The UVRGB has historically maintained generally good water quality. The Regional Water Quality Control Board's Basin Plan also establishes groundwater quality "objectives" as "the allowable limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area" (RWQCB-LA, 2019). The groundwater quality objectives are shown in the Table 3.1-02.

Figures 3.1-27 and 3.1-28 show median concentrations for nitrate (as N) calculated over data available from 1975 to 2019 (long-term) and data available from 2008 to 2019 (recent), respectively. Chemographs for select wells with good temporal data coverage are shown for each hydrogeologic area. Wells with median nitrate higher than the water quality objective (10 mg/L as N) are shown in red and labeled. Nitrate concentrations in the Mira Monte/Meiners Oaks Area tend to be the highest, with several wells showing historical and recent nitrates above the water quality objective. Some wells in the Robles Area also show elevated nitrate levels, though these have typically been below the water quality objective. Some of these wells (e.g., 04N23W16C08S) show higher nitrate concentrations during the recent drought (2012-2016), when there was less recharge from fresher quality surface water. Elevated nitrate concentrations in groundwater have been found in areas of Tico Road and Mira Monte, as well as the northern portion of the Robles Area, where several sources including equestrian facilities, fertilizing operations, and septic systems may contribute to the nutrient loading in these areas (DBSA, 2010b). Nitrate concentrations in the Kennedy, Santa Ana, and Casitas Springs areas tend to be low and well below the water quality objective. Note that there is sparse data available in recent years in the Santa Ana Area.

Previous investigations have reported that TDS concentrations from public supply wells within the Basin range from about from 500 to 1240 mg/L, with an average of about 700 mg/L (DWR, 2003). Figures 3.1-29 and 3.1-30 show median concentrations for TDS calculated for the long-term (s-2019) and recent (2008-2019) period of record, respectively. A few wells have median TDS concentrations above the water quality objective, with several wells showing concentrations just below to the water quality objective with a few exceedances in the past. TDS concentrations appear to increase during extended dry periods when there is less recharge of fresher quality surface water.

Figures 3.1-31 and 3.1-32 show median concentrations for sulfate calculated for the long-term (1969-2019) and recent (2008-2019) period of record, respectively. Most wells were below the water quality objective, though several wells had concentrations just below the water quality objective. In general, the lowest observed concentrations are in the Mira Monte/Meiners Oaks Area. Since bedrock contributions are the primary source of sulfates in the water, the relatively lower concentrations in the Mira Monte/Meiners Oaks Area are indicative of older water that has not flowed over or through (fractured) bedrock.

Figures 3.1-33 and 3.1-34 show median concentrations for chloride calculated for the long-term (1975-2019) and recent (2008–2019) period of record, respectively. With one exception, chloride concentrations

Ventura River would improve the understanding and refine the modeling of streamflows and surface-water/groundwater interactions within the UVRGB.

Imported Water [§354.14(d)(6)]

No data gaps or significant uncertainties were identified.

Regional Geology and Structural Setting [§354.14(b)(1), (d)(2)]

No data gaps or significant uncertainties were identified.

Soil Characteristics [§354.14(d)(3)]

No data gaps or significant uncertainties were identified.

Vertical and Lateral Extent [§354.14(b)(2),(b)(3), (c)]

No significant data gaps or uncertainties were identified with respect to the lateral or vertical extent of the Basin.

Groundwater Flow Barriers [§354.14(b)(4)(C) and (c)]

No significant data gaps or uncertainties were identified with respect to lateral groundwater flow barriers in the Basin.

Formation Names and Hydraulic Properties [§354.14(b)(4)(A), (b)(4)(B)]

As noted in Section 3.1.3.1, a few aquifer tests have been reported in the literature. The best available information for aquifer and aquitard hydraulic properties in the UVRGB is from the calibrated numerical flow model (Appendix H). Use of model-derived hydraulic properties values is considered appropriate and, therefore, the lack of aquifer tests results is not considered a significant data gap or uncertainty at this time. Going forward, UVRGA will work with well owners in the Basin to conduct aquifer tests when such opportunities arise, such as when new or replacement wells are constructed. Additional wells and aquifer tests closer to the Ventura River will help refine the estimates of hydraulic properties within the Ventura River floodplain.

Groundwater Recharge and Discharge Areas [§354.14(d)(4)]

The primary locations of groundwater recharge and discharge are adequately identified in the GSP and are not a data gap. It is acknowledged that there is considerable variability in the extents of the recharge and discharge areas over time.

Water Quality [§354.14(b)(4)(D)]

The northern ⅔ of the Mira Monte/Meiners Oaks Area has sparse groundwater quality data. However, there is very little groundwater production in this Area (and much of the area has shallow our outcropping bedrock), so this is not considered to be a significant data gap or uncertainty in the HCM.

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GAVIN NEWSOM, Governor
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October 5, 2021

Via Electronic Mail and Online Submission

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Subject: Comments on the Upper Ventura River Groundwater Agency Draft Groundwater Sustainability Plan

Dear Mr. Bondy:

The California Department of Fish and Wildlife (CDFW) appreciates the opportunity to provide comments on the Upper Ventura River Groundwater Agency's (UVRGA) Draft Groundwater Sustainability Plan (Draft GSP) prepared pursuant to the Sustainable Groundwater Management Act (SGMA).

As trustee agency for the State's fish and wildlife resources, CDFW has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and the habitat necessary for biologically sustainable populations of such species. (Fish & Game Code §§ 711.7 and 1802.)

Development and implementation of groundwater sustainability plans (GSPs) under SGMA represents a new era of California groundwater management. CDFW has an interest in the sustainable management of groundwater, as many sensitive ecosystems, species, and public trust resources depend on groundwater and interconnected surface waters (ISWs), including ecosystems on CDFW-owned and managed lands within SGMA-regulated basins.

SGMA and its implementing regulations afford ecosystems and species specific statutory and regulatory consideration, including the following as pertinent to GSPs:

- GSPs must **consider impacts to groundwater dependent ecosystems** (GDEs) (Water Code § 10727.4(l); see also 23 CCR § 354.16(g));
- GSPs must consider the interests of all beneficial uses and users of groundwater, including environmental users of groundwater (Water Code § 10723.2) and GSPs must **identify and consider potential effects on all beneficial uses and users of groundwater** (23 CCR §§ 354.10(a), 354.26(b)(3), 354.28(b)(4), 354.34(b)(2), and 354.34(f)(3));
- GSPs must **establish sustainable management criteria that avoid undesirable results** within 20 years of the applicable statutory deadline, including **depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water** (23 CCR § 354.22 *et seq*. and Water

Code §§ 10721(x)(6) and 10727.2(b)) and describe monitoring networks that can identify adverse impacts to beneficial uses of interconnected surface waters (23 CCR § 354.34(c)(6)(D)); and

- GSPs must **account for groundwater extraction for all water use sectors,** including managed wetlands, managed recharge, and native vegetation (23 CCR §§ 351(al) and 354.18(b)(3)).

Furthermore, the Public Trust Doctrine imposes a related but distinct obligation to consider how groundwater management affects public trust resources, including navigable surface waters and fisheries. Groundwater hydrologically connected to surface waters is also subject to the Public Trust Doctrine to the extent that groundwater extractions or diversions affect or may affect public trust uses. (*Environmental Law Foundation v. State Water Resources Control Board* (2018), 26 Cal. App. 5th 844; *National Audubon Society v. Superior Court* (1983), 33 Cal. 3d 419.) The groundwater sustainability agency (GSA) has "an affirmative duty to take the public trust into account in the planning and allocation of water resources, and to protect public trust uses whenever feasible." (*National Audubon Society*, *supra*, 33 Cal. 3d at 446.) Accordingly, groundwater plans should consider potential impacts to and appropriate protections for ISWs and their tributaries, and ISWs that support fisheries, including the level of groundwater contribution to those waters.

Individually and collectively, the SGMA statutes and regulations, and Public Trust Doctrine considerations, necessitate that groundwater planning carefully consider and protect environmental beneficial uses and users of groundwater, including fish and wildlife and their habitats, GDEs, and ISWs.

COMMENT OVERVIEW

CDFW supports ecosystem preservation and enhancement in compliance with SGMA and its implementing regulations based on CDFW expertise and best available information and science. The Upper Ventura River Valley Basin (Basin) is rated as a medium priority basin under SGMA with 18.5 priority points. The Basin is adjacent to the Ojai Valley basin, which is rated as high priority with 22.5 priority points. The Basin is upstream of the Lower Ventura River Basin, which is rated as very low priority with zero priority points. These three basins are located within the larger Ventura River watershed. CDFW offers the following comments and recommendations below to assist the Upper Ventura River Groundwater Agency (UVRGA) in identifying and evaluating impacts on biological resources, including GDEs within the adjacent groundwater basins. Additional suggestions are included for UVRGA's consideration during revisions of the Draft GSP.

COMMENTS AND RECOMMENDATIONS

Comment #1: Data Gaps Exist in the Hydrologic Conceptual Model (HCM) (Introduction to Sustainable Management Criteria of the UVRGA-Draft GSP, Section 4.1, starting on p. 92)

Issue: CDFW appreciates the efforts the UVRGA undertook to analyze the Basin's geologic and hydrogeologic characteristics. CDFW also appreciates UVRGA's proposed plans to utilize the updated HCM to fill in the data gaps and deficiencies identified in the Draft GSP. However, CDFW's understanding is that the Draft GSP does not account for the wide range of hydraulic connectivity and transmissivity values across the Basin, nor does it set forth a reasonable pathway to address gaps in the data sets for these values. For example, the draft plans of the

HCM for Sections 3.1 and 3.2 stated that some of the aquifer information was obtained from available driller logs and short-term pumping tests, which are not likely to provide a complete and accurate data set for assessing aquifer parameters.

Recommendation #1: Accurate hydrogeologic modeling requires an accurate and complete data set. CDFW recommends that the GSA expand the area in which it is assessing hydraulic connectivity and transmissivity values to ensure the model contains representative conditions across the Basin. Furthermore, the GSA should consider well data with adequate construction and accurate aquifer testing information in its analysis to ensure accurate characterization of hydrogeologic conditions. The Draft GSP should also provide specific model details such as hydraulic connectivity and transmissivity values across the Basin to evaluate the accuracy of the results.

Comment #2: The GSP Does Not Consider All Riparian Groundwater Dependent Ecosystems in the Basin (Riparian Groundwater Dependent Ecosystems, Section 3.2.7.2.1 of the UVRGA-Draft GSP, starting on p. 66 and Appendix O)

Issue: Page 66 of the Draft GSP states, *"As summarized in the Riparian GDE Assessment Memo (Appendix O), the basin was subdivided into eight areas to screen and evaluate potential riparian GDEs."* The Draft GSP then provides a summary of the areas screened out in Appendix O. This portion of the Draft GSP contains a thorough identification of ecosystems that potentially rely on groundwater, also known as "indicators of groundwater dependent ecosystems" (iGDEs), identifying eight areas within the Basin that were mapped as containing iGDEs. However, the Draft GSP concludes that only two of these mapped areas are GDEs subject to SGMA requirements and only provides for monitoring of groundwater levels and vegetative health in these two areas. Regarding the excluded areas, the biologists on the UVRGA GSP Development Team concluded that *"…dominant species are unlikely to be groundwater dependent based on their plant biology, known locations of occurrence in other regions, and comparison of rooting depth with groundwater level data and model generated water table contours"* (p. 66). The GSA concludes that iGDEs containing coast live oaks in the Mira Monte/Meiners Oaks and Terrace Areas do not qualify as GDEs *"…due to the lack of alluvial groundwater where trees are located. The Coast Live Oaks in these areas are sustained by shallow perched groundwater, bedrock groundwater, or surface water in the associated drainages. In other words, pumping in the UVRGB cannot impact these trees"* (p. 67).

Hydrologic connectivity considerations include connected surface waters, disconnected surface waters, and transition surface waters. CDFW believes that shallow perched groundwater, bedrock groundwater, and surface water can still be connected to groundwater and hydrologic connectivity cannot be ruled out without further analysis. A recent publication by The Nature Conservancy notes that, *"If pumping is concentrated in deeper aquifers, SGMA still requires GSAs to sustainably manage groundwater resources in shallow aquifers, such as perched aquifers, that support springs, surface water, domestic wells, and GDEs…This is because vertical groundwater gradients across aquifers may result in pumping from deeper aquifers to cause adverse impacts onto beneficial users reliant on shallow aquifers or interconnected surface water."* (TNC 2019.)

If hydrologic connectivity exists between a terrestrial or aquatic ecosystem and groundwater, then that ecosystem is a potential GDE and must be identified in a GSP. (23 CCR § 354.16 (g).) Therefore, hydrologic connectivity between surface water and groundwater, as well as groundwater accessibility to terrestrial vegetation, must be evaluated carefully. Accurate

identification and consideration of GDEs is also essential to assess whether the GSA has complied with the requirement to avoid significant and unreasonable adverse impacts to beneficial uses of surface water, including aquatic ecosystems reliant on interconnected surface water. (Water Code § 10721(x)(6).)

Recommendation #2(a): CDFW recommends the final GSP provide a more detailed assessment of the eight areas within the Basin that were mapped as iGDEs to determine whether they qualify as GDEs. Conclusions regarding the presence of GDEs needs to be well-supported. CDFW also recommends considering best available GDEs-related data and information when conducting this analysis. Specifically, the GSA should consider the best scientific data on depth to groundwater in its analysis of ISWs, USGS data on mapped springs/seeps, and a comparison of recent groundwater level contours to vegetation root zones. CDFW believes the shallow perched aquifer and shallow alluvial aquifer, although rarely used for water supply, likely support GDEs and should be analyzed further in the Draft GSP. Groundwater within the shallow perched and alluvial aquifers is likely critical to supporting "ecological communities or species" within the Basin. (23 CCR § 351(m).) CDFW recommends using Normalized Difference Vegetation Index (NDVI) and Normalized Difference Moisture Index (NDMI) to assess habitat health for all eight iGDE areas on an annual basis.

Recommendation #2(b): If the GSA's revised analysis indicates that additional iGDEs qualify as GDEs under SGMA, the Draft GSP's sustainable management criteria should be revised to facilitate appropriate and timely monitoring and management response actions for all beneficial users within or supported by these GDEs. These GDEs should be monitored for groundwater levels and vegetative health to account for and mitigate potential adverse impacts to these GDEs from new production wells or expanded production from existing wells. The Draft GSP states that in non-drought periods, the Basin can fill up on the *"order of two out of every three years and significant surface water base flow is sustained by rising groundwater in the southern part of the basin"* (p. 31). This "flashy" behavior can provide recharge for the shallow alluvial aquifer and perched zones that may support GDEs. Considering this interconnection, GDEs should be carefully monitored, and groundwater pumping should be responsibly managed to avoid damaging consequences to GDEs.

Recommendation #2(c): CDFW does not recommend relying solely on soils information to assess the presence of GDEs. For example, the presence of sandy, dry, and friable soils does not mean that existing plant species do not rely on groundwater for some portion of their life cycle. Capillary fringe associated with root networks from native plants could be accessing groundwater from deeper depths.

Recommendation #2(d): CDFW recommends the final GSP develop sustainable management criteria for all areas of ISWs and GDEs within the Upper Ventura River Basin GSP.

Comment #4: The GSP Minimum Thresholds and Measurable Objectives for Interconnected Surface Waters Depletion Do Not Account for the Best Available Science

Issue: The Draft GSP relies on the Hopkins Study (2013) and Padre Study (2012) to establish minimum thresholds and measurable objectives for the depletion of ISWs in the Foster Park Habitat Area (Page – ES-xiv, Draft GSP.) The Draft GSP indicates these two studies represent the *"best available science for establishing significant and unreasonable interconnected surface water depletion effects in the Foster Park Habitat Area"* because they *"identify flow conditions that may indicate the onset of potential significant and unreasonable effects applicable under*

SGMA" and are *"based on direct observations of site-specific flow and habitat conditions in the Foster Park area.*" The Draft GSP indicates that CDFW's Draft Instream Flow Recommendations (2021) (Draft Recommendations) and National Marine Fisheries Service (NMFS) Draft Biological Opinion for Foster Park Wellfield (2007) (Foster Park Draft BO) are not on point for this analysis because they do not identify a threshold for significant and unreasonable effects based on groundwater pumping, but rather contain "*surface flow recommendations or requirements to maintain optimal habitat conditions for steelhead*." (p. 129.)

CDFW believes that the Draft GSP mischaracterizes CDFW's Draft Recommendations and the Foster Park Draft BO as protecting only "optimal" conditions for steelhead. CDFW also disagrees that the Draft Recommendations and Foster Park Draft BO are not relevant to determining appropriate sustainability criteria to avoid unreasonable adverse impacts to beneficial users of ISWs. The CDFW Draft Recommendations were designed to protect the federal Endangered Species Act (FESA) listed Southern California steelhead (*Oncorhynchus mykiss;* Steelhead) passage and habitat for spawning and rearing, as well as supporting ecological function in the lower Ventura River. CDFW's Lower Ventura Draft Recommendations were largely based on direct measurements and modeling of site-specific flow and habitat conditions, particularly in the summer months. Groundwater pumping has the potential to draw down surface flows, which may lead to inadequate depths for Steelhead passage or reduced habitat for steelhead spawning and rearing. This draw-down may constitute a significant and unreasonable effect on beneficial users, including Steelhead.

Recommendation #4(a): CDFW recommends that the Draft GSP utilize the best available information and science to develop appropriate minimum thresholds and measurable objectives for ISW depletion. Specifically, CDFW recommends that the UVRGA account for CDFW's Draft Recommendations and any subsequent updates to this document. CDFW's Draft Recommendations encompass the areas identified in the Draft GSP as Casitas Springs Area (known as Ventura Reaches 3 & 4 in CDFW's Draft Recommendations). CDFW's Draft Recommendations represent the best available science regarding flows needed to support a range of life stage needs for Steelhead, including the following:

- Passage and habitat during the spawning season from December to May
- Low-flow habitat from June to October
- Fall pulse flows in October through December and varying peak flows from January through May.

Thus, the Draft Recommendations should be used to inform the development of sustainable management criteria needed to avoid ISW depletions that may have significant and unreasonable effects on Steelhead and other beneficial users, as required under SGMA.

Recommendation #4(b): The Foster Park Draft BO recommends a minimum maintenance flow of 11-12 cfs at the Foster Park gage (USGS 1118500) to allow for improved growth and survival of juvenile Steelhead. Although the Foster Park Draft BO has not yet been imposed as a binding regulatory requirement in the Ventura River, its scientific information can still be relevant to understanding current environmental circumstances and conditions. CDFW recommends that the final GSP consider NMFS's recommended minimum maintenance flow of 11-12 cfs at the Foster Park gage when establishing thresholds to avoid significant and unreasonable ISW depletions.

Comment #5: Evaluation of Multiple Minimum Thresholds

Issue: According to UVRGA, the Evaluation of Multiple Minimum Thresholds (23 CCR §354.26(c)) is not applicable because only one minimum threshold is established for the ISW depletions sustainability indicator. CDFW disagrees with this conclusion. Because multiple areas within the Basin have ISWs, it is appropriate to have more than one minimum threshold for the ISW sustainability indicator. Areas of ISWs that overlap with GDEs support various fish and wildlife resources. The Upper Ventura River is designated critical habitat for Steelhead and contains important Steelhead spawning and rearing habitat in Southern California. Species including Steelhead, the FESA-listed and California Endangered Species Act (CESA) listed least Bell's vireo (*Vireo bellii pusillus*), and the FESA- and CESA-listed southwestern willow flycatcher (*Empidonax traillii extimus*) utilize the various habitats identified in the draft GSP as wetland and riverine features.

Steelhead have a range of life cycle needs that require multiple minimum thresholds. Excessively high-water temperatures in the spring, summer, and early fall reduce available juvenile Steelhead rearing habitat. Low flows in the fall and winter can delay adult Steelhead passage to critical spawning areas. Steelhead also need passage flows during the spawning season of December-May, ecological baseflows for the low flow months of June-October, and Steelhead habitat optimum flows for the transition month of November. Multiple minimums thresholds throughout the year are needed to provide monthly flows to support Steelhead.

Recommendation #5(a): CDFW proposes that the final GSP incorporate Recommendations #4(a) and #4(b).

Recommendation #5(b): The NMFS 2007 BO for the Robles Diversion Fish Passage Facility (Robles Diversion BO) states that during the fish passage augmentation season (January 1-June 30), bypass flows of at least 30 cfs are required at the Robles Diversion. The Robles Diversion BO also states that "the minimum flow rate providing successful steelhead migration through the lower river is 50 cfs. Therefore, downstream released flows at the diversion must be maintained at or above 50 cfs during the first 10 days of each migratory storm event (i.e., storms generating flows 150 cfs or greater, as measured at the Robles Diversion)" (p. 7). To augment these stream flows, "storm events during the months of January through June are considered potential migration events if the resulting peak discharge rate (a) exceeds 149 cfs as measured at the Robles Diversion, and (b) results in at least double the flow of any of the three days preceding the storm peak" (p. 6). Steelhead take is not anticipated with the minimum 30-50 cfs recommended by NMFS. CDFW recommends the GSA consider NMFS's recommendation of minimum flows of 30-50 cfs at the Robles Diversion Facility when developing minimum thresholds and measurable objectives to avoid ISW depletions that would have significant and unreasonable adverse impacts on Steelhead and other beneficial users of surface water.

Recommendation #5(c): On August 31, 2021, the State Water Resources Control Board (SWRCB) released a Preliminary Draft version of the Groundwater-Surface Water Model of the Ventura River Watershed. This integrated groundwater-surface water model quantifies the relationship between surface flow, subsurface flow, and instream flow requirements in the Ventura River, including areas within the Basin. CDFW recommends incorporating the model's data and simulation results into the final GSP.

ADDITIONAL COMMENTS AND RECOMMENDATIONS

Comment #6: Additional Sensitive Species and Habitats: Southwestern pond turtle (*Actinemys pallida*) was designated as a California Species of Special Concern (SSC) in 1994 and is known to occur throughout the Ventura River watershed, especially in the Casitas Springs area. Southwestern pond turtle's preferred habitat is permanent ponds, lakes, streams, or permanent pools along intermittent streams associated with standing and slow-moving water. A potentially important limiting factor for the southwestern pond turtle is the relationship between water level and flow in off-channel water bodies, which can both be affected by groundwater pumping.

California red legged frog (*Rana draytonii*) is FESA-listed and is considered a California SSC. It is rarely encountered far from permanent water. Tadpoles require water for at least three or four months while completing their aquatic development. Adults eat both aquatic and terrestrial invertebrates, and the tadpoles graze along rocky stream bottoms. Groundwater pumping that impairs streamflow could have negative impacts on California red-legged frog populations in the Confluence Aquatic Habitat Area and the northernmost portion of the Kennedy Area in the Draft GSP.

Other wildlife resources designated as SSCs that could be substantially adversely affected by declining water levels include: coast horned lizard (*Phrynosoma blainvillii*); coast patch-nosed snake (*Salvadora hexalepis virgultea*); California legless lizard (*Anniella spp.*); two-striped gartersnake (*Thamnophis hammondii*); burrowing owl (*Athene cunicularia*).

Proper management of both shallow and deep groundwater pumping combined with reduced surface water pumping and diverting would ensure that beneficial users in the Basin are not negatively impacted. Unsustainable use of groundwater can impact the shallow aquifers and ISWs on which species and GDEs rely, potentially resulting in adverse impacts to fish and wildlife. Determining the relationship between groundwater levels and surface water flows in the Basin will inform how the groundwater levels may be associated with the health and abundance of riparian vegetation. Poorly managed groundwater pumping and ISW flows have the potential to reduce the abundance and quality of riparian vegetation, reducing the amount of shade provided by the vegetation, and ultimately leading to increased water temperatures in the Basin.

Additionally, shallow groundwater levels near interconnected surface waters should be monitored to ensure that groundwater use is not depleting ISWs and adversely affecting fish and wildlife resources in the Basin.

Recommendation #6(a): CDFW proposes that the final GSP incorporate Recommendation 2(a), 2(b), 2(c), and 2(d) to ensure these species would have their habitats protected into the future. CDFW believes shallow perched aquifers, intermittent surface flows and shallow alluvial aquifers, although rarely used for consumptive water supply, are extremely important to the ecological communities or species that depend on groundwater emerging from all aquifers or from groundwater occurring near the surface within the Basin.

Recommendation #6(b): CDFW recommends that the UVRGA commit to Arundo *(Arundo donax)* removal in the Upper Ventura River within the Basin to improve groundwater supply and enhance habitat quality for nesting birds. Arundo removal is one example of a project and management action to minimize groundwater overdraft. If groundwater depletion results in reduced streamflow due to ISWs, the nesting and foraging success of the SSC yellow warbler

(*Dendroica petechia*), the SSC yellow breasted chat (*Icteria virens*), least Bell's vireo, southwestern willow flycatcher, and other bird species may be diminished due to reduced nesting habitat and food availability.

CONCLUSION

CDFW appreciates the opportunity to provide input on the Draft GSP for you to consider as it continues to revise the document. As set forth above, the Draft GSP does not yet comply with the aspects of SGMA statutes and regulations related to fish and wildlife beneficial uses and users of groundwater and interconnected surface waters. CDFW has concerns about data gaps in the HCM, identification and consideration of riparian GDEs, and consideration of CDFW's draft flow recommendations released in February 2021 for the Lower Ventura River. CDFW recommends the UVRGA plan for and engage in responsible groundwater management that minimizes or avoids these impacts to the maximum extent feasible as required under applicable provisions of SGMA and the Public Trust Doctrine, and that the UVRGA address the above comments to avoid a potential 'incomplete' or 'inadequate' GSP determination, as assessed by the Department of Water Resources, for the following reasons derived from regulatory criteria for GSP evaluation:

1. The assumptions, criteria, findings, and objectives, including the sustainability goal, undesirable results, minimum thresholds, measurable objectives, and interim milestones are not reasonable and/or not supported by the best available information and best available science. (CCR § 355.4(b)(1).) (See Comments # 1, 2, 3, 4, and 5);

2. The Draft GSP does not identify reasonable measures and schedules to eliminate data gaps (CCR § 355.4(b)(2).) (See Comments # 1, 2, and 3);

3. The sustainable management criteria and projects and management actions are not commensurate with the level of understanding of the basin setting, based on the level of uncertainty, as reflected in the Draft GSP. (CCR § 355.4(b)(3).) (See Comments # 3, 4 and 5); and,

4. The interests of the beneficial uses that are potentially affected by the use of groundwater in the basin, have not been considered. (CCR § 355.4(b)(4).) (See all comments);

CDFW appreciates the opportunity to provide comments. Additionally, CDFW appreciates UVRGA's continued coordination while UVRGA develops a final GSP. If you have any questions or comments regarding this letter, please contact Steve Slack, Environmental Scientist, at Steven.Slack@wildlife.ca.gov.

Sincerely,

DocuSigned by:
B6E58CFE24724F5...

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Environmental Program Manager I
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Enclosures (Literature Cited)

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October 8, 2021

Upper Ventura River Groundwater Agency
Meiners Oaks Water District
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Submitted via email: bbondy@uvrgroundwater.org

Re: Public Comment Letter for Upper Ventura River Valley Basin Draft GSP

Dear Bryan Bondy,

On behalf of the above-listed organizations, we appreciate the opportunity to comment on the Draft Groundwater Sustainability Plan (GSP) for the Upper Ventura River Valley Basin being prepared under the Sustainable Groundwater Management Act (SGMA). Our organizations are deeply engaged in and committed to the successful implementation of SGMA because we understand that groundwater is critical for the resilience of California's water portfolio, particularly in light of changing climate. Under the requirements of SGMA, Groundwater Sustainability Agencies (GSAs) must consider the interests of all beneficial uses and users of groundwater, such as domestic well owners, environmental users, surface water users, federal government, California Native American tribes and disadvantaged communities (Water Code 10723.2).

As stakeholder representatives for beneficial users of groundwater, our GSP review focuses on how well disadvantaged communities, drinking water users, tribes, climate change, and the environment were addressed in the GSP. While we appreciate that some basins have consulted us directly via focus groups, workshops, and working groups, we are providing public comment letters to all GSAs as a means to engage in the development of 2022 GSPs across the state. Recognizing that GSPs are complicated and resource intensive to develop, the intention of this letter is to provide constructive stakeholder feedback that can improve the GSP prior to submission to the State.

Based on our review, we have significant concerns regarding the treatment of key beneficial users in the Draft GSP and consider the GSP to be **insufficient** under SGMA. We highlight the following findings:

1. Beneficial uses and users **are not sufficiently** considered in GSP development.
    a. Human Right to Water considerations **are not sufficiently** incorporated.
    b. Public trust resources **are not sufficiently** considered.
    c. Impacts of Minimum Thresholds, Measurable Objectives and Undesirable Results on beneficial uses and users **are not sufficiently** analyzed.

2. Climate change **is not sufficiently** considered.
3. Data gaps **are not sufficiently** identified and the GSP **needs additional plans** to eliminate them.
4. Projects and Management Actions **do not sufficiently consider** potential impacts or benefits to beneficial uses and users.

Our specific comments related to the deficiencies of the Upper Ventura River Valley Basin Draft GSP along with recommendations on how to reconcile them, are provided in detail in **Attachment A.**

Please refer to the enclosed list of attachments for additional technical recommendations:

Attachment A	GSP Specific Comments
Attachment B	SGMA Tools to address DAC, drinking water, and environmental beneficial uses and users
Attachment C	Freshwater species located in the basin
Attachment D	The Nature Conservancy's "Identifying GDEs under SGMA: Best Practices for using the NC Dataset"
Attachment E	Maps of representative monitoring points in relation to key beneficial users

Thank you for fully considering our comments as you finalize your GSP.

Best Regards,

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Water Policy Analyst
Clean Water Action/Clean Water Fund

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Union of Concerned Scientists

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Attachment A

Specific Comments on the Upper Ventura River Valley Basin Groundwater Sustainability Plan

1. Consideration of Beneficial Uses and Users in GSP development

Consideration of beneficial uses and users in GSP development is contingent upon adequate identification and engagement of the appropriate stakeholders. The (A) identification, (B) engagement, and (C) consideration of disadvantaged communities, drinking water users, tribes, groundwater dependent ecosystems, streams, wetlands, and freshwater species are essential for ensuring the GSP integrates existing state policies on the Human Right to Water and the Public Trust Doctrine.

A. Identification of Key Beneficial Uses and Users

Disadvantaged Communities and Drinking Water Users

The identification of Disadvantaged Communities (DACs) and drinking water users is **insufficient**. We note the following deficiencies with the identification of these key beneficial users.

- The GSP identifies the community of Casitas Springs as a DAC. The GSP, however, does not show the DAC boundaries on a map or provide the population of the DAC area.
- Appendix E includes the Barbareño-Ventureño Band of Mission Indians as part of the GSA's interested parties list and states that "portions of the Barbareño-Ventureño Band of Mission Indians are located within the UVR Basin." A map of these lands, however, is not provided.
- The GSP fails to provide a density map or location map of domestic wells and their depths (such as minimum well depth, average well depth, or depth range) within the basin.
- The GSP fails to identify the population dependent on groundwater as their source of drinking water in the basin. Specifics are not provided on how much the DAC community relies on a particular water supply (e.g., what percentage is supplied by groundwater).

These missing elements are required for the GSA to fully understand the specific interests and water demands of these beneficial users, and to support the development of sustainable management criteria and projects and management actions that are protective of these users.

RECOMMENDATIONS

- Provide a map of the boundaries of the recognized DAC in the basin. Provide the population of the DAC.
- Provide a map of tribal lands within the basin.
- Include a map showing domestic well locations and average well depth across the basin.
- Identify the sources of drinking water for DAC members, including an estimate of how many people rely on groundwater (e.g., domestic wells, state small water systems, and public water systems).

Interconnected Surface Waters

The identification of Interconnected Surface Waters (ISWs) is **insufficient**, due to lack of supporting information provided for the ISW analysis. Based on the ISW section of the GSP (Section 3.2.6) and UVRGB Numerical Model documentation (Appendix H), it appears that a comprehensive analysis of ISWs in the basin was performed. The ISW section of the GSP lacked a clear summary of the locations of groundwater wells and their screen depths used in the analysis, and description of temporal (seasonal and interannual) variability of the data used to calibrate the model. This information should be provided in the GSP to support the conclusions presented.

Figure 3.2-11 (Surface Water Bodies – Hydrologic Conditions) labels sections of the Ventura River as: (1) Losing Reach with Intermittent Groundwater- Surface Water Interconnection, (2) Losing Reach with Generally Disconnected Groundwater- Surface Water, (3) Variably Losing or Gaining Reach with Intermittent Groundwater- Surface Water Interconnection, and (4) Gaining Reach with Generally Interconnected Groundwater - Surface Water. We recommend that these labels are clarified in the text so it is more clear which stream segments are retained as ISWs or potential ISWs in the GSP.

RECOMMENDATIONS

- Describe the legend labels used on Figure 3.2-11 in the GSP text to make clear which stream segments are retained as ISWs or potential ISWs in the GSP.
- Further describe the groundwater elevation data and stream flow data used in the ISW analysis. Ensure depth-to-groundwater data from multiple seasons and water year types (e.g., wet, dry, average, drought) are used to determine the range of depth and capture the variability in environmental conditions inherent in California's climate.
- Overlay the stream reaches shown on Figure 3.2-11 with depth-to-groundwater contour maps to illustrate groundwater depths and the groundwater gradient near the stream reaches. Show the location of groundwater wells used in the analysis.
- For the depth-to-groundwater contour maps, use the best practices presented in Attachment D. Specifically, ensure that the first step is contouring groundwater elevations, and then subtracting this layer from land surface elevations from a Digital Elevation Model (DEM) to estimate depth-to-groundwater contours across the landscape. This will provide accurate contours of depth to groundwater along streams and other land surface depressions where GDEs are commonly found.
- Describe data gaps for the ISW analysis in the ISW section, in addition to the discussion in Sections 3.1.4 (Data Gaps and Uncertainty). On Figure 3.2-11, include reaches with data gaps as potential ISWs.

Groundwater Dependent Ecosystems

The identification of Groundwater Dependent Ecosystems (GDEs) is **insufficient**. The GSP took initial steps to identify and map GDEs using the Natural Communities Commonly Associated with Groundwater dataset (NC dataset) and other sources. However, we found that mapped features in the NC dataset were improperly disregarded, as described below.

- NC dataset polygons were incorrectly removed based on the assumption that they are supported by the shallow, perched water table. However, shallow aquifers that have the potential to support well development, support ecosystems, or provide baseflow to streams are principal aquifers[1], even if the majority of the basin's pumping is occurring in deeper principal aquifers. If there are no data to characterize groundwater conditions in the shallow principal aquifer, then the GDE should be retained as a potential GDE and data gaps reconciled in the Monitoring Network section of the GSP.
- NC dataset polygons were incorrectly removed in areas adjacent to irrigated fields due to the presence of surface water. However, this removal criteria is flawed since GDEs, in addition to groundwater, can rely on multiple water sources – including shallow groundwater receiving inputs from irrigation return flow from nearby irrigated fields – simultaneously and at different temporal/spatial scales. NC dataset polygons adjacent to irrigated land can still potentially be reliant on shallow groundwater aquifers, and therefore should not be removed solely based on their proximity to irrigated fields.

We commend the GSA for using depth-to-groundwater data from multiple seasons and water year types to determine the range of depth to groundwater for the GDE analysis. The GSP states that water years 2005, 2010, and 2015 were selected to represent wet, average, and dry precipitation conditions, respectively. We also commend the GSA for including the complete inventory of flora and fauna species and habitat types in the basin's GDEs. Appendices O and P include figures, tables, and descriptions of flora and fauna and a list of special status species with potential to occur in the Upper Ventura River Valley Basin.

RECOMMENDATIONS

- Describe a systematic approach for analyzing the basin's GDEs. For example, provide a map of the NC Dataset. On the map, label polygons retained, removed, or added to/from the NC dataset (include the removal reason if polygons are not considered potential GDEs, or include the data source if polygons are added). Discuss how local groundwater data was used to verify whether polygons in the NC Dataset are supported by groundwater in an aquifer. Refer to Attachment D of this letter for best practices for using local groundwater data to verify whether polygons in the NC Dataset are supported by groundwater in an aquifer.

- Refer to Attachment B for more information on TNC's plant rooting depth database. Deeper thresholds are necessary for plants that have reported maximum root depths that exceed the averaged 30-ft threshold, such as valley oak (*Quercus lobata*). We recommend that the reported max rooting depth for these deeper-rooted plants be used. For example, a depth-to-groundwater threshold of 80 feet should be used instead of the 30-ft threshold, when verifying whether valley oak polygons from the NC Dataset are connected to groundwater. It is important to re-emphasize that actual rooting depth data are limited and will depend on the plant species and site-specific conditions such as soil and aquifer types, and availability to other water sources.

- Provide depth-to-groundwater contour maps, noting the best practices presented in Attachment D. Specifically, ensure that the first step is contouring groundwater elevations, and then subtracting this layer from land surface elevations from a digital elevation model (DEM) to estimate depth-to-groundwater contours across the landscape.

[1] "'Principal aquifers' refer to aquifers or aquifer systems that store, transmit, and yield significant or economic quantities of groundwater to wells, springs, or surface water systems." [23 CCR §351(aa)]

- If insufficient data are available to describe groundwater conditions within or near polygons from the NC dataset, include those polygons as “Potential GDEs” in the GSP until data gaps are reconciled in the monitoring network.

Native Vegetation and Managed Wetlands

Native vegetation and managed wetlands are water use sectors that are required[2,3] to be included in the water budget. The integration of native vegetation into the water budget is **sufficient**. We commend the GSA for including the groundwater demands of this ecosystem in the historical, current and projected water budgets. Managed wetlands are not mentioned in the GSP, so it is not known whether or not they are present in the basin.

RECOMMENDATION

- State whether or not there are managed wetlands in the basin. If there are, ensure that their groundwater demands are included as separate line items in the historical, current, and projected water budgets.

B. Engaging Stakeholders

Stakeholder Engagement during GSP development

Stakeholder engagement during GSP development is **insufficient**. SGMA’s requirement for public notice and engagement of stakeholders is not fully met by the description in the Stakeholder Engagement Plan of the GSP (Appendix E).

The GSP describes outreach to DAC members and environmental stakeholders in the basin. Outreach to these members includes representation of DAC and environmental stakeholders on the GSA’s Board of Directors, reserving seats on the Stakeholder Advisory Committee for domestic well owners, newsletters and emails to the interested parties list, social media posts, telephone communications with stakeholders, updates given to the Ventura River Watershed Council, public notices, newspaper articles, and direct outreach to DAC members of the Casitas Springs community. An Ad Hoc Stakeholder Engagement Committee was also formed throughout the GSP process to actively seek input across stakeholders. However, we note the following deficiency with the overall stakeholder engagement process. While tribal stakeholders are mentioned, there is no documentation of tribal consultation to ensure participation in GSP development and implementation processes.

[2] “‘Water use sector’ refers to categories of water demand based on the general land uses to which the water is applied, including urban, industrial, agricultural, managed wetlands, managed recharge, and native vegetation.” [23 CCR §351(al)]

[3] “The water budget shall quantify the following, either through direct measurements or estimates based on data: (3) Outflows from the groundwater system by water use sector, including evapotranspiration, groundwater extraction, groundwater discharge to surface water sources, and subsurface groundwater outflow.” [23 CCR §354.18]

RECOMMENDATION

- In the Stakeholder Engagement Plan, describe active and targeted consultation with tribal governments within the basin during the remainder of the GSP development process and throughout the GSP implementation phase. Refer to Attachment B for guidance on how to consult with tribal governments.

C. Considering Beneficial Uses and Users When Establishing Sustainable Management Criteria and Analyzing Impacts on Beneficial Uses and Users

The consideration of beneficial uses and users when establishing sustainable management criteria (SMC) is **insufficient**. The consideration of potential impacts on all beneficial users of groundwater in the basin are required when defining undesirable results[4] and establishing minimum thresholds[5,6]

Disadvantaged Communities and Drinking Water Users

For chronic lowering of groundwater levels, the GSP mentions impacts to drinking water users when defining undesirable results. The GSP does not, however, analyze direct and indirect impacts on DACs or tribes when defining undesirable results, or evaluate the cumulative or indirect impacts of proposed minimum thresholds on these stakeholders.

The GSP starts the degraded water quality SMC section of the GSP with the statement (p. 112): "Significant changes to the degraded water quality SMC are expected before GSP Adoption." The GSP identifies constituents of concern (COCs) in the basin as the following: nitrate, TDS, sulfate, chloride, and boron. The GSP states (p. 116): "The minimum thresholds [Table 4.7-01] were selected be consistent with protection of human health (MCL for nitrate), the Upper Consumer Acceptance Levels (TDS and sulfate), and concentrations that are considered to represent toxicity thresholds for agricultural beneficial uses (chloride and boron)."

The GSP only includes a very general discussion of impacts to drinking water users when defining undesirable results and evaluating the cumulative or indirect impacts of proposed minimum thresholds. The GSP does not, however, mention or discuss direct and indirect impacts on DACs or tribes when defining undesirable results for degraded water quality, nor does it evaluate the cumulative or indirect impacts of proposed minimum thresholds on these stakeholders.

[4] "The description of undesirable results shall include [...] 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." [23 CCR §354.26(b)(3)]
[5] "The description of minimum thresholds shall include [...] how minimum thresholds may affect the interests of beneficial uses and users of groundwater or land uses and property interests." [23 CCR §354.28(b)(4)]
[6] "The description of minimum thresholds shall include [...] how state, federal, or local standards relate to the relevant sustainability indicator. If the minimum threshold differs from other regulatory standards, the agency shall explain the nature of and the basis for the difference." [23 CCR §354.28(b)(5)]

RECOMMENDATIONS

Chronic Lowering of Groundwater Levels

- Describe direct and indirect impacts on DACs, drinking water users, and tribes when describing undesirable results for chronic lowering of groundwater levels.
- Consider and evaluate the impacts of selected minimum thresholds and measurable objectives on DACs, drinking water users, and tribes within the basin. Further describe the impact of passing the minimum threshold for these users. For example, provide the number of domestic wells that would be de-watered at the minimum threshold.

Degraded Water Quality

- Provide an updated Section 4.7 (Degraded Water Quality) for public comment before GSP adoption.
- Describe direct and indirect impacts on DACs, drinking water users, and tribes when defining undesirable results for degraded water quality. For specific guidance on how to consider these users, refer to "Guide to Protecting Water Quality Under the Sustainable Groundwater Management Act."[7]
- Evaluate the cumulative or indirect impacts of proposed minimum thresholds for degraded water quality on DACs, drinking water users, and tribes.

Groundwater Dependent Ecosystems and Interconnected Surface Waters

For the chronic lowering of groundwater level SMC, the GSP states (p. 99): "Details concerning the analysis are provided in the Draft Riparian GDE Assessment Memo (Appendix O). In summary, it was concluded that riparian plant communities have experienced stress during periods of low groundwater levels historically, such as the 2012-2016 drought. However, the available data show that the riparian GDEs rebound following drought periods without a noticeable change in the predominant plant species. It was concluded that if groundwater levels were to remain chronically low for an extended period (beyond that seen in the historic dataset), pumping within the basin could exacerbate the stress on these communities and could potentially cause permanent or prolonged impacts to the riparian GDEs, which may be significant and unreasonable." The GSP sets the minimum thresholds to the historical low groundwater levels at the representative groundwater level monitoring sites. The GSP states (p. 102): "Modeling projections for the GSP suggest that the proposed minimum thresholds may be occasionally exceeded at some monitoring locations (Appendix Q). However, the criterion for undesirable results is not predicted to be triggered during the 50-year GSP implementation period." Despite acknowledging the impacts of drought-level groundwater elevations on GDEs, the GSP appears to disregard these impacts when setting the minimum thresholds to the historical low groundwater levels at the representative monitoring sites.

Two aquatic habitat areas were identified for consideration in the development of depletion of interconnected surface water SMC, Confluence Aquatic Habitat Area and Foster Park Aquatic Habitat Area. The GSP states (p. 131): "[T]here is insufficient information to assess whether depletion effects in the Confluence Aquatic Habitat Area are significant and unreasonable. SMC for the Confluence Aquatic Habitat Area cannot not be evaluated until these data gaps have been

[7] Guide to Protecting Water Quality under the Sustainable Groundwater Management Act https://d3n8a8pro7vhmx.cloudfront.net/communitywatercenter/pages/293/attachments/original/1559328858/Guide_to_Protecting_Drinking_Water_Quality_Under_the_Sustainable_Groundwater_Management_Act.pdf?1559328858.

addressed. The Confluence Aquatic Habitat Area will be revisited prior to the first five-year GSP assessment after addressing the data gaps." However, preliminary SMC should be established now (instead of at the five-year update) using the best available science to avoid significant and unreasonable effects on surface water beneficial users in the basin.

RECOMMENDATIONS

- Reevaluate the minimum thresholds for impacts to GDEs for the chronic lowering of groundwater level SMC. Set minimum thresholds to levels that avoid 'significant and unreasonable' effects on beneficial users. Potential impacts on environmental beneficial uses and users need to be considered when defining undesirable results[8] in the basin. Defining undesirable results is the crucial first step before the minimum thresholds[9] can be determined.

- Establish preliminary SMC for depletion of interconnected surface water for the Confluence Aquatic Habitat Area, instead of waiting for the five-year GSP update.

2. Climate Change

The SGMA statute identifies climate change as a significant threat to groundwater resources and one that must be examined and incorporated in the GSPs. The GSP Regulations[10] require integration of climate change into the projected water budget to ensure that projects and management actions sufficiently account for the range of potential climate futures.

The integration of climate change into the projected water budget is **insufficient**. The GSP does incorporate climate change into the projected water budget using DWR change factors for 2030 and 2070. However, the GSP does not consider multiple climate scenarios (e.g., the 2070 extremely wet and extremely dry climate scenarios) in the projected water budget. The GSP should clearly and transparently incorporate the extremely wet and dry scenarios provided by DWR into projected water budgets or select more appropriate extreme scenarios for their basins. While these extreme scenarios may have a lower likelihood of occurring, their consequences could be significant, therefore they should be included in groundwater planning.

We acknowledge and commend the inclusion of climate change into key inputs (e.g., precipitation, evaporation, and surface water flow) of the projected water budget. The sustainable yield is calculated based on the projected pumping with climate change incorporated. However, If the water budgets are incomplete, including the omission of extremely wet and dry scenarios, then there is increased uncertainty in virtually every subsequent calculation used to plan for projects, derive measurable objectives, and set minimum thresholds. Plans that do not adequately include climate change projections may underestimate future impacts on vulnerable beneficial users of groundwater such as ecosystems, DACs, and domestic well owners.

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[8] "The description of undesirable results shall include [...] 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". [23 CCR §354.26(b)(3)]

[9] The description of minimum thresholds shall include [...] how minimum thresholds may affect the interests of beneficial uses and users of groundwater or land uses and property interests." [23 CCR §354.28(b)(4)]

[10] "Each Plan shall rely on the best available information and best available science to quantify the water budget for the basin in order to provide an understanding of historical and projected hydrology, water demand, water supply, land use, population, climate change, sea level rise, groundwater and surface water interaction, and subsurface groundwater flow." [23 CCR §354.18(e)]

RECOMMENDATIONS

- Integrate climate change, including extremely wet and dry scenarios, into all elements of the projected water budget to form the basis for development of sustainable management criteria and projects and management actions.
- Incorporate climate change scenarios into projects and management actions.

3. Data Gaps

The consideration of beneficial users when establishing monitoring networks is **insufficient**, due to lack of specific plans to increase the Representative Monitoring Sites (RMSs) in the monitoring network that represent groundwater quality around DACs and domestic wells in the basin.

The GSP states (p. 161): "No representative monitoring sites have been identified for the degraded water quality sustainability indicator. However, it is noted for clarification that four well groups have been established to address the four sets of closely spaced wells in the groundwater quality monitoring network (Table 5.6-01 and Figure 5.6-01). These sets of closely spaced wells are grouped (i.e., treated as a single well) for the purposes of implementing the measurable objectives and minimum thresholds for the degraded water quality sustainability indicator, as discussed in Section 4.7.1." The GSP does not explain how the use of a well group to represent a RMS will satisfy the reporting requirements of SGMA, however.

Figure 5.6-01 (Existing and Planned Water Quality Monitoring Network) shows that no monitoring wells are located across portions of the basin near DACs and domestic wells (see maps provided in Attachment E). Beneficial users of groundwater may remain unprotected by the GSP without adequate monitoring and identification of data gaps in the shallow aquifer. The Plan therefore fails to meet SGMA's requirements for the monitoring network[11].

The GSP provides discussion of data gaps for GDEs and ISWs in Section 5.3.4 of the GSP (Assessment and Improvement of Monitoring Network) and provides planned monitoring well locations on Figure 5.3-01 (Existing and Planned Groundwater Level Monitoring Wells). The GSP could be improved by describing the aquatic GDE monitoring programs for the Foster Park and Confluence Aquatic Habitat Areas (p. 159) and how they will be used to assess the potential for significant and unreasonable impacts to GDEs and ISWs due to groundwater conditions in the basin.

RECOMMENDATIONS

- Provide maps that overlay monitoring well locations with the locations of DACs and domestic wells to clearly identify potentially impacted areas. Increase the number of representative monitoring sites (RMSs) in the shallow aquifer across the basin for the groundwater quality condition indicator. Prioritize proximity to DACs and drinking water users when identifying new RMSs.
- Choose single wells for water quality RMSs, instead of using well groups. If well groups are used, explain how the reporting requirements of SGMA will be met.

[11] "The monitoring network objectives shall be implemented to accomplish the following: [...] (2) Monitor impacts to the beneficial uses or users of groundwater." [23 CCR §354.34(b)(2)]

- Further describe the biological monitoring that can be used to assess the potential for significant and unreasonable impacts to GDEs or ISWs due to groundwater conditions in the basin. The aquatic GDE monitoring programs for the Foster Park and Confluence Aquatic Habitat Areas are mentioned on p. 159 but no further details are provided.

4. Addressing Beneficial Users in Projects and Management Actions

The consideration of beneficial users when developing projects and management actions is **insufficient**, due to the failure to identify benefits or impacts of identified projects and management actions to beneficial users of groundwater such as DACs and tribes.

The GSP includes two projects and management actions with explicit benefits to the environment (Foster Park Protocols to Address Direct Depletion of Interconnected Surface Water and Actions to Address Indirect Depletion of Interconnected Surface Water). The only other project included in the GSP is a Domestic Well Survey to collect more information about domestic wells in the basin. The GSP does not discuss the manner in which DACs and tribes may be benefitted or impacted by projects and management actions identified in the GSP, nor does the GSP discuss the potential water quality impacts from groundwater management in the basin. Potential project and management actions may not protect these beneficial users. Groundwater sustainability under SGMA is defined not just by sustainable yield, but by the avoidance of undesirable results for *all* beneficial users.

RECOMMENDATIONS

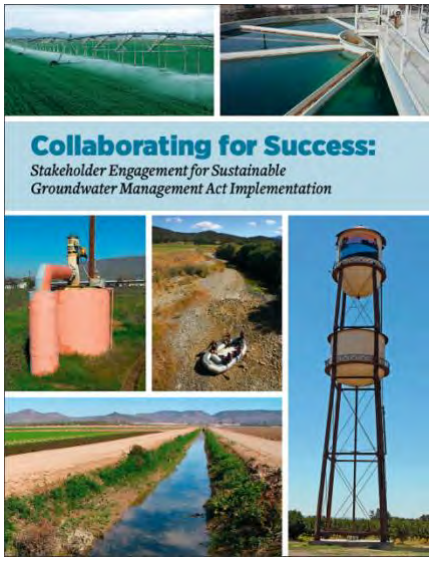
- For DACs and domestic well owners, include a drinking water well impact mitigation program to proactively monitor and protect drinking water wells through GSP implementation. Refer to Attachment B for specific recommendations on how to implement a drinking water well mitigation program.
- For DACs, domestic well owners, and tribes, include a discussion of whether potential impacts to water quality from projects and management actions could occur and how the GSA plans to mitigate such impacts.
- Recharge ponds, reservoirs, and facilities for managed stormwater recharge can be designed as multiple-benefit projects to include elements that act functionally as wetlands and provide a benefit for wildlife and aquatic species. For guidance on how to integrate multi-benefit recharge projects into your GSP, refer to the “Multi-Benefit Recharge Project Methodology Guidance Document”[12].
- Develop management actions that incorporate climate and water delivery uncertainties to address future water demand and prevent future undesirable results.

[12] The Nature Conservancy. 2021. Multi-Benefit Recharge Project Methodology for Inclusion in Groundwater Sustainability Plans. Sacramento. Available at: https://groundwaterresourcehub.org/sgma-tools/multi-benefit-recharge-project-methodology-guidance/

Attachment B

SGMA Tools to address DAC, drinking water, and environmental beneficial uses and users

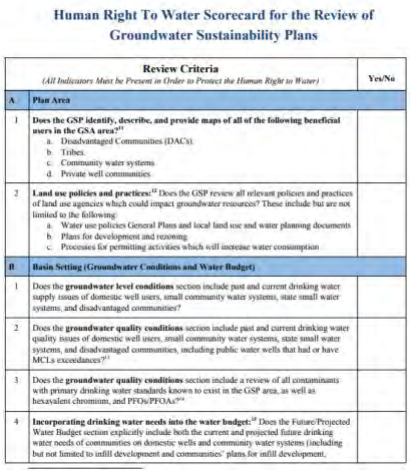
Stakeholder Engagement and Outreach



Clean Water Action, Community Water Center and Union of Concerned Scientists developed a guidance document called Collaborating for success: Stakeholder engagement for Sustainable Groundwater Management Act Implementation. It provides details on how to conduct targeted and broad outreach and engagement during Groundwater Sustainability Plan (GSP) development and implementation. Conducting a targeted outreach involves:

- Developing a robust Stakeholder Communication and Engagement plan that includes outreach at frequented locations (schools, farmers markets, religious settings, events) across the plan area to increase the involvement and participation of disadvantaged communities, drinking water users and the environmental stakeholders.
- Providing translation services during meetings and technical assistance to enable easy participation for non-English speaking stakeholders.
- GSP should adequately describe the process for requesting input from beneficial users and provide details on how input is incorporated into the GSP.

The Human Right to Water

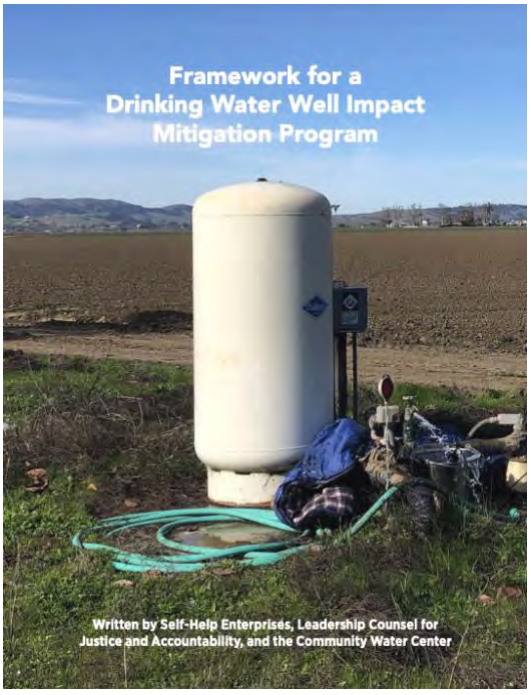


Human Right To Water Scorecard for the Review of Groundwater Sustainability Plans

	Review Criteria (*All Indicators Must be Present in Order to Protect the Human Right to Water*)	Yes/No
A	**Plan Area**	
1	**Does the GSP identify, describe, and provide maps of all of the following beneficial users in the GSA area:**[43] a. Disadvantaged Communities (DACs). b. Tribes. c. Community water systems. d. Private well communities.	
2	**Land use policies and practices:**[44] Does the GSP review all relevant policies and practices of land use agencies which could impact groundwater resources? These include but are not limited to the following: a. Water use policies General Plans and local land use and water planning documents b. Plans for development and rezoning. c. Processes for permitting activities which will increase water consumption	
B	**Basin Setting (Groundwater Conditions and Water Budget)**	
1	Does the **groundwater level conditions** section include past and current drinking water supply issues of domestic well users, small community water systems, state small water systems, and disadvantaged communities?	
2	Does the **groundwater quality conditions** section include past and current drinking water quality issues of domestic well users, small community water systems, state small water systems, and disadvantaged communities, including public water wells that had or have MCLs exceedances?[45]	
3	Does the **groundwater quality conditions** section include a review of all contaminants with primary drinking water standards known to exist in the GSP area, as well as hexavalent chromium, and PFOs/PFOAs?[46]	
4	**Incorporating drinking water needs into the water budget:**[47] Does the Future/Projected Water Budget section explicitly include both the current and projected future drinking water needs of communities on domestic wells and community water systems (including but not limited to infill development and communities' plans for infill development,	

The Human Right to Water Scorecard was developed by Community Water Center, Leadership Counsel for Justice and Accountability and Self Help Enterprises to aid Groundwater Sustainability Agencies (GSAs) in prioritizing drinking water needs in SGMA. The scorecard identifies elements that must exist in GSPs to adequately protect the Human Right to Drinking water.

Drinking Water Well Impact Mitigation Framework



The Drinking Water Well Impact Mitigation Framework was developed by Community Water Center, Leadership Counsel for Justice and Accountability and Self Help Enterprises to aid GSAs in the development and implementation of their GSPs. The framework provides a clear roadmap for how a GSA can best structure its data gathering, monitoring network and management actions to proactively monitor and protect drinking water wells and mitigate impacts should they occur.

Groundwater Resource Hub

The Nature Conservancy has developed a suite of tools based on best available science to help GSAs, consultants, and stakeholders efficiently incorporate nature into GSPs. These tools and resources are available online at GroundwaterResourceHub.org. The Nature Conservancy's tools and resources are intended to reduce costs, shorten timelines, and increase benefits for both people and nature.

Rooting Depth Database

The Plant Rooting Depth Database provides information that can help assess whether groundwater-dependent vegetation are accessing groundwater. Actual rooting depths will depend on the plant species and site-specific conditions, such as soil type and

availability of other water sources. Site-specific knowledge of depth to groundwater combined with rooting depths will help provide an understanding of the potential groundwater levels are needed to sustain GDEs.

How to use the database

The maximum rooting depth information in the Plant Rooting Depth Database is useful when verifying whether vegetation in the Natural Communities Commonly Associated with Groundwater (NC Dataset) are connected to groundwater. A 30 ft depth-to-groundwater threshold, which is based on averaged global rooting depth data for phreatophytes[1], is relevant for most plants identified in the NC Dataset since most plants have a max rooting depth of less than 30 feet. However, it is important to note that deeper thresholds are necessary for other plants that have reported maximum root depths that exceed the averaged 30 feet threshold, such as valley oak (*Quercus lobata*), Euphrates poplar (*Populus euphratica*), salt cedar (*Tamarix spp.*), and shadescale (*Atriplex confertifolia*). The Nature Conservancy advises that the reported max rooting depth for these deeper-rooted plants be used. For example, a depth-to groundwater threshold of 80 feet should be used instead of the 30 ft threshold, when verifying whether valley oak polygons from the NC Dataset are connected to groundwater. It is important to re-emphasize that actual rooting depth data are limited and will depend on the plant species and site-specific conditions such as soil and aquifer types, and availability to other water sources.

The Plant Rooting Depth Database is an Excel workbook composed of four worksheets:

1. California phreatophyte rooting depth data (included in the NC Dataset)
2. Global phreatophyte rooting depth data
3. Metadata
4. References

How the database was compiled

The Plant Rooting Depth Database is a compilation of rooting depth information for the groundwater-dependent plant species identified in the NC Dataset. Rooting depth data were compiled from published scientific literature and expert opinion through a crowdsourcing campaign. As more information becomes available, the database of rooting depths will be updated. Please Contact Us if you have additional rooting depth data for California phreatophytes.

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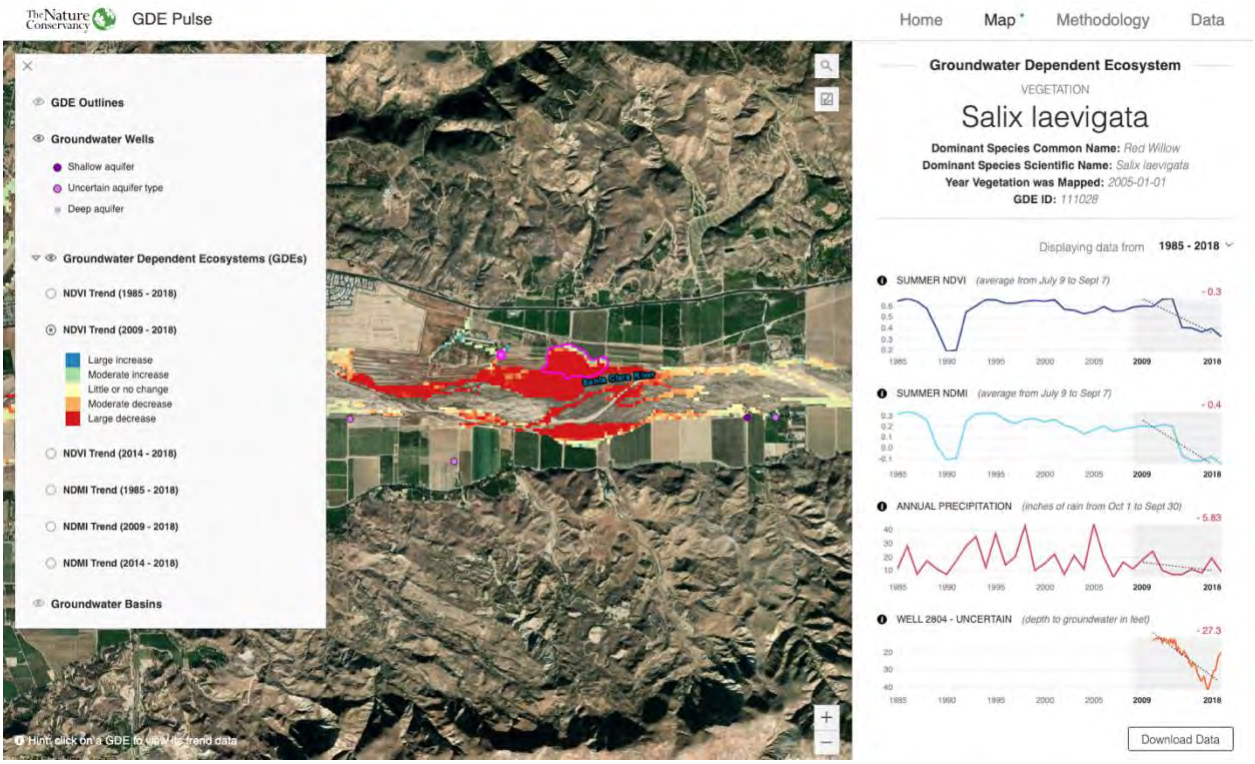
[1] Canadell, J., Jackson, R.B., Ehleringer, J.B. et al. 1996. Maximum rooting depth of vegetation types at the global scale. Oecologia 108, 583–595. https://doi.org/10.1007/BF00329030

GDE Pulse



GDE Pulse is a free online tool that allows Groundwater Sustainability Agencies to assess changes in groundwater dependent ecosystem (GDE) health using satellite, rainfall, and groundwater data. Remote sensing data from satellites has been used to monitor the health of vegetation all over the planet. GDE pulse has compiled 35 years of satellite imagery from NASA's Landsat mission for every polygon in the Natural Communities Commonly Associated with Groundwater Dataset. The following datasets are available for downloading:

Normalized Difference Vegetation Index (NDVI) is a satellite-derived index that represents the greenness of vegetation. Healthy green vegetation tends to have a higher NDVI, while dead leaves have a lower NDVI. We calculated the average NDVI during the driest part of the year (July - Sept) to estimate vegetation health when the plants are most likely dependent on groundwater.

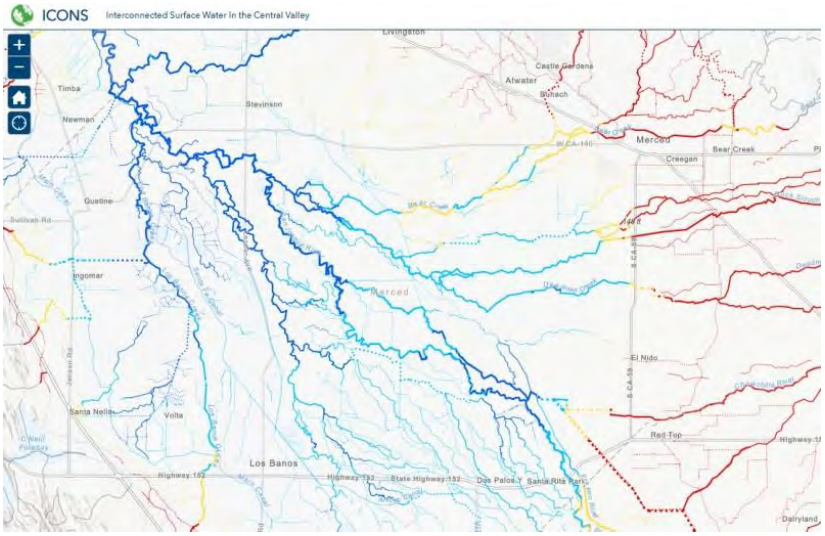
Normalized Difference Moisture Index (NDMI) is a satellite-derived index that represents water content in vegetation. NDMI is derived from the Near-Infrared (NIR) and Short-Wave Infrared (SWIR) channels. Vegetation with adequate access to water tends to have higher NDMI, while vegetation that is water stressed tends to have lower NDMI. We calculated the average NDVI during the driest part of the year (July–September) to estimate vegetation health when the plants are most likely dependent on groundwater.

Annual Precipitation is the total precipitation for the water year (October 1st – September 30th) from the PRISM dataset. The amount of local precipitation can affect vegetation with more precipitation generally leading to higher NDVI and NDMI.

Depth to Groundwater measurements provide an indication of the groundwater levels and changes over time for the surrounding area. We used groundwater well measurements from nearby (<1km) wells to estimate the depth to groundwater below the GDE based on the average elevation of the GDE (using a digital elevation model) minus the measured groundwater surface elevation.

ICONOS Mapper

Interconnected Surface Water in the Central Valley



ICONS maps the likely presence of interconnected surface water (ISW) in the Central Valley using depth to groundwater data. Using data from 2011-2018, the ISW dataset represents the likely connection between surface water and groundwater for rivers and streams in California's Central Valley. It includes information on the mean, maximum, and minimum depth to groundwater for each stream segment over the years with available data, as well as the likely presence of ISW based on the minimum depth to groundwater. The Nature Conservancy developed this database, with guidance and input from expert academics, consultants, and state agencies.

We developed this dataset using groundwater elevation data available online from the California Department of Water Resources (DWR). DWR only provides this data for the Central Valley. For GSAs outside of the valley, who have groundwater well measurements, we recommend following our methods to determine likely ISW in your region. The Nature Conservancy's ISW dataset should be used as a first step in reviewing ISW and should be supplemented with local or more recent groundwater depth data.

Attachment C

Freshwater Species Located in the Ventura River Valley - Upper Ventura River Subbasin

To assist in identifying the beneficial users of surface water necessary to assess the undesirable result "depletion of interconnected surface waters", Attachment C provides a list of freshwater species located in the Ventura River Valley - Upper Ventura River Subbasin. To produce the freshwater species list, we used ArcGIS to select features within the California Freshwater Species Database version 2.0.9 within the basin boundary. This database contains information on ~4,000 vertebrates, macroinvertebrates and vascular plants that depend on fresh water for at least one stage of their life cycle. The methods used to compile the California Freshwater Species Database can be found in Howard et al. 2015. The spatial database contains locality observations and/or distribution information from ~400 data sources. The database is housed in the California Department of Fish and Wildlife's BIOS as well as on The Nature Conservancy's science website.

Scientific Name	Common Name	Legal Protected Status		
		Federal	State	Other
BIRDS				
Actitis macularius	Spotted Sandpiper			
Agelaius tricolor	Tricolored Blackbird	Bird of Conservation Concern	Special Concern	BSSC - First priority
Anas acuta	Northern Pintail			
Anas americana	American Wigeon			
Anas crecca	Green-winged Teal			
Anas cyanoptera	Cinnamon Teal			
Anas discors	Blue-winged Teal			
Anas platyrhynchos	Mallard			
Anas strepera	Gadwall			
Anser albifrons	Greater White-fronted Goose			
Ardea alba	Great Egret			
Ardea herodias	Great Blue Heron			
Aythya collaris	Ring-necked Duck			
Botaurus lentiginosus	American Bittern			
Bucephala albeola	Bufflehead			
Butorides virescens	Green Heron			
Calidris minutilla	Least Sandpiper			
Cistothorus palustris palustris	Marsh Wren			
Egretta thula	Snowy Egret			
Empidonax traillii	Willow Flycatcher	Bird of Conservation Concern	Endangered	
Fulica americana	American Coot			
Gallinago delicata	Wilson's Snipe			
Haliaeetus leucocephalus	Bald Eagle	Bird of Conservation Concern	Endangered	
Himantopus mexicanus	Black-necked Stilt			
Ixobrychus exilis hesperis	Western Least Bittern		Special Concern	BSSC - Second priority

Limnodromus scolopaceus	Long-billed Dowitcher			
Lophodytes cucullatus	Hooded Merganser			
Megaceryle alcyon	Belted Kingfisher			
Mergus merganser	Common Merganser			
Mergus serrator	Red-breasted Merganser			
Numenius phaeopus	Whimbrel			
Nycticorax nycticorax	Black-crowned Night-Heron			
Oxyura jamaicensis	Ruddy Duck			
Piranga rubra	Summer Tanager		Special Concern	BSSC - First priority
Plegadis chihi	White-faced Ibis		Watch list	
Podiceps nigricollis	Eared Grebe			
Podilymbus podiceps	Pied-billed Grebe			
Porzana carolina	Sora			
Rallus limicola	Virginia Rail			
Setophaga petechia	Yellow Warbler			BSSC - Second priority
Tachycineta bicolor	Tree Swallow			
Tringa melanoleuca	Greater Yellowlegs			
Tringa solitaria	Solitary Sandpiper			
Xanthocephalus xanthocephalus	Yellow-headed Blackbird		Special Concern	BSSC - Third priority
CRUSTACEANS				
Gammarus spp.	Gammarus spp.			
Hyalella spp.	Hyalella spp.			
FISHES				
Oncorhynchus mykiss irideus	Coastal rainbow trout			Least Concern - Moyle 2013
Oncorhynchus mykiss - Southern CA	Southern California steelhead	Endangered	Special Concern	Endangered - Moyle 2013
HERPS				
Actinemys marmorata marmorata	Western Pond Turtle		Special Concern	ARSSC
Anaxyrus boreas boreas	Boreal Toad			
Pseudacris cadaverina	California Treefrog			ARSSC
Rana boylii	Foothill Yellow-legged Frog	Under Review in the Candidate or Petition Process	Special Concern	ARSSC
Rana draytonii	California Red-legged Frog	Threatened	Special Concern	ARSSC
Spea hammondii	Western Spadefoot	Under Review in the Candidate or Petition Process	Special Concern	ARSSC

Thamnophis hammondii hammondii	Two-striped Gartersnake		Special Concern	ARSSC
Thamnophis sirtalis sirtalis	Common Gartersnake			
Pseudacris regilla	Northern Pacific Chorus Frog			
INSECTS AND OTHER INVERTS				
Ablabesmyia spp.	Ablabesmyia spp.			
Ambrysus spp.	Ambrysus spp.			
Apedilum spp.	Apedilum spp.			
Argia lugens	Sooty Dancer			
Argia spp.	Argia spp.			
Argia vivida	Vivid Dancer			
Baetidae fam.	Baetidae fam.			
Baetis adonis	A Mayfly			
Baetis spp.	Baetis spp.			
Brechmorhoga mendax	Pale-faced Clubskimmer			
Caenis bajaensis	A Mayfly			
Caenis spp.	Caenis spp.			
Callibaetis spp.	Callibaetis spp.			
Centroptilum spp.	Centroptilum spp.			
Cheumatopsyche spp.	Cheumatopsyche spp.			
Chironomidae fam.	Chironomidae fam.			
Chironomus spp.	Chironomus spp.			
Cloeodes spp.	Cloeodes spp.			
Coenagrionidae fam.	Coenagrionidae fam.			
Corisella decolor				Not on any status lists
Corixidae fam.	Corixidae fam.			
Cricotopus bicinctus				Not on any status lists
Cricotopus spp.	Cricotopus spp.			
Cricotopus trifascia				Not on any status lists
Cryptochironomus spp.	Cryptochironomus spp.			
Dicrotendipes spp.	Dicrotendipes spp.			
Dytiscidae fam.	Dytiscidae fam.			
Endochironomus spp.	Endochironomus spp.			
Ephemerellidae fam.	Ephemerellidae fam.			
Eukiefferiella spp.	Eukiefferiella spp.			
Fallceon quilleri	A Mayfly			
Fallceon spp.	Fallceon spp.			
Gomphidae fam.	Gomphidae fam.			

Hetaerina americana	American Rubyspot			
Hydrobius spp.	Hydrobius spp.			
Hydropsyche spp.	Hydropsyche spp.			
Hydroptila spp.	Hydroptila spp.			
Hydroptilidae fam.	Hydroptilidae fam.			
Labrundinia spp.	Labrundinia spp.			
Laccobius spp.	Laccobius spp.			
Larsia spp.	Larsia spp.			
Micrasema spp.	Micrasema spp.			
Microcylloepus spp.	Microcylloepus spp.			
Micropsectra spp.	Micropsectra spp.			
Microtendipes pedellus				Not on any status lists
Microtendipes spp.	Microtendipes spp.			
Microvelia spp.	Microvelia spp.			
Mideopsis spp.	Mideopsis spp.			
Nanocladius spp.	Nanocladius spp.			
Naucoridae fam.	Naucoridae fam.			
Nectopsyche spp.	Nectopsyche spp.			
Neoclypeodytes spp.	Neoclypeodytes spp.			
Nilothauma spp.	Nilothauma spp.			
Ochrotrichia spp.	Ochrotrichia spp.			
Ochthebius spp.	Ochthebius spp.			
Oecetis spp.	Oecetis spp.			
Ordobrevia nubifera				Not on any status lists
Oxyethira spp.	Oxyethira spp.			
Paltothemis lineatipes	Red Rock Skimmer			
Paracladopelma spp.	Paracladopelma spp.			
Paraleptophlebia spp.	Paraleptophlebia spp.			
Parametriocnemus spp.	Parametriocnemus spp.			
Paratanytarsus spp.	Paratanytarsus spp.			
Pentaneura spp.	Pentaneura spp.			
Petrophila spp.	Petrophila spp.			
Phaenopsectra spp.	Phaenopsectra spp.			
Polycentropus spp.	Polycentropus spp.			
Polypedilum spp.	Polypedilum spp.			
Procladius spp.	Procladius spp.			
Psectrocladius spp.	Psectrocladius spp.			
Psectrotanypus spp.	Psectrotanypus spp.			
Pseudochironomus spp.	Pseudochironomus spp.			
Rheotanytarsus spp.	Rheotanytarsus spp.			
Rhyacophila spp.	Rhyacophila spp.			

Sialis spp.	Sialis spp.			
Sigara mckinstryi	A Water Boatman			Not on any status lists
Sigara spp.	Sigara spp.			
Simulium spp.	Simulium spp.			
Sperchon spp.	Sperchon spp.			
Tanytarsus spp.	Tanytarsus spp.			
Thienemannimyia spp.	Thienemannimyia spp.			
Tinodes spp.	Tinodes spp.			
Trichocorixa calva				Not on any status lists
Tricorythodes explicatus	A Mayfly			
Tricorythodes spp.	Tricorythodes spp.			
Tropisternus spp.	Tropisternus spp.			
Veliidae fam.	Veliidae fam.			
Zavrelimyia spp.	Zavrelimyia spp.			
MOLLUSKS				
Anodonta californiensis	California Floater		Special	
Gyraulus spp.	Gyraulus spp.			
Menetus opercularis	Button Sprite			CS
Physa spp.	Physa spp.			
Pisidium spp.	Pisidium spp.			
PLANTS				
Cotula coronopifolia	NA			
Eleocharis macrostachya	Creeping Spikerush			
Lythrum californicum	California Loosestrife			
Mimulus cardinalis	Scarlet Monkeyflower			
Persicaria lapathifolia				Not on any status lists
Rorippa palustris palustris	Bog Yellowcress			
Schoenoplectus californicus	California Bulrush			
Stuckenia pectinata				Not on any status lists
Typha domingensis	Southern Cattail			
Typha latifolia	Broadleaf Cattail			
Veronica anagallis-aquatica	NA			

Attachment D

The Nature Conservancy

July 2019

IDENTIFYING GDEs UNDER SGMA
Best Practices for using the NC Dataset

The Sustainable Groundwater Management Act (SGMA) requires that groundwater dependent ecosystems (GDEs) be identified in Groundwater Sustainability Plans (GSPs). As a starting point, the Department of Water Resources (DWR) is providing the Natural Communities Commonly Associated with Groundwater Dataset (NC Dataset) online[1] to help Groundwater Sustainability Agencies (GSAs), consultants, and stakeholders identify GDEs within individual groundwater basins. To apply information from the NC Dataset to local areas, GSAs should combine it with the best available science on local hydrology, geology, and groundwater levels to verify whether polygons in the NC dataset are likely supported by groundwater in an aquifer (Figure 1)[2]. This document highlights six best practices for using local groundwater data to confirm whether mapped features in the NC dataset are supported by groundwater.

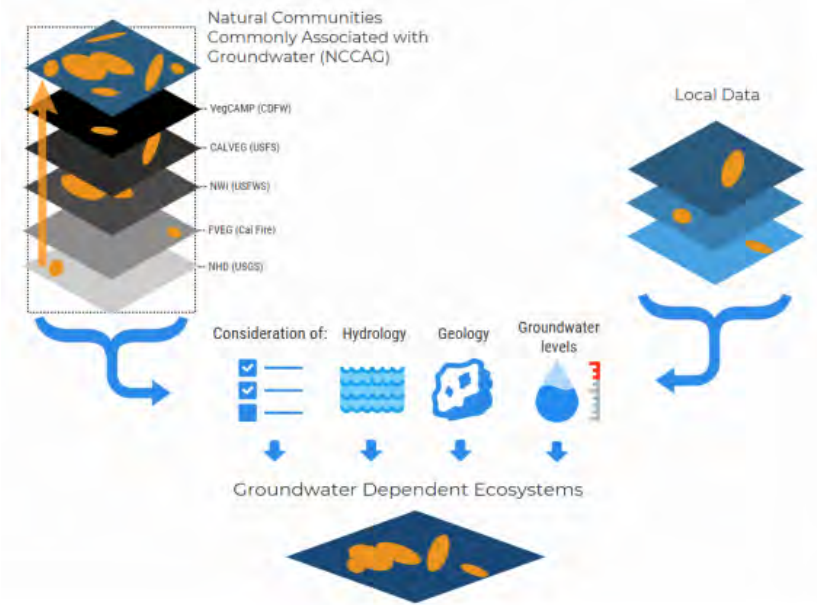


Figure 1. Considerations for GDE identification.
Source: DWR[2]

[1] NC Dataset Online Viewer: https://gis.water.ca.gov/app/NCDatasetViewer/
[2] California Department of Water Resources (DWR). 2018. Summary of the "Natural Communities Commonly Associated with Groundwater" Dataset and Online Web Viewer. Available at: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Data-and-Tools/Files/Statewide-Reports/Natural-Communities-Dataset-Summary-Document.pdf

The NC Dataset identifies vegetation and wetland features that are good indicators of a GDE. The dataset is comprised of 48 publicly available state and federal datasets that map vegetation, wetlands, springs, and seeps commonly associated with groundwater in California[3]. It was developed through a collaboration between DWR, the Department of Fish and Wildlife, and The Nature Conservancy (TNC). TNC has also provided detailed guidance on identifying GDEs from the NC dataset[4] on the Groundwater Resource Hub[5], a website dedicated to GDEs.

BEST PRACTICE #1. Establishing a Connection to Groundwater

Groundwater basins can be comprised of one continuous aquifer (Figure 2a) or multiple aquifers stacked on top of each other (Figure 2b). In unconfined aquifers (Figure 2a), using the depth-to-groundwater and the rooting depth of the vegetation is a reasonable method to infer groundwater dependence for GDEs. If groundwater is well below the rooting (and capillary) zone of the plants and any wetland features, the ecosystem is considered disconnected and groundwater management is not likely to affect the ecosystem (Figure 2d). However, it is important to consider local conditions (e.g., soil type, groundwater flow gradients, and aquifer parameters) and to review groundwater depth data from multiple seasons and water year types (wet and dry) because intermittent periods of high groundwater levels can replenish perched clay lenses that serve as the water source for GDEs (Figure 2c). Maintaining these natural groundwater fluctuations are important to sustaining GDE health.

Basins with a stacked series of aquifers (Figure 2b) may have varying levels of pumping across aquifers in the basin, depending on the production capacity or water quality associated with each aquifer. If pumping is concentrated in deeper aquifers, SGMA still requires GSAs to sustainably manage groundwater resources in shallow aquifers, such as perched aquifers, that support springs, surface water, domestic wells, and GDEs (Figure 2). This is because vertical groundwater gradients across aquifers may result in pumping from deeper aquifers to cause adverse impacts onto beneficial users reliant on shallow aquifers or interconnected surface water. The goal of SGMA is to sustainably manage groundwater resources for current and future social, economic, and environmental benefits. While groundwater pumping may not be currently occurring in a shallower aquifer, use of this water may become more appealing and economically viable in future years as pumping restrictions are placed on the deeper production aquifers in the basin to meet the sustainable yield and criteria. Thus, identifying GDEs in the basin should done irrespective to the amount of current pumping occurring in a particular aquifer, so that future impacts on GDEs due to new production can be avoided. A good rule of thumb to follow is: *if groundwater can be pumped from a well - it's an aquifer*.

[3] For more details on the mapping methods, refer to: Klausmeyer, K., J. Howard, T. Keeler-Wolf, K. Davis-Fadtke, R. Hull, A. Lyons. 2018. Mapping Indicators of Groundwater Dependent Ecosystems in California: Methods Report. San Francisco, California. Available at: https://groundwaterresourcehub.org/public/uploads/pdfs/iGDE_data_paper_20180423.pdf

[4] "Groundwater Dependent Ecosystems under the Sustainable Groundwater Management Act: Guidance for Preparing Groundwater Sustainability Plans" is available at: https://groundwaterresourcehub.org/gde-tools/gsp-guidance-document/

[5] The Groundwater Resource Hub: www.GroundwaterResourceHub.org

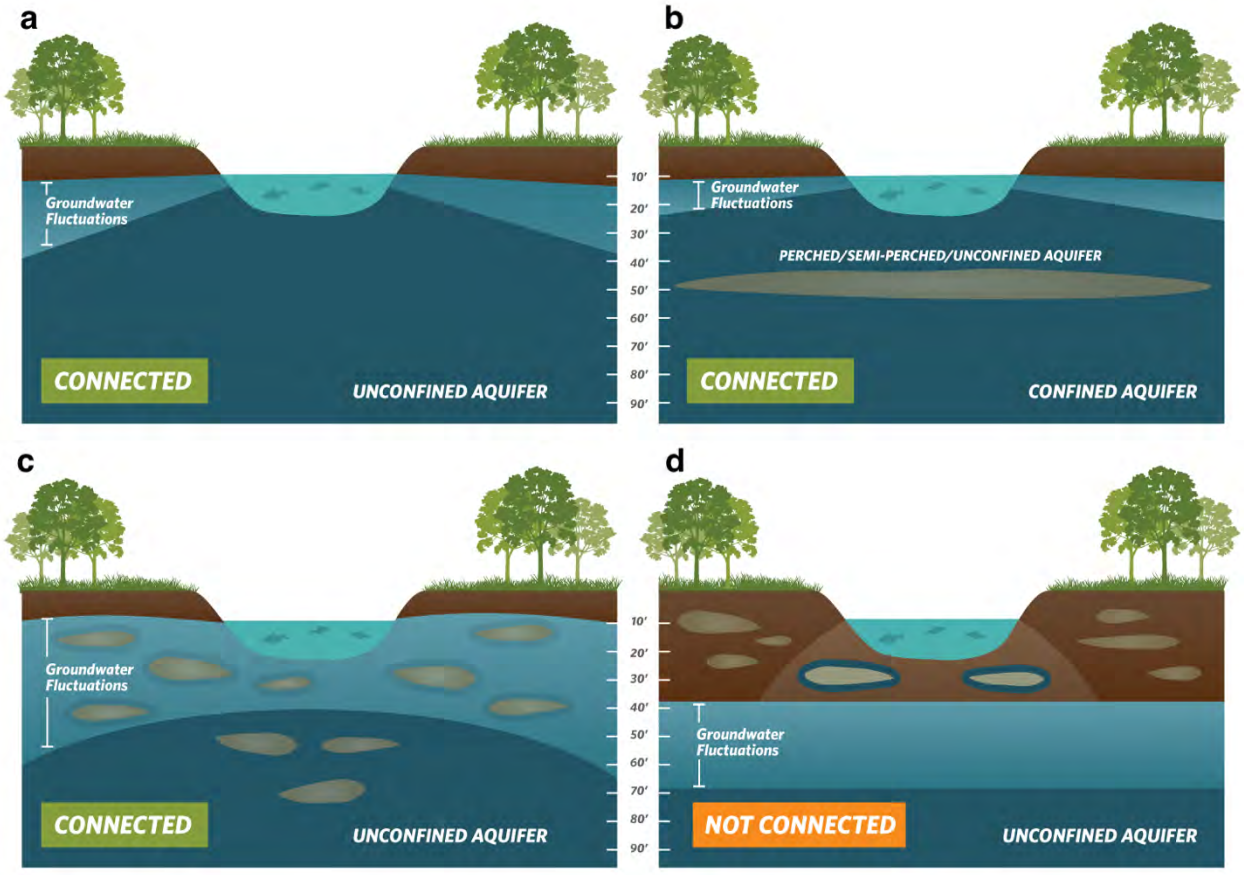


Figure 2. Confirming whether an ecosystem is connected to groundwater. Top: (a) Under the ecosystem is an unconfined aquifer with depth-to-groundwater fluctuating seasonally and interannually within 30 feet from land surface. (b) Depth-to-groundwater in the shallow aquifer is connected to overlying ecosystem. Pumping predominately occurs in the confined aquifer, but pumping is possible in the shallow aquifer. Bottom: (c) Depth-to-groundwater fluctuations are seasonally and interannually large, however, clay layers in the near surface prolong the ecosystem's connection to groundwater. (d) Groundwater is disconnected from surface water, and any water in the vadose (unsaturated) zone is due to direct recharge from precipitation and indirect recharge under the surface water feature. These areas are not connected to groundwater and typically support species that do not require access to groundwater to survive.

BEST PRACTICE #2. Characterize Seasonal and Interannual Groundwater Conditions

SGMA requires GSAs to describe current and historical groundwater conditions when identifying GDEs [23 CCR §354.16(g)]. Relying solely on the SGMA benchmark date (January 1, 2015) or any other single point in time to characterize groundwater conditions (e.g., depth-to-groundwater) is inadequate because managing groundwater conditions with data from one time point fails to capture the seasonal and interannual variability typical of California's climate. DWR's Best Management Practices document on water budgets[6] recommends using 10 years of water supply and water budget information to describe how historical conditions have impacted the operation of the basin within sustainable yield, implying that a baseline[7] could be determined based on data between 2005 and 2015. Using this or a similar time period, depending on data availability, is recommended for determining the depth-to-groundwater.

GDEs depend on groundwater levels being close enough to the land surface to interconnect with surface water systems or plant rooting networks. The most practical approach[8] for a GSA to assess whether polygons in the NC dataset are connected to groundwater is to rely on groundwater elevation data. As detailed in TNC's GDE guidance document[4], one of the key factors to consider when mapping GDEs is to contour depth-to-groundwater in the aquifer that is supporting the ecosystem (see Best Practice #5).

Groundwater levels fluctuate over time and space due to California's Mediterranean climate (dry summers and wet winters), climate change (flood and drought years), and subsurface heterogeneity in the subsurface (Figure 3). Many of California's GDEs have adapted to dealing with intermittent periods of water stress, however if these groundwater conditions are prolonged, adverse impacts to GDEs can result. While depth-to-groundwater levels within 30 feet[4] of the land surface are generally accepted as being a proxy for confirming that polygons in the NC dataset are supported by groundwater, it is highly advised that fluctuations in the groundwater regime be characterized to understand the seasonal and interannual groundwater variability in GDEs. Utilizing groundwater data from one point in time can misrepresent groundwater levels required by GDEs, and inadvertently result in adverse impacts to the GDEs. Time series data on groundwater elevations and depths are available on the SGMA Data Viewer[9]. However, if insufficient data are available to describe groundwater conditions within or near polygons from the NC dataset, include those polygons in the GSP until data gaps are reconciled in the monitoring network (see Best Practice #6).

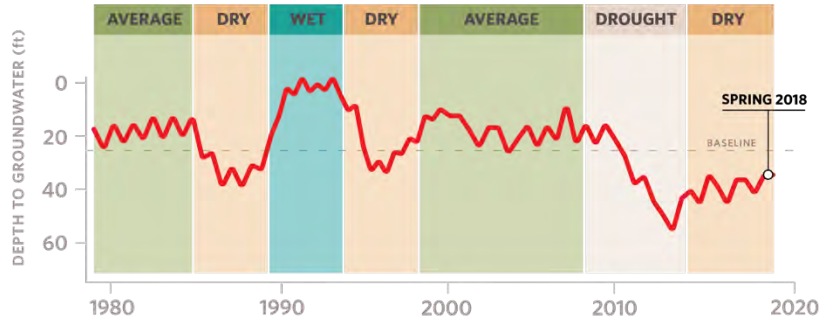


Figure 3. Example seasonality and interannual variability in depth-to-groundwater over time. Selecting one point in time, such as Spring 2018, to characterize groundwater conditions in GDEs fails to capture what groundwater conditions are necessary to maintain the ecosystem status into the future so adverse impacts are avoided.

[6] DWR. 2016. Water Budget Best Management Practice. Available at: https://water.ca.gov/LegacyFiles/groundwater/sgm/pdfs/BMP_Water_Budget_Final_2016-12-23.pdf

[7] Baseline is defined under the GSP regulations as "historic information used to project future conditions for hydrology, water demand, and availability of surface water and to evaluate potential sustainable management practices of a basin." [23 CCR §351(e)]

[8] Groundwater reliance can also be confirmed via stable isotope analysis and geophysical surveys. For more information see The GDE Assessment Toolbox (Appendix IV, GDE Guidance Document for GSPs[4]).

[9] SGMA Data Viewer: https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer

BEST PRACTICE #3. Ecosystems Often Rely on Both Groundwater and Surface Water

GDEs are plants and animals that rely on groundwater for all or some of its water needs, and thus can be supported by multiple water sources. The presence of non-groundwater sources (e.g., surface water, soil moisture in the vadose zone, applied water, treated wastewater effluent, urban stormwater, irrigated return flow) within and around a GDE does not preclude the possibility that it is supported by groundwater, too. SGMA defines GDEs as "ecological communities and species that depend on groundwater emerging from aquifers or on groundwater occurring near the ground surface" [23 CCR §351(m)]. Hence, depth-to-groundwater data should be used to identify whether NC polygons are supported by groundwater and should be considered GDEs. In addition, SGMA requires that significant and undesirable adverse impacts to beneficial users of surface water be avoided. Beneficial users of surface water include environmental users such as plants or animals[10], which therefore must be considered when developing minimum thresholds for depletions of interconnected surface water.

GSAs are only responsible for impacts to GDEs resulting from groundwater conditions in the basin, so if adverse impacts to GDEs result from the diversion of applied water, treated wastewater, or irrigation return flow away from the GDE, then those impacts will be evaluated by other permitting requirements (e.g., CEQA) and may not be the responsibility of the GSA. However, if adverse impacts occur to the GDE due to changing groundwater conditions resulting from pumping or groundwater management activities, then the GSA would be responsible (Figure 4).

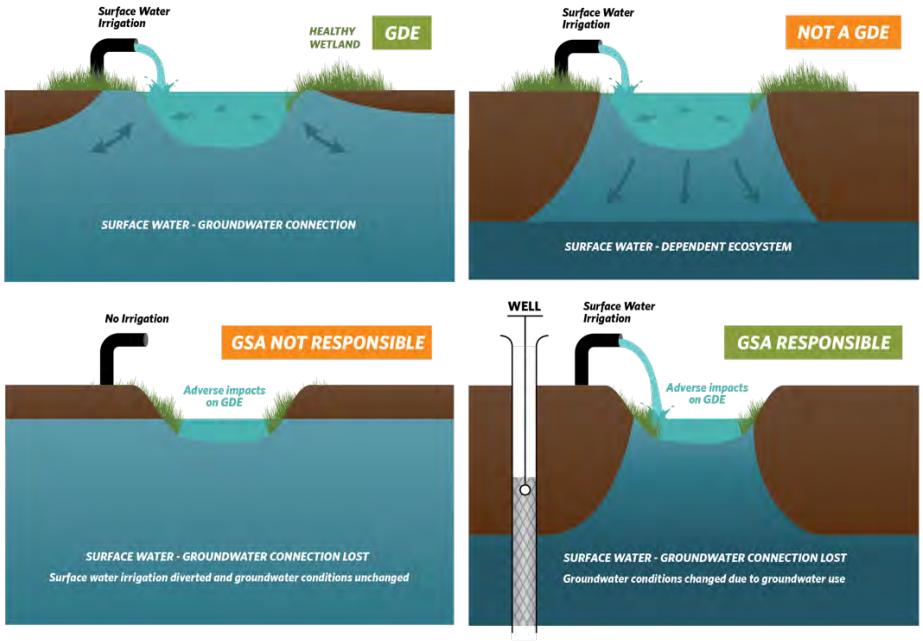


Figure 4. Ecosystems often depend on multiple sources of water. Top: (Left) Surface water and groundwater are interconnected, meaning that the GDE is supported by both groundwater and surface water. (Right) Ecosystems that are only reliant on non-groundwater sources are not groundwater-dependent. Bottom: (Left) An ecosystem that was once dependent on an interconnected surface water, but loses access to groundwater solely due to surface water diversions may not be the GSA's responsibility. (Right) Groundwater dependent ecosystems once dependent on an interconnected surface water system, but loses that access due to groundwater pumping is the GSA's responsibility.

[10] For a list of environmental beneficial users of surface water by basin, visit: https://groundwaterresourcehub.org/gde-tools/environmental-surface-water-beneficiaries/

BEST PRACTICE #4. Select Representative Groundwater Wells

Identifying GDEs in a basin requires that groundwater conditions are characterized to confirm whether polygons in the NC dataset are supported by the underlying aquifer. To do this, proximate groundwater wells should be identified to characterize groundwater conditions (Figure 5). When selecting representative wells, it is particularly important to consider the subsurface heterogeneity around NC polygons, especially near surface water features where groundwater and surface water interactions occur around heterogeneous stratigraphic units or aquitards formed by fluvial deposits. The following selection criteria can help ensure groundwater levels are representative of conditions within the GDE area:

- Choose wells that are within 5 kilometers (3.1 miles) of each NC Dataset polygons because they are more likely to reflect the local conditions relevant to the ecosystem. If there are no wells within 5km of the center of a NC dataset polygon, then there is insufficient information to remove the polygon based on groundwater depth. Instead, it should be retained as a potential GDE until there are sufficient data to determine whether or not the NC Dataset polygon is supported by groundwater.

- Choose wells that are screened within the surficial unconfined aquifer and capable of measuring the true water table.

- Avoid relying on wells that have insufficient information on the screened well depth interval for excluding GDEs because they could be providing data on the wrong aquifer. This type of well data should not be used to remove any NC polygons.

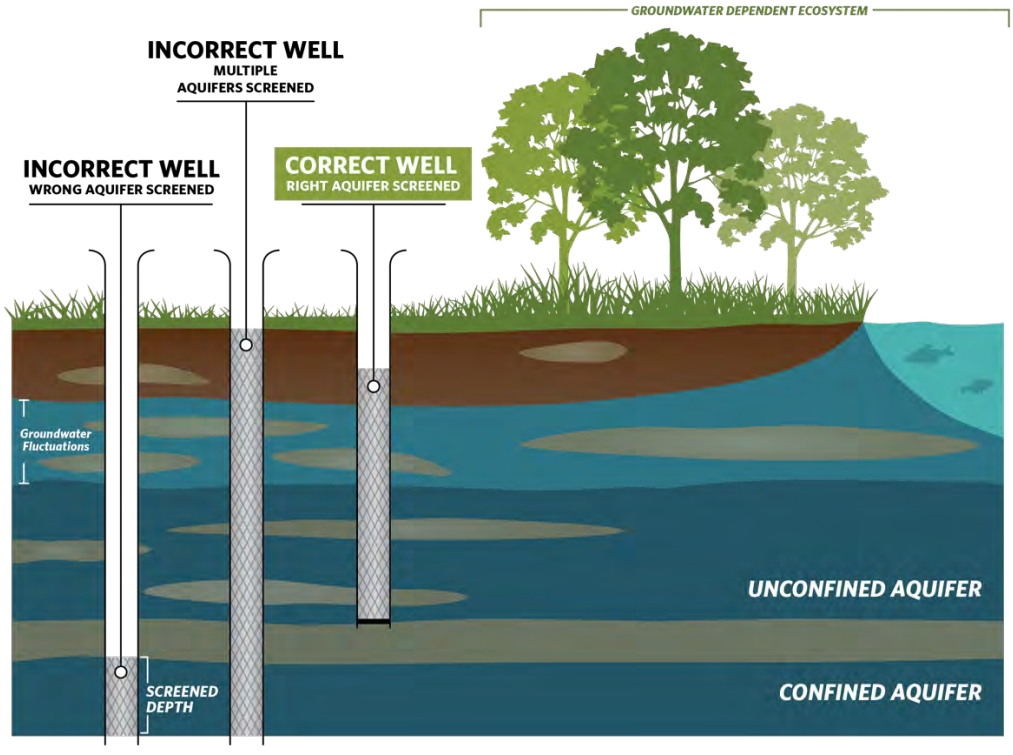


Figure 5. Selecting representative wells to characterize groundwater conditions near GDEs.

BEST PRACTICE #5. Contouring Groundwater Elevations

The common practice to contour depth-to-groundwater over a large area by interpolating measurements at monitoring wells is unsuitable for assessing whether an ecosystem is supported by groundwater. This practice causes errors when the land surface contains features like stream and wetland depressions because it assumes the land surface is constant across the landscape and depth-to-groundwater is constant below these low-lying areas (Figure 6a). A more accurate approach is to interpolate groundwater elevations at monitoring wells to get groundwater elevation contours across the landscape. This layer can then be subtracted from land surface elevations from a Digital Elevation Model (DEM)[11] to estimate depth-to-groundwater contours across the landscape (Figure b; Figure 7). This will provide a much more accurate contours of depth-to-groundwater along streams and other land surface depressions where GDEs are commonly found.

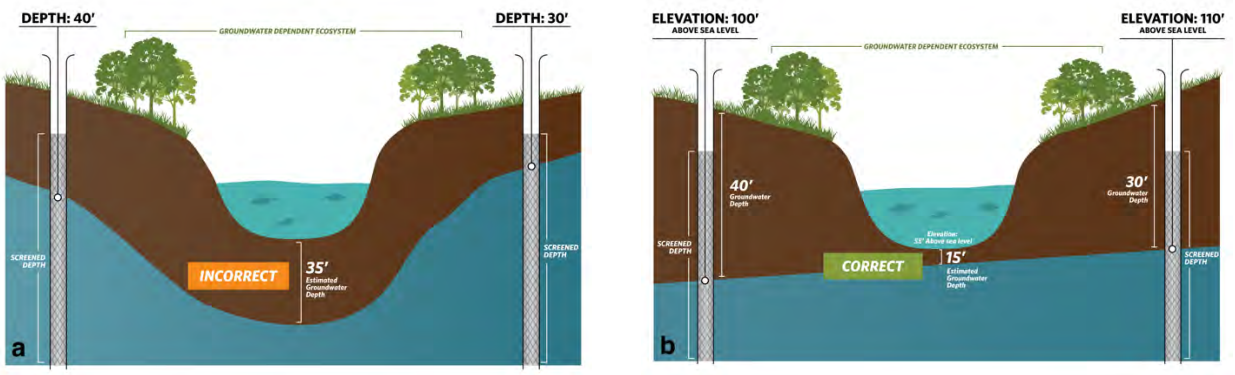


Figure 6. Contouring depth-to-groundwater around surface water features and GDEs. (a) Groundwater level interpolation using depth-to-groundwater data from monitoring wells. (b) Groundwater level interpolation using groundwater elevation data from monitoring wells and DEM data.

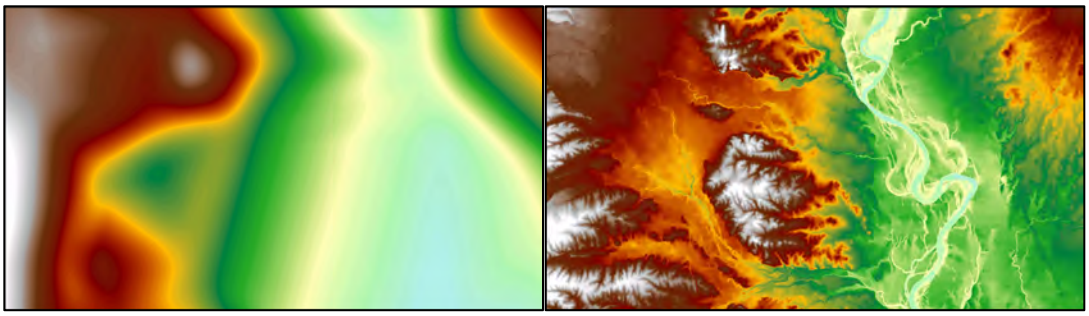


Figure 7. Depth-to-groundwater contours in Northern California. (Left) Contours were interpolated using depth-to-groundwater measurements determined at each well. (Right) Contours were determined by interpolating groundwater elevation measurements at each well and superimposing ground surface elevation from DEM spatial data to generate depth-to-groundwater contours. The image on the right shows a more accurate depth-to-groundwater estimate because it takes the local topography and elevation changes into account.

[11] USGS Digital Elevation Model data products are described at: https://www.usgs.gov/core-science-systems/ngp/3dep/about-3dep-products-services and can be downloaded at: https://iewer.nationalmap.gov/basic/

BEST PRACTICE #6. Best Available Science

Adaptive management is embedded within SGMA and provides a process to work toward sustainability over time by beginning with the best available information to make initial decisions, monitoring the results of those decisions, and using the data collected through monitoring programs to revise decisions in the future. In many situations, the hydrologic connection of NC dataset polygons will not initially be clearly understood if site-specific groundwater monitoring data are not available. If sufficient data are not available in time for the 2020/2022 plan, The Nature Conservancy strongly advises that questionable polygons from the NC dataset be included in the GSP until data gaps are reconciled in the monitoring network. Erring on the side of caution will help minimize inadvertent impacts to GDEs as a result of groundwater use and management actions during SGMA implementation.

KEY DEFINITIONS

Groundwater basin is an aquifer or stacked series of aquifers with reasonably well-defined boundaries in a lateral direction, based on features that significantly impede groundwater flow, and a definable bottom. *23 CCR §341(g)(1)*

Groundwater dependent ecosystem (GDE) are ecological communities or species that depend on groundwater emerging from aquifers or on groundwater occurring near the ground surface. *23 CCR §351(m)*

Interconnected surface water (ISW) surface water that is hydraulically connected at any point by a continuous saturated zone to the underlying aquifer and the overlying surface water is not completely depleted. *23 CCR §351(o)*

Principal aquifers are aquifers or aquifer systems that store, transmit, and yield significant or economic quantities of groundwater to wells, springs, or surface water systems. *23 CCR §351(aa)*

ABOUT US

The Nature Conservancy is a science-based nonprofit organization whose mission is *to conserve the lands and waters on which all life depends*. To support successful SGMA implementation that meets the future needs of people, the economy, and the environment, TNC has developed tools and resources (www.groundwaterresourcehub.org) intended to reduce costs, shorten timelines, and increase benefits for both people and nature.

Attachment E

Maps of representative monitoring sites in relation to key beneficial users

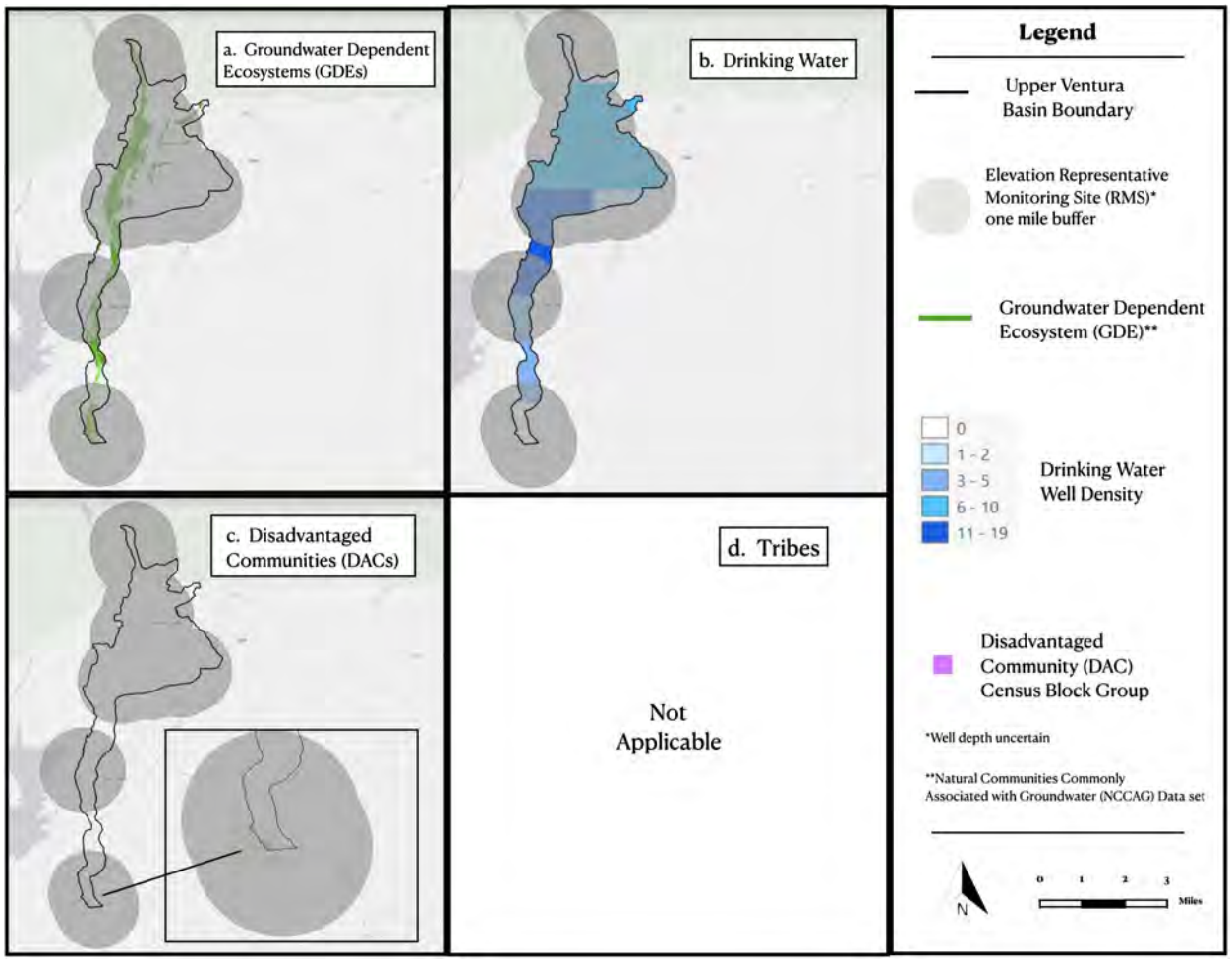


Figure 1. Groundwater elevation representative monitoring sites in relation to key beneficial users: a) Groundwater Dependent Ecosystems (GDEs), b) Drinking Water users, c) Disadvantaged Communities (DACs), and d) Tribes.

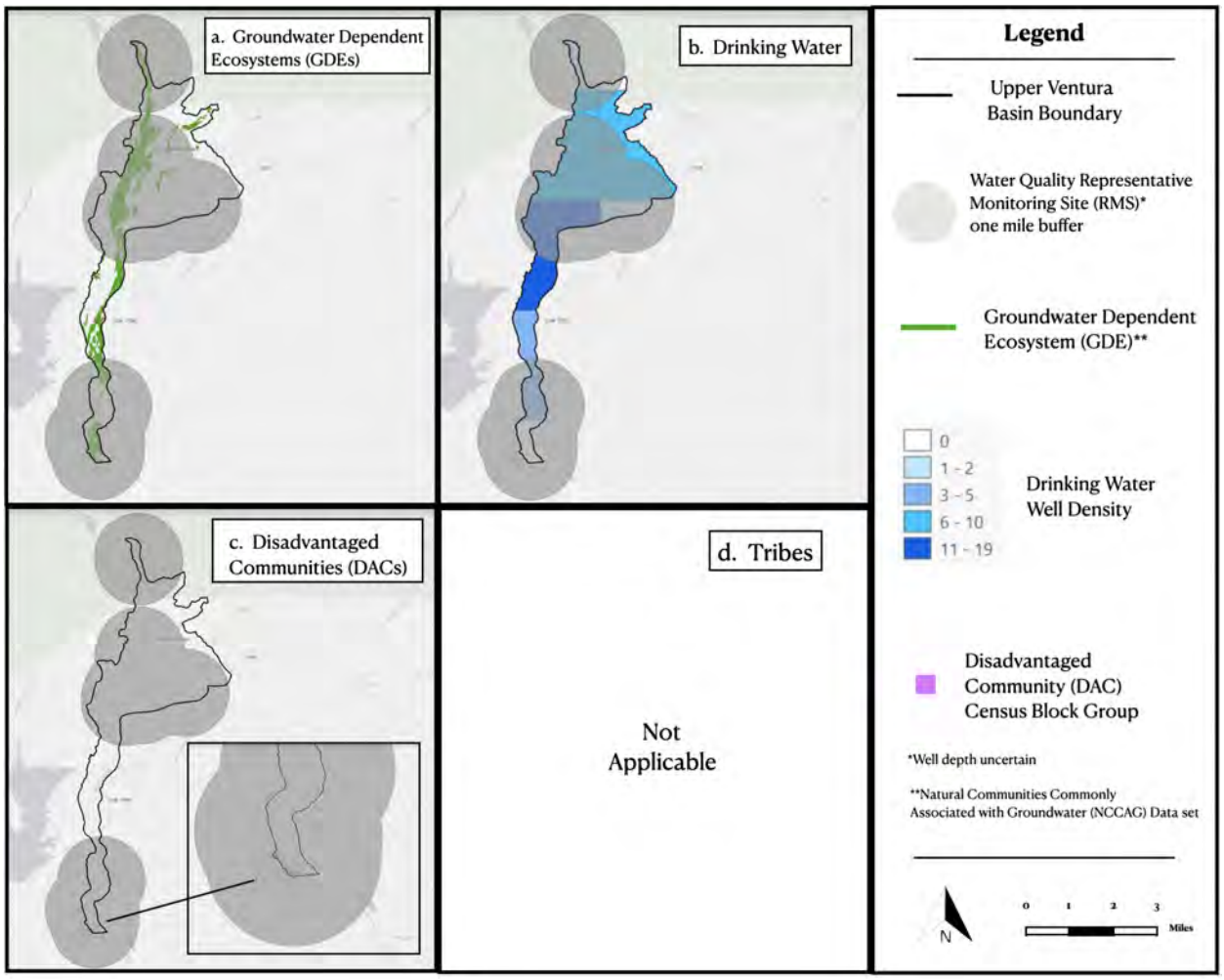


Figure 2. Groundwater quality representative monitoring sites in relation to key beneficial users: a) Groundwater Dependent Ecosystems (GDEs), b) Drinking Water users, c) Disadvantaged Communities (DACs), and d) Tribes.

PUBLIC WORKS VENTURA COUNTY

COUNTY of VENTURA

Jeff Pratt
Agency Director

David Fleisch
Assistant Director

Central Services **Joan Araujo**, Director | Engineering Services **Christopher Cooper**, Director | Roads & Transportation **Christopher Kurgan**, Director | Water & Sanitation **Joseph Pope**, Director | Watershed Protection **Glenn Shephard**, Director

October 8, 2021

Upper Ventura River Groundwater Agency
Attn: Mr. Bryan Bondy
202 W. El Roblar Dr.
Ojai, CA 93023

Subject: Public Comment Draft Upper Ventura River Valley Basin Groundwater Sustainability Plan

Dear Mr. Bondy:

Ventura County Public Works Agency, Watershed Protection (VCPWA-WP), appreciates the opportunity to review the Upper Ventura River Basin Groundwater Agency (UVRBGA) *Public Comment Draft Upper Ventura River Valley Basin Groundwater Sustainability Plant* (Draft) dated August 2021. Following are our comments:

On page ES-xi, a table such as Table 3.3.03 would be helpful to summarize demands and supplies and to provide a usage order of magnitude. It would also be helpful to provide a brief discussion of climate change assumptions (order of magnitude / %changes in precipitation / ET, etc.).

On page ES-xii, table ES-01, an explanation should be provided as to why the surface water historical total in/out (48,025-AFY) is lower than the current/projected in out (86,241/96,474-AFY).

On page ES-xiv, the well on which the groundwater levels in the hydrograph shown in Fig. ES-11 should be identified.

On Page ES-xxii, the Municipal and Industrial (M&I) and Agricultural (Ag) water use efficiency and Casitas Municipal Water District (CMWD) proposed projects to bridge the 5,160-AFY yield gap should be added as described in Section 6.

Section 2.2.1 lists the source types of water for municipal and industrial, agricultural, and domestic uses. Are there any significant stream, channel or surface water diversions contributing to water supplies (aside from the Robles Diversion and the privately owned

agricultural diversion mentioned in Sections 3.1.1.2 and 4.9.1)? The Draft only lists diversions reported by the State Water Resources Control Board (SWRCB).

Section 2.2.2.2 should be revised to reflect that the CMWD's 2020 Urban Water Management Plan update was completed and formally adopted.

In Section 2.2.2.2, have there been any recent updates to the Regional Water Quality Control Board (RWQCB) total maximum daily loads (TMDLs) for the Ventura River and its tributaries? If so, these updates should be referenced in the text.

In Section 2.2.3.2, it may be useful to state that that the California Well Standards Bulletins are undergoing a technical advisory committee review at the time of the GSP was prepared.

A statement should be included in Section 2.3.1 that CMWD's Mira Monte well pumps less than 1% of the water supplied by CMWD.

In Sections 3.1, 3.1.3.1.3 and 3.1.3.2, despite the lower hydraulic conductivity of the Ojai Conglomerate, could this formation potentially connect any portions of the water-bearing alluvial sediments of the Upper Ventura River Valley Basin and the Ojai Valley Basin? If so, the Ojai Valley Basin could act as a source of groundwater recharge in Section 3.1.3.2.

In general, there are references throughout the text to the groundwater model in Appendix H. It would be helpful to include a summary of the model in GSP text.

Section 3.1.1.3 states that water is not imported to the Ventura River Watershed. It may be appropriate to note the planned CMWD interconnect project with Carpinteria Valley Water.

Sections 3.1.3.3, 3.2.4 and 4.7 discuss the elevated concentrations of nitrates in the Mira Monte/Meiners Oaks Area. It should be noted that Ventura County discretionary planning reviews consider the RWQCB Basin Plan groundwater quality objectives and groundwater beneficial uses as pertains to potential development and proposed projects.

On page 70, last paragraph, climate change is anticipated to change the timing and duration of precipitation events and could influence the year-to-year surface and groundwater budgets. It is suggested to rephrase or acknowledge what is anticipated from climate change, but note that there is a large level of uncertainty.

On page 77 and Table 3.3-03 – While estimated Municipal and Industrial (M&I) demands have decreased over time, Agricultural (Ag) demands have stayed constant and therefore start to represent a larger portion of total demand. Discussion should be included about how this is addressed in the future water demands.

Table 3.3-03 shows annual Ag demands at 505 AFY, while Table 3.3-06 has a more specific Ag pumping demand. Is the difference due to Ag surface water deliveries? This should be clarified.

On page 78 – Reliability of Historic Surface Water Deliveries, information should be added on how CMWD estimates planned deliveries. Regarding the following text: “The surface water supply was deemed reliable because demands were less than projected for much of the historical period and the surface water supply was less than the safe yield of the reservoir, as it was understood at the time” and “the reservoir safe yield has been re-assessed to be 10,660 AF/yr for Lake Casitas (now called “safe demand”), as discussed in Sections 3.3.2 and 3.3.3.2.”

1. The first sentence above is not necessarily accurate since not all of Lake Casitas water is delivered to the Upper Ventura River (UVR). If the other CMWD demands increase, UVR deliveries could potentially decrease.
2. Did the “Safe Demand” estimate incorporate the climate change effects as outlined in this Draft? What is the estimated portion to be delivered to the UVR if the supply is limited to the “Safe Demand”?

On page 79, second paragraph, clarify if stream outflows from individual streams make up 83% of the total groundwater model domain inflows.

On page 82 – Average 2006-2016 ”M&I GW Supplies” of 845 AFY in Table 3.3-03 “Estimated Historical Demands and Supplies in the UVRGB by Category and Source” are much less than the average 2006-2016 “M&I Pumping” of 4,707 AFY in Table 3.3-06 “UVRGB Groundwater Inflows and Outflows by Water Year, Historical and Current Period.” Is this due to M&I exports out of the basin? If so, there should be a note on Table 3.3-03 similar to the note on Ag groundwater exports. Otherwise, this discrepancy needs to be explained.

On pages 87-88, per Table 3.3-03, are M&I demands appropriately estimated, given the likelihood of multiple-dry year conditions?

On page 88, in the last paragraph, there is a significant gap between the CMWD safe demand and project demand. What portion of the gap applies to UVR? Is the schedule to close this gap within the next 10 years overly optimistic?

Page 90 relates the conclusions from Baseline vs Climate Change. What is the frequency of ENSO/PDO events? Can it be stated that the size of the basin and its responsiveness to changes in precipitation/runoff such that the higher rain fall events of ENSO/PDO rapidly refill the basin?

On page 102, top paragraph, the statement “Modeling projections for the GSP suggest that the proposed minimum thresholds may be occasionally exceeded at some monitoring

locations (Appendix Q). However, the criterion for undesirable results is not predicted to be triggered during the 50-year GSP implementation period" seems contradictory and potentially weakens the selection of MTs.

On page 115, second Paragraph, "…and UVRGA determines that exceedances are caused by groundwater pumping." The criteria for making this determination should be identified.

Section 4.7.2.4 discusses the increased costs for treatment of groundwater to meet water quality objectives for municipal beneficial users. This is an important issue, especially within the Meiners Oaks Water District's pumping areas.

On page 132, top paragraph, consider using groundwater levels for measuring this SCM (in addition to flows). Measurement may be implied with the addition of new wells, but it is not sufficiently described in this section.

On page 142, Section 5.3, additional detail would be helpful regarding the spatial and temporal extent of the monitoring network. Although the GSP network may meet the DWR BMP guidance for well density, the Miramonte/Meiners Oaks area is lacking in monitoring locations. This could be a data gap with an additional well be needing to be identified in this area.

Does the Draft address amending the Plan at the five-year assessment to reflect any revisions or modifications made to the RWQCB Water Quality Objectives (Section 5.2)? The Draft discusses potential modification to monitoring networks if there are significant changes in pumping patterns or groundwater quality.

Section 6.2 states the UVRGA will attempt to survey domestic well owners in the Basin. The survey will be designed to collect information from the well owners about well status, construction, usage, etc. VCPWA-WP oversees compliance with the County Well Ordinance (No. 4468). UVRGA should notify VCPWA-WP if a well is surveyed and does not comply with the County Well Ordinance.

No mention is made of the CMWD proposed projects to increase water conservation and new water supply to bridge the 5,160 AFY gap in the loss of yield from Lake Casitas. The magnitude of impact of the 5,160-AFY to the UVR should also be documented.

The Draft does not discuss any anticipated effects on the Basin from the future removal of the Matilija Dam. It might be beneficial to discuss the impacts to the Basin after execution and completion of the project, likely to occur during the 20-year measurable objectives achievement period (Section 7.1.6).

If you should have any questions, please contact James Maxwell at james.maxwell@ventura.org or (805) 654-5164, or me at kim.loeb@ventura.org or (805) 650-4083.

Sincerely,

Kimball R. Loeb, PG, CEG, CHG
Manager, Groundwater Resources Section
Water Resources Division

C: Jeff Pratt, Director, Ventura County Public Works
Glenn Shephard, Director, Ventura County Public Works, Watershed Protection
Arne Anselm, Deputy Director, Ventura County Public Works, Water Resources

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DATE: October 8, 2021
TO: Brian Bondy, UVRGSA
FROM: Paul Jenkin, Surfrider Foundation
RE: **Comments on Draft Upper Ventura River Groundwater Sustainability Plan**

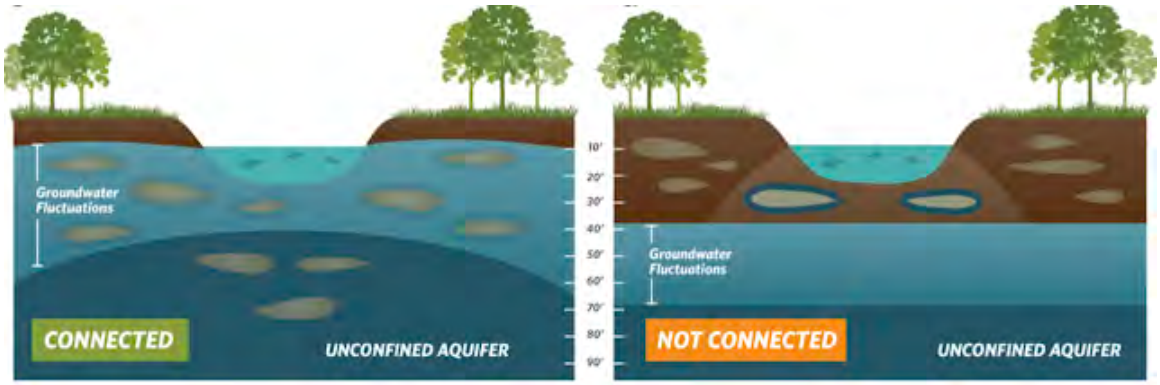
Dear Mr Bondy,

Thanks for the opportunity to review the Draft **Upper Ventura River Groundwater Sustainability Plan (GSP).** The Surfrider Foundation recognizes that sustainable management of coastal watersheds is critical to the protection and enhancement of our oceans, waves, and beaches. We have been engaged in issues affecting the Ventura River since the Ventura County Chapter was founded in 1991.

Upon review of the GSP it is clear that the primary Sustainable Management Criteria (SMC) for the Upper Ventura River Groundwater Basin (UVRGB) is the **Depletion of Interconnected Surface Water**. The analyses presented do not adequately assess the groundwater/surface water interactions within and between the different reaches of the basin or acknowledge the impact of groundwater pumping on surface flows.

Screening Groundwater Dependent Ecosystems (GDEs)

The Upper Ventura River Groundwater Basin is a shallow alluvial aquifer integral to the riparian floodplain ecosystem of the main stem Ventura River.



Confirming whether an ecosystem is connected to groundwater, TNC

The **Riparian Groundwater Dependent Ecosystems Assessment** Report characterizes the Robles reach as a "*Losing reach with generally disconnected groundwater- surface water.*" This categorization eliminates the majority of this Groundwater Dependent Ecosystem from consideration under SGMA by assuming that it is "disconnected" and thus has too great a depth to groundwater to support riparian habitat. Other reaches are similarly dismissed.

Figure 2 Potential Riparian GDEs, Hydrogeologic Areas, and Interconnected Surface Water Systems within the UVRGB

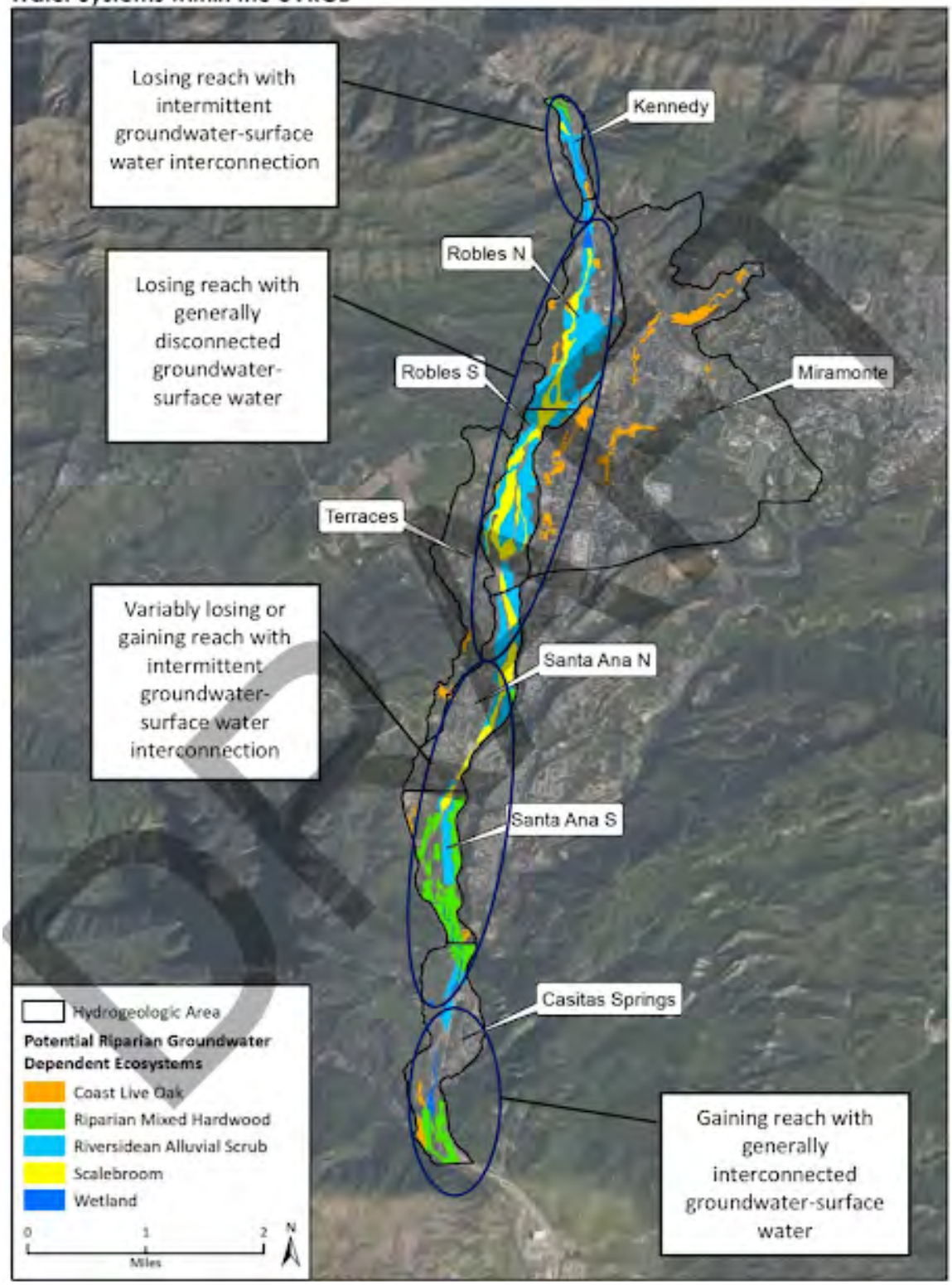


Figure 2 from Riparian Groundwater Dependent Ecosystems Assessment

The analysis presented relies heavily on the Nature Conservancy "Natural Communities (NC) Dataset," using vegetation communities to eliminate GDE polygons from the Upper Ventura River Groundwater Basin. The NC dataset is a statewide geographic computer database that maps vegetation types in all potential GDEs throughout the State of California. The large geographic scope of this map does not accurately represent current on-the-ground conditions, and more robust ground truthing should be undertaken. Even the aerial photos presented tell a different story than is acknowledged in the narrative (i.e. Figure 6 North Robles Habitat Area Photographs, Aquatic GDE Characterization report)

Photograph 2. Southern portion of North Robles Habitat Area (facing south)

Figure 6 North Robles Habitat Area Photographs

Unfortunately, the UVRGSA analysis does not fully implement the **Best Practices for using the NC Dataset** guidance provided by the Nature Conservancy, which presents six best practices for using local groundwater data to confirm whether mapped features in the NC dataset are supported by groundwater. (Best Practices for using the NC Dataset, TNC July 2019)

According to this guidance:

> *While depth-to-groundwater levels within 30 feet of the land surface are generally accepted as being a proxy for confirming that polygons in the NC dataset are supported by groundwater,* ***it is highly advised that fluctuations in the groundwater regime be characterized to understand the seasonal and interannual groundwater variability in GDEs.*** *(see Best Practice #2.)*

> ***one of the key factors to consider when mapping GDEs is to contour depth-to-groundwater in the aquifer that is supporting the ecosystem*** *(see Best Practice #5).*

The **GIS Spatial Analysis of Maximum Rooting Depth and Groundwater Level** presented in the Riparian GDE document **does not present such *contour depth-to-groundwater*** mapping or account for temporal variability.

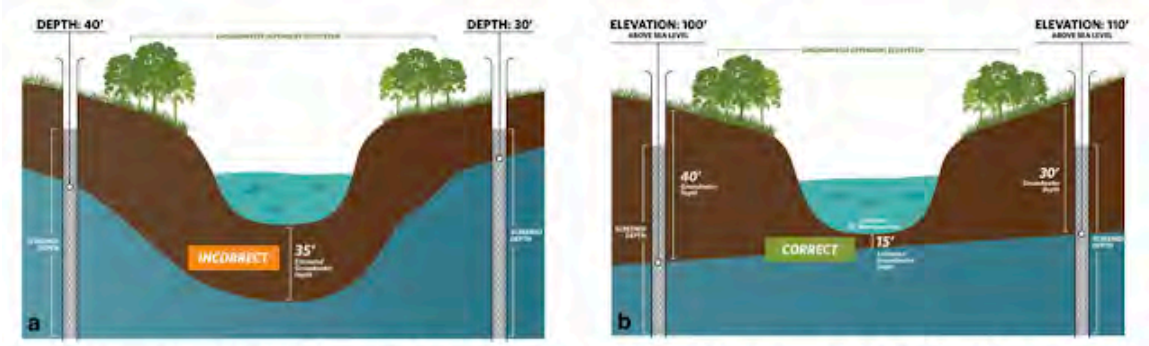


Figure 6. Contouring depth-to-groundwater around surface water features and GDEs. (a) Groundwater level interpolation using depth-to-groundwater data from monitoring wells. **(b)** Groundwater level interpolation using groundwater elevation data from monitoring wells and DEM data.

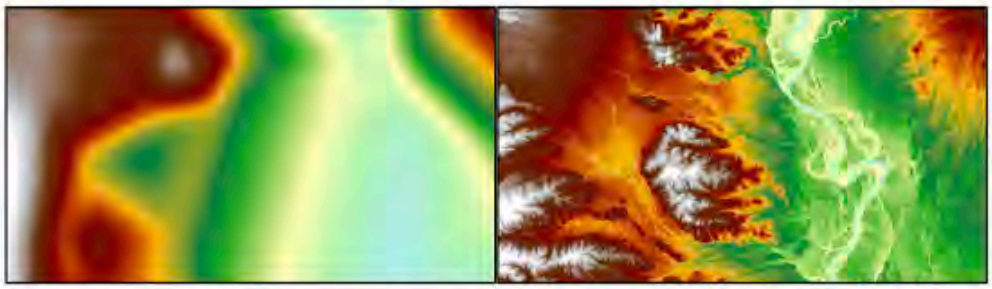


Figure 7. Depth-to-groundwater contours in Northern California. (Left) Contours were interpolated using depth-to-groundwater measurements determined at each well. **(Right)** Contours were determined by interpolating groundwater elevation measurements at each well and superimposing ground surface elevation from DEM spatial data to generate depth-to-groundwater contours. The image on the right shows a more accurate depth-to-groundwater estimate because it takes the local topography and elevation changes into account.

Figures from Best Practices for using the NC Dataset, TNC

Furthermore, TNC guidance acknowledges that;

> *In many situations, the hydrologic connection of NC dataset polygons will not initially be clearly understood if site-specific groundwater monitoring data are not available. If sufficient data are not available in time for the 2020/2022 plan,* ***The Nature Conservancy strongly advises that questionable polygons from the NC dataset be included in the GSP until data gaps are reconciled in the monitoring network.*** *Erring on the side of caution will help minimize inadvertent impacts to GDEs as a result of groundwater use and management actions during SGMA implementation.*
>
> *Many of California's GDEs have adapted to dealing with intermittent periods of water stress, however if these groundwater conditions are prolonged, adverse impacts to*

GDEs can result.

Therefore, it is likely that the NC vegetation mapping is representative of conditions in which groundwater levels have been frequently and repeatedly pumped beyond the reach of riparian tree roots. Meanwhile, field observations over the past few wetter years show that the riparian vegetation has rebounded, illustrating how the ecosystem responds with the variation in water years. Receding groundwater levels and corresponding loss of surface flows due to pumping during the current drought will likely reverse this recent trend, with the potential loss of the many young sycamores and other riparian vegetation.

Determining Groundwater/Surface water interactions

TNC guidance for determining GDEs recognizes the importance of surface flows;

> *In addition, SGMA requires that significant and undesirable adverse impacts to beneficial users of surface water be avoided.* ***Beneficial users of surface water include environmental users such as plants or animals, which therefore must be considered when developing minimum thresholds for depletions of interconnected surface water****.*

The **Model Results and SMC Implications Presentation (March 25, 2021)** reaches the conclusion that:

- *Basin water budget is dominated by streamflow percolation into the Basin and groundwater discharge to Ventura River*
- *GW pumping averages only ~10% of the GW Budget As low as 4% in wet years Up to 31% in dry years*
- *Basin GW levels will be lower in dry seasons, but Basin will still re-fill in normal to wet years*

The conclusion that there is no impact from pumping based on the fact that the basin rapidly refills in the wet season points to the likelihood that the surface water is in fact "connected" to groundwater during these periods. Moreover, the fact that pumping represents up to 31% of the basin water budget in critical dry years raises the question of how these groundwater extractions impact surface flows and groundwater levels.

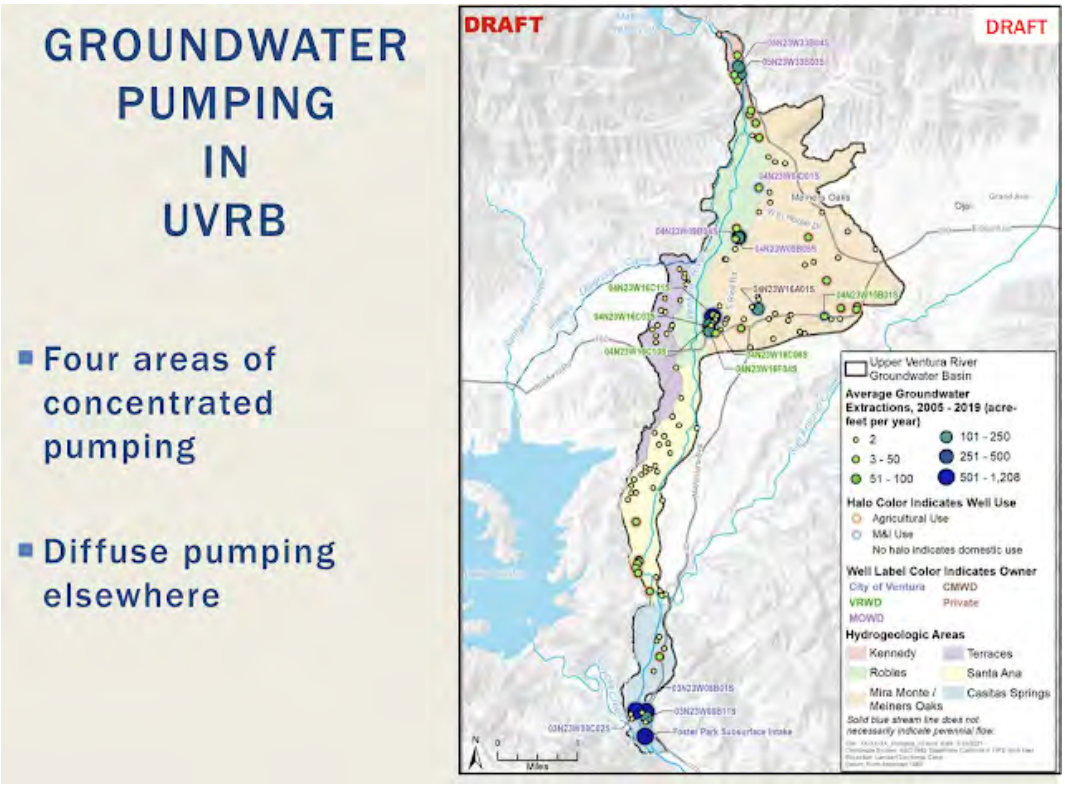
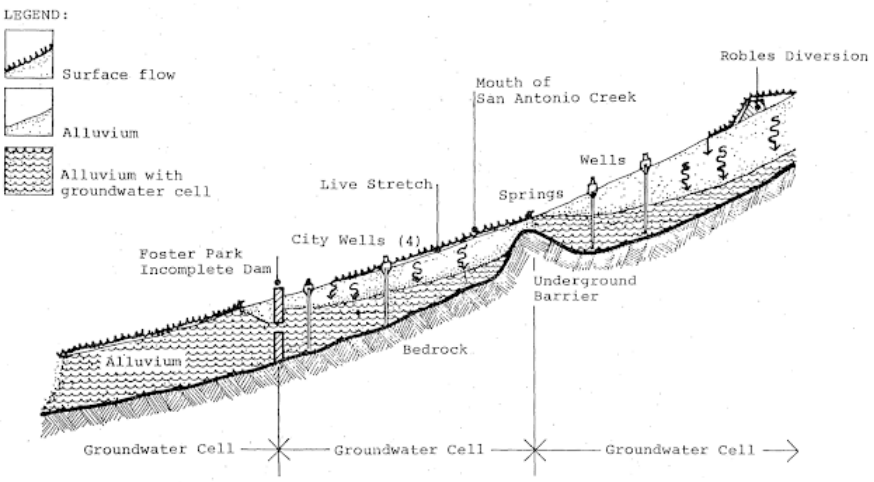


figure from Model Results and SMC Implications Presentation (March 25, 2021)

The Model Results identify four areas of concentrated pumping, three of which directly impact groundwater levels in the "Robles Reach." This reach is the area with the most storage in the basin, and should be considered as the "primary sub-basin" for water supply. The three areas of concentrated pumping in this reach are likely to affect conditions throughout the basin.

The analyses and graphs presented in the Model Results do not provide information on the spacial and temporal surface flow conditions as they relate to groundwater levels. Because the downstream reaches are largely dependent on surface and groundwater flows out of this sub-basin, further analysis is needed to more clearly define the relationship between groundwater levels and surface flows. The analyses should, at a minimum, determine threshold groundwater levels at which surface flows are diminished or eliminated, both in the reach being monitored and downstream.



Ventura River at Casitas Springs

Schematic Diagram of Ventura River at Casitas Springs - Summer Condition

This relationship was established decades ago in the **Ventura River Conjunctive Use Report (1978)** which states that;

> *Flows in the live stretch are affected by both the rate of recharge of the upper part of the Ventura River groundwater basin and by the rate of groundwater extraction from wells in the river.*

Investigations published in the Conjunctive Use Report identified groundwater elevation thresholds in the upper basin at which flows in the live reach will cease;

> *when the water level in well 4N23Wl6C4 falls below Elevation 495, surface flow in much of the live stretch stops although some pools remain. A flow of 1 cfs or more in the live stretch corresponds with a water level in this well of greater than about Elevation 507.*

Groundwater levels also affect surface flows in the Robles Reach, which frequently dries up despite constant inflows. Unfortunately, the **Aquatic GDE Impact Analysis** is quick to dismiss the effect of groundwater elevation on surface flows;

> *No monitoring is recommended at either of the critical riffle aquatic GDEs or the Robles Habitat Area, as impacts from pumping in these areas were determined to be minimal or non-existent.*

This conclusion is inconsistent with the guidance provided in Monitoring Networks and Identification of Data Gaps BMP (DWR 2016) which states:

> *23 CCR §354.34(c))(6): Depletions of Interconnected Surface Water.*
> *Monitor surface water and groundwater, where interconnected surface water conditions exist, to characterize the spatial and temporal exchanges between surface water and groundwater, and to calibrate and apply the tools and methods necessary*

> *to calculate depletions of surface water caused by groundwater extractions. The monitoring network shall be able to characterize the following:*
> *(A) Flow conditions including surface water discharge, surface water head, and baseflow contribution.*
> *(B) Identifying the approximate date and location where ephemeral or intermittent flowing streams and rivers cease to flow, if applicable.*
> *(C) Temporal change in conditions due to variations in stream discharge and regional groundwater extraction.*
> *(D) Other factors that may be necessary to identify adverse impacts on beneficial uses of the surface water.*

DWR guidance provides detailed information on developing a monitoring network to accurately assess these concerns.

Establishing Minimum Flow Thresholds

As described above, the current GSP analysis incorrectly concludes that groundwater pumping has little to no effect on surface flows throughout the majority of the basin. But even for the identified groundwater dependent "Habitat Areas," the development of minimum flow thresholds is inadequate. For example;

> *For the Foster Park Habitat Area, while the City's low-flow thresholds are based on only one HSI score evaluated in the Padre study (average thalweg depth), we understand this currently provides the best available information to establish minimum thresholds for the depletion of interconnected surface water sustainability criteria.*

This statement ignores best available science, including the recently published CDFW Draft Instream Flow Recommendations (2021) as well as the NMFS Draft Biological Opinion for Foster Park Wellfield (2005).

Implications for the UVR Groundwater Sustainability Plan

According to the Brownstein Water Group, the Cuyama Valley Basin and the Paso Robles Area Subbasin GSPs were recently deemed incomplete for deficiencies in their definitions of sustainable management criteria (SMC), including minimum thresholds and undesirable results. Some of the concerns cited by DWR are that the GSP;

- *provides insufficient detail for how it determined that the selected minimum thresholds . . . are consistent with avoiding undesirable results*
- *does not relate different minimum thresholds for different portions of the basin to conditions that could cause undesirable results*
- *does not sufficiently discuss expected impacts and therefore "precludes meaningful disclosure to, and participation by, interested parties and residents in the Basin.*

It is clear from these recent DWR determinations that much more work is needed to develop and present a clear understanding of the workings of the Upper Ventura River Groundwater Basin, the potential impacts from groundwater pumping, and a plan to better manage the limited resource to ensure future sustainability and a healthy ecosystem.

Recommendation:

The primary storage within the Upper Ventura River Groundwater Basin lies beneath the floodplain of the Robles reach of the Ventura River. Further analysis is needed to develop a meaningful assessment of the impact of groundwater pumping on surface flows in the Ventura River. This should include contour mapping as described in the TNC Guidance documents as well as a plan to install monitoring wells to better characterize the depth to groundwater and connectivity throughout the basin, especially through the Robles reach where the majority of pumping takes place. It is clear that this will be necessary to successfully develop the Groundwater Sustainability Plan to a level that satisfies the objectives of the Sustainable Groundwater Management Act (SGMA) in order to gain the support of local stakeholders and approval by the California Department of Water Resources.

Bryan Bondy

From: Jennifer Tribo <jtribo@cityofventura.ca.gov>
Sent: Friday, October 8, 2021 3:44 PM
To: Bryan Bondy
Cc: Susan Rungren
Subject: RE: -EXT- RE: City of Ventura Comments on Draft Upper Ventura River GSP

Bryan – We have reviewed the latest draft of the GSP and do not have any additional comments, but I did want to follow-up on our comments from July.

- 2-1 Agency Information – Decided to leave as is. It is accurate.
- 2.2.2.2 Existing Water Resources Management Programs – I checked the updated documents and the numbers you used for modeling. Updating the UWMP Reference to 2020 will not change anything and is more accurate. Updating the WSECP reference to 2020 will not change any numbers. However, I do suggest leaving the 2020 CWRR reference. That is the only document that still has the single year drought extraction of 1,573 AF. The 2021 CWRR uses 1,298 AF for all drought years. I know you cannot change the modeling now (and I don't think you need to), so just leave the 2020 CWRR reference. In future updates, we will have better information on our actual extractions under the settlement protocols.
- The only other comment I was going to make was to explain the limitations how our settlement agreement protocols are modeled, but I think the sentence at the top of p130 and footnote 9 are sufficient. However, if you get comments that suggest others may need more clarification/explanation, please let me know.

Overall, great job. Thanks for your hard work on this.

Jennifer

From: Bryan Bondy <bbondy@uvrgroundwater.org>
Sent: Thursday, July 22, 2021 7:03 PM
To: Jennifer Tribo <jtribo@cityofventura.ca.gov>
Cc: Susan Rungren <srungren@cityofventura.ca.gov>
Subject: -EXT- RE: City of Ventura Comments on Draft Upper Ventura River GSP

Thanks again Jenny. Regarding the third comment – do you know if changing the references as suggested would affect any of the numbers we included in the GSP or used for modeling?

From: Jennifer Tribo <jtribo@cityofventura.ca.gov>
Sent: Thursday, July 22, 2021 12:09 PM
To: Bryan Bondy <bbondy@uvrgroundwater.org>

Cc: Susan Rungren <srungren@cityofventura.ca.gov>
Subject: City of Ventura Comments on Draft Upper Ventura River GSP

Bryan – We have given the Draft GSP a preliminary review, and have the following comments:
Please note that we will be giving the Draft GSP a more thorough review during the public comment period and may have additional edits, but we do not expect these edits to be consequential to the conclusions of the GSP. Overall, we thought it was a well written comprehensive document and appreciate your hard work on its development.

- Executive Summary – *"Ventura River Watershed Adjudication (titled Santa Barbara Channelkeeper v. State Water Resources Control Board and the City of San Buenaventura (Los Angeles County Superior Court, Case No. 19STCP01176)"*
  - We agree with this text. Good summary of a dynamic process.
- 2-1 Agency Information –
  - Will submit suggested edits to City description during the public review process.
- 2.2.2.2 Existing Water Resource Management Programs –
  - Suggest updating References to City documents – The 2021 CWRR, 2020 UWMP, and 2020 Water Shortage Event Contingency Plan have all been completed and were approved by City Council in May/June 2021.
- 3.3.1.1 Historical Demands, Supplies, and Reliability of Surface Water Deliveries – Municipal and Industrial Groundwater Supplies –
  - Suggest the following edit on Page 76
    - Municipal and Industrial (M&I) Groundwater Supplies: VRWD, CMWD, and MOWD pump groundwater within the basin to meet M&I demands. Groundwater pumping for the water districts were compiled based on reported data (details on pumping estimates for UVRGB are in Appendix F). A fraction (based on the proportion of their respective service areas inside UVRGB) of VRWD and MOWD total groundwater extractions were estimated to be used for demands within the basin. All of CMWD's groundwater pumping was assumed to meet local demands (within the UVRGB). Note that the City of Ventura pumps groundwater from the UVRGB ~~but exports all this water to meet demands outside the UVRGB.~~ for use within the Ventura River watershed, but outside the boundaries of the Upper Ventura River groundwater basin. Hence, City of Ventura pumping was not included as part of UVRGB groundwater supplies to meet demands within the Basin. Historically, it is estimated that 19% of total M&I pumping is used to meet demands within the basin.
- 4.9.1 Undesirable Results
  - Proposed edit to Foster Park Habitat Area section on page 128 (third full paragraph):
    - The bottom chart of Figure 4.9-03 shows both total depletions (black line) and the direct depletions associated with the City of Ventura's Foster Park extraction facilities (cyan line) that are simulated to cause stream flow to be depleted below 2 cfs. The difference between black and cyan lines is the indirect depletion associated with pumping wells located upstream of Foster Park. When interpreting the results in Table 4.9-02 and Figure 4.9-03, it is important to recall that the model simulations assume decreased annual pumping from City of Ventura's Foster Park extraction facilities during dry years, with no pumping during August – January (Table 4.9-03). The City of Ventura Foster Park pumping schedule employed in the model simulation is intended to approximate, but not exactly replicate, the Foster Park Flow Protocols[9]~~. Simulated City of Ventura depletions would have likely been larger if historical Foster Park extraction patterns had been used in the simulation.~~

Bryan Bondy

From: Upper Ventura River Groundwater Agency <sward@uvrgroundwater.org>
Sent: Friday, October 8, 2021 4:24 PM
To: Summer Ward
Subject: GSP Comment/Question

GSP Comment/Question Form	
Last Name:	Pitterle
First Name:	Benjamin
Email Address:	ben@sbck.org
Confirm Email Address:	ben@sbck.org
Phone:	
Mailing Address:	Santa Barbara Channelkeeper
GSP Section for Comment/Question:	4.4 Chronic Downing of Groundwater Levels
GSP Comment/Question:	Chronic Lowering of Groundwater Levels The GSP used the lowest recorded historical groundwater level outlier as the groundwater level and storage minimum threshold. The stated purpose of establishing this threshold is to prevent significant and unreasonable effects that include causing municipal, domestic, or agricultural beneficial users to be unable to meet basic water supply needs with groundwater or alternative supplies, or permanent or prolonged impacts to riparian GDEs. We note that the ability to pump groundwater from the Robles reach is routinely disrupted during drought for many water rights holders in the basin including the existing municipal water districts. These purveyors rely significantly if not entirely during drought years on alternative supply from Lake Casitas. Lake Casitas is currently critically reduced in capacity. In light of these circumstances and the risk of increased frequency of drought due to climate change, we find the selection of the lowest recorded historical groundwater level in appropriate as a minimum threshold to prevent undesirable effects to water supplies related to chronic lowering of groundwater levels.
Would you like to join the UVRGA Official Interested Parties List?:	Yes

Beneficial Uses:

This email was built and sent using Visual Form Builder.

Bryan Bondy

From: Upper Ventura River Groundwater Agency <sward@uvrgroundwater.org>
Sent: Friday, October 8, 2021 4:21 PM
To: Summer Ward
Subject: GSP Comment/Question

GSP Comment/Question Form

Last Name:	Pitterle
First Name:	Benjamin
Email Address:	ben@sbck.org
Confirm Email Address:	ben@sbck.org
Phone:	
Mailing Address:	Santa Barbara Channelkeeper 714 Bond Avenue Santa Barbara, CA 93103
GSP Section for Comment/Question:	4.9 Depletions of Interconnected Service Water
GSP Comment/Question:	Foster Park Flow Protocols The "Foster Park Flow Protocols" are not based on the best available science. Santa Barbara Channelkeeper negotiated the protocols with the City of Ventura as a means to provide "life support" for the lower reaches until a final outcome is reached with the Ventura River Watershed Adjudication. The State Water Board's groundwater and surface water model was not available when the protocols were developed. The California Department of Fish and Wildlife's instream flow recommendations for the Ventura River were not available when the protocols were developed. Based on current implementation of the protocols in 2021, extractions at Foster Park continued to take place even though river flows in the reach dropped below 2 CFS for prolonged periods of time. 2 CFS was identified by the City of Ventura's own 2013 Hydrology Study as a critical threshold below which is detrimental to critical habitat conditions. The "Foster Park Flow Protocols" do not have the endorsement of State and Federal resource agencies. For these reasons, the GSP should not rely on long-term implementation of the "Foster Park Flow Protocols" to ensure that undesirable results do not occur.

Would you like to join the UVRGA Official Interested Parties List?: Yes

Beneficial Uses:

This email was built and sent using Visual Form Builder.

Bryan Bondy

From: Upper Ventura River Groundwater Agency <sward@uvrgroundwater.org>
Sent: Friday, October 8, 2021 4:13 PM
To: Summer Ward
Subject: GSP Comment/Question

GSP Comment/Question Form

Last Name:	Pitterle
First Name:	Benjamin
Email Address:	ben@sbck.org
Confirm Email Address:	ben@sbck.org
Phone:	
Mailing Address:	Santa Barbara Channelkeeper 714 Bond Avenue Santa Barbara, CA 93103 United States of America
GSP Section for Comment/Question:	4.9 Depletions of Interconnected Service Water
GSP Comment/Question:	GDE Analysis The GSP has not adequately demonstrated that permanent and prolonged impacts to GDEs have not already occurred in the Robles reach due to historic groundwater extractions. Rather, the GSP essentially asserts that the Robles reach is not a GDE because certain riparian vegetation communities were not identified in the GSA's recent analysis. Significant groundwater extractions, however, have been occurring for many decades. Such extractions and any related depletions of surface water would likely have significant impact on any riparian vegetation that may have been present during the period analyzed during GSP development. Channelkeeper echoes comments submitted by the Surfrider Foundation, Ventura Chapter as they related to the GDE analysis included in the draft GSP. These comments are reiterated below: "The Riparian Groundwater Dependent Ecosystems Assessment Report characterizes the Robles reach as a "Losing reach with generally disconnected groundwater- surface water." This categorization eliminates the majority of this Groundwater Dependent Ecosystem from consideration under SGMA by assuming that it is

"disconnected" and thus has too great a depth to groundwater to support riparian habitat. Other reaches are similarly dismissed. The analysis presented relies heavily on the Nature Conservancy "Natural Communities (NC) Dataset," using vegetation communities to eliminate GDE polygons from the Upper Ventura River Groundwater Basin. The NC dataset is a statewide geographic computer database that maps vegetation types in all potential GDEs throughout the State of California. The large geographic scope of this map does not accurately represent current on-the-ground conditions, and more robust ground truthing should be undertaken. Even the aerial photos presented tell a different story than is acknowledged in the narrative. Unfortunately, the UVRGSA analysis does not fully implement the Best Practices for using the NC Dataset guidance provided by the Nature Conservancy, which presents six best practices for using local groundwater data to confirm whether mapped features in the NC dataset are supported by groundwater. (Best Practices for using the NC Dataset, TNC July 2019) According to this guidance: While depth-to-groundwater levels within 30 feet of the land surface are generally accepted as being a proxy for confirming that polygons in the NC dataset are supported by groundwater, it is highly advised that fluctuations in the groundwater regime be characterized to understand the seasonal and interannual groundwater variability in GDEs. (see Best Practice #2.) one of the key factors to consider when mapping GDEs is to contour depth-to-groundwater in the aquifer that is supporting the ecosystem (see Best Practice #5). The GIS Spatial Analysis of Maximum Rooting Depth and Groundwater Level presented in the Riparian GDE document does not present such contour depth-to-groundwater mapping or account for temporal variability. Furthermore, TNC guidance acknowledges that; In many situations, the hydrologic connection of NC dataset polygons will not initially be clearly understood if site-specific groundwater monitoring data are not available. If sufficient data are not available in time for the 2020/2022 plan, The Nature Conservancy strongly advises that questionable polygons from the NC dataset be included in the GSP until data gaps are reconciled in the monitoring network. Erring on the side of caution will help minimize inadvertent impacts to GDEs as a result of groundwater use and management actions during SGMA implementation. Many of California's GDEs have adapted to dealing with intermittent periods of water stress, however if these groundwater conditions are prolonged, adverse impacts to GDEs can result. Therefore, it is likely that the NC vegetation mapping is representative of conditions in which groundwater levels have been frequently and repeatedly pumped beyond the reach of riparian tree roots. Meanwhile, field observations over the past few wetter years show that the riparian vegetation has rebounded, illustrating how the ecosystem responds with the variation in water years. Receding groundwater levels and corresponding loss of surface flows due to pumping during the current drought will likely reverse this recent trend, with the potential loss of the many young sycamores and other riparian vegetation. Determining Groundwater/Surface water interactions TNC guidance for determining GDEs recognizes the importance of surface flows; In addition, SGMA requires that significant and undesirable adverse impacts to beneficial users of surface water be avoided. Beneficial users of surface water include environmental users such as plants or animals, which therefore must be considered when developing minimum thresholds for depletions of interconnected surface water. The Model Results and SMC Implications Presentation (March 25, 2021) reaches the conclusion that: • Basin water budget is dominated by streamflow percolation into the Basin and groundwater discharge to Ventura River • GW pumping averages only ~10% of the GW Budget As low as 4% in wet years Up to 31% in dry years • Basin GW levels will be lower in dry seasons, but Basin will still re-fill in normal to wet years The conclusion that there is no impact from pumping based on the fact that the basin rapidly refills in the wet season points to the likelihood that the surface water is in fact "connected" to groundwater during these periods. Moreover, the fact that pumping represents up to 31% of

the budget in critical dry years raises the question of how groundwater extractions impact surface flows and groundwater levels. The Model Results identify four areas of concentrated pumping, three of which directly impact groundwater levels in the "Robles Reach." This reach is the area with the most storage in the basin, and should be considered as the "primary sub-basin" for water supply. The three areas of concentrated pumping in this reach are likely to affect conditions throughout the basin. The analyses and graphs presented in the Model Results do not provide information on the spacial and temporal surface flow conditions as they relate to groundwater levels. Because the downstream reaches are largely dependent on surface and groundwater flows out of this sub-basin, further analysis is needed to more clearly define the relationship between groundwater levels and surface flows. The analyses should, at a minimum, determine threshold groundwater levels at which surface flows are diminished or eliminated, both in the reach being monitored and downstream. This relationship was established decades ago in the Ventura River Conjunctive Use Report (1978) which states that; Flows in the live stretch are affected by both the rate of recharge of the upper part of the Ventura River groundwater basin and by the rate of groundwater extraction from wells in the river. Investigations published in the Conjunctive Use Report identified groundwater elevation thresholds in the upper basin at which flows in the live reach will cease; when the water level in well 4N23Wl6C4 falls below Elevation 495, surface flow in much of the live stretch stops although some pools remain. A flow of 1 cfs or more in the live stretch corresponds with a water level in this well of greater than about Elevation 507. Groundwater levels also affect surface flows in the Robles Reach, which frequently dries up despite constant inflows. Unfortunately, the Aquatic GDE Impact Analysis is quick to dismiss the effect of groundwater elevation on surface flows; No monitoring is recommended at either of the critical riffle aquatic GDEs or the Robles Habitat Area, as impacts from pumping in these areas were determined to be minimal or non-existent. This conclusion is inconsistent with the guidance provided in Monitoring Networks and Identification of Data Gaps BMP (DWR 2016) which states: 23 CCR §354.34(c))(6): Depletions of Interconnected Surface Water. Monitor surface water and groundwater, where interconnected surface water conditions exist, to characterize the spatial and temporal exchanges between surface water and groundwater, and to calibrate and apply the tools and methods necessary to calculate depletions of surface water caused by groundwater extractions. The monitoring network shall be able to characterize the following: (A) Flow conditions including surface water discharge, surface water head, and baseflow contribution. (B) Identifying the approximate date and location where ephemeral or intermittent flowing streams and rivers cease to flow, if applicable. (C) Temporal change in conditions due to variations in stream discharge and regional groundwater extraction. (D) Other factors that may be necessary to identify adverse impacts on beneficial uses of the surface water. DWR guidance provides detailed information on developing a monitoring network to accurately assess these concerns." Confluence Area GDE The Draft GSP accurately identifies the Confluence Area as a GDE. The GSP, however, falls short in its determination that more years of study are necessary to determine if surface flow depletions caused by upstream pumping are significant and unreasonable. The confluence area is critical habitat for federally endangered Southern California steelhead trout. Steelhead have been observed over-summering in pools within this reach by state and local resource agencies. Surface water habitat and water quality conditions degrade significantly (to the point of complete dewatering) in this reach due to depletions of interconnected groundwater in the Robles reaches. The numeric model utilized to determine the effect of pumping on surface flows in the Confluence Area is not based on the best available science, which includes the State Water Resource Control Board's Groundwater and Surface Water model, currently well under development. "Direct" Depletions of Surface Water The GSP defines the

terms “direct” and “indirect” depletion with regard to depletion of interconnected surface waters. Direct depletion is defined as surface water depletion caused by a cone of depression from pumping wells near the Ventura River. The GSP, however, then continues to identify only the Foster Park Well field as a facility causing direct depletion. Multiple, major water extraction facilities are located in the Robles reach of the Upper Ventura River Basin. These facilities utilize wells located in direct proximity of the Ventura River. Pumping from these wells has the potential to create a cone of depression that could deplete surface flows. The Robles Reach historically receives perennial inflows from the upper Ventura River and its Matilija Creek and North Fork Matilija Creek tributaries. These inflows persist even during prolonged periods of drought. The GSP has not provided adequate evidence to support its assertion that most groundwater in the basin “naturally” drains out of the basin at a rate greater than inflows. In any case, pumping from wells located within the basin and within immediate proximity of the Ventura River clearly have the capacity to produce cone of depression effects that can reduce and eliminate surface flows earlier than may naturally occur absent pumping. Such reduction in flows could have significant effects on riparian habitat and aquatic communities within the Robles Reach and downstream.

Would you like to join the UVRGA Official Interested Parties List?: Yes

Beneficial Uses:

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UPPER VENTURA RIVER GROUNDWATER AGENCY Item No. 10(c)

DATE: October 14, 2021

TO: Board of Directors

FROM: Executive Director

SUBJECT: Intera, Inc. Work Order No. 3 Budget Modification (Grant Category (a): Grant Administration)

SUMMARY

Intera, Inc. (Intera) Work Order No. 3 includes groundwater sustainability plan (GSP) and groundwater model development services (Attachment A). Work Order No. 3 was approved by the Board on May 14, 2020 for a not-to-exceed budget of $418,780.

Intera has diligently performed the services necessary to work with Executive Director and Rincon Consultants, Inc. to produce a high-quality preliminary draft GSP and draft GSP. During the course of the work additional, unanticipated effort was necessary to complete the GSP drafts. Key items that resulted in additional effort not included in the Work Order No. 3 budget, included the following:

- Task 1 – Develop Draft GSP:
  - Animation videos were created to help the Board and stakeholders visualize and understand the complex interactions between groundwater and surface water. Intera's scope of work did not assume the animation videos would be created.
  - Not mentioned in Intera's proposal (Attachment B) but true, is the fact that a significant additional effort was required to render the hydrogeologic conceptual model content provided by a prior consultant SGMA compliant.
- Task 2 – Respond to Comments, Finalize, and Submit GSP
  - Two versions of the GSP were budgeted (one draft and one final GSP). Pursuant to Board direction, three versions were/will be prepared (preliminary draft, draft and final). Extensive comments from Board members provided on the preliminary draft were addressed, which were not budgeted for.
- Task 6 – Project Management:
  - A greater number of and longer duration project coordination calls were necessary to coordinate with the Executive Director and Rincon Consultants during project execution.

The total estimated cost of the above-described items was $51,000.

Intera's Work Order No. 3 contract balance is $6,150 as of September 30, 2021. Additional funds are needed to complete the project, including responding to stakeholder comments, preparing the final GSP for approval, and uploading the GSP and associated data and references to the DWR on-line SMGA portal. The cost for the remaining effort is estimated to be $40,980 (i.e., $34,830 more than the current work order balance). Therefore, Intera is requesting a $34,830 increase in the contract limit to compete the remaining work. The Executive Director recommends adding $10,000 of contingency to the requested amount, making the recommended contract increase $44,830. Use of any contingency funds would require a written request by Intera and written approval by the Executive Director. Because Work Order No. 3 is a time-and-materials contract, UVRGA will only be billed for the actual effort necessary to complete the remaining assigned work.

RECOMMENDED ACTIONS

Authorize the Executive Director to increase the not-to-exceed budget for Intera, Inc. Work Order No. 3 up to $463,610.

BACKGROUND

Intera's Master Services Agreement was approved by the Board on April 11, 2019. Work Order No. 3 was approved by the Board on May 14, 2020.

FISCAL SUMMARY

The proposed contract increase is included in the current fiscal year budget. Please see Item 10(a) Attachment B for budget analysis.

ATTACHMENTS

A. Intera, Inc. Work Order No. 3
B. Intera, Inc. Work Order No. 3 Budget Increase Proposal

Action: _____

Motion:_____ Second: _____

B. Kuebler___ D. Engle___ P. Kaiser ___ S. Rungren___ G. Shephard___ E. Ayala___ L. Rose___

Item 10(c)

Attachment A

Intera, Inc. Work Order No. 3

Statement of Work

Work Order No. 3

GSP and Groundwater Flow Model Development

To: Intera, Inc.
3838 W Carson St, Ste 380
Torrance, CA 90503
Attention: Abhishek Singh
Email: ASingh@intera.com

From: Upper Ventura River Groundwater Agency
202 W. El Roblar Dr., Ojai, California 93023
Attention: Bryan Bondy
Email: bbondy@uvrgroundwater.org

In accordance with our Master Services Agreement (**"MSA"**) dated April 12, 2019, the following Statement of Work (**"SOW"**) is entered into by Upper Ventura River Groundwater Agency (**"Customer"**) and Intera, Inc. (**"Provider"**) for a new project and/or services (collectively, **"Services"**):

GENERAL NATURE OF SERVICES: Groundwater Sustainability Plan and groundwater flow model development for the Upper Ventura River Basin, as further described in the attached proposal. Provider shall ensure all work is performed under the supervision of a California Professional Civil Engineer or Professional Geologist. Provider shall ensure all work is performed in accordance with UVRGA's adopted procedures.

SCOPE OF SERVICES: See attached proposal.

TERM: May 14, 2020 through January 31, 2022.

COMPENSATION AND PAYMENT: Time and material services, not-to-exceed $418,780, without prior written authorization. Labor Rates are pursuant to Intera's Statement of Qualifications dated February 25, 2019 or attached proposal, whichever is lower.

PAYMENT TERMS
Payments shall be due:

☐ upon the completion of the SOW

☒ as follows: Billing will occur on a monthly basis and shall be based on time and materials. All invoices will be payable on a Net-30 basis. Invoices are due on the 5th business day of each month. Invoices received after the 5th business day of the month are payable on a Net-60 basis. Payment may be delayed up to 30 days beyond these terms in the event of Board of Directors meeting cancellations.

ADDITIONAL TERMS AND CONDITIONS
This SOW will be governed by the terms and conditions of the MSA. In the event of any conflict between the terms set forth in this SOW and the MSA, the MSA shall be deemed to control the control the relationship between the parties with respect to the SOW.

[signature page follows]

ACCEPTED AND AGREED:

"PROVIDER" INTERA, INC.	"CUSTOMER" UPPER VENTURA RIVER GROUNDWATER AGENCY
By:	By: Bryan Bondy
Print Name: David Jordan	Print Name: Bryan Bondy
Title: Vice President	Title: Executive Director
Date: 5/15/2020	Date: 5/15/2020

INTERA Incorporated
3838 W. Carson Street, #380
Torrance, California 90503 USA
424.275.4055

May 3, 2020

Mr. Bryan Bondy, PG, CHG
Executive Director
Upper Ventura River Groundwater Agency
202 W. El Roblar Dr.
Ojai, CA 93023

RE: Scope and Cost for Upper Ventura River Groundwater Agency – INTERA Work Order No. 3

Dear Mr. Bondy,

INTERA is pleased to submit this scope and estimated cost to the Upper Ventura River Groundwater Agency (UVRGA) in support of the Groundwater Sustainability Plan (GSP) development:

Task 1. Develop Draft GSP

INTERA has worked closely with Mr. Bondy to develop a detailed table of contents and outline of the groundwater sustainability plan (GSP). The GSP outline consists of 7 (seven) Sections and associated Appendices. The outline addresses Department of Water Resources' (DWR) GSP Emergency Regulations. INTERA is currently working closely with Mr. Bondy to develop draft Section 3.2 (Groundwater Conditions). INTERA is also supporting Mr. Bondy and Kear Groundwater in the development of Section 3.1 (Hydrogeologic Conceptual Model). Under this task, INTERA will work closely with Mr. Bondy and Kear Groundwater to develop the remaining GSP Sections. The following describes the content and approach for each GSP Section:

- Executive Summary: This section will contain an overview of the GSP and description of groundwater conditions in the basin. INTERA will assist Mr. Bondy in the writing of this section once all the GSP Sections are complete.

- Section 1 – Introduction: This section will summarize the content and organization of the GSP, including administrative information, basin setting, sustainable management criteria, monitoring network, and projects and management actions. INTERA assist Mr. Bondy in the writing of this section.

- Section 2 – Administrative Information: This section will contain the description of the groundwater sustainability agency (GSA), the plan area, existing monitoring/management/land-use plans, and details on the notice and stakeholder communication of the GSA. INTERA will provide Mr. Bondy with necessary maps, figures, and assist with development of text for this section.

- Section 3 – Basin Setting: This section will contain details on the hydrogeologic conceptual model, groundwater conditions, the groundwater budget, management areas (if any). Sections 3.1 (hydrogeologic conceptual model) and 3.2 (groundwater conditions) are currently under development by Kear Groundwater and INTERA, respectively. INTERA will work with Mr. Bondy and Kear Groundwater to finalize Section 3.1. Section 3.2 is covered under INTERA Work Order 2 and is not included in the scope and budget of this task. For the water budget (Section 3.3), INTERA will estimate and document the historical, current, and future water budget as well as the sustainable yield using existing hydrologic datasets (including the climate change dataset provided by DWR for GSP purposes) and the numerical model, developed under Task 5 of this work-order. INTERA will assist Mr. Bondy in the development and documentation of management any areas (Section 3.4) in the Upper Ventura River Groundwater Basin (Basin).

- Section 4 – Sustainable Management Criteria: SGMA entails managing the basin based on sustainable management criteria (SMC) for one or more of six undesirable results (or sustainability indicators) – chronic lowering of groundwater levels, reduction in groundwater storage, seawater intrusion, degraded water quality, land subsidence, and depletions of interconnected surface water. SGMA requires the GSP to establish sustainability goals, minimum thresholds, measurable objectives, and interim milestones for each sustainability indicators. INTERA will work with Mr. Bondy to analyze and describe SMC for each applicable sustainability indicator in this section of the GSP. INTERA will utilize the numerical model (Task 5) to analyze SMC relative to current or future conditions in the Basin.

- Section 5 – Monitoring Networks: This section will describe the monitoring network and data-collection/reporting protocols to measure key sustainability indicators to ensure sustainable management of the Basin. INTERA will assist Mr. Bondy in the writing of this section. Data gap evaluation and developing a plan for addressing data gaps will be performed under a separate work order that will be aligned with funding from the Wildlife Conservation Board.

- Section 6 – Projects and Management Actions: This section will describe any project and/or management actions that are developed for the Plan.. Description of each project and/or management action will include implementation triggers (based on minimum thresholds or measurable objectives), permitting and regulatory process, implementation approach and timeline, anticipated benefits, costs, and other relevant details. INTERA will assist Mr. Bondy in the development and documentation of these projects and/or management actions. INTERA will utilize the numerical model (Task 5) to assess impact of projects and/or management actions on applicable SMC in the Basin.

- Section 7 – References and Technical Studies: INTERA will compile and document all relevant references and technical studies in this section.

- Appendices: INTERA will compile and attach all relevant appendices to the GSP.

In addition to the content of the GSP sections, INTERA will be lead for formatting, technical editing, version control, and document management of the draft GSP. The draft GSP will be uploaded to the

UVRGA website for stakeholder comment. INTERA will assist UVRGA with submittal of the adopted GSP and required associated information to the DWR SGMA Portal.

Task 2. Respond to comments, finalize, and submit GSP
INTERA will compile all stakeholder comments on the draft GSP.. INTERA will assist Mr. Bondy in responding to comments and revising the GSP, as needed. INTERA will work with Mr. Bondy to finalize the GSP upload the document and associated appendices/attachments on the GSP submittal website. This will entail filling out the 'elements guide' (provided by DWR), cross-checking the GSP sections against GSP regulations.

Task 3. Stakeholder Workshops
This task includes four stakeholder workshops, as detailed in the UVRGA GSP Development Schedule. As part of this Task, INTERA will support the Mr. Bondy in preparation of workshop materials and presentation. We will review and analyze feedback from the Stakeholder group and provide recommendations on how to incorporate the feedback into the GSP.

Task 4. Coordination Meetings
This task includes up-to 6 (six) in-person meetings and weekly one-hour phone calls with Mr. Bryan Bondy and/or Kear Groundwater to coordinate and collaborate on the project tasks.

Task 5. Construct, Calibrate, and Document Groundwater Model
GSP Emergency Regulations require GSAs to develop and use a numerical model to quantify the water budget for the basin and quantify surface water depletion for the minimum thresholds that address depletion of interconnected surface water. In each case, if a numerical groundwater and surface water model is not used, the regulations require the GSA to use an equally effective method, tool, or analytical model. The watershed-wide numerical model under development by SWRCB is not anticipated to be available for GSP development. Even if the SWRCB model was to be available, its coarse scale grid may be inadequate for quantifying surface water depletion at a scale necessary to support development of the minimum thresholds. As part of Work Order No. 2, Intera will reviewed available data and anticipated modeling objectives for the GSP. Intera, in consultation with others on the GSP Development Team (i.e. Bondy and Kear) recommends developing a numerical groundwater flow model for SGMA compliance. The key factors leading to this recommendation are the complex geology and hydrostratigraphy of the basin and the highly dynamic and spatially variable surface flow conditions. A numerical model has been deemed necessary to simulate and assess groundwater and surface-water conditions, as opposed to analytical or other approaches that will not be capable of addressing the above-described complexities. The model will build upon on-going work (under Work Order 2) on the Hydrogeologic Conceptual Model (GSP Section 3.1) and Groundwater Conditions (GSP Section 3.2), as well as information provided by the State Water Resources Control Board (SWRCB), Dept. of Fish and Wildlife, Ventura County, and other stakeholders.

A key goal of the model will be to accurately simulate surface-water and groundwater interactions to meet the statutory requirement under SGMA to quantitatively assess sustainable management criteria (SMC) for "depletions of interconnected surface water that has adverse impacts on beneficial uses of the surface water and may lead to undesirable results. For the Upper Ventura River Basin, this will entail simulating the duration and extent of wet and dry reaches of the River as well as groundwater

levels within and adjacent to the river floodplain. This would allow the model to be used to assess flow criteria under different flow conditions and potential impacts from groundwater pumping on streamflow conditions. The model will cover and be calibrated for a representative hydrologic period that includes both wet and dry hydrologic conditions. The model will be built at the necessary temporal and spatial resolution to accurately simulate surface-water and groundwater interactions based on available data and hydrogeologic understanding. Based on our current understanding the model will be built using the MODFLOW-NWT (Niswonger et al., 2011) USGS code using the revised streamflow-routing (SFR2) package (Niswonger and Prudic, 2005), which dynamically routes and couples surface flows with the groundwater system.

This task covers the construction and calibration of the numerical groundwater model. The model will build upon existing data sets and modeling studies, refined to the basin-scale to improve the accuracy of the model. The level of calibration will be kept at or above the industry standard (10% normalized residual error) while ensuring that the model can be reliably used to a) inform historical, current, and future water budget estimates, b) assess basin-specific SMCs (especially depletion of interconnected surface-water), c) evaluate basin management and project alternatives, and d) inform monitoring requirements for the Upper Ventura Basin.

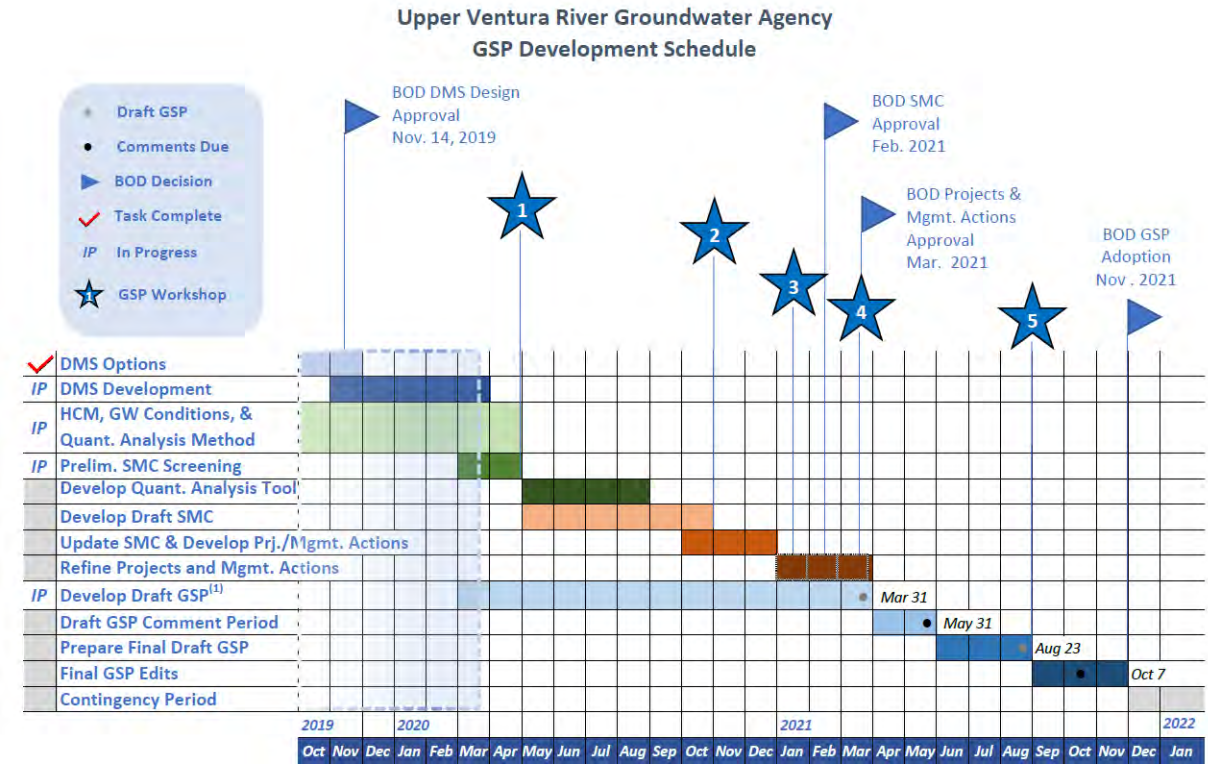
The task includes a technical memorandum documenting the construction and calibration of the model, as well as any predictive management/project scenarios simulated by the model. The technical memorandum will be appended to the GSP to meet GSP regulatory requirements for model documentation.

Task 6. Project Management

The project management task includes internal coordination, communication with Mr. Bondy, and generating monthly invoices and tracking scope and budget.

Schedule

INTERA will ensure all tasks, deliverables, and meetings meet the UVRGA GSP Development schedule below.



Cost

This cost is based on the items discussed above. The cost for this work is estimated to be approximately $418,780 and is summarized in the table below.

INTERA Incorporated
3838 W. Carson Street, #380
Torrance, California 90503 USA
424.275.4055

			Task 1. Develop Draft GSP		Task 2. Response to comments, Finalize, Submit GSP		Task 3.Stakeholder Workshops		Task 4.Coordination Meetings		Task 5.Construct, Calibrate, Document Groundwater Model		Task 6. Project Management	
Labor Category	Proposed Staff	Rate	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost
Principal Engineer/Scientist I		$250		$0		$0		$0		$0		$0		$0
Principal Engineer/Scientist II	David Jordan	$220		$0		$0		$0		$0		$0		$0
Principal Engineer/Scientist III	Abhishek Singh	$205	180	$36,900	40	$8,200	80	$16,400	80	$16,400	120	$24,600	24	$4,920
Senior Engineer/Scientist I		$195		$0		$0		$0		$0		$0		$0
Senior Engineer/Scientist II		$185		$0		$0		$0		$0		$0		$0
Senior Engineer/Scientist III	Raghu Suribhatla, Courtney Black	$170	360	$61,200	40	$6,800	80	$13,600	40	$6,800	200	$34,000		$0
Senior Engineer/Scientist IV		$155		$0		$0		$0		$0		$0		$0
Engineer/Scientist I		$145		$0		$0		$0		$0		$0		$0
Engineer/Scientist II	Patrick O'Connell; Jevon Harding	$135	320	$43,200	40	$5,400	40	$5,400	40	$5,400	200	$27,000		$0
Engineer/Scientist III	Erick Fox	$125	320	$40,000	40	$5,000	40	$5,000		$0	200	$25,000		$0
Engineer/Scientist IV	Michael Hodges	$110		$0		$0		$0		$0	120	$13,200		$0
Senior Technician		$115		$0		$0		$0		$0		$0		$0
Technician		$72		$0		$0		$0		$0		$0		$0
Senior Technical Editor		$115		$0		$0		$0		$0		$0		$0
Tech Editor	Joanna Stakutis	$95	80	$7,600	40	$3,800		$0		$0	8	$760		$0
Senior CAD/Graphics		$87		$0		$0		$0		$0		$0		$0
CAD/Graphics		$76		$0		$0		$0		$0		$0		$0
Project Analyst/Assistant		$105		$0		$0		$0		$0		$0		$0
Project Associate		$75		$0		$0		$0		$0		$0		$0
Travel and other Direct Costs								$1,200		$1,000				
Subtotals				**$188,900**		**$29,200**		**$41,600**		**$29,600**		**$124,560**		**$4,920**
Total														**$418,780**

INTERA Incorporated
3838 W. Carson Street, #380
Torrance, California 90503 USA
424.275.4055

We look forward to beginning work on this project and await your approval of this scope. If you have questions, comments, or concerns please do not hesitate to contact me.

Sincerely,

INTERA Incorporated

Abhishek Singh, PhD, PE
Project Manager
Vice President, Western Region

Item 10(c)

Attachment B

Intera, Inc. Work Order No. 3 Budget Increase Proposal

INTERA Incorporated
3838 W. Carson Street, #380
Torrance, California 90503 USA
424.275.4055

October 8, 2021

Mr. Bryan Bondy, PG, CHG
Executive Director
Upper Ventura River Groundwater Agency
202 W. El Roblar Dr.
Ojai, CA 93023

RE: Request for Budget Amendment for the UVRGA Groundwater Sustainability Plan Submittal

Dear Mr Bondy,

Under the direction of the UVRGA Board and Executive Director, INTERA has supported the development of the Upper Ventura River Groundwater Basin (UVRGB) Sustainability Plan and the numerical groundwater model for GSP associated analysis. INTERA submitted a proposal (UVRGA Work Order #3) to UVRGA for services associated with the GSP and groundwater model development for a budget amount of $418,780 on May 3rd, 2020. The proposal was approved and executed on May 15, 2021.

APreliminary Draft GSP was prepared for Board Review on was completed on July 6, 2021. The Preliminary Draft GSP was reviewed by UVRGA Board Members and INTERA worked with the UVRGA Executive Director and Rincon Consultants to revise the GSP per the Board comments and develop a response comment matrix. To support the understanding the Basin hydrogeology, especially surface-water/groundwater interconnection and streamflow depletions, INTERA also developed cross-sectional animations of groundwater levels and river flows under pumping and non-pumping conditions. The Draft GSP was prepared for public comment on was completed on August 10th, 2021 for a 60-day public comment period ending on October 8th, 2021.

The tasks and level of effort involved in the above tasks exceeded the scope and budget envisioned in the UVRGA Work Order #3, as summarized below:

1) **Task 1: Develop Draft GSP**. As noted above, INTERA provided two cross-section animation videos for pumping and non-pumping conditions for a 5-year period. The animations were key in understanding and visualizing the complex interactions between the surface-water and groundwater system in the UVRGB and provided value to Board Members and Stakeholders in understanding UVRGB basin conditions, sustainable management criteria (associated with streamflow depletions), and proposed management actions. These animations entailed extensive model output post-processing (daily and monthly water levels and streamflow data had to be exported out of the model and processed for visual display), development of a cross-sectional Leapfrog Geologic Model, graphical/video support to develop the animations with appropriate annotations, and revisions in response to review and comments by the UVRGA Executive Director. INTERA spent approximately $26,000 on the two animations. This scope and budget were not part of the scope included in UVRGA Work Order #3.

2) **Task 2: Respond to Comments, Finalize, and Submit GSP.** The UVRGA Work Order #3 proposed two GSP versions – a draft GSP for board and public comment and a final GSP. Pursuant to Board

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Torrance, California 90503 USA
424.275.4055

direction, three versions were/will be prepared (preliminary draft, draft and final). More than 100 comments were received from the UVRGA Board on the Preliminary Draft GSP and INTERA assisted the Executive Director with responding to those comments within one month and preparation of the draft GSP for public comment. INTERA spent approximately $20,000 on the compilation, review, response, and GSP revisions related to the Board comments on the preliminary draft GSP. This additional round of GSP review (preliminary draft to draft) and associated revisions were not anticipated in the UVRGA Work Order #3.

3) **Tasks 4 and 6: Coordination Meetings & Project Management**: INTERA spent more time on communication/coordination with the UVRGA Executive Director and Rincon Consultants as well as project management, than assumed in UVRGA Work Order #3. This amounted to approximately $5,000 of additional expenses on Task 6.

Due to the additional effort (as requested by UVRGA) on Tasks 1, 2, and 6, as described above, INTERA spent a total of approximately $51,000 beyond the scope and budget assumed in Work Order #3. To date, INTERA has a total of $6,150 remaining (to date) of the UVRGA Work Order #3 budget of $418,780.

At the writing of this amendment letter, public comments are being received in the Draft GSP. INTERA will be assisting the Executive Director and Rincon Consultants with addressing these comments, submitting the revised GSP for Board adoption, and uploading the GSP and associated data files to the Department of Water Resources (DWR) website (a multi-step and time-consuming process due to DWR reporting and data-organization requirements). We assume that the version of the GSP revised in response to public comments and submitted for Board adoption will be the version of the GSP submitted to DWR, and no significant revisions will be made subsequent to this round of revisions. The level of effort and budget for this effort is approximately $40,980 (a table with a detailed budget for remaining tasks is included as an attachment to this amendment letter). Because $6,150 remains in budget, we respectfully request a budget amendment of $34,830 to cover the additional effort involved in responding to comments, revising the GSP, and uploading the GSP and associated data to the DWR website. As this is a time and materials contract, UVRGA will only be billed for the actual effort. INTERA will not exceed the amended budget without prior written authorization by UVRGA.

We appreciate the opportunity to support the UVRGA on the development and submittal of this key document to meet all SGMA requirements in a timely manner. If you have questions, comments, or concerns please do not hesitate to contact me.

Sincerely,

Abhishek Singh, PhD, PE
Project Manager
Vice President, Western Region
INTERA Incorporated

Attachment: Detailed Budget

INTERA Incorporated
3838 W. Carson Street, #380
Torrance, California 90503 USA
424.275.4055

			Task 1. Develop Draft GSP		Task 2. Response to comments, Finalize, Submit GSP		Task 3.Stakeholder Workshops		Task 4.Coordination Meetings		Task 5.Construct, Calibrate, Document Groundwater Model		Task 6. Project Management	
Labor Category	Proposed Staff	Rate	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost
Principal Engineer/Scientist I		$250		$0		$0		$0		$0		$0		$0
Principal Engineer/Scientist II	David Jordan	$220		$0		$0		$0		$0		$0		$0
Principal Engineer/Scientist III	Abhishek Singh	$205		$0	24	$4,920		$0	24	$4,920		$0	8	$1,640
Senior Engineer/Scientist I		$195		$0		$0		$0		$0		$0		$0
Senior Engineer/Scientist II		$185		$0		$0		$0		$0		$0		$0
Senior Engineer/Scientist III	Raghu Suribhatla, Courtney Black	$170		$0		$0		$0		$0		$0		$0
Senior Engineer/Scientist IV	Steven Humphrey	$155		$0	100	$15,500		$0	24	$3,720		$0		$0
Engineer/Scientist I	Saman Tavakoli-Kivi	$145		$0		$0		$0		$0		$0		$0
Engineer/Scientist II		$135		$0		$0		$0		$0		$0		$0
Engineer/Scientist III	Erick Fox	$125		$0	40	$5,000		$0		$0		$0		$0
Engineer/Scientist IV	Nathan Hatch	$110		$0	16	$1,760		$0		$0		$0		$0
Senior Technician		$115		$0		$0		$0		$0		$0		$0
Technician		$72		$0		$0		$0		$0		$0		$0
Senior Technical Editor		$115		$0		$0		$0		$0		$0		$0
Tech Editor	Joanna Stakutis	$88		$0	40	$3,520		$0		$0		$0		$0
Senior CAD/Graphics		$87		$0		$0		$0		$0		$0		$0
CAD/Graphics		$76		$0		$0		$0		$0		$0		$0
Project Analyst/Assistant		$105		$0		$0		$0		$0		$0		$0
Project Associate		$75		$0		$0		$0		$0		$0		$0
Travel and other Direct Costs														
Subtotals				**$0**		**$30,700**		**$0**		**$8,640**		**$0**		**$1,640**
Total Budget Needed														**$40,980**
Budget Remaining														**$6,150**
Budget Amendment Requested														**$34,830**

UPPER VENTURA RIVER GROUNDWATER AGENCY Item No. 10(d)

DATE: October 14, 2021

TO: Board of Directors

FROM: Executive Director

SUBJECT: Rincon Consultants, Inc. Work Order No. 1 Budget Modification (Grant Category (a): Grant Administration)

SUMMARY

Rincon Consultants, Inc. (Rincon) Work Order No. 1 is for on-call, as-needed services to support groundwater sustainability plan (GSP) development. The original Work Order No. 1 authorization approved on August 13, 2020 totaled $25,000 and was used to get Rincon up-to-speed on the project and complete preliminary tasks related to GSP development. The Board increased the authorization to $77,500 on February 11, 2021 for Rincon to characterize and analyze groundwater dependent ecosystems and provide support for sustainable management criteria and monitoring networks development. In February 2021, it was emphasized that it was unclear precisely how much support will be needed from Rincon.

The Work Order No. 1 contract balance is $5,359 as of September 30, 2021. Rincon has provided support requested by the Executive Director including development of two draft technical memoranda that will be finalized and appended to the GSP. These memoranda detail riparian and aquatic groundwater dependent ecosystems (GDEs), which are important aspects of the GSP. Rincon has performed its tasks well.

Rincon will be assisting the Executive Director and Intera with responding to draft GSP comments, many of which are focused on riparian and aquatic GDEs issues. Rincon verbally estimated the cost for the remaining effort at $15,000 (i.e., $9,641 more than the current work order balance) (note: a written proposal was not requested due to Rincon's project manager's paternity leave). Therefore, Rincon is requesting a $9,641 increase in the contract limit to compete the remaining work. The Executive Director recommends adding $5,000 of contingency to the requested amount, making the recommended contract increase $14,641. Use of any contingency funds would require a written request by Rincon and written approval by the Executive Director. Because Work Order No. 1 is a time-and-materials contract, UVRGA will only be billed for the actual effort necessary to complete the remaining assigned work.

RECOMMENDED ACTIONS

Authorize the Executive Director to increase the not-to-exceed budget for Rincon Consultants Work Order No. 1 up to $92,141.

BACKGROUND

Rincon Consultant's Master Services Agreement and Work Order No. 1 were approved by the Board on August 13, 2020. The Work Order No. 1 budget authorization was increased from $25,000 to $77,500 on February 11, 2021.

FISCAL SUMMARY
The proposed contract increase is included in the current fiscal year budget. Please see Item 10(a) Attachment B for budget analysis.

ATTACHMENTS
A. Rincon Consultants Work Order No. 1

Action: _____

Motion:_____ Second: _____

B. Kuebler___ D. Engle___ P. Kaiser ___ S. Rungren___ G. Shephard___ E. Ayala___ L. Rose___

Item 10(d)

Attachment A

Rincon Consultants Work Order No. 1

Item 10(d), Attachment A

Statement of Work
Work Order No. 1: As Needed Services

To: Rincon Consultants, Inc.
180 North Ashwood Avenue
Ventura, California 93003
Attention: Kiernan Brtalik
Email: kbrtalik@rinconconsultants.com

From: Upper Ventura River Groundwater Agency
202 W. El Roblar Dr., Ojai, California 93023
Attention: Bryan Bondy
Email: bbondy@uvrgroundwater.org

In accordance with our Master Services Agreement ("MSA") dated August 18, 2020, the following Statement of Work ("SOW") is entered into by Upper Ventura River Groundwater Agency ("Customer") and Rincon Consultants, Inc. ("Provider") for a new project and/or services (collectively, "Services"):

GENERAL NATURE OF SERVICES: As-needed services to be requested by the UVRGA Executive Director, as further described in the Scope of Services. When applicable, Provider shall ensure all work is performed under the supervision of a California Professional Civil Engineer or Professional Geologist.

SCOPE OF SERVICES: Anticipated services include, but are not limited to, assist with groundwater sustainability plan development in collaboration with the Executive Director and Intera, Inc., assist Executive Director with grant applications and project planning.

COMPLETION DATE: August 19, 2020 through January 31, 2022

COMPENSATION AND PAYMENT: Time and material services, not-to-exceed $25,000, without prior written authorization. Labor Rates are pursuant to MSA.

Budget increased to $77,500 on 2/11/21 by UVRGA Board of Directors

PAYMENT TERMS

Payments shall be due:
☐ upon the completion of the SOW
☒ as follows: Per MSA terms.

ADDITIONAL TERMS AND CONDITIONS

This SOW will be governed by the terms and conditions of the MSA. In the event of any conflict between the terms set forth in this SOW and the MSA, the MSA shall be deemed to control the relationship between the parties with respect to the SOW.

ACCEPTED AND AGREED:

"PROVIDER" Rincon Consultants, Inc.	"CUSTOMER" UPPER VENTURA RIVER GROUNDWATER AGENCY
By: Print Name: Jennifer Haddow Title: Principal-in-Charge Date: 8/18/2020	By: Bryan Bondy Print Name: Bryan Bondy Title: Executive Director Date: 8/19/2020

Bryan Bondy

From: Bryan Bondy
Sent: Thursday, February 11, 2021 9:41 PM
To: Kiernan Brtalik; Jennifer Haddow
Subject: Rincon Work Order #1 Budget Increase Approval

Hi Kiernan and Jennifer,

Please accept this email as formal notification that the UVRGA Board of Directors voted affirmatively on 2/11/21 to increase Rincon's Work Order No. 1 budget from $25,000 to $77,500.

I look forward to discussing next steps on our call tomorrow.

Thank you !

Best Regards,

--
Bryan Bondy, PG, CHG
Executive Director
UVRGA
805-212-0484