

LOS OSOS GROUNDWATER BASIN, BASIN MANAGEMENT COMMITTEE

NOTICE OF MEETING

NOTICE IS HEREBY GIVEN that the Los Osos Groundwater Basin, Basin Management Committee Board of Directors will hold a **Special Board Meeting** at **1:30 P.M.** on **January 28, 2026** at the **Los Osos Community Services District Boardroom**, located at 2122 9th Street, Suite 106, Los Osos, CA 93402 Members of the public may participate in this meeting in person or via teleconference and/or electronically.

For quick access, go to <https://us04web.zoom.us/j/778762508>

(This link will help connect both your browser and telephone to the call)

If not using a computer, dial 1 (669) 900-6833 or 1 (346) 248-779 and enter **778 762 508**

All persons desiring to speak during any Public Comment can submit a comment by:

- Email at danheimel@ConfluenceES.com by 5:00 PM on the day prior to the Committee meeting.
- Teleconference by phone at 1 (669) 900-6833 and enter **778 762 508**
- Teleconference by phone at 1 (346) 248-7799 and enter **778 762 508**
- Teleconference meeting at <https://us04web.zoom.us/j/778762508>
- Mail by 5:00 PM on the day prior to the Committee meeting to:

Attn: Dan HeimeI (Basin Management Committee)
2122 9th St.
Suite 110
Los Osos, CA 93402

Los Osos Basin Management Committee Website: Go to <https://www.losososbmc.org/> to view agendas, agenda packets, meeting recordings, important documents, and BMC news. Click "join our mailing list" in the lower right-hand corner of the page to receive email updates and meeting notifications.

Directors: Agenda items are numbered for identification purposes only and may not necessarily be considered in numerical order.

NOTE: The Basin Management Committee reserves the right to limit each speaker to three (3) minutes per subject or topic. In compliance with the Americans with Disabilities Act, all possible accommodations will be made for individuals with disabilities, so they may participate in the meeting. Persons who require accommodation for any audio, visual or other disability in order to participate in the meeting of the BMC are encouraged to request such accommodation 48 hours in advance of the meeting from Dan HeimeI at danheimel@ConfluenceES.com.

BASIN MANAGEMENT COMMITTEE BOARD OF DIRECTORS AGENDA

- 1. CALL TO ORDER**
- 2. ROLL CALL**
- 3. PLEDGE OF ALLEGIANCE**
- 4. BOARD MEMBER COMMENTS**

Board members may make brief comments, provide project status updates, or communicate with other directors, staff, or the public regarding non-agenda topics.

5. SPECIAL PRESENTATION

- a. None

6. CONSENT AGENDA

The following routine items listed below are scheduled for consideration as a group. Each item is recommended for approval unless noted and may be approved in their entirety by one motion. Any member of the public who wishes to comment on any Consent Agenda item may do so at this time. Consent items generally require no discussion. However, any Director may request that any item be withdrawn from the Consent Agenda and moved to the "Action Items" portion of the Agenda to permit discussion or to change the recommended course of action. The Board may approve the remainder of the Consent Agenda on one motion.

- a. **Approval of 2026 Financial Reports**
- b. **Approval of Proposed Reserve Fund Use**
- c. **Approval of Minutes from the Special November 12, 2025 BMC Meeting**

7. PUBLIC COMMENTS ON ITEMS NOT APPEARING ON THE AGENDA

The Basin Management Committee will consider public comments on items not appearing on the agenda and within the subject matter jurisdiction of the Basin Management Committee. The Basin Management Committee cannot enter into a detailed discussion or take any action on any items presented during public comments at this time. 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. The presiding Chair shall limit public comments to three minutes.

8. LOS OSOS BASIN UPDATE REPORT

9. ACTION ITEMS

- a. **Appointment of BMC Officers for Calendar Year 2026**

Recommendation: Staff recommend the BMC review the existing officer positions and appoint officers for CY 2026 or provide alternative direction to Staff.

- b. **Draft Fall 2025 Los Osos Basin Lower Aquifer Water Quality Monitoring Results and Updated Chloride Metric**

Recommendation: Receive an update on the Draft Fall 2025 Los Osos Basin Lower Aquifer Water Quality Monitoring Results and Updated Chloride Metric.

- c. **Approve Use of Technical Support Services Budget for Preparing an Enhanced Agricultural Irrigation Water Use Estimate**

Recommendation: Approve use of budget from Item 5: Technical Support Services for use in preparing an enhanced agricultural irrigation water use estimate for the 2025 Annual Monitoring Report.

10. ADJOURNMENT

TO: Los Osos Basin Management Committee

FROM: Daniel Heimel, Executive Director

DATE: January 28, 2026

SUBJECT: Item 6 – Consent Agenda

Recommendations

- a. BMC Staff recommends that the BMC review and consider approval of Financial Reports or provide alternate direction to Staff.
- b. BMC Staff recommends that the BMC consider approval of utilizing reserves to allocate:
 1. \$10,256.25 to Budget Item 1: BMC Administration and Facilitation
 2. \$567.00 to Budget Item 4: BMC Legal Counselor provide alternate direction to Staff.
- c. BMC Staff recommends that the BMC review and consider approval of Meeting Minutes or provide alternate direction to Staff.

Discussion

BMC Staff prepared summary Financial Reports and Meeting Minutes from previous BMC Meetings for the BMC's review and approval consideration (see Attachments). BMC Staff have also prepared a summary of the recommended reserve funds allocation for Budget Item 1: BMC Administration and Facilitation and Budget Item 4: BMC Legal Counsel Services.

Financial Reports Highlights:

- The Cost Summary (Attachment 1) and Statement of Revenues and Expenditures (Attachment 3) reflect the use of contingency/reserve funds for Budget Items 1 and 5 and the WRFPP Study services as approved at the [November 12, 2025 BMC Meeting](#).

Budget Item 1: BMC Administration and Facilitation

The completion of the Transient Model and adoption of a new Sustainable Yield among progress on many other BMC projects this year has required a higher level of effort for coordination amongst BMC Party Staff and for preparation of meeting materials and deliverables. The CY 2025 budget for BMC Admin and Facilitation has been expended. The invoices for Sept-Oct were approved by the Board at the [Oct/Nov BMC Meetings](#) (a total of \$20,865). The invoice for Nov-Dec services is \$10,256.25 and requires Board approval.

Budget Item 4: BMC Legal Counsel Services

At the [December 3, 2025 Special BMC Meeting](#), the Board approved \$5,000 for the Budget Item 4: Legal Counsel Services in the CY 2025 BMC Budget. Legal Counsel Services have been utilized several

times this year for support in preparing responses for records, ADA compliance, and compliance with the Stipulated Judgement. At the [October 2, 2025 Special BMC Meeting](#), the Board approved of allocating funds from contingency/reserves to Legal Counsel Services to cover the \$2,236 budget exceedance. At the [October 15, 2025 BMC Meeting](#), the Board approved of use of reserve funds to cover the cost of RWG’s August services (\$72). To date, \$7,308 has been spent on Legal Counsel Services. The current Legal Counsel Services budget is \$0.

Staff propose the Board consider approval of RWG’s October 2025 invoice for \$576. October services included review of the Sustainable Yield Staff Report and discussion regarding the GMO recommendation letter. If approved the total spent on Budget Item 4 in 2025 will be \$7,884.

Budget Item	Month of Services	Cost	Status	Description of Services
Budget Item 1: BMC Administration and Facilitation	Nov-Dec 25	\$10,256.25	Unapproved	Admin and Facilitation
Budget Item 4: BMC Legal Counsel Services	Oct-25	\$567.00	Unapproved	Review of SY and GMO documents
Total:		\$10,832.25		

The BMC has utilized contingency previously for Technical Support Services, WRF Peer Review Services, Legal Counsel Services, and BMC Admin and Facilitation Services, thus \$0 is remaining of the original \$16,254 in contingency and \$23,619 is remaining of the original \$70,406 in Reserves.

BMC Staff recommends the Board approve of utilizing \$10,832.25 in reserves to cover the above expenses. This will result in a remaining contingency of \$0 and a remaining reserve fund of \$12,787. See proposed use on the second page of Attachment 1.

Closeout of the 2025 BMC Budget will be presented at the next BMC meeting.

Attachments

1. Cost Summary (January 2025 to Current Date for Calendar Year 2025 Budget)
2. Invoice Register for Los Osos BMC for Calendar Year 2025
3. Monthly Financial Documents (Statement of Revenues and Expenditures, Balance Sheet, Reconcile Cash Accounts, and Warrant Register)
4. Minutes from the November 12, 2025 BMC Meeting

Attachment 1: Cost Summary (January 2025 to Current Date) for Calendar Year 2025 Budget

Item	Description	Budget Amount	Approved Contingency/ Reserves Allocation	Updated Allocated Budget Amount	Costs Incurred	Percent Incurred	Remaining Budget
1	BMC Administration and Facilitation	\$93,000	\$20,856	\$113,856	\$124,113	109.0%	-\$10,256
2	BMC Website Hosting	\$2,280		\$2,280	\$1,920.00	84.2%	\$360
3	BMC Accounting Services	\$6,300		\$6,300	\$3,221.74	51.1%	\$3,078
4	BMC Legal Counsel	\$5,000	\$2,308	\$7,308	\$7,884.00	107.9%	-\$576
5	Technical Support Services	\$15,000	\$13,210	\$28,210	\$28,210	100.0%	\$0
6	2025 Groundwater Monitoring	\$67,000		\$67,000	\$66,985.30	100.0%	\$15
7	2024 Annual Report	\$71,500		\$71,500	\$66,990.00	93.7%	\$4,510
8	WRFP Study Peer Review - Year 2	\$15,000	\$10,167	\$25,167	\$25,098.75	99.7%	\$68
9	Groundwater Monitoring Program Improvements	\$50,000		\$50,000	\$12,317.03	24.6%	\$37,683
10	Los Osos Geophysics Interpretation	\$0		\$0	\$0.00	0.0%	\$0
	WRFP Study Contract Exceedance		\$16,500	\$16,500	\$16,500	-	\$0
	Subtotal	\$325,080					\$34,882
	5% Contingency	\$16,254	-\$16,254	\$0	\$16,254	100.0%	\$0
	Total	\$341,334		\$388,121	\$353,239	103.5%	\$34,882
	2024 Budget (held for LA14/16 costs)	\$45,000		\$45,000	\$41,477	92.2%	\$3,523
	Reserve funds (leftover 2024 funds)	\$70,406	-\$46,787	\$23,619	\$46,787	66.5%	\$23,619
						Total Funding	\$62,024
	LOCSA (38%)	\$129,707					
	GSWC (38%)	\$129,707					
	County of SLO/SLOFC&WCD (20%)	\$68,267					
	S&T Mutual (4%)	\$13,653					

PROPOSED Attachment 1: Cost Summary (January 2025 to Current Date) for Calendar Year 2025 Budget

Item	Description	Budget Amount	Approved Contingency/ Reserves Allocation	PROPOSED RESERVES USE	Updated Allocated Budget Amount	Costs Incurred	Percent Incurred	Remaining Budget
1	BMC Administration and Facilitation	\$93,000	\$20,856	\$10,256.25	\$124,113	\$124,113	100.0%	\$0
2	BMC Website Hosting	\$2,280			\$2,280	\$1,920.00	84.2%	\$360
3	BMC Accounting Services	\$6,300			\$6,300	\$3,221.74	51.1%	\$3,078
4	BMC Legal Counsel	\$5,000	\$2,308	\$576.00	\$7,884	\$7,884.00	100.0%	\$0
5	Technical Support Services	\$15,000	\$13,210		\$28,210	\$28,210	100.0%	\$0
6	2025 Groundwater Monitoring	\$67,000			\$67,000	\$66,985.30	100.0%	\$15
7	2024 Annual Report	\$71,500			\$71,500	\$66,990.00	93.7%	\$4,510
8	WRFP Study Peer Review - Year 2	\$15,000	\$10,167		\$25,167	\$25,098.75	99.7%	\$68
9	Groundwater Monitoring Program Improvements	\$50,000			\$50,000	\$12,317.03	24.6%	\$37,683
10	Los Osos Geophysics Interpretation	\$0			\$0	\$0.00	0.0%	\$0
	WRFP Study Contract Exceedance		\$16,500		\$16,500	\$16,500	-	\$0
	Subtotal	\$325,080						\$45,714
	5% Contingency	\$16,254	-\$16,254		\$0	\$16,254	100.0%	\$0
	Total	\$341,334			\$398,954	\$353,239	103.5%	\$45,714
	2024 Budget (held for LA14/16 costs)	\$45,000			\$45,000	\$41,477	92.2%	\$3,523
	Reserve funds (leftover 2024 funds)	\$70,406	-\$46,787	-\$10,832	\$12,787	\$57,619	81.8%	\$12,787
							Total Funding	\$62,024
	LOCSD (38%)	\$129,707						
	GSWC (38%)	\$129,707						
	County of SLO/SLOCFC&WCD (20%)	\$68,267						
	S&T Mutual (4%)	\$13,653						

Attachment 2: Invoice Register for Los Osos BMC for Calendar Year 2025

Vendor	Invoice No.	Amount	Month of Service	Description	Budget Item	Date Executive Director Approved	Date BMC Chairperson Approved	Date BMC Approved
CHG	20241206	\$4,290.00	Dec-24	2024 Annual Report	7	Jan-25		
CHG	20250114	\$9,460.00	Jan-25	2024 Annual Report	7	Feb-25		
Robert Stilts CPA	2025-1	\$465.49	Dec-Jan 2025	BMC Accounting Services	3	Feb-25		
ConfluenceES	1236	\$8,137.50	Jan-25	BMC Administration and Facilitation	1		Mar-25	
Streamline	9877A921-0003	\$1,920.00	Mar-25	BMC Website Hosting	2	Mar-25		
Robert Stilts CPA	2025-2	\$218.75	Feb-25	BMC Accounting Services	3	Mar-25		
CHG	20250210	\$13,042.50	Feb-25	2024 Annual Report	7	Mar-25		
GHG	20250211	\$975.00	Feb-25	Technical Support Services	5	Mar-25		
ConfluenceES	1245	\$9,187.50	Feb-25	BMC Administration and Facilitation	1		Mar-25	
RWG	252345	\$2,520.00	Feb-25	BMC Legal Counsel	4	Apr-25		
Robert Stilts CPA	2025-3	\$350.00	Mar-25	BMC Accounting Services	3	Apr-25		
CHG	20250308	\$30,677.50	Mar-25	2024 Annual Report	7	May-25		
CHG	20250309	\$195.00	Mar-25	Technical Support Services	5	May-25		
CHG	20250310	\$3,670.00	Mar-25	2025 Groundwater Monitoring	6	May-25		
GSI	02136.001-4	\$2,810.00	Mar-25	WRFP Study Peer Review - Year 2	8	May-25		
ConfluenceES	1254	\$7,275.00	Mar-25	BMC Administration and Facilitation	1		May-25	
RWG	252805	\$684.00	Mar-25	BMC Legal Counsel	4	May-25		
RWG	253030	\$324.00	Apr-25	BMC Legal Counsel	4	May-25		
Stilts	2024-4	\$175.00	Apr-25	BMC Accounting Services	3	May-25		
GSI	2136.001	\$480.00	Feb-25	WRFP Study Peer Review - Year 2	8	May-25		
GSI	02136.001 - 5	\$13,772.50	Apr-25	WRFP Study Peer Review - Year 2	8	May-25		Jul-25
ConfluenceES	1256	\$11,306.25	Apr-25	BMC Administration and Facilitation	1		Jun-25	
Stilts	2025-5	\$306.25	May-25	BMC Accounting Services	3	Jul-25		
ConfluenceES	1284	\$9,656.25	May-25	BMC Administration and Facilitation	1		Jul-25	
CHG	20250513	\$1,845.00	May-25	2024 Annual Report	7	Jul-25		
CHG	20250514	\$1,560.00	May-25	Technical Support Services	5	Jul-25		
CHG	20250515	\$3,353.00	May-25	2025 Groundwater Monitoring	6	Jul-25		
RWG	253700	\$72.00	May-25	BMC Legal Counsel	4	Jul-25		
Stilts	2025-6	\$218.75	Jun-25	BMC Accounting Services	3	Jul-25		
CHG	20250410	\$7,675.00	Apr-25	2024 Annual Report	7	Jul-25		
CHG	20250411	\$3,770.00	Apr-25	Technical Support Services	5			Jul-25
CHG	20250412	\$25,393.65	Apr-25	2025 Groundwater Monitoring	6	Jul-25		
CHG	20250606	\$885.50	Jun-25	2025 Groundwater Monitoring	6	Jul-25		
CHG	20250605	\$10,250.00	Jun-25	Technical Support Services	5			Jul-25
GSI	02136.001-7	\$8,036.25	Jun-25	WRFP Study Peer Review - Year 2	8			Jul-25
CHG	20250608	\$4,245.05	Jun-25	Groundwater Monitoring Program Improvement	9	Jul-25		
RWG	254285	\$72.00	Jun-25	BMC Legal Counsel	4	Jul-25		
Stilts	2025-7	\$568.75	Jul-25	BMC Accounting Services	3	Aug-25		
ConfluenceES	1297	\$9,393.75	Jun-25	BMC Administration and Facilitation	1		Aug-25	
CHG	20250709	\$3,410.00	Jul-25	Technical Support Services	5			Aug-25

CHG	20250711	\$2,756.08	Jul-25	Groundwater Monitoring Program Improvement	9	Aug-25		
ConfluenceES	1307	\$11,718.75	Jul-25	BMC Administration and Facilitation	1		Aug-25	
Stilts	2025-8	\$175.00	Aug-25	BMC Accounting Services	3	Sep-25		
CHG	20250812	\$ 800.00	Aug-25	Technical Support Services	5			Oct-25
CSD/CHG	20250814	\$ 1,480.00	Aug-25	Groundwater Monitoring Program Improvement	9	Sep-25		
ConfluenceES	1316	\$ 13,140.00	Aug-25	BMC Administration and Facilitation	1		Sep-25	
RWG	255170	\$ 72.00	Aug-25	BMC Legal Counsel	4			
RWG	254934	\$ 3,564.00	Jul-25	BMC Legal Counsel	4			Oct-25
Stilts	2025-9	\$ 175.00	Sep-25	BMC Accounting Services	3	Oct-25		
ConfluenceES	1323	\$ 16,671.25	Sep-25	BMC Administration and Facilitation	1			
CHG	20250913	\$ 5,195.00	Sep-25	2025 Groundwater Monitoring	6	Oct-25		
CHG	20250912	\$ 7,250.00	Sep-25	Technical Support Services	5			Nov-25
ConfluenceES	1344	\$ 17,370.00	Oct-25	BMC Administration and Facilitation	1			Nov-25
CHG	2212-2301	\$16,500.00	Oct-25	WRFPP Study	-			Nov-25
Stilts	2025-10	\$ 306.25	Oct-25	BMC Accounting Services	3	Nov-25		
CHG	1206-2502	\$ 23,668.65	Oct-25	2025 Groundwater Monitoring	6	Nov-25		
CHG	2122-2501	\$ 400.00	Oct-25	Groundwater Monitoring Program Improvement	9	Nov-25		
CHG/CSD	66010	\$ 837.50	Aug-25	Groundwater Monitoring Program Improvement	9	Oct-25		
RWG	255787	\$ 576.00	Oct-25	BMC Legal Counsel	4			
CHG	20251108-REV	\$ 4,819.50	Nov-25	2025 Groundwater Monitoring	6	Jan-26		
CHG	20251110	\$ 1,553.40	Nov-25	Groundwater Monitoring Program Improvement	9	Jan-26		
Silts	2025-11	\$ 262.50	Nov-25	BMC Accounting Services	3	Jan-26		
CHG	20251207	\$ 1,045.00	Dec-25	Groundwater Monitoring Program Improvement	9	Jan-26		
ConfluenceES	1354	\$ 10,256.25	Nov-Dec 25	BMC Administration and Facilitation	1			
	2025 Total	\$342,407						To be approved
LOCSD/CHG	N/A	\$38,636.56	Mar-25	CY24 Groundwater Monitoring Program Improvements, paid from 2024 budget	-	May-25		
CHG	20250709	\$340.00	Jul-25	CY24 Groundwater Monitoring Program Improvements, paid from 2024 budget	-	Aug-25		
	2025-250	\$2,500.00	Oct-25	LA14/16 Wellhead Survey, paid from 2024 budget	-	Nov-25		
	Total	\$41,476.56						

Los Osos Basin Management Committee

Statement of Revenues and Expenditures

100 - BMC

From 12/1/2025 Through 12/31/2025

	Current Period Actual	Current Year Actual	Total Budget \$ - Original	Total Budget \$ Variance - Original	Percent Total Budget Remaining - Original
Operating Revenue					
Contributions					
4010	0.00	129,707.00	129,707.00	0.00	0.00%
4020	0.00	129,707.00	129,707.00	0.00	0.00%
4030	0.00	68,267.00	68,267.00	0.00	0.00%
4040	0.00	13,653.00	13,653.00	0.00	0.00%
	<u>0.00</u>	<u>341,334.00</u>	<u>341,334.00</u>	<u>0.00</u>	<u>0.00%</u>
Total Contributions					
Total Operating Revenue	<u>0.00</u>	<u>341,334.00</u>	<u>341,334.00</u>	<u>0.00</u>	<u>0.00%</u>
Total Revenue	<u>0.00</u>	<u>341,334.00</u>	<u>341,334.00</u>	<u>0.00</u>	<u>0.00%</u>
Expenditures					
Program Expenses					
5010	0.00	113,856.25	113,856.25	0.00	0.00%
5020	0.00	1,920.00	2,280.00	360.00	15.79%
5030	0.00	3,180.49	6,300.00	3,119.51	49.52%
5040	0.00	7,308.00	7,308.00	0.00	0.00%
5060	0.00	28,210.00	28,210.00	0.00	0.00%
5070	0.00	66,985.30	67,000.00	14.70	0.02%
5080	0.00	66,990.00	71,500.00	4,510.00	6.31%
5090	0.00	25,098.75	25,167.00	68.25	0.27%
5095	0.00	16,500.00	16,500.00	0.00	0.00%
6000	1,045.00	12,317.03	50,000.00	37,682.97	75.37%
6010	0.00	41,476.56	45,000.00	3,523.44	7.83%
	<u>1,045.00</u>	<u>383,842.38</u>	<u>433,121.25</u>	<u>49,278.87</u>	<u>11.38%</u>
Total Program Expenses					
Total Expenditures	<u>1,045.00</u>	<u>383,842.38</u>	<u>433,121.25</u>	<u>49,278.87</u>	<u>11.38%</u>
Net Revenue Over Expenditures	<u>(1,045.00)</u>	<u>(42,508.38)</u>	<u>(91,787.25)</u>	<u>49,278.87</u>	<u>(53.69)%</u>

Los Osos Basin Management Committee

Balance Sheet
As of 11/30/2025

		Current Period Balance
		<u> </u>
Assets		
Current Assets		
Cash & Cash Equivalents		
General Checking Account	1012	<u>230,531.42</u>
Total Cash & Cash Equivalents		<u>230,531.42</u>
Total Current Assets		<u>230,531.42</u>
Total Assets		<u><u>230,531.42</u></u>
Liabilities		
Short-term Liabilities		
Accounts Payable		
Vendor Payable (Control Account)	2000	<u>0.00</u>
Total Accounts Payable		<u>0.00</u>
Total Short-term Liabilities		<u>0.00</u>
Total Liabilities		<u>0.00</u>
Net Assets		
Current YTD Net Income		
REVENUES		341,334.00
EXPENDITURES		(376,161.98)
EQUITY		
Fund Balance	3200	<u>115,359.40</u>
Total EQUITY		<u>115,359.40</u>
Total Current YTD Net Income		<u>80,531.42</u>
Total Net Assets		<u>80,531.42</u>
Total Liabilities and Net Assets		<u><u>80,531.42</u></u>

Los Osos Basin Management Committee

Balance Sheet
As of 12/31/2025

		<u>Current Period Balance</u>
Assets		
Current Assets		
Cash & Cash Equivalents		
General Checking Account	1012	<u>230,531.42</u>
Total Cash & Cash Equivalents		<u>230,531.42</u>
Total Current Assets		<u>230,531.42</u>
Total Assets		<u><u>230,531.42</u></u>
Liabilities		
Short-term Liabilities		
Accounts Payable		
Vendor Payable (Control Account)	2000	<u>7,680.40</u>
Total Accounts Payable		<u>7,680.40</u>
Total Short-term Liabilities		<u>7,680.40</u>
Total Liabilities		<u>7,680.40</u>
Net Assets		
Current YTD Net Income		
REVENUES		341,334.00
EXPENDITURES		(383,842.38)
EQUITY		
Fund Balance	3200	<u>115,359.40</u>
Total EQUITY		<u>115,359.40</u>
Total Current YTD Net Income		<u>72,851.02</u>
Total Net Assets		<u>72,851.02</u>
Total Liabilities and Net Assets		<u><u>80,531.42</u></u>

**Los Osos Basin Management Committee
Reconcile Cash Accounts**

Summary

Cash Account: 1012 General Checking Account
Reconciliation ID: Bank Account Reconciliation 11282025
Reconciliation Date: 11/28/2025
Status: Locked

Bank Balance	299,363.82
Less Outstanding Checks/Vouchers	68,832.40
Plus Deposits in Transit	0.00
Plus or Minus Other Cash Items	0.00
Plus or Minus Suspense Items	<u>0.00</u>
Reconciled Bank Balance	230,531.42
Balance Per Books	<u>230,531.42</u>
Unreconciled Difference	<u><u>0.00</u></u>

Click the Next Page toolbar button to view details.

**Los Osos Basin Management Committee
Reconcile Cash Accounts**

Detail

Cash Account: 1012 General Checking Account
Reconciliation ID: Bank Account Reconciliation 11282025
Reconciliation Date: 11/28/2025
Status: Locked

Outstanding Checks/Vouchers

<u>Document Number</u>	<u>Document Date</u>	<u>Document Description</u>	<u>Document Amount</u>	<u>Payee</u>
77	11/24/2025	System Generated Check/Voucher	17,370.00	CONFLUENCE ENGINEERING SOLUTIONS, INC.
78	11/24/2025	System Generated Check/Voucher	47,818.65	CLEATH-HARRIS GEOLOGISTS, INC.
79	11/24/2025	System Generated Check/Voucher	837.50	Los Osos CSD
80	11/24/2025	System Generated Check/Voucher	306.25	Robert Stilts, CPA
81	11/24/2025	System Generated Check/Voucher	2,500.00	Twin Cities Surveying, Inc.
Outstanding Checks/Vouchers			68,832.40	

**Los Osos Basin Management Committee
Reconcile Cash Accounts**

Detail

Cash Account: 1012 General Checking Account
Reconciliation ID: Bank Account Reconciliation 11282025
Reconciliation Date: 11/28/2025
Status: Locked

Cleared Checks/Vouchers

<u>Document Number</u>	<u>Document Date</u>	<u>Document Description</u>	<u>Document Amount</u>	<u>Payee</u>
73	10/17/2025	System Generated Check/Voucher	16,671.25	CONFLUENCE ENGINEERING SOLUTIONS, INC.
74	10/17/2025	System Generated Check/Voucher	5,195.00	CLEATH-HARRIS GEOLOGISTS, INC.
76	10/17/2025	System Generated Check/Voucher	175.00	Robert Stilts, CPA
Cleared Checks/Vouchers			22,041.25	

**Los Osos Basin Management Committee
Reconcile Cash Accounts**

Summary

Cash Account: 1012 General Checking Account
Reconciliation ID: Bank Account Reconciliation 12312025
Reconciliation Date: 12/31/2025
Status: Locked

Bank Balance	248,207.67
Less Outstanding Checks/Vouchers	17,676.25
Plus Deposits in Transit	0.00
Plus or Minus Other Cash Items	0.00
Plus or Minus Suspense Items	<u>0.00</u>
Reconciled Bank Balance	230,531.42
Balance Per Books	<u>230,531.42</u>
Unreconciled Difference	<u><u>0.00</u></u>

Click the Next Page toolbar button to view details.

**Los Osos Basin Management Committee
Reconcile Cash Accounts**

Detail

Cash Account: 1012 General Checking Account
Reconciliation ID: Bank Account Reconciliation 12312025
Reconciliation Date: 12/31/2025
Status: Locked

Outstanding Checks/Vouchers

<u>Document Number</u>	<u>Document Date</u>	<u>Document Description</u>	<u>Document Amount</u>	<u>Payee</u>
77	11/24/2025	System Generated Check/Voucher	17,370.00	CONFLUENCE ENGINEERING SOLUTIONS, INC.
80	11/24/2025	System Generated Check/Voucher	306.25	Robert Stilts, CPA
Outstanding Checks/Vouchers			17,676.25	

**Los Osos Basin Management Committee
Reconcile Cash Accounts**

Detail

Cash Account: 1012 General Checking Account
Reconciliation ID: Bank Account Reconciliation 12312025
Reconciliation Date: 12/31/2025
Status: Locked

Cleared Checks/Vouchers

<u>Document Number</u>	<u>Document Date</u>	<u>Document Description</u>	<u>Document Amount</u>	<u>Payee</u>
78	11/24/2025	System Generated Check/Voucher	47,818.65	CLEATH-HARRIS GEOLOGISTS, INC.
79	11/24/2025	System Generated Check/Voucher	837.50	Los Osos CSD
81	11/24/2025	System Generated Check/Voucher	2,500.00	Twin Cities Surveying, Inc.
Cleared Checks/Vouchers			51,156.15	

Los Osos Basin Management Committee

Check/Voucher Register - Warrant Register

1012 - General Checking Account

From 1/1/2025 Through 1/20/2026

Check Number	Vendor Name	Transaction Description	Document Date	Check Amount
0031			1/13/2025	0.00
0032			1/13/2025	0.00
31	CONFLUENCE ENGINEERING SOLUTIONS, INC.	10/1/24-10/31/24 Executive Director Services	1/13/2025	9,566.25
32	CLEATH-HARRIS GEOLOGISTS, INC.	10/1/24-10/31/24 2024 Groundwater Monitoring	1/13/2025	27,367.26
33	Robert Stilts, CPA	10/1/24-10/31/24 Accounting Services	1/13/2025	131.25
34	CONFLUENCE ENGINEERING SOLUTIONS, INC.	11/1/24-11/30/24 Executive Director Services	1/22/2025	8,487.50
	CONFLUENCE ENGINEERING SOLUTIONS, INC.	12/1/24-12/31/24 Executive Director Services	1/22/2025	4,057.50
35	CLEATH-HARRIS GEOLOGISTS, INC.	11/1/24-11/30/24 2024 Groundwater Monitoring	1/22/2025	2,905.20
	CLEATH-HARRIS GEOLOGISTS, INC.	12/1/24-12/31/24 2024 Annual Report	1/22/2025	4,290.00
36	RICHARDS, WATSON & GERSHON A PROFESSIONAL CORPORATION	11/1/24-11/30/24 General Legal Counsel	1/22/2025	324.00
	RICHARDS, WATSON & GERSHON A PROFESSIONAL CORPORATION	12/1/24-12/31/24 General Legal Counsel	1/22/2025	828.00
37	Robert Stilts, CPA	11/1/24-11/30/24 Accounting Services	1/22/2025	218.75
38	CONFLUENCE ENGINEERING SOLUTIONS, INC.	1/1/25-1/31/25 Executive Director Services	3/11/2025	8,137.50
39	CLEATH-HARRIS GEOLOGISTS, INC.	1/1/25-1/31/25 2024 Annual Report	3/11/2025	9,460.00
40	Robert Stilts, CPA	12/1/24-1/31/25 Accounting Services	3/11/2025	465.49
41	CONFLUENCE ENGINEERING SOLUTIONS, INC.	2/1/25-2/28/25 Executive Director Services	3/18/2025	9,187.50
42	CLEATH-HARRIS GEOLOGISTS, INC.	2/1/25-2/28/25 2024 Annual Report	3/18/2025	13,042.50
	CLEATH-HARRIS GEOLOGISTS, INC.	2/1/25-2/28/25 Technical Support Services	3/18/2025	975.00
43	Robert Stilts, CPA	2/1/25-2/28/25 Accounting Services	3/18/2025	218.75
44	RICHARDS, WATSON & GERSHON A PROFESSIONAL CORPORATION	2/1/25-2/28/25 General Legal Counsel	4/9/2025	2,520.00
45	Robert Stilts, CPA	3/1/25-3/31/25 Accounting Services	4/9/2025	350.00
46	CONFLUENCE ENGINEERING SOLUTIONS, INC.	3/1/25-3/31/25 Executive Director Services	5/15/2025	7,275.00
47	CLEATH-HARRIS GEOLOGISTS, INC.	3/1/25-3/31/25 2024 Annual Report	5/15/2025	30,677.50
	CLEATH-HARRIS GEOLOGISTS, INC.	3/1/25-3/31/25 2025 Groundwater Monitoring	5/15/2025	3,670.00
	CLEATH-HARRIS GEOLOGISTS, INC.	3/1/25-3/31/25 Technical Support Services	5/15/2025	195.00
48	GSI Water Solutions, Inc.	3/1/25-3/31/25 WRFP Study Peer Review - Year 2	5/15/2025	2,810.00

Los Osos Basin Management Committee

Check/Voucher Register - Warrant Register

1012 - General Checking Account

From 1/1/2025 Through 1/20/2026

Check Number	Vendor Name	Transaction Description	Document Date	Check Amount
49	Los Osos CSD	LA 14 & LA 16 Groundwater Monitoring Well Project	5/15/2025	38,636.56
50	CONFLUENCE ENGINEERING SOLUTIONS, INC.	4/1/25-4/30/25 Executive Director Services	6/10/2025	11,306.25
51	GSI Water Solutions, Inc.	4/1/25-4/30/25 WRFP Study Peer Review - Year 2	6/10/2025	13,772.50
52	RICHARDS, WATSON & GERSHON A PROFESSIONAL CORPORATION	3/1/25-3/31/25 General Legal Counsel	6/10/2025	684.00
	RICHARDS, WATSON & GERSHON A PROFESSIONAL CORPORATION	4/1/25-4/30/25 General Legal Counsel	6/10/2025	324.00
53	Robert Stilts, CPA	4/1/25-4/30/25 Accounting Services	6/10/2025	175.00
54	GSI Water Solutions, Inc.	2/1/25-2/28/25 WRFP Study Peer Review - Year 2	6/10/2025	480.00
55	CONFLUENCE ENGINEERING SOLUTIONS, INC.	5/1/25-5/31/25 Executive Director Services	7/8/2025	9,656.25
56	CLEATH-HARRIS GEOLOGISTS, INC.	5/1/25-5/31/25 2024 Annual Report	7/8/2025	1,845.00
	CLEATH-HARRIS GEOLOGISTS, INC.	5/1/25-5/31/25 2025 Groundwater Monitoring	7/8/2025	3,353.00
	CLEATH-HARRIS GEOLOGISTS, INC.	5/1/25-5/31/25 Technical Support Services	7/8/2025	1,560.00
57	RICHARDS, WATSON & GERSHON A PROFESSIONAL CORPORATION	5/1/25-5/31/25 General Legal Counsel	7/8/2025	72.00
58	Robert Stilts, CPA	5/1/25-5/31/25 Accounting Services	7/8/2025	306.25
59	CLEATH-HARRIS GEOLOGISTS, INC.	4/1/25-4/30/25 2024 Annual Report	7/25/2025	7,675.00
	CLEATH-HARRIS GEOLOGISTS, INC.	4/1/25-4/30/25 2025 Groundwater Monitoring	7/25/2025	25,393.65
	CLEATH-HARRIS GEOLOGISTS, INC.	4/1/25-4/30/25 Technical Support Services	7/25/2025	3,770.00
	CLEATH-HARRIS GEOLOGISTS, INC.	6/1/25-6/30/25 2025 Groundwater Monitoring	7/25/2025	885.50
	CLEATH-HARRIS GEOLOGISTS, INC.	6/1/25-6/30/25 Groundwater Monitoring Program Improvements	7/25/2025	4,245.05
	CLEATH-HARRIS GEOLOGISTS, INC.	6/1/25-6/30/25 Technical Support Services	7/25/2025	10,250.00
60	GSI Water Solutions, Inc.	6/1/25-6/30/25 WRFP Study Peer Review - Year 2	7/25/2025	8,036.25
61	Robert Stilts, CPA	6/1/25-6/30/25 Accounting Services	7/25/2025	218.75
62	CONFLUENCE ENGINEERING SOLUTIONS, INC.	6/1/25-6/30/25 Executive Director Services	8/18/2025	9,393.75
63	CLEATH-HARRIS GEOLOGISTS, INC.	7/1/25-7/31/25 Groundwater Monitoring Program Improvements	8/18/2025	2,756.08
64	RICHARDS, WATSON & GERSHON A PROFESSIONAL CORPORATION	6/1/25-6/30/25 General Legal Counsel	8/18/2025	72.00
65	Robert Stilts, CPA	7/1/25-7/31/25 Accounting Services	8/18/2025	568.75

Los Osos Basin Management Committee

Check/Voucher Register - Warrant Register

1012 - General Checking Account

From 1/1/2025 Through 1/20/2026

Check Number	Vendor Name	Transaction Description	Document Date	Check Amount
66	CONFLUENCE ENGINEERING SOLUTIONS, INC.	7/1/25-7/31/25 Executive Director Services	9/9/2025	11,718.75
67	CLEATH-HARRIS GEOLOGISTS, INC.	7/1/25-7/31/25 Technical Support Services	9/9/2025	3,750.00
68	Robert Stilts, CPA	8/1/25-8/31/25 Accounting Services	9/9/2025	175.00
69	CONFLUENCE ENGINEERING SOLUTIONS, INC.	8/1/25-8/31/25 Executive Director Services	10/7/2025	13,140.00
70	CLEATH-HARRIS GEOLOGISTS, INC.	8/1/25-8/31/25 Technical Support Services	10/7/2025	800.00
71	Los Osos CSD	8/1/25-8/31/25 Groundwater Monitoring Program Improvements	10/7/2025	1,480.00
72	RICHARDS, WATSON & GERSHON A PROFESSIONAL CORPORATION	7/1/25-7/31/25 General Legal Counsel	10/7/2025	3,564.00
73	CONFLUENCE ENGINEERING SOLUTIONS, INC.	9/1/25-9/30/25 Executive Director Services	10/17/2025	16,671.25
74	CLEATH-HARRIS GEOLOGISTS, INC.	9/1/25-9/30/25 2025 Groundwater Monitoring	10/17/2025	5,195.00
75	RICHARDS, WATSON & GERSHON A PROFESSIONAL CORPORATION	8/1/25-8/31/25 General Legal Counsel	10/17/2025	72.00
76	Robert Stilts, CPA	9/1/25-9/30/25 Accounting Services	10/17/2025	175.00
77	CONFLUENCE ENGINEERING SOLUTIONS, INC.	10/1/25-10/31/25 Executive Director Services	11/24/2025	17,370.00
78	CLEATH-HARRIS GEOLOGISTS, INC.	10/1/25-10/31/25 2025 Groundwater Monitoring	11/24/2025	23,668.65
	CLEATH-HARRIS GEOLOGISTS, INC.	10/1/25-10/31/25 Groundwater Monitoring Program Improvements	11/24/2025	400.00
	CLEATH-HARRIS GEOLOGISTS, INC.	10/1/25-10/31/25 WRF Study Services	11/24/2025	16,500.00
	CLEATH-HARRIS GEOLOGISTS, INC.	9/1/25-9/30/25 Technical Support Services	11/24/2025	7,250.00
79	Los Osos CSD	8/1/25-8/31/25 Groundwater Monitoring Program Improvements	11/24/2025	837.50
80	Robert Stilts, CPA	10/1/25-10/31/25 Accounting Services	11/24/2025	306.25
81	Twin Cities Surveying, Inc.	10/31/25 LA 14/16 Wellhead Survey	11/24/2025	2,500.00
82	CLEATH-HARRIS GEOLOGISTS, INC.	11/1/25-11/30/25 2025 Groundwater Monitoring	1/19/2026	4,819.50
	CLEATH-HARRIS GEOLOGISTS, INC.	11/1/25-11/30/25 Groundwater Monitoring Program Improvements	1/19/2026	1,553.40
	CLEATH-HARRIS GEOLOGISTS, INC.	12/1/25-12/31/25 Groundwater Monitoring Program Improvements	1/19/2026	1,045.00
83	Robert Stilts, CPA	11/1/25-11/30/25 Accounting Services	1/19/2026	262.50
ACH_Strmlne3.5...	STREAMLINE SOFTWARE, INC.	2/1/2025-2/1/2026 Streamline Flex Website Hosting	3/5/2025	1,920.00
Report Total				437,769.34

BASIN MANAGEMENT COMMITTEE BOARD OF DIRECTORS

Agenda Item 6b: Minutes of the Special Meeting of November 12, 2025

The following is a summary of the actions taken at the Basin Management Committee Board of Directors Meeting.
The official record for the meeting is the recording that can be found at:

<https://www.losososbmc.org/>

Agenda Item	Discussion or Action
1. Call to Order	Chair Zimmer called the meeting to order at approximately 2:00 PM (00:00:01).
2. Roll Call	Daniel Heimel, Executive Director, called roll to begin the meeting. Director Zimmer, Director Cesena, and Director Gibson were present. Director Reinke attended remotely due to family care circumstances (00:00:50).
3. Pledge of Allegiance	Pledge of Allegiance (00:01:40)
4. Board Member Comments	Board Discussion (00:02:10) None
4. Special Presentation	
None	None (00:02:30)
6. Consent Agenda	Approval of Minutes from October 15, 2025 Regular BMC Meeting and 2025 Financial Reports (00:02:35)
6a. 2025 Financial Reports	
6b. Approval of proposed contingency/reserve fund use	Recommendation: BMC Staff recommends: <ul style="list-style-type: none"> a. The Board review and consider approval of Financial Reports or provide alternate direction to Staff. b. The Board consider approval of utilizing reserves to allocate \$17,370 to Budget Item 1: BMC Administration and Facilitation, \$7,250 to Budget Item 5: Technical Support Services, and \$16,500 for WRFPP Study related services. c. The Board review and consider approval of Meeting Minutes or provide alternate direction to Staff.
6c. Approval of Minutes from October 15, 2025 Regular BMC Meeting	Board Discussion (00:04:39) Public Comment None Board Action on Consent Agenda (00:07:33) The Board approved of the following: <ul style="list-style-type: none"> a. 2025 Financial Reports b. Approval of proposed contingency/reserve fund use c. Approval of Minutes from the October 15, 2025 Regular BMC Meeting Motion: Director Gibson Second: Director Cesena Ayes: All Nays: None Passes: 4-0

<p>7. Public Comments on Items Not Appearing on the Agenda</p>	<p>Public Comment (00:07:50) Deborah Howe Jeff Edwards</p> <p>Board Discussion (00:12:30)</p>
<p>8. Los Osos Basin Update Report</p>	<p>Los Osos Basin Update Report (00:14:40)</p> <p>Board Discussion (00:18:58)</p> <p>Public Comment None</p>
<p>9. Action Items</p>	
<p>9a. Final Draft Los Osos Water Recycling Funding Program (WRFP) Study Supply Alternatives Analysis</p>	<p>Final Draft Los Osos Water Recycling Funding Program (WRFP) Study Supply Alternatives Analysis (00:22:55)</p> <p>Recommendation: Receive and comment on the Final Draft Los Osos Water Recycling Funding Program (WRFP) Study and authorize submittal of the Final WRFP Study to the State Water Resources Control Board (SWRCB) with changes to address comments received from SWRCB and BMC.</p> <p>Board Discussion (00:59:01)</p> <p>Public Comment (01:13:41) Deborah Howe Richard Margetson Jeff Edwards</p> <p>Board Action (01:26:54) The Board received and commented on the Final Draft Los Osos Water Recycling Funding Program (WRFP) Study and authorized submittal of the Final WRFP Study to the State Water Resources Control Board (SWRCB) with changes to address comments received from SWRCB and BMC.</p> <p>Motion: Director Gibson Second: Director Cesena Ayes: All Nays: None Passes: 4-0</p>
<p>9b. Calendar Year 2026 Budget and Consultant Services Proposals</p>	<p>Calendar Year 2026 Budget and Consultant Services Proposals (01:28:25)</p> <p>Recommendation: Receive the proposed Calendar Year 2026 BMC Budget and consultant services proposals and consider for approval or provide alternate direction to Staff.</p> <p>Public Comment (01:35:21) Jeff Edwards</p>

	<p>Board Discussion (01:38:59)</p> <p>Board Action (01:45:21) The Board received and approved the proposed Calendar Year 2026 BMC Budget and consultant services proposals.</p> <p>Motion: Director Gibson Second: Director Cesena Ayes: All Nays: None Passes: 4-0</p>
11. Adjournment	<p>Meeting adjourned at approximately 3:40 PM (01:47:10). The next regularly scheduled meeting is on November 19, 2025.</p>

DRAFT

TO: Los Osos Basin Management Committee

FROM: Dan Heibel, Executive Director

DATE: January 28, 2026

SUBJECT: Item 8 – Los Osos Basin Update Report

Recommendations

Staff recommends that the Basin Management Committee (BMC) receive and file the Los Osos Basin Update Report and provide staff with any direction for future discussions. Sections of the Los Osos Basin Update Report that have been updated or significantly changed from the previous meeting's version are underlined and sections of the report that have not had any recent or anticipated updates have been removed.

Discussion

This report was prepared to summarize updates on matters not covered in other agenda items and to provide a general update on Los Osos Basin related activities.

Funding and Financing Programs to Support Basin Plan Implementation

WRFP Grant: On February 11, 2022 the Los Osos Community Services District (LOCSO) submitted an application for a Water Recycled Funding Program (WRFP) grant to develop a transient model and analyze recycled water and supplemental water projects to improve the sustainability of the Los Osos Basin (WRFP Study). Los Osos CSD was notified of the award of the grant in January 2023 and all the required documents were signed and fully executed. On May 17, 2023 the BMC approved Cleath-Harris Geologist (CHG) to complete the WRFP Study and the WRFP Study is underway. A proposed modification to the schedule for completion of the WRFP Study was executed on March 7, 2025 by the State Water Resources Control Board (SWRCB) to allow for additional time to incorporate published data from the Department of Water Resources (DWR) Aerial Electromagnetic (AEM) Survey. The BMC and LOCSO received the agreement amendment from the SWRCB which reflects the updated schedule (see table below). CHG incorporated findings from the AEM data, completed calibration, and held several meetings with the Technical Advisory Committee (TAC) and Peer Review Consultant to discuss the Transient Model calibration and recycled water/supplemental water supply alternatives. The Peer Review Consultant (GSI) has provided feedback to CHG, which is incorporated into the Transient Model Construction/Calibration TM and the groundwater model. In addition to GSI's peer review, the County coordinating an additional review Lynker, and their comments have been incorporated as well. The Transient Model Construction/Calibration TM and Baseline Scenario Results were brought to the BMC at the regularly scheduled June 18, 2025 BMC meeting. Cleath Harris-Geologists provided a presentation on these items at the August 20, 2025 BMC meeting. At the July 16, 2025, meeting the lead consultant preparing the Engineering Report, Water Systems Consulting (WSC), provided a presentation on the

current status of the WRF Study Supply Alternatives Analysis. The BMC notified the SWRCB that the Draft Project Submittal Estimated Due Date and subsequent estimated due dates, would be pushed back. The Draft Project Report was submitted on September 9, 2025. In lieu of the Mid-Course Meeting, the SWRCB provided written comments on the WRF Study Report. Since Staff received SWRCB comments later than anticipated, Staff requested and received an extension on the due date of the Final WRF Study from November 15, 2025 until November 30, 2025. The Final Draft WRF report was approved by the Board at the November 12, 2025 Special BMC Meeting. The Final Draft was submitted to the State Board. The State provided the Final Approval Letter on January 21, 2026. Staff are preparing the Final Disbursement Request (due by May 15, 2026).

BMC Staff will continue to monitor potential additional grant funding opportunities and bring information on these opportunities to the BMC for consideration as they become available.

Status of BMC Initiatives

Basin Monitoring Program Improvement/Central Coast Community-Based Water Quality Grants

Program Grant: The Central Coast Community-Based Water Quality Grants Program is offered by the Rose Foundation, in collaboration with the Central Coast Water Board and the Bay Foundation of Morro Bay. This program is dedicated to funding water quality improvement projects within the jurisdiction of the Central Coast Regional Water Quality Control Board.

On June 12th, 2024, the BMC authorized the preparation of an application for the Central Coast Community-Based Water Quality Grant Program to request \$150k for the construction of a new, lower aquifer monitoring well. The grant application was submitted on July 12th, 2024 and on September 19th, 2024 BMC Staff received an email indicating that the BMC's application is being recommended to the Rose Foundation's Board of Directors for funding. On September 24th, 2024 the Rose Foundation notified the BMC Executive Director of the grant award selection and sent an agreement for the BMC to execute. To fulfill the requirements of the Rose Foundation Grant the BMC would provide the required 25% (\$50,000) match funding from the Monitoring Network Improvements budget item in the 2025 Calendar Year Budget. The BMC Executive Director executed the grant agreement with the Rose Foundation on October 22nd, 2024. On December 24th, 2024, the grant funds were deposited into the BMC's bank account. On February 18, 2025, LOCSD and the BMC released a Request for Proposals (RFP) for Hydrogeological Consultant Procurement for the Sweet Springs Monitoring Well (Los Osos Basin Lower Aquifer Water Quality Monitoring Well). Proposals were due March 18th, 2025. The Board approved Staff's recommendation of the selection of Cleath-Harris Geologists (CHG) as the hydrogeological consultant for this project at the [May 21, 2025 BMC Meeting](#). Construction has been delayed until early 2026 due to the need to acquire HCP credits prior to construction. Due to the recent May 2025 designation of Morro Manzanita as a candidate for listing under the California Endangered Species Act, the County is short on available HCP credits for projects this year. More credits will be available in 2026, and this is a priority project.

DWR AEM Survey: On December 2022, BMC Staff were notified that the Los Osos Basin would be included in the Department of Water Resources (DWR) Statewide Airborne Electromagnetic (AEM) Survey in Spring 2023. To assist DWR in preparing flight lines for the AEM Survey, BMC Staff provided DWR with lithologic information for the Los Osos Basin and prepared an Area of Interest Map. The data collected during the AEM survey will improve DWR and the BMC's understanding of Los Osos Basin hydrogeology and seawater intrusion. The AEM Survey for the San Luis Obispo and Santa Barbara County basins was initiated on April 26th, 2023, however, due to weather conditions and the need to support emergency flood response efforts elsewhere in the State, DWR was not able to complete the survey of the Los Osos Basin. DWR returned to complete the survey in November 2023 and survey results were released in November 2024. The AEM survey data and additional information on DWR's Statewide AEM Survey Project can be found here:

<https://water.ca.gov/Programs/Groundwater-Management/Data-and-Tools/AEM>

At the [August 20, 2025 BMC meeting](#), Cleath-Harris Geologists (CHG) presented the AEM Survey Results and provided the [Technical Memorandum: Airborne Electromagnetic \(AEM\) Data Results](#).

Sustainable Yield: At its October 27th, 2021 Meeting, the BMC unanimously approved an updated Sustainable Yield estimate of 2,380 Acre-Feet per Year (AFY) for Calendar Year 2022 and at its December 6th, 2023 Meeting, the BMC unanimously approved retaining the current Sustainable Yield estimate of 2,380 AFY for CY 2024 for the following reasons: 1) No new infrastructure, not already considered in the 2022 Sustainable Yield Estimate, has been constructed; 2) estimates for the development of the Broderson Mound and long-term average rainfall were updated and incorporated into the CY 2022 Sustainable Yield Estimate and are not anticipated to change significantly on a year-over-year basis; 3) no significant hydrogeologic investigations have been conducted that would warrant an update to the steady-state groundwater model utilized to develop the Sustainable Yield Estimate. For these same reasons, the BMC unanimously approved retaining the current Sustainable Yield Estimate of 2,380 AFY for CY 2025 at its [October 16th, 2024 Meeting](#). Staff brought a presentation on the calculation of the Sustainable Yield estimate for 2026 to the October 2, 2025 Special BMC Meeting. The Board approved the proposed CY 2026 Sustainable Yield of 2,000 AFY at the [October 15, 2025 BMC Meeting](#).

Basin Metric Evaluation: Since 2019, the BMC has made significant improvements to its Groundwater Monitoring Program, including construction of the Sweet Springs/Cuesta-by-the-Sea and Skyline Monitoring Wells and modifications to Lower Aquifer (LA) 13, 14, and 16 wells. These additional/enhanced monitoring locations provide an opportunity to improve the Basin Metrics that the BMC utilizes to assess the health of the Basin. Additionally, the modification of LA 14 and 16 to dedicated Lower Aquifer Zone E monitoring wells changed the depth of the screened intervals so that water level readings collected at these wells now reflect Zone E water level elevations only and not the combined water level elevation of Zone D and E and thus the Water Level Metric Methodology needs to be modified to account for this change. The survey for wellhead elevations of Wells LA 16, LA 42, LA 43, and LA 44 has been completed. The new elevations will be included in the Fall Water Level Data presented to the BMC. See Item 9c in the agenda packet from the [August 20, 2025 BMC Meeting](#) for more details on the scope of the surveying.

CHG is working on an initiative to evaluate the existing metrics and provide recommendations to the BMC for changes that can be made to incorporate the improvements to the Groundwater Monitoring Program and will bring them to the BMC for their consideration at a future date. The Board approved CHG's proposal for metric review and update services at the [November 12, 2025 BMC Meeting](#).

Transient Groundwater Model: See update under WRF Grant above.

Lower Aquifer Nitrate Investigation: On October 19th, 2022 the BMC authorized Calendar Year (CY) 2022 funding to perform additional Nitrate Source Investigation to better understand the source of Nitrate impacting lower aquifer production wells. However, due to the inability to obtain well owner permission to sample the desired wells, much of that work was not completed in 2022. Subsequently, the Regional Water Quality Control Board (RWQCB) staff reviewed the investigation information and findings available to date and provided a presentation to the BMC at its March 15th, 2023 Meeting. BMC Party Staff is working with RWQCB Staff to identify potential additional investigations to help better inform the sources of the nitrate in the LA8 Well. On March 8th, 2024 and April 29th, 2024 BMC Staff received updates from RWQCB Staff on the status of their investigation into the source of nitrate impacting water supply wells in the western Los Osos Valley Groundwater Basin.

County Planning's Land Use Planning Process Update

Guide to Planning Information for Development in Los Osos:

This website provides relevant planning information for the community of Los Osos, including the Growth Management Ordinance, the Los Osos Habitat Conservation Plan, and frequently asked questions: <https://www.slocounty.ca.gov/departments/planning-building/grid-items/communities-villages/los-osos>

Los Osos Community Plan:

The Los Osos Community Plan (LOCP) was approved by the County Board of Supervisors on October 29, 2024. The LOCP and amendments to the Estero Area Plan were certified by the California Coastal Commission at a hearing on December 11, 2024. Both the [LOCP](#) and [Estero Area Plan](#) are now in effect.

Los Osos and the Growth Management December 16, 2025 Hearing Update:

On December 16, 2025, the County Board of Supervisors adopted a resolution establishing the maximum annual allocation for Calendar Year 2026 for the community of Los Osos of 25 new dwelling units (growth rate of 0.4%).

The BMC provided the County of San Luis Obispo's Groundwater Sustainability Director with the [Los Osos Basin Management Committee 2026 Growth Rate Recommendation Letter](#), which outlines the BMC's recommendation for a CY 2026 growth rate of 0%.

Los Osos Habitat Conservation Plan (HCP):

On December 10th, 2024, the County Board of Supervisors approved funding for the implementation of the Los Osos Habitat Conservation Plan (LOHCP). This funding will be used to pursue mitigation credits

for habitat conservation through fee title or easement acquisition, fund habitat restoration projects, and fund staffing needed to implement the plan. Staff returned to the Board in February 2025 where the Board adopted the fee which will allow applicants to pay into the LOHCP to offset disturbance caused by development. Availability of LOHCP credits is expected by March 1, 2026.

Title 19 Retrofit-to-Build

No Title 19 Retrofit-to-Build certificates were issued between October 1 – December 31, 2025.

The following table summarizes Title 19 Retrofit-to-Build certificates which have been issued through December 31, 2025.

Title 19 Retrofit-to-Build Certificates	
Total Issued (since 2008)	Issued in Oct-Dec 2025
65	0

Please see the Los Osos page on County’s website linked [here](#) for more information on Title 19 certificates and growth in Los Osos.

Land Use Permits

Only land use permits for projects that have seen movement in 2025 are included in the table below. More detailed information on land use in Los Osos is available on the [LOCAC website](#).

Los Osos Land Use Permits			
	Pending	Approved in Nov/Dec	2025 Total Approved
Single-Family Residence	11	1	3
Mixed-Use	2	-	-

County Public Works' Los Osos Water Recycling Facility Project Update

The following table summarizes flows from the LOWRF based on the available data.

2025 LOWRF Wastewater and Recycled Water Flows (Acre Feet)

Year	Month	Influent	Broderson	Bayridge	Ag Users	Urban Irrigation*	Effluent
2025	Jan	45.74	41.61	1.25	0.05	**2.15	45.07
2025	Feb	41.72	39.49	1.14	0.02	**2.07	42.72
2025	Mar	45.63	39.35	1.25	0.04	**4.80	45.45
2025	April	44.28	30.98	1.33	0.30	**9.43	41.32
2025	May	46.04	27.12	1.25	0.39	**10.12	40.67
2025	June	44.63	28.55	1.29	0.47	**9.77	40.08
2025	July	46.09	37.17	1.31	0.57	15.86	51.51
2025	Aug	59.84	28.09	1.02	0.59	16.26	39.88
2025	Sept	56.32	35.40	0.98	0.45	6.99	44.35
2025	Oct	54.51	28.90	1.04	0.26	2.09	37.85
2025	Nov	56.88	40.69	1.27	0.03	1.75	43.64
2025	Dec	58.20	44.23	1.27	0.06	1.15	48.03

*Urban Irrigation includes recycled water usage at Sea Pines, Los Osos Middle School, Monarch Grove, Los Osos Valley Road Median and Los Osos Community Park.

**For Jan-Jun 2025, urban irrigation only includes Sea Pines Golf Course for as Los Osos Middle School, Monarch Grove, and Los Osos Community Park were not receiving recycled water until July 2025

LOWRF Project Updates:

- The County has connected the Los Osos Community Park, Los Osos Middle School, and Monarch Grove Elementary to the LOWRF recycled water distribution system. The County received funding for these connections through the ARPA grant program.

Enforcement: A list of properties that were not connected were transferred to County Code Enforcement and Notice of Violations were issued in Feb. 2019. That list was about 70 properties. As of 5/12/2021, the sewer service area has a 99.4% connection status with a total of 36 properties not yet connected. Of those, one is not required to connect because there is no structure (demolished), 18 have expired building permits, and the rest have an open Code Enforcement case.

The County has assigned staff in code enforcement to Los Osos. Expired permits did not receive a Code Enforcement case because those properties have their own noticing process through the Building Department which, if not corrected, could result in a Notice of Violation.

Los Osos CSD's Water Resiliency Intertie Project Update

The Los Osos Community Services District (CSD) continues to make progress towards implementation of the Water Resiliency Intertie Project (Intertie Project) since they began investigations into alternative water supply sources in 2021. Efforts to date include the preparation of a preliminary design report, environmental review, and the pursuit of funding sources. The conceptual strategy involves using supplemental water from the State Water Project during wet years as an offset for groundwater pumping, allowing for long-term recovery of the Los Osos Groundwater Basin. During dry years, the CSD would rely more on groundwater. This approach enhances long-term resiliency while avoiding overreliance on outside sources.

At the [September 4, 2025 CSD Board meeting](#), the Board approved a contract with Water Systems Consulting in the amount of \$854,044 to provide design services for the project. The design work is estimated to take about one year to complete.

Sustainable Groundwater Management Act (SGMA)

SGMA Overview: SGMA took effect on January 1, 2015.¹ SGMA provides new authorities to local agencies with water supply, water management or land use responsibilities and requires various actions be taken in order to achieve sustainable groundwater management in high and medium priority groundwater basins. Los Osos Valley Groundwater Basin (Los Osos Basin) was subject to SGMA based on the 2014 Basin Prioritization by the California Department of Water Resources (DWR) that listed the Los Osos Basin as high priority and in critical conditions of overdraft.²

Basin Prioritization: On December 18, 2019, DWR released the SGMA 2019 Basin Prioritizations. Basins or subbasins reassess to low or very low priority basins or subbasins are not subject to SGMA regulations.

¹ On September 16, 2014, Governor Jerry Brown signed into law a three-bill legislative package, composed of [AB 1739 \(Dickinson\)](#), [SB 1168 \(Pavley\)](#), and [SB 1319 \(Pavley\)](#), collectively known as SGMA

² SGMA mandates that all groundwater basins identified by DWR as high- or medium-priority by January 31, 2015, must have groundwater sustainability agencies established by June 30, 2017. The act also requires that all high- and medium-priority basins classified as being subject to critical conditions of overdraft in Bulletin 118, as of January 1, 2017, be covered by groundwater sustainability plans, or their equivalent, by January 31, 2020. Groundwater sustainability plans, or their equivalent, must be established for all other high- and medium-priority basins by January 31, 2022.

A summary of DWR's Final SGMA Prioritizations for the Los Osos Area Subbasin and Warden Creek Subbasin are listed below:

- Los Osos Area Subbasin is listed as **very low** priority for SGMA³ and in critical conditions of overdraft⁴
- SGMA does not apply to the portions of Los Osos Basin that are adjudicated provided that certain requirements are met (Water Code §10720.8).
- Warden Creek Subbasin is listed as **very low** priority for SGMA³

For more information on DWR's basin boundary modification and prioritization process, please visit: <https://water.ca.gov/Programs/Groundwater-Management/Basin-Prioritization>

³ As noted by DWR, the priority for the subbasin has been set to very low (0 total priority points) as a result of conditions being met under sub-component C of the Draft SGMA 2019 Basin Prioritizations.

⁴ Critical conditions of overdraft have been identified in 21 groundwater basins as described in Bulletin 118 (Water Code Section 12924). Bulletin 118 (updates 2003) defines a groundwater basin subject to condition of critical overdraft as: "A basin is subject to critical conditions of overdraft when continuation of present water management practices would probably result in significant adverse overdraft-related environmental, social, or economic impacts."

Additional Attachments:

Updated Status of Basin Plan Programs

Update on Status of Basin Plan Infrastructure Projects

Program Name	Project Name	Parties Involved	BMC Budgeted Amount	Funding Status	Anticipated Planning/Pre-Construction Cost	Anticipated Capital Cost	Status/Notes
Program A – Shift groundwater production from Lower Aquifer to Upper Aquifer	Water Systems Interconnection	LOCSO/ GSWC	NA	NA	NA	NA	Completed
	Upper Aquifer Well (8 th Street)	LOCSO	NA	Fully Funded	NA	\$307,000	Completed
	South Bay Well Nitrate Removal	LOCSO	NA	NA	NA	NA	Completed
	Palisades Well Modifications	LOCSO	NA	NA	NA	NA	Completed
	Blending Project (Skyline Well)	GSWC	NA	NA	NA	NA	Completed
	Water Meters	S&T	NA	NA	NA	NA	Completed
Program B - Shift groundwater production from Lower Aquifer to Upper Aquifer	LOCSO Wells (Upper Aquifer)	LOCSO		Not Funded	TBD	BMP: \$2.7 mil	Project not initiated
	GSWC Wells (Upper Aquifer)	GSWC		Not Funded	TBD	BMP: \$3.2 mil	Project not initiated
	Community Nitrate Removal Facility	LOCSO/GSWC/S&T	TBD	Partial, GSWC portion funded	TBD	GSWC: \$1.23 mil	GSWC’s Program A Blending Project might be capable of expanding to be the first phase of the Program B Community Nitrate Removal Facility.
Program C - Shift production within the Lower Aquifer from the Western Area to the Central Area of the Basin	Expansion Well No. 1 (Los Olivos)	GSWC	NA	NA	NA	NA	Completed
	Expansion Well No. 2 (Lower Aquifer)	LOCSO		LOCSO	TBD	BMP: \$2.5 mil	<u>The CSD has received the well permit and completed necessary testing. The well is anticipated to go online the week of January 26th, 2026.</u>
	Expansion Well 3 (Lower Aquifer) and LOVR Water Main Upgrade	GSWC/LOCSO		Cooperative Funding	TBD	BMP: \$1.6 mil	The deferral from Program C for this project was removed by the BMC on August 16th, 2023.
	LOVR Water Main Upgrade	GSWC		May be deferred	TBD	BMP: \$1.53 mil	Project may not be required, depending on the pumping capacity of the drilled Program C wells. It may be deferred to Program D.
	S&T/GSWC Interconnection	S&T/ GSWC		Pending	TBD	BMP: \$30,000	Currently on hold pending further evaluation of the project.
Program D - Shift production within the Lower Aquifer from the Western Area to the Eastern Area of the Basin							Currently being considered for deferment through Adaptive Management. BMC to review on an annual or semi-annual basis.
Program M – Groundwater Monitoring Plan	New Zone D/E lower aquifer monitoring well in Cuesta by the Sea	All Parties	NA	NA	NA	NA	Completed

Program Name	Project Name	Parties Involved	BMC Budgeted Amount	Funding Status	Anticipated Planning/Pre-Construction Cost	Anticipated Capital Cost	Status/Notes
Program U - Urban Water Reinvestment Program	Creek Discharge Program	All Parties				TBD	These activities are currently on hold. The Transient Model and Water Recycling Funding Study are intended to better inform the BMC on the most effective opportunities for increasing the sustainable yield of the Basin.
	8 th and El Moro Urban Storm Water Recovery Project	All Parties				TBD	These activities are currently on hold. The Transient Model and Water Recycling Funding Study are intended to better inform the BMC on the most effective opportunities for increasing the sustainable yield of the Basin.

TO: Los Osos Basin Management Committee

FROM: Dan Heimerl, Executive Director

DATE: January 28, 2026

SUBJECT: Item 9a – Appointment of BMC Officers for Calendar Year 2026

Recommendations

Staff recommend the BMC review the existing officer positions and appoint officers for CY 2026 or provide alternative direction to staff.

Discussion

The adopted Rules and Regulations (January 2016) for the BMC require appointment of the Committee's officers as noted in the excerpt below from Section 4.2:

Appointment of Officers. The officers shall be appointed annually by, and serve at the pleasure of, the Basin Management Committee. Officers shall be elected at the first Basin Management Committee meeting, and thereafter at the first Basin Management Committee meeting following December 1 of each year. An Officer may serve for multiple consecutive terms. Any Officer may resign at any time upon written notice to the Basin Management Committee. The Secretary or Treasurer may be removed and replaced by an affirmative decision of the Basin Management Committee.

The current BMC officers are as follows:

Director Zimmer: Chairperson
Director Cesena: Vice Chairperson
Director Reineke: Secretary
Director Gibson: Treasurer

TO: Los Osos Basin Management Committee

FROM: Dan Heibel, Executive Director

DATE: January 28, 2026

SUBJECT: Item 9b – Draft Fall 2025 Los Osos Basin Water Level Data, Lower Aquifer Water Quality Monitoring Results, and Updated Chloride Metric

Recommendations

Receive an update on the Draft Fall 2025 Los Osos Basin Water Level Data, Lower Aquifer Water Quality Monitoring Results, and Updated Chloride Metric.

Discussion

Results

Please find the attached Draft Fall 2025 Los Osos Basin Water Level Data, Lower Aquifer Water Quality Monitoring Results, and Updated Chloride Metric. As described in Section 5.14 of the Stipulated Judgment and Chapter 7 of the Basin Plan, the Basin Management Committee (BMC) established a groundwater monitoring program to provide the BMC, parties to the adjudication, private Basin water users and public agencies with updated information on groundwater resources in the Los Osos Basin. The final results, including water levels and results from the First Water and Upper Aquifer monitoring, will be included in the 2025 Annual Report. See notes from the BMC hydrogeologist on the results below:

- LA10 had Upper Aquifer Influence (Chloride was 240 mg/L with NO₃-N at 3.1 mg/L). This data was substituted with a [GAMA \(Groundwater Ambient Monitoring and Assessment\) Ground Water Information System](#) result from August 5, 2025 that reported Chloride at 290 mg/L and NO₃-N at 2.3 mg/l.
- LA11 (Pasadena) – Chloride down slightly from Spring record high.
- LA15 (Palisades) – Chloride holding at record high.
- LA18 (10th Street Zone E) – Showing a chloride increase in 2025 over historical (still low Chloride but would need to run ion ratios to check for precursors of intrusion). This would be in the main intrusion path from Palisades toward downtown.
- LA14 (North end Palisades Zone E monitoring) – New to table. Intrusion front not present at LA14.
- LA16 (Broderson/LOVR Zone E) - New to table - Intrusion has reached LA16.

Water Level Metric

The Water Level Metric has not been updated for Fall 2025 as Lower Aquifer Well (LA) 14 and LA 16 were recently modified (February 2025) to be dedicated Lower Aquifer Zone E monitoring wells. They previously were used to monitor water levels in both Zone D and Zone E. These modifications changed

the depth of the screened intervals, see table below, so that water level readings collected at these wells now reflect Zone E water level elevations only and not the combined water level elevation of Zone D and E. Due to these modifications, the measurements from these wells cannot be compared to historical values and the Basin Metric Methodology needs to be modified to account for this change. BMC Staff have re-initiated an initiative to evaluate existing metrics and provide recommendations to the BMC for improvements that can be made to incorporate the improvements that the BMC has made to the Groundwater Monitoring Program well network (i.e. construction of Sweet Springs/Cuesta-by-the-Sea and Skyline Monitoring Wells and modifications to LA 13, 14, and 16). The BMC approved of Cleath-Harris Geologists’ proposal for services to review and update the Basin Metrics at the [November 12, 2025 BMC Meeting](#). This work is anticipated to take place in 2026, prior to the release of the Spring 2026 metrics.

Well	Previous Screen Depth	Modified Screen Depth
LA 14	355-600 ft – Lower Aquifer Zone D/E	551-591 ft – Lower Aquifer Zone E
LA 16	330-575 ft – Lower Aquifer Zone D/E	469-509 ft – Lower Aquifer Zone E

Attachments

1. Draft Fall 2025 Los Osos Basin Water Level Data, Lower Aquifer Water Quality Monitoring Results, and Updated Chloride Metric

Los Osos BMC Water Quality Results - Lower Aquifer Monitoring

Station ID	Well Name	Basin Plan Well ID	Aquifer Zone	Date	HCO3	Total Hardness	Cond	pH	TDS	Cl	NO3-N	SO4	Ca	Mg	K	Na
					mg/l	mg/l	µmhos/cm		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
30S/10E-11A2	Sand Spit #1 East	LA2	D	3/14/2005	180	4600	16000	7.3	8900	5400	ND	430	770	640	20	1300
				10/21/2015	150	6640	17700	7.4	13100	6300	ND	740	1030	990	31	1560
				11/5/2020	220	6700	18000	7.7	15300	5890	ND	777	1140	936	38	1560
30S/10E-12J1	MBO5 DWR Obs.	LA11	E	2/14/2005	350	370	1300	8.1	840	77	ND	190	51	58	6.1	110
				11/20/2009	300	360	1150	7.5	732	83	ND	190	51	58	4.4	95
				7/24/2014	360	489	1290	7.7	780	105	ND	212	69	77	5	88
				4/22/2015	360	475	1290	7.8	810	112	ND	189	65	76	5	88
				10/1/2015	250	486	1280	7.3	840	117	ND	188	68	77	4	85
				4/20/2016	330	524	1370	n/a	840	151	ND	193	73	40	5	83
				10/10/2016	350	497	1370	7.1	930	173	ND	189	69	79	4	81
				4/11/2017	350	541	1380	7.5	880	167	ND	186	75	86	4	81
				10/4/2017	300	543	1370	7	850	162	ND	191	76	86	5	90
				4/10/2018	350	595	1390	7.6	820	173	ND	192	85	93	5	97
				10/2/2018	350	497	1340	7.4	870	160	ND	160	69	79	3	87
				4/9/2019	350	539	1430	7.4	860	196	ND	189	76	85	4	85
				10/2/2019	250	290	1520	7.6	1000	187	ND	189	80	90	5	91
				4/14/2020	350	667	1580	7	950	222	ND	187	81	113	5	83
				10/1/2020	350	763	1650	7.1	1040	242	ND	183	85	134	5	88
				4/5/2021	345	612	1630	7.6	1050	256	ND	192	88	96	5	91
				10/6/2021	340	569	1710	7.3	1020	258	ND	176	83	88	5	82
				4/13/2022	330	620	1800	7.3	1020	287	ND	183	90	96	4	87
				10/6/2022	350	633	1720	7.7	1220	279	ND	195	89	100	5	93
				4/13/2023	350	653	1840	7.2	1040	346	ND	188	92	103	5	89
				10/4/2023	340	715	1910	7.4	1300	350	ND	188	102	112	5	93
				4/2/2024	350	675	1870	7.6	1130	340	ND	194	94	107	5	91
				10/2/2024	330	725	1980	7.8	1250	340	ND	189	101	115	5	92
4/2/2025	340	754	2060	7.6	1240	430	ND	193	106	119	5	94				
10/2/2025	330	795	2080	7.6	1480	390	ND	184	114	124	5	97				

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Los Osos BMC Water Quality Results - Lower Aquifer Monitoring

Station ID	Well Name	Basin Plan Well ID	Aquifer Zone	Date	HCO3	Total Hardness	Cond	pH	TDS	Cl	NO3-N	SO4	Ca	Mg	K	Na
					mg/l	mg/l	µmhos/cm		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
30S/10E-13Bb	Lupine Zone D	LA41	D	11/7/2019	210	312	1310	7.7	760	136	3.1	188	69	34	4	140
				4/8/2020	310	204	943	7.1	560	68	0.3	109	44	23	2	101
				10/8/2020	340	263	920	7.1	490	52	0.1	89.4	51	33	2	72
				4/14/2021	333	289	855	7.9	505	66	ND	86	53	38	2	60
				10/11/2021	340	309	812	7.2	460	48	ND	80	58	40	2	64
				4/12/2022	330	309	818	8.3	500	47	ND	67	58	40	2	58
				10/11/2022	340	315	766	7.6	470	48	ND	71	62	39	2	57
				4/11/2023	340	260	764	7.5	440	51	ND	58	48	34	2	47
				10/23/2023	340	281	754	7.0	460	48	ND	57	50	38	2	50
				4/9/2024	340	292	729	7.5	410	48	ND	52	51	40	2	51
				10/10/2024	340	270	744	7.5	400	48	ND	49	47	37	2	47
4/9/2025	340	274	744	7.4	420	52	ND	48	49	37	2	46				
10/21/2025	340	274	730	7.4	470	52	ND	44	49	37	2	44				
30S/10E-13Ba	Lupine Zone E	LA40	E	11/6/2019	210	2090	5330	7	4750	1460	1.3	224	388	272	6	182
				4/7/2020	240	3300	7360	7.6	6340	2190	0.3	202	569	458	7	203
				10/7/2020	270	4100	8220	6.9	7930	2220	ND	192	720	560	8	217
				4/15/2021	274	3760	8590	7.4	6760	2510	ND	217	558	576	7	210
				10/13/2021	270	3540	8930	7.4	7430	2910	ND	201	544	530	6	190
				4/14/2022	270	3780	8790	7.3	6790	2410	ND	187	523	601	6	178
				10/12/2022	280	3860	8860	7.5	8340	2900	ND	221	569	594	7	186
				4/12/2023	280	4570	9020	7.3	5870	2820	ND	232	575	762	7	198
				10/24/2023	280	4450	9200	6.9	9610	3200	ND	259	764	619	6	201
				4/8/2024	280	3760	9020	7.4	8040	3200	ND	251	650	519	6	197
				10/9/2024	290	3690	9140	7.4	7670	2900	ND	255	658	499	7	248
4/7/2025	280	4160	8830	7.4	9070	2700	ND	249	693	590	6	211				
10/20/2025	270	4310	8990	7.3	8570	3200	ND	259	736	601	7	219				

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Los Osos BMC Water Quality Results - Lower Aquifer Monitoring

Station ID	Well Name	Basin Plan Well ID	Aquifer Zone	Date	HCO ₃	Total Hardness	Cond	pH	TDS	Cl	NO ₃ -N	SO ₄	Ca	Mg	K	Na
					mg/l	mg/l	µmhos/cm		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
30S/10E-13J1* Highlighted chloride values have been adjusted for wellbore leakage	GSWC Rosina	LA10	D,E	12/20/2004	72	230	720	7.1	410	150	1.6	14	38	33	1.4	29
				1/14/2010	35	260	778	6	435	200	1.6	13	41	38	1.5	33
				7/24/2014	80	418	1200	7.3	910	303	1.7	16	67	61	2	39
				4/22/2015	80	431	1230	7.1	750	331	1.9	20	69	63	2	39
				10/5/2015	70	460	1280	7	950	329	1.7	19	74	67	2	41
				4/26/2016	80	412	1170	7.1	840	299	1.8	18	66	60	2	37
				10/12/2016	60	509	1430	6.8	1100	389	1.8	26.7	82	74	2	44
				4/10/2017	80	327	957	6.9	720	300	2.6	14.7	52	48	2	35
				10/12/2017	80	245	702	6.9	510	220	3.4	12.5	39	36	2	33
				4/24/2018	70	188	620	7.4	400	190	4.3	12.3	29	28	1	29
				10/9/2018	70	265	730	7.1	450	210	3.2	12.7	42	39	2	34
				4/15/2019	80	251	744	7	600	174	1.9	10.4	38	38	2	31
				10/14/2019	80	332	961	7.1	830	229	2	12.7	54	48	1	33
				4/21/2020	80	353	1310	6.4	970	250	2.1	14.2	59	50	2	32
				10/7/2020	70	183	618	7.6	430	310	4.6	11.3	29	27	1	33
				4/6/2021	81	405	1110	7.6	815	258	2.1	16.1	66	58	2	36
				10/8/2021	80	413	1180	7.2	790	289	2.1	16.8	65	61	2	37
				4/18/2022	70	192	612	7.1	420	220	5.8	14.9	29	29	1	37
				12/5/2022	90	327	911	7.7	690	235	2	13.4	52	48	2	33
				5/8/2023	80	303	892	7.1	690	211	2	12.5	49	44	2	51
10/10/2023	80	277	805	7.6	610	235	3.2	13.2	45	40	2	35				
4/10/2024	70	230	688	7.2	480	211	3.2	11.4	36	34	2	31				
10/9/2024	80	519	1440	7.2	1120	360	2	26.9	86	74	2	43				
4/2/2025	80	312	894	7.6	750	210	2.2	14.2	51	45	2	33				
10/6/2025	80	326	945	6.9	750	290	3.1	15	53	47	2	36				

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Los Osos BMC Water Quality Results - Lower Aquifer Monitoring

Station ID	Well Name	Basin Plan Well ID	Aquifer Zone	Date	HCO ₃	Total Hardness	Cond	pH	TDS	Cl	NO ₃ -N	SO ₄	Ca	Mg	K	Na
					mg/l	mg/l	µmhos/cm		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
30S/10E-13M2 4/1/2021 and 10/16/2024 results show Upper Aquifer influence due to reduced pumping	Howard East	LA31	C,D	11/22/2004	51	810	2900	7.3	1500	810	0.5	140	60	120	4.7	210
				12/9/2009	55	1100	3740	7.1	2170	1100	0.5	220	160	160	4.8	370
				8/4/2014	60	757	3340	7.1	2450	990	0.6	178	117	113	5	382
				4/21/2015	60	739	3430	7.3	1930	950	0.6	178	117	113	5	382
				10/6/2015	30	756	3370	7.1	2140	960	0.5	185	115	114	5	342
				4/20/2016	50	726	3520	7.2	2190	941	0.7	179	113	108	5	400
				10/19/2016	70	722	3420	7.4	2190	943	0.6	182	113	107	4	398
				4/17/2017	60	733	3380	6.8	2060	907	0.6	178	114	109	4	413
				10/5/2017	60	738	3350	7.5	2190	960	0.7	160	116	109	5	411
				4/24/2018	70	664	3370	7.2	2020	946	0.6	2.8	103	99	4	367
				10/17/2018	60	740	3400	7.3	2180	834	0.6	153	115	110	5	414
				4/3/2019	70	640	3290	7.8	2010	940	0.6	179	103	93	4	341
				10/3/2019	70	574	3120	7.4	2120	827	0.7	169	90	85	4	340
				4/9/2020	70	519	2970	7.8	1740	738	0.6	152	86	74	4	258
				10/1/2020	70	774	3330	8	2080	844	0.7	169	94	131	5	495
				4/1/2021	218	187	1010	8.3	581	161	2.9	47	31	27	20	113
				11/4/2021	70	509	2780	7.9	1700	629	0.6	124	77	77	4	305
				5/11/2022	70	388	2550	7.6	1540	578	0.6	134	60	58	3	303
				10/6/2022	70	506	2520	8.3	1840	636	0.7	145	79	75	4	268
				4/4/2023	70	352	2180	7.1	1370	599	0.6	121	52	54	4	272
11/7/2023	70	425	2340	8.0	1440	600	0.7	131	68	62	3	247				
4/18/2024	70	375	2060	8.2	1230	560	0.7	113	58	56	3	221				
10/16/2024	80	193	1170	8.1	680	270	0.4	58.9	31	28	3	106				
4/17/2025	90	203	1290	7.8	750	300	1.0	69.6	32	30	5	136				
10/16/2025	100	223	1470	7.7	900	390	0.9	73.9	35	33	6	165				

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Los Osos BMC Water Quality Results - Lower Aquifer Monitoring

Station ID	Well Name	Basin Plan Well ID	Aquifer Zone	Date	HCO ₃	Total Hardness	Cond	pH	TDS	Cl	NO ₃ -N	SO ₄	Ca	Mg	K	Na
					mg/l	mg/l	µmhos/cm		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
30S/10E-13N	S&T #5	LA8	D	11/23/2004	42	80	390	6.9	200	67	5.9	9.2	13	12	1.7	38
				11/19/2009	41	89	386	6.8	267	73	6.1	11	15	13	1.4	38
				7/24/2014	50	100	438	7.4	270	76	7	10	17	14	2	38
				4/21/2015	50	98	445	6.9	280	77	7.7	11	16	14	2	38
				10/6/2015	40	98	422	7.2	310	75	6.8	10	16	14	1	38
				4/20/2016	20	97.5	446	7	320	76	7.2	12	16	14	1	38
				10/13/2016	50	104	470	8	320	79	7.2	12	17	15	1	40
				4/11/2017	50	100	434	7.4	270	77	7.3	12.4	17	14	1	38
				10/2/2017	30	95	438	7.2	290	78	7.6	13.2	15	14	1	36
				4/11/2018	60	104	440	7	260	79	7.9	13.5	17	15	1	39
				10/3/2018	60	107	430	6.5	340	66	6.7	12.9	18	15	2	40
				4/3/2019	50	100	434	6.3	250	75	7.3	12.7	17	14	1	36
				10/7/2019	60	95	446	7.6	250	77	7.7	14.4	15	14	1	37
				4/13/2020	60	104	443	8	300	75	7.4	14.5	17	15	2	37
				10/1/2020	60	108	464	7.9	300	76	7.5	14.4	17	16	1	40
				4/6/2021	63	103	438	7.4	302	78	7.8	13.1	17	15	1.4	38
				10/8/2021	60	108	443	7.8	290	77	7.5	13.3	17	16	2	41
				4/13/2022	60	106	449	8.1	270	76	7.3	12.8	16	16	1	40
				10/4/2022	60	108	432	7.4	280	77	6.6	13.1	17	16	2	38
				4/13/2023	60	139	443	8.0	250	80	7.3	13.2	21	21	1	41
10/4/2023	60	108	455	7.6	310	81	7.3	13.1	17	16	2	40				
4/4/2024	60	106	452	7.7	280	85	7.5	14.1	16	16	2	37				
10/10/2024	60	104	455	7.9	280	84	7.4	13.9	17	15	2	39				
4/1/2025	60	108	452	7.9	270	88	6.9	15.5	17	16	2	40				
10/1/2025	60	106	446	7.8	330	84	6.7	8.9	16	16	1	37				

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Los Osos BMC Water Quality Results - Lower Aquifer Monitoring

Station ID	Well Name	Basin Plan Well ID	Aquifer Zone	Date	HCO ₃	Total Hardness	Cond	pH	TDS	Cl	NO ₃ -N	SO ₄	Ca	Mg	K	Na
					mg/l	mg/l	µmhos/cm		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
30S/10E-24C1	GSWC Cabrillo	LA9	D	12/20/2004	64	130	610	7	310	110	4.5	19	22	19	1.6	50
				11/20/2009	60	150	611	7.1	347	130	4.1	22	23	22	1.6	52
				7/24/2014	40	69	339	7.6	240	46	8.4	6	11	10	1	32
				4/22/2015	70	117	530	7.3	320	95	5.5	16	19	17	2	45
				10/5/2015	50	75	349	7.6	270	50	7.6	7	12	11	1	34
				4/26/2016	70	115	499	7	300	90	5.6	16	18	17	2	44
				10/12/2016	70	111	506	7.1	320	93	5.5	15.1	18	16	1	44
				4/10/2017	70	111	490	7	310	89	5.7	15.9	18	16	1	43
				10/12/2017	70	117	484	7	270	89	6	16.3	19	17	2	46
				4/24/2018	70	115	486	7.8	300	90	6.2	16.7	18	17	1	43
				10/9/2018	60	135	477	6.9	280	76	5.8	17.2	21	20	2	50
				4/15/2019	70	112	488	7.1	310	92	5.7	15.6	17	17	2	45
				4/21/2020	300	75.2	674	6.7	370	37	0.2	28.4	3	35	2	42
				10/7/2020	60	102	460	7.4	270	75	6.6	13.1	16	15	1	40
				4/6/2021	63	98.6	443	7.9	287	78	6.8	12.2	16	15	1	39
				10/8/2021	60	112	490	7.7	280	86	6.4	16	17	17	2	44
				4/18/2022	70	126	533	7.2	330	93	6.2	16.2	19	19	2	46
				10/19/2022	70	126	502	7.4	310	93	6.5	15.6	19	19	2	48
				4/11/2023	80	117	518	7.5	330	98	6.8	17.3	19	17	1	43
				10/10/2023	70	128	545	7.6	380	96	6.8	17.4	20	19	2	47
4/10/2024	70	128	535	7.1	330	98	7	17.9	20	19	2	47				
10/9/2024	80	131	559	7.4	380	110	7.1	18.5	21	19	2	49				
4/2/2025	70	131	549	7.6	350	100	7	19.1	21	19	2	48				
10/6/2025	80	144	597	6.8	400	120	6.6	19.9	23	21	2	51				

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Los Osos BMC Water Quality Results - Lower Aquifer Monitoring

Station ID	Well Name	Basin Plan Well ID	Aquifer Zone	Date	HCO ₃	Total Hardness	Cond	pH	TDS	Cl	NO ₃ -N	SO ₄	Ca	Mg	K	Na
					mg/l	mg/l	µmhos/cm		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
30S/11E-7Q3	LOCSD 8th St.	LA12	D	11/18/2004	250	270	790	7.5	410	73	ND	39	44	40	2.3	48
				11/19/2009	220	290	782	7.4	465	92	ND	46	46	42	1.9	53
				7/23/2014	290	303	876	7.6	460	91	ND	43	49	44	2	54
				4/21/2015	290	305	897	7.7	500	101	ND	55	48	45	2	59
				10/6/2015	280	298	828	7.4	490	91	ND	46	47	44	2	55
				4/20/2016	190	307	907	7.7	520	91	ND	49	49	45	2	54
				10/11/2016	280	278	827	4.9	490	93	ND	46.2	44	41	2	52
				4/10/2017	300	294	839	7.3	480	91	ND	49.5	47	43	2	54
				10/4/2017	220	305	826	6.5	470	92	ND	45	48	45	2	56
				4/10/2018	300	319	814	7.7	440	93	ND	46.2	52	46	2	56
				10/2/2018	290	283	822	7.3	470	78	ND	50.1	46	41	1	53
				4/9/2019	300	301	844	7.5	480	94	ND	49.7	48	44	2	53
				10/2/2019	290	312	877	8	530	91	ND	50.9	49	46	2	56
				4/16/2020	310	301	883	7.8	500	94	ND	54.7	48	44	2	52
				10/5/2020	300	321	891	7.9	510	89	ND	49.6	51	47	2	57
				4/5/2021	305	297	849	7.7	504	94	ND	54.1	48	43	2	54
				10/6/2021	300	283	874	7.5	510	95	ND	55	46	41	2	51
				4/13/2022	300	276	879	7.4	490	94	ND	51.5	43	41	2	50
				10/4/2022	310	285	839	7.9	500	94	ND	51.5	45	42	2	52
				4/5/2023	310	317	842	7.1	490	98	ND	51.9	48	48	3	72
10/11/2023	310	298	849	7.4	520	95	ND	52.1	47	44	2	53				
4/1/2024	310	305	849	7.9	480	95	ND	51.3	48	45	2	55				
10/1/2024	310	298	860	7.7	550	100	ND	54.7	47	44	2	52				
4/1/2025	320	305	848	7.8	470	98	ND	56.3	48	45	2	55				
10/1/2025	310	302	846	7.7	560	98	0.4	50.4	47	45	2	52				
30S/11E-18L6	USGS Palisades OBS	LA14	E	4/22/2025	350	382	893	7.6	530	84	ND	92.1	69	51	2	34
				10/23/2025	350	375	892	7.5	580	82	ND	91.2	68	50	2	35
30S/11E-18M1	CCW #5 Broderson	LA16	E	4/21/2025	190	237	732	7.6	400	140	ND	25.7	39	34	2	40
				10/9/2025	200	495	1320	7.6	820	330	ND	24.3	83	70	3	49

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Los Osos BMC Water Quality Results - Lower Aquifer Monitoring

Station ID	Well Name	Basin Plan Well ID	Aquifer Zone	Date	HCO ₃	Total Hardness	Cond	pH	TDS	Cl	NO ₃ -N	SO ₄	Ca	Mg	K	Na
					mg/l	mg/l	µmhos/cm		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
30S/11E-17E8	So. Bay Obs. Middle	LA22	D	1/14/2005	150	150	440	7.5	290	34	2.2	11	24	22	1.4	28
				11/20/2009	120	160	455	7.3	255	42	4.3	12	25	23	1.3	29
				7/23/2014	150	166	500	7.6	270	43	6.3	10	27	24	2	28
				4/21/2015	150	157	481	7.6	270	49	7.1	13	25	23	1	28
				10/1/2015	120	164	475	7.4	290	44	6.6	10	26	24	1	28
				4/19/2016	150	164	476	6.9	290	45	6.9	12	26	24	1	29
				10/13/2016	140	161	521	7.3	290	46	6.9	11.9	25	24	1	29
				4/13/2017	150	164	466	7.3	300	46	6.7	13.2	26	24	1	29
				10/11/2017	150	168	476	7.7	260	47	7.2	14	26	25	1	29
				4/16/2018	150	165	473	6.4	310	47	6.7	14.2	25	25	1	29
				10/10/2018	150	160	471	7.5	250	43	6.1	15	26	23	1	28
				4/10/2019	180	153	466	7.2	290	46	5.8	13.6	25	22	1	28
				10/9/2019	150	155	485	7.3	270	49	7	14.9	24	23	1	28
				4/14/2020	160	164	482	8	280	48	6.3	14.9	26	24	1	27
				10/6/2020	160	181	506	7.5	340	47	6.7	14.7	28	27	1	30
				4/8/2021	159	154	470	7.5	329	46	5.8	12.5	24	23	1	27
				10/19/2021	170	181	480	7.4	310	41	5.8	14.9	28	27	1	29
				4/20/2022	160	178	518	7.6	320	43	7.4	14.6	27	27	1	29
				10/17/2022	180	213	485	7.4	300	45	7	16.5	31	33	2	32
				4/6/2023	200	176	496	7.7	300	41	5.5	14.9	26	27	1	26
10/17/2023	170	169	465	7.0	290	45	6.1	13.7	25	26	2	28				
4/3/2024	170	159	465	7.6	250	45	4.9	14.4	24	24	1	28				
10/7/2024	160	178	509	7.6	310	49	8.9	16.2	27	27	2	29				
4/16/2025	170	161	473	7.4	280	47	6	15.2	25	24	1	28				
10/8/2025	170	173	473	7.6	280	48	6.5	14	28	25	2	30				

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Los Osos BMC Water Quality Results - Lower Aquifer Monitoring

Station ID	Well Name	Basin Plan Well ID	Aquifer Zone	Date	HCO ₃	Total Hardness	Cond	pH	TDS	Cl	NO ₃ -N	SO ₄	Ca	Mg	K	Na
					mg/l	mg/l	µmhos/cm		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
30S/11E-17N10	GSWC So. Bay #1	LA20	C,D,E	Jan 2003	250	--	510	7.1	290	37	ND	21	41	25	1.3	35
				11/20/2009	230	220	638	7.3	357	41	0.5	30	35	33	1.7	37
				7/24/2014	280	232	646	7.7	370	37	0.5	24	37	34	2	41
				4/22/2015	290	234	653	7.4	360	43	0.6	27	36	35	2	42
				10/5/2015	280	227	614	7.2	370	38	0.5	23	35	34	2	41
				4/26/2016	230	227	629	7.1	360	39	0.6	27	35	34	2	40
				10/12/2016	290	221	631	7	370	40	0.6	25.2	34	33	2	40
				4/10/2017	280	227	624	7.2	380	39	0.6	26.7	35	34	2	40
				10/12/2017	260	240	583	6.6	320	41	0.7	27.9	37	36	2	43
				4/24/2018	200	166	515	7.4	330	43	3.2	23.2	27	24	2	31
				10/9/2018	290	273	632	7.2	340	38	0.6	29.2	42	41	3	47
				4/15/2019	200	181	559	7.4	310	42	3.1	21.7	28	27	2	34
				10/14/2019	290	221	626	7.2	380	41	0.7	29	34	33	2	40
				4/21/2020	300	230	705	7	400	50	0.7	26.9	36	34	2	42
				10/7/2020	290	227	654	7.5	350	40	0.7	27	35	34	2	42
				4/6/2021	204	178	529	7.9	329	43	3	21.1	29	26	2	33
				10/7/2021	290	245	633	6.8	340	40	0.7	27.8	37	37	2	43
				4/18/2022	280	242	636	7.4	360	39	0.7	26.6	36	37	2	42
				10/19/2022	300	245	616	7.6	330	40	0.7	26.4	37	37	2	43
				4/11/2023	200	173	515	7.8	290	43	3.4	21.8	28	25	2	33
10/10/2023	220	193	538	7.7	320	43	3	23.4	31	28	2	36				
4/10/2024	300	231	610	7.3	330	40	0.7	27.3	35	35	2	40				
4/2/2025	270	223	593	7.5	310	44	1.4	26.4	35	33	2	39				
10/6/2025	200	177	505	7.2	350	43	3.2	21.5	28	26	2	33				

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Los Osos BMC Water Quality Results - Lower Aquifer Monitoring

Station ID	Well Name	Basin Plan Well ID	Aquifer Zone	Date	HCO ₃	Total Hardness	Cond	pH	TDS	Cl	NO ₃ -N	SO ₄	Ca	Mg	K	Na
					mg/l	mg/l	µmhos/cm		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
30S/11E-18K8	10th St. Obs. East (Deep)	LA18	E	1/19/2005	260	290	650	7.5	370	33	ND	38	62	33	2.5	28
				11/20/2009	230	220	620	7.5	378	32	ND	40	51	24	1.8	23
				7/24/2014	290	271	647	7.5	380	28	ND	34	56	32	2	27
				4/21/2015	290	265	634	7.7	400	33	ND	39	55	31	2	27
				10/19/2015	230	256	621	7.3	370	29	ND	33	53	30	2	26
				4/20/2016	190	265	700	7.5	390	31	ND	38	55	31	2	26
				10/18/2016	290	256	615	6.8	370	31	ND	35.9	53	30	2	26
				4/12/2017	290	274	616	7.5	450	31	ND	38	57	32	2	27
				10/10/2017	220	271	619	7.8	350	30	ND	35.5	56	32	2	27
				4/17/2018	290	260	625	7.3	390	33	ND	39.9	53	31	2	27
				10/10/2018	290	254	608	7.5	360	31	ND	39.8	54	29	2	26
				4/10/2019	290	245	620	7.6	380	32	ND	37.4	52	28	2	25
				10/9/2019	290	253	647	7.9	390	33	ND	40.5	52	30	2	26
				4/14/2020	290	269	629	7.5	400	33	ND	40.2	55	32	2	26
				10/22/2020	300	247	669	7.5	370	32	ND	38.2	51	29	3	26
				4/12/2021	298	267	621	7.6	389	32	ND	41.2	54	32	2	27
				10/19/2021	300	287	657	7.4	400	32	ND	38.4	59	34	2	28
				4/15/2022	290	257	638	8.3	420	31	ND	36.5	52	31	2	25
				10/10/2022	310	278	613	8.0	400	33	ND	39.3	57	33	2	29
				4/6/2023	310	252	623	7.9	410	32	ND	38.7	50	31	2	26
10/17/2023	310	264	622	7.1	430	31	ND	37.7	53	32	2	26				
4/3/2024	310	260	628	7.6	410	33	ND	40	53	31	2	27				
10/3/2024	300	257	638	7.4	400	36	0.6	45.4	55	29	2	29				
4/3/2025	270	265	667	7.7	420	64	ND	60.9	55	31	2	35				
10/6/2025	260	254	657	7.6	440	49	ND	61.3	54	29	2	35				

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Los Osos BMC Water Quality Results - Lower Aquifer Monitoring

Station ID	Well Name	Basin Plan Well ID	Aquifer Zone	Date	HCO3	Total Hardness	Cond	pH	TDS	Cl	NO3-N	SO4	Ca	Mg	K	Na
					mg/l	mg/l	µmhos/cm		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
30S/11E-18K9	LOCSD 10th St.	LA32	C,D	5/1/2002	250	--	550	6.9	320	37	0.2	26	31	32	--	39
				11/20/2009	180	160	539	7.2	307	36	1	27	27	24	1.3	32
				7/23/2014	220	190	546	7.7	300	32	1	20	30	28	1	35
				4/21/2015	190	108	504	7.6	270	38	1.6	20	17	16	1	27
				10/6/2015	50	62	248	7.2	190	31	5.9	3	10	9	ND	21
				4/20/2016	130	121	382	7.5	220	32	3.3	12	19	18	1	27
				10/11/2016	200	168	511	6.6	270	36	1.2	21.5	26	25	1	34
				4/10/2017	190	155	461	7.3	270	35	1.9	19.1	24	23	1	31
				10/9/2017	200	168	493	7.6	270	36	1.4	23.1	26	25	1	33
				4/10/2018	50	75.2	256	7.7	150	35	6.5	28.6	12	11	ND	23
				10/2/2018	210	168	492	7.3	270	36	1.3	22	26	25	ND	33
				4/9/2019	200	172	474	7.6	270	34	1.6	21.5	26	26	1	33
				10/2/2019	200	185	531	7.4	310	36	1.4	24.7	28	28	1	35
				4/16/2020	60	72.7	272	8.1	190	35	6	5.4	11	11	ND	20
				10/6/2020	60	68.6	246	8	180	30	4	4.9	11	10	ND	21
				4/5/2021	143	128	390	7.8	247	34	2.1	15.7	20	19	1	27
				10/6/2021	60	68.6	255	7.7	150	30	3.9	5.7	11	10	ND	20
				4/13/2022	70	66.1	262	7.6	150	30	3.8	5.2	10	10	ND	20
				10/6/2022	200	211	461	7.7	260	38	1.4	23.5	32	32	2	58
				4/5/2023	190	169	465	7.2	290	38	1.4	22.8	25	26	1	33
10/10/2023	200	168	482	7.6	290	38	1.3	21.4	26	25	2	32				
4/1/2024	200	172	487	7.7	260	41	1.4	23	26	26	2	32				
10/1/2024	200	161	493	7.6	300	43	1.4	22.7	25	24	1	30				
4/1/2025	200	178	500	7.7	280	50	1.4	24	27	27	1	33				
10/1/2025	200	178	507	7.4	320	52	1.4	18.9	27	27	1	31				

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Los Osos BMC Water Quality Results - Lower Aquifer Monitoring

Station ID	Well Name	Basin Plan Well ID	Aquifer Zone	Date	HCO3	Total Hardness	Cond	pH	TDS	Cl	NO3-N	SO4	Ca	Mg	K	Na
					mg/l	mg/l	µmhos/cm		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
30S/11E-18K	GSWC Los Olivos #5	LA39	D	4/15/2019	290	230	619	8.1	350	38	ND	27.4	33	36	2	41
				10/14/2019	300	225	628	7.2	370	37	ND	28.6	34	34	1	41
				4/21/2020	300	236	674	6.9	370	37	0.2	28.4	37	35	2	42
				10/7/2020	300	227	657	7.4	360	37	ND	28.2	35	34	2	43
				4/6/2021	301	226	629	8.0	382	38	ND	25.8	34	34	2	40
				10/8/2021	300	253	638	7.4	360	37	ND	29.3	37	39	2	45
				4/18/2022	250	209	561	7.6	330	34	ND	17.8	31	32	2	34
				10/19/2022	310	236	617	7.6	330	37	ND	28	37	35	2	44
				4/11/2023	310	214	626	7.5	340	38	ND	30.1	33	32	1	40
				10/10/2023	310	245	632	7.4	370	37	ND	29.4	37	37	2	42
				4/10/2024	310	235	625	7.2	350	38	ND	31.3	35	36	2	41
				10/9/2024	300	231	621	7.3	360	39	0.4	30.7	35	35	2	42
4/2/2025	300	225	607	7.5	340	39	0.5	30.5	34	34	2	41				
10/6/2025	290	225	609	7.0	370	38	0.5	29.4	34	34	1	40				
30S/11E-18L2**	LOCSD Palisades	LA15	D,E	11/18/2004	220	330	880	7.3	420	120	ND	31	54	48	2.2	40
				11/19/2009	200	590	1460	7.2	890	360	0.4	39	94	86	2	44
			D	7/23/2014	250	293	783	7.8	390	90	0.4	26	48	42	2	40
				10/28/2015	230	288	782	7.4	420	104	0.6	29	46	42	ND	36
				4/27/2016	230	264	796	7.3	450	93	0.9	28	43	38	2	43
				10/11/2016	200	221	694	7	380	91	1.7	25.5	36	32	1	35
				10/5/2017	180	306	768	7.6	400	102	0.7	27	50	44	2	40
				4/10/2018	250	311	767	7.3	420	100	0.8	32.4	52	44	2	40
				10/23/2018	250	288	772	7.7	440	83	0.6	30.7	48	41	1	38
				4/9/2019	250	301	774	7.4	460	102	0.8	29.2	48	44	1	38
				11/14/2019	210	303	806	7.8	430	107	0.7	32.9	49	44	2	39
				4/16/2020	260	299	832	7.7	460	109	0.8	32.5	49	43	2	37
				10/5/2020	250	319	841	7.8	450	109	0.7	29.7	52	46	2	41
				4/6/2021	234	290	780	7.7	444	108	1	27.2	47	42	2	38
				10/6/2021	250	295	856	7.3	490	107	0.5	32.8	49	42	2	37
				4/13/2022	250	330	876	7.3	470	116	0.5	30.3	53	48	2	43
				10/4/2022	250	326	885	7.7	610	138	0.8	31.2	53	47	2	40
				4/11/2023	250	282	877	8.2	470	142	0.8	31.4	47	40	2	37
				10/9/2023	270	331	898	7.6	570	130	0.5	31.1	55	47	2	40
				4/2/2024	260	323	861	7.9	480	130	0.7	32.9	52	47	2	39
10/2/2024	250	323	900	8.2	530	130	0.8	31.7	52	47	2	39				
4/16/2025	260	326	913	7.4	560	160	0.7	34.7	53	47	2	39				
10/2/2025	240	405	943	7.8	590	160	1.1	31.9	65	59	2	46				

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Los Osos BMC Water Quality Results - Lower Aquifer Monitoring

Station ID	Well Name	Basin Plan Well ID	Aquifer Zone	Date	HCO ₃	Total Hardness	Cond	pH	TDS	Cl	NO ₃ -N	SO ₄	Ca	Mg	K	Na
					mg/l	mg/l	µmhos/cm		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
30S/11E-18F2	LOCSD Ferrell	LA13	E	4/5/2023	190	132	668	8.3	310	77	ND	62.1	15	23	2	76
				10/11/2023	280	168	656	7.7	400	50	ND	39.7	23	27	2	70
				4/11/2024	210	139	583	8.4	290	61	ND	41	13	26	2	66
				10/8/2024	330	245	639	7.8	380	37	ND	28.4	34	39	2	42
				4/10/2025	310	224	625	8.0	350	42	ND	28.3	32	35	2	47
				10/8/2025	260	202	613	8.1	330	57	ND	29.1	28	32	2	52
30S/10E-14B2	Sand Spit #3 Deep	LA3	D	3/15/2005	100	3600	30000	8	17000	8500	ND	960	1200	130	34	4300
				10/21/2015	ND	7140	29500	11	24700	10000	ND	530	2830	20	80	4040
30S/11E-13Ja	Skyline 1a (North)	LA42	E	4/17/2024	270	2940	6150	7.5	6340	1900	ND	170	583	360	6	107
				10/16/2024	270	2290	6160	7.5	5800	1800	ND	156	517	242	5	99
				4/14/2025	270	2860	6090	7.5	5220	2100	ND	166	576	345	5	96
				10/16/2025	260	2370	5980	7.4	6710	2000	ND	462	564	234	5	96
30S/11E-13Jb	Skyline 1b (South)	LA43	D	4/17/2024	320	277	724	7.5	420	61	ND	37.9	45	40	2	41
				10/16/2024	330	286	712	7.6	400	49	ND	38.5	47	41	2	42
				4/14/2025	330	261	712	7.5	390	55	ND	41	42	38	2	39
				10/16/2025	340	268	678	7.4	420	42	ND	37.0	43	39	2	40

*Chloride concentrations at 13J1 can vary seasonally by 100+ mg/l and are affected by well production and borehole leakage, so fluctuations are expected.

**Water from 18L2 and 13M2 affected by wellbore leakage/upper aquifer influence when inactive

Legend and Detection Limits

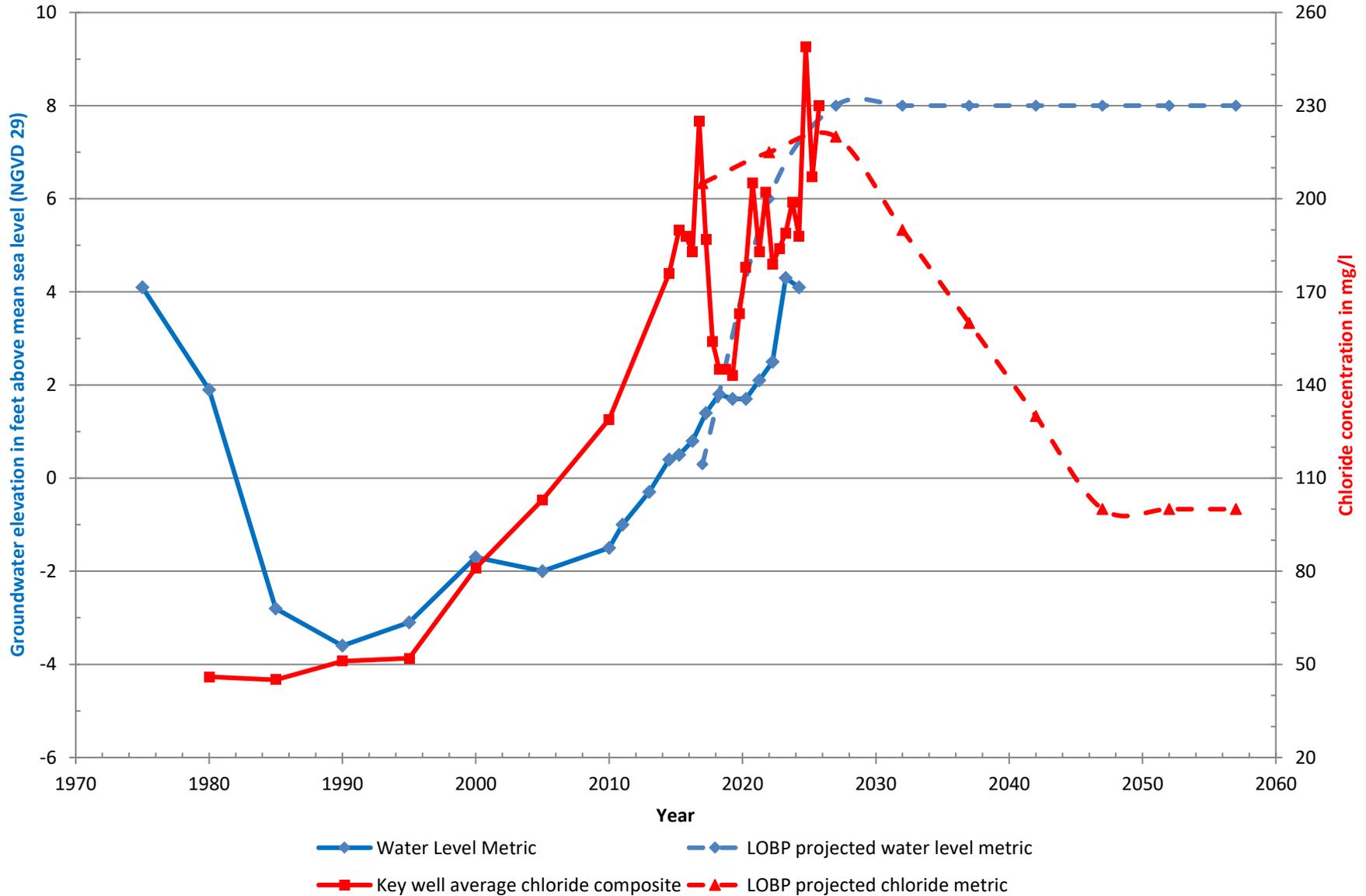
Constituent	Description	Practical Quantitation Limit*
HCO ₃	Bicarbonate Alkalinity in mg/L CaCO ₃	10.0
Total Hardness	Total Hardness in mg/L CaCO ₃	--
Cond	Electrical Conductance in µmhos/cm	1.0
pH	pH in pH units	--
TDS	Total Dissolved Solids in mg/L	20.0
Cl	Chloride concentration in mg/L	1.0
NO ₃ -N	Nitrate as Nitrogen concentration in mg/L	0.1
SO ₄	Sulfate concentration in mg/L	2.0
Ca	Calcium concentration in mg/L	1.0
Mg	Magnesium concentration in mg/L	1.0
K	Potassium concentration in mg/L	1.0
Na	Sodium concentration in mg/L	1.0

*where dilution not required

*where dilution not required

FALL 2025 DRAFT

Chloride and Water Level Metric Lower Aquifer



Note: The Water Level Metric has not been updated for 2025, as the current Basin Metric Methodology does not account for the recent modifications to LA 14/16 (February 2025). Due to these modifications, current measurement cannot be compared against historical values.

TO: Los Osos Basin Management Committee

FROM: Dan Heibel, Executive Director

DATE: January 28, 2026

SUBJECT: Item 9c – Approve Use of Technical Support Services Budget for Preparing an Enhanced Agricultural Irrigation Water Use Estimate

Recommendations

Approve use of budget from Item 5: Technical Support Services for use in preparing an enhanced agricultural irrigation water use estimate for the 2025 Annual Monitoring Report.

Discussion

Cleath-Harris Geologists (CHG) includes an estimate of agricultural water use in the BMC's Annual Monitoring Reports for the Los Osos Basin, as required by Stipulated Judgement Sections 5.6.12 and 5.8.3. The current methodology for developing estimates of agricultural irrigation water use utilizes a daily soil-moisture budget model (SMB), crop mapping data from LandIQ, and Reference Evapotranspiration (ET_o) from a California Irrigation Management Information System (CIMIS) weather station in the Chorro Valley (nearest location CIMIS station).

For the Calendar Year 2025 Annual Monitoring Report, CHG prepared a preliminary estimate of agricultural irrigation water use using the current method and it is lower than previous year's estimates. This reduction is primarily associated with reduced evapotranspiration observed at the Chorro Valley CIMIS station. An alternative methodology, using OpenET open-source remote sensing (satellite) surface energy balance technology to estimate field specific evapotranspiration could be utilized to potentially improve agriculture irrigation water use estimates for the Los Osos Basin.

At the [March 20, 2024 BMC Meeting](#), an analysis completed by CHG comparing the results of the two methodologies for Los Osos Basin was presented to the BMC. Additional detail on the methodology comparison and the recommendation to incorporate OpenET evapotranspiration data into the Los Osos Basin agriculture irrigation water use estimate methodology is documented in the July 17, 2023 TM titled "Agricultural Water Demand Comparison, Los Osos Groundwater Basin, Los Osos", included as Attachment 1.

The cost for the services to prepare and run the SMB tool utilizing OpenET evapotranspiration data for the Los Osos Basin, incorporate the results into the Annual Report as a comparison with the current methodology, and provide a brief presentation to the BMC is estimated to be \$5,000 and the current available budget CY 2026 Technical Services \$15,000.

BMC Staff recommends that the BMC approve the use of the Technical Support Services budget to prepare the enhanced agricultural water use estimate for inclusion in the 2025 Los Osos Basin Annual Monitoring Report.

Attachments

1. Agricultural Water Demand Comparison, Los Osos Groundwater Basin, Los Osos Technical Memorandum, dated July 17, 2023



Technical Memorandum

Date: July 17, 2023

From: Spencer Harris, HG 633

To: Blaine Reely, PhD, P.E.
Director, Groundwater Sustainability Department
San Luis Obispo County

SUBJECT: **Agricultural Water Demand Comparison, Los Osos Groundwater Basin, Los Osos.**

Cleath-Harris Geologists (CHG) has completed a comparison of water demand estimates for agricultural water use in the Los Osos groundwater basin (Basin). The purpose of the work is to compare methodologies for estimating irrigation water demand in order to evaluate the strengths and weaknesses of the methodologies and to assist the County in decision-making related to remote sensing data acquisition and water resources planning.

INTRODUCTION

Agricultural water use is a major component of Basin groundwater use, currently estimated at 34 percent of 2022 Basin Production (680 acre-feet out of a total of 2,010 acre-feet). No water meter data are available from agricultural wells, so the production is estimated. The current methodology for agricultural irrigation water use estimates used for Los Osos Basin management involves a daily soil-moisture budget (SMB). An alternative methodology, used by OpenET, is based on open-source remote sensing (satellite) data and a surface energy balance. Agricultural water demand estimates using two methodologies are compared over three years (2020, 2021, and 2022).

METHODOLOGIES

Daily Soil-Moisture Budget (SMB) Methodology

Groundwater production estimates for agriculture and turf irrigation are currently developed using a daily SMB with local data input. Sources of data included:

- Land use/cropping data sets from LandIQ for estimating irrigated acreages (2022).
- Daily rainfall from County Rain Gage 727 (former Los Osos Landfill).



- Daily reference evapotranspiration from the California Irrigated Management Information System (CIMIS) Station 160 (San Luis Obispo West - Chorro Valley) located in DWR Climate Zone 6, which is the same climate zone as the Los Osos Valley.
- Water holding capacity and rooting depths from UC Davis Cooperative Extension.
- Crop Coefficients (Kc) for Central Coast valleys based on prior work.

The SMB methodology accounts for soil holding capacity, crop rooting depth, leaching fraction, irrigation efficiency, local precipitation, and local reference evapotranspiration. The following equation, modified from a general formula for irrigation water requirements, was used for the soil-moisture budget:

$$\text{Applied Irrigation Water} = (\text{ETc} - \text{ER}) / (\text{EF})$$

Where:

ETc [Crop evapotranspiration] = ETo [reference evapotranspiration] x Kc [crop coefficient]

ER [effective rainfall] = rainfall stored in soil and available to crop

EF [efficiency factor] = (1-LF[leaching fraction]) x IE [irrigation efficiency]

Assumes no frost protection for crops in the Los Osos Creek Valley.

OpenET Methodology

Description from OpenET website: <https://openetdata.org/methodologies/>

OpenET provides satellite-based estimates of the total amount of water that is transferred from the land surface to the atmosphere through the process of evapotranspiration (ET). This is also referred to as ‘actual ET’, since it represents an estimate of the actual amount of ET that occurred over a specified time period. OpenET provides ET data from multiple satellite-driven models, and also calculates a single “ensemble value” from those models. The models currently included are shown in the table below. All of the models included in the OpenET ensemble have been used by government agencies with responsibility for water use reporting and management in the western U.S., and some models are widely used internationally. All models currently use Landsat satellite data to produce ET data at a spatial resolution of 30 meters by 30 meters (0.22 acres per pixel). Additional inputs include gridded weather variables such as solar radiation, air temperature, humidity, wind speed, and in some cases, precipitation.

The majority of the models that make up the OpenET ensemble are based on full or simplified implementations of the surface energy balance (SEB) approach. The SEB approach accounts for the energy used to transform liquid water in plants and soil into vapor that is released to the atmosphere. The SEB approach relies on satellite measurements of surface temperature and surface reflectance combined with other key land surface and weather variables to estimate components of the energy balance—net radiation, sensible heat flux, ground heat flux, and latent heat flux, which is the energy consumed through ET.



Evapotranspiration and Irrigation Water Use

When comparing the results of the above methodologies, it is helpful to keep in mind the differences between reference evapotranspiration (ET_o), crop evapotranspiration (ET_c), applied water evapotranspiration (ET_{aw}), and water use. ET_o is amount of water a reference crop (typically turfgrass) requires for healthy growth, given the climatic conditions present. ET_c is the amount of water other crop types require for healthy growth, given the climatic conditions present. The relationship between ET_o and ET_c has been studied extensively for different crop types, and most crop types have published crop coefficients (K_c), whereby ET_c can be approximated as $ET_c = ET_o * K_c$. ET_{aw} is ET_c minus effective rainfall (ER), and assumes 100 percent irrigation system efficiency. ER will vary based on a number of factors, but generally ranges from about 30 to 60 percent of rainfall in California (Burt et al., 2002). Water use is the total amount of irrigation water needed, and factors in water system efficiency, leaching fraction requirements, and frost control.

WATER DEMAND ESTIMATES COMPARISON

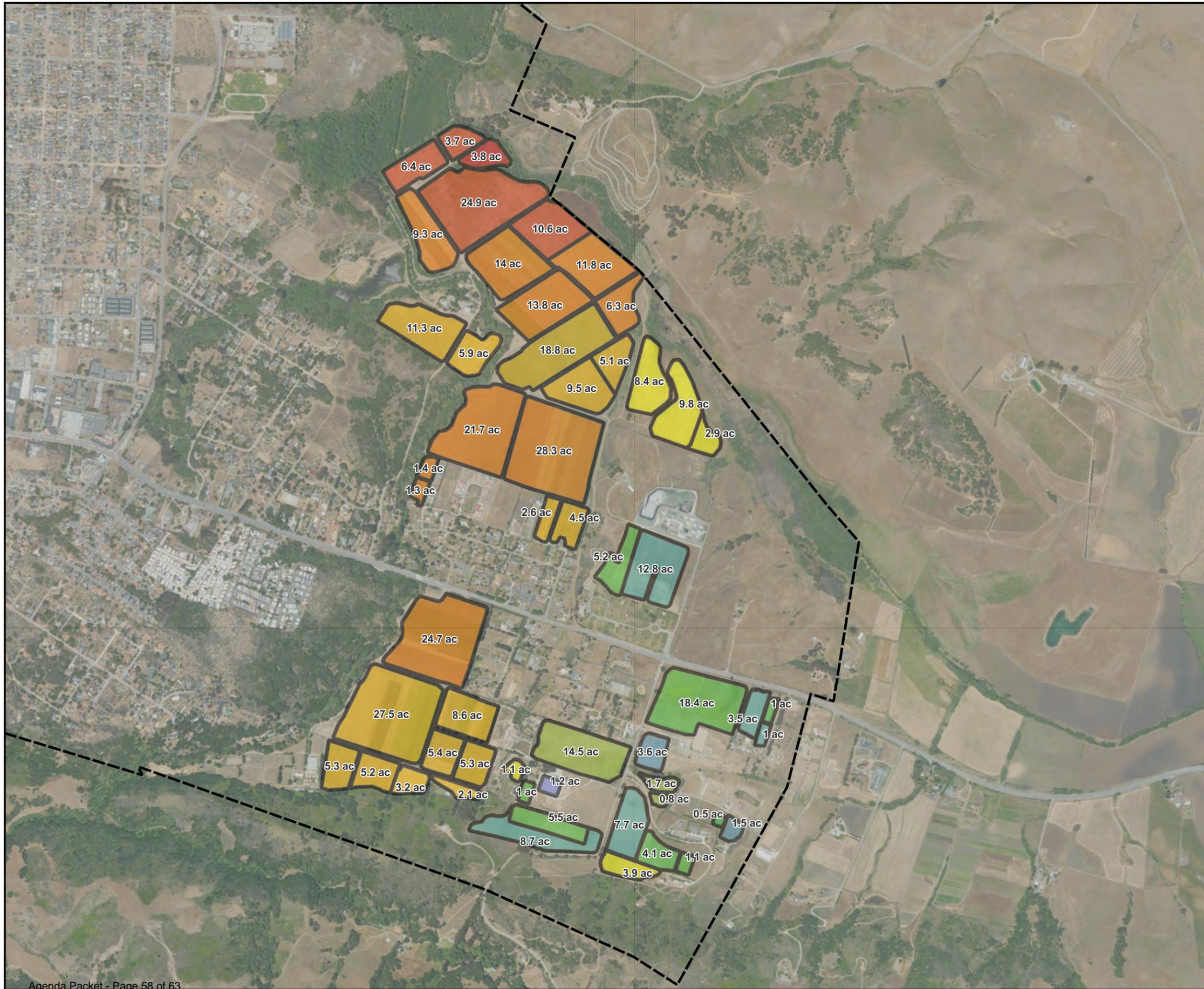
The OpenET methodology provides local crop evapotranspiration (ET_c). It does not report ET_o, K_c, ER, ET_{aw}, or applied water use. The SMB methodology estimates ET_o, K_c, ET_c, ER, and ET_{aw}.

Agricultural water use in the Los Osos basin is currently estimated from ET_{aw} (as output from the daily SMB) by applying a calibration factor (substituting for the efficiency factor), which maintains consistency with historical water use estimates (CHG, 2023).

Vegetables (row crops) is the main agricultural crop in the Basin, accounting for over 95% of the planted acreage. The DWR Land IQ database was used to develop acreages for vegetables, with some minor modifications to exclude fields irrigated with bedrock wells. OpenET also provides field-specific data, but for the comparison with SMB methodology the OpenET data was indexed to represent the weighted average of all fields. Figure 1 shows the Basin OpenET data set for crop ET in 2022 (all fields shown).

ET_c Comparison

A comparison between OpenET and SMB reported monthly ET_c values for calendar years 2020, 2021, and 2022 is summarized in Table 1 below. The Los Osos Basin Management Committee reports all production on a calendar year basis.



Explanation

Los Osos Adjudicated Plan Area

Annual Crop ET by Agricultural Field from OpenET [inches]

- 18 - 20
- 20 - 22
- 22 - 24
- 24 - 26
- 26 - 28
- 28 - 30
- 30 - 32
- 32 - 34
- 34 - 36
- 36 - 38
- 38 - 40

Basemap: NAIP 2022
 ET data from OpenET Data Explorer
 Ag field boundaries from LandIQ
 (All crop types shown including non-irrigated fields)



Figure 1
ETc 2022

Water Demand Comparison
County of San Luis Obispo

Los Osos Groundwater Basin

CLEATH-HARRIS GEOLOGISTS



Table 1. ETc Comparison

Month	2020 ETc (in)		2021 ETc (in)		2022 ETc (in)		Average ETc (in)	
	OpenET	SMB	OpenET	SMB	OpenET	SMB	OpenET	SMB
Jan	1.22	0.96	1.16	1.13	1.27	1.09	1.22	1.06
Feb	1.51	1.39	1.60	1.32	1.35	1.46	1.49	1.39
Mar	2.08	1.80	2.24	2.24	2.63	2.37	2.32	2.13
Apr	3.06	2.38	3.05	2.40	3.73	2.79	3.28	2.52
May	3.64	4.73	3.83	4.24	4.08	4.96	3.85	4.65
Jun	3.94	5.54	4.21	5.64	4.39	6.16	4.18	5.78
Jul	3.90	5.24	4.26	5.30	4.36	5.45	4.17	5.33
Aug	4.21	4.18	3.71	4.31	3.90	4.84	3.94	4.44
Sep	3.03	3.10	2.59	3.28	3.12	3.66	2.91	3.35
Oct	1.75	2.40	1.79	2.32	1.89	2.00	1.81	2.24
Nov	1.02	1.43	1.44	1.44	1.30	1.30	1.26	1.39
Dec	0.87	0.89	0.76	0.57	0.77	0.53	0.80	0.66
Total	30.23	34.03	30.65	34.18	32.81	36.62	31.23	34.94
Difference (inches)		-3.80		-3.53		-3.81		-3.71
AFY (vegetables)	710	800	650	730	700	780	670	750
Difference (AFY)	-90		-80		-80		-80	

Notes: ETc = Crop evapotranspiration; in = inches; AFY = acre-feet per year; vegetable AFY based on acreages from DWR Land IQ.

The results in Table 1 shows a consistent difference of roughly 3.7 inches of additional evapotranspiration per year for the SMB methodology, compared to OpenET. This difference is expected, since the SMB methodology uses ETo from a CIMIS station in the Chorro Valley, where the coastal fog influence is lower than the Los Osos Creek valley, despite being in the same DWR Climate Zone 6. SMB estimates 80 acre-feet per year (AFY) greater crop water demand than OpenET (before effective rainfall adjustments).

Applied Water Use Comparison

As mentioned above, OpenET only provides ETc, therefore, any further comparison with SMB methodology requires come assumptions for effective rainfall and irrigation system efficiencies. Communications with the OpenET developer and a review of annual reports for two local groundwater basins indicates effective rainfall is typically being estimated (for the purposes of processing OpenET data) based on a fixed percentage of total rainfall that offsets ETc on a monthly basis. The OpenET developer suggested 90 percent as a default rate, while the annual reports reviewed used total rainfall as effective rainfall (100 percent ETc offset on a monthly basis). For this comparison, effective rainfall was assigned as 50 percent and 100 percent of total rainfall to gauge the sensitivity.



The other assumption for estimating applied water use from the OpenET data is for water system efficiencies and leaching fraction requirements. Frost control is not necessary in the Los Osos creek valley. The leaching fraction is the amount of irrigation and rainfall that drains below the root zone. For typical irrigation water salinity of 900 $\mu\text{mhos/cm}$ in the Los Osos Creek valley, and relatively cool conditions with coastal fog influences, the leaching fraction for local vegetables is estimated at close to 10 percent (ANR Publication 8550, 2015). This amount of leaching fraction is assumed to be satisfied by rainfall for the Los Osos area (Carollo, 2012). Water system efficiencies vary, and is assumed to be 80 percent based on good design and management by experienced growers.

A comparison between OpenET and SMB applied water use assuming 50 percent and 100 percent effective rainfall (with 80 percent system efficiency) is summarized below in Table 2 and Table 3, respectively.

Table 2. Applied Water Use Comparison – 50% ER and 80% EFF

Month	2020 Water Use (in)		2021 Water Use (in)		2022 Water Use (in)		Average	
	OpenET	SMB	OpenET	SMB	OpenET	SMB	OpenET	SMB
Jan	1.40	0	0	0	1.47	0	0.95	0
Feb	1.87	0	1.76	0	1.59	0	1.74	0
Mar	0.00	0	1.89	0	2.02	0.53	1.30	0.18
Apr	2.62	0	3.59	0.59	4.18	1.11	3.46	0.57
May	4.48	2.64	4.49	4.6	4.80	5.40	4.59	4.20
Jun	4.90	5.98	4.96	6.1	5.17	6.69	5.01	6.27
Jul	4.88	5.69	5.01	5.8	5.13	5.93	5.01	5.79
Aug	5.23	4.50	4.36	4.7	4.59	5.26	4.73	4.82
Sep	3.78	3.37	3.04	3.6	3.13	2.98	3.32	3.31
Oct	2.19	2.61	0.53	2.0	2.20	2.13	1.64	2.25
Nov	0.98	1.03	1.51	0	0.76	0.17	1.08	0.40
Dec	0.00	0.48	0	0	0.00	0	0	0.16
Total	32.32	26.30	31.14	27.32	35.04	30.20	32.83	27.94
Difference		6.02		3.82		4.84		4.89
AFY (vegetables)	760	620	660	580	750	650	700	600
Difference (AF)	140		80		100		100	

Notes: ER = effective rainfall; EFF = irrigation system efficiency; in = inches; AFY = acre-feet per year; vegetable AFY based on acreages from DWR Land IQ



Table 3. Applied Water Use Comparison – 100% ER and 80% EFF

Month	2020 Water Use (in)		2021 Water Use (in)		2022 Water Use (in)		Average	
	OpenET	SMB	OpenET	SMB	OpenET	SMB	OpenET	SMB
Jan	1.27	0	0	0	1.53	0	0.93	0
Feb	1.84	0	1.74	0	1.69	0	1.76	0
Mar	0.00	0	1.21	0	0.99	0.53	0.73	0.18
Apr	1.42	0	3.82	0.59	4.21	1.11	3.15	0.57
May	4.41	2.64	4.74	4.57	5.10	5.40	4.75	4.20
Jun	4.87	5.98	5.27	6.13	5.49	6.69	5.21	6.27
Jul	4.88	5.69	5.32	5.76	5.45	5.93	5.22	5.79
Aug	5.21	4.50	4.63	4.68	4.87	5.26	4.90	4.82
Sep	3.78	3.37	3.23	3.57	2.75	2.98	3.26	3.31
Oct	2.19	2.61	0	2.03	2.32	2.13	1.50	2.25
Nov	0.68	1.03	1.40	0	0	0.17	0.69	0.40
Dec	0.00	0.48	0	0	0	0	0	0.16
Total	30.54	26.30	31.37	27.32	34.41	30.20	32.11	27.94
Difference		4.24		4.05		4.21		4.17
AFY (vegetables)	720	620	670	580	740	650	690	600
Difference (AF)	100		90		90		90	

Notes: ER = effective rainfall; EFF = irrigation system efficiency; in = inches; AFY = acre-feet per year; vegetable AFY based on acreages from DWR Land IQ

The results shown in Table 2 and Table 3 indicate that the use of a fixed percentage (of total rainfall) for effective rainfall results in less offset to crop ETc than the use of a daily SMB. After adjustment for effective rainfall (and system efficiency), the applied water use on vegetables based on OpenET with 50 percent and 100 percent ER averages 4.17 to 4.89 inches more than SMB values. The OpenET methodology estimates water use for vegetables in the Los Osos basin between 2020 and 2022 averaged 700 AFY at 50 percent ER and 690 AFY at 100 percent ER, which is 90 to 100 AFY more than estimated by SMB methodology.

Offsetting ETc by a fixed percentage of total rainfall on a monthly basis does not provide the same credit as a SMB does, especially coming out of the rainy season. Soil holding capacity provides up to 4 inches of carryover moisture from month to month in the SMB, and allows seasonal rains to offset ETc through March and April. A fixed ER effectively resets soil moisture to zero every month, regardless of the amount of rainfall.



DISCUSSION

The strength of the OpenET methodology is that the estimates of ET_c are based on processing local remote sensing data that account for the actual field-level climatic conditions, basically measuring ET_c directly. The SMB methodology derives ET_c from ET_o calculated at a nearby climate station and various estimates for K_c. OpenET methodology appears to be more accurate than the SMB methodology for reporting ET_c. The weakness of the OpenET methodology is the current practice of applying effective rainfall as a fixed percentage of total rainfall on a monthly basis. That is not actually a part of OpenET, but it has been accepted by the developer and others.

By comparison, the strength of the daily SMB methodology is a robust process for estimating effective rainfall. By allowing rainfall to be stored in the soil and balancing incremental ET_c and rainfall on a daily basis, the full range of actual rainfall distributions can be more accurately modeled to estimate effective rainfall. The weakness of the SMB methodology is the ET_c estimate, which is dependent on several assumptions and data that is not locally field-based.

With respect to estimating irrigation system efficiency, both the OpenET and SMB are on equal terms. In the Los Osos basin, however, a calibration factor was substituted for the efficiency factor in order to match historical work which used detailed cropping data from County records between 2006 and 2008. In theory, if the OpenET ET_c data is used with the SMB effective rainfall, providing the best of both methodologies, this combination of methods (referred to herein as “SEB+SMB” for “surface water balance and soil moisture budget”), along with an assumed efficiency factor of 80 percent, should be the best available estimate for water use.

The ET_c data from OpenET is available on a monthly basis, while effective rainfall is estimated on a daily basis by the SMB. In order to combined the methods, the daily effective rainfall from the SMB is summed for each month and applied to offset the monthly ET_c from OpenET. Table 4 provides the results of this combined methodology.



Table 4. Applied Water Use Comparison – SEB with SMB and 80% EFF

Month	2020 Water Use (in)		2021 Water Use (in)		2022 Water Use (in)		Average	
	SEB+SMB	SMB	SEB+SMB	SMB	SEB+SMB	SMB	SEB+SMB	SMB
Jan	0.32	0	0.05	0	0.22	0	0.20	0.00
Feb	0.15	0	0.34	0	0.00	0	0.16	0.00
Mar	0.36	0	0.01	0	0.94	0.53	0.44	0.18
Apr	0.85	0	1.50	0.59	2.45	1.11	1.60	0.57
May	1.67	2.64	4.74	4.57	5.10	5.40	3.84	4.20
Jun	4.87	5.98	5.27	6.13	5.49	6.69	5.21	6.27
Jul	4.88	5.69	5.32	5.76	5.45	5.93	5.22	5.79
Aug	5.21	4.50	4.63	4.68	4.87	5.26	4.90	4.82
Sep	3.78	3.37	3.23	3.57	2.75	2.98	3.26	3.31
Oct	2.19	2.61	1.67	2.03	2.32	2.13	2.06	2.25
Nov	0.68	1.03	0.00	0	0.20	0.17	0.29	0.40
Dec	0.53	0.48	0.23	0	0.30	0	0.36	0.16
Total	25.49	26.30	27.00	27.32	30.09	30.20	27.53	27.94
Difference		-0.81		-0.32		-0.10		-0.41
AFY (vegetables)	600	620	570	580	640	650	590	600
Difference (AF)	-20		-10		-10		-10	

Notes: SEB = surface energy balance; SMB = soil moisture budget; EFF = irrigation system efficiency; in = inches; AFY = acre-feet per year; vegetable AFY based on acreages from DWR Land IQ

Table 4 shows that the combined SEB+SMB methodology, which combines OpenET and SMB, is a close match for the stand-alone SMB methodology, and supports current estimates of applied water use in Los Osos annual reports.

CONCLUSIONS AND RECOMMENDATIONS

Based on comparison and analysis of the results of two methodologies, OpenET and SMB, the OpenET data appears to be a better method for obtaining ETc values, while SMB provides the best estimates for effective rainfall. A proposed composite method, SEB+SMB, has the potential to combine the best of the two methodologies for estimating agricultural water use, and would allow replacement of the calibration factor with an actual efficiency factor.

Field-based verification of the results of water use estimates is recommended. CHG can work with the County to find grower(s) who would be willing to share any irrigation well production data over the last three years, and/or would allow meter installation for future data collection on groundwater production.