

Meeting of the Delta-Mendota Subbasin Coordination Committee

Monday, February 13, 2023, 9:30 AM **DRAFT**

San Luis & Delta-Mendota Water Authority Board Room, 842 6th Street, Los Banos, CA

Coordination Committee Members and Alternates Present

Ric Ortega, Member – Grassland Water District
Joe Hopkins, Member – Aliso Water District/Provost & Pritchard
John Wiersma, Member – San Luis Canal Company/SJREC
Augie Ramirez, Alternate – Fresno County
Jim Stilwell, Member – Farmers Water District
Vince Lucchesi, Member – Patterson Irrigation District/Northern Delta-Mendota
Will Halligan, Alternate – Farmers Water District/LSCE
Chase Hurley, Member – Pacheco Water District/Central Delta-Mendota
Christy McKinnon, Alternate – Stanislaus County/Northern Delta-Mendota

San Luis & Delta-Mendota Water Authority Staff Present

John Brodie
Lauren Viers*

Others Present

Ellen Wehr – Grassland Water District*
Chris Rogers – Central California Irrigation District*
Andrew Garcia – Santa Clara Valley Water District
Steve Stadler – San Luis Water District
Anthea Hansen – Del Puerto Water District*
Daniel Hartwig, Alternate – Aliso Water District*
Lauren Layne – Baker Manock & Jensen (first portion of meeting)*
Rick Iger – Provost & Pritchard*
Andrew Francis – LSCE
Anona Dutton – EKI Environment & Water, Inc.*
Meredith Durant – EKI Environment & Water, Inc.*
Leslie Dumas – Woodard & Curran*
Jim Van de Water – Thomas Harder Inc.*
Rebecca Padilla – Stanislaus County*

* Denotes telephonic/Zoom participation.

1. Call to Order/Roll Call

Chair John Wiersma/SJREC called the meeting to order at 9:31 AM.

2. Committee to Consider Corrections or Additions to the Agenda of Items, as authorized by Government Code Section 54950 et seq.

3. No corrections or additions to the agenda of items was shared. Opportunity for Public Comment

No public comment was shared.

4. **Committee to Review and Take Action on Consent Calendar, Wiersma**

- a) Minutes of the January 9, 2023 Coordination Committee Meeting
- b) Budget to Actual Report (through December 2022)
- c) Grant Reimbursement Summary Report

A minor correction was requested for the minutes for the Committee meeting on January 9, 2023. Ric Ortega/Grassland Water District provided the motion to approve the Consent Calendar and Augie Ramirez/Fresno County seconded. The Committee voted and the motion was passed unanimously by those present.

5. **Committee to Consider Approval of Fiscal Year 2024 SGMA Coordinated Budget, Brodie**

Augie Ramirez provided the motion to approve the Fiscal Year 2024 Coordinated Budget and Joe Hopkins/Aliso Water District seconded. The Committee voted and the motion was passed unanimously by those present.

6. **Committee to Consider Issuing a Request for Proposals to Design the Interconnected Surface Water Monitoring Network for the SGMA Round 1 Grant (Component 8, Task 1), Brodie**

John Brodie referenced the memorandum included in the meeting materials and noted that following submittal of a proposal from Luhdorff & Scalmanini in response to a request from the Committee in early January 2023, DWR communicated its desire for the grant recipients to solicit competitive proposals to perform grant-funded activities. John Brodie volunteered to prepare a draft Request for Proposals (RFP) for the planning and preliminary design of the interconnected surface water monitoring network by mid-day on Wednesday February 15, 2023. Vince Lucchesi/Patterson Irrigation District, Augie Ramirez, and Ric Ortega volunteered to serve on an ad hoc committee to review the draft RFP, and review subsequently received proposals. The Committee would like to approve a recommended consultant at its March meeting. Vince Lucchesi provided the motion to proceed with this planned approach and Ric Ortega seconded. The Committee voted and the motion was passed unanimously by those present.

7. **Committee to Discuss Timeline and Tasks for 2025 GSP Updates, Hopkins/Ramirez/Brodie**

John Brodie referenced the timeline included in the meeting materials. In the near future, it is important to identify which tasks the GSAs intend to perform internally, so that the remaining tasks can be identified in an RFP. The recommended corrective actions from DWR on the Amended GSPs, anticipated at the end of March 2023, will also be used to develop the RFP.

John Brodie has edited the GSP Common Chapter to improve its readability for stakeholders. The Committee discussed the need for the GSP to balance the objectives of providing both sufficient technical support and stakeholder comprehension. The Committee members are encouraged to review and provide their comments on the Common Chapter to John Brodie by February 28, 2023.

8. **Committee to Discuss Coordination Agreement Amendment(s), Hopkins/Stilwell**

Joe Hopkins reported that the effort is still in progress. Over the past several years of GSP implementation and coordination within the Subbasin, a few challenges have been identified. The ad hoc committee will continue to discuss proposed revisions to the existing Coordination Agreement.

9. **Committee to Discuss Merced County Groundwater Export Ordinance Update, Wiersma/Hurley**

John Wiersma summarized a recent meeting in Merced County to review an Ordinance which prohibits the export of groundwater from Merced County. The ordinance had been developed prior to SGMA, and does not mention the GSAs. Chase Hurley noted that it is important to have GSAs involved in the process, and that Merced County extends across other subbasins. Chase also noted that within the Subbasin, the GSAs are working cooperatively. The County is considering potential revisions to the Ordinance. Several participants from the Subbasin participated in the meeting, and provided suggestions to Merced County staff members. The next step is for the County staff members to meet internally to discuss the received input and requests.

10. **Committee to Discuss WY 2022 Annual Report, Dumas/Brodie**

Leslie Dumas/Woodard & Curran stated that the draft Annual Report is in progress. Woodard & Curran has sent email reminders to the GSAs requesting the upload of data and information (i.e., water use and change in storage) to the DMS. Not all GSAs have completed this task. Completion of the draft Annual Report is contingent upon Woodard & Curran's receipt of the requested information.

11. **Committee to Discuss Rescheduling March Meeting to Approve WY2022 Annual Report, Brodie/Dumas**

The committee discussed scheduling constraints regarding receipt of data, preparation of the Annual Report, the required April 1, 2023 submittal date, and agreed to schedule the next Committee meeting for later in March to discuss the draft Annual Report. The next Committee meeting will be scheduled for March 21, 2023 at 1:00 PM.

12. **Committee to Discuss Monitoring/Reporting Changes from Revised GSPs, Brodie**

Example GSP implementation tables prepared for the Northern & Central Delta-Mendota GSP region are included in the meeting materials. These tables will be updated prior to the next meeting.

13. **Committee to Discuss Available Funding Opportunities, Brodie**

John Brodie referenced the list of available funding opportunities included in the meeting materials.

14. **Next Steps, Brodie**

The following next steps were identified:

- Vince Lucchesi, Augie Ramirez, Ric Ortega will review the draft RFP for the SGMA Round I Grant Component 8, Task I - Interconnected Surface Water services, with the objective of issuing the RFP to consultants by end of this week.
- Comments on the revisions on the Subbasin GSP Common Chapter circulated to the Committee by John Brodie on February 10, 2023, should be submitted to John by February 28, 2023.
- The ad hoc committee will meet in the next month to continue discussions regarding proposed revisions to the Subbasin Coordination Agreement.

- Starting in April, Committee meetings will be scheduled for the afternoons of the second Monday of the month.

15. Reports Pursuant to Government Code Section 54954.2(a)(3)

No topics were discussed under this item.

16. Next Scheduled Meeting: Tuesday, March 21, 2023, 1:00 PM, San Luis & Delta-Mendota Water Authority, Los Banos

17. ADJOURNMENT

John Wiersma adjourned the meeting at 10:29 AM.

DRAFT

Special Joint Meeting of the Northern Delta-Mendota Region Management Committee,
Central Delta-Mendota Region Management Committee, Central Delta-Mendota GSA, and
Delta-Mendota Subbasin Coordination Committee

Monday, March 13, 2023, 1:30 PM **DRAFT**

SLDMWA Boardroom, 842 6th Street, Los Banos, CA

Coordination Committee Members and Alternates Present

Augie Ramirez – Fresno County
Joe Hopkins – Provost & Pritchard/Aliso Water District
Daniel Hartwig – Aliso Water District
Chase Hurley – Pacheco Water District/Central Delta-Mendota Region
Jarrett Martin – Central California Irrigation District/SJREC
Jim Stilwell – Farmers Water District
Will Halligan – Luhdorff & Scalmanini/Famers Water District
Ken Swanson – Grassland Water District
John Wiersma – San Luis Canal Company/SJREC
Vince Lucchesi – Patterson Irrigation District/Northern Delta-Mendota Region

Northern & Central Delta-Mendota Regions Management Committees Members and Alternates Present

Anthea Hansen – Del Puerto Water District/Oak Flat Water District
Bobby Pierce – West Stanislaus Irrigation District
Aaron Barcellos – Pacheo Water District
Danny Wade – Tranquillity Irrigation District/Fresno Slough Water District
Juan Cadena – Mercy Springs Water District*
Maria Encinas – City of Patterson
Randall Miles – Eagle Field Water District
Wayne Western – Panoche Water District
Damian Aragona – Widren Water District
Lacey McBride – Merced County
Steve Stadler – San Luis Water District
Christy McKinnon – Stanislaus County

San Luis & Delta-Mendota Water Authority Staff Present

John Brodie
Scott Petersen

Others Present

Jessica Johnson – Baker Manock & Jensen
Anona Dutton – EKI Environment & Water, Inc.
Meredith Durant – EKI Environment & Water, Inc.
Ethan Andrews – Provost & Pritchard
Rebecca Padilla – Stanislaus County

1. Call to Order/Roll Call

John Wiersma/SLCC called the meeting to order at 1:30 PM.

2. Opportunity for Public Comment

No public comment was shared under this meeting agenda item.

3. Committees to Review Leadership Meeting to Discuss Next Steps, Barcellos/Hopkins

Joe Hopkins/Aliso Water District reported that leadership from the Northern and Central and Coordination Committees met following receipt of the Inadequate Determination letter. The chairs and co-chairs attending the meeting received an overview of the Determination Letter, discussed possible next steps, and requested this Special Meeting be scheduled as soon as possible for all Committee members.

4. Committees to Receive Overview of Inadequate Determination and Deficiencies, Brodie

John Brodie/SLDWMA referred to a process flow chart included in the meeting materials. The Water Board must provide cities and counties with a minimum of 90-day notice in advance of a scheduled probationary hearing. Well owners must be provided with a minimum of 60-day notice for the same. Based upon his conversations with Water Board staff, John expects the Water Board to issue this advance notice within the next month. The Water Board may modify the list of GSP deficiencies identified by DWR. The Water Board suggested that representatives from the Subbasin meet with Water Board and DWR staff, and John Brodie has initiated scheduling of that meeting.

Chase Hurley/Pacheco WD reported that representatives from the Chowchilla Subbasin conducted an initial meeting via Zoom with staff from the Water Board and DWR to discuss their Inadequate Determination letter. At this time, the Water Board staff are starting from a point of no prior involvement in the GSPs, and they will rely on DWR staff findings. Cultural differences between the two agencies were recognized, with DWR more focused on water supply, and the Water Board more focused on water quality and drinking water. The Committees agreed to request that an ad hoc team including Jarrett Martin/CCID, Chase Hurley, and Scott Petersen participate in a meeting with the Water Board via Zoom to discuss next steps and anticipated schedule for the Delta-Mendota Subbasin.

5. Committees to Discuss Subbasin GSPs, Brodie

John Brodie noted that the Delta-Mendota Subbasin is complex, and that the six GSPs were prepared by several consultants. Only one subbasin with multiple GSPs and previously determined to be inadequate by DWR, was recently approved by DWR. The Kings Subbasin employed an approach where different consultants drafted chapters for multiple GSPs addressing a single subject (such as the water budget, or water quality). Thus, the Kings Subbasin GSPs were more organizationally consistent, and it was easier for DWR to understand the past and anticipated future coordination. Will Halligan reminded the Committees that use of SGMA Round 1 grant funds for GSP revision will involve solicitation of competitive proposals. Anona Dutton/EKI opined that it will be difficult for the Delta-Mendota Subbasin to avoid a probationary period, but with effort, focus, and increased coordination it may be possible to avoid the Water Board issuing an Interim Plan. The group discussed likely timing for the Water Board to issue its 90-day notice of a public hearing, as well as the potential schedule for the Water Board's imposition of groundwater extraction fees.

The Committees discussed the need for greater consistency in structure between the six GSPs, and the need for a subbasin-wide water budget with consistent individual water budgets to support it. The need for updating and revision of the Coordination Agreement was recognized.

6. Northern and Central Committees to Authorize Its Representatives to the Coordination Committee to Approve Modifying Legal Counsel’s Scope of Work to Include Amending the Delta-Mendota Subbasin Coordination Agreement, Brodie

Bobby Pierce/WSID provided the motion to approve this authorization for the Northern Region Management Committee representative and Vince Lucchesi/PIID seconded. The motion was passed unanimously by those present. Danny Wade/Fresno Slough WD provided the motion to approve this authorization for the Central Region Management Committee representative and Chase Hurley seconded. The motion was passed unanimously by those present.

7. Northern and Central Committees to Authorize Its Representatives to the Coordination Committee to Modify the Existing Agreement with EKI to Address the Inadequate Determination for the Subbasin’s GSPs, Brodie

Vince Lucchesi provided the motion to approve this authorization for the Northern Region Management Committee representative and Bobby Pierce seconded. The Northern Region Management Committee voted by roll call; the motion was passed unanimously by those present. Danny Wade provided the motion to approve this authorization for the Central Region Management Committee representative and Steve Stadler/San Luis Water District seconded. The motion was passed unanimously by those present.

8. Coordination Committee to Consider Modifying Legal Counsel’s Scope of Work to Include Amending the Delta-Mendota Subbasin Coordination Agreement, Brodie

The Committee discussed the need to update and amend the Subbasin Coordination Agreement and the need for legal counsel input in this process. Vince Lucchesi provided the motion to modify the scope of work for the Subbasin’s legal counsel to include revision of the Subbasin Coordination Agreement and Jarrett Martin seconded. The motion was passed unanimously by those present.

9. Coordination Committee to Consider Modifying the Existing Agreement with EKI to Address the Inadequate Determination for the Subbasin’s GSPs, Brodie

Jarrett Martin provided the motion for EKI to proceed with developing a common GSP outline, a subbasin water budget, revised sustainable management criteria, and a term sheet using FY2024 budget previously approved by the Coordination Committee and Vince Lucchesi seconded. The motion was passed unanimously by those present. It was noted that SGMA Round 1 implementation grant funds cannot be used for this purpose. SLDMWA staff will review EKI’s progress and budget status over the next 45 to 60 days and report back to the Committees. Future authorization of additional budget for EKI to complete these initial GSP revision tasks is anticipated.

10. **Conference with Legal Counsel – Anticipated Litigation**

The Committee met in closed session to confer with legal counsel on significant exposure to anticipated litigation pursuant to Paragraph (2) of Subdivision (d) of Government Code Section 54956.9 (1 case).

11. **Conference with Legal Counsel – Existing Litigation**

The Committee met in closed session to confer with legal counsel pursuant to Paragraph (1) of Subdivision (d) of Government Code Section 54956.9.

California Sportfishing Protection Alliance v. All Persons Interested in the Matter of the Validity of the Northern and Central Delta-Mendota Regions Groundwater Sustainability Plan, et al., Merced County Superior Court, Case No. 21CV-01691.

12. **Report out of Closed Session**

There were no actions identified during the Closed Session discussion.

13. **Next Steps**

- Staff will amend the task order for EKI to include the current budget allocation to respond to the inadequate determination for the Subbasin GSPs.
- EKI will initiate preparation of a common GSP outline, subbasin water budget, and revised sustainable management criteria.
- Staff will schedule a meeting between Water Board staff and the ad hoc subcommittee to discuss the Subbasin's response to the inadequate determination from DWR.
- Staff will inquire whether SWRCB can delay issuing the public hearing notices due to the active flood emergency in the subbasin.
- Scott will work with elected representatives to educate them about the difficulties of simultaneously managing SGMA and flooding issues.

14. **Reports Pursuant to Government Code 54954.2(a)(3)**

No topics were discussed under this item.

15. **Future Meetings**

- a. March 21, 2023 10:00AM: Special Joint Northern & Central Delta-Mendota Management Committees Meeting and Central GSA Meeting
- b. March 21, 2023 1:00PM: Special Meeting of the Delta-Mendota Subbasin Coordination Committee

16. **ADJOURNMENT**

John Wiersma adjourned the meeting at 3:53 PM.

SAN LUIS & DELTA-MENDOTA WATER AUTHORITY
MARCH 1, 2022 - FEBRUARY 28, 2023
SGMA ACTIVITIES - COORDINATED COST-SHARE AGREEMENT
ACTIVITY AGREEMENTS BUDGET TO ACTUAL
COORDINATED (FUND 63)

Report Period 3/1/22 - 1/31/23

SGMA 3/21/23

EXPENDITURES	Annual Budget	Paid/ Expense	Amount Remaining	% of Amt Remaining	Expenses Through
<u>Legal:</u>					
Baker Manock & Jensen	\$ 10,000	\$ 35,419	\$ (25,419)	-254%	1/4/23
<u>Other Professional Services:</u>					
GSP Implementation Contracts					
Coordinated Annual Reports Activities (Common Chapter, Water Level Contouring)	\$ 50,579	\$ 10,865	\$ 39,714	79%	10/12/22
DMS Hosting, Augmentation and Support	\$ 10,306	\$ 3,458	\$ 6,848	66%	5/23/22
GSP Approval-DWR Response to Comments	\$ 10,000	\$ 52,569	\$ (42,569)	-426%	8/3/22
Staff Augmentation Support (EKI)	\$ 51,241	\$ 29,566	\$ 21,675	42%	1/20/23
Proposition 68 (Grant Administration)					
Component 1 (Grant Administration)	\$ 39,150	\$ 24,796	\$ 14,354	37%	8/3/22
Component 2 (Technical Assistance)	\$ 10,000	\$ -	\$ 10,000	100%	
Component 10 (Well Census and Inventory)	\$ 10,000	\$ -	\$ 10,000	100%	
Component 11 (Subsidence Characterization)	\$ 10,000	\$ -	\$ 10,000	100%	
SGMA Implementation Grant Round 1 SPA (A9)	\$ -	\$ 3,195	\$ (3,195)	0%	10/12/22
SGMA Implementation Grant Round 2 SPA (A10)	\$ -	\$ -	\$ -	0%	
<u>Other:</u>					
Executive Director	\$ 2,383	\$ -	\$ 2,383	100%	
General Counsel	\$ 4,210	\$ 217	\$ 3,993	95%	3/31/22
Water Policy Director	\$ 4,128	\$ 4,575	\$ (447)	-11%	1/31/23
Water Resources Program Manager	\$ 44,277	\$ 42,541	\$ 1,736	4%	1/31/23
Accounting	\$ 4,207	\$ 2,839	\$ 1,368	33%	1/31/23
License & Continuing Education	\$ 500	\$ -	\$ 500	100%	
Los Banos Administrative Office (LBAO)	\$ 500	\$ -	\$ 500	100%	
Conferences & Training	\$ 2,500	\$ -	\$ 2,500	100%	
Travel/Mileage	\$ 7,500	\$ 43	\$ 7,457	99%	
Group Meetings	\$ 1,000	\$ 225	\$ 775	77%	
Telephone	\$ 2,500	\$ 61	\$ 2,439	98%	
Software	\$ 2,500	\$ -	\$ 2,500	100%	
Equipment and Tools	\$ 5,350	\$ -	\$ 5,350	100%	
Total Expenditures	\$ 282,831	\$ 210,369	\$ 72,462	26%	

	A	B	C
1	IRWM Proposition 1 Round 1		
2	Amount Paid		
3	Administration	\$ 9,000.00	
4	City of Huron	\$ 584,974.57	
5	NVRRWP-Turlock	\$ 45,000.00	
6	WSID Pumping Plant	\$ -	
7	Orestimba Creek	\$ 404,632.00	
8	Broadview Aquifer	\$ 218,683.66	
9	Total	\$ 1,262,290.23	
10			
11	Amount Remaining		
12	Administration	\$ 1,000.00	
13	City of Huron	\$ 25.43	
14	NVRRP-Turlock	\$ -	
15	WSID Pumping Plant	\$ 809,264.00	
16	Orestimba Creek	\$ 404,632.00	
17	Broadview Aquifer	\$ 67,316.34	
18	Total	\$ 1,282,237.77	
19			
20	Prop 1/Prop 68 SGMA Plan Development		
21	Amount Paid		
22	Administration	\$ 65,757.08	
23	Technical Assistance	\$ 877,385.42	
24	Generic DMS	\$ 178,500.00	
25	N-C Region GSP	\$ 534,291.00	
26	Grassland GSP	\$ 208,678.64	
27	Farmers GSP	\$ 168,988.62	
28	Aliso GSP	\$ 201,487.25	
29	Fresno GSP	\$ 252,899.02	
30	SJREC GSP	\$ 376,705.55	
31	Well Census	\$ 100,000.00	
32	Subsidence Study	\$ 92,907.04	
33	Total	\$ 3,057,599.62	
34			
35	Amount Remaining		
36	Administration	\$ 10,841.92	
37	Technical Assistance	\$ 154,503.98	
38	Generic DMS	\$ -	
39	N-C Regions GSP	\$ -	
40	Grassland GSP	\$ -	
41	Farmers GSP	\$ -	
42	Aliso GSP	\$ -	
43	Fresno GSP	\$ -	
44	SJREC GSP	\$ -	
45	Well Census	\$ -	
46	Subsidence Study	\$ 8,318.50	
47	Total	\$ 173,664.40	



MEMORANDUM

TO: Delta-Mendota Subbasin Coordination Committee Members and Alternates

FROM: John Brodie, Water Resources Program Manager

DATE: March 20, 2023

RE: Approval of Transmitting a Request for Proposals for Work on SGMA Round 1 Grant Monitoring Networks (Component 8, Task 1)

BACKGROUND

On October 11, 2022, the Del Puerto Water District (DPWD) signed a grant agreement with the California Department of Water Resources (DWR) to fund SGMA Implementation activities in the Delta-Mendota Subbasin. The grant agreement contains a total of 11 Components to be completed. Component 8 proposes to fill data and monitoring gaps identified by the Subbasin. Total funding allocated in the grant for a non-specific Interconnected Surface Water Monitoring Network (ISWMN) and a non-specific Subsidence Monitoring Network (SMN) is \$640,000.

ISSUES FOR DECISION

The Coordination Committee, at its meeting on February 13, 2023 authorized a Request for Proposals (RFP) be issued to provide for the design of an ISWMN in the Delta-Mendota Subbasin. The RFP was released on February 16, 2023 to a list of consultants used by GSP groups in the Subbasin and others. One proposal was returned by the published deadline.

RECOMMENDATION

Staff recommends the following:

That the Committee approves the proposal submitted by Luhdorff & Scalmanini Consulting Engineers for the design of an Interconnected Surface Water Monitoring Network to meet the requirements of the SGMA Implementation Grant.

ANALYSIS

The proposal received meets all requirements as stipulated in the released Request for Proposals.

BUDGET

As previously noted, the total amount of funding available for Subbasin-wide benefit for ISW and subsidence monitoring is \$640,000. The submitted budget to complete this particular task is \$25,250.



LSCE Proposal No. 23-2-002

Design of an Interconnected Surface Water Monitoring Network for the Delta-Mendota Subbasin



**Luhdorff &
Scalmanini**
Consulting Engineers

Delta-Mendota Subbasin Coordination Committee

MARCH 10, 2023





March 10, 2023

LSCE No. 23-2-002

John Brodie
Delta-Mendota Subbasin Coordination Committee
842 6th Street
Los Banos, CA 93635

SUBJECT: Response to Request for Proposal for Design of an Interconnected Surface Water Monitoring Network for the Delta-Mendota Subbasin

Dear Coordination Committee Members,

Luhdorff & Scalmanini, Consulting Engineers (LSCE) is excited to present our qualifications and proposal to provide the Delta-Mendota Subbasin Coordination Committee with engineering design services related to the Interconnected Surface Water (ISW) Monitoring Network. Based on our understanding of the project after reviewing the Coordination Committee's Request for Proposal (RFP), the work to be completed includes determining locations for nested monitoring wells, acquiring access agreements and/or easements as needed, providing design specifications for the individual monitoring well sites along with a basis for design report (required by the grant funding agreement), and coordination with adjacent subbasins.

LSCE has been a leader in Sustainable Groundwater Management Act (SGMA)-related work from the start. This includes our service on technical advisory groups to the California Department of Water Resources (DWR) during the development of the Groundwater Sustainability Plan (GSP) emergency regulations and Best Management Practices for implementation of the Act. Since then, we have assisted entities in groundwater basins and subbasins throughout California and the San Joaquin Valley to secure funding and fulfill SGMA requirements, including monitoring networks design. Our technical work related to GSPs spans many of the high- and medium- priority basins or subbasins representing diverse stakeholders.

Our team consists of individuals who have been involved with the Delta-Mendota GSP from the beginning, has worked on many projects along the San Joaquin River and has a very strong understanding of the shallow aquifer system throughout the region. LSCE has already conducted a significant amount of work related to the design of ISW monitoring networks for the Delta-Mendota Subbasin (Subbasin) GSPs and others. We are familiar with existing monitoring programs in the area and where the data gaps exist along the San Joaquin River. In the revised 2022 GSP for the Subbasin, it was decided by the Coordination Committee to use groundwater levels as a proxy for ISW due to the abundance of data gaps. Prior to the decision, LSCE was involved with the preliminary design of an ISW network in the Subbasin. Utilizing data already collected and analyzed for ISWs in the Subbasin and our experience on other projects in the region, LSCE is in an ideal position to design the Subbasin ISW network.

LSCE staff are currently working with the Chowchilla Subbasin to better characterize groundwater-surface water (GW-SW) interaction. The purpose of this work is to better understand how hydrogeologic conditions vary on different sides of the river and the relationship between shallow groundwater levels, streamflow fluctuations, and groundwater pumping.

Monitoring and developing sustainable management criteria (SMC) for ISWs is one of the more challenging issues given that surface water bodies often serve as the boundary between Groundwater Sustainability Agencies (GSAs) and GSP groups, making coordination extremely important. LSCE's involvement in multiple subbasins provides an excellent opportunity to promote inter-basin coordination and to assist in the development of SMCs that will help the region achieve sustainability as a whole. We have reviewed our current projected obligations and determined that we have the resources to devote to this project to complete it in a timely and cost-effective manner. We look forward to the opportunity to continue working with the Subbasin. Please feel free to contact our proposed project manager, Will Halligan at (530) 661-0109 or whalligan@lsce.com, should you have any additional questions about our proposal or proposed team.

Sincerely,

Luhdorff & Scalmanini, Consulting Engineers



Will Halligan
Senior Principal Hydrogeologist
President

LSCE Point of Contact

Will Halligan, PG
Senior Principal Hydrogeologist | President
whalligan@lsce.com

1430 Blue Oaks Blvd, Suite 288
Roseville, CA 95747
530.661.0109



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Section 1.

General Information

Luhdorff and Scalmanini, Consulting Engineers (LSCE) is a consulting and services organization providing hydrogeologic and civil engineering services related to the investigation, development, use, protection, and management of groundwater to public and private entities.

LSCE was founded in 1980 to fill a recognized need for technical and management expertise in a broad range of issues associated with groundwater resource development and its efficient utilization.

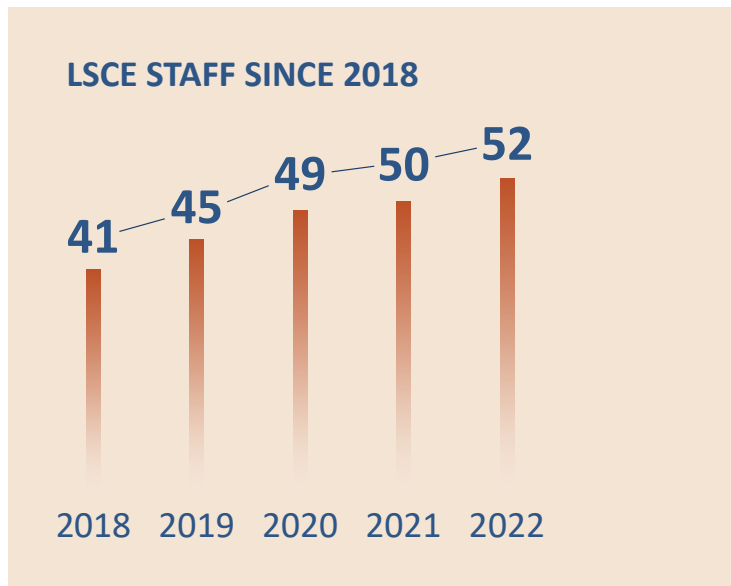
LSCE’s staff includes experts in hydrogeologic investigations, monitoring and production well design, site characterization, well construction and testing, well rehabilitation, water resources management, permitting, groundwater modeling, pump selection and pump station design, geographic information systems (GIS), database design, and AutoCAD (ACAD) drafting.

LSCE’s multi-disciplinary team of hydrogeologists, geologists and engineers have a wide range of expertise in groundwater resources and municipal water production facilities.

LSCE provides a wide range of consulting services related to groundwater management but over the past six years, much of our work has focused on the development and implementation of Groundwater Sustainability Plans (GSPs). This has included designing groundwater monitoring networks for the purpose of filling data gaps for each of the six groundwater sustainability indicators including interconnected surface waters.

Our integrated approach uses expertise in groundwater, hydrogeology, well structures and pumping stations to identify underlying issues and develop sensible solutions to address issues associated with changes in quantity, quality and efficiency of existing well facilities.

Sample projects with a scope similar to the project outlined in the RFP are provided on the following page. We encourage you to contact our clients to hear firsthand how we have implemented projects within budget under stringent deadlines.



Section 2.

Experience

Hydrogeologic Support Services

NAPA COUNTY

CONTACT: Ms. Jamison Crosby, Natural Resources Conservation Manager; **ADDRESS:** 1195 3rd St, Ste 210, Napa, CA, 94559; **PHONE:** 707.253.4823; **EMAIL:** jamison.crosby@countyofnapa.org; **TEAM:** Andrew Francis; **DATES:** 2017-ongoing

LSCE has been working for Napa County since 2008. LSCE provided groundwater expertise and technical services to Napa County to support General Plan development, Groundwater Sustainability Plan development, data management system and monitoring, ongoing monitoring network refinements, outreach and education, grant funding application submittal, and other hydrogeologic services. Monitoring network refinements included evaluation of groundwater conditions and data gaps; prepare updated plan for groundwater monitoring; planned and installed shallow, dual nested monitoring wells at five sites (10 total wells) for analysis and characterization of groundwater-surface water interactions (DWR local groundwater assistance grant). Four additional sites (8 monitoring wells) underway (support from Prop 68); ongoing County wide groundwater monitoring network planning, development, and tracking. LSCE has also served as a reviewer for Water Availability Assessments (WAA) for new well permits. The purpose of a WAA is to determine if additional groundwater pumping would create overdraft, injure neighboring well owners, or deplete interconnected-surface waters.

Project Outcome

An expanded monitoring network to fill data gaps and facilitate ongoing groundwater management activities including GSP implementation.

Deer Creek Hydrogeological Analysis

TROUT UNLIMITED

CONTACT: Mr. Matt Clifford, Staff Attorney; **ADDRESS:** 5950 Doyle Street, Suite 2, Emeryville, CA 94608; **PHONE:** 408.370.9431; **EMAIL:** Matt.Clifford@tu.org; **TEAM:** Eddy Teasdale; **DATES:** 2018-2022

Deer Creek provides habitat for wild spring-run Chinook salmon, fall-run Chinook salmon, and Central Valley steelhead trout. The interaction of agricultural practices, including surface water diversions, groundwater extractions, and deep percolation of applied water, are poorly understood in the area. The purpose of this project was to assess the effects of eliminating Deer Creek surface water diversion to restore full upstream and downstream passage for salmonids. LSCE collected existing information, evaluated existing models, developed a local project model for this analysis, and assisted with project communications and outreach. The model allowed for exploration of conjunctive use management scenarios to maximize benefits for ecological flows within Deer Creek as well as irrigators. The model simulated the surface water system, the underlying groundwater system, and the interactions between the two.

Project Outcome

Determination of the net water available for dedication to instream flows after accounting for return flows currently returned to Deer Creek or other streams, historic diversion uses, and any increase in stream leakage (and/or reduced groundwater discharge) induced by potential lowering of groundwater levels provided the necessary context to balance environmental and other water uses.

Hydrogeological On-Call Support Services

TURNER ISLAND WATER DISTRICT

CONTACT: Mr. Larry Harris; **ADDRESS:** 1269 West I Street, Los Banos, CA; **PHONE:** 559.285.5940; **EMAIL:** LHarris@murdoc.com; **TEAM:** Eddy Teasdale; **DATES:** 2015-2022

LSCE has been providing hydrogeological technical support services for Turner Island Water District (TIWD), that covers a portion of the Merced and Delta-Mendota Subbasins. LSCE supported aquifer testing, SGMA assistance/peer-reviewed GSP chapters, developed TIWD water budgets, and seepage analysis. Developed water resources data management system using available data, identified data gaps, and provided recommendations for water resources monitoring. LSCE also reviewed updated hydrogeologic conceptualization and characterization of conditions including eight geologic cross-sections, refined and further characterized areas of greater recharge potential, and analyzed potential GW-SW interactions utilizing the existing monitoring network.

Project Outcome

The modeling and analysis provided the TIWD with the data necessary to make informed decisions related to groundwater recharge and other groundwater management activities.

Additional Experience Summary

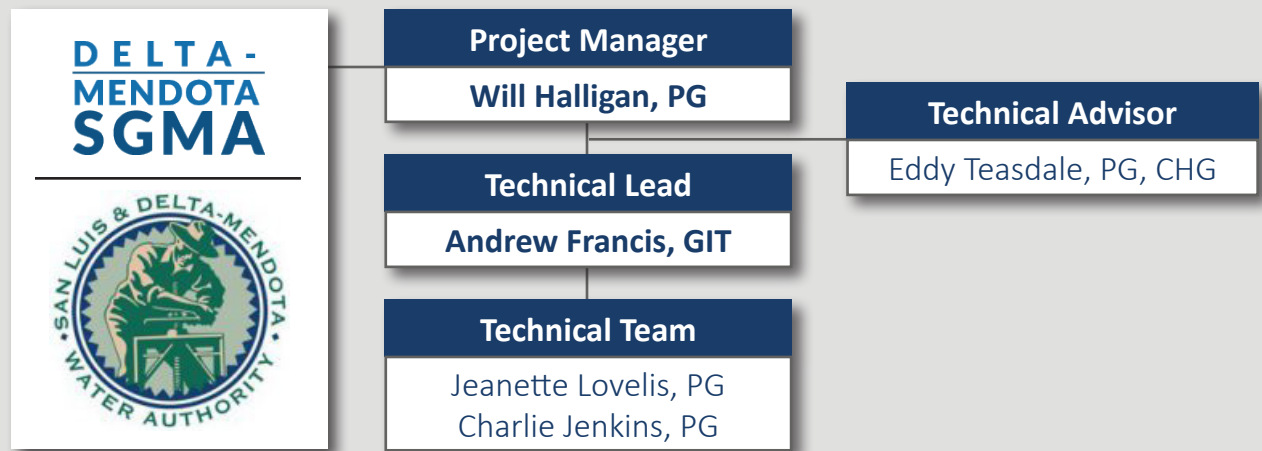
Project, Client	GW-SW Interaction	Monitoring Network Design	Subbasin Coordination
Napa Valley GW-SW Interconnection, Napa County	●	●	
Surface Water Sustainable Management, Turner Island Water District	●	●	●
Deer Creek Hydrogeological Analysis, Trout Unlimited	●	●	●
Aggregate Pit Recharge Monitoring, San Francisco Public Utilities Commission	●	●	
Tehama County GSPs, County of Tehama	●	●	●
Monitoring Well Network, Northern California Water Association	●	●	●
Interconnected Surface Water Monitoring Network, Chowchilla Subbasin	●	●	●
Streamflow Depletion Analysis from Sacramento River, Confidential Client, Yolo County	●	●	
Lake Merced Monitoring Network, San Francisco Public Utilities Commission	●	●	
Funding Strategy/Grant Writing, Colusa and Glenn Groundwater Authorities, Vina and Wyandotte Creek GSAs, Corning Subbasin GSA	●	●	●

Section 3.

Project Team

In selecting our team, we started by carefully evaluating the required functions and examined the likely critical issues and concerns. We then identified the associated disciplines necessary to complete the project and chose the most appropriate staff in each discipline. As a result, we have presented in the organizational chart below a highly qualified, experienced, streamlined group of professionals. Resumes for key team members are included in **Appendix A**.

Organizational Chart



KEY STAFF

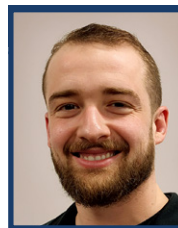


Will Halligan, PG

PROJECT MANAGER

Developed groundwater management programs and developed/managed monitoring programs, on

local and regional scales, for over 25 years at LSCE. Developed and peer reviewed complex transient groundwater flow and solute transport models, evaluated and assessed geologic and hydrologic conditions for groundwater resource management, conducted CEQA/NEPA impact analysis, and investigated and identified overdraft conditions. Currently manages groundwater investigations projects including groundwater resource and conjunctive use programs and groundwater sustainability plan recharge projects.



Andrew Francis, GIT

TECHNICAL LEAD

Six years of professional experience in groundwater consulting in California, Idaho, Oregon, and Utah. Expertise is

in hydrogeological conceptualization, related to GSP development and implementation in multiple subbasins including characterizing interconnected GW-SW and developing including consideration of all sustainability indicators (e.g., water levels, subsidence, water quality). Experience on multiple projects providing well design and construction oversight. Well versed in GIS including geospatial analysis, mapping, and managing large geospatial datasets.



Eddy Teasdale, PG, CHG

TECHNICAL ADVISOR

Over 24 years of geological and hydrogeological investigations experience including complex,

comprehensive geology, hydrogeology, conveyance, flood control, and environmental issues. Extensive experience writing technical reports and working with local, state, and federal regulatory agencies including presenting project information and resolving project issues. His primary areas of technical expertise are in hydrogeologic characterization and groundwater modeling.

SUPPORT STAFF



Charlie Jenkins, PG: Thirteen years of experience in geology and hydrogeology conducting subsurface investigations for hydrogeologic characterization, permitting, construction management, interpretation of geophysical surveys, grain size distribution analysis, project specification preparation, contractor compliance, well construction and testing oversight, water quality sample collection oversight, and preparation of technical reports involving data evaluation and interpretation.



Jeanette Lovelis, PG: Thirteen years of geology, hydrogeology, water resource, GIS, and database management experience including: monitoring reporting and compliance, technical reports, hydrogeologic investigations, data management, well design, construction oversight, well testing, and project permitting. She has designed, built, and maintained relational and GIS databases with well information and related, surface water, land use, and geology data.

Section 4.

Project Approach and Scope of Work

APPROACH

LSCE’s approach to the proposed project has been developed based on the services specifically outlined in the RFP, our experience in the Subbasin and with projects of similar size and complexity, and our current understanding of this project.

The design of the ISW monitoring network described in the Scope of Work below will consist of existing monitoring wells, steam gages, and the addition of up to five nested and paired monitoring wells along the San Joaquin River. The purpose of this network will be to understand the response of shallow groundwater and surface water with deeper groundwater production. This network will be designed in a coordinated fashion with adjacent subbasins. The Scope of Work on the following page describes each of the key tasks necessary to perform this proposed Scope of Work. The budget for this work is influenced by documentation requirements for the implementation grant.

LSCE will utilize its extensive experience to critically review all aspects of the project to identify the unique challenges and issues that will need to be addressed in order to successfully and efficiently complete the project at the lowest cost and on schedule. From the first day of the project, and continuing throughout, LSCE’s highly experienced team will work together with the Coordination Committee (CC) and stakeholders to ensure a smooth and successful project all the way through to completion.

There are several key priorities to be addressed to successfully complete the proposed project. LSCE’s approach to addressing these priorities are shown in the following table.

LSCE's Approach to Key Priorities		
Key Priority	Potential Risk Factors	Mitigation Approach
Fill data gaps identified within the Subbasin	Landowner/stakeholder responsiveness	Start communication process immediately to provide the best chance of success. Leverage existing relationships with Subbasin GSAs.
	Inability to acquire access agreements in data gap areas.	Prioritize landowner outreach in areas most critical to achieving sustainability
	Inaccessibility of suitable sites for monitoring well adjacent to existing stream gauges	Recommend installation of a new stream gauge adjacent to monitoring well if needed
Meet grant requirements for the design of an ISW Monitoring Network	Lack of familiarity with grant requirements could cause delays	Experience developing and implementing DWR SGMA implementation grants allows us to avoid mistakes
Complete project on schedule	Meeting the expedited schedule	Subbasin and grant development experience allows us to start immediately with a minimal learning curve.
Complete project within grant budget	Additional required coordination/meetings may impact budget	Share preliminary plans with stakeholders prior to individual meetings to minimize risk through transparency.

SCOPE OF WORK

Task 1. Coordinate with Adjacent Subbasins on Existing Monitoring Sites

Luhdorff and Scalmanini, Consulting Engineers (LSCE) will review existing Groundwater Sustainability Plans (GSPs) and conduct outreach to the Modesto, Turlock, Merced, and Chowchilla subbasins to identify existing and planned interconnected surface water (ISW) monitoring locations. The goal of this task is to coordinate with the adjacent subbasins to promote future data sharing,

modifying sustainable management criteria (if necessary), and meeting sustainability goals. This coordination and outreach will also gather information on ISW facilities (existing and planned) in the adjacent subbasins which will assist in the design and locations of Delta-Mendota Subbasin (Subbasin) ISW facilities.

Task 1. Deliverables

- Technical memorandum summarizing the individual meetings and goals for future coordination

Task 2. Acquire Access Agreements and/or Easements Needed for Well Installation

LSCE will work with Groundwater Sustainability Agencies (GSAs) and landowners within the individual Subbasin GSAs to acquire access agreements for well installation and future monitoring. LSCE will provide preliminary site locations for ISW wells to the GSA where the locations are specified. LSCE will assist the GSA in reaching out to landowners to obtain permission and use GSA-developed access agreements, if necessary, to allow for the drilling, installation, and monitoring of new ISW monitoring wells.

TASK 2. ASSUMPTIONS

- Well sites will primarily be located on district-owned land

Task 2. Deliverables

- Well installation and monitoring Access Agreements

Task 3. Prepare Preliminary Design Plans

This task includes the development and finalization of ISW monitoring well locations and design based on the existing stream gages and monitoring sites along the San Joaquin River. LSCE will provide monitoring well specifications based on local geologic conditions and site specific information that drilling contractors will need as part of subsequent drilling and installation of ISW monitoring wells. Specifications will include provisions for the mobilization, construction, development, and testing of each of the wells and will include provision for site specific constraints including disposal of drill cuttings and fluids, water supply for drilling, and permitting. 60% and 100% plans and design specification will be provided per the deliverables identified in the implementation grant. The 60% plans and specification will serve as the draft, and 100% plans and

specification will include any edits/comments from the Coordination Committee (CC).

The preliminary plans will also include a basis for design report which will describe justification for well location and anticipated screen interval.

TASK 3. ASSUMPTIONS

- Design of up to 5 dual-completion monitoring wells
- Recommended stream gage sites do not include access agreements or specifications

Task 3. Deliverables

- Map of final monitoring locations
- Propose additional stream gage sites (if necessary)
- 60% design plans and specifications
- 100% design plans and specifications
- Basis for design report

Task 4. Meetings and Communication

LSCE will attend a minimum of two meetings with the CC and/or the Technical Working Group (TWG) either individual meetings with each group or a join session. LSCE will provide monthly updates at CC regular monthly meetings.

This task will also include individual meetings with GSAs where monitoring wells are to be located and meetings with each adjacent subbasin along the San Joaquin River.

TASK 4. ASSUMPTIONS

- Monthly updates provided at CC regular monthly meetings
- GSA/Subbasin meetings held via Zoom

Task 4. Deliverables

- Two meetings with the CC and/or TWG
- Monthly updates to CC
- One to five Delta-Mendota GSA meetings
- Adjacent subbasin GSA meetings

Section 5.

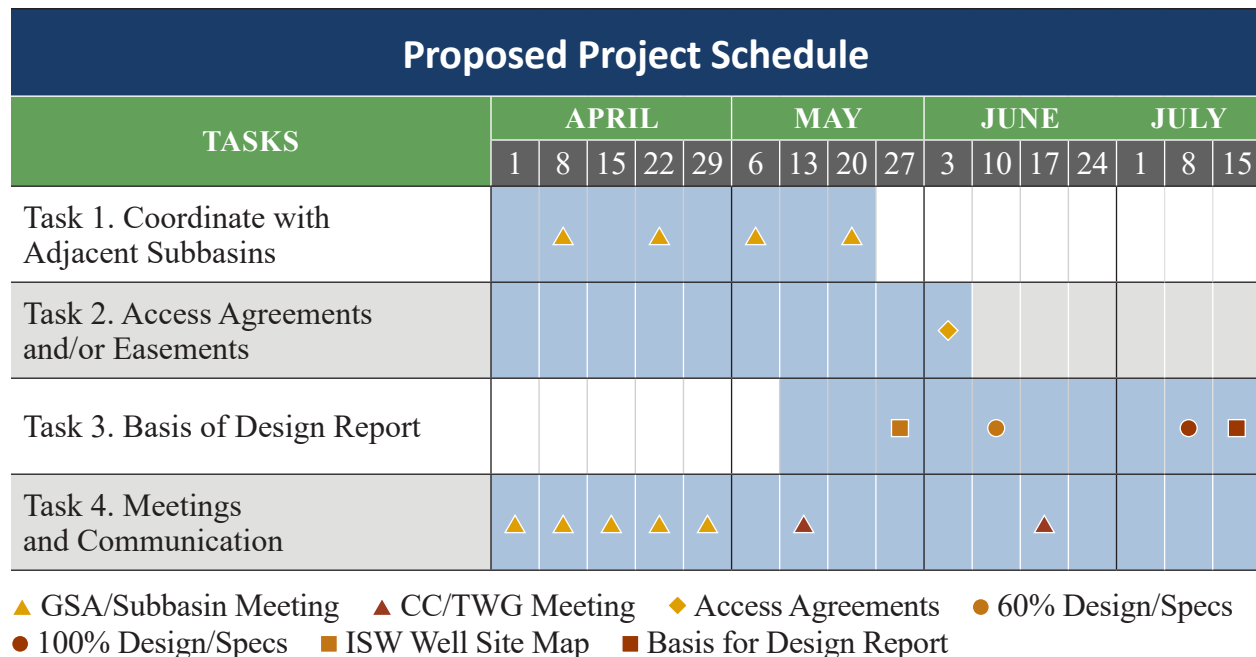
Project Budget and Schedule

Estimated Project Budget		
Tasks	Level of Effort (hours)	Estimated Budget (dollars)
Task 1. Coordinate with Adjacent Subbasins	28	\$5,360
Task 2. Access Agreements and/or Easements	10	\$1,850
Task 3. Basis of Design Report	70	\$13,400
Task 4. Meetings and Communication	22	\$4,640
Total Project Hours and Cost	130	\$25,250

Assumptions

Assumptions for each task are included in the Scope of Work where applicable and summarized below.

- Well sites will primarily be located on district-owned land
- Design of up to 5 monitoring well sites
- Recommended stream gage sites do not include access agreements or specifications
- Two meetings with the CC and/or TWG
- Adjacent subbasin meetings held via Zoom
- Up to five meetings with Delta-Mendota GSAs via Zoom
- Monthly updates can be provided at CC Regular Monthly Meetings
- A geotechnical investigation report not included





2023 SCHEDULE OF FEES ENGINEERING AND RELATED FIELD SERVICES

Professional*

Senior Principal	\$247/hr.
Principal Professional.....	\$236/hr.
Supervising Professional	\$228/hr.
Senior Professional	\$190 to 210/hr.
Project Professional	\$165 to 175/hr.
Staff Professional	\$145 to 160/hr.

Technical

Engineering Inspector	\$145/hr.
ACAD DMS/GIS.....	\$145/hr.
Engineering Assistant.....	\$120 to 145/hr.
Scientist.....	\$120 to 145/hr.
Technician.....	\$120 to 145/hr.

Project Admin Support

Word Processing, Clerical.....	\$94/hr.
Digital Communications Specialist.....	\$105/hr.
Project Admin/Accounting Assistant	\$110/hr.

Vehicle Use	\$0.655/mi(or curr. IRS rate)
Subsistence	Cost Plus 15%
Groundwater Sampling Equipment (Includes Operator)	\$170.00/hr
Copies	\$0.20 ea.
Professional or Technical Testimony	200% of Regular Rates
Technical Overtime (if required)	150% of Regular Rates
Outside Services/Rentals	Cost Plus 15%
Services by Associate Firms	Cost Plus 15%

* Engineer, Geologist, Hydrogeologist, and Hydrologist

Section 6.

Conflicts

LSCE’s proposed project manager, Will Halligan, is on the Coordination Committee and would recuse himself from discussion and voting related to awarding of the contract for this project. LSCE does not have any other actual, apparent, direct, indirect, or potential conflicts of interest with respect to our firm, management, or employees pursuant to this RFP.

Section 7.

Professional Services Agreement and Insurance

LSCE has reviewed the San Luis & Delta-Mendota Water Authority (SLDMWA) Professional Services Agreement and has no exceptions or requested revisions to the agreement. LSCE insurance coverage meets or exceeds the SLDMWA insurance requirements as illustrated in the table below.

Insurance Coverage	Meets	Exceeds
Worker’s Compensation	■	
Employer’s Liability	■	
Commercial General Liability	■	
Commercial Automotive Liability	■	
Professional Liability (E&O)		■
Umbrella/Excess Liability		■

WHY LSCE?



A **proven team** of water resources professionals dedicated to projects throughout California



An **industry leader** in planning, permitting, and engineering design, **designing hundreds of wells and water systems** up and down the state of California



High value solutions that limit capital expenditures and helps our clients address a broad range of water related challenges



Creative insight and **innovative responses** to perplexing challenges, and sound technical knowledge to support practical engineered solutions are integral to our practice

Appendix A

Team Resumes

- Will Halligan, PG
- Andrew Francis, GIT



WILL HALLIGAN, PG

Senior Principal Hydrogeologist

Years of Experience

30

Education

MS, Geoscience (Hydrogeology),
University of Nevada, Las Vegas

BS, Geology, California State
University, Chico

Professional Registrations

Professional Geologist
CA No. 7056

Professional Affiliations

- National Ground Water Association
- Association of Ground Water Scientists & Engineers
- Groundwater Resources Association of California
- Association of California Water Agencies

Will has over thirty years of professional experience including over 25 years in groundwater consulting with Luhdorff and Scalmanini Consulting Engineers (LSCE). Will currently conducts and manages a variety of groundwater investigation, management and development projects including groundwater resource and conjunctive use programs along with groundwater sustainability plan (GSP), recharge and seepage projects. His experience includes development and peer review of complex transient groundwater flow and solute transport models, evaluation, and assessment of geologic and hydrologic conditions for groundwater resource management, monitoring programs on local to regional scales, impacts analysis for CEQA and NEPA studies, investigation and identification of overdraft conditions, and development of groundwater management programs for sustainable groundwater development.

Will was involved in Sustainable Groundwater Management Act (SGMA) GSP regulation development as part of Groundwater Resources Association's Sustainable Groundwater Management Committee. From that work, he advises Groundwater Sustainability Agencies (GSAs) on GSP development and implementation. He also teaches groundwater resources related classes for University of California Extension program with a focus on groundwater management and development, SGMA, and GSP development and implementation.

EXPERIENCE

Groundwater Management and Development

Will has conducted investigations involving conjunctive use of surface and groundwater resources, water transfers, sustainable groundwater management and development, sustainable basin yield estimates to avoid overdraft conditions and impacts analysis of planned groundwater development and aggregate mining projects throughout many of the subbasins and basins listed below. Experience includes evaluation and feasibility of groundwater recharge projects such as surface recharge ponds, aquifer storage and recovery (ASR) projects and the influence of these projects on groundwater storage and quality. Will has also conducted investigations evaluating the impact of multiple management actions and projects on regional and groundwater conditions.

REPRESENTATIVE PROJECT

Technical Consultant for Mendota Pool Group Exchange Program: Will oversees the monitoring and reporting of groundwater levels, quality, subsidence, pumping, and surface water quality for the Mendota Pool Groups exchange contract with the Bureau of Reclamation and

the Settlement Agreement with the San Joaquin River Exchange Contractors and Wonderful Orchards. Work also involved the technical analysis of the exchange programs impacts on ground and surface water conditions as utilizing a numerical flow model and a surface water mixing model as part of a CEQA and NEPA analysis of project impacts. Work also includes assisting the MPG in coordination efforts with area landowners and water districts in the management and use of the Mendota Pool.

Groundwater Resource Investigations and Monitoring

Will has conducted numerous investigations of geologic and groundwater conditions utilizing existing and new monitoring and other hydrogeologic data to develop conceptual models, evaluate surface and groundwater interactions involving both flow and water quality, safe yield estimates, and evaluation of groundwater overdraft conditions in many areas of California including coastal and adjudicated basins. Groundwater resource investigations have also involved participation in projects that include legal proceedings that contest overdraft conditions, safe yield, and basin adjudication. Projects have also included development of monitoring programs involving well selection criteria and integration of conceptual model information to ensure that comprehensive data collection of multi-aquifer groundwater systems are adequately addressed.

REPRESENTATIVE PROJECT

Project Manager for Westlands Water District SGMA-Related Projects: Will oversaw the development of a basin-wide conceptual model of geologic and hydrogeologic conditions of the Westside Subbasin. The project work included development and analysis of water budget components, impacts of subsidence on critical infrastructure, GSP development and implementation, and intra-basin and inter-basin coordination efforts and stakeholder outreach. Will is also involved in ongoing refinement of monitoring efforts for SGMA compliance and improvements to the conceptual model based on an expansion of data collection efforts by Westlands Water District.

Groundwater Modeling

Will has developed, constructed, or critically reviewed analytical and numerical groundwater flow models along with solute transport models throughout California, including almost half of the Critically Overdrafted Basins

identified by DWR (as of August 2015). Many of the modeling projects integrate land use along with surface water and groundwater interactions to fully capture the effect land surface and near surface processes have on the groundwater system. Will's experience has also included peer reviews of both regional and local numerical and solute transport and seawater intrusion models throughout California, including coastal and inland basins and valleys. Locations include the counties and basins listed below:

REPRESENTATIVE PROJECT

Project Manager for Fresno County Management Area A and B GSAs: Will led the LSCE effort to develop a numerical and solute transport model of the Fresno County portion of the Delta Mendota Subbasin. A comprehensive conceptual model of the groundwater and surface water conditions in the GSA was developed which led to the development and calibration of the transient model to long term average annual hydrologic conditions. This modeling effort supported the development of a GSP as part of a coordination agreement among the 23 GSAs in the Subbasin.

Seepage and Recharge

Will has directed several investigations of seepage or recharge between surface water bodies as and groundwater. These investigations have also evaluated quantities of streamflow losses attributed to groundwater pumping and the influences on groundwater levels and quality. In addition, Will has also managed projects that evaluated percolation rates of recharge basins, quantification of net recharge from recharge facilities by accounting for rainfall and evaporation, along with the evaluation of mounding that may occur from recharge operations and the impacts to percolation rates.

REPRESENTATIVE PROJECT

Project Manager for Mendota Pool Group 20-year Extension of Exchange Program EIS/EIR: As part of the groundwater conditions impact analysis development of the from the proposed project and project alternatives to support the development and preparation of environmental documents, Will managed the analysis of streamflow losses from the San Joaquin River from the project. The analyses included the evaluation of changes in streamflow and evaluation of shallow and deep groundwater levels from shallow and deep monitoring wells located adjacent to the San Joaquin River. The objective of the evaluation was to determine any cause

and effect on streamflow from project operations from the evaluation of streamflow changes and the change in groundwater levels at different depth horizons. This work included outreach and interaction with stakeholders including the Bureau of Reclamation and departments that manage the San Joaquin River Restoration Project.

Well Design

Has assisted in the design and construction of groundwater monitoring and supply wells, conducted well interference analysis, capture zone analysis, aquifer test analysis, spinner test analysis, monitoring well network design, and source water protection program documents for CDPH supply well permit packages.

REPRESENTATIVE PROJECT

Project Manager for East Contra Costa Subbasin GSP

Implementation: Conducted an evaluation of potential sites for locating shallow monitoring wells for monitoring of potential interconnected surface water. Initial phase of work involved the design and construction of two shallow monitoring wells in two areas of the Subbasin identified as having groundwater dependent ecosystems and flowing streams. Subsequent phase of work will involve the design of deeper monitoring wells at the same two sites in order to monitor the response of groundwater levels and surface water flows to groundwater pumping patterns.

Environmental Analysis

Has conducted groundwater studies for project impact analysis under CEQA and NEPA. Projects include conjunctive use, aggregate mining, groundwater development, mitigation of seawater intrusion, and water transfers and exchanges. Has also prepared and reviewed monitoring and mitigation plans as part of environmental analysis documentation. Experience includes analysis of surface water and groundwater

quality impacts on beneficial uses such as agriculture, municipal and domestic, and environmental purposes.

Counties: Fresno, Madera, Stanislaus, Kern, San Francisco, San Mateo, Monterey, San Diego, Sacramento, Santa Cruz, San Luis Obispo, Los Angeles, Butte, Inyo, San Bernardino, Santa Barbara, Napa, Tulare, Yolo, and Placer.

Basins/Subbasins: Delta-Mendota, Westside, and Tulare Lake Subbasins, Napa Valley, West-side (San Francisco/San Mateo County), Soquel Valley, Pajaro Valley, Salinas Valley (including 180/400 Foot Aquifer, East Side Aquifer, Forebay Aquifer, Upper Valley Aquifer, Paso Robles Area, Seaside Area, Corral de Tierra Area), Santa Maria River Valley, Santa Ynez River Valley, Santa Clara River Valley, Upper Santa Ana Valley, Mission Valley, San Diego River Valley, West Butte, Yolo, South American, Modesto, Turlock, Kaweah, Kings, Kern County, Antelope Valley, Rose Valley, Fenner Valley, Cadiz Valley, and Bristol Valley.

TEACHING EXPERIENCE UC DAVIS EXT.

- Sustainable Groundwater Management Act and Groundwater Sustainability Plan Development and Implementation, April 2017
- Water Law and Hydrology, Annually 2016 to Present



ANDREW FRANCIS, GIT

Project Hydrogeologist

Years of Experience

6

Education

MS, Hydrogeology,
Illinois State University, Normal, IL

BS, Geology, Wittenberg
University, Springfield, OH

Professional Registrations

Geologist in Training
CA No. 1094

Professional Geologist
Idaho 1717; Oregon G2750

Professional Affiliations

- American Water Works Association
- American Geophysical Union
- Groundwater Resources Association

Andrew has six years of professional experience in groundwater consulting working on projects in California, Idaho, Oregon, and Utah. His expertise is in hydrogeological conceptualization. He has worked on multiple projects providing well design and construction oversight. Andrew is also well versed in GIS including geospatial analysis, mapping, and managing large geospatial datasets. He has worked in a variety of geologic settings including alluvial basins, volcanics, and bedrock terrains. A majority of his experience has been related to the development and implementation of Groundwater Sustainability Plans (GSPs) throughout California. This has included characterization of geologic and groundwater conditions, technical writing, and technical advisory committee participation.

EXPERIENCE

HYDROGEOLOGIC CONCEPTUALIZATION (CA)

Delta-Mendota Groundwater Sustainability Plans, Fresno County, CA: *Hydrogeologist/Project Hydrogeologist.* In order to comply with the Sustainable Groundwater Management Act (SGMA), many groundwater subbasin throughout California including the Delta-Mendota were required to develop a GSP. The Delta-Mendota Subbasin is comprised of six individual GSP's, two of which were prepared by LSCE (Farmers Water District and Fresno County). Andrew was lead on the developing the hydrogeological conceptual models, designing monitoring networks, and setting minimum thresholds and measurable objectives for the various groundwater sustainability indicators. He also was an active participant in the coordination meetings with the other Delta-Mendota GSP groups.

Andrew has also been involved with preparing annual reports for Farmers Water District and Fresno County.

Tehama County Groundwater Sustainability Plans: *Hydrogeologist.* Assisted with the development of four GSPs in Tehama County, CA. Analyzed shallow groundwater conditions for the identification of groundwater dependent ecosystems. This included utilizing publicly available database for well construction and water level data.

Westside (Westlands) Subbasin Groundwater Sustainability Plan, Fresno County, CA: *Hydrogeologist.* Assisted with the development of the Westside Subbasin GSP. Developed water level contours and storage change calculations for GSP annual reports.

Santa Clara River Valley Subbasin Groundwater Sustainability Plan, Los Angeles County, CA:

Hydrogeologist. Prepared groundwater conditions section for the Santa Clara River Valley Subbasin GSP. Presented (Zoom) at public workshops to interested stakeholders.

Indian Wells Valley GSP Support, Ridgecrest, CA:

Hydrogeologist. Prepared technical memoranda on hydrogeologic conditions in the Indian Wells Valley Subbasin.

Mendota Pool Group Transfer Program, Fresno County, CA:

Hydrogeologist. Assisted with the preparation of annual reports on groundwater and surface water conditions in the Mendota, California. Planned and conducted groundwater quality sampling events.

Ryer Island Drawdown Assessment, Solano County, CA:

Project Hydrogeologist. Performed analytical drawdown analysis for planned vineyard. Determined approximate pumping rate to drawdown water table below root zone.

Santa Clarita Water Agency (Formerly Castaic Lake Water Agency) Annual Water Supply Reporting, Santa Clarita, CA:

Hydrogeologist. Assisted with the preparation of annual water supply reports. Created water level contour maps, hydrographs, and evaluated groundwater quality data.

HYDROGEOLOGIC CONCEPTUALIZATION (ID, OR, UT)

Groundwater Baseline Report, Malheur County, OR:

Project Hydrogeologist. Provided revisions for Groundwater Baseline Report. Addressed comments provided by the Bureau of Land Management (BLM) and Oregon Department of Geology and Mineral Industries (DOGAMI). Presented revision to report to BLM and DOGAMI.

Idaho Landfill Well Siting, Adams County: Project

Hydrogeologist. Conducted a site visit and reviewed available geologic data to determine locations for monitoring wells. Prepared a technical memorandum providing well locations and rationale for those future well sites.

New Subdivision Groundwater Use/Drawdown Assessments, Various sites in Idaho: Project

Hydrogeologist. Conducted multiple drawdown analysis for new subdivision throughout Idaho. Determined the impact of new domestic wells on existing groundwater

conditions. Attended zoning hearings and community meetings to discuss the results of drawdown assessments.

Irrigation Well Testing, Rich County, UT: Project

Hydrogeologist. Performed pumping testing monitoring flow rate and water levels to determine well capacity. Reviewed available geologic information and made recommendation for new well location. Prepared memo documenting well testing and proposed well locations.

Hart Mountain National Antelope Refuge Downhole

Video Log and Well Reconnaissance, Plush OR: *Project Hydrogeologist.* Performed downhole video log on existing well and provided recommendation for new well location

WELL DESIGN/OVERSIGHT

City of Lathrop ASR Feasibility Study – Monitoring

Well Permitting and Design, Lathrop, CA: *Project Hydrogeologist.* Prepared permits and provided specifications for monitoring well design as a part of an aquifer storage and recovery project.

City of Meridian Municipal Supply Well, Meridian,

ID: *Project Hydrogeologist.* Provided oversight for well construction and well testing and prepared well completion report for City of Meridian public supply well.

City of Kuna Test Well and Municipal Supply Well,

Kuna, ID: *Project Hydrogeologist.* Provide well design, construction and testing oversight, and prepared well completion report for test and a public supply well for the City of Kuna.

Buckeye Farms Irrigation Wells, Hagerman, ID: Project

Hydrogeologist. Provided construction and well testing oversight for two large irrigation well (~8-10 CFS).

City of Boise Well Park Well Cleaning, Boise, ID: Project

Hydrogeologist. Performed downhole video survey, developed specification, and oversaw well cleaning for park well that lost production due to clogged screens. Methods included bailing, swabbing, packer pumping, and chemical cleaning.

Pre-Engineering Report for Crouch Community Church,

Crouch, ID: *Project Hydrogeologist.* Conducted site visit, pumping test, and prepared preliminary engineering report for previously constructed public supply well confirming all regulatory requirements were met.

Pre-Engineering Report for Oregon Military Department, Boardman, OR: *Project Hydrogeologist.*

Conducted site visit, pumping test, and prepared preliminary engineering report for previously constructed public supply well confirming all regulatory requirements were met.

Pre-Engineering Report for Idaho Power Fish Hatcher, Wendell, ID: *Project Hydrogeologist.* Conducted site visit and prepared preliminary engineering report for planned public supply well.

GIS

Boise River (Barber Pool) Bathymetry Mapping, Boise ID: *Project Hydrogeologist.* Bathymetry mapping of the Boise River utilizing LIDAR data from the Idaho Lidar Consortium.

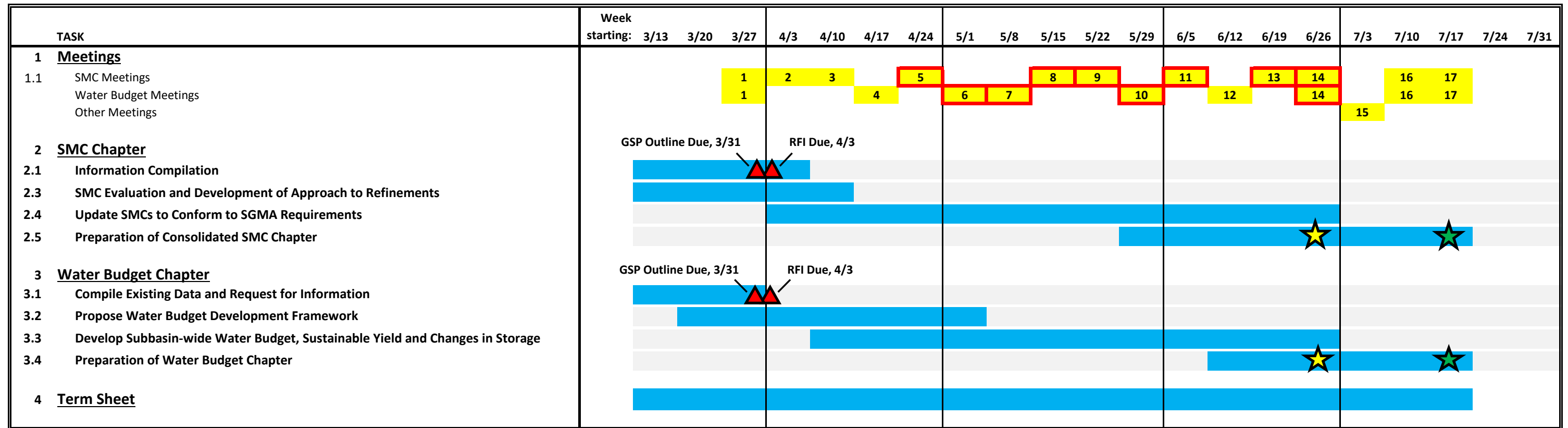
PUBLICATIONS

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Figure 1. Schedule for Delta-Mendota Subbasin Response to DWR Inadequate Determination



Legend:

-  Draft Section/Chapter Deliverable
-  Final Section/Chapter Deliverable
-  Requested Item from GSP Groups
-  Meeting presenting technical information; feedback needed within 1 week after meeting

Notes:

(1) Meetings under Task 1 are identified by their meeting number, corresponding to the meeting list on Table 1.

Draft Timeline: 2025 Plan Update for Coordination Committee

- January 9, 2022: Staff submits draft of example “simplified language” (from Common Chapter) for possible adjustments to 2025 Plan update. Review updated draft budgets for fund 63. Review of items needed for Annual Report. Review statutory requirements for the 2025 Plan updates and DWR’s latest Plan update recommendations.
- February 13, 2023: ~~Continue GSP draft simplified language review and make recommendations.~~ Begin discussions on how to address public comments received on GSP and revisions in the 2025 Plan Updates. Review of any released DWR GSP Determinations on other Subbasins for possible relevance to D-M Subbasin. Draft a workplan for 2025 GSP updates including assignments to specific GSAs and consultants. Begin review of Annual Report Data for the 2025 Plan Updates. Refine 2025 GSP update workplan.
- March 13, 2023 ~~Continue GSP draft simplified language review and recommendations.~~ Refine workplan for 2025 GSP updates. Review and approve WY 2022 Annual Report. Begin to analyze data from annual report for the 2025 Update.
- April 10, 2023: ~~Finalize review of DWR comments and recommended actions and incorporate into 2025 GSP update workplan. Finalize workplan including specific assignments for individual GSAs, GSP groups, and consultant tasks.~~ Draft RFP for selecting Plan Update consultant. Schedule meeting with DWR to discuss Plan Update process and procedures.
- May 1, 2023: Issue RFP for Northern & Central Delta-Mendota Subbasin GSP 2025 Update. Staff/GSA/group analysis of “Basin” and “Setting” Chapters and DWR recommended actions. Further review of staff “simplified” text approach. Solicit feedback from DWR on simplified approach.
- May 31, 2023: Deadline for 2025 Update RFP Responses from Consultants. Continue discussions on Coordination Agreement revisions.
- June 1-15 2023: Subcommittee meets to select consultant(s) to interview for 2025 NCDMS Plan Update. Interview consultant(s) for 2025 NCDM GSP Update.
- June 15-30 2023: Select consultant to perform specific tasks for 2025 NCDM GSP Update. Execute Fiscal Year task order. Consultant performs analysis of (any) DWR Plan Update guidance documents, recommended actions, and task/subtask lists and assignments including responses to comments. If needed, schedule meeting with DWR staff to discuss Plan Update items.

- July 10, 2023: Deadline for consultant data adjustments for 2025 CC Update “Plan Area” and “Settings” Chapters. Begin outline of responses to “general comments.” Begin review and discussions of Subbasin Water Budget and Sustainable Yield with Coordination Committee/TWG. Review of staff “simplified language” proposed changes. Review GSA/GSP group, staff, and consultant task list and timelines.
- August 14, 2023: Continue Water Budget and Sustainable Yield discussions with CC/TWG. Address DWR recommended actions. Finalize WQ section if able and begin discussions on CC Interconnected Surface Water SMC and Table. Meet with DWR to discuss Update progress and proposed changes.
- September 11, 2023: Finish water budget and sustainable yield with CC/TWG and incorporate into NCDM GSP. Incorporate WQ SMC and Table (if not already done) and/or Interconnected Surface Water SMC and table (see above). If able, begin discussions on Chronic Lowering of Groundwater. Address DWR recommended actions.
- October 9, 2023: Finalize Interconnected Surface Water SMC and Table (if not already done) and/or Chronic Lowering of Groundwater SMC and Table. Review tasks lists for GSAs, GSP groups, staff, and consultants for schedule. Review and identify any new priorities for next fiscal year’s budget. Address DWR recommended actions. Meet with DWR to discuss Update progress and proposed changes. Review GSA/GSP group, staff, and consultant task list and timelines.
- November 13, 2023: Finalize Chronic Lowering of groundwater SMC and table. Begin discussions of Reduction in Groundwater Storage SMC and Table. Continue review of budget. Address DWR recommended actions. Review items needed for Annual Report.
- December 11, 2023: Continue discussions of Reduction in Storage SMC and Table. Approve next fiscal year’s budget. Continue to review simplified language efforts. Address DWR recommended actions (if needed). Meet with DWR to discuss Update progress and changes.
- January 8, 2024: Finalize Reduction in Storage SMC and Table. Begin discussions of SMC and Table for Subsidence. Address DWR recommended actions (if needed). Review staff edits for simplified language. Review GSA/GSP group, staff, and consultant task list and timelines.
- February 12, 2024: Continue discussions of SMC and Table for Subsidence. Address DWR recommended actions (if needed). Meet with DWR to discuss Update progress and changes.

March 11, 2024:	Finalize SMC and Table for Subsidence. Begin planning public meetings on 2025 update. Finalize action on DWR recommended actions (if needed). Create draft presentation on Update changes. Meet with DWR to discuss Update progress and changes.
April 8, 2024:	Buffer month for tying up loose ends. Possibly begin public meeting roadshow. Review simplified language changes and refine draft presentation. Review GSA/GSP group, staff, and consultant task list and timelines.
May 13, 2024:	Begin holding public meetings on 2025 GSP update in Cooperation with the Coordination Committee. Note attendance and comments. Final review of GSA/GSP group task assignments and completion.
June 10, 2024:	Continue public meetings. Finalize draft Coordination Agreement revisions. Continue GSP simplified language revisions. Meet with DWR to discuss Update progress and changes.
July 8, 2024:	Continue Public Meetings. Continue individual GSP revisions. Coordination agreement out for GSA/GSP approval.
August 12, 2024:	Deadline for final review of CC, GSPs, and response to comments. Continue public meetings.
September 9, 2024:	Final approval of GSP 2025 Update.
Sept./Oct. 2024:	Begin public notices, public hearings, and formal approval at GSA level for final 2025 Common Chapter and individual GSP updates.
January 23, 2025:	Submit 2025 GSP Updates including Common Chapter, other appendices, and Coordination Agreement.

Table 1: Northern & Central Delta-Mendota GSP Implementation Commitments - in Text of Groundwater Sustainability Plan

Task	Activity	Related	GSP Deadline	GSP Reference ^(a)	Status as Reported in WY2021 Annual Report	Comments	Status of Activities ^(b)
1	Update/refine monitoring network as new wells are constructed and well construction information is obtained						
1a	Well Census and Inventory project	--	2025	--	Completed in February 2022	Reconciliation of Well Census and Inventory information with update to SGMA monitoring network remains to be done.	Additional changes to NCDM representative monitoring network (RMN) will be necessary as additional wells were removed from the RMN during 2022 sampling events.
1b	Video log 14 wells that are missing well construction information	--	2025	NCDM GSP Section 7.2.5.1.6	N/A	Identified as an optional task in Well Census and Inventory project scope but not performed.	--
1c	Determine if video-logged wells are appropriate to add to the [SGMA] monitoring network	1a	2025	CC Section 4.2.8; NCDM GSP Sections 5.3.8 and 7.2.5.1.6	N/A	--	--
2	Establish ISW SMC as a rate or volume of surface water depletions						
2a	Install five additional ICSW monitoring wells adjacent to the San Joaquin River	--	2025	CC Section 4.2.8; NCDM GSP Section 5.3.8	N/A	\$929,400 awarded to Subbasin in SGMA Round 1 Implementation Grant for data gap filling efforts, including installation of at least one (1) and up to four (4) ICSW monitoring wells in the NCDM region.	SGMA Round 1 Funding Agreement executed with DWR on 10/7/22. Consultant RFP issued, contracting in progress. Funding for additional ISW wells in NCDM was included in SGMA Round 2 Grant Application submitted on 12/16/22.
2b	Collect and analyze data from ICSW monitoring wells	2a	2030	CC Section 4.2.8; NCDM GSP Section 5.3.8	N/A	Limited data collection and analysis to date.	--
3	GDE mapping						
3a	Analyze locations of potential GDEs using recent groundwater elevation/depth contour mapping	--	2025	CC Section 4.2.8; NCDM GSP Section 5.3.8	N/A	Limited/no data collection and analysis to date.	--
4	Re-evaluate land subsidence SMC considering new data and studies						
4a	Collect and analyze subsidence data from 2020-2025 and identify where there are spatial data gaps	--	2025	CC Section 4.2.8	Ongoing, data collected WY2020 and 2021	Completed <i>Conceptual Master Plan for Subsidence Monitoring and Management for the Delta-Mendota Subbasin</i> in June 2022.	Two NCDM GSAs performed subsidence monitoring at end of 2022. USBR survey planned for Dec. 2023.
4b	Work with USBR to revise CVHM2 model to simulate interactions between groundwater extractions and land subsidence	--	2025	CC Section 5.4.4	N/A	Intermittent coordination meetings have occurred between SLDMWA, GSAs, and USBR.	Reviewed groundwater model with USBR & USGS on 12/12/2022. Model likely not available for release until later in 2023.
4c	Determine portion of subsidence caused by groundwater extraction within and outside the Subbasin at each RMS	4a, 4b	2025	NCDM GSP Section 6.3.5.3	N/A	\$929,400 awarded to Subbasin in SGMA Round 1 Implementation Grant for portion of data gap filling efforts, including subsidence monitoring.	SGMA Round 1 Funding Agreement executed with DWR on 10/7/22. Consultant RFP for subsidence monitoring in progress.
4d	Review and revise HCM to incorporate new subsidence data, including AEM survey and results from the subsidence study	4a, 4c	2025	CC Section 5.4.4; NCDM GSP Section 6.3.5.3	N/A	Limited/no analysis to date.	--
4e	Assess allowable land subsidence on a Subbasin and localized basis	4a, 4c, 4d	2025	CC Section 5.4.4; NCDM GSP Section 6.3.5.3	N/A	Limited/no analysis to date.	--
4f	Conduct an updated subsidence DMC Conveyance Capacity Analysis	--	2025	NCDM GSP Section 5.3.8	N/A	SLDMWA led effort. SLDMWA noted that work has been done to create a model in HEC-RAS and an EIR for Subsidence Correction Project is expected to be complete mid-2023.	--

Table 1: Northern & Central Delta-Mendota GSP Implementation Commitments - in Text of Groundwater Sustainability Plan

Task	Activity	Related	GSP Deadline	GSP Reference ^(a)	Status as Reported in WY2021 Annual Report	Comments	Status of Activities ^(b)
5	Refine/update water budget and sustainable yield estimates						
5a	Establish additional CIMIS and/or other weather stations to define spatial variability of precipitation and evapotranspiration	--	2025	NCDM GSP Section 5.3.8	N/A	Limited/no analysis to date.	--
5b	Reconciliation of water budget nomenclature in individual GSPs with terminology used in the Common Chapter	--	2025	CC Section 4.3.1	N/A	Limited/no analysis to date.	--
5c	Improve estimated allocation of groundwater extraction between two aquifers (based on well construction information and inventory projects completed by GSAs in 2022)	1a, 1b	2025	CC Section 4.3.1	N/A	Limited/no analysis to date. Reconciliation of Well Census and Inventory information with update to pumping estimates remains to be done. Some GSAs have initiated efforts to register wells and require metering/water use reporting, but incomplete records to date.	--
5d	Improve storage estimates of each aquifer using data collected from 2020-2025	--	2025	CC Section 4.3.1	N/A	Limited/no analysis to date.	--
6	Update Sustainable Management Criteria						
6a	Develop short-term (acute) thresholds for Chronic Lowering of Groundwater Levels	--	2025	CC Section 5.4.1; NCDM GSP Section 6.3.1.2	N/A	Limited/no analysis to date.	--

Abbreviations:

- | | |
|-------------------------------------------------------------|-----------------------------------------------------|
| AEM = Airborne Electromagnetic | N/A = Not Applicable |
| CC = Common Chapter | NCDM = Northern & Central Delta-Mendota |
| CIMIS = California Irrigation Management Information System | PID = Patterson Irrigation District |
| CVHM2 = Central Valley Hydrologic Model, Version 2 | RMS = Representative Monitoring Site |
| DMC = Delta-Mendota Canal | SGM = Sustainable Groundwater Management |
| EIR = Environmental Impact Report | SGMA = Sustainable Groundwater Management Act |
| GDE = Groundwater Dependent Ecosystem | SLDMWA = San Luis and Delta-Mendota Water Authority |
| GSA = Groundwater Sustainability Agency | SMC = Sustainable Management Criteria |
| GSP = Groundwater Sustainability Plan | USBR = United States Bureau of Reclamation |
| HCM = Hydraulic Conceptual Model | WSID = West Stanislaus Irrigation District |
| ICSW = Interconnected Surface Water | WY = Water Year |

Notes:

- (a) Commitments identified in this table were made in either the 2022 Amended NCDM GSP or Common Chapter for the Delta-Mendota Subbasin GSPs.
- (b) Based upon information communicated by GSAs.
- (c) A yellow highlighted row indicates that the activity was not included in the 2020 GSP submittal and was added during the 2022 GSP revision process.

Table 2: Northern & Central Delta-Mendota GSP Implementation Commitments - Projects

Tier ^(a)	Project ^(b)	Project Proponent	Implementation Start Date	Estimated Cost	Status as Reported in WY2021 Annual Report ^(c)	Comments ^(d)	Status of Activities ^(e)
1	Los Banos Creek Recharge and Recovery Project	San Luis Water District	February 2020	\$9,116,374	Preliminary design completed in 2018; additional steps pending funding for CEQA, design, and construction.	\$1,000,000 awarded in SGMA Round 1 Implementation Grant.	SGMA Round 1 Funding Agreement executed with DWR on 10/7/22.
1	Orestimba Creek Recharge and Recovery Project	Del Puerto Water District	February 2020	\$7,923,450	CEQA/NEPA complete; design anticipated complete in early Spring 2022; Construction anticipated complete by end of 2023.	--	Design complete in October 2022.
1	North Valley Regional Recycled Water Program (NVRWP) – Modesto and Early Turlock Years	Del Puerto Water District	February 2020	\$96,000,000	Completed Turlock and Modesto components in March 2020; Ceres component in progress, funding requested through SGMA Round 1 Implementation Grant; anticipated completion in 2023.	Portions of project are completed. \$250,150 awarded in SGMA Round 1 Implementation Grant.	SGMA Round 1 Funding Agreement executed with DWR on 10/7/22.
1	City of Patterson Percolation Ponds for Stormwater Capture and Recharge	City of Patterson	February 2020	\$7,800,000	Project still in conceptual and EIR phase (linked to planned development); preliminary design to occur in 2022.	--	Preliminary design initiated and in progress.
1	Kaljia Drainwater Reuse Project	San Luis Water District	February 2020	\$16,500,000	Preliminary design and CEQA/permitting in progress; design planned for 2023-2025, construction planned to start in 2025.	--	--
1	West Stanislaus Irrigation District Lateral 4-North Recapture and Recirculation Reservoir	West Stanislaus Irrigation District	February 2020	\$1,120,000	FS completed in Sept 2021; design anticipated to take 8 months with CEQA in parallel.	\$250,150 awarded in SGMA Round 1 Implementation Grant.	SGMA Round 1 Funding Agreement executed with DWR on 10/7/22. Construction planned to start in late 2024.
1	Revision to Tranquillity Irrigation District Lower Aquifer Pumping	Tranquillity Irrigation District	February 2020	\$0	Well Water Operations Plan established in 2017 and implemented on an annual basis.	--	--
2	Del Puerto Canyon Reservoir Project	Del Puerto Water District	January 2026	\$491,300,000	30% preliminary design anticipated to be complete in 2022; CEQA completed in October 2020; NEPA to be completed fall 2024; 100% design and permitting anticipated complete in 2024; construction anticipated complete in 2028.	--	--
2	Little Salado Creek Groundwater Recharge and Flood Control Basin	Stanislaus County	January 2026	\$7,710,000	Scheduled for development in subsequent phases of the overall CLIBP project.	--	--
2	Patterson Irrigation District Groundwater Bank and/or Flood MAR-type Project	Patterson Irrigation District	January 2026	TBD	Consultant retained for FS; acquired small potential property.	--	--
2	West Stanislaus Irrigation District Lateral 4-South Recapture and Recirculation Reservoir	West Stanislaus Irrigation District	January 2026	\$1,500,000	Preliminary design complete in September 2021.	Partially funded under IRWM grant.	--
2	Ortogonalita Creek Groundwater Recharge and Recovery Project	San Luis Water District	January 2026	TBD	N/A	Partially funded under IRWM grant.	Funding request was included in SGMA Round 2 Grant Application.

Abbreviations and Notes provided on page 2

Table 2: Northern & Central Delta-Mendota GSP Implementation Commitments - Projects

Abbreviations:

CEQA	= California Environmental Quality Act
CLIBP	= Crows Landing Industrial Business Park
EIR	= Environmental Impact Report
FS	= Feasibility Study
IRWM	= Integrated Regional Water Management
MAR	= Managed Aquifer Recharge
N/A	= Not Applicable
NCDM	= Northern & Central Delta-Mendota
NEPA	= National Environmental Policy Act
SGM	= Sustainable Groundwater Management
TBD	= To Be Determined
USBR	= United States Bureau of Reclamation
WY	= Water Year

Notes:

- (a) Projects and Management Actions divided into Tiers (pg 7-1 of Revised GSP):
- Tier 1 – Near-term projects and management actions that the Groundwater Sustainability Agencies (GSAs) are committed to implementing at this time. These projects and management actions are either currently in the process of being implemented or could be implemented in the near future (constructed and operational) within the next five years (by 2025).
- Tier 2 – Projects and management actions that have been identified and require further development before implementation can occur. It is anticipated that these projects and management actions could be developed over the next five years and implemented beginning in 2026 or later, pending re-evaluation prior to the 5-year GSP Update in 2025.
- Tier 3 – Longer-term projects and management actions that may be implemented in the future as needed. Many of these projects are outside of the GSAs' control but could have implications on surface water availability and/or are additional projects/management actions that could be implemented under an adaptive management approach. For purposes of this analysis, did not include the Tier 3 projects listed in the GSP (because implementation of the identified projects is driven by others).
- (b) Project information obtained from Section 7 of the 2022 amended NCDM GSP.
- (c) Consolidated WY 2021 Annual Report dated March 2022, incorporating updated information obtained from GSAs in 3Q2022 GSP Implementation Tracking Tools.
- (d) Per SGMA Budget Spending Plan circulated by John Brodie on 12 August 2022, NCDM was awarded a total of \$1,500,300 from SGMA Round 1 grant to Subbasin.
- (e) Based upon information communicated by GSAs.

Table 3: Northern & Central Delta-Mendota GSP Implementation Commitments - Management Actions

Tier ^(a)	Responsible GSAs	Status of Activities ^(d)	Status as Reported in WY2021 Annual Report ^(c)	Notes
1	Lower Aquifer Pumping Rules for Minimizing Subsidence			
	Central Delta-Mendota GSA	Developed draft administrative policy for well metering and reporting. Adopted policy in January 2023.	GSAs have coordinated on developing Lower Aquifer pumping rules. A few GSAs do not extract from Lower Aquifer.	Limited/no analysis or discussion to date. GSA efforts to require metering and reporting of pumping are continuing. This pumping data, coupled with the Well Census and Inventory Report, could be used to better understand the location and distribution of pumping.
	City of Patterson GSA			
	DM-II GSA	DPWD: developed draft groundwater well registration and metering policy.		
	Northwestern Delta Mendota GSA	Stanislaus & Merced County permits for new extraction wells require metering and reporting.		
	Oro Loma Water District GSA			
	Patterson Irrigation District GSA	Adopted ordinance requiring the registration of wells and reporting of pumping.		
	West Stanislaus Irrigation District GSA	Adopted ordinance requiring the registration of wells and reporting of pumping.		
	Widren Water District GSA	Two operational WWD Upper Aquifer (no Lower Aquifer) supply wells are equipped with meters.		
1	Maximize Use of Other Water Supplies			
	Central Delta-Mendota GSA	SNCWD: Signed partial agreement with USBR for CVP supply; additional USBR contracting planned.	N/A	No formal policies implemented.
	City of Patterson GSA	Evaluating stormwater recharge project (tied to development).		
	DM-II GSA	DPWD: developed draft Policy to maximize other water supplies.		
	Northwestern Delta Mendota GSA			
	Oro Loma Water District GSA			
	Patterson Irrigation District GSA	Surface water is preferred by local growers.		
	West Stanislaus Irrigation District GSA	Financial incentive for grower initial use of surface water.		
	Widren Water District GSA			
1	Increasing GSA Access to and Input on Well Permits			
	Central Delta-Mendota GSA	Merced updated its well permitting process.	GSAs have coordinated on increasing GSA participation in well permitting process.	Governor's EO N-7-22 regarding well permitting provides some clarity and authority. Merced County and Stanislaus County have updated their well permitting process and requirements.
	City of Patterson GSA			
	DM-II GSA			
	Northwestern Delta Mendota GSA	Merced updated its well permitting process. Stanislaus well permitting process being updated.		
	Oro Loma Water District GSA			
	Patterson Irrigation District GSA			
	West Stanislaus Irrigation District GSA			
	Widren Water District GSA			
1	Drought Contingency Planning in Urban Areas			
	City of Patterson GSA	Conducted contingency planning described in adopted 2020 UWMP.	Conducted as part of UWMP.	--
1	Fill Data Gaps			
	Central Delta-Mendota GSA		N/A	See "Implementation Activities" tab for specific data-gap filling efforts. SGMA Round 1 Implementation Grant awarded \$929,400 to Subbasin for Data Gaps and Monitoring. Issued RFP, with consultant contracting in progress. Additional ISW wells in NCDM included in SGMA Round 2 Grant Application submitted on 12/16/22.
	City of Patterson GSA	Conducted subsidence monitoring and added well to monitoring network. Improving well metering.		
	DM-II GSA	DPWD serving as grantee for SGMA Round 1 Implementation Grant.		
	Northwestern Delta Mendota GSA			
	Oro Loma Water District GSA			
	Patterson Irrigation District GSA	Improving pumping data collection. Lead for ISW component of SGMA Round 2 Grant Application.		
	West Stanislaus Irrigation District GSA			
	Widren Water District GSA			

Abbreviations and Notes provided on page 2

Table 3: Northern & Central Delta-Mendota GSP Implementation Commitments - Management Actions

Abbreviations:

CDM = Central Delta-Mendota	N/A = Not applicable
CVP = Central Valley Project	PID = Patterson Irrigation District
DPWD = Del Puerto Water District	SGM = Sustainable Groundwater Management
EO = Executive Order	USBR = United States Bureau of Reclamation
GSA = Groundwater Sustainability Agency	UWMP = Urban Water Management Plan
GSP = Groundwater Sustainability Plan	WSID = West Stanislaus Irrigation District
NCDM = Northern & Central Delta-Mendota	WY = Water Year

Notes:

- (a) Projects and Management Actions divided into Tiers (pg 7-1 of 2022 Amended NCDM GSP):
 - Tier 1 – Near-term projects and management actions that the Groundwater Sustainability Agencies (GSAs) are committed to implementing at this time. These projects and management actions are either currently in the process of being implemented or could be implemented in the near future (constructed and operational) within the next five years (by 2025).
 - Tier 2 – Projects and management actions that have been identified and require further development before implementation can occur. It is anticipated that these projects and management actions could be developed over the next five years and implemented beginning in 2026 or later, pending re-evaluation prior to the 5-year GSP Update in 2025.
 - Tier 3 – Longer-term projects and management actions that may be implemented in the future as needed. Many of these projects are outside of the GSAs’ control but could have implications on surface water availability and/or are additional projects/management actions that could be implemented under an adaptive management approach.
- (b) Management Action information obtained from Section 7 of the 2022 Amended NCDM GSP.
- (c) Consolidated WY 2021 Annual Report dated March 2022, incorporating information provided by GSAs in 3Q2022 GSP Implementation Tracking Tools. WY 2022 Annual Report is not yet available at time of table preparation and update.
- (d) Based upon information communicated by GSAs.

Table 4: Northern & Central Delta Mendota GSP Implementation - Status of Well Ordinances

Organization	Ordinance Identification	Ordinance Date	Text
Fresno County	Ordinance No. 00-13	September 2000	Section 14.03.090 - Conditions of permit approval. "C. If requested by the county, the permittee shall share with the county groundwater monitoring information and data, and, where practicable, the parties shall coordinate their groundwater management efforts to effectively monitor groundwater resources throughout the county"
Merced County	Ordinance No. 1930 An Ordinance to Prevent the Mining and Export of Groundwater from the Unincorporated Portions of Merced County	March 2015	Section 9.27.065 - Groundwater Monitoring & Reporting "A. Monitoring. All new permits for wells or groundwater exports under the scope of this ordinance shall be measured by a properly installed and maintained water measuring device satisfactory to the Department of Public Health, Division of Environmental Health. As an alternative to water measuring devices, other reasonable methods to determine groundwater extraction may be used if approved by the Department of Public Health, Division of Environmental Health. B. Reporting. All persons, including Public Works Agencies, that extract groundwater within the County shall cause to be prepared and submitted to the Department of Public Health, Division of Environmental Health, annual reports of groundwater information that are necessary to monitor the existing condition of groundwater resources within the County....The required information to be reported shall include without limitation water level and pumping data...."
Stanislaus County	Ordinance CS 1155, Section 9	2014	Section 9.37.065 - Groundwater Monitoring. "A. All persons, including public water agencies that extract groundwater within the county shall cause to be prepared and submitted to the county department of environmental resources periodic reports of groundwater information that are reasonably necessary to monitor the existing condition of groundwater resources within the county, to determine trends, or to develop effective sustainable groundwater management plans and policies. A de minimis extractor shall not be required to submit such information. B. The department shall develop and recommend regulations to be adopted by the board that establish the frequency and timing of required reports, and the required information to be monitored, including, without limitation, water level and pumping data, or other data necessary for any other method to determine groundwater production."
Patterson Irrigation District	Resolution 05-2020: Patterson Irrigation District Groundwater Sustainability Agency Rule Regarding Irrigation Well Meters	15 April 2020	"The owner of any Groundwater Extraction Facility within the PID GSA must register that Groundwater Extraction Facility with the PID GSA... ...The owner of every Groundwater Extraction Facility within the PID GSA must measure use of that Groundwater Extraction Facility by a water-measuring device (Meter) satisfactory to the PID GSA... ...Meters must be installed on all Groundwater Extraction Facilities by January 1st, 2021."
West Stanislaus Irrigation District	West Stanislaus Irrigation District Groundwater Sustainability Agency Policy Regarding Irrigation Well Meters	2020	"The owner of any Groundwater Extraction Facility within the WSID GSA must register that Groundwater Extraction Facility with the WSID GSA... ...The owner of every Groundwater Extraction Facility within the WSID GSA must measure use of that Groundwater Extraction Facility by a water-measuring device (Meter) satisfactory to the WSID GSA. Meters must be installed on all Groundwater Extraction Facilities by January 1st, 2021. The meter shall measure all flow rate in gallons per minute, or cubic feet per second and totalize total extractions in gallons, cubic feet, or in acre-feet."

Table 4: Northern & Central Delta Mendota GSP Implementation - Status of Well Ordinances

Organization	Ordinance Identification	Ordinance Date	Text
Del Puerto Water District	Draft Groundwater Well Metering Policy	15 June 2022	Covers well registration, metering, access, costs, semi-annual reporting, maintenance, and exclusions. Packets to be sent to customers explaining the new well registration and metering policy requirements in the near future.
City of Patterson	Ordinance No. 348, Section 1	1981	13.20.010 Private wells - Construction prohibited. No person, firm or corporation may drill, dig or install a water well in the city for any purpose whatsoever, save and except the Patterson City Water Company.
Central Delta-Mendota GSA	Central GSA Resolution Nos. 2021-01 and 2021-02	25 January 2021	Adopted two Resolutions on 25 January 2021: require registration of all wells by 4/1/2021, impose fee for late registration. Developed draft Well Metering and Reporting Policy in 2022 to require installation of meters on production wells within the GSA and reporting of pumped groundwater volumes. Adopted Policy Number Two in January 2023.
Widren Water District	N/A	N/A	N/A. The two operational supply wells in WWD are equipped with meters.

Abbreviations:

- GSA = Groundwater Sustainability Agency
- GSP = Groundwater Sustainability Plan
- N/A = Not Applicable
- NCDM = Northern & Central Delta-Mendota
- No. = Number
- PID = Patterson Irrigation District
- SGMA = Sustainable Groundwater Management Act
- WSID = West Stanislaus Irrigation District

Notes:

- (a) Online search for ordinances adopted by NCDM GSAs and member agencies performed in August 2022.
- (b) Note that County Ordinances are also discussed in Section 2.3.2 of the 2022 Amended NCDM GSP. Discussion speaks more to permitting process for well construction/destruction and less to measuring of pumped groundwater.

GSP Implementation Schedule Northern & Central Delta-Mendota GSP Region

3-MONTH LOOK-AHEAD SCHEDULE

TASK	RESPONSIBLE PARTY	START	END	MAR					APR				MAY				JUNE					
				WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	
BASIN-SCALE COORDINATION																						
Annual Report																						
WY2022 DM Consolidated Annual Report	W&C / Basin GSAs	10/10/22	4/1/23																			
Intra-Basin Coordination																						
Subbasin Coordination Committee	Basin GSAs		Bi-Monthly																			
DM Technical Working Group	Basin GSAs		As-needed																			
Respond to Inadequate Determination from DWR	Basin GSAs / EKI	3/2/23	9/29/23																			
SGM Implementation Grant																						
Perform SGM Round 1 Grant Approved Activities	Basin GSAs	10/7/22	4/30/25																			
N-C REGION COORDINATION / ADMINISTRATION																						
N-C Coordination Meetings																						
Northern and Central Region Mngmt Committees Meetings	GSAs		Monthly																			
Northern Region Management Committee Meetings	GSAs		As-needed																			
Central Region Management Committee Meetings	GSAs		As-needed																			
Technical/Finance Working Group Meetings	GSAs		TBD																			
GSP Progress Checks																						
GSP Implementation Progress Reports (Tracking Tools)	GSAs		Semi-Annual																			
Quarterly GSP Implementation Update Reports	W&C		Quarterly																			
N-C REGION GSP IMPLEMENTATION																						
Water Level Monitoring																						
Collect Spring Water Level Data	GSAs / SLDMWA	2/1/23	4/30/23																			
Data QA/QC	GSAs / W&C	4/30/23	5/31/23																			
Install New Monitoring Wells	GSAs	7/1/20	12/31/23																			
Water Quality Monitoring																						
Collect Water Quality Data	GSAs	5/1/23	8/31/23																			
Data QA/QC	GSAs / W&C	7/31/23	9/30/23																			
Data Consolidation/Upload to DMS	GSAs / W&C	7/31/23	9/30/23																			
Interconnected Surface Water Monitoring																						
Install/Identify New Monitoring Wells	WSID / PID / NWDM	3/1/20	6/30/23																			
Meet with Adjoining GSP Groups	WSID / PID / NWDM		As-needed																			
Projects^(a)																						
Los Banos Creek Recharge and Recovery Project	SLWD	In design	TBD																			
Kaljia Drainwater Reuse Project	SLWD	PD in 2022	TBD																			
Orestimba Creek Recharge and Recovery Project	DPWD	In design	12/31/23																			
NVRRWP – Increased Modesto and Turlock Portions ^(b)	DPWD		Complete																			
Percolation Ponds for Stormwater Capture and Recharge	City of Patterson	PD in 2023	TBD																			
WSID Lateral 4-North Recapture and Recirculation Reservoir ^(c)	WSID	Design in 2023	Est. 2024																			
Revision to TRID Lower Aquifer Pumping ^(d)	TRID		On-going																			

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Management Actions^(a)																							
Lower Aquifer Pumping Rules for Minimizing Subsidence	GSAs	6/25/20	12/31/23																				
Maximize Use of Other Water Supplies	GSAs	6/25/20	10/31/24																				
Increasing GSA Access to and Input on Well Permits	GSAs	6/11/20	12/31/23																				
Drought Contingency Planning in Urban Areas	GSAs	Complete																					
Fill Data Gaps	GSAs	2/1/20	4/30/25																				
Additional GSP Activities																							
USGS / Basin Model	USGS/USBR	3/1/20	TBD																				
Develop 2025 GSP Update	GSAs / TBD	1/1/23	10/31/24																				
Project Management and Communication	SLDMWA / EKI	3/1/23	2/29/24																				
As-Needed Technical Support	EKI / W&C	3/1/23	2/29/24																				

Abbreviations

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|-----------------------------------------|-------------------------------------------------------|---------------------------------------------------|--------------------------------------------|
| DMS = Data Management System | GSP = Groundwater Sustainability Plan | QA/QC = Quality Assurance/Quality Control | USBR = United States Bureau of Reclamation |
| DM = Delta Mendota | NVRRWP = North Valley Regional Recycled Water Program | SLDMWA = San Luis & Delta-Mendota Water Authority | USGS = United States Geological Survey |
| DPWD = Del Puerto Water District | P&MA = Projects and Management Actions | SLWD = San Luis Water District | W&C = Woodard & Curran |
| EKI = EKI Environment & Water, Inc. | PD = Preliminary Design | TBD = to be determined | WSID = West Stanislaus Irrigation District |
| FS = Feasibility Study | PID = Patterson Irrigation District | TRID = Tranquillity Irrigation District | WY = Water Year |
| GSA = Groundwater Sustainability Agency | P&P = Provost & Pritchard | TWG = Technical Working Group | |

Notes

- (a) Projects and Management Actions extend through 2025.
- (b) Portion of project is complete. Increased supply of recycled water expected.
- (c) Needs to be coordinated with Orestimba and Del Puerto Creek projects.
- (d) In operation starting in 2017.

Key Dates

- March 21, 2023: Subbasin Coordination Committee Meeting
- March 21, 2023: Northern & Central Delta-Mendota Management Committees Meeting
- April 1, 2023: WY 2022 Consolidated Annual Report Due to DWR**
- April 10, 2023: Subbasin Coordination Committee Meeting
- April 27, 2023: Northern & Central Delta-Mendota Management Committees Meeting
- May 8, 2023: Subbasin Coordination Committee Meeting
- May 25, 2023: Northern & Central Delta-Mendota Management Committees Meeting

Funding Opportunities – Updated 3/18/2023

Multibenefit Land Repurposing Program

This program will fund groundwater sustainability projects that reduce groundwater use, repurpose irrigated agricultural land, and provide wildlife habitat. Funding is intended to increase regional capacity to repurpose agricultural land to reduce reliance on groundwater while providing community health, economic wellbeing, water supply, habitat, and climate benefits. Four regional block grants of up to \$8.9 million each to a total of \$40 million available in Round 2. Department of Conservation. Deadline 3/29/23

Integrated Climate Adaptation and Resiliency Program Climate Adaptation Planning Grant

The program provides flexible funding to meet multi-sector/issue planning needs that intersect with climate risks, including but not limited to land use, transportation, housing, natural resource management, public infrastructure, and hazard mitigation issues. Funding from the Governor's Office of Planning and research. Maximum award ~\$650,000. Deadline 3/31/23

County-Wide and Regional Funding Program

Funding for regional programs that address drought-related and contamination issues for small water systems and domestic wells serving DACs. No deadline. Funding is from the State Water Board.

Restoration Grant Program

Multiple funding programs including wetland restoration, wildlife corridors, and addressing climate impacts. Project categories include: planning, implementation, acquisition, monitoring, and scientific studies. Applications accepted on rolling basis. Funding from CA Dept. of Fish and Wildlife.

Riparian Habitat Conservation Program

The Wildlife Conservation Board is accepting concept proposals for projects that provide meaningful and sustainable improvements to riparian habitats. \$3 Million available on a rolling basis.

Fertilizer Research and Education Program

Total of \$225,000 available for projects on: improving input management, understanding plant-soil processes, and evaluating loss pathways. They are focused on nutrients in general with nitrogen/nitrates as a particular focus. It is a rolling deadline with funding awarded as projects are approved. CA Dept. of Food and Agriculture.