

Special Meeting of the
Delta-Mendota Subbasin Coordination Committee

Tuesday, March 21, 2023, 1:00 PM **DRAFT**

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

Coordination Committee Members and Alternates Present

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

San Luis & Delta-Mendota Water Authority Staff Present

John Brodie
Scott Petersen*

Others Present

Steve Stadler – San Luis Water District
Lauren Layne – Baker Manock & Jensen*
Anona Dutton – EKI Environment & Water, Inc.*
Meredith Durant – EKI Environment & Water, Inc.*
Leslie Dumas – Woodard & Curran
Adam Scheuber – Del Puerto Water District
Andrew Francis – Luhdorff & Scalmanini*

* denotes participation via Zoom

1. Call to Order/Roll Call

John Wiersma/SLCC called the meeting to order at 1:02 PM.

2. Opportunity for Public Comment

No public comment was shared under this meeting agenda item.

3. Committee to Review and Take Action on Consent Calendar, Wiersma/Brodie

- a) Minutes for the February 13, 2023 Meeting of the Delta-Mendota Subbasin Coordination Committee
- b) Minutes for the March 13, 2023 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
- c) Budget-to-Actual Report (through January 2023)

d) Grant Reimbursement Summary Report

John Brodie noted that the grant reimbursement summary report is the final report for this grant, and it reflects the final invoices and retention amounts. Augie Ramirez/Fresno County provided the motion to approve the Consent Calendar and Vince Lucchesi/Patterson Irrigation District seconded. The motion was passed unanimously by those present.

4. Committee to Consider Approval for the Consolidated WY 2022 Annual Report for the Delta-Mendota Subbasin, Brodie/Dumas

Woodard & Curran previously provided the draft WY 2022 Annual Report to the Coordination Committee members for review. The received comments have been incorporated. Vince Lucchesi provided the motion to approve the Consolidated WY 2022 Annual Report, and Jim Stilwell/Farmers Water District seconded. The motion was passed unanimously by those present.

5. Committee to Consider Approval for the Proposal from Luhdorff & Scalmanini to Design the Interconnected Surface Water Monitoring Network (Component 1, Task 8 of SGMA Round 1 Implementation Grant), Brodie

John Brodie noted that in accordance with requirements of the SGMA Round 1 Grant Agreement, several consultants were contacted to solicit competitive proposals, and only one proposal, from Luhdorff & Scalmanini, was received. Will Halligan/Luhdorff & Scalmanini/Farmers Water District recused himself from the approval process for this agenda item. Jarrett Martin/CCID provided the motion to approve the proposal for design of the grant-funded ISW monitoring wells and Vince Lucchesi seconded. The motion was passed unanimously by those present.

6. Committee to Discuss DWR Inadequate Determination of the Amended 2020 Groundwater Sustainability Plans for the Delta-Mendota Subbasin, Brodie

The Committee discussed preparation for a meeting that has been scheduled with Water Board staff to discuss the process and a potential schedule for moving forward with revision of the GSP. A few members of the Coordination Committee, and Scott Petersen, will attend the one-hour meeting. A key unknown that affects both the schedule and the additional GSP revisions, is the available time interval prior to the Water Board providing the 90-day advance notice of its planned public hearing. Anona Dutton/EKI reminded the participants that at its prior meeting, the Committee agreed that the key near-term focus was to improve the Subbasin water budgets and better support the sustainable management criteria. A meeting with the USGS/USBR team which developed the CVHM2 groundwater model has been scheduled for March 22, 2023 to assess whether the model inputs could be used to improve the Subbasin-scale water budget.

7. Committee to Discuss Schedule and Timeline of Tasks for Responding to DWR Inadequate Determination and Potential Probationary Hearing at the State Water Board, Brodie/Dutton

Anona Dutton referred the participants to a proposed near-term schedule included in the meeting materials. The Committee will arrange for EKI to be provided with access to the Subbasin data management system (DMS). The Committee continued to discuss options for moving forward, and the best approach for obtaining approval on the Subbasin GSP. The importance of updating the Coordination Agreement, initially developed several years ago for purposes of preparation of the GSPs, was mentioned.

8. **Committee to Discuss Work Plan and Schedule for Preparation of 2025 GSP Update, Brodie**

The Committee discussed its decision-making process. Anona Dutton expressed her opinion that the Common Chapter needs to be updated by the Subbasin policy team, and that could occur in conjunction with preparation of the 2025 GSP Update. There is also the opportunity to update the technical information using more recent monitoring data (and not relying on the data from 2013 used in the initial GSPs). Leslie Dumas/Woodard & Curran reminded the Committee that DWR (and the Water Board) will need to review the data, and then suggested that a series of technical memoranda could be prepared and submitted as interim deliverables to provide and document the basis for key components such as SMCs or the water budget.

9. **Committee to Discuss 2023 GSP Implementation**

- a) 2023 GSP Implementation Activities Review, Dutton
- b) Three-Month Look-Ahead Schedule, Dutton
- c) WY 2022 Annual Report (including results/findings), Dumas/Brodie
- d) Upcoming GSP Implementation Monitoring Activities, Dumas
- e) Stakeholder Outreach and Engagement, Dumas/Dutton

John Brodie referred the participants to information items included in the meeting materials, some of which were developed to support and document implementation of the Northern & Central Delta-Mendota GSP.

10. **Committee to Discuss Potential Additional Funding Opportunities, Brodie**

Updated information on additional funding opportunities is included in the meeting materials.

11. **Next Steps**

- Representatives of the Subbasin will meet with Water Board staff on Thursday March 23, 2023.
- The Coordination Committee will meet at 1:00 PM on Monday March 27, 2023 to review results of the meeting with Water Board staff.
- EKI will be provided with access to the Subbasin data management system.
- SLDMWA and EKI will meet with the USGS/USBR modeling team on Wednesday March 22, 2023 to discuss potential use of the groundwater model to support the Subbasin water budget.
- Scott Petersen will prepare and transmit a summary of the Water Board meeting to the Coordination Committee members.

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

A conference with legal counsel was not necessary and was not conducted.

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

A conference with legal counsel was not necessary and was not conducted.

14. **Report out of Closed Session**

A Closed Session was not conducted.

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

No topics were discussed under this item.

16. **Future Meetings**

- a. Monday March 27, 2023 1:00 PM
- b. Monday April 10, 2023 1:00PM
- c. Monday May 8, 2023 1:00PM

17. **ADJOURNMENT**

John Wiersma adjourned the meeting at 3:23 PM.

DRAFT

Special Joint Meeting of the Delta-Mendota Subbasin Coordination Committee and Technical Working Group

Monday, March 27, 2023, 1:00 PM **DRAFT**

Grassland Water District 200 W. Willmott Avenue, Los Banos, CA

Coordination Committee and Technical Working Group Members and Alternates Present

Ellen Wehr, Alternate – Grassland Water District*
Ric Ortega, Member – Grassland Water District
John Wiersma, Member – San Joaquin River Exchange Contractors (SJREC)
Jarrett Martin, Member – Central California Irrigation District/SJREC
Vince Lucchesi, Member – Patterson Irrigation District/Northern Delta-Mendota Region
Chase Hurley, Member – Pacheco Water District/Central Delta-Mendota Region
Jim Stilwell, Member – Farmers Water District
Joe Hopkins, Member – Aliso Water District/Provost & Pritchard

San Luis & Delta-Mendota Water Authority Staff Present

Scott Petersen

Others Present

Adam Scheuber – Del Puerto Water District
Will Halligan, Alternate – Farmers Water District/Luhdorff & Scalmanini*
Andrew Francis – Luhdorff & Scalmanini*
Lauren Layne – Baker Manock & Jensen*
Ethan Andrews – Provost & Prichard*
Rick Iger – Provost & Pritchard*
Anona Dutton – EKI Environment & Water, Inc.
Sarah Gerenday – EKI Environment & Water, Inc.*
Leslie Dumas – Woodard & Curran

* Denotes telephonic/Zoom participation.

1. Call to Order/Roll Call

Chair John Wiersma/SJREC called the meeting to order at 1:00 PM.

2. Opportunity for Public Comment

No public comment was shared.

3. Ad Hoc Subcommittee Meeting with State Water Resources Control Board and Department of Water Resources on Inadequate Determination for Delta-Mendota Subbasin GSPs, Martin/Stilwell (Policy)

The State Water Resources Control Board (SWRCB) expects Groundwater Sustainability Agencies (GSAs) to continue to revise and implement the Groundwater Sustainability Plans (GSPs). The SWRCB will hold an informational meeting on 4 April 2023 to discuss the inadequate GSPs. The SWRCB is willing to meet with Subbasin representatives regarding GSP revisions but will not commit to reviewing information or providing feedback. Staff expressed that the SWRCB is under pressure for its SGMA oversight activities to be self-funded via

groundwater pumping fees; however, they understand that such fees must be tied to SGMA implementation activities.

Action item: Jarrett Martin to attend April 4th SWRCB meeting and discuss Subbasin complexity and general approach to GSP revision.

4. **EKI Report on GSP Revision, Dutton (Technical)**

a. **Report from Meeting with USBR/USGS on 22 March 2023**

SLDMWA is currently working with the US Bureau of Reclamation/US Geological Services (USBR/USGS) modeling team to access CVHM2-SJV, an updated MODFLOW-OWHM simulation of Central Valley groundwater, which simulates surface water delivery and transfers within the Delta-Mendota Subbasin better than its predecessor, CVHM. Model data inputs are publicly available. The model and its results may be shared with SLDMWA, but they cannot be used for submittals to the Department of Water Resources (DWR) or the SWRCB until the model has been peer reviewed and publicly released. This process may take several months.

b. **Proposed Approach for Water Level SMCs**

EKI presented an analysis of the existing water level sustainable management criteria (SMCs) in the Subbasin in comparison to other recently approved GSPs and sought direction on proposed revisions. EKl conducted a preliminary well impacts analysis for the Subbasin which suggested that at current minimum thresholds (MTs), approximately 7.6% of the domestic wells would be dewatered in the Upper Aquifer and 5% of the domestic wells would be dewatered in the Lower Aquifer. These potential impacts are consistent with those projected in recently approved GSPs from adjacent subbasins; however, DWR is skeptical of the Subbasin criteria that 50% of representative monitoring wells must exceed their MTs to qualify as an undesirable result (UR). Insufficient justification for this criteria was one of the deficiencies cited by DWR in its Inadequate Determination of the existing Subbasin GSPs. The consensus was that further justification is needed to support the current water level SMCs following procedures outlined in the GSP regulations and that the current UR definition likely needs to be revised.

Action item: EKl to provide a proposal including scope, timeline, and budget to develop a single, revised GSP, consistent with the applicable requirements for the 2025 Update, with an initial primary focus on SMCs and water budget.

c. **Updates on Request for Information**

This item was not discussed.

5. **Coordination Agreement Revision Ad Hoc Subcommittee, Hopkins/Stilwell/Layne (Policy)**

The ad hoc subcommittee has developed an initial redlined version of a revised and updated Subbasin Coordination Agreement. The primary topics for consideration include adaptive management, dispute resolution, centralization of committees, and designation of a single Plan Manager with an independent technical consultant. It was noted that if a single GSP is prepared

for the Subbasin, submittal of a formal Coordination Agreement is not required. The agreement could be replaced by a memorandum of understanding to accompany the GSP.

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

This item was not discussed.

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

This item was not discussed.

8. **Report out of Closed Session**

A closed session was not conducted.

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

No topics were discussed under this item.

10. **ADJOURNMENT**

John Wiersma adjourned the meeting at 3:20 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 - 2/28/23

SGMA 4/10/23

EXPENDITURES	Annual Budget	Paid/ Expense	Amount Remaining	% of Amt Remaining	Expenses Through
<u>Legal:</u>					
Baker Manock & Jensen	\$ 10,000	\$ 37,164	\$ (27,164)	-272%	2/28/23
<u>Other Professional Services:</u>					
GSP Implementation Contracts					
Coordinated Annual Reports Activities (Common Chapter, Water Level Contouring)	\$ 50,579	\$ 16,662	\$ 33,917	67%	12/21/22
DMS Hosting, Augmentation and Support	\$ 10,306	\$ 3,458	\$ 6,848	66%	5/23/22
GSP Approval-DWR Response to Comments	\$ 10,000	\$ 52,981	\$ (42,981)	-430%	12/21/22
Staff Augmentation Support (EKI)	\$ 51,241	\$ 31,053	\$ 20,188	39%	2/15/23
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)	\$ -	\$ 10,120	\$ (10,120)	0%	12/21/22
SGMA Implementation Grant Round 2 SPA (A10)	\$ -	\$ 36,848	\$ (36,848)	0%	12/21/22
<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	\$ 4,695	\$ (567)	-14%	2/28/23
Water Resources Program Manager	\$ 44,277	\$ 46,424	\$ (2,147)	-5%	2/28/23
Accounting	\$ 4,207	\$ 2,987	\$ 1,220	29%	2/28/23
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	\$ 65	\$ 7,435	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	\$ 267,756	\$ 15,075	5%	

Project Sponsor	Project	Amount	Env. & Design	Construction	Monitoring	Local Cost Share	Grant \$ Subtotal	Amount Invoiced	Balance
Farmers Water District	FWD Water Bank	\$ 791,300.00	\$ 125,000.00	\$ 616,300.00	\$ 50,000.00	\$ -	\$ 791,300.00		
Amount Invoiced			\$ 33,145.30	\$ -	\$ -	\$ -	\$ -	\$ 33,145.30	
Remaining Balance		\$ 791,300.00	\$ 91,854.70	\$ 616,300.00	\$ 50,000.00	\$ -	\$ 791,300.00	\$ 33,145.30	\$ 758,154.70

	A	B	C	D	E	F	G	H	I	J	K
1	Project Sponsor	Project	Amount	Env. & Design	Construction	Monitoring	Outreach	Local Cost Share	Grant \$ Subtotal	Amount Invoiced	Balance
2	Subbasin	ISW and Subsidence Monitoring	\$ 640,000.00	\$ 98,400.00	\$ 229,200.00	\$ 216,800.00	\$ 95,600.00	0	\$ 640,000.00		\$ 640,000.00
3	Amount Invoiced									\$ -	
4	Balance			\$ 98,400.00	\$ 229,200.00	\$ 216,800.00	\$ 95,600.00		\$ 640,000.00		\$ 640,000.00
5	Aliso WD	Data Gaps and Monitoring	\$ 134,400.00		\$ 134,400.00				\$ 134,400.00		\$ 134,400.00
6	Amount Invoiced									\$ -	
7	Balance				\$ 134,400.00				\$ 134,400.00		
8	Fresno County	Data Gaps and Monitoring	\$ 80,000.00	\$ 10,000.00	\$ 70,000.00				\$ 80,000.00		\$ 78,696.25
9	Amount Invoiced			\$ 1,303.75						\$ 1,303.75	
10	Balance			\$ 8,696.25	\$ 70,000.00				\$ 80,000.00		
11	Farmers WD	Data Gaps and Monitoring	\$ 75,000.00	\$ -	\$ 50,000.00	\$ 25,000.00			\$ 75,000.00		\$ 75,000.00
12	Amount Invoiced									\$ -	
13	Balance				\$ 50,000.00	\$ 25,000.00			\$ 75,000.00		
14	Subtotal		\$ 929,400.00	\$ 107,096.25	\$ 483,600.00	\$ 241,800.00	\$ 95,600.00		\$ 929,400.00	1303.75	\$ 928,096.25
15											

	A	B	C	D	E	F	G	H	I
1	Project Sponsor	Project	Amount	Env. & Design	Public Outreach	Local Cost Share	Grant \$ Subtotal	Amount Invoiced	Balance
2	SJREC	GSP Revisions & Updates	\$ 50,000.00	\$ 50,000.00	\$ -		\$ 50,000.00	\$ -	\$ 2,328.05
3	Amount Invoiced				\$ 47,671.95			\$ 47,671.95	
4	Balance			\$ 50,000.00	\$ (47,671.95)				
5	Grasslands WD	GSP Revisions & Updates	\$ 112,500.00	\$ 112,500.00	\$ -		\$ 112,500.00	\$ -	\$ 24,564.18
6	Amount Invoiced			\$ 87,935.82				\$ 87,935.82	
7	Balance			\$ 24,564.18	\$ -				
8	Aliso WD	GSP Revisions & Updates	\$ 50,000.00	\$ 50,000.00	\$ -		\$ 50,000.00	\$ -	\$ 50,000.00
9	Amount Invoiced							\$ -	
10	Balance			\$ 50,000.00					
11	Fresno County	GSP Revisions & Updates	\$ 174,000.00	\$ 124,000.00	\$ 50,000.00		\$ 174,000.00	\$ -	\$ 121,221.53
12	Amount Invoiced			\$ 52,778.47				\$ 52,778.47	
13	Balance			\$ 71,221.53					
14	Farmers WD	GSP Revisions & Updates	\$ 175,000.00	\$ 125,000.00	\$ 50,000.00		\$ 175,000.00	\$ -	\$ 119,312.00
15	Amount Invoiced			\$ 55,688.00				\$ 55,688.00	
16	Balance			\$ 69,312.00					
17	Subtotal		\$ 561,500.00	\$ 265,097.71	\$ (47,671.95)	\$ -	\$ 561,500.00	\$ 244,074.24	\$ 317,425.76
18								\$ -	

	A	B	C	D	E	F	G	H
1	Project Sponsor	Project	Amount	Public Outreach	Local Cost Share	Grant \$ Subtotal	Amount Invoiced	Balance
2	SJREC	Outreach & Engagement	\$ 82,500.00	\$ 82,500.00		\$ 82,500.00	\$ -	\$ 69,246.76
3	Amount Invoiced			\$ 13,253.24			\$ 13,253.24	
4	Balance		\$ 82,500.00	\$ 69,246.76				
5	Grasslands WD	Outreach & Engagement	\$ 25,000.00	\$ 25,000.00		\$ 25,000.00	\$ -	\$ 11,746.76
6	Amount Invoiced			\$ 13,253.24			\$ 13,253.24	
7	Balance		\$ 25,000.00	\$ 11,746.76				
8	Fresno County	Outreach & Engagement	\$ 25,000.00	\$ 25,000.00		\$ 25,000.00	\$ -	\$ 766.90
9	Amount Invoiced			\$ 24,233.10			\$ 24,233.10	
10	Balance		\$ 25,000.00	\$ 766.90				
11	Farmers WD	Outreach & Engagement	\$ 40,000.00	\$ 40,000.00		\$ 40,000.00	\$ -	\$ 14,906.76
12	Amount Invoiced			\$ 25,093.24			\$ 25,093.24	
13	Balance		\$ 40,000.00	\$ 14,906.76				
14	Subtotal		\$ 172,500.00	\$ 96,667.18	\$ -	\$ 172,500.00	\$ 50,739.58	\$ 96,667.18
15								

6 April 2023

John Brodie
Water Resources Program Manager
San Luis & Delta-Mendota Water Authority
842 6th Street, PO Box 2157
Los Banos, CA 93635

Subject: Proposal to Initiate Response to the Inadequate Determination
Delta-Mendota Subbasin
(EKI C3-114)

Dear Mr. Brodie:

EKI Environment and Water, Inc. (EKI) is pleased to submit this proposal to support the Delta-Mendota Subbasin (Subbasin) to initiate response to the California Department of Water Resources (DWR's) "Inadequate" determination issued on 3 March 2023. This proposal is submitted in response to San Luis & Delta-Mendota Water Authority's (SLDMWA's or Client's) request on 27 March 2023.

BACKGROUND

On 20 July 2022, the GSAs submitted a revised Subbasin Plan consisting of a Coordination Agreement and six GSPs (collectively, the Plan) in response to DWR's "incomplete" determination of the original Subbasin Plan submitted in January 2020. On 3 March 2023, DWR issued a final determination, finding the Subbasin's 2022 Revised Plan to be "inadequate" and transferring oversight of the Subbasin to the State Water Resources Control Board (State Board).

Key deficiencies identified by DWR included:

- **Deficiency #1:** "The Agencies did not provide sufficient information to demonstrate [that] water budget, change in storage, and sustainable yield, are or will use the same data or methodologies"
 - The coordination agreement and various technical memoranda that are part of the proposed management program remain unchanged, making it unclear how or whether certain revisions in some GSPs would be carried through on a basinwide scale.
- **Deficiency #2:** "The GSPs have not established common definitions of undesirable results in the Subbasin"
 - No new supporting information is provided within the Common Chapter or within the revised GSPs to justify the new groundwater management approach. (i.e., the coordinated Undesirable Results definitions)
 - No justification for setting a 50 percent threshold for groundwater levels or water quality is provided, details regarding modifying wells and pumps are absent from the resubmitted material, ... (i.e., part of revised significant and unreasonable definition)

- ... lack of specific, quantitative details, or a more defined and transparent decision-making process for establishing definitions of sustainability
- **Deficiency #3:** “The GSPs in the Subbasin have not set sustainable management criteria in accordance with the GSP regulations”
 - The Plan does not indicate when the historic low groundwater levels (which are part of the minimum threshold definitions) were observed.
 - No analysis was provided explaining or justifying why 50 percent was chosen as the threshold or what impacts would occur to the Subbasin’s pumping wells or the beneficial uses and users of groundwater if that threshold is approached or exceeded.
 - There is no discussion in the Plan related to continued overdraft or subsidence, migration of contamination plumes, degradation of water quality, or depletions of interconnected surface water if groundwater levels approach or exceed to new minimum thresholds, especially for those wells located near the San Joaquin River.
 - The revised Plan does not provide an explanation as to how the GSAs have determined that managing the Subbasin to near historical low groundwater elevations would avoid undesirable results for the other applicable sustainability indicators.
 - It is unclear if the minimum thresholds have been selected to avoid undesirable results.

It is understood that the State Board, in its review of the Subbasin’s Plan may identify additional deficiencies that will have to be addressed by the GSAs to avoid or remove probationary status. It is further understood that the Subbasin now has roughly one year to prepare a revised Plan that meets the requirements of the Sustainable Groundwater Management Act (SGMA) to avoid implementation of an Interim Plan developed by the State Board. While the exact timeline of State Board intervention is unknown of, it appears that in roughly the same time frame (i.e., by January 2025), the GSAs will be required to conduct their periodic evaluation of the Subbasin Plan and provide a written assessment to DWR that satisfies the requirements of CCR § 356.4. *Periodic Evaluation by Agency.*

The following Scope of Work addresses initial efforts to respond to the DWR deficiencies through July 2023, as it is understood that on-going coordination with DWR and the State Board and completion of the 2025 GSP Update will be subject to a Request for Proposals (RFP).

SCOPE OF WORK

Task 1 – Revise the Sustainable Management Criteria

EKI will support the GSAs to develop revised Sustainable Management Criteria (SMCs) for relevant Sustainability Indicators based on the requirements of California Code of Regulations (CCR) §354.22 - §354.30 (GSP SMC Regulations), the best available data, review of the approaches used in other basins, and review of the DWR deficiency letters.

As part of this task EKI will work with the GSAs to:

- Review and potentially revise the *Sustainability Goal* for the Subbasin;
- At a minimum, justify, and potentially revise the definitions of *Undesirable Results* (URs) for selected applicable SGMA Sustainability Indicators, and continue to demonstrate why seawater intrusion is not applicable;
- At a minimum, justify, and potentially revise the *Minimum Thresholds* (MTs) for each applicable Sustainability Indicator at each representative monitoring site;
- At a minimum, justify, and potentially revise the *Measurable Objectives* (MOs) and establish a *Margin of Operational Flexibility* for each applicable Sustainability Indicator at each representative monitoring site; and
- Develop *Interim Milestones* (IMs) at 5-year intervals through 2040 (beginning in 2025) for each applicable Sustainability Indicator based on the *Minimum Thresholds*, *Measurable Objectives*, and *Margin of Operational Flexibility* defined at each representative monitoring site.

EKI's approach to the above tasks will be to start with the SMC framework contained in the Revised Common Chapter, which was agreed upon and adopted by all GSAs, and to systematically and objectively identify (with consideration of the DWR inadequacy determination) the areas of deficiency with respect to conformance with the GSP SMC Regulations.

This systematic process will involve creating a summary table for each applicable Sustainability Indicator that presents in succinct terms (i.e., bullets) how the Common Chapter addresses each requirement (or not). For example, EKI will summarize how the existing Undesirable Results section in the Common Chapter describes: (a) the causes of groundwater conditions throughout the Subbasin that would lead to URs, (b) the potential effects of URs on beneficial uses/users, and (c) the criteria that define when URs occur (based on a quantitative description of MT exceedances that cause significant and unreasonable effects).

Similarly, for MTs, EKI will summarize the existing Common Chapter with respect to: (a) MT justification supported by information in the Basin Setting and other data or models as appropriate, (b) describing the relationships between MTs for each Sustainability Indicator, (c) how the MTs have been selected to avoid URs in adjacent basins, (d) how they may affect the interests of beneficial uses/users of groundwater or land use and property interests, (e) how (if at all) state, local, or federal standards relate to the sustainability Indicator, and (f) how each MT will be measured. EKI will conduct a similar Regulations-driven assessment for MOs and IMs.

With the above objective deficiency assessment complete, EKI will then examine SMC content from each of the six revised Subbasin GSPs that may be useful in addressing identified gaps and supporting the justification of SMCs. Where potentially supporting content from multiple GSPs is contradictory, EKI will identify these instances and bring them before the GSAs for consideration. Where consistent supporting content is not available, EKI will supplement this content with additional analyses, as appropriate (e.g., well impacts analysis, spatiotemporal analysis of historical data, groundwater modeling to assess conditions likely to occur once overdraft is ceased). EKI will also consider approaches to SMC development/establishment and justification from other GSPs in other basins that were approved by DWR and will assess whether such approaches may be appropriate for use in the Subbasin.

EKI will then synthesize the concepts and content identified through previous tasks into a recommended approach for updated SMCs for each applicable Sustainability Indicator, including URs, MTs, MOs, and IMs. To ensure compliance with the GSP SMC Regulations, EKI will first consider each Sustainability Indicator independently, and then will assess whether use of groundwater levels as a proxy for any other indicators is justifiable and appropriate. EKI will assess the relationships between indicators and will adjust MTs preliminarily established for a given indicator if they would result in URs for another indicator. EKI will use the exact language of the GSP SMC Regulations, as well as the SMC Best Management Practices document (DWR, 2017), as a guiding framework to developing compliant SMCs. For example, in accordance with the Regulations, the MOs and IMs will use the same metrics (i.e., units) as the MTs.

EKI will present key information to the GSAs during regular meetings (see Task 3) for direction and decisions. EKI will then prepare a draft SMC proposal for each Sustainability Indicator for GSA review. Comments provided by the GSAs will be incorporated.

Deliverables

- Draft Summary Table of Common Chapter SMC Approach and Identified Deficiencies
- Draft SMC proposal for each Sustainability Indicator
- PowerPoint presentation of proposed SMC approach

Assumptions

- SLDMWA will provide one consolidated set of review comments on each deliverable.
- Additional deficiencies identified by the State Board may impact the level of effort anticipated herein.
- To the extent possible, proposed approaches will be vetted with the State Board and DWR for feedback.
- Work efforts on the Interconnected Surface Water SMCs will be deferred to the 2025 GSP Update process pending forthcoming guidance from DWR.
- Work efforts on the Water Quality SMCs may have to be deferred to the 2025 GSP Update process pending receipt of data from the GSAs and potential budget /timing constraints.
- SMCs may be further revised as part of the 2025 GSP Update process based on groundwater modeling results and feedback provided by the GSAs, State Board and DWR.

Task 2 – Develop Subbasin Water Budget

Under this Task, EKI will develop an initial set of Subbasin-wide current, historical, and projected water budgets (GSP water budgets) that comply with the requirements of CCR Title 23 § 354.18 and address the deficiencies outlined by the DWR. EKI will rely on the Central Valley Hydrologic Model Version 2 (CVHM2), which was recently developed by the US Geological Survey (USGS) and the US Bureau of Reclamation (USBR). In its utilization of the CVHM2 and development of the GSP water budgets, EKI will apply scientifically sound methodologies consistent with DWR guidelines and ensure the use of the best available data and information obtained from accepted and reliable resources.

As part of this Task, EKI will:

- Gather and review information and data used to develop previous Subbasin-wide and GSA-specific water budgets;
- Review underlying data for the available models, California Central Valley Groundwater-Surface Water Simulation Model Fine-Grid (C2VSIM-FG) and CVHM2, and assess their performances compared to previously developed GSP water budgets;
- Propose a water budget development framework that details the data and methodology used and how they will respond to the identified deficiencies;
- Revise current, historical, and projected water budgets' timelines, as needed; and,
- Develop initial GSP water budgets using the proposed methodology.

Based on the agreed-upon timeline of deliverables between EKI and the GSAs, EKI will develop the historical, current and future water budgets to secure feedback from the State Board. Since CVHM2 is not yet publicly released and peer-reviewed, it cannot be directly referenced. Therefore, EKI intends to use the CVHM2 draft version and its publicly released input data to conduct its water budget analysis, consistent with CVHM2 methodologies and results. This will facilitate the incorporation of the CVHM2 into the 2025 GSP Update if it is publicly released and can be directly cited. EKI does not expect significant departures from the CVHM2 simulated water budgets and will not substantially modify the input data to avoid inconsistencies in data and methodology. Any desired/required addition or modification of data will be incorporated as uncertainty sources to be potentially addressed in the 2025 GSP update.

In order to develop the projected water budget, EKI will coordinate with the GSAs to select a methodology and a historical period to be considered as the future baseline. EKI will use the future baseline to develop projected water budget and Climate Change Scenario water budgets using DWR's Central Tendency Climate Change Projections (i.e., 2030 and 2070 Central Tendency)¹. Any additional water budgets or simulation of different operational or climate change scenarios or implementation of Projects and Management Actions (P/MAs) is outside of the current scope and is assumed to be completed as part of the 2025 GSP Update effort.

Upon development of the GSP water budgets, EKI will provide estimates of the changes in storage per each principal aquifer (Upper and Lower aquifers) using CVHM2 simulations. In coordination with Task 1, EKI will also provide estimates of sustainable yield for each principal aquifer.

EKI will present key information to the GSAs during regular meetings (see Task 3) for direction and decisions. These presentations will include, at the minimum, discussion of the proposed water budget development framework and presentation of GSP water budgets. Comments provided by the GSAs during these meetings will be incorporated. EKI expects one set of consolidated comments per deliverable and assumes timely submission of such comments to stay on schedule.

GSP water budgets, changes in storage, and sustainable yields developed under this Task will be on a Subbasin-wide scale. EKI will not develop fine-scale and/or GSA-specific water budgets, changes in

¹ <https://data.cnra.ca.gov/dataset/climate-change-projections-wsip-2030-2070>

storage, or sustainable yields under this scope of work. EKI will not modify or recalibrate CVHM2 to address regional or GSA-wide data gaps and uncertainties.

Deliverables

- Draft Water Budget Estimates
- PowerPoint presentation of Water Budget approach
- Basin Model files

Assumptions

- EKI will rely on CVHM2 for preparation of the Subbasin water budget in its current form and will not be re-calibrating the model or significantly modifying any model inputs.
- SLDMWA will provide one consolidated set of review comments on each deliverable.
- To the extent possible, proposed approaches will be vetted with the State Board and DWR for feedback.
- Additional deficiencies identified by the State Board may impact the level of effort anticipated herein.
- Extension of the model to WY 2023 and inclusion of P/MAs and additional climate change or other scenarios will be done as part of the 2025 GSP Update.

Task 3 – Project Management and Coordination

Task 3 involves facilitating near-term Subbasin coordination efforts during Task 1 and Task 2 preparation, assumed to be completed within four months (i.e., April through July 2023). Specifically, EKI will:

- Provide support including developing meeting agendas, presentations, and packets as applicable, and participate in the following meeting venues:
 - Up to eight bi-weekly Subbasin Coordination Committee meetings, assuming in-person attendance;
 - Up to eight bi-weekly one-hour planning meetings conducted virtually.
- Participate in inter-basin coordination efforts with GSAs in the adjacent Subbasins on an as-needed basis; assumes up to two 1-hour meetings conducted remotely.
- Participate in monthly meetings with DWR and the State Board; Assumes up to six 1-hour meetings, conducted remotely and up to two 1-hour meetings conducted in person.

Deliverables

- Meeting materials
- Monthly invoices and progress summary reports
- Project Schedule, regularly updated

Assumptions

- Bi-weekly coordination committee meetings, conducted in-person
- Remaining meetings will be conducted remotely

PERSONNEL

EKI's staff members who will lead this project include Anona Dutton, PG, CHg (Officer), Christopher Heppner, PhD, PG (Supervising 1), Amir Mani, PhD, PG (Senior 1), Nigel Chen, PhD, PE (Grade 1), Sarah Gerenday, PhD (Grade 2), and Sarah Hodson, PE (Grade 4); grades in parentheses are for purposes of billing in accordance with the attached Schedule of Charges (see **Attachment A**). Other EKI staff members will be assigned to assist with the performance of the tasks as required to meet project commitments.

TERMS AND CONDITIONS

All work performed by EKI under this scope will be performed pursuant to our existing Agreement with SLDMWA for Professional Services.

COMPENSATION

Inasmuch as the exact level of effort required to complete the above Scope of Work cannot be known precisely, EKI proposes to perform the work on a time and materials expense reimbursement basis in accordance with our current Schedule of Charges (**Attachment A**). The estimated budget for this scope of work is estimated to be \$200,000 (**Attachment B**).

SCHEDULE

EKI is prepared to start work on the above Scope of Work immediately upon authorization to proceed and will continue through July 2023. EKI will inform SLDMWA of any issues that arise that may affect the schedule for completion or impact the anticipated level of effort.

We are very excited about the opportunity to work with SLDMWA and the Subbasin GSAs on this project.

Please do not hesitate to contact me with any questions.

Very truly yours,

EKI ENVIRONMENT & WATER, INC.

A handwritten signature in blue ink, appearing to read 'Anona L. Dutton', with a long horizontal flourish extending to the right.

Anona L. Dutton, PG, CHg
Vice President / Principal-In-Charge

AUTHORIZATION
SAN LUIS & DELTA-MENDOTA WATER AUTHORITY (CLIENT)

By_____

Title_____

Date_____

Attachments

Attachment A. Schedule of Charges, dated 1 January 2023

Attachment B. Detailed Budget Estimate

ATTACHMENT A

EKI 2023 Schedule of Charges and Detailed Budget Table

SCHEDULE OF CHARGES FOR EKI ENVIRONMENT & WATER, INC.

1 January 2023

<u>Personnel Classification</u>	<u>Hourly Rate</u>
Officer and Chief Engineer-Scientist	332
Principal Engineer-Scientist	320
Supervising I, Engineer-Scientist	309
Supervising II, Engineer-Scientist	298
Senior I, Engineer-Scientist	286
Senior II, Engineer-Scientist	275
Associate I, Engineer-Scientist	264
Associate II, Engineer-Scientist	248
Engineer-Scientist, Grade 1	231
Engineer-Scientist, Grade 2	218
Engineer-Scientist, Grade 3	200
Engineer-Scientist, Grade 4	178
Engineer-Scientist, Grade 5	157
Engineer-Scientist, Grade 6	138
Project Assistant	130
Technician	125
Senior GIS / Database Analyst	162
CADD Operator / GIS Analyst	144
Senior Administrative Assistant	159
Administrative Assistant	124
Secretary	104

Direct Expenses

Reimbursement for direct expenses, as listed below, incurred in connection with the work will be at cost plus fifteen percent (15%) for items such as:

- a. Maps, photographs, reproductions, printing, equipment rental, and special supplies related to the work.
- b. Consultants, soils engineers, surveyors, drillers, laboratories, and contractors.
- c. Rented vehicles, local public transportation and taxis, travel, and subsistence.
- d. Special fees, insurance, permits, and licenses applicable to the work.
- e. Outside computer processing, computation, and proprietary programs purchased for the work.

A Communication charge for e-mail access, web conferencing, cellphone calls, messaging and data access, file sharing, local and long distance telephone calls and conferences, facsimile transmittals, standard delivery U.S. postage, and incidental in-house copying will be charged at a rate of 4% of labor charges. Large volume copying of project documents, e.g., bound reports for distribution or project-specific reference files, will be charged as a project expense as described above.

Reimbursement for company-owned automobiles, except trucks and four-wheel drive vehicles, used in connection with the work will be at the rate of sixty cents (\$0.60) per mile. The rate for company-owned trucks and four-wheel drive vehicles will be seventy-five cents (\$0.75) per mile. There will be an additional

charge of thirty dollars (\$30.00) per day for vehicles used for field work. Reimbursement for use of personal vehicles will be at the federally allowed rate plus fifteen percent (15%).

CADD and other specialized software computer time will be charged at twenty dollars (\$20.00) per hour. In-house material and equipment charges will be in accordance with the current rate schedule or special quotation. Excise taxes, if any, will be added as a direct expense.

Rate for professional staff for legal proceedings or as expert witnesses will be at a rate of one and one-half times the Hourly Rates specified above.

The foregoing Schedule of Charges is incorporated into the Agreement for the Services of EKI Environment & Water, Inc. and may be updated annually.

ATTACHMENT B
Detailed Budget Estimate

Table 1. Detailed Estimated Budget

TASKS			EKI Labor (hrs)				Total EKI Labor, including 4% Comm. Charge ⁽¹⁾	Expenses	Total Requested Budget
	Anona Dutton, PG, CHg	Christopher Heppner, PhD, PG	Amir Mani, PhD, PE	Nigel Chen, PhD	Sarah Gerenday, PhD	Sarah Hodson		Other Direct Costs ⁽²⁾	
	\$332	\$309	\$286	\$231	\$218	\$178		(\$)	
Task 1 – Revise the Sustainable Management Criteria	24	96	0	0	96	128	\$84,598	\$0	\$85,000
Task 2 – Develop Subbasin Water Budget	24	0	64	96	0	128	\$74,081	\$0	\$74,000
Task 3 – Project Management and Coordination	90	24	0	0	0	0	\$38,788	\$2,000	\$41,000
Total	138	120	64	96	96	256	\$197,467	\$2,000	\$200,000

Notes:

- (1) A communications charge of 4% of labor costs covers e-mail access, web conferencing, cellphone calls, messaging and data access, file sharing, local and long-distance telephone calls and conferences, facsimile transmittals, standard delivery U.S. postage, and incidental in-house copying.
- (2) "Other Direct Costs" includes direct expenses, as listed below, incurred in connection with the work and will be reimbursed at cost plus ten percent (10%) for items such as:
- Maps, photographs, reproductions, printing, equipment rental, and special supplies related to the work.
 - Consultants, soils engineers, surveyors, drillers, laboratories, and contractors.
 - Rented vehicles, local public transportation and taxis, travel and subsistence.
 - Special fees, insurance, permits, and licenses applicable to the work.
 - Outside computer processing, computation, and proprietary programs purchased for the work.

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. 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. Refine 2025 GSP update workplan. Begin discussions on how to address public comments received on GSP and revisions in the 2025 Plan Updates. 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.
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.

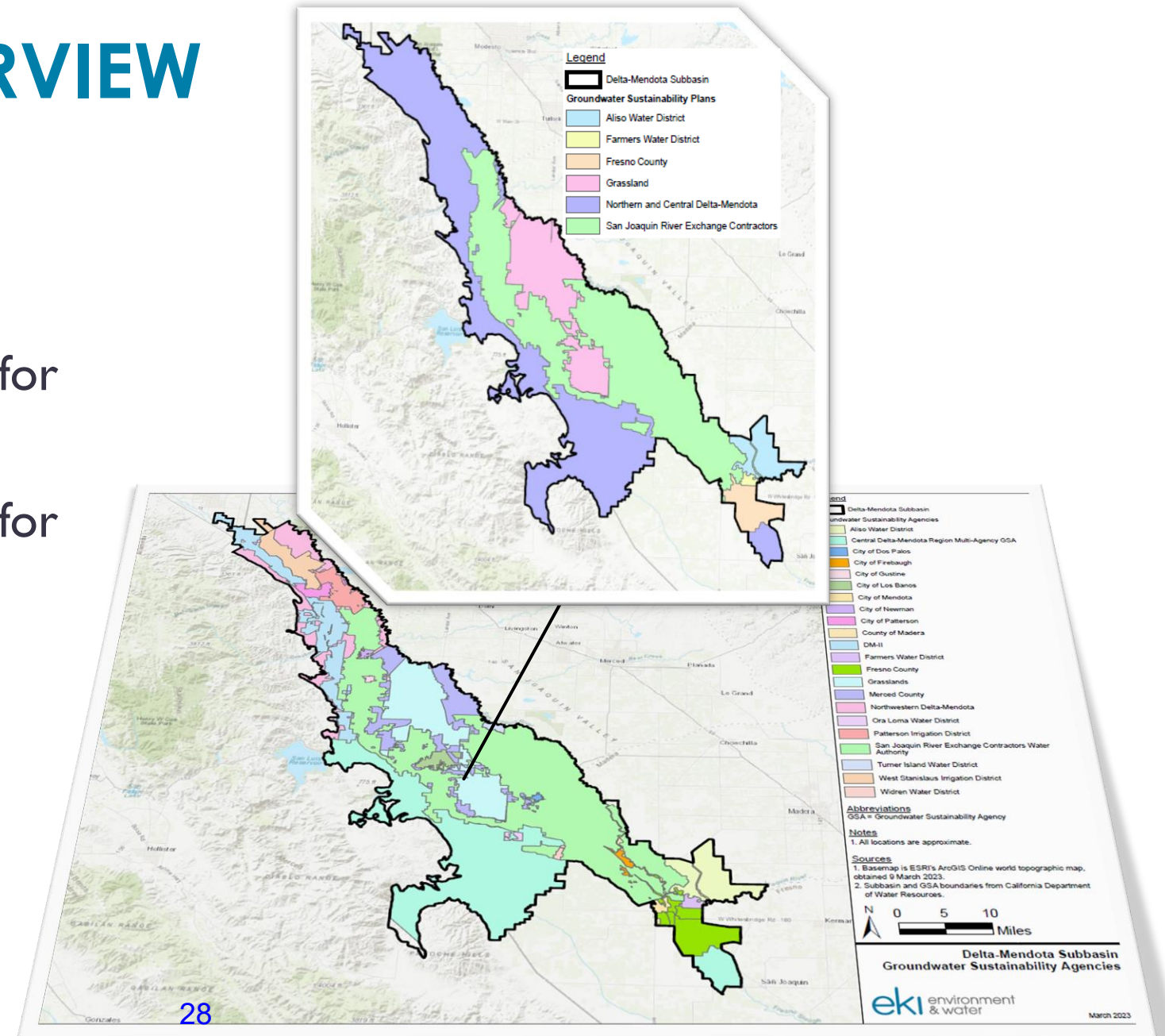
DELTA-MENDOTA SUBBASIN RESPONSE TO INADEQUATE DETERMINATION

10 APRIL 2023

TECHNICAL MEETING #3

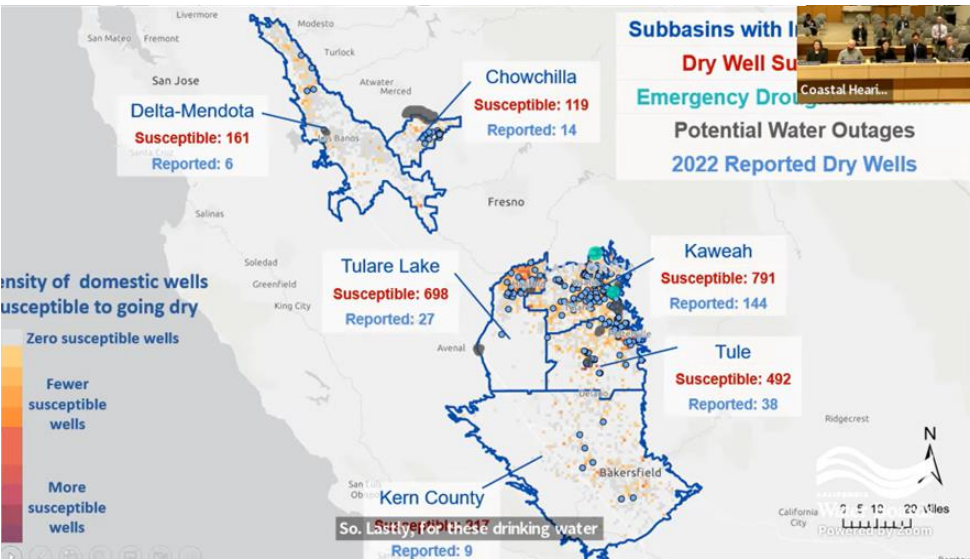
PRESENTATION OVERVIEW

- Summary of SWRCB Meeting
- Results to be Achieved Today:
 - Direction on SMC Approach for Water Levels
 - Direction on SMC Approach for GW Storage
- Water Budget/Model Update
- Next steps



SWRCB MEETING 4 APRIL 2023

- SWRCB staff presented a technical analysis of the various technical issues they observed in the 6 Inadequate basins to assist with “prioritization”.
- Staff presented a potential timeline for intervention, with the assumed “kick off date” of May 2023; the SWRCB may not determine a pathway for at least two months however, so timeline likely extended, even for highest priority basins.
- Based on comments by the SWRCB it seems like the DM Subbasin may not be top priority, so revision and SWRCB process is likely to be even more closely aligned with 2025 Update timing.
- Public comments were primarily from NGOs focused on water quality and well impacts.



MEETING OBJECTIVES

Objective #1:

Confirm Water Level SMC Approach

PROPOSED WATER LEVEL URs AND MTs/MOs

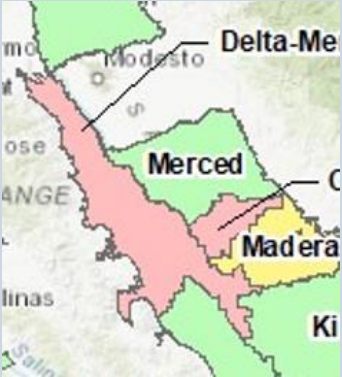
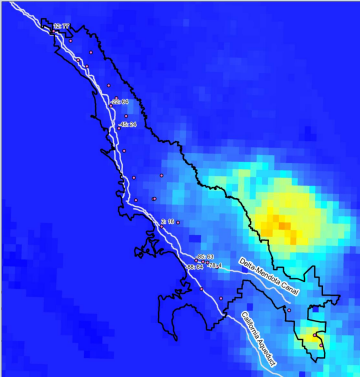
- **Undesirable Results:** UR occurs if MTs are exceeded at 25% or more of RMS for two consecutive years.
- **Minimum Thresholds:** Set at historic low groundwater level (prior to end of WY 2016 [i.e., up through Sept 2016])
- **Measurable Objectives:** Set at seasonal high water levels from WY 2015 (i.e., Spring 2015)
- **Interim Milestones:** Glide path between MTs and MOs based on future modeling and planned P/MA implementation

PROCESS REQUIRED TO JUSTIFY SMCs

Undesirable Results (URs) (CCR §354.26) Minimum Thresholds (MTs) (CCR § 354.28)

- Identify beneficial uses/users that are impacted by URs
 - Describe the causes and effects of URs
 - Describe what constitutes "significant and unreasonable" effects
 - Define quantitative criteria relating URs to MT exceedances
- Describe information and criteria used to establish and justify the MTs
 - Describe relationship between MTs for each SI, and how URs are avoided
 - Describe how MTs avoid impacts to adjacent basins
 - Describe how MTs may affect beneficial uses/users, land uses and property interests
 - Discuss related state, federal or local standards

WATER LEVEL SMC DEVELOPMENT PROCESS

ID Beneficial Users	Impacts to Beneficial Users	Consideration of Adjacent Basins	Relationships with Other Sustainability Indicators	State, Federal, and Local Standards
<ul style="list-style-type: none">• Holders of overlying GW rights (ag users, domestic well owners)• Municipal Well Operators• Environmental Users of GW (GDEs, managed wetlands)	<ul style="list-style-type: none">• Well impacts analysis to assess vulnerability of well dewatering• Analysis of GDE health (using PULSE data)* <p>* Recognize that managed wetlands are also supported by surface water</p>	<ul style="list-style-type: none">• Compare MOs/MTs to those in adjacent basins to assess potential impacts to GW gradients 	<ul style="list-style-type: none">• GW Storage• Subsidence• Interconnected Surface Water• Water Quality 	<ul style="list-style-type: none">• Not applicable for water levels

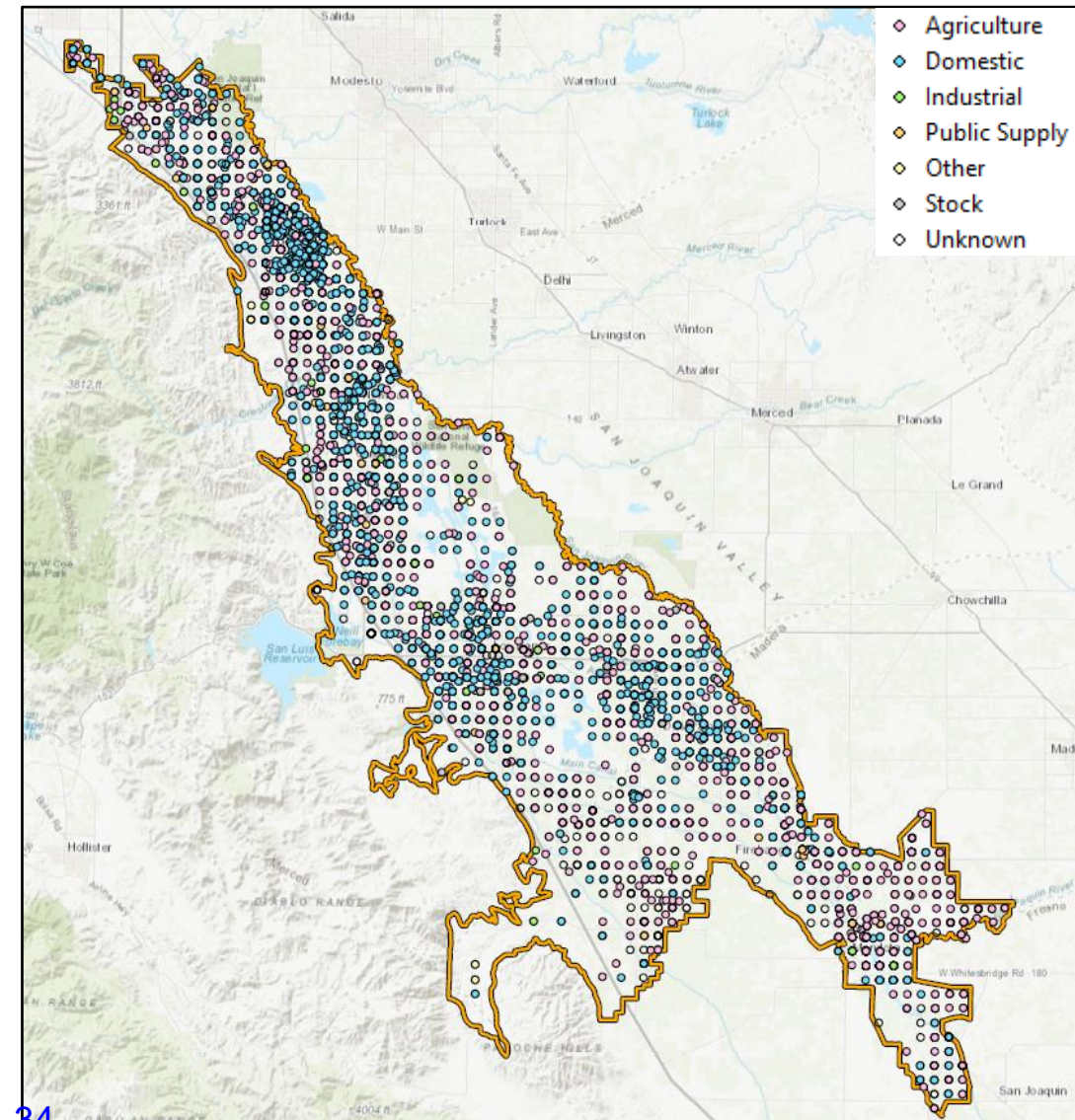
BENEFICIAL USERS: GROUNDWATER PUMPERS

Well Count by Type*:

- Agricultural: 1,729
- Domestic: 2,470
- Public Supply: 87
- Industrial: 71
- Other: 1,172

Total: 5,529 wells

* Excludes cathodic, test, injection, remediation, and monitoring wells



IDENTIFICATION OF NEGATIVE EFFECTS OF SUSTAINABILITY INDICATORS ON BENEFICIAL USERS

Sustainability Indicator	Beneficial Uses/Users				
	Agricultural/ Industrial Users	Domestic / Small Community Users	Municipal Users	Environmental Users	Critical Surface Infrastructure
Chronic Lowering of Groundwater Levels	Well dewatering* BUT also effects on ag economy if SMCs too strict	Well dewatering*	Well dewatering*	Dewatering of root zones for phreatophyte plant communities (GDEs)	Indirect: lowering of groundwater levels below historical lows can lead to land subsidence

* Dewatering is an umbrella term for reduced access to GW due to drop in GW levels

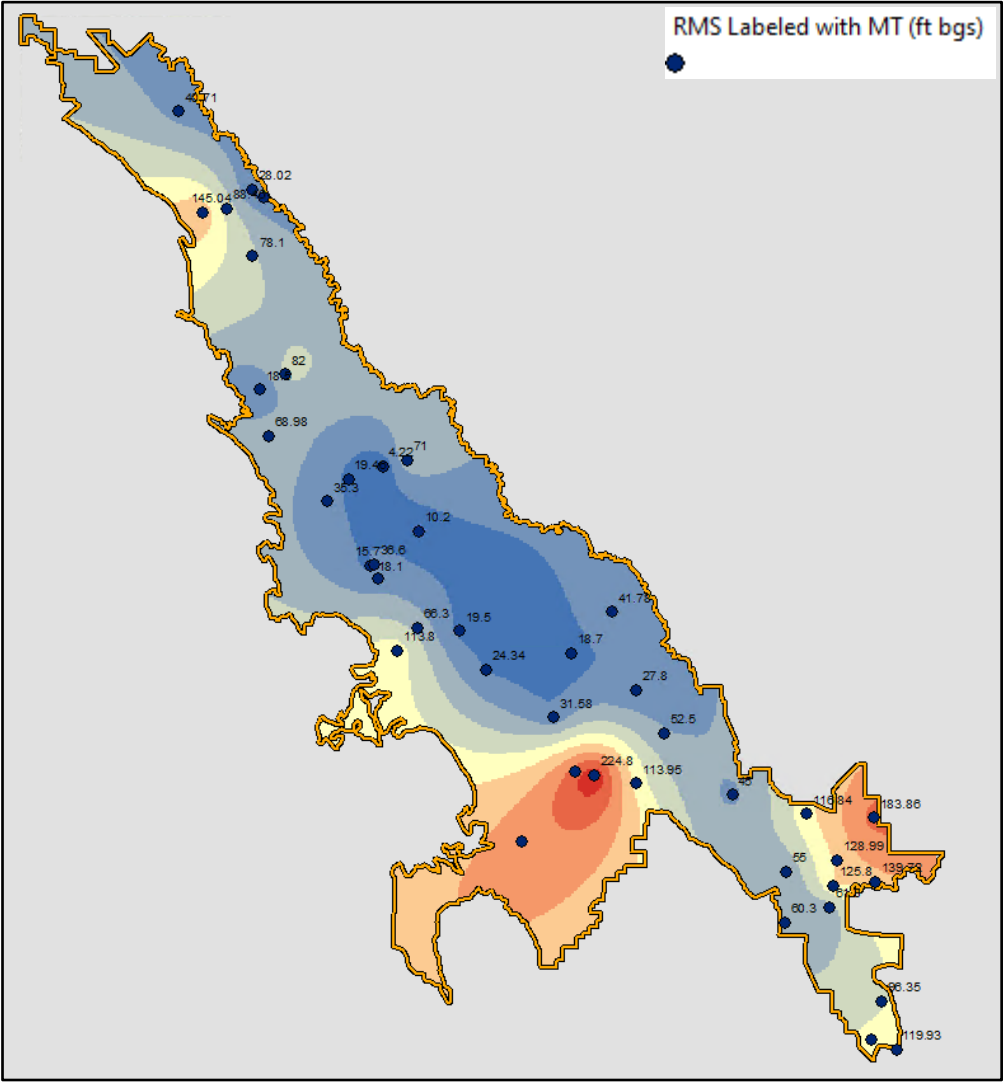
DEFINE UNDESIRABLE RESULTS CRITERIA

Sustainability Indicator	Beneficial Uses/Users				
	Agricultural/ Industrial Users	Domestic / Small Community Users	Municipal Users	Environmental Users	Critical Surface Infrastructure
Chronic Lowering of Groundwater Levels	<p><u>Questions:</u></p> <ul style="list-style-type: none"> • How much well dewatering is significant & unreasonable? • In other words, what percentage of wells being dewatered is significant & unreasonable, and why? <p><u>Translate</u> answer to MT exceedances at RMS locations: MT exceedances at X% of RMS locations over XX period</p>				

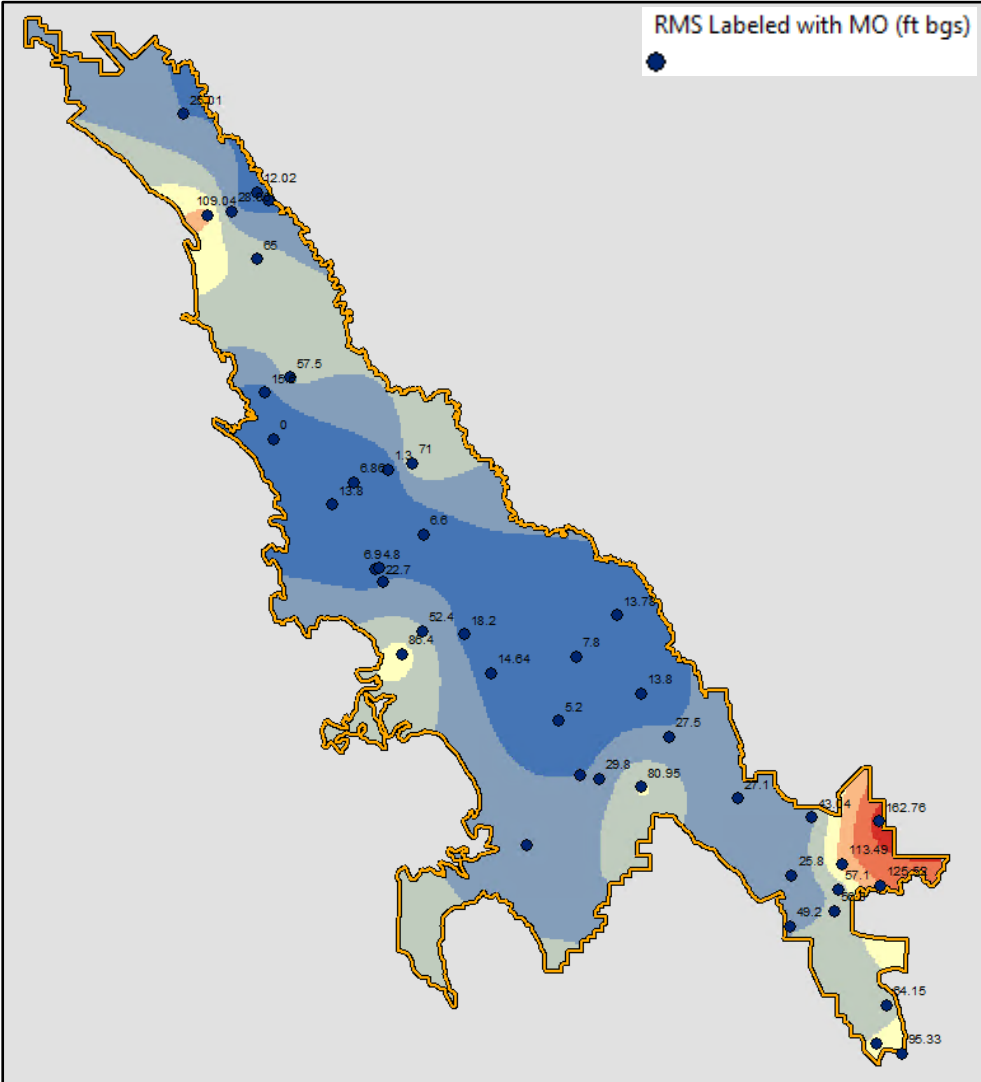
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Need justification for choices

RMS AND SMC CONTOURS – UPPER AQUIFER

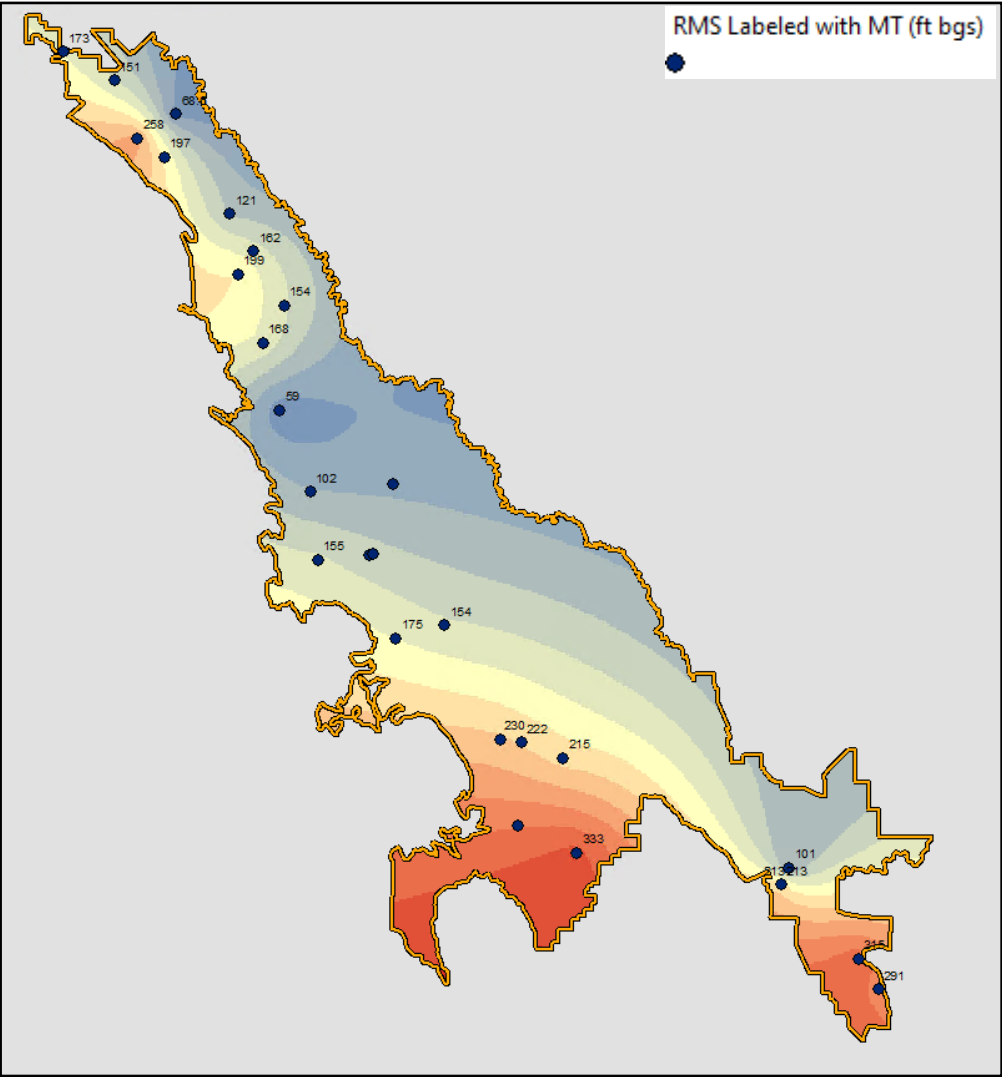


MT Contours – Upper Aquifer

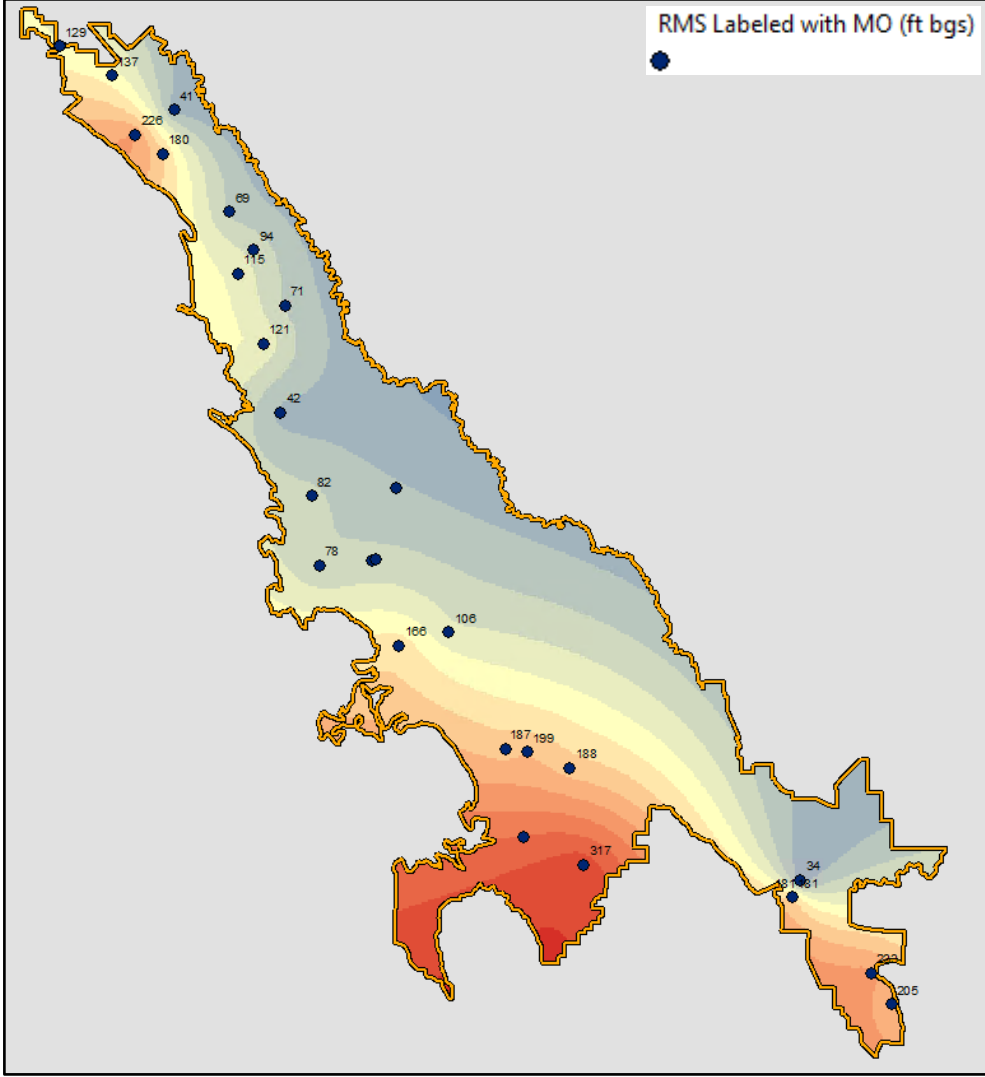


MO Contours – Upper Aquifer

RMS AND SMC CONTOURS – LOWER AQUIFER



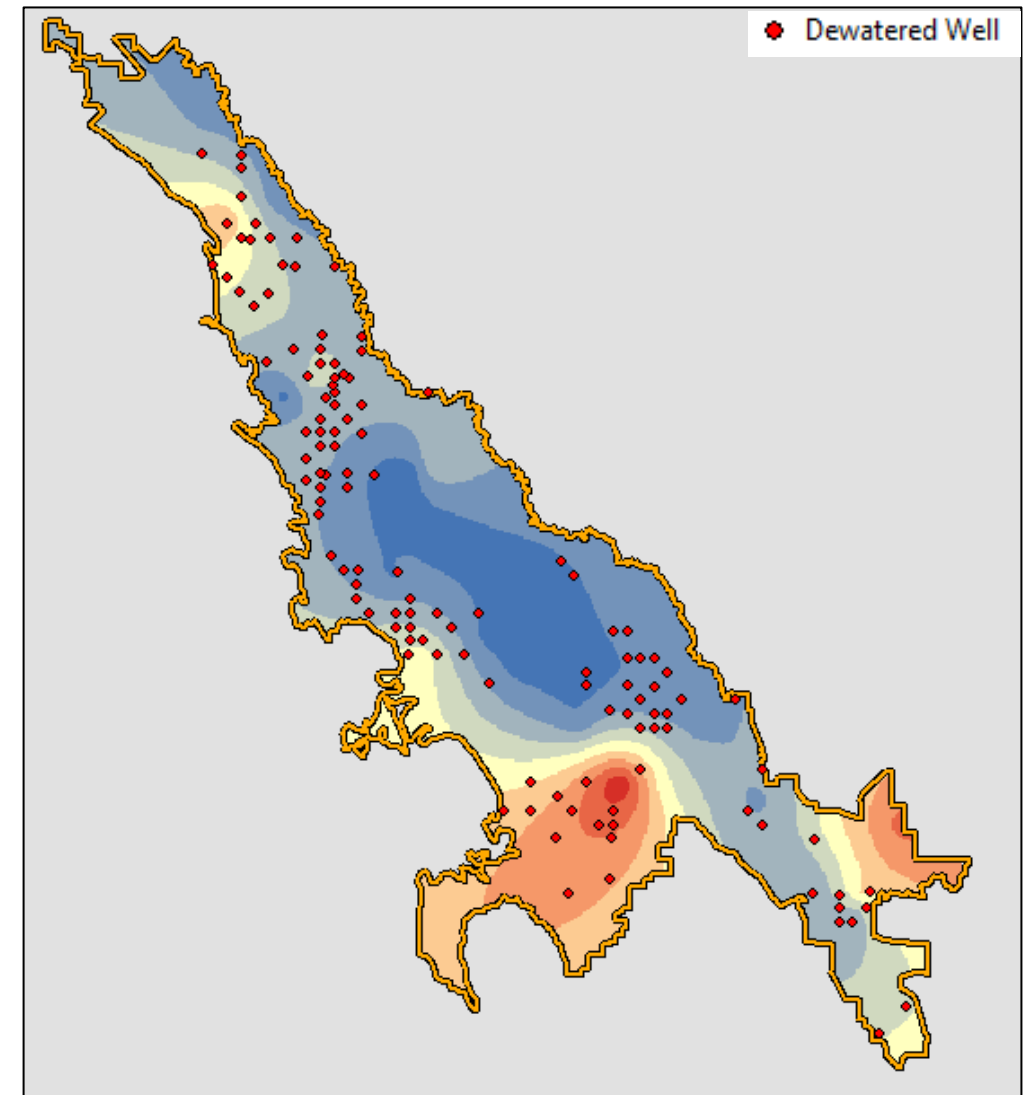
MT Contours – Lower Aquifer



MO Contours – Lower Aquifer

WELL IMPACTS ANALYSIS AT SMCs – UPPER AQUIFER

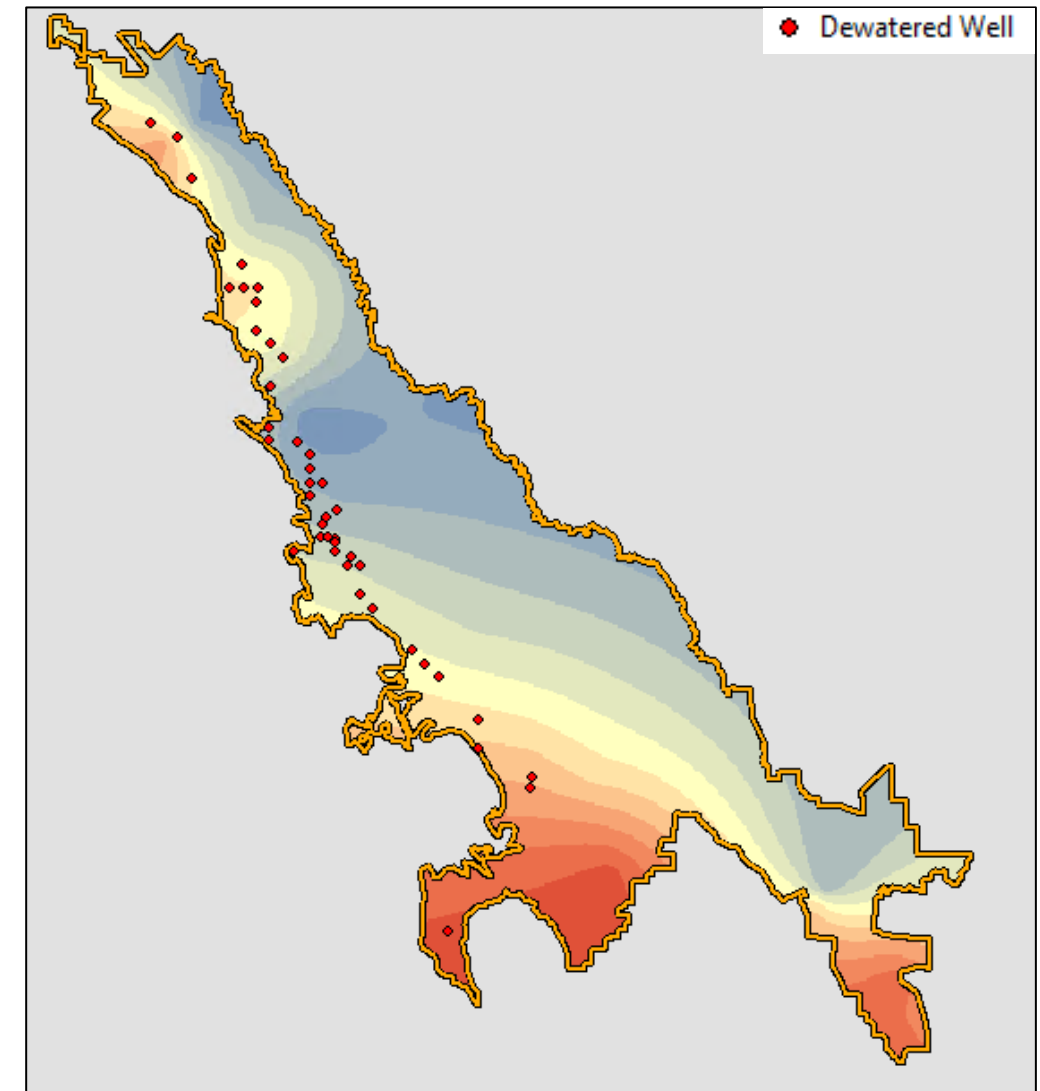
- 1.5% of wells dewatered at MOs
 - 46 out of 3,051 total wells
 - 31 out of 1,739 domestic wells (1.8%)
- 5.4% of wells dewatered at MTs
 - 165 out of 3,051 total wells
 - 128 out of 1,739 domestic wells (7.4%)



Wells Dewatered at MTs – Upper Aquifer

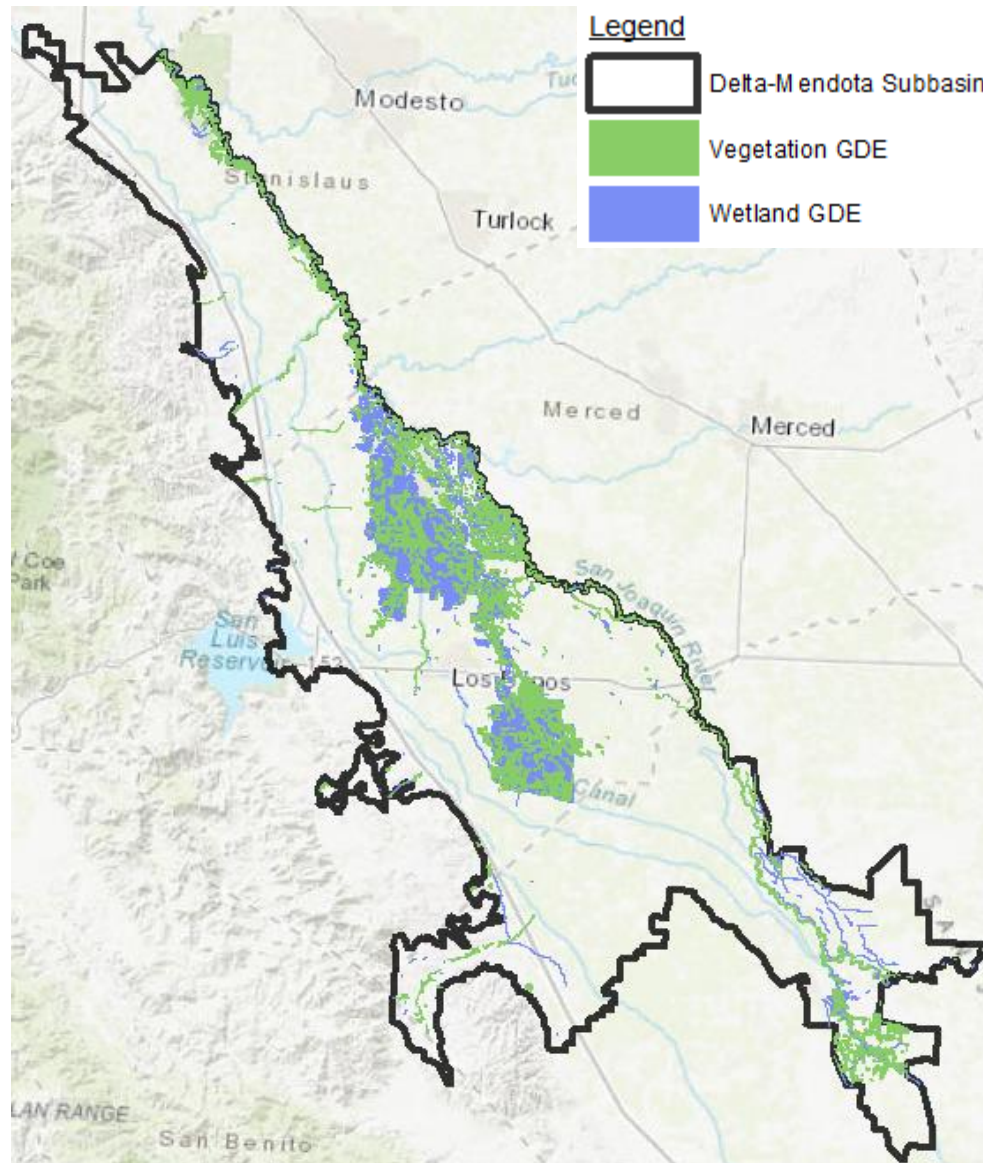
WELL IMPACTS ANALYSIS AT SMCs – LOWER AQUIFER

- 0.6% of wells dewatered at MOs
 - 15 out of 2,386 wells
 - 9 out of 683 domestic wells (1.3%)
- 2.4% of wells dewatered at MTs
 - 57 out of 2,386 total wells
 - 32 out of 683 domestic wells (4.7%)



Wells Dewatered at MTs – Lower Aquifer

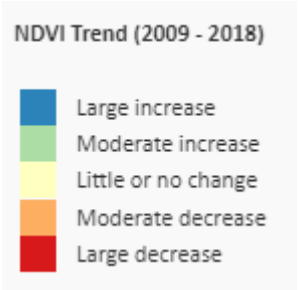
BENEFICIAL USERS: GDEs AND MANAGED WETLANDS



- Total of 74,376 acres of combined vegetation and wetland GDEs
- GDEs are located in the following GSP Groups:
 - Grasslands (81%)
 - Northern & Central D-M (7%)
 - Fresno County MA (6%)
 - SJREC (6%)
 - Aliso WD (<1%)
 - Farmers WD (<1%)

GDE IMPACTS ANALYSIS

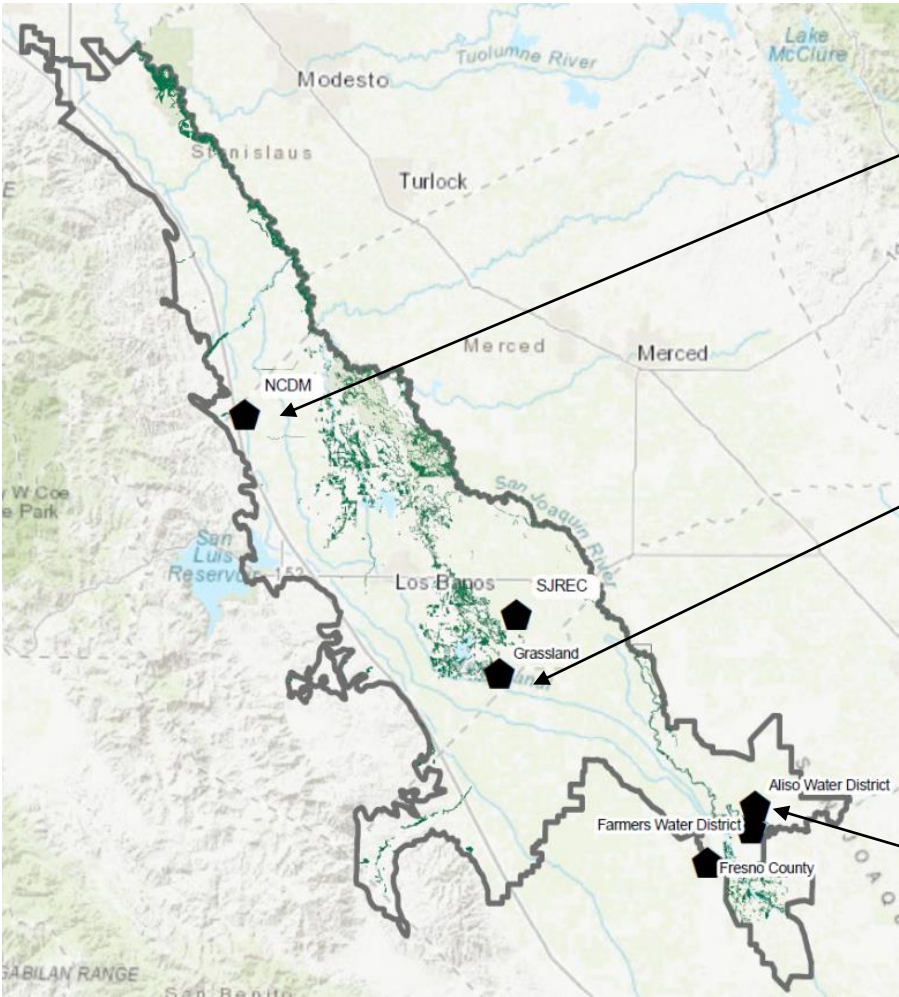
- Examined trends in vegetative health (NDVI and NDMI) between 2009-2018 from The Nature Conservancy GDE Pulse tool
- Within the combined potential GDEs area, summed the total cells by each GSP group that had increases or decreases based on the GDE Pulse color scale
- Increasing GDE health over the 10-year period



GSP Group	Change in GDE area NDVI trends from 2009-2018
Grasslands	39%
Northern & Central D-M	44%
Fresno County MA	18%
SJREC	29%
Aliso WD	88%
Farmers WD	78%
Area weighted average	37%

Results may change upon receipt and processing of data from 2018-2022

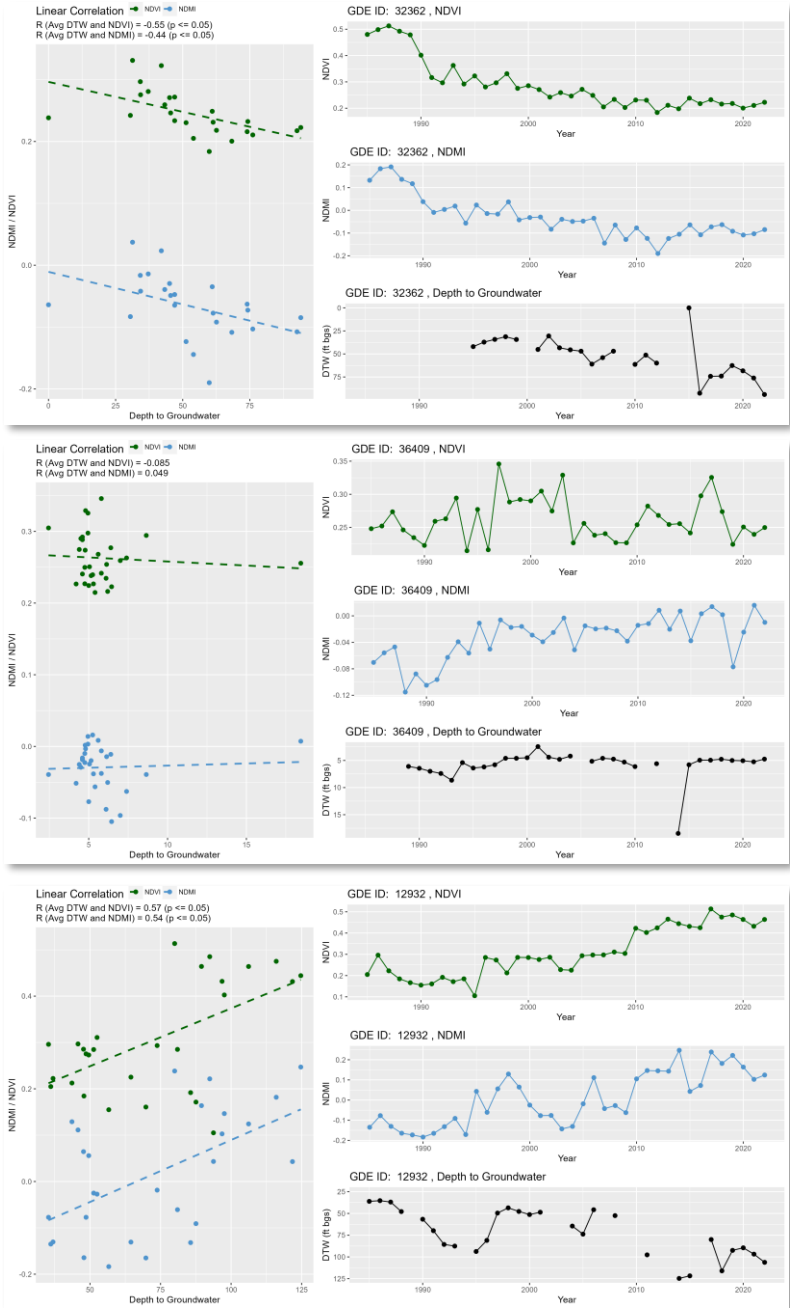
VEGETATIVE GDE HEALTH AND NEARBY RMS WATER LEVELS



Decreasing GDE health with decreasing water levels

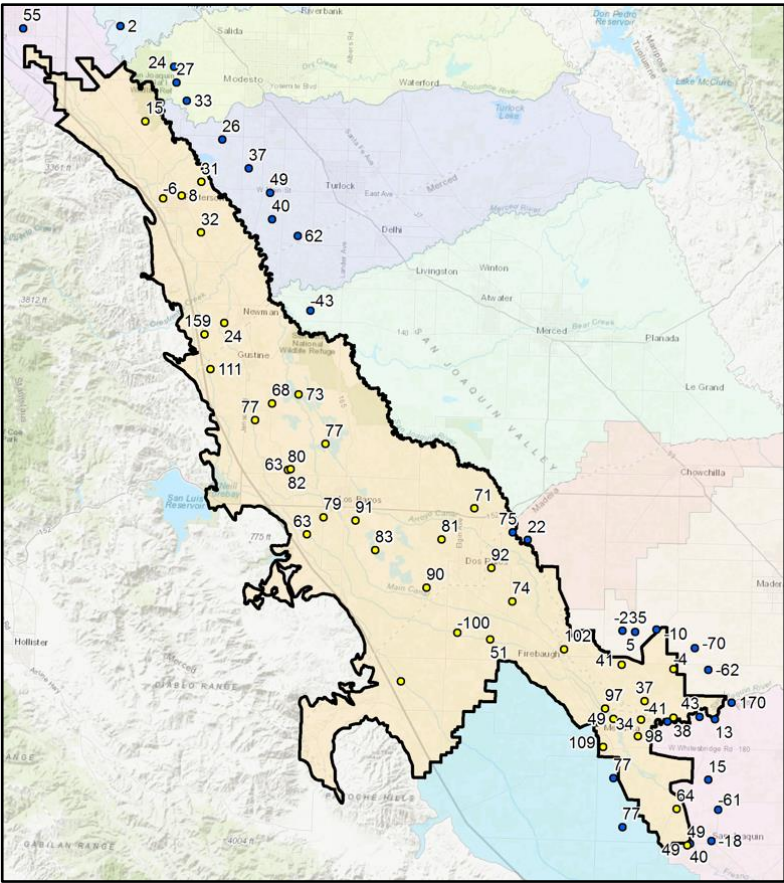
Relatively stable GDE health and water levels

Increasing GDE health with decreasing water levels

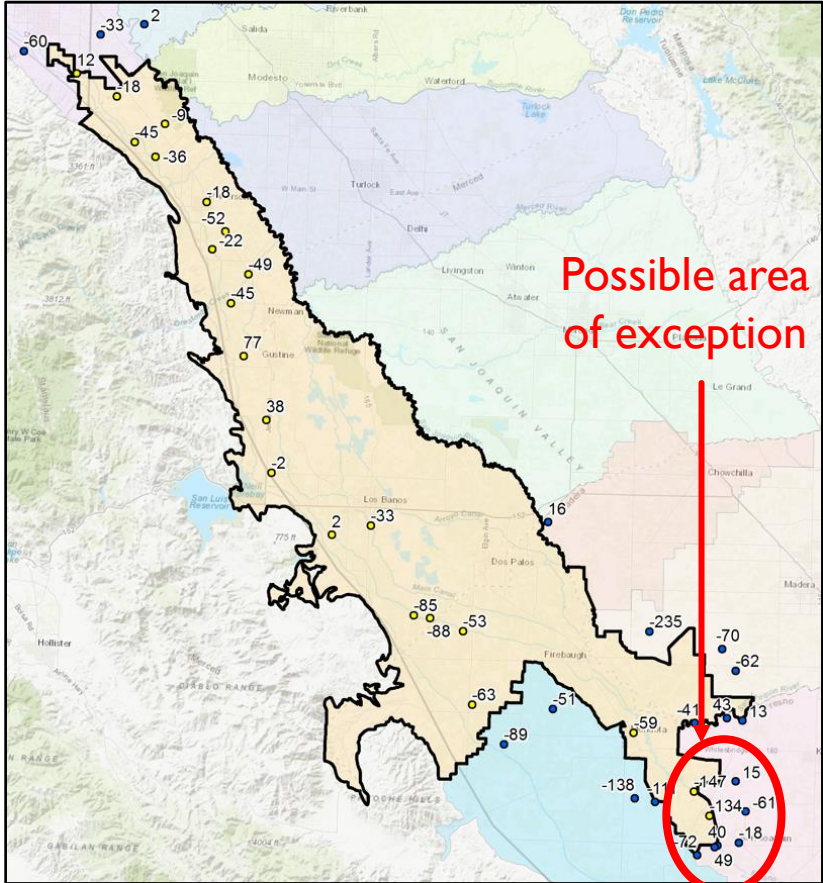


IMPACTS TO ADJACENT BASINS

- Groundwater level MTs set at 2016 historical lows in the D-M basin are generally as high or higher than those set in adjacent basins



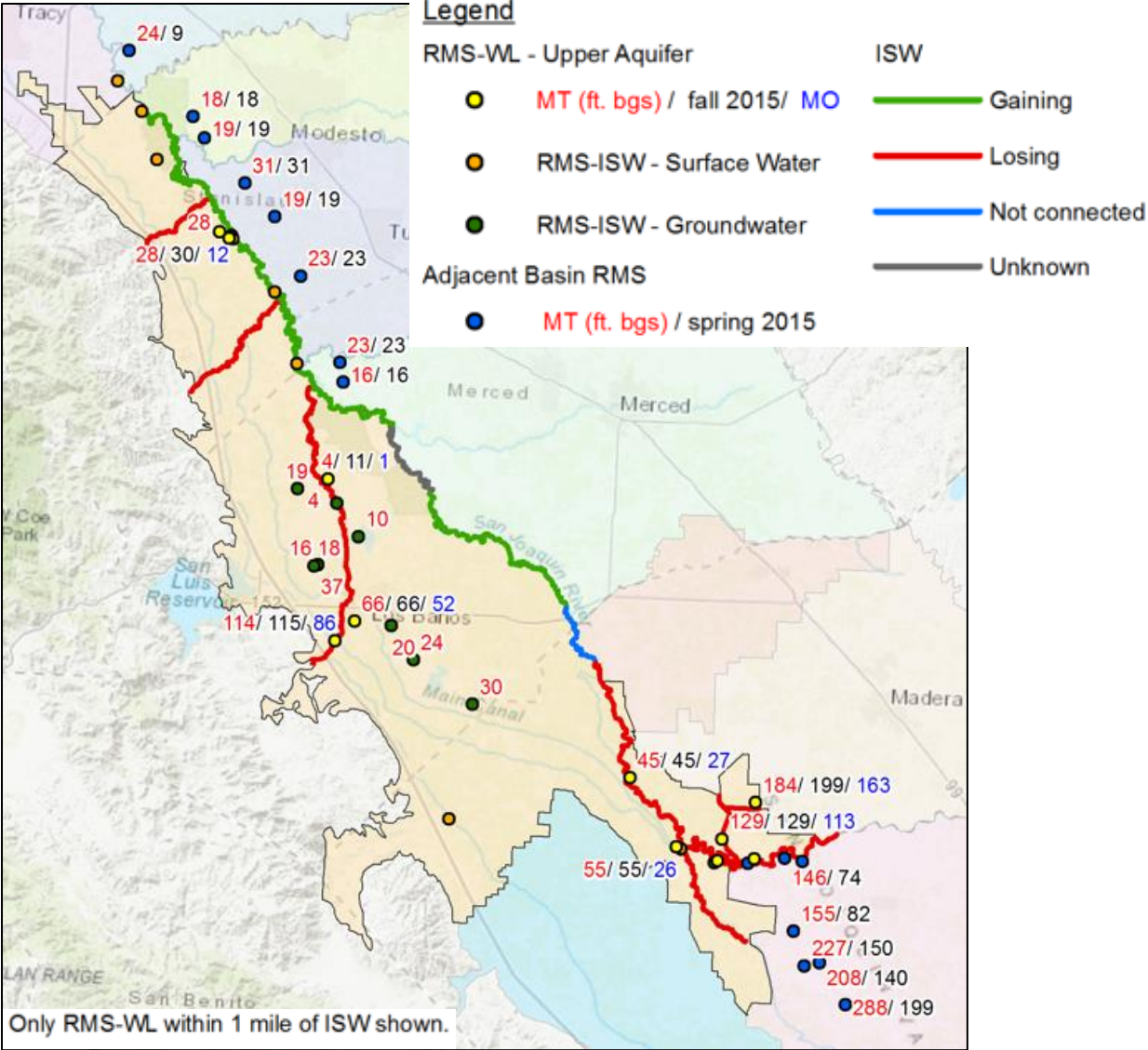
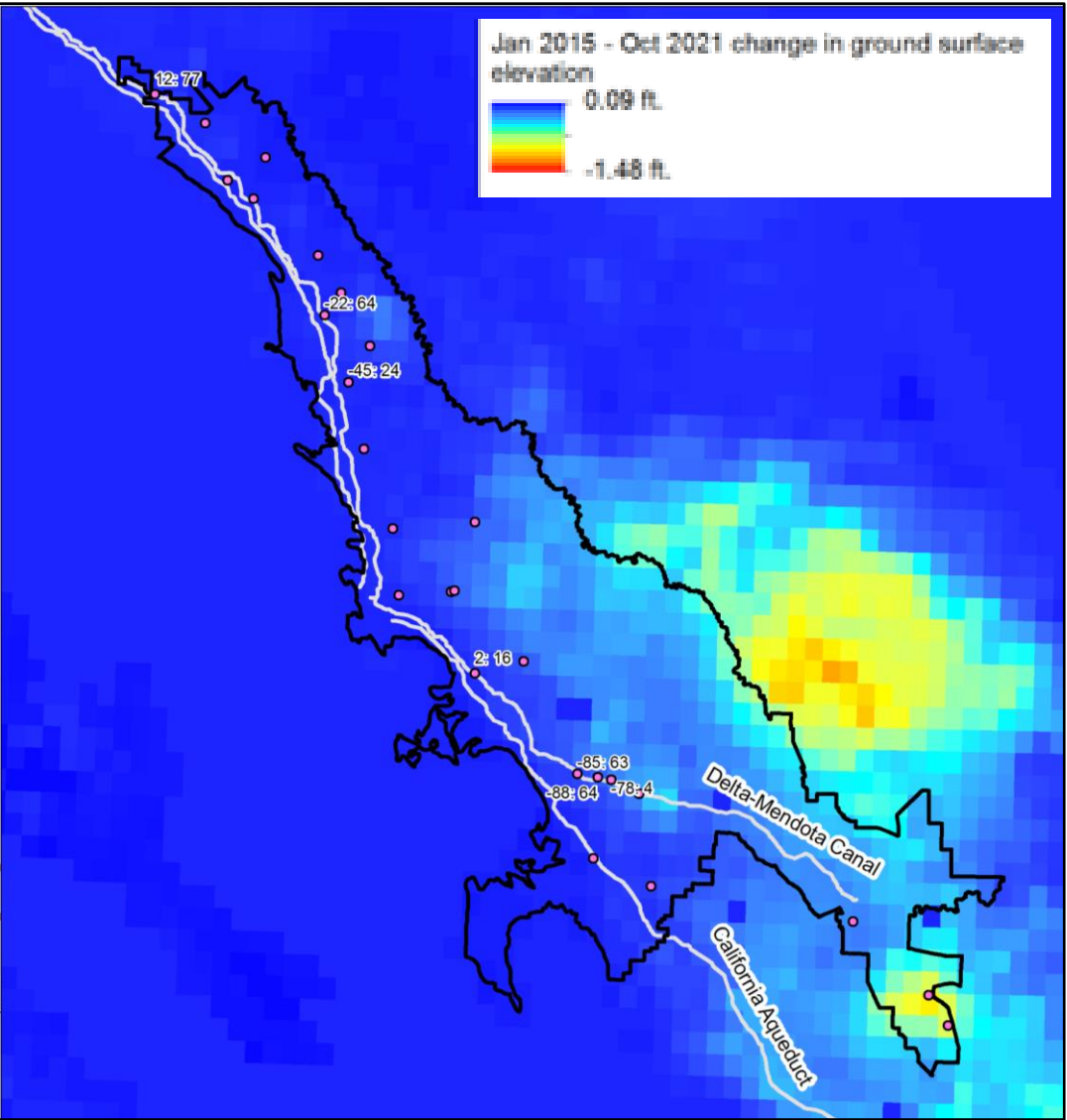
Upper Aquifer*



Lower Aquifer*

* MTs for RMS wells in adjacent basins are not fully differentiated between aquifers in these maps due to incomplete available information. Results may change upon further information/analysis.

RELATED SUSTAINABILITY INDICATORS



ASSESSMENT OF RELATED SUSTAINABILITY INDICATORS

- **GW Storage:** Do GW level MTs allow for adequate flexibility for operation of the basin during drought periods? → Analyze volume of GW available above MTs and compare to volume extracted during past/foreseeable multi-year drought; requires application of GW Model
- **Subsidence:** Do GW level MTs prevent GW levels from exceeding historical lows, thus theoretically preventing new subsidence? **YES**
- **Interconnected Surface Water:** Do GW level MTs prevent GW levels from exceeding historical lows prior to 2015, thus avoiding new undesirable results for the ISW indicator? → Analyze MTs relative to pre-2015 GW levels; requires application of GW Model
- **Water Quality:** Do GW level MTs prevent GW levels from exceeding historical lows, thus theoretically preventing new water quality degradation related to groundwater extractions? **YES**

REVISED MT/MO JUSTIFICATIONS

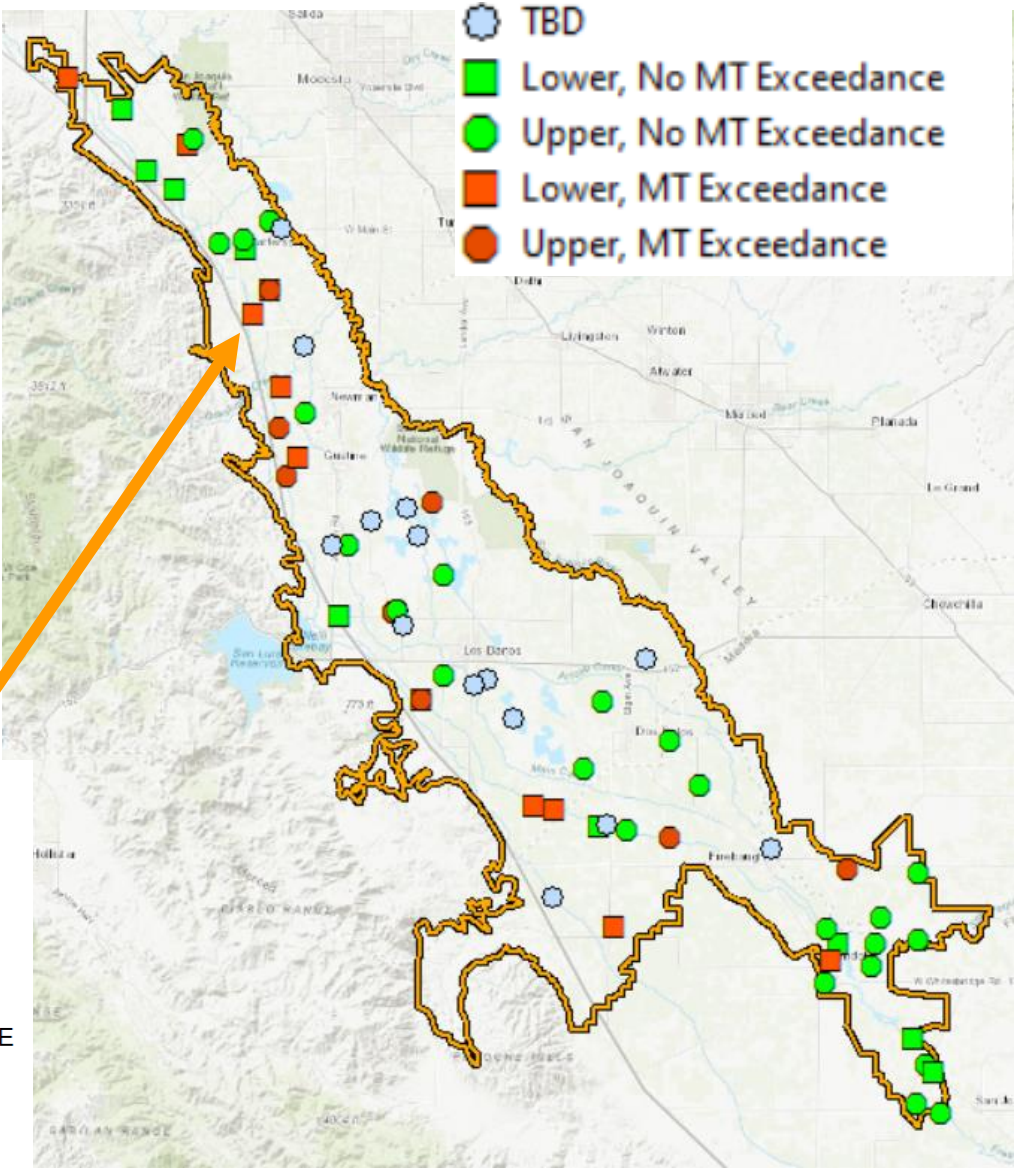
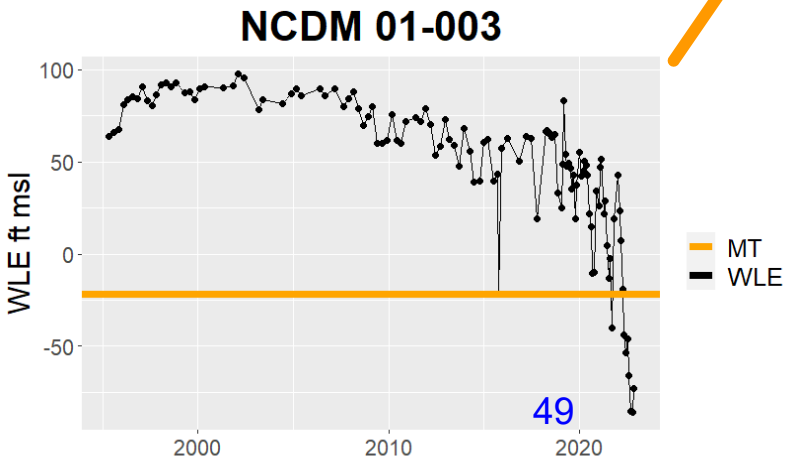
Impacts to Beneficial Users	Impacts to Adjacent Basins	Impacts to Other Sustainability Indicators
<ul style="list-style-type: none">• Less than 10% of wells will be impacted, which is lower than the anticipated natural replacement rate given current well ages• The average change in GDE health by area between 2009-2018, which represents a historical range of GDE health fluctuation and response to climatic and managed conditions, increased by 37%	<p>Groundwater level MTs set at 2016 historical lows in the D-M basin are generally as high or higher than those set in adjacent basins</p>	<ul style="list-style-type: none">• Impacts no worse than recent historic lows, SGMA baseline• Sufficient GW storage to meet several years of drought• MTs limited to no lower than historic lows theoretically prevents additional subsidence* and groundwater quality degradation due to groundwater extraction <p><i>* Delayed subsidence from historic lows may still occur for years</i></p>

REVISED UR DEFINITION & JUSTIFICATION

UR Criteria	UR Justification
MT exceedances at 25% of RMS for two consecutive years (four seasonal measurements)	<p>Groundwater Pumpers</p> <ul style="list-style-type: none">• Even if MTs were exceeded in ALL RMS, less than 10% of domestic wells would be impacted; fewer wells would be impacted at the UR criterion of 25% of RMS.• A percentage much lower than 25% suggests a primarily local impact, whereas much larger percentage suggests a widespread impact inconsistent with the Sustainability Goal.• Impacts are not significant and unreasonable because, based on current age of wells, approximately 19% of domestic wells (and 25% of all wells) are more than 40 years old and would likely have to be replaced anyway before 2040. <p>Groundwater Dependent Ecosystems</p> <ul style="list-style-type: none">• Based on NDVI trends between 2009 and 2018, the average change in GDE health by area increased by approximately 37%, which represents the historical range of GDE health fluctuation and response to climatic and managed conditions.• A UR criterion of 25% of RMS falls within the range of GDE health by area fluctuations observed between 2009-2018 (37%)

POTENTIAL RISK TO BASIN / GSAs

- Can the GSAs maintain water levels above the SMCs?
- In the past two years there have been MT exceedances and water level trends remain generally downward, despite some recovery during wet years
 - In WY 2021: **9 MT exceedances** out of 54 RMS wells with data and established MTs (17%)
 - In WY 2022: **19 MT exceedances** out of 52 RMS wells with data and established MTs (37%)

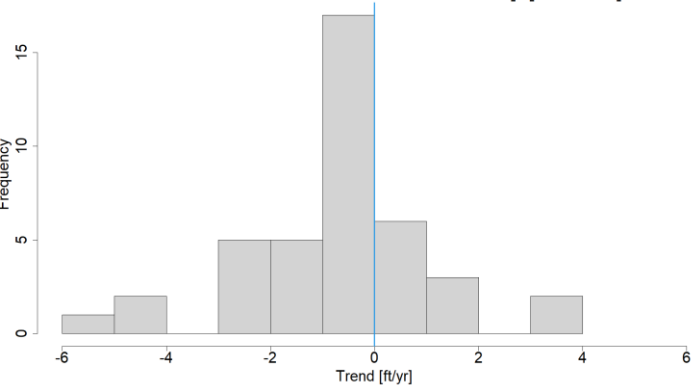


Wells Exceeding MTs – WY 2022

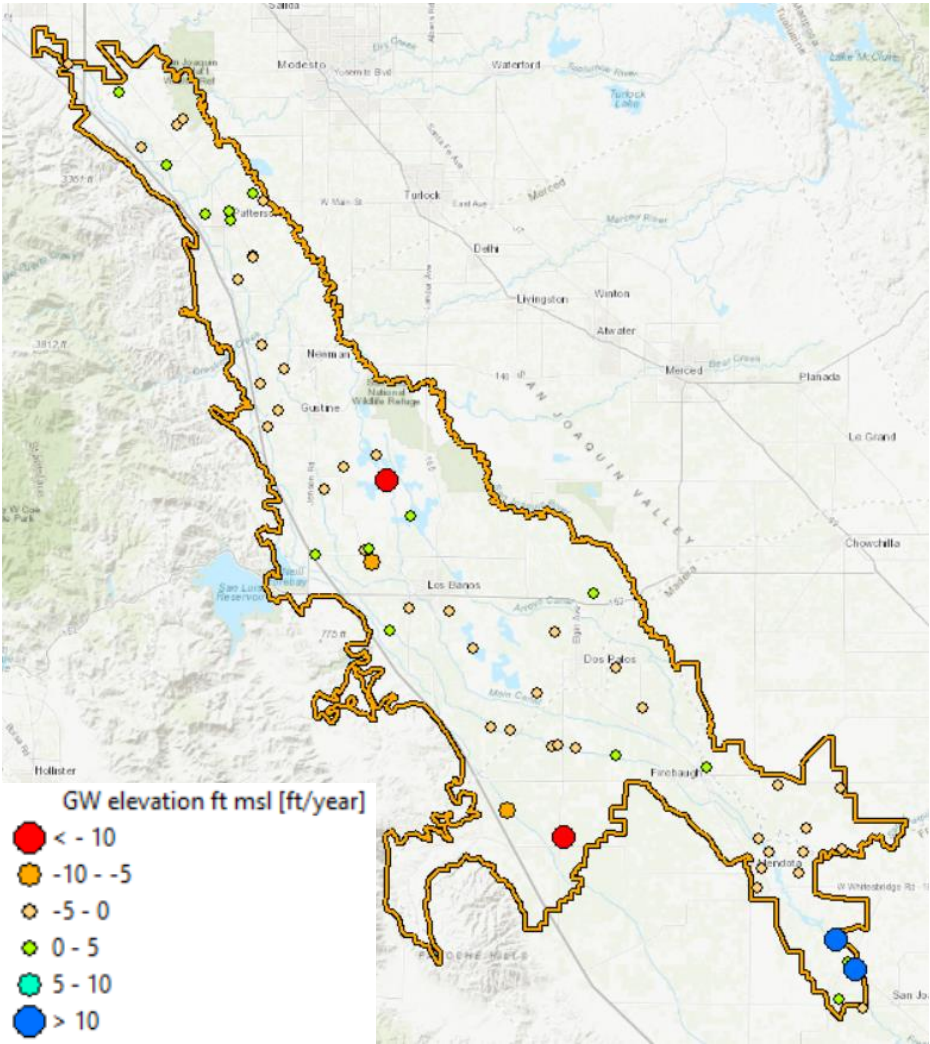
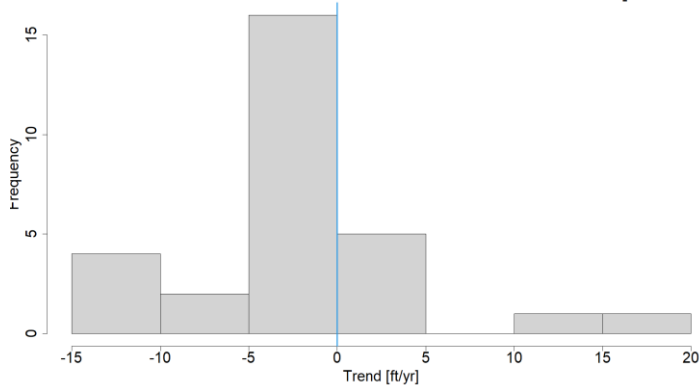
RMS WATER LEVEL TRENDS (2002-PRESENT)

	Positive Trend	Negative Trend	NA	Total
Upper Aquifer	11 (15%)	30 (40%)	2	43
Lower Aquifer	7 (10%)	22 (29%)	4	32
Total	18 (25%)	52 (69%)	6	75

Trend Distribution at RMWs - Upper Aquifer



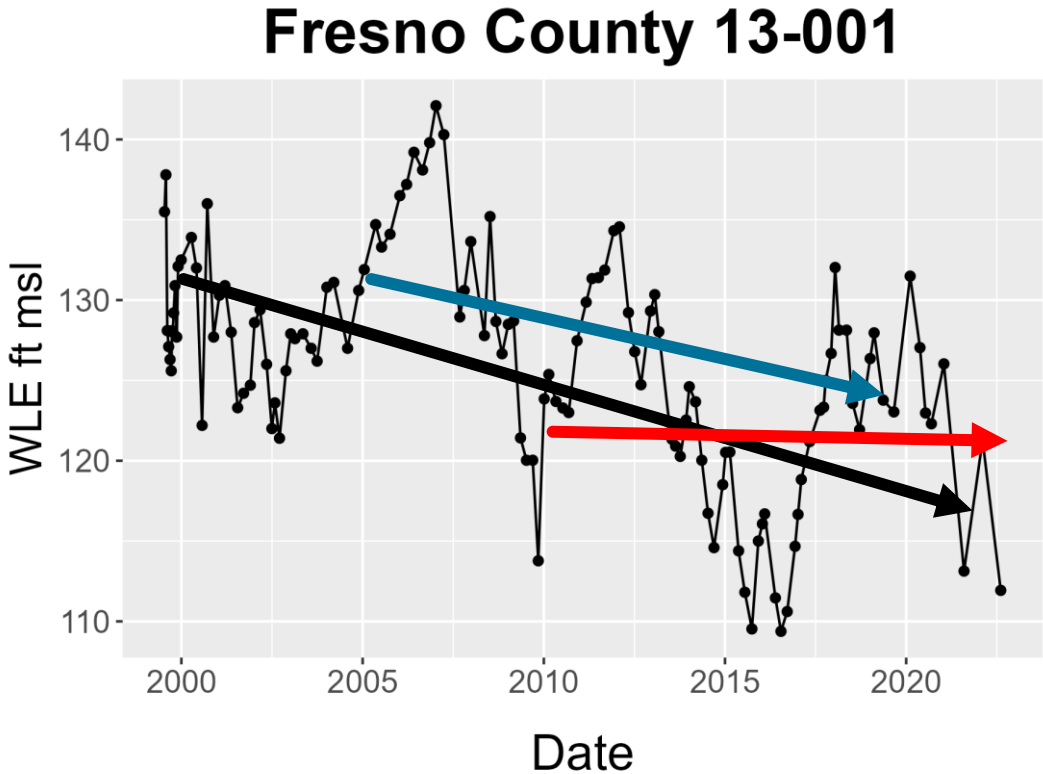
Trend Distribution at RMWs - Lower Aquifer



TRENDS ARE SENSITIVE TO TIME PERIODS

(2002-2020*) (2010 -2022*) (2005-2019**)

2002-2020	Positive Trend	Negative Trend	NA	Total
Upper Aquifer	13 / 16 / 12	28 / 25 / 29	2	43
Lower Aquifer	11 / 15 / 11	11 / 7 / 11	10	32
Total	24 / 31 / 23	39 / 32 / 40	12	75



* WY 2019 is a wet year

** WY 2005 – 2019 is consistent with long term average hydrology based on SJR Index

MEETING OBJECTIVES

Objective #2:

Provide Direction on GW Storage SMC
Approach

WAS THE SGMA REGS PROCESS FOLLOWED TO DEVELOP THE GROUNDWATER STORAGE SMCs?

Basin	ID Beneficial Users	Impacts to Beneficial Users	Consideration of Adjacent Basins	Relationship with other SIs	State, Federal, and Local Standards
Delta-Mendota (Common Chapter SMC Section)	--	Partial (describes significant and unreasonable impacts, but not impacts of specific MTs)	--	✓	--
Kings	✓	✓	Partial (mentioned for future consideration)	✓	--
Westside	✓	✓	✓	✓	--
Merced	--	--	--	--	--
Eastern San Joaquin	✓	✓	--	✓	--

SUMMARY OF GROUNDWATER STORAGE URs

Basin	UR Criteria	UR Justification
Delta Mendota (Common Chapter)	Upper Aquifer: Groundwater levels as proxy Lower Aquifer: Land subsidence used as proxy	Upper Aquifer: amount of groundwater storage is directly related to groundwater levels Lower Aquifer: reduction in groundwater storage is caused by inelastic land subsidence
Kings	20% of wells younger than 25 years old are dewatered	URs are defined the same as water levels since they are related. Even at groundwater level MTs, there will be a significant amount of storage in much of the Basin.
Westside	(1) MT exceedance in 2 consecutive, non-drought years (2) 25% of RMS below MTs for two consecutive spring measurements	(1) Encourages no net change in groundwater elevation and storage. (2) No justification
Merced	Sustainability indicator is not applicable	Significant and unreasonable reduction of groundwater storage is not present and not likely to occur in the Subbasin, as cumulative change in storage reflects a rate of overdraft of ~0.3% per year.
Eastern San Joaquin	Storage reduction of 23 MAF	Water resources model indicates most demand for beneficial use occurs within the shallowest 23 MAF of the subbasin.

SUMMARY OF GROUNDWATER STORAGE MTs/MOs

Basin	MT Methodology	MO Methodology
Delta Mendota (Common Chapter)	Upper Aquifer: Groundwater levels as proxy Lower Aquifer: I.I MAF storage loss by 2040 (based on subsidence SMCs)	Upper Aquifer: Groundwater levels as proxy Lower Aquifer: minimize loss of groundwater storage caused by inelastic land subsidence; No additional subsidence after 2040.
Kings	Groundwater level MTs used to create a surface to calculate storage MTs	Groundwater level MOs used to create a surface to calculate storage MOs
Westside	(1) Loss of storage equivalent to decline from 2017 max GW levels to GW level MTs (2) No long-term reduction in groundwater storage based on measured groundwater levels	(1) Same as GW level MO, based on Spring average 2006-2012; (2) Projected average future groundwater level from projected with projects model simulation (2040-2070)
Merced	--	--
Eastern San Joaquin	Groundwater level MTs as a proxy	Groundwater level MOs as a proxy

GROUNDWATER STORAGE MT/MO JUSTIFICATIONS

Basin	Impacted Beneficial Users	Impacts to Adjacent Basins	Relationship with Other Sustainability Indicators
Delta Mendota (Common Chapter)	Groundwater level MTs maintain sufficient storage for beneficial use.	--	Upper Aquifer – caused by declining GW levels Lower Aquifer – physical storage loss caused by subsidence
Kings	Same as water levels - Figures generated to show locations of impacted wells.	To be evaluated when all surrounding GSPs are complete	MTs/MOs for groundwater storage were calculated directly from groundwater levels MOs/MTs
Westside	<ul style="list-style-type: none">No impacts from long term average, as water volume will be the same.Unspecified impacts possible in dry years.	MO Will result in reduced inflow from other basins and thus will not hinder them.	<ul style="list-style-type: none">Groundwater levels used as proxy.No impacts anticipated to water quality or subsidence at MTs.
Merced	--	--	--
Eastern San Joaquin	Pumping for beneficial use generally occurs in lower 23 MAF, and should be protected at storage MTs	--	Analysis indicates a reduction of approximately 1.2MAF of storage may trigger GW level UR

PROPOSED APPROACH TO GW STORAGE SMCs

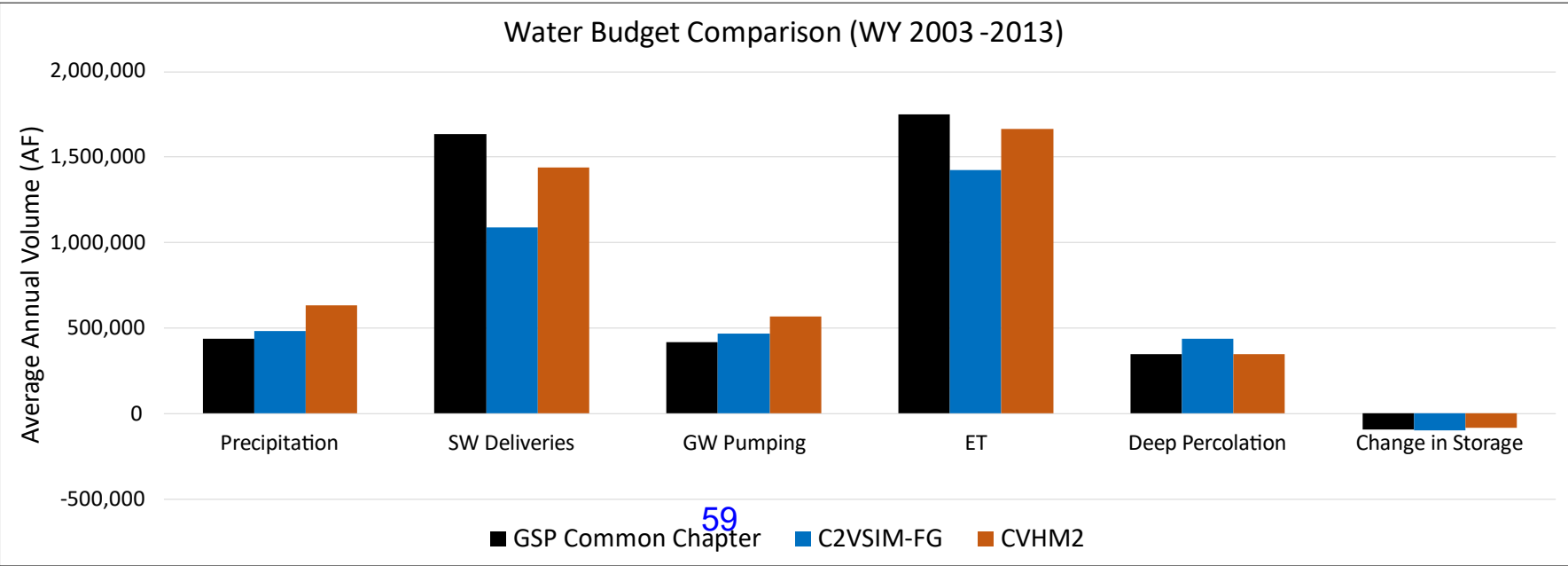
- Use Water Levels as a proxy
- Potential data gap that likely cannot be resolved until we have access to CVHM2 – modeled total storage availability and change in storage in each aquifer at MOs and MTs

MEETING OBJECTIVES

Water Budget / Model Update

USGS/USBR MODEL STATUS UPDATE

- USGS has indicated that draft CVHM2 can be released to SLDMWA based on current funding/information sharing agreements.
- Subbasin will not be able to rely on CVHM2 to support decision making or for direct citation until it has been released publicly; Journal article submission currently in process.



GSP REGULATIONS: WATER BUDGET TIMELINES

- §354.18. (c) Water Budget
 - (1) **Current** water budget information shall quantify current inflows and outflows for the basin **using the most recent** hydrology, water supply, water demand, and land use information.
 - (2) The **Historical** water budget shall include (B) A quantitative assessment of the historical water budget, **starting with the most recently available information and extending back a minimum of 10 years**
 - (3) (A) **Projected (water budget) hydrology shall utilize 50 years of historical** precipitation, evapotranspiration, and streamflow information as the baseline condition for estimating future hydrology.

PROPOSED WATER BUDGET TIMELINES/APPROACH

■ DWR 2023 Determination:

“[...] the Plan has not provided an explanation for the continued use of water year 2013 as the Subbasin’s current water year, especially since the projected components of the water budget have substantially changed [..].”

Basin	Historical	Current	Projected
Delta-Mendota (Common Chapter)	2002-2012	2013	2014-2017, 1979-2017, 1965-1978
Kings	1997-2011	2017	1968-2017
Merced	2006-2015	2016	1969-2018
Eastern San Joaquin	1996-2015	Average of 1996-2018	1969-2018

PROPOSED WATER BUDGET TIMELINES/APPROACH

- CVHM2 Simulation Timeline: 1969-2019*
- Initial EKI scope is to develop Water Budgets using existing CVHM2
 - Historical: WY 2002-2019
 - Current: WY 2019
 - Future Baseline: Covers WY 1969 - 2019 to form a 50-year baseline.
 - Climate Change: Two central tendency scenarios (2030 & 2070) by applying DWR's recommended methodology to Future Baseline
- As part of 2025 GSP Update:
 - CVHM2 will be extended through WY 2023, with respect to Delta-Mendota Subbasin
 - Additional climate or other scenarios will be modeled
 - P/MAs will be evaluated

NEXT STEPS

- Refine the Water Level and GW Storage SMCs based on feedback today
- Initiate other SMC development efforts
- Follow up on access to the CVHM2 Model

QUESTIONS

