

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

Monday May 22, 2023, 1:00 PM **DRAFT**

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

Coordination Committee and Technical Working Group Members and Alternates Present

John Wiersma, Member – San Luis Canal Company (SLCC)/San Joaquin River Exchange Contractors (SJREC)
Jarrett Martin, Member – Central California Irrigation District (CCID)/SJREC
Chase Hurley, Member – Pacheco Water District/Central Delta-Mendota Region
Vince Lucchesi, Member – Patterson Irrigation District/Northern Delta-Mendota Region
Christy McKinnon, Alternate – Northern Delta-Mendota Region/Stanislaus County
Ric Ortega, Member – Grassland Water District
Ken Swanson, Alternate – Grassland Water District
Augie Ramirez, Alternate – Fresno County
Jim Stilwell, Member – Farmers Water District
Will Halligan, Alternate – Farmers Water District (FWD)/Luhdorff & Scalmanini C.E. (LSCE)
Joe Hopkins, Member – Aliso Water District/Provost & Pritchard

San Luis & Delta-Mendota Water Authority Staff Present

John Brodie
Scott Petersen*

Others Present

Aaron Barcellos – Pacheco Water District
Steve Stadler – San Luis Water District (SLWD)
Robert Kostlivi – Stanislaus County
Maria Encinas – City of Patterson
Adam Scheuber – Del Puerto Water District
Nirorn Than – City of Los Banos
Lauren Layne – Baker Manock & Jensen (BMJ)*
Anona Dutton – EKI Environment & Water, Inc. (EKI)*
Sarah Gerenday – EKI*
Christopher Heppner – EKI*
Nigel Chen – EKI*
Ethan Andrews – Provost & Pritchard
Andrew Francis – LSCE
Rick Iger – Provost & Pritchard
Leslie Dumas – Woodard & Curran*
Robert Stoddard – Public

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 made.

3. **Committee to Review and Take Action on the Minutes of the May 8, 2023 Coordination Committee and Technical Working Group Meeting, Wiersma (Policy)**

Will Halligan/FWD requested that discussion of not setting Sustainable Management Criteria (SMC) in areas with already degraded water quality be added to Item 9 of the minutes. Jarrett Martin/CCID motioned to approve the minutes as amended. Ric Ortega/Grassland WD seconded the motion. The motion was passed unanimously by those present.

4. **Committee to Discuss Progress to Date, Dutton (Policy/Technical)**

EKI provided a memo on progress to date on responding to the Inadequate Determination by the Department of Water Resources (DWR). The memo was included in the meeting packet.

5. **Committee to Discuss Draft FAQ for the Inadequate Determination, Brodie (Policy)**

John Brodie/SLDMWA announced that he was compiling edits to the draft FAQ based on comments received and that he would send it to Northern and Central Delta-Mendota Management Committees for their 25 May 2023 meeting. John stated that he would bring the updated draft to the 31 May 2023 policy meeting. Potential options for distribution include posting on the Subbasin's webpage and sending to the Subbasin's email stakeholder distribution list.

6. **Committee to Discuss Delta-Mendota Subbasin Staff Meeting with State Water Resources Control Board Staff and DWR Staff, Brodie/Dutton (Policy/Technical)**

- a. Schedule Update
- b. SWRCB Outreach Consultants and Their Role(s)
- c. Status of SWRCB Staff Review of D-M Subbasin GSPs
- d. Data Requirements for Response to the Inadequate Determination
- e. Approved GSPs and the Periodic Evaluation
- f. Questions/Comments from DWR/SWRCB Staff

John Brodie and Anona Dutton/EKI reported on a meeting they had earlier in the day with DWR and the State Water Resources Control Board (SWRCB) staff on behalf of the Subbasin. SWRCB staff would not comment on the likelihood of the Subbasin being placed on probationary status. SWRCB and DWR staff suggested a meeting to discuss technical issues and the inclusion of new data in a revised plan, probably scheduled for late June. SWRCB and DWR staff responded positively to the news that the Subbasin planned to move towards preparation of a single GSP and requested documentation, which Brodie will provide.

7. **Committee to Discuss RFP for Response to DWR's Inadequate Determination, Brodie (Policy/Technical)**

John Brodie announced that he was incorporating feedback received on the draft RFP for response to DWR's Inadequate Determination and would send out the revised draft on 23 May 2023. He clarified that the RFP is for tasks other than SMCs and water budget, which EKI is already addressing. The response to the RFP will be required within three weeks.

8. **Committee to Discuss Draft MOA for Single GSP Coordination Committee, Layne/Brodie (Policy)**
 - a. Discussion of Comments on First Draft
 - b. Article vs. Policy Preference for MOA/Committee
 - c. Specific Items for 5/31/23 Policy Meeting Discussion
 - d. Structure/Planning for the June 12 Delta-Mendota Subbasin Coordination Committee Meeting and Delta-Mendota Subbasin Groundwater Sustainability Agency Informational Meeting

Lauren Layne/BMJ announced that she had received and incorporated feedback on the draft Memorandum of Agreement (MOA). The next draft will include a list of types of decisions to be decided by unanimity and those decided by simple majority. The number of seats on the Coordination Committee under the MOA is yet to be determined. Lauren Layne expressed that comments received from some GSA representatives indicated that they did not understand how the current agreement is structured, and that the upcoming GSA workshop will be a good opportunity to clarify that. The schedule for adoption of the MOA is yet to be determined.

9. **Committee to Discuss Water Quality Sustainable Management Criteria, Dutton (Technical)**

Agenda Items 9 and 10 were combined for expediency.

10. **Committee to Discuss Subbasin Water Budget, Dutton (Technical)**

Anona Dutton gave an update on the use of CVHM2-SJB for a subbasin wide water budget. Dutton explained that CVHM2-SJB is generally representative of the Subbasin and gives a similar, though slightly lower, long-term decline in storage estimate compared to what was calculated in the 2020 GSP water budgets. EKI will use CVHM2-SJB to develop a subbasin-wide historic water budget for water years (WY) 2003-2018, and a future baseline based on WY 1969 – 2019. WY 2019 will be used as the current water year for the single GSP water budget. Leslie Dumas/Woodard & Curran commented that the climate change assumptions were revised for the Subbasin relative to what was provided by DWR, which was confirmed by Jarrett Martin.

Discussion was held on updated water quality SMCs and revisions to the Representative Monitoring Network (RMN). Several committee members expressed that setting extremely high SMCs for wells with already degraded water was not worthwhile, because the water would not be useable even if the wells were in compliance with their SMCs. An existing total dissolved solids (TDS) concentration of 2,000 mg/L was discussed as a potential threshold for not setting a TDS SMC, as that is the maximum concentration still considered freshwater by DWR.

Anona briefly presented work that had been initiated on the Subsidence SMCs, with an emphasis on refining the current definitions to match the “rate and extent” requirements from the GSP regulations and to confirm the recent subsidence rates against the proposed SMCs.

11. **Next Steps**

- John Brodie will send notices to committee members regarding future meetings with SWRCB or DWR.
- John Brodie will add a line to the RFP regarding sustainability indicators and send it out.

- Lauren Layne will send a revised MOA for review.
- Anona Dutton, Steve Stadler/SLWD, Maria Encinas/City of Patterson, Jarrett Martin, Rick Iger/P&P will continue the discussion of Water Quality SMCs via a call next week.
- Jarrett Martin will participate in a panel discussion hosted by the Association of California Water Agencies and report back.

12. Conference with Legal Counsel – Anticipated Litigation

No conference with legal counsel was held under this agenda item.

13. Conference with Legal Counsel – Existing Litigation

No conference with legal counsel was held under this agenda item.

14. Report out of Closed Session

No report was made, as there was no closed session.

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

No reports were made under this agenda item.

16. Future Delta-Mendota Subbasin Coordination Committee Meetings

- a. Wednesday May 31, 2023: 8:00 AM (Policy Meeting)
- b. Monday June 12, 2023: 1:00 PM at SLDMWA boardroom (includes GSA informational meeting)

Note that this meeting will **not** be held at the Grasslands Water District Office as was previously planned.
- c. Monday June 26, 2023 1:00 PM

17. ADJOURNMENT

Joe Hopkins adjourned the meeting at 4:13 PM.

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

Wednesday May 31, 2023, 8:00 AM **DRAFT**

San Luis & Delta-Mendota Water Authority 842 Sixth St., Los Banos, CA

Coordination Committee and Technical Working Group Members and Alternates Present

John Wiersma, Member – San Luis Canal Company (SLCC)/San Joaquin River Exchange Contractors (SJREC)

Jarrett Martin, Member – Central California Irrigation District (CCID)/SJREC

Chase Hurley, Member – Pacheco Water District/Central Delta-Mendota Region

Vince Lucchesi, Member – Patterson Irrigation District/Northern Delta-Mendota Region

Ric Ortega, Member – Grassland Water District

Ken Swanson, Alternate – Grassland Water District

Augie Ramirez, Alternate – Fresno County

Jim Stilwell, Member – Farmers Water District (FWD)

Joe Hopkins, Member – Aliso Water District/Provost & Pritchard

San Luis & Delta-Mendota Water Authority Staff Present

John Brodie

Others Present

Steve Stadler – San Luis Water District (SLWD)

Maria Encinas – City of Patterson

Amy Montgomery – Santa Nella County Water District

Adam Scheuber – Del Puerto Water District

Lauren Layne – Baker Manock & Jensen (BMJ)

Anona Dutton – EKI Environment & Water, Inc. (EKI) – via zoom

1. Call to Order/Roll Call

John Wiersma/SJREC called the meeting to order at 8:01 AM.

2. Opportunity for Public Comment

No public comment was made.

3. Committee to Discuss Water Quality Representative Monitoring Network Strike Team Call, Wiersma (Policy)

Jarrett Martin/SJREC reported the strike team discussed possibly starting fresh with a new representative monitoring network (RMN) for water quality. Jarrett also discussed the need to determine how to pay for monitoring sites and conduct monitoring in GSA areas outside the cities. Staff was directed to schedule another strike team meeting for June 5.

4. Committee to Review Draft Subbasin MOA for Single GSP Implementation, Layne (Policy)

The latest draft of the MOA was distributed in the meeting room. Discussion included the need to resolve issues including:

- Setting a timeline to adopt the MOA prior to adoption of the single GSP for the Subbasin.
- How to resolve the cost share split for creating the single GSP.
- Determining the size, membership, and cost share split of the Subbasin Coordination Committee under a single GSP.
- Getting clarity on the role of the San Luis & Delta-Mendota Water Authority for the future.
- Finding an implementation balance for the GSAs that includes accountability to the other Subbasin GSAs but maintains independence for the individual GSAs.

5. Committee to Discuss Adaptive Management: Articles vs. Policies, Hopkins/Ramirez, Stilwell/Layne (Policy)

Discussion for this item was rolled into the discussion on the overall draft MOA.

6. Committee to Discuss the Upcoming Technical Meeting with SWRCB/DWR Staff, Wiersma/Martin/Stilwell/Petersen (Policy)

John Wiersma asked staff for an update on scheduling the technical issues meeting suggested by SWRCB/DWR staff at a May 22, 2023 meeting. John Brodie reported he is still waiting for the main personnel from SWRCB and DWR to respond to a doodle poll to schedule the meeting.

John Brodie noted that his understanding is that invited meeting participants will be the strike team of members Hurley, Martin, and Stilwell with others eligible to listen provided a quorum will not be reached. Committee members specified Anona Dutton/EKI will serve as the lead for the Subbasin in the discussion. Items the Committee would like to get resolved at this meeting include: identifying the procedure for submitting the response to the inadequate determination; show progress; and, try to vet the Subbasin's approach to addressing the deficiencies to inform our direction.

7. Committee to Discuss RFP for Completing the Response to the Inadequate Determination for the Delta-Mendota Subbasin, Brodie (Policy)

John Brodie reported that the RFP was transmitted to nine different firms on Friday. The deadline to respond to the RFP is June 23, 2023. The next important date related to the RFP is June 5, is the deadline to submit questions on the RFP. John noted one notice of intent to respond to the RFP was received as of this date.

8. Next Steps, Brodie (Policy)

The following next steps were identified:

- The Water Quality Strike Team will meet June 5, and will include specific recommendations from EKI.
- Lauren Layne will work on language for when the MOA becomes effective, with a target date of September 30, 2023 for approval.
- Staff is to agendize a SPA and cost share action item for the RFP tasks and remaining GSP revisions/response to the inadequate determination.

- Anona will review Article VIII of the MOA (Monitoring Network) and make recommendations on what should remain in the MOA and what should be placed in the GSP.
- Staff is to place a recurring item on each meeting agenda to review monitoring exceedances.
- Staff and EKI are to work with the strike team on a proposed agenda for the SWRCB/DWR technical items meeting.
- Staff is to try and schedule another policy group meeting prior to the June 12 meeting and GSA workshop.
- Anona and Lauren will work on a presentation for the June 12 meeting and workshop.
- Staff is to send out Coordination and cost share agreements.

9. Conference with Legal Counsel – Anticipated Litigation

No conference with legal counsel was held under this agenda item.

10. Conference with Legal Counsel – Existing Litigation

No conference with legal counsel was held under this agenda item.

11. Report out of Closed Session

No report was made, as there was no closed session.

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

No reports were made under this agenda item.

13. Future Delta-Mendota Subbasin Coordination Committee Meetings

- Wednesday May 31, 2023: 8:00 AM (Policy Meeting)
- Monday June 12, 2023: 1:00 PM at SLDMWA boardroom (includes GSA informational meeting)

Note that this meeting will **not** be held at the Grasslands Water District Office as was previously planned.
- Monday June 26, 2023 1:00 PM

The Committee discussed the June 12, 2023 meeting and GSA workshop. There was concern the group isn't ready for the meeting as so much remains unresolved. It was noted that when the meeting was first suggested, the thought was to inform the GSAs about DWR's inadequate determination, what may happen now that the Subbasin is under the purview of the SWRCB, and the path the Coordination Committee is moving forward with to have the Subbasin reach "approved" status under SGMA.

The Committee discussed a powerpoint presentation to lay out the timelines and to hit the hot button items in the MOA including cost share and governance. John Wiersma will serve as the chair/emcee of the workshop, with Lauren Layne handling the presentation on the MOA and

Anona Dutton leading the discussion of technical issues. A substantial period should be allowed for questions from the GSAs.

14. ADJOURNMENT

John Wiersma adjourned the meeting at 10:52 AM.

DRAFT

**Regular Meeting of the Delta-Mendota Subbasin Coordination Committee
and Technical Working Group
Monday June 12, 2023, 1:00 PM **DRAFT**
SLDMWA Boardroom, 842 6th Street, Los Banos, CA**

Coordination Committee Members and Alternates Present

John Wiersma, Member – San Luis Canal Company/San Joaquin River Exchange Contractors (SJREC)
Chase Hurley, Member – Pacheco Water District/Central Delta-Mendota Region
Lacey McBride, Alternate – Merced County/Central Delta-Mendota Region
Vince Lucchesi, Member – Patterson Irrigation District/Northern Delta-Mendota Region
Christy McKinnon, Alternate – Stanislaus County/Northern Delta-Mendota Region
Ken Swanson, Alternate – Grassland Water District
Augustine Ramirez, Alternate – Fresno County
Jim Stilwell, Member – Farmers Water District
Daniel Hartwig, Alternate – Aliso Water District
Joe Hopkins, Member – Aliso Water District/Provost & Pritchard

GSA Representatives Present

Aaron Barcellos – Pacheco Water District
Maria Encinas – City of Patterson
Larrisa Camera – City of Patterson
Anthea Hansen – Del Puerto Water District/Oak Flat Water District
Adam Scheuber – Del Puerto Water District
Cristian Gonzalez – City of Mendota
Danny Wade – Tranquillity Irrigation District/Fresno slough Water District
Wayne Western – Panoche Water District
Amy Montgomery – Santa Nella County Water District
Anna Nicholas – City of Gustine
Damien Aragona – Widren Water District
Bobby Pierce – West Stanislaus Irrigation District
Ben Gallegos – City of Firebaugh
Mario Gouveia – City of Firebaugh
Steve Stadler – San Luis Water District
Randy Miles – Eagle Field Water District
Nirorn Than – City of Los Banos
William Vaughn – City of Los Banos
Steve Chedester – San Joaquin River Exchange Contractors
Roy Catania – Aliso Water District

San Luis & Delta-Mendota Water Authority Staff Present

John Brodie

Others Present

Lauren Layne – Baker Manock & Jensen
Anona Dutton – EKI Environment & Water, Inc. (EKI)
Rick Iger – Provost & Pritchard
Ethan Andrews – Provost & Pritchard
Leslie Dumas – Woodard & Curran

Joel Del Bosque – Del Bosque Farms
Thomas Birmingham – Widren Water District/Hallmark Group
Jeanne Zolezzi – West Stanislaus and Patterson Irrigation Districts/Herum Crabtree

1. Call to Order/Roll Call

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

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

No corrections or additions were considered.

3. Opportunity for Public Comment

No public comments were made.

4. GSA Workshop Overview, Wiersma

John Wiersma welcomed those in attendance and introduced the members and alternates of the Coordination Committee. He gave a brief overview of the structure and topic for the meeting.

5. Overview of the Delta-Mendota Groundwater Sustainability Plans (GSPs) History and inadequate Determination, Dutton

Anona Dutton/EKI gave a brief overview of the Delta-Mendota Subbasin history of moving through the GSP process beginning with the passage of the Sustainable Groundwater Management Act and culminating with the Inadequate Determination issued by DWR in early March, 2023. Anona also highlighted the knowns and unknowns of the process moving forward under the direction of the State Water Resources Control Board (SWRCB), and summarized actions taken to date under the direction of the Coordination Committee to move towards “approved” status.

6. Overview of the Deficiencies Identified by DWR, Dutton

Anona Dutton gave an overview of the deficiencies identified by DWR in the Determination Letter to the Subbasin. She highlighted a few reasons why the revisions submitted by the Subbasin in response to the “incomplete” evaluation issued by DWR in January 2022 might not have been sufficient to address DWR’s concerns.

7. Overview of the Subbasin Response to DWR’s Determination Letter, Dutton

Anona Dutton explained the steps the Subbasin has taken to date under the direction of the Coordination Committee in response to the Inadequate Determination and being placed under the authority of the SWRCB. One of those responses will be to consolidate the six GSPs into one.

8. Changes to Implementation Requirements for Individual GSAs Under a Single GSP, Dutton

Anona Dutton described possible changes in data collection for the Subbasin under a single GSP. Based on work conducted so far, it is likely that the Subbasin’s Representative Monitoring Network for various sustainability indicators will change.

9. Overview of Previous Delta-Mendota Subbasin Multiple GSP Governance Framework, Layne

Lauren Layne/Baker Manock & Jensen noted that the Subbasin's 23 GSAs adopted a Coordination Agreement in 2018 to guide development of the Subbasin's GSPs. That agreement remains in place for as long as there are multiple GSPs in the Subbasin for SGMA compliance.

10. Future Framework: Coordination Agreement vs. MOA, Layne

Lauren Layne explained that a Coordination Agreement as defined by SGMA would no longer be required under a single GSP. The Subbasin is now moving toward a Memorandum of Agreement (MOA) that will guide how the 23 GSAs implement the GSPs so basin sustainability can be achieved.

11. Possible Changes for Individual GSAs in the MOA, Layne

Lauren Layne told GSA representatives that though the Coordination Committee will remain, there are a number of possible changes to how the Committee will operate under a single GSP. That may include changing the number of Coordination Committee members from the current six to an odd number of seven or nine. That will depend on whether existing GSAs will want to elevate to a seat and vote on the Coordination Committee. The number of voting seats will also change the existing cost share structure.

12. Timeline and Sequence for MOA GSP Adoption, Layne/Wiersma

Lauren Layne said the goal is to have the MOA adopted by all GSAs in the Subbasin by October 1, 2023. The MOA would not take effect until the single GSP is adopted at a later date.

13. Additional Questions from GSAs, Dutton/Layne, Wiersma

No reports were made under this agenda item.

14. ADJOURNMENT

John Wiersma adjourned the meeting at 2:48 PM.

SAN LUIS & DELTA-MENDOTA WATER AUTHORITY
MARCH 1, 2023 - FEBRUARY 29, 2024
SGMA ACTIVITIES - COORDINATED COST-SHARE AGREEMENT
ACTIVITY AGREEMENTS BUDGET TO ACTUAL
COORDINATED (FUND 63)

Report Period 3/1/23 - 4/30/23

Coordination Meeting 6/26/23

EXPENDITURES	Annual Budget	Paid/ Expense	Amount Remaining	% of Amt Remaining	Expenses Through
<u>Legal:</u>					
Baker Manock & Jensen	\$ 30,960		\$ 30,960	100%	
<u>Other Professional Services:</u>					
GSP Implementation Contracts					
Coordinated Annual Reports Activities (Common Chapter, Water Level Contouring)	\$ 146,093		\$ 146,093	100%	
DMS Hosting, Augmentation and Support	\$ 11,367		\$ 11,367	100%	
GSP Approval-DWR Response to Comments	\$ -		\$ -	0%	
Staff Augmentation Support (EKI)	\$ 65,000		\$ 65,000	100%	
DAC Outreach and Coordination	\$ 30,000		\$ 30,000	100%	
SGMA Implementation Grant Round 1 SPA (A9)	\$ 75,560		\$ 75,560	100%	
SGMA Implementation Grant Round 2 SPA (B0)	\$ 75,560		\$ 75,560	100%	
<u>Other:</u>					
Executive Director	\$ 2,364	\$ -	\$ 2,364	100%	
General Counsel	\$ 4,082	\$ -	\$ 4,082	100%	
Water Policy Director	\$ 7,100	\$ 3,242	\$ 3,858	54%	4/30/23
Water Resources Program Manager	\$ 62,400	\$ 8,816	\$ 53,584	86%	4/30/23
Accounting	\$ 2,916	\$ 27	\$ 2,889	99%	3/31/23
License & Continuing Education	\$ 500		\$ 500	100%	
Conferences & Training	\$ 1,000		\$ 1,000	100%	
Travel/Mileage	\$ 2,500		\$ 2,500	100%	
Group Meetings	\$ 1,000		\$ 1,000	100%	
Telephone	\$ 500		\$ 500	100%	
Software	\$ 780		\$ 780	100%	
Equipment and Tools	\$ 5,650		\$ 5,650	100%	
Total Expenditures	\$ 525,332	\$ 12,086	\$ 513,246	98%	

	A	B	C	D	E	F	G
1	Grant Summary Report						
2	IRWM Proposition 1 Round 1			Through FY 2022	FY 2023	FY 2024	FY 2025
3		Grant Amount	Amount Paid				
4	Administration	\$ 10,000.00	\$ 9,000.00	\$ 9,000.00			
5	City of Huron	\$ 650,000.00	\$ 649,974.57	\$ 649,974.57			
6	NVRRWP-Turlock	\$ 45,000.00	\$ 45,000.00	\$ 45,000.00			
7	WSID Pumping Plant	\$ 809,264.00	\$ 728,337.60		\$ 728,337.60		
8	Orestimba Creek	\$ 809,264.00	\$ 404,632.00	\$ 404,632.00			
9	Broadview Aquifer	\$ 809,263.00	\$ 279,820.41	\$ 122,800.45	\$ 157,019.96		
10	Total	\$ 3,132,791.00	\$ 2,116,764.58				
11							
12		Amount Remaining					
13	Administration	\$ 1,000.00	\$ -				
14	City of Huron	\$ 25.43	\$ -				
15	NVRRP-Turlock	\$ -	\$ -				
16	WSID Pumping Plant	\$ 80,926.40	\$ -				
17	Orestimba Creek	\$ 404,632.00	\$ -				
18	Broadview Aquifer	\$ 529,442.59	\$ -				
19	Total	\$ 1,016,026.42	\$ -				
20							
21	SGMA Implementation Round 1						
22	Amount Paid	Grant Amount	Amount Paid				
23	Component 1	\$ 2,000,000.00	\$ -				
24	Component 2	\$ 1,000,000.00	\$ -				
25	Component 3	\$ 1,000,000.00	\$ -				
26	Component 4	\$ 228,030.00	\$ -				
27	Component 5	\$ 272,270.00	\$ -				
28	Component 6	\$ 791,300.00	\$ 17,967.90		\$ 17,967.90		
29	Component 7	\$ 600,000.00	\$ -				
30	Component 8	\$ 929,400.00	\$ -				
31	Component 9	\$ 561,500.00	\$ 253,471.86		\$ 253,471.86		
32	Component 10	\$ 172,500.00	\$ 106,084.03		\$ 106,084.03		
33	Component 11	\$ 45,000.00	\$ -				
34	Total	\$ 7,600,000.00	\$ 377,523.79		\$ 377,523.79		
35							
36		Amount Remaining					
37	Component 1	\$ 2,000,000.00	\$ -				
38	Component 2	\$ 1,000,000.00	\$ -				
39	Component 3	\$ 1,000,000.00	\$ -				
40	Component 4	\$ 228,030.00	\$ -				
41	Component 5	\$ 272,270.00	\$ -				
42	Component 6	\$ 773,332.10	\$ -				
43	Component 7	\$ 600,000.00	\$ -				
44	Component 8	\$ 929,400.00	\$ -				
45	Component 9	\$ 308,028.14	\$ -				
46	Component 10	\$ 66,415.97	\$ -				
47	Component 11	\$ 45,000.00	\$ -				
48	Total	\$ 7,222,476.21	\$ -				

Report on June 21, 2023 State Water Resources Control Board Meeting
SGMA Agenda Item

Prepared by Lauren Layne:

The Board meeting began with a presentation by Board staff members providing a brief overview of the state intervention process. They then discussed the prioritization of probationary hearings. Prioritization was based on 5 considerations including basin overdraft, drinking water impacts, subsidence impacts, water quality degradation, and data on implementation and coordination with the subbasin. Water Board staff recommended basins be prioritized into two groups: 1) Kaweah, Tulare Lake, Tule, and Kern County and 2) Chowchilla and Delta-Mendota.

The first priority group was based on 1) the ongoing groundwater decline which poses imminent impacts to water users and infrastructure or 2) the potential for substantial impacts to water users and infrastructure under the proposed GSP plans and no clear timeline or pathway to address those issues. The second priority was based on 1) the ongoing groundwater decline impacts to water users and infrastructure being less severe and 2) the identified deficiencies within the GSP may be easier to correct.

Therefore, Board staff (Natalia Stork) recommended the following **schedule for probationary hearings**:

Tulare Lake	December 2023
Tule	January 2024
Kaweah	March 2024
Kern County	April 2024
Delta-Mendota	September 2024
Chowchilla	October 2024

The rationale for prioritizing Tulare Lake, Tule, and Kaweah was based on anticipated urgent impacts caused by declining water levels and subsidence. Staff stated data indicated around 2,000 domestic wells are at risk of going dry. Furthermore, staff showed concern of infrastructure damage caused by subsidence to the California Aqueduct, Friant Kern Canal, and Corcoran Levees.

The Chowchilla subbasin showed the least concern from staff since the potential impacts are less extensive. Also, staff noted the subbasin had already submitted a revised plan and adoption of that plan in the Subbasin was already in progress.

Staff discussed the procedure leading up to a probationary hearing. Staff stated that by statute, a minimum 90-day notice is required for cities, counties, DWR, and electronic mailing list. A minimum 60-day notice is required to groundwater extractors within the basin. Staff will then issue a draft deficiencies report, which will become available for public comment. Next, staff will engage in outreach and public engagement. Finally, staff will issue a finalized deficiencies report and issue draft orders for the Board to consider.

Based on the example SWRCB staff used during the meeting, the following is the likely timeline for the Delta-Mendota Subbasin:

- Early May, 2024: SWRCB releases draft deficiencies and sends notices to cities and counties.
- May, 2024: Notices sent to all known extractors/pumpers
- Late May, 2024: Stakeholder meetings
- May – July, 2024: Public comment Period
- August, 2024: Release final deficiencies and issue draft order
- September, 2024: Probationary hearing and potential probationary designation.

Note that staff indicated the Board has the discretion to identify their own deficiencies, aside from those identified by DWR.

Finally, staff discussed the steps to exit state intervention. Those steps are as follows (from SWRCB staff slide presentation):

- Revise the plan by addressing DWR deficiencies (SWRCB deficiencies if placed on probation).
- Explain to SWRCB Staff how the deficiencies are addressed during technical meetings.
- SWRCB staff reviews revisions (time estimate available once the plan(s) is received.
- SWRCB-DWR coordinate on revision review.
- SWRCB determines whether deficiencies are addressed.

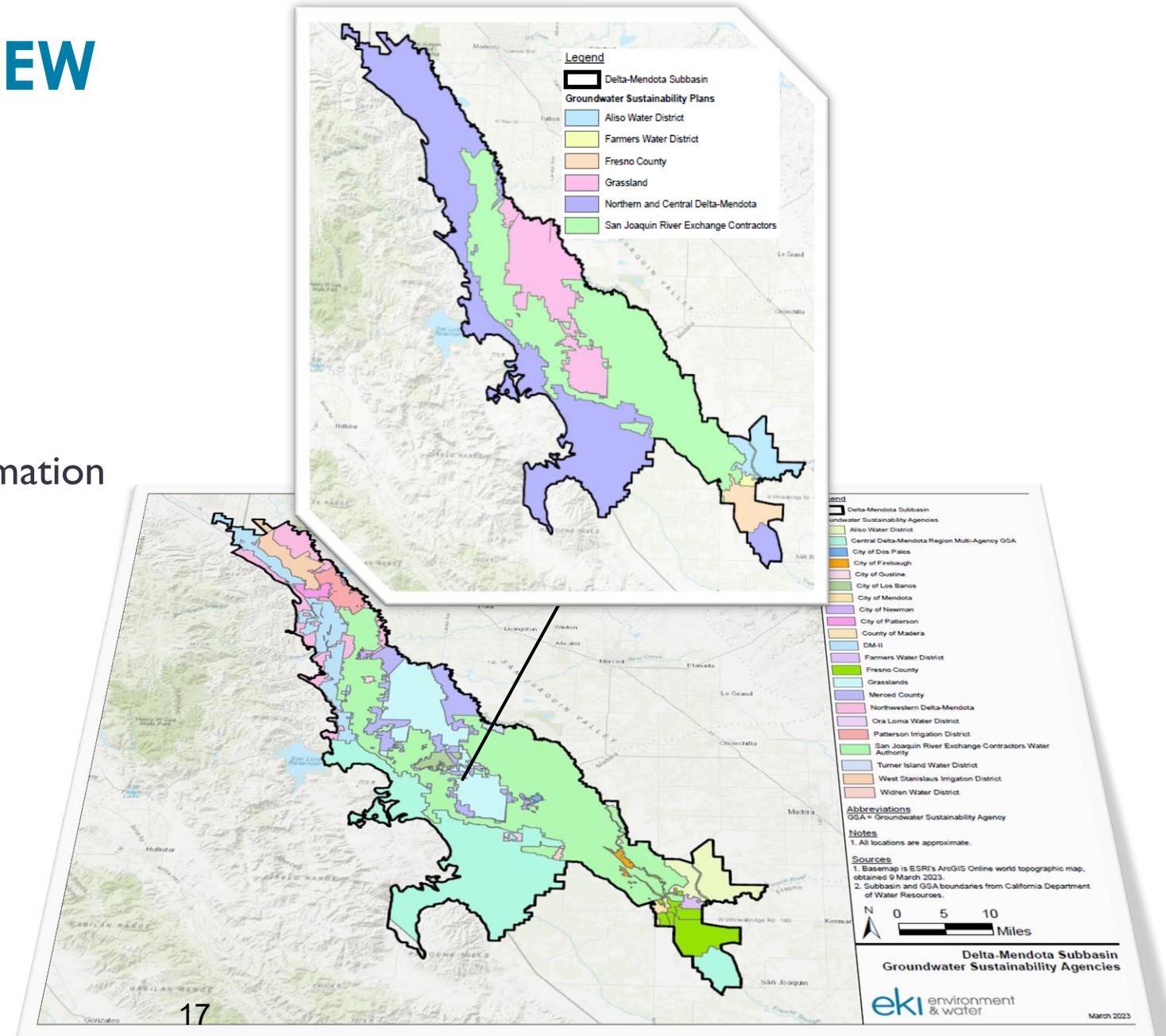
DELTA-MENDOTA SUBBASIN RESPONSE TO INADEQUATE DETERMINATION

26 JUNE 2023

TECHNICAL MEETING #9

PRESENTATION OVERVIEW

- SMC Update
 - Subsidence SMCs
 - Groundwater Storage SMC Confirmation
- Water Budget Update
- Next steps

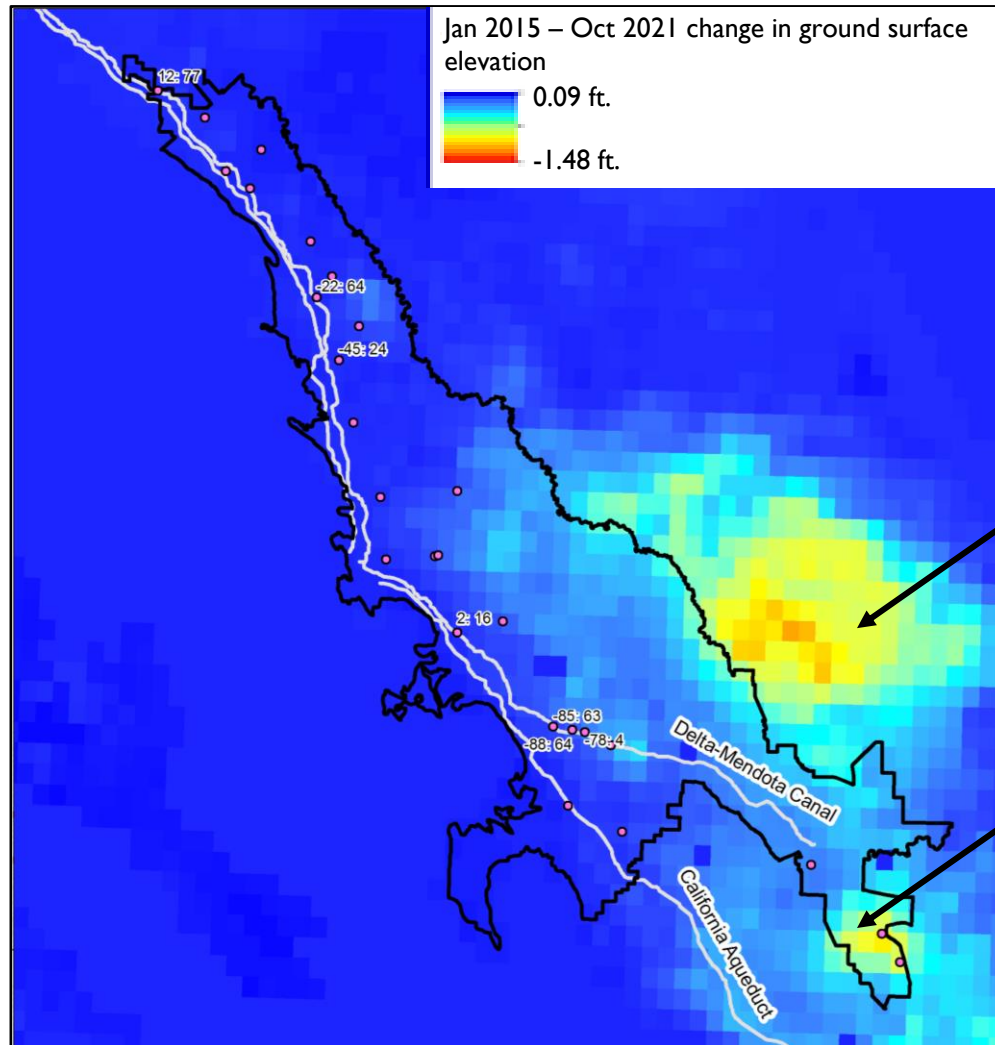


MEETING OBJECTIVES

Objective #1:

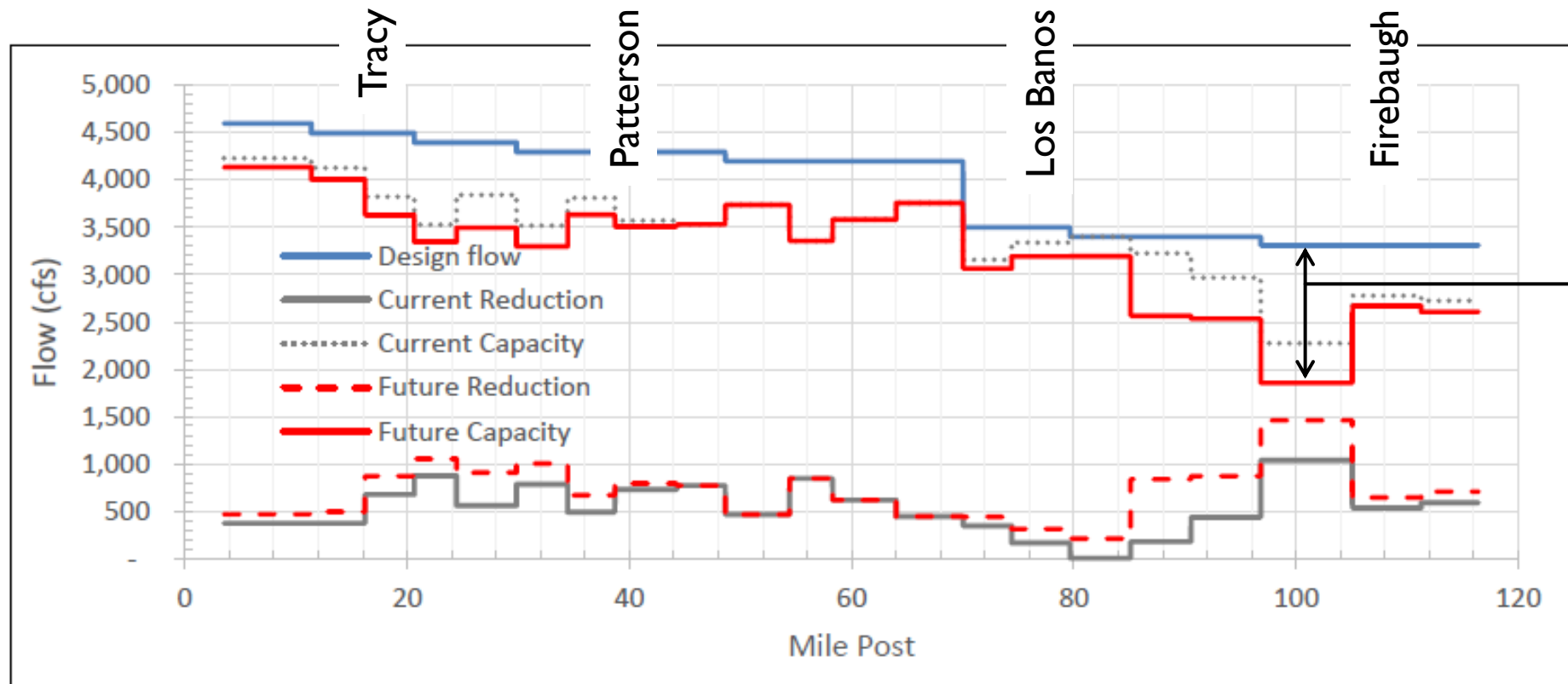
Provide Feedback on Subsidence SMCs

RECENT (2015 – 2021) SUBSIDENCE



- Subsidence has occurred in the southeast portion of the basin
- A major subsidence “hot spot” is located outside of the basin in the Chowchilla and Madera Subbasins
- A smaller subsidence hot spot is located in the Tranquility area

SUBSIDENCE IMPACTS ON CRITICAL INFRASTRUCTURE



Source: Feasibility Study of the Structural Alternatives

Figure 7. Design Flows, Reduction in Flow, and Actual Flow Capacities in the DMC for Current and Future (With Future Subsidence) Conditions

Anticipated total reduction in Delta-Mendota Canal (DMC) capacity under 2070 conditions, relative to original design capacity, in absence of corrective actions.

The draft EA/IS assumes another 2 ft of subsidence will occur by 2040 under SGMA (based on the 2022 GSP)

Source: USBR & SLDMWA, 2023, Delta-Mendota Canal Subsidence Correction Project Plan Formulation Technical Memorandum (Appendix B of Delta-Mendota Canal Subsidence Correction Project Draft Environmental Assessment/Initial Study)

DWR DETERMINATION SUBSIDENCE SMC DEFICIENCIES

- Regarding Undesirable Results definitions:
 - (they) “do not explain what are now considered to be significant and unreasonable conditions. For example, ... **no examples** of what are considered an **unmitigated and unmanageable** reduction of design capacity for conveyance structures are discussed.”
- Regarding Minimum Thresholds:
 - “GSP Regulations ... require the minimum threshold to be expressed as a **rate and extent** of subsidence and the new minimum threshold is only expressed as a total amount of subsidence.”
 - “the Plan does not indicate when the **period for calculation a total of two feet of additional subsidence begins**”

WAS THE SGMA REGS PROCESS FOLLOWED TO DEVELOP THE SUBSIDENCE 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)	✓	Partial (describes significant and unreasonable impacts, but not impacts of specific MTs)	✓	✓	--
Kings	✓	✓	✓	✓	✓
Westside	✓	✓	✓	✓	✓
Merced	✓	✓	✓	✓	--
Eastern San Joaquin	✓	✓	--	✓	--

SUMMARY OF SUBSIDENCE URs

Basin	UR Criteria	UR Justification
Delta-Mendota (Common Chapter)	At RMS, the change in ground surface elevation that would cause undesirable results is up to 2 feet of additional inelastic land subsidence .	This amount of subsidence would cause “damage to critical infrastructure, including significant and unreasonable reductions of conveyance capacity, impacts to natural resource areas, or conditions that threaten public health and safety.”
Kings	MT exceedance within a 36 mi ² area	<ul style="list-style-type: none"> • Could be significant to stakeholders nearby or downstream • Additional trigger set at 1 ft for investigation but not considered UR if no damage
Westside	MT rate exceedance at 3 monitoring sites for 2 consecutive years OR Cumulative MT exceedance at 3 monitoring sites	Based on subsidence observed to impact surface uses in past droughts
Merced	Unreasonable reduction in viability of use of infrastructure; MT exceedance at 3 out of 4 monitoring sites for two consecutive years	No historic records of significant and unreasonable impacts from subsidence in the Subbasin; however, Eastside Bypass and community infrastructure in El Nido have large potential to be damaged or have reduced flood conveyance capacity due to subsidence
Eastern San Joaquin	<ul style="list-style-type: none"> • UR when subsidence substantially interferes with land use (e.g., damage to water conveyance); • No quantitative UR criteria, but a 0.25 ft subsidence trigger value for analysis and PMA implementation 	No historic records of significant and unreasonable impacts from subsidence in the Subbasin.

SUMMARY OF SUBSIDENCE MTs/MOs

Basin	MT Methodology	MO Methodology
Delta-Mendota (Common Chapter)	2 feet of additional inelastic land subsidence attributable to groundwater extraction in the Subbasin	Minimize land subsidence, with no additional subsidence after 2040 <ul style="list-style-type: none"> No more than 1.0 ft by 2025, 0.5 ft additional by 2030, 0.25 ft additional by 2035, and 0.25 ft additional by 2040
Kings	3 ft of cumulative subsidence – based on freeboard of irrigation canals and Kings River Levees	<ul style="list-style-type: none"> 1 in/yr No additional subsidence after 2040
Westside	Near San Luis Canal: 0.3 ft/yr, 1.5 ft cumulative; Other Areas: 0.3 ft/year; 2.5 ft cumulative OR groundwater levels as proxy	Near San Luis Canal: 0 ft/yr, 0 ft cumulative; Other areas: 0.1 ft/yr, 0.5 ft cumulative OR Groundwater level MO as proxy
Merced	<ul style="list-style-type: none"> Subsidence rate at 0 ft/year. Rate of less than –0.16 ft/year are considered compliant with the MT due to uncertainty. To be achieved by end of 20-year implementation period 	<ul style="list-style-type: none"> Subsidence rate at 0 ft/year, on a long-term average. Interim milestones: <ul style="list-style-type: none"> 2025: -0.75 ft/year; 2030: -0.5 ft/year; 2035: -0.25ft/year
Eastern San Joaquin	GW levels used as proxy (provisional)	GW levels used as proxy (provisional)

SUBSIDENCE MT/MO JUSTIFICATIONS

Basin	Impacted Beneficial Users	Impacts to Adjacent Basins	Relationship with Other Sustainability Indicators
Delta-Mendota (Common Chapter)	The MT is “set to prevent subsidence that exceeds corrective design standards or established triggers for critical infrastructure including the Delta-Mendota Canal and California Aqueduct, and roads and bridges.”	As part of subsidence Sustainability Goal: “Work with neighboring Subbasins to address inelastic land subsidence caused by GW extraction outside of the Subbasin.”	Reduction in groundwater storage is caused by land subsidence in the lower aquifer.
Kings	<ul style="list-style-type: none"> Potential loss of unspecified irrigation canal capacity. Deemed unlikely due to lack of historic impacts. 	No impacts to adjacent basins as subsidence is minimal.	Subsidence is affected by GW levels and can cause a change in storage.
Westside	<ul style="list-style-type: none"> Reduced short-term operational flexibility of San Luis Canal. Potential but unlikely impacts to certain District pipelines. Potential need for well retrofits (wells not identified). Discussed roads and bridges with Caltrans. 	Unlikely to impact adjacent basins due to land retirement along boundary and SMCs set higher than in adjacent basins	The groundwater elevation MTs are set at or above groundwater elevations that will induce additional subsidence in areas that currently have minimum tolerances for additional subsidence along the San Luis Canal.
Merced	No historic records of significant and unreasonable impacts from subsidence; Eastside Bypass and community infrastructure in El Nido have large potential for subsidence impacts	Subsidence has caused a reduction in freeboard of the Middle Eastside Bypass over the last 50 years and has caused problems in neighboring subbasins	Interim subsidence milestones are set to reduce subsidence values as P/MA are implemented to address groundwater levels and subsidence
Eastern San Joaquin	Subsidence is not expected to occur at groundwater level MTs	No Discussion 25	Lowering groundwater levels may trigger subsidence, though this has historically not occurred above GW level MTs.

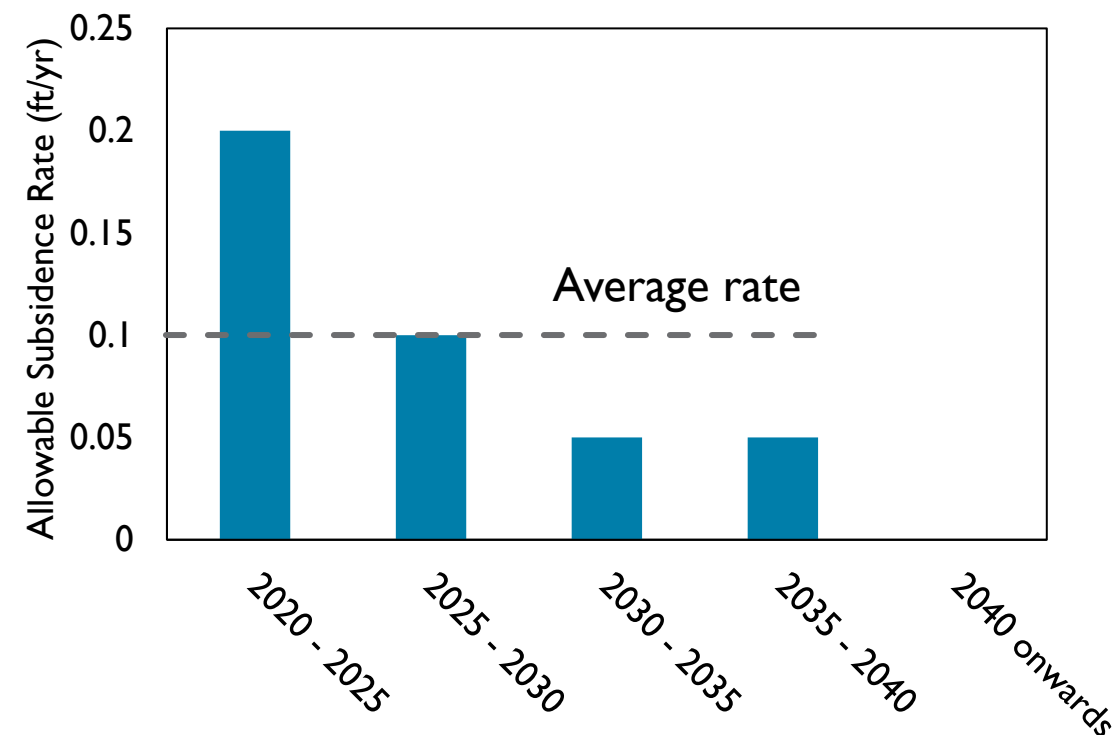
CONVERTING SMC SUBSIDENCE AMOUNTS TO RATES

Minimum Threshold/ Measurable Objective

SMC	Criteria	Average Rate (assuming 2020 start)
Minimum Threshold	≤2 ft. by 2040	0.1 ft/year
Measurable Objective	0 ft. after 2040	0 ft/year after 2040

Interim Milestones

Time interval	Subsidence (ft)	Rate (ft/year)
2020 – 2025	1	0.2
2025 – 2030	0.5	0.1
2030 – 2035	0.25	0.05
2035 – 2040	0.25	0.05
2040 onwards	0	0



PROPOSED LAND SUBSIDENCE SMCs

■ Undesirable Results:

- UR occurs if MTs are exceeded at 25% or more of RMS for as a result of groundwater extraction in the basin, based on a 5-year moving average.
- Critical Infrastructure includes the California Aqueduct, Delta-Mendota Canal, and Chowchilla Bypass.
- Significant and Unreasonable definitions tied to existing mitigation plans (i.e., DMC Subsidence Correction Project)

■ Minimum Thresholds:

- Set as 2 ft total (cumulative) subsidence by 2040, equivalent to rate of 0.1 feet per year; starting point is 2020

■ Interim Milestones:

- No more than 1 ft cumulative subsidence by 2025; starting point is 2020 (same as for MTs and all other IMs)
- No more than 1.5 ft cumulative subsidence by 2030
- No more than 1.75 ft cumulative subsidence by 2035
- No more than 2.0 ft cumulative subsidence by 2040

■ Measurable Objectives:

- No additional cumulative subsidence beyond 2040

PROPOSED REVISED SUBSIDENCE MT LANGUAGE

Minimum Threshold Definition

~~The Minimum Threshold for land subsidence is defined as At representative monitoring sites, the change in ground surface elevation that would cause undesirable results is up to two feet of additional inelastic land subsidence relative to 2020 land surface elevations attributable to groundwater extraction in the sub-basin, equivalent to a rate of 0.1 feet per year. Prevent subsidence caused by groundwater extractions in the delta Mendota sub-basin that exceeds corrective design standards or established triggers for critical infrastructure including the delta Mendota canal, California aqueduct, and roads and bridges.~~

Keep same MT amount (2 ft) as in 2022 GSPs and Common Chapter

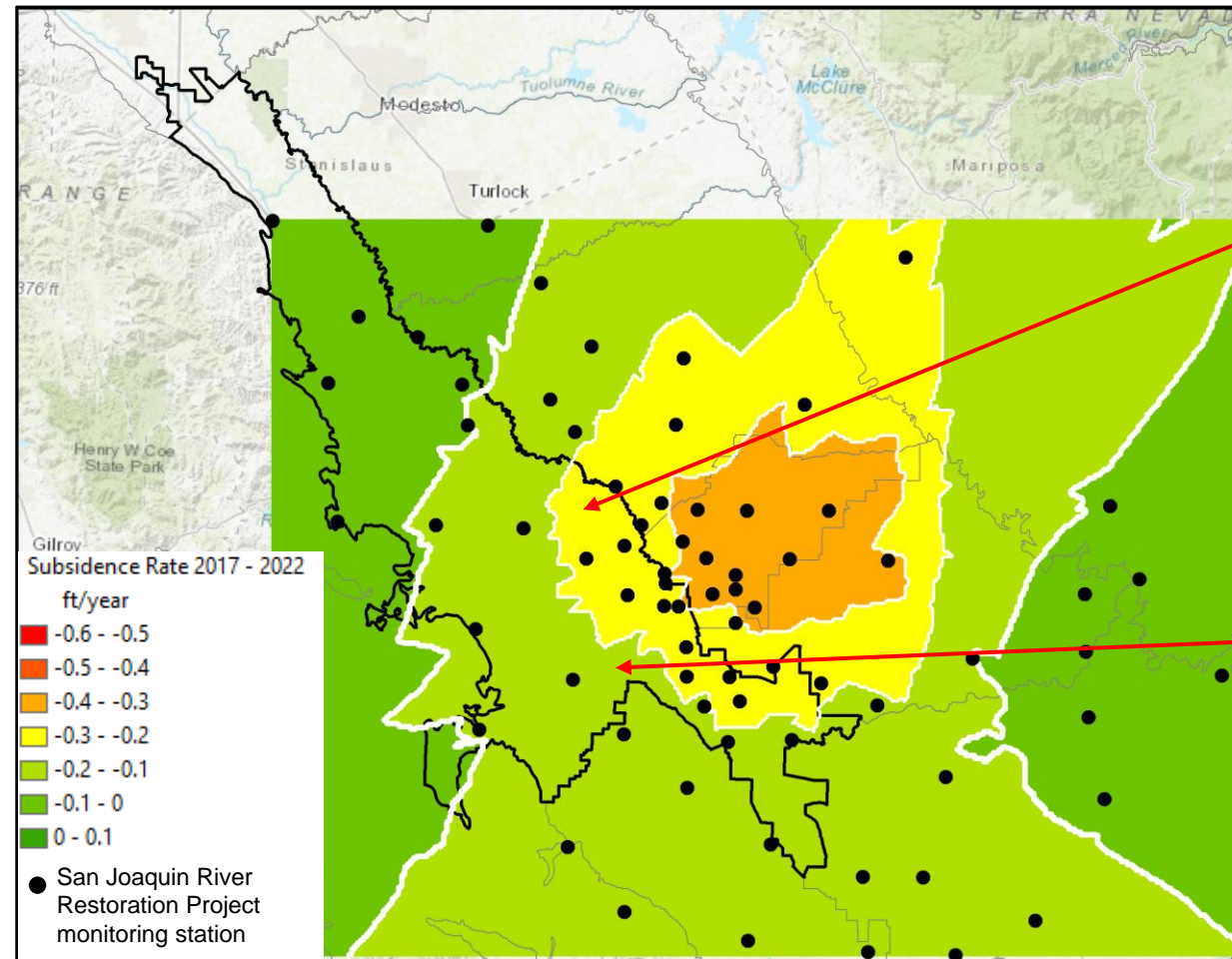
Explicit mention of starting point for land subsidence MT evaluation (2020)

Translate MT amount into a rate (0.1 ft/year)

Remove language that has been more appropriately placed in the UR definition section

POTENTIAL RISKS OF SMC EXCEEDANCE

- If current subsidence rates were to continue, areas of the D-M subbasin would exceed proposed MT rates and extent.

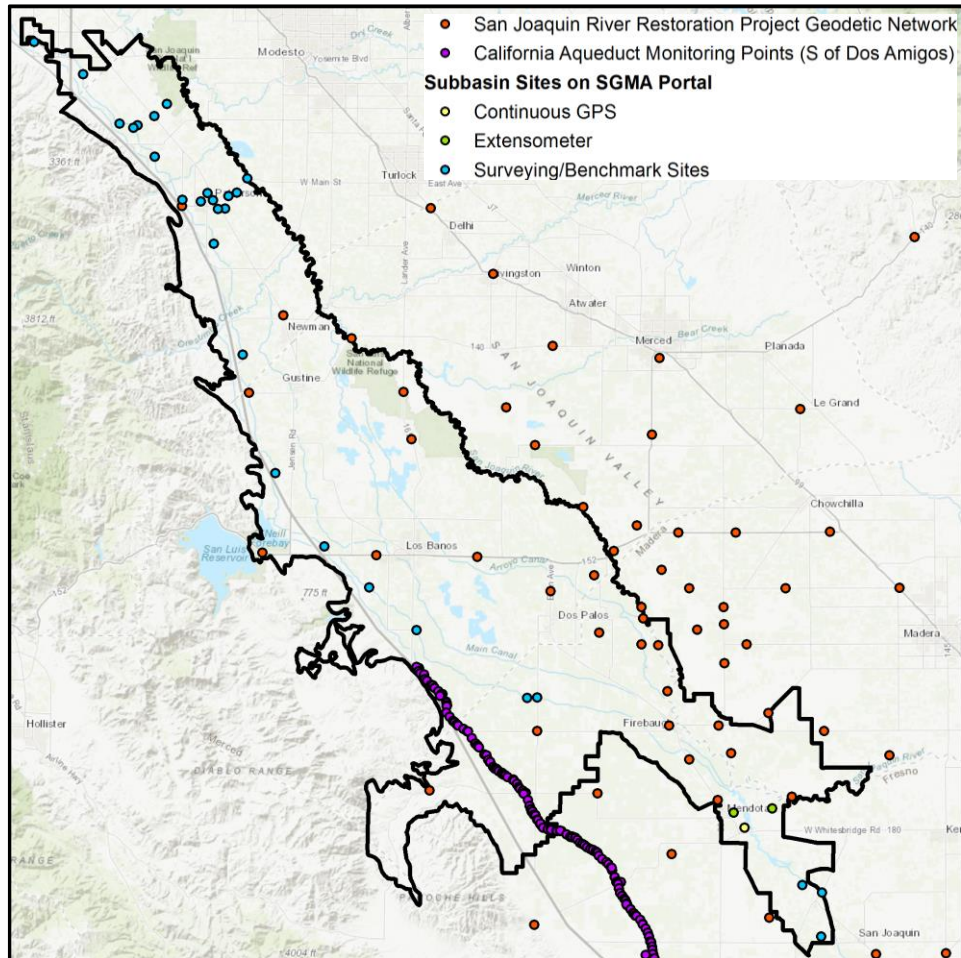


Yellow areas:
subsidence rates
(2017-2022) in
excess of first 5-yr
maximum allowable
rate (>0.2 ft/yr)

Light green areas:
subsidence rates
(2017-2022) in
excess of average
MT rate (>0.1 ft/yr)

Data source: <https://www.restoresjr.net/science/subsidence-monitoring/>

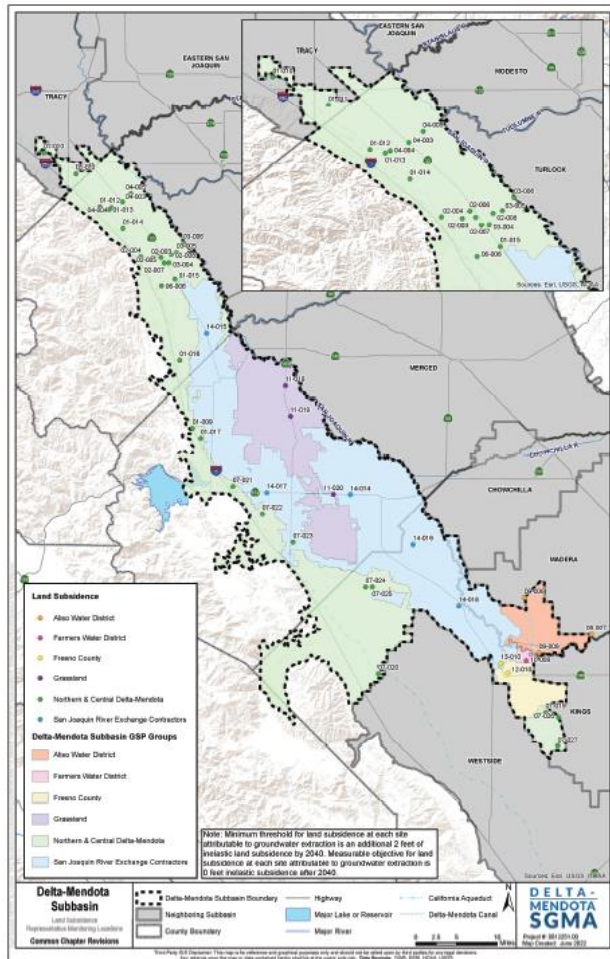
SUBSIDENCE MONITORING NETWORKS IN AND AROUND D-M SUBBASIN



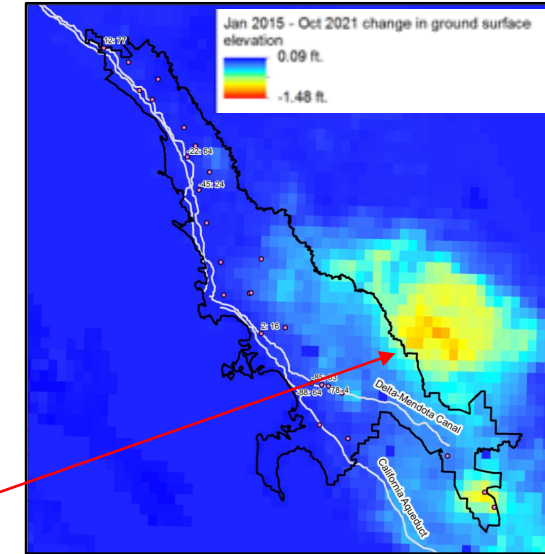
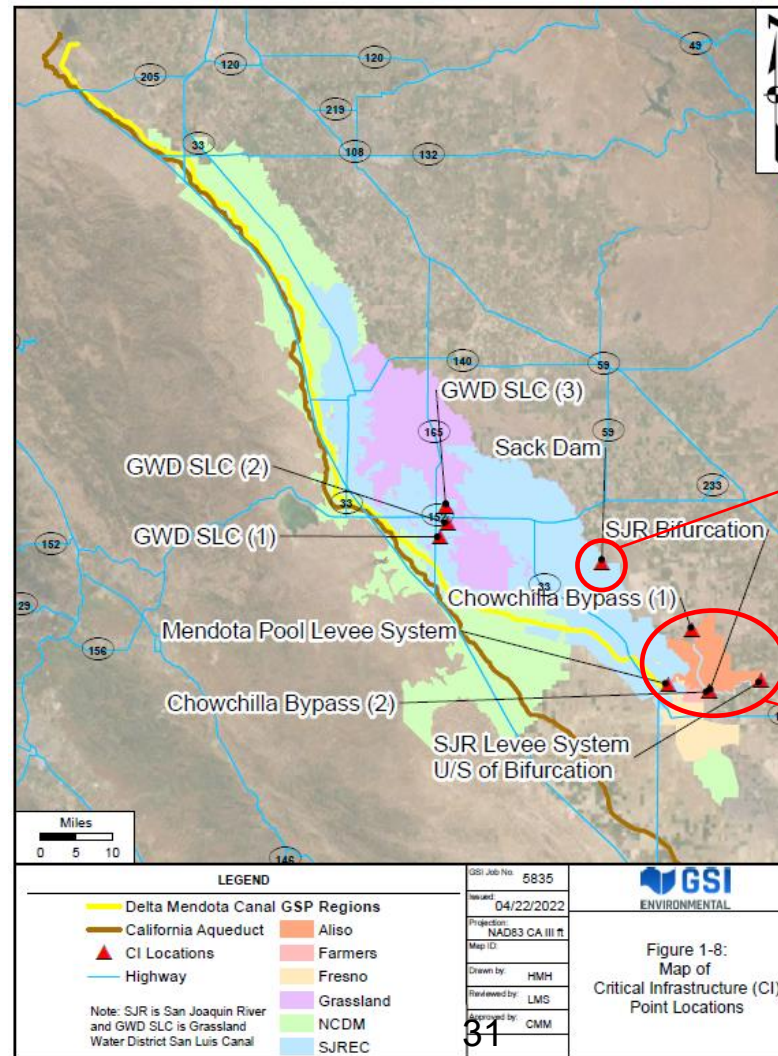
- Other existing subsidence monitoring networks can be leveraged to build out the land subsidence RMS network
 - San Joaquin River Restoration Project Geodetic Network
 - California Aqueduct subsidence monitoring network

SUBSIDENCE MONITORING CONSIDERATIONS

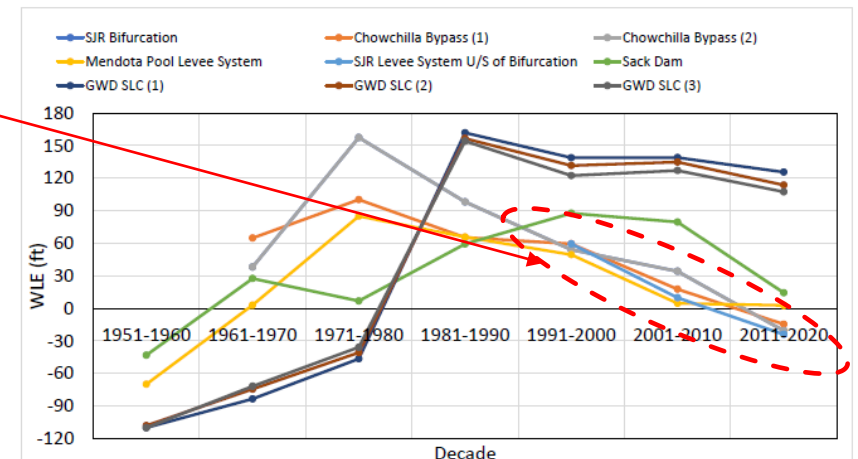
Current RMS Network



Locations of Critical Infrastructure



GW Levels Below Corcoran Clay at CI



MEETING OBJECTIVES

Objective #3:

Confirm Reduction of Groundwater Storage
SMC

DWR DETERMINATION: REDUCTION OF GROUNDWATER STORAGE SMC DEFICIENCIES

- Regarding Undesirable Results definitions:
 - (they) “do not explain what are now considered to be significant and unreasonable conditions. For example, ... **what is considered insufficient water storage is not quantified.**”
- Regarding Minimum Thresholds:
 - “The Lower Aquifer is now using the (SMC) established for land subsidence... The **use of land subsidence as a proxy for groundwater storage is not consistent with the GSP regulations.**”
 - “there still **does not appear to be a straightforward quantification of overdraft** in the Subbasin and no discussion of **how the overdraft will be mitigated.**”
 - “There also does not appear to be a discussion regarding **how the loss of storage and groundwater elevation declines will affect the drinking water wells** in the Subbasin...”

WAS THE SGMA REGS PROCESS FOLLOWED TO DEVELOP THE REDUCTION OF 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 REDUCTION 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 REDUCTION 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

REDUCTION OF 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 JUSTIFICATION OF REDUCTION OF GW STORAGE SMCs

- Use groundwater levels as a proxy for storage by demonstrating that MTs set for groundwater levels would be protective against Undesirable Results for groundwater storage
 - Calculate the difference in storage between 2015 (pre-SGMA) groundwater levels and MT groundwater levels; do the same for 2019 groundwater levels (“current”)
 - Apply model to calculate the total volume of storage between 2015/2019 groundwater levels and the bottom of the respective aquifers
 - Calculate the % change in storage from 2015/2019 levels to groundwater level MTs
 - Assess whether at MTs we can argue that groundwater level SMCs are protective against URs for groundwater storage
- Assess remaining storage below groundwater level MTs is equivalent to X years of average annual GW extractions (~490,000 AFY), showing that available storage above SMCs provides a buffer against dry years

CHANGE IN STORAGE AT WATER LEVEL MTs RELATIVE TO 2015 WATER LEVELS

Upper Aquifer:

- Volume of Storage in 2015: 9,457,447 AF
- Volume of Storage at MTs: 9,233,026 AF
- Potential reduction in Storage at MTs: **2.4%**
- ~34 years of storage available to support GW pumping

Lower Aquifer:

- Volume of Storage in 2015: 6,295,537 AF
- Volume of Storage at MTs: 6,066,680 AF
- Potential reduction in Storage at MTs: **3.6%**
- ~28 years of storage available to support GW pumping

Notes:

1. Upper aquifer GW pumping estimated from CVHM2-SJB – 270,855 AFY
2. Lower aquifer GW pumping estimated from CVHM2-SJB – 218,794 AFY
3. CVHM2-SJB upper aquifer assumed to be model layer 1 – 8 39
4. CVHM2-SJB lower aquifer assumed to be model layer 9 – 13

CHANGE IN STORAGE AT WATER LEVEL MTs RELATIVE TO “CURRENT” (2019) WATER LEVELS

Upper Aquifer:

- Volume of Storage in 2019: 10,325,028 AF
- Volume of Storage at MTs: 9,233,026 AF
- Potential reduction in Storage at MTs: **10.6%**
- ~34 years of storage available to support GW pumping

Lower Aquifer:

- Volume of Storage in 2019: 6,324,600 AF
- Volume of Storage at MTs: 6,066,680 AF
- Potential reduction in Storage at MTs: **4.1%**
- ~28 years of storage available to support GW pumping

Notes:

1. Upper aquifer GW pumping estimated from CVHM2-SJB – 270,855 AFY
2. Lower aquifer GW pumping estimated from CVHM2-SJB – 218,794 AFY
3. CVHM2-SJB upper aquifer assumed to be model layer 1 – 8 40
4. CVHM2-SJB lower aquifer assumed to be model layer 9 – 13

PROPOSED REDUCTION OF GROUNDWATER STORAGE SMCs

■ Undesirable Results:

- Define significant and unreasonable impacts to beneficial users as:
 - Insufficient storage to maintain beneficial uses, including a 3-year drought buffer
 - More than a 15% decrease in the volume of “usable groundwater in storage”

■ Minimum Thresholds/ Interim Milestones / Measurable Objectives:

- Use groundwater level SMCs as a proxy; no separate MTs/IMs/MOs

MEETING OBJECTIVES

Objective #4:
Water Budget Update

DWR DETERMINATION WATER BUDGET DEFICIENCY

- “the water budget revisions made to the Plan **no longer align** with the Technical Memoranda or Coordination Agreement and **numerous inconsistencies** exist throughout the Subbasin’s six GSPs”
- “Each of the revised GSPs still rely upon **separate water budgets** and use a **variety of modeling approaches** that rely upon **GSP-specific** hydrogeologic conceptual models”
- “the Plan has not provided an explanation for the **continued use of water year 2013** as the Subbasin’s current water year”
- “It is **unclear why the inflows and outflows in the Subbasin have changed** so much if the water budget components were only simplified and more concisely organized.”

WATER BUDGET GUIDELINES

Figure 8-34 Land System Water Budget Components and MODFLOW-OWHM Water Budget Elements

LAND SYSTEM WATER BUDGET (Acre-Feet)		
	Component	Credit(+)/Debit(-) Model Output
INFLOWS	Precipitation	Detailed Farm Budget: Q-p-in
	Surface Water Delivery	Detailed Farm Budget: Q-nrd-in + Q-srd-in + Q-rd-in
	Groundwater Extraction	Detailed Farm Budget: Q-wells-in
	Stored Water Extraction	Detailed Farm Budget: Q-wells-in
	Applied Water Reuse/Recycled Water	N/A
	Applied Water	Detailed Farm Budget: Q-nrd-in + Q-srd-in + Q-rd-in + Q-wells-in
	Total Inflow	
OUTFLOWS	Evapotranspiration	Detailed Farm Budget: Q-ei-out + Q-ep-out + Q-egw-out + Q-ti-out + Q-tp-out + Q-tgw-out
	Runoff	Detailed Farm Budget: Q-run-out
	Return Flow	Detailed Farm Budget: Q-run-out
	Recharge of Applied Water	Detailed Farm Budget: Q-dp-out
	Recharge of Precipitation	Detailed Farm Budget: Q-dp-out
	Managed Aquifer Recharge	Detailed Farm Budget: Q-dp-out
	Recycled Water Export	Detailed Farm Budget: Q-dp-out
	Total Outflow	
STORAGE CHANGE	Change in Land System Storage	Unsaturated Zone Budget: In - Out
	Land System Mass Balance Error	


Figure 8-36 Groundwater System Budget Components and MODFLOW-OWHM Water Budget Elements

GROUNDWATER SYSTEM WATER BUDGET (Acre-Feet)		
	Component	Credit(+)/Debit(-) Model Output
INFLOWS	Recharge of Applied Water	Zone Budget: Farm Net Recharge
	Recharge of Precipitation	Zone Budget: Farm Net Recharge
	Managed Aquifer Recharge	Zone Budget: Recharge
	Groundwater Gain from Stream	Zone Budget: Stream Leakage
	Groundwater Gain from Lake	Lake Budget: Groundwater Outflow
	Conveyance Seepage	Stream Budget: Flow to Aquifer (positive values)
	Subsurface Inflow	Zone Budget: Constant Head + Head Dep Bounds + From Other Zones
	Water Release Caused by Land Subsidence	Zone Budget: Instantaneous Elastic Flow + Instantaneous Inelastic Flow + Delayed Elastic Flow + Delayed Inelastic Flow
		Total Inflow
OUTFLOWS	Groundwater Extraction	Zone Budget: Constant Head + Head Dep Bounds + To Other Zones
	Stored Water Extraction	Zone Budget: Wells
	Groundwater Loss to Stream	WEL input file
	Groundwater Loss to Lake	Zone Budget: Stream Leakage
	Subsurface Outflow	Lake Budget: Groundwater Inflow
	Groundwater Export	Zone Budget: Wells
	Stored Water Export	Zone Budget: Wells
	Total Outflow	Zone Budget: Storage In - Storage Out
STORAGE CHANGE	Change in Groundwater Storage	Groundwater Budget: Beginning Storage - Ending Storage
	Groundwater System Mass Balance Error	



DRAFT

Handbook for Water Budget Development

With or Without Models

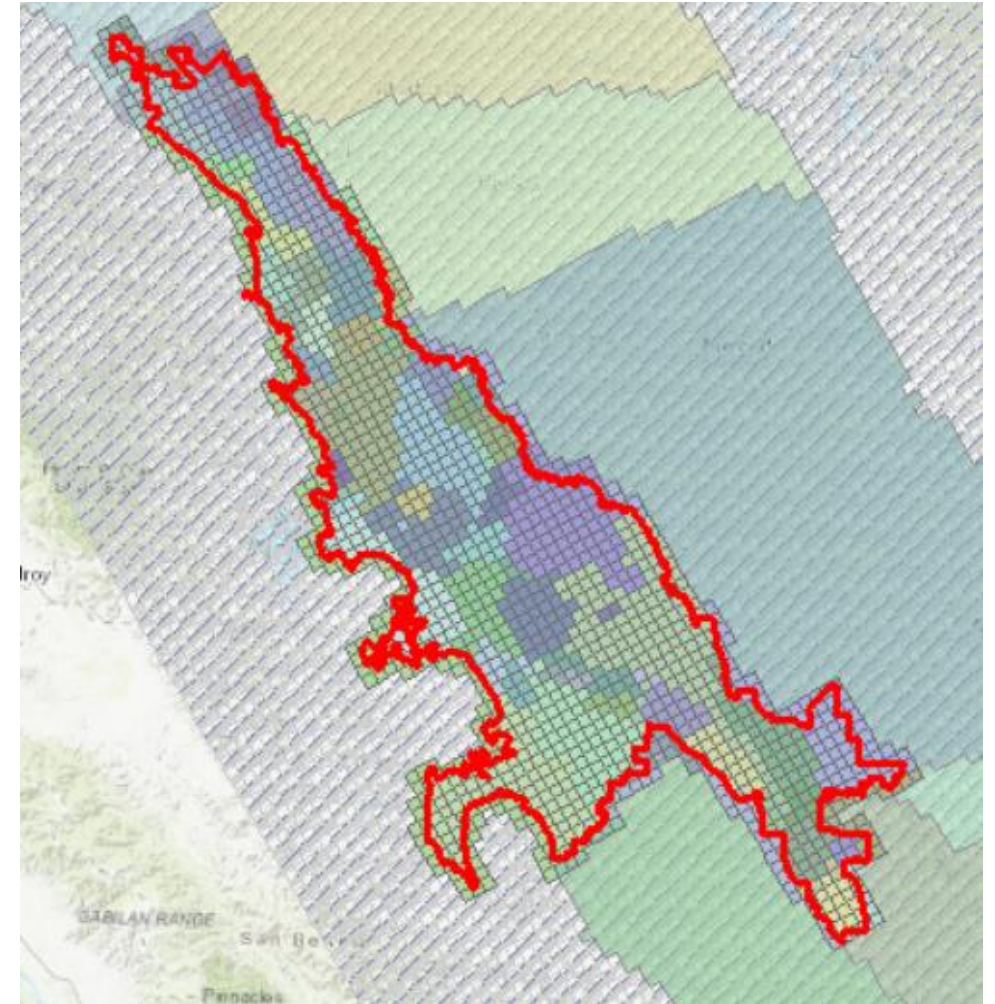


CALIFORNIA DEPARTMENT OF WATER RESOURCES

ADDRESSING DEFICIENCY #1

- CVHM2-SJB produces consistent basin-wide water budgets that address the water budget deficiency outlined in DWR determination letter.
- CVHM (and consequently CVHM2-SJB) is a DWR-approved model to use under SGMA according to DWR Water Budget BMP.
 - Enhanced subregion resolution within Delta-Mendota using refined datasets
 - Model time frame (1961 to 2019)
 - 1.0 square mile grid spatial resolution



WATER BUDGET TIMELINES

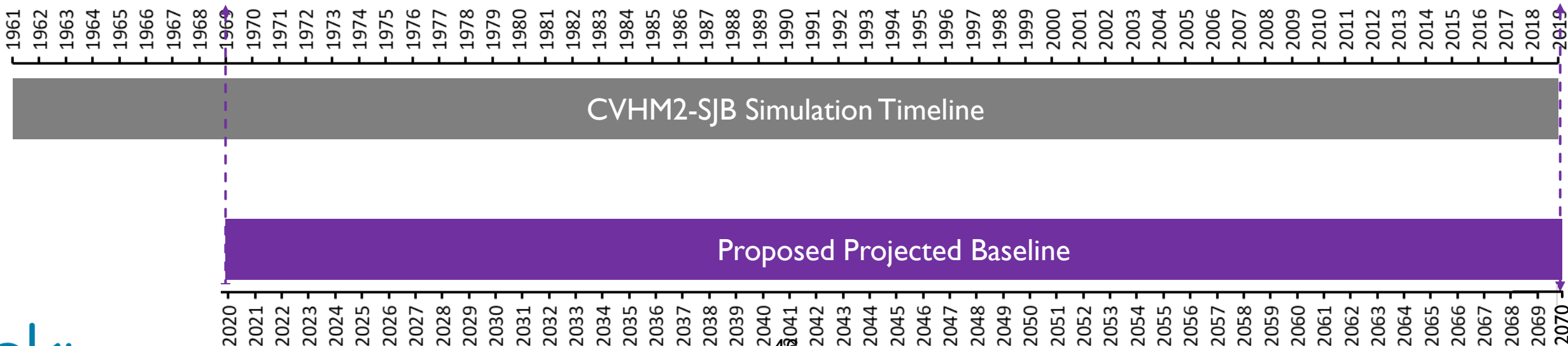
- Historical: WY 2003-2018
- Current: WY 2019
- Future: WY 2020-2070

2022 GSP Current

2022 GSP
Historical Baseline

Proposed Historical Baseline

Proposed Current



HISTORICAL GW WATER BUDGET (WY 2003-2018)

Average annual rates in AFY

Aquifer	Inflow to Basin (+)			Outflow from Basin (-)				GW Storage Change
	Recharge	Net Subsurface Inflow	GW Gain from Stream	GW Extraction	Net Drain	Net Subsurface Outflow	GW ET	
Upper Aquifer	398,180	-	5,418	-270,855	-60,520	-26,007	-74,159	-24,577
Lower Aquifer	2,863	147,750	5,493	-218,794	-	-	-	-58,416
							TOTAL	-82,993

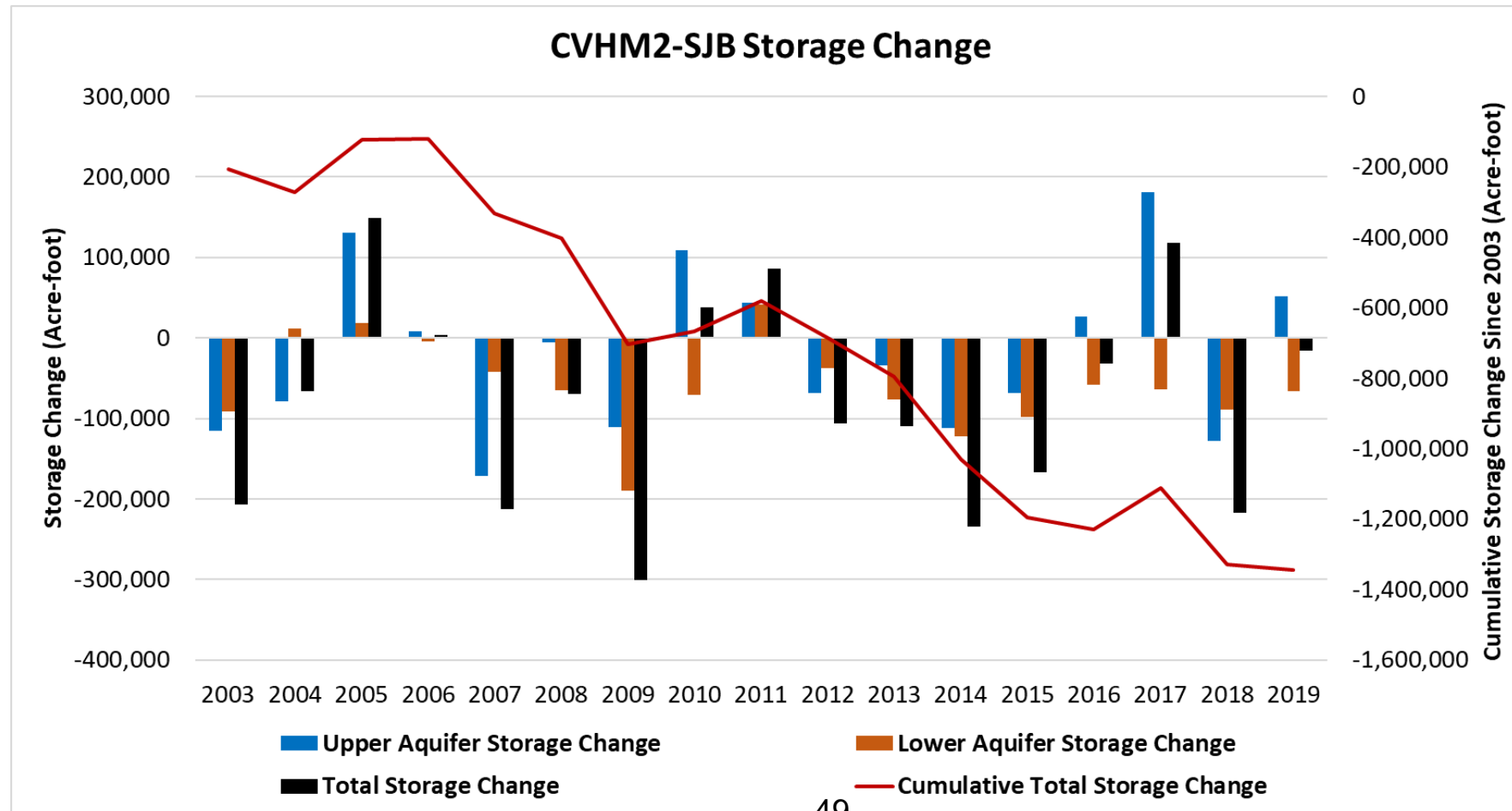
CURRENT WATER BUDGET (WY 2019)

Average annual rates in AFY

Aquifer	Inflow to Basin (+)			Outflow from Basin (-)				GW Storage Change
	Recharge	Net Subsurface Inflow	GW Gain from Stream	GW Extraction	Net Drain	Net Subsurface Outflow	GW ET	
Upper Aquifer	443,095	-	128,277	-306,975	-70,288	-67,480	-77,901	51,225
Lower Aquifer	2,884	158,193	8,944	-241,162	-	-	-	-66,688
							TOTAL	-15,463

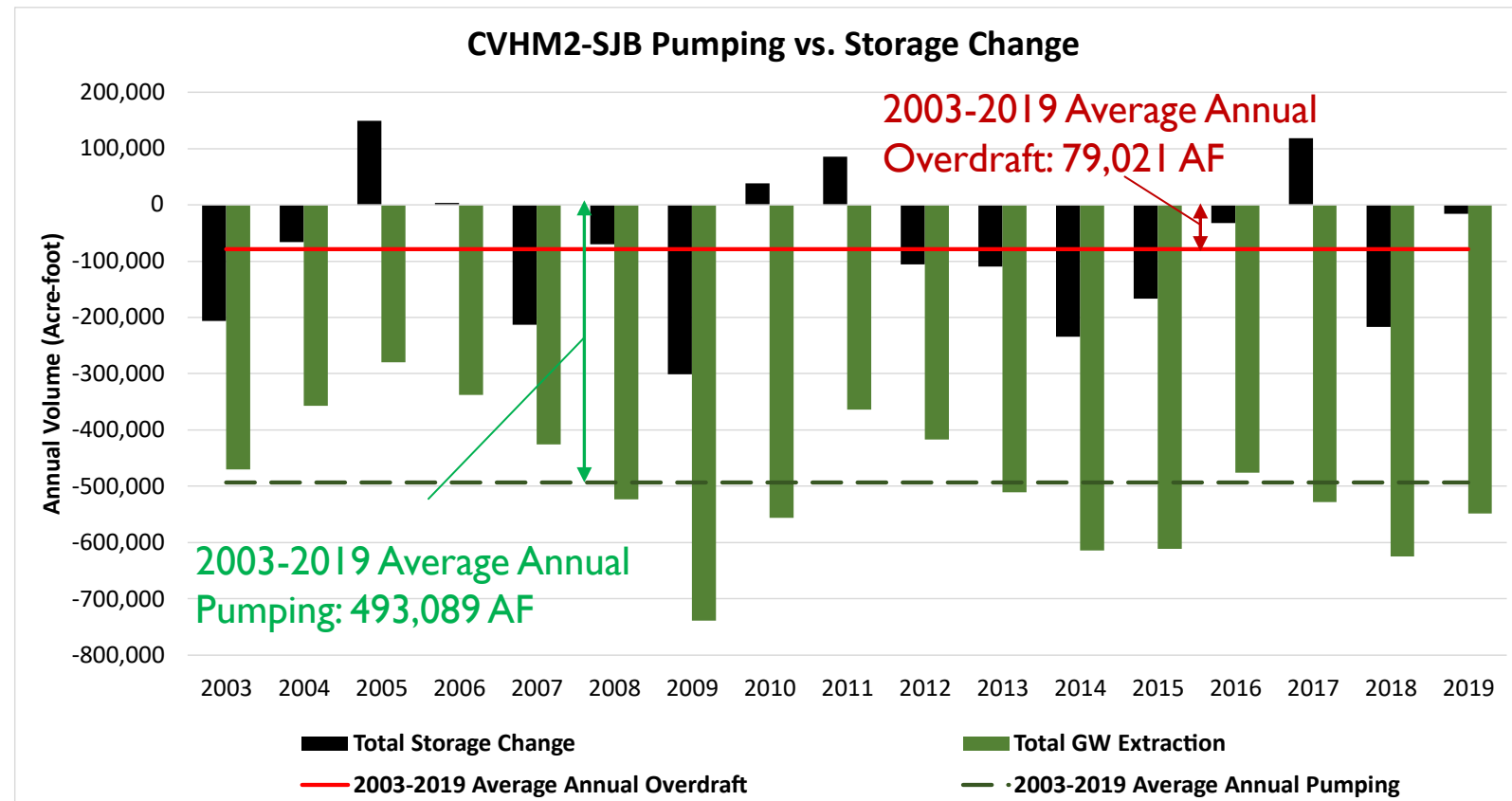
HISTORICAL STORAGE CHANGE

- Over the historical period, CVHM2-SJB shows an average loss of storage in both aquifers, indicating basin is in overdraft.



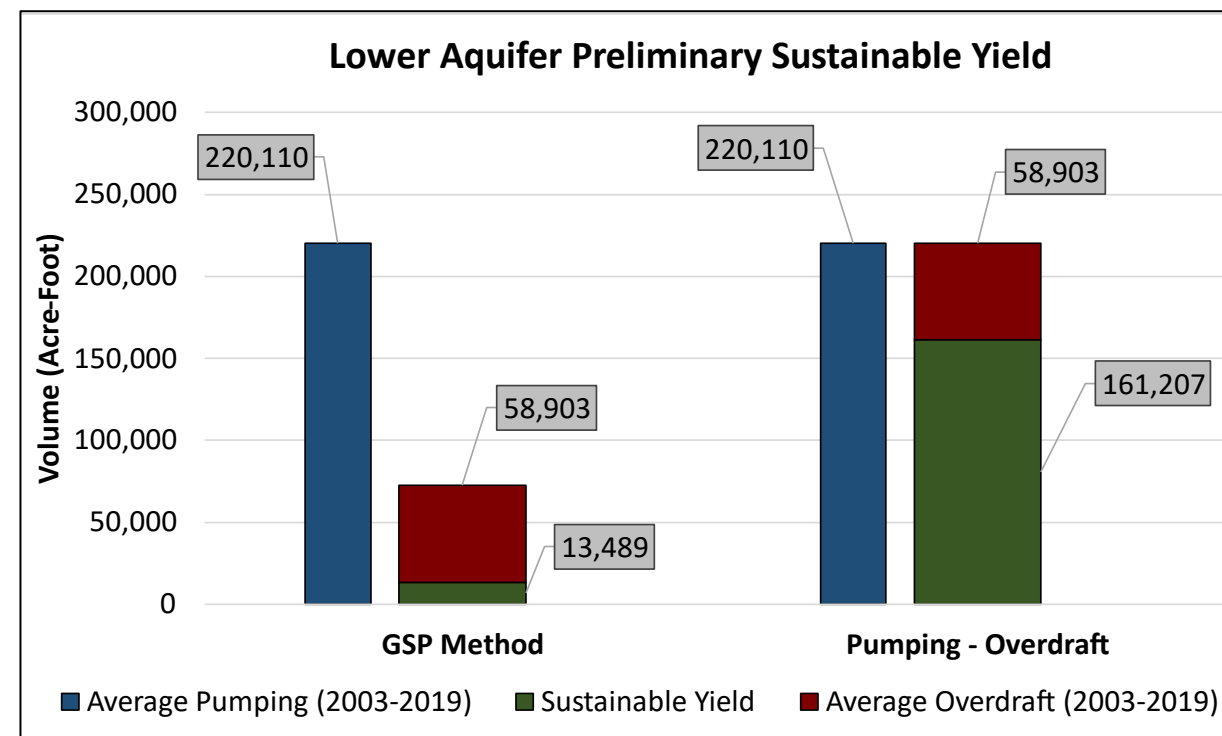
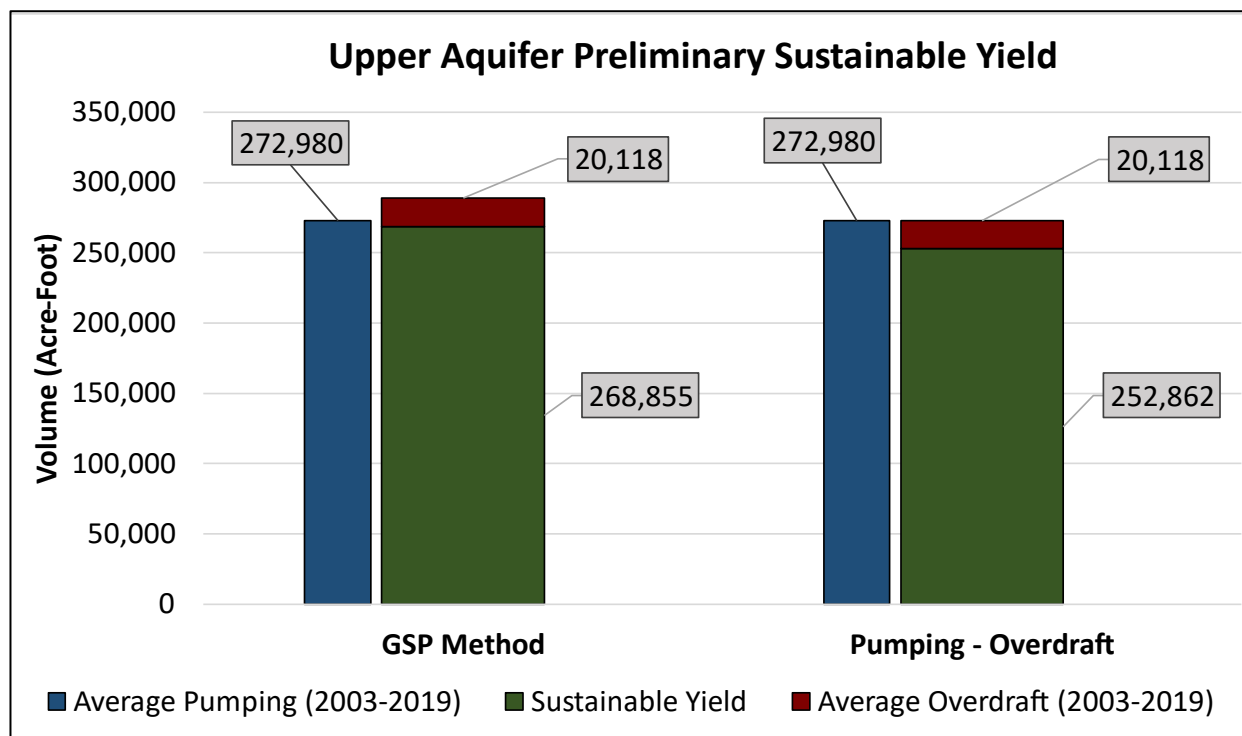
STORAGE CHANGE AND OVERDRAFT

- The average overdraft over WY 2003-2019 is 79,021 AFY.
- Average pumping over the same period is ~493,089 AFY.
- Reducing pumping to cease overdraft (assuming no other actions are taken) would require a ~16% reduction in total pumping.



PRELIMINARY ESTIMATION OF SUSTAINABLE YIELD (BASED ON CONDITIONS OBSERVED 2003-2019)

- Upper aquifer: 253,000 to 269,000 AFY
- Lower Aquifer: 14,000 to 161,000 AFY



PRELIMINARY CLIMATE CHANGE SCENARIOS

- Climate projections based on DWR's guidance – 2030 central tendency and 2070 central tendency
- Precipitation and ET data are updated by multiplying projected baseline values by the climate change factors (CC2030 and CC2070)
- Other (Preliminary) Assumptions b/c of Data Availability Issues:
 - WY 2019 land use for the entire projected simulation
 - Pumping wells active at end of historical simulation remain active for projected simulation
 - Streamflow and surface water deliveries remain the same as the projected baseline scenario
 - Boundary flow and runoff from BCM (Basin Characterization Model) data remain unchanged

PROJECTED GW WATER BUDGETS (WY 2020-2070)

Average annual rates in AFY

Period	Inflow to Basin (+)			Outflow from Basin (-)				GW Storage Change
	Recharge	Net Subsurface Inflow	GW Gain from Stream	GW Extraction	Net Drain	Net Subsurface Outflow	GW ET	
Upper Aquifer								
Projected	304,140	-	25,128	-250,942	-35,706	-16,771	-47,951	-18,707
CC-2030	313,814	-	27,739	-260,701	-36,580	-18,203	-48,505	-18,830
CC-2070	330,158	-	31,855	-277,713	-38,100	-20,578	-49,134	-19,672
Lower Aquifer								
Projected	2,557	146,306	6,285	-196,219	-	-	-	-33,767
CC-2030	2,674	151,907	6,383	-206,162	-	-	-	-38,023
CC-2070	2,885	159,752	6,568	-223,915	-	-	-	-44,994

Increase in ET & Subsurface Outflow
 Increase in Recharge and Stream Gain

Increase in Pumping But Minimal Loss of Additional Storage

Increase in ET
 Increase in Subsurface Inflow

Increase in Pumping & Additional Loss of Storage



GW Storage Change annual rates from CVHM2-SJB include changes due to subsidence.

COMPARISON TO 2022 GSP WATER BUDGETS (2002-2013)

Average annual rates in AFY

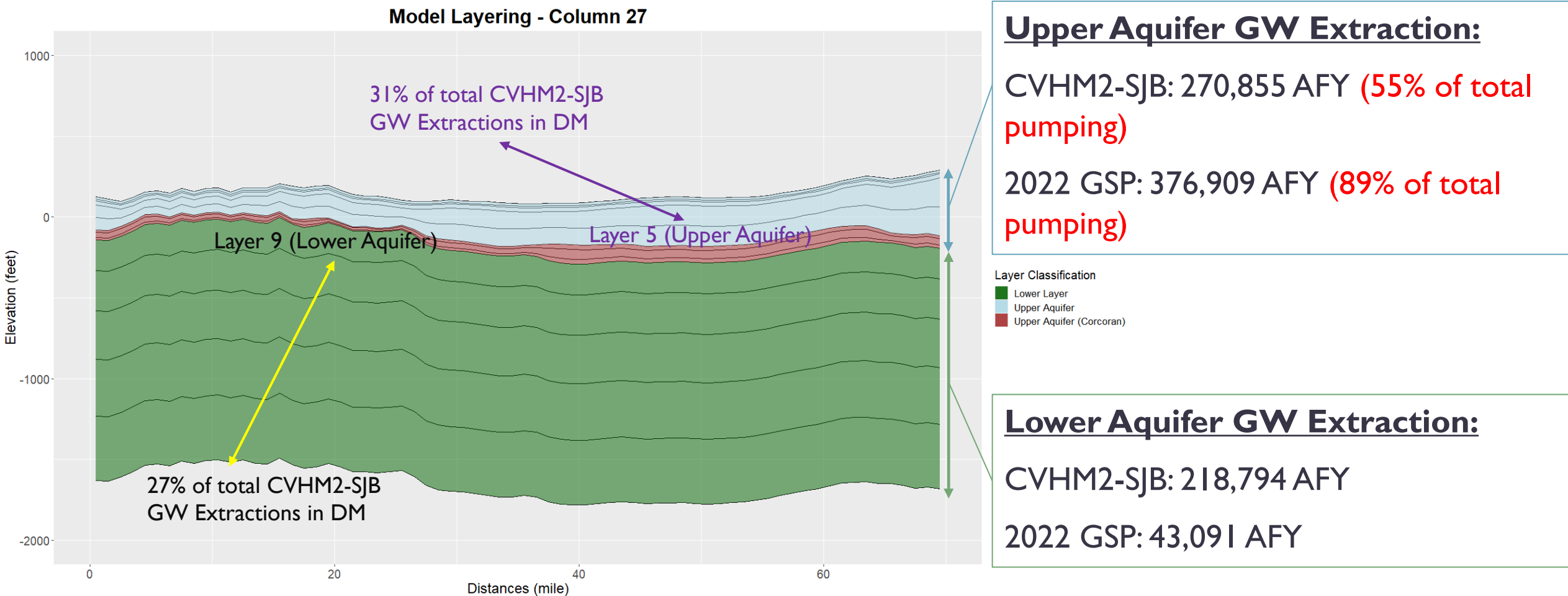
	Inflow to Basin (+)			Outflow from Basin (-)					GW Storage Change
	Recharge	Net Subsurface Inflow	GW Gain from Stream	GW Extraction	Net Drain	Net Subsurface Outflow	GW Loss to Stream	GW ET	
Upper Aquifer									
CVHM2-SJB	382,958	-	-	-249,551	-59,044	-15,993	-1,313	-78,189	-17,783
2022 GSP	404,182	-	-	-376,909	-	-86,181	-	-	-61,182
Lower Aquifer									
CVHM2-SJB	2,727	147,718	6,167	-201,357	-	-	-	-	-41,176
2022 GSP	-	727	-	-43,091	-	-	-	-	-33,727

GW Storage Change annual rates from CVHM2-SJB include changes due to subsidence.

DIFFERENCES IN ASSUMPTIONS / METHODOLOGIES ARE DRIVING THE AQUIFER-SPECIFIC DIFFERENCES

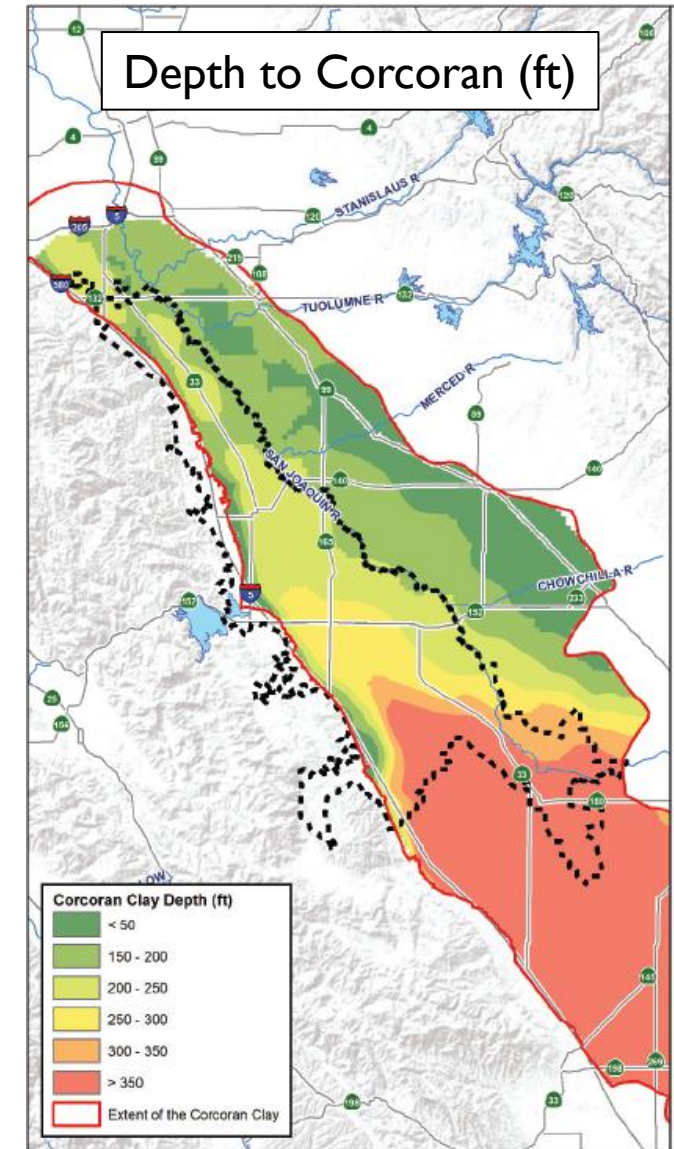
- GSP assumed that the majority of extractions (80-90%) occur in the Upper Aquifer. CVHM2-SJB assigns 55% of the GW extractions to the Upper Aquifer.
- Estimates of cross-boundary flows between methods are significantly different.
- Water budget components do not exactly map between the GSP water budgets and CVHM2-SJB.
- Neither method is perfect in their current form, therefore a discrepancy does not mean anything is “wrong”.

EXAMPLE: SIGNIFICANT DISCREPANCY IN ALLOCATION OF AQUIFER-SPECIFIC GW EXTRACTIONS IN MODEL VS. GSP



DEPTH TO CORCORAN CLAY AND AQUIFER-SPECIFIC PUMPING

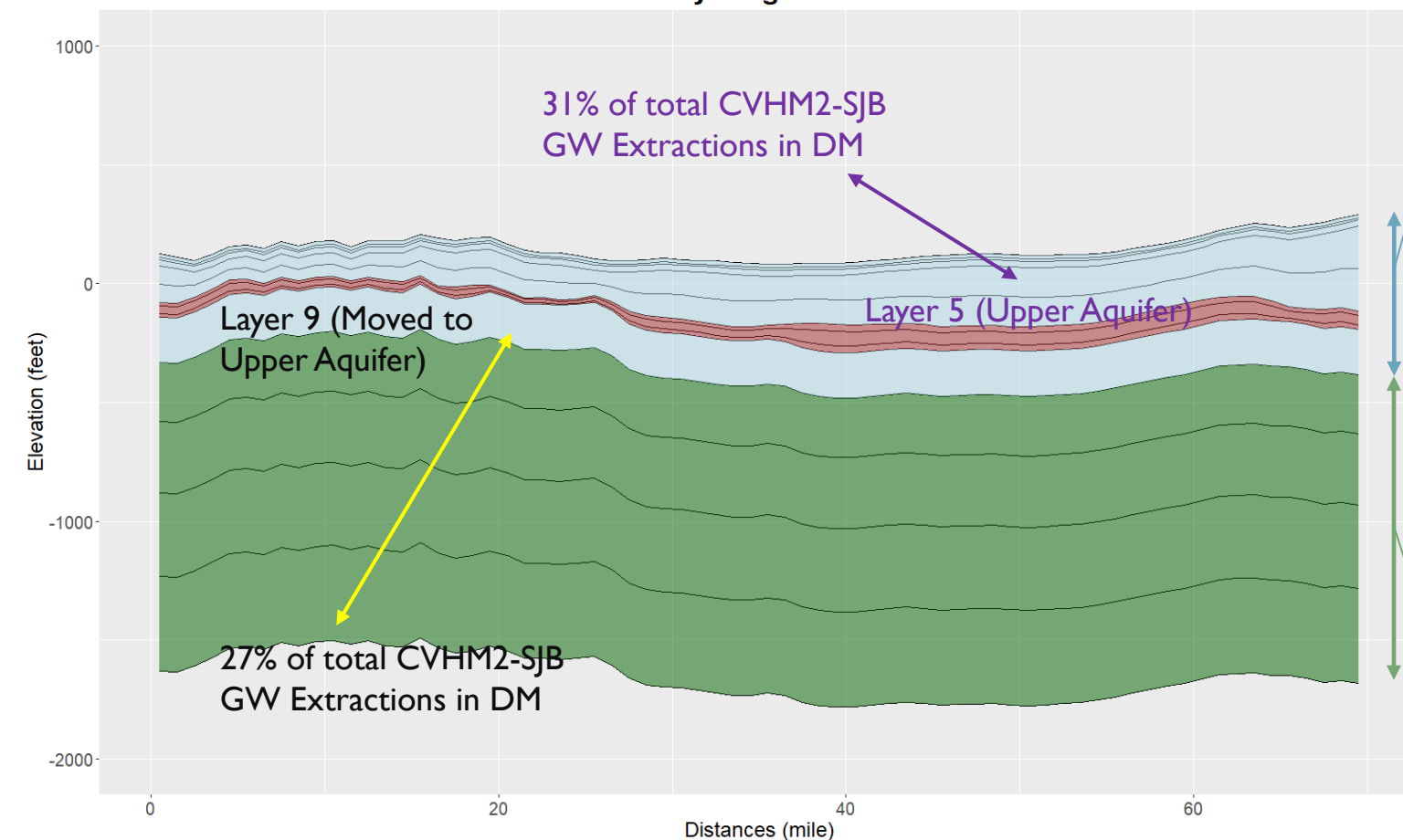
- According to Common Chapter, depth to the top of Corcoran Clay ranges from 100 to 500 ft, with deeper levels observed in the southern part of the Basin.
- The 2022 GSP water budget assumes 80-90% of pumping occurs from the Upper Aquifer.
- Based on well database, approximately 56% (3,110 out of 5,529) of wells are screened in the Upper Aquifer. This aligns more closely with the CVHM2-SJB pumping assignment (55% to Upper).
- Additional work needs to be done to better assign pumping to aquifers in the Basin (involves comparing well perforation depth to the top and/or bottom of Corcoran Clay).



Common Chapter Figure CC-31

DISCREPANCIES ELIMINATED WHEN PUMPING ASSIGNED TO DIFFERENT LAYERS IN THE MODEL AND HCM OF THE BASIN

Model Layering - Column 27



Conceptual Revision to Upper Aquifer GW Extraction:

CVHM2-SJB : 375,220 AFY (83% of total pumping)

2022 GSP: 376,909 AFY (89% of total pumping)

Conceptual Revision to Lower Aquifer GW Extraction:

CVHM2-SJB: 75,689 AFY

2022 GSP: 43,091 AFY

CVHM2-SJB VS. 2019 ANNUAL REPORT

Average annual rates in AFY

	GW Extraction	SW Delivery	GW Storage Change	
			Upper Aquifer	Lower Aquifer
CVHM2-SJB	548,137	908,266	51,225	-66,688
WY-2019 Annual Report	270,400	1,807,600	53,600	-32,600

GW Storage Change annual rates from CVHM2-SJB include changes due to subsidence.

- The WY-2019 Annual Report shows 498,100 AF of surface water delivery from creeks, rivers, and recycled water, and 1,309,500 AF delivered from CVP and SWP.
- There is a notable discrepancy between the total supply and pumping estimates from the two sources.
- It is recommended to investigate the discrepancy between the estimation of groundwater extraction and total demand.

RECOMMENDED NEXT STEPS

- To improve local water budget estimations, reconcile discrepancies in different components, and enhance model applicability to GSP implementation, the following actions should be considered:
 - Extract a representative sub-grid of the model, encompassing the entire Basin, key neighboring infrastructure, cones of depression, and subsidence.
 - Extend the extracted sub-grid model through WY 2022 and utilize the additional data for further calibration and adjustment of the model. This process will involve a closer examination of surface water deliveries and aquifer assignments for wells.
 - Improve model projections by incorporating important P/MAs relevant to GSP implementation. Apply DWR methodology to adjust unimpaired streamflows, boundary recharge, and surface water inflows and deliveries.
 - Adjust GSP water budgets using the refined model and utilize scenario results from P/MA analyses to support the justification of SMC₆₀ setting and sustainable yield estimates.

QUESTIONS



SGMA Round 2 Application Project List

1. Interconnected Surface Water Monitoring Network Study

- Assessing ISW representative monitoring networks and existing surface water gaging stations on both sides of the San Joaquin River to establish commonalities, determine data gaps, and to begin formal coordination efforts with GSAs in the adjoining subbasins in data collection and analysis, and ultimately coordinated and consistent management of groundwater extractions on both sides of the San Joaquin River to avoid ISW impacts and sustainably manage groundwater use on both sides of the river.
- Construct multi-completion dedicated monitoring wells and piezometers in areas of known deficiencies to understand both the horizontal and vertical interdependencies between San Joaquin River flows and groundwater pumping at various depths in the Upper Aquifer.
- Conduct a study to understand the interdependencies of GDEs and ISW flows with the goal of confirming the presence and extent of GDEs in the Delta-Mendota Subbasin, understanding whether the San Joaquin River is an ISW in the Aliso Water District (AWD) GSP area, improving the understanding of the effects of Upper Aquifer groundwater pumping on river seepage, and to assess the existing legal framework (the Herminghaus Agreement and similar) that limits the extraction of water from the shallow aquifer.

2. Data Gaps and Monitoring

The projects included in this component will include construction of dedicated monitoring wells in AWD GSA and TID to fill spatial data gaps, and installation of surface water gaging along the Chowchilla Bypass and Cottonwood Creek in AWD GSA to fill identified data gaps in representative monitoring networks, inform water budgets, and support characterization of stream-aquifer interactions. The component is intended to provide AWD and TID with more readily-available data and information to develop tools for better management of groundwater levels, groundwater quality, and stream flows relative to established sustainable management criteria (SMC). Additionally, dedicated monitoring wells within TID's service area will help to characterize boundary conditions with the Fresno County Management Areas A and B GSP region in the Delta-Mendota Subbasin and with neighboring subbasins, the Kings and Westside Subbasins. Data collected from the new wells and gages will help AWD GSA and TID (thus the Central Delta- Mendota Subbasin GSA) avoid undesirable results and improve sustainability of the Delta-Mendota Subbasin. Information gained from this component will also be shared with the entire Subbasin to support improved understanding of Subbasinwide conditions, and facilitate more comprehensive and coordinated GSPs and Annual Reports.

3. Canal Lining Projects

The San Luis Water District (SLWD) will be implementing the lining of a portion of the SLWD Relift Canal and the Pacheco Water District (PWD) will conduct the lining of Lateral 5 and Lateral 6. The goal of these projects is to reduce seepage of imported surface water into the shallow groundwater portion of the Upper Aquifer (above the Corcoran Clay layer, a regional impermeable clay layer in the San Joaquin Valley). This percolation loss is not considered to be beneficial as the shallow groundwater in these locations is highly saline and

not recoverable for reuse as a water supply without treatment. With the linings, the reduced canal losses to the shallow groundwater system will allow for more higher quality imported water to be delivered to growers in the area, offsetting groundwater pumping from the sub-Corcoran Lower Aquifer (a higher quality aquifer) that would otherwise be extracted to meet crop demand. Lower Aquifer pumping is a primary cause of inelastic land subsidence in this portion of the Delta- Mendota Subbasin (around Pool 18 of the Delta-Mendota Canal). By reducing seepage losses from the canals, imported surface water can be conserved and reduced Lower Aquifer pumping will minimize the chance for additional inelastic land subsidence.

4. Test

Included in this component are three projects: the Ortigalita Creek Recharge and Recovery project being implemented by San Luis Water District (SLWD), an Injection Well Pilot project being implemented by Tranquillity Irrigation District (TID), and a Stormwater Infiltration Gallery project being implemented by the City of Newman.

The Ortigalita Creek Recharge and Recovery project will provide planning, design, and construction of about 9 recharge ponds varying in size from approximately 7 to 12.5 acres for a total recharge area of approximately 93 acres. The recharge area is located within the SLWD service area, north of the California Aqueduct/San Luis Canal, at the southwest corner of the intersection of Mervel Avenue and Center Avenue, south of Los Banos and west of Dos Palos in Merced County. The project will include construction of the recharge basins, levees, inter-basin structures and 3 outfall structures; installation of one new siphon turnout on the California Aqueduct; installation of approximately 560 linear feet of 18-inch diameter pipe, 250 linear feet of 36-inch diameter pipe, flow measurement devices, and a 60-inch diameter standpipe; and construction of 4 monitoring wells. The project will recharge the Upper Aquifer of the Delta-Mendota Subbasin with water imported by SLWD via the California Aqueduct and the Delta-Mendota Canal via the San Luis Canal.

The TID Injection Well Pilot project will address subsidence occurring in and around the TID service area due to regional deep aquifer pumping. While deep aquifer pumping is essential to the area (as the deeper water is of better quality for irrigation versus the Upper Aquifer), sub-Corcoran Clay pumping (below the Corcoran Clay, a regional impermeable clay layer in the San Joaquin Valley) has been identified as a key cause of inelastic land subsidence. Additionally, recharging by utilizing percolation (recharge) ponds is not practical in the TID service area as the surface soils are too impermeable to allow percolation and would not recharge the aquifer being depleted (the Lower Aquifer). To address this ongoing problem, TID is proposing to investigate the feasibility of injecting surplus surface water into the confined deep aquifer for temporary storage and later recovery. This project will stabilize groundwater levels in the Lower Aquifer in the TID service area and thus mitigate future subsidence. Westlands Water District, located immediately to the south of TID, has recently implemented a successful similar project and program. To determine the feasibility of a similar program, TID will develop a testing protocol for the pilot study, design, and contract to have testing equipment fabricated, and install and conduct pilot testing on a single existing well in the TID service area.

The Newman Stormwater Infiltration Gallery project will install large stormwater subsurface infiltration galleries under Hurd Barrington Park. The project will divert flows from the

City's piped stormwater system along Barrington Avenue to the large infiltration galleries to be constructed at Hurd Barrington Park. The City's 30-inch diameter storm drain along Barrington Avenue is currently used to route stormwater runoff from the contributing single-family residential drainage area, flows from Central California Irrigation District (CCID), and flush water from the City's production Wells 8 and 10. The flows diverted from the main line will be routed to a hydrodynamic separator (HDS) to remove trash and sediment, and will then be conveyed through a pipeline to the subsurface infiltration basins. The current grassed park/playfield at the park will be replaced after installation of the infiltration gallery thereby providing the dual benefits of groundwater recharge and recreation.

5. Water Use Efficiency and Reclamation

The proposed project is located approximately 7 miles northwest of the community of Firebaugh, in California's Central Valley. This project will increase the recovery and usability of shallow saline groundwater by installing a package wellhead treatment plant, solar power system, and constructing an approximately 2.6-mile-long pipeline that will tie four existing drainage wells together and allow rotating treatment of the production water from each of the four wells. The system will allow increased pumping from the saline shallow aquifer, which will be treated by the treatment plant such that the product (treated) water could be incorporated into the regional irrigation systems and not negatively impact surrounding water quality. A solar power system will provide the necessary power for the treatment system from renewable resources. The brine from the treatment system will be reused to irrigate existing salt-tolerant forage grasses. The proposed project will increase available irrigation water resources by between 900 and 1,300 acre- feet per year (AFY).

Funding Opportunities – Updated 6/22/2023

Biologically Integrated Farming Systems (BIOS)

Projects from this program should demonstrate IPM-based alternative pest management options that focus on economical and efficacious biological and cultural pest management techniques that allow growers to maintain yields and quality. Up to \$1 Million available per project. California Dept. of Pesticide Regulation. Deadline: 7/31/23

Natural Communities Conservation Planning Local Assistance Grant Program

A total of more than \$29 Million for NCCP implementation and NCCP and/or HCP planning and implementation, targeted at highest priority projects. California Dept. of Fish and Wildlife. Deadline: 8/4/23

Integrated Climate Adaptation and Resiliency Program's Regional Resilience Planning and Implementation Grant Program

The Regional Resilience Grant Program (RRGP) funds planning and implementation projects that strengthen climate change resilience at a regional scale. The RRGP funds projects led by partnerships that involve multiple jurisdictions working together to address the most significant climate change risks in their regions, especially in communities that are most vulnerable to climate change impacts. Up to \$3 Million per project, \$9.4 Million total available. Governor's Office of Planning and Research. Deadline: 8/29/23

Instream Flow Water Purchase Program

The Instream Flow Water Purchase Program (WPP) establishes financial instruments and agreements necessary to ensure water for beneficial instream flows are made available from those with legal rights to use or dedicate water. Projects must measurably enhance streamflow at a time and location necessary to provide fisheries or ecosystem benefits or that improve upon existing flow conditions. Minimum qualifications will require applicants to provide at least 2,000 acre-feet of water through sale, lease, license, dedication or other binding mechanism, including forbearance, for purposes of instream flow enhancement between January 1st and June 30th in every water year type in which the water right holder proposes to provide water. These flows must be provided in the Sacramento-San Joaquin Delta Watershed for at least 10 water years (subject to negotiation if only provided in specific water year types). Up to \$360 Million available. Department of Water Resources. Deadline: 10/1/23

Water Resilience Infrastructure-Water Recycling

The purpose of the grant is to provide technical and financial assistance to local agencies for the planning and construction of water recycling projects that promote the beneficial use of treated municipal wastewater in order to augment fresh water supplies in California. Up to \$15 million available per project and a total of more than \$232 Million. State Water Resources Control Board. Deadline: 6/30/25

Emergency Community Water Assistance Program

This program helps eligible communities prepare, or recover from, an emergency that threatens the availability of safe, reliable drinking water and is targeted at small communities and rural areas (DACs, SDACs, and EDAs). \$150,000 available for leak repair and maintenance to existing water lines and construct water line extensions; up to \$1,000,000 for construction of new wells,

transmission lines, treatment plants, or other sources of water. USDA Rural Development. Applications accepted on a continuous basis.

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.

Building Resilient Infrastructure and Communities (BRIC) and Flood Mitigation Assistance (FMA) Programs

Applications accepted through the Governor's Office of Emergency Services. BRIC is prioritizing the following types of projects: infrastructure projects, projects that benefit disadvantaged communities as referenced in EO 14008, and projects that incorporate nature-based solutions including those designed to reduce carbon emissions, climate change adaptation and resilience projects. 25% Match required. Applications accepted on a rolling deadline.