VIII.

MEMORANDUM

TO: SLDMWA Board of Directors, Alternates

FROM: John Brodie, Water Resources Programs Manager
Joe McGahan, Regional Drainage/Westside Watershed Coalition Coordinator

DATE: July 13, 2023

RE: Activity Agreements – Staff Report for June 2023

This memorandum serves as the Staff Report for June 2023 regarding specified[1] Water Authority activities not separately addressed on the Board meeting agenda.

1. Integrated Regional Water Management (IRWM) Activity Summary

General Westside-San Joaquin Integrated Regional Water Management Plan (IRWMP)

Projects funded by the Department of Water Resources (DWR) Proposition 1, Round 1 IRWM Implementation Grant continue to move forward. Both the West Stanislaus Irrigation District Pumping Plant Modernization Project and the Central California Irrigation District's Orestimba Creek Recharge and Recovery Project are progressing on schedule. The Westlands Water District's Broadview Aquifer Recharge and Recovery Project is also moving forward.

Staff is finalizing a Scope of Work for Self-Help Enterprises to update Community Needs Assessments previously conducted for the Westside San Joaquin IRWM Region. Separate assessments focused on severely disadvantaged communities in both the San Joaquin River and Tulare Lake Funding Areas were completed in 2020. Self-Help's update will seek to identify priority communities where drinking water conditions (accessibility, affordability, quality, and quantity) in the region can be improved.

2. Sustainable Groundwater Management Activity (SGMA) Activity Summary

Coordinated Activities

Local Groundwater Sustainability Agencies GSAs are meeting on an accelerated schedule to address what DWR called "deficiencies" in the Subbasin's six Groundwater Sustainability Plans (GSPs). DWR's "inadequate" determination for the Subbasin's Plans means the State Water Resources Control Board (SWRCB) will judge future efforts by the Subbasin to achieve "approved" Plans.

---

[1] For the sake of completeness, this includes those Activity Agreements that have been approved by the Board of Directors, but not yet signed by all interested members and/or participants (i.e., the Los Vaqueros Expansion Project Activity Agreement, the Exchange Contractors 2019-2023 Transfer Program Activity Agreement, and the Westside-San Joaquin Integrated Regional Water Management Activity Agreement).

A request for proposals was issued to select a consultant, firm, or team to consolidate the six GSPs into a single Plan for the Subbasin. A single consulting firm was selected to complete the GSP consolidation. The Subbasin Coordination Committee will work with the consultant to select a timetable for completion of the work. Staff is preparing an amended task order for rapid execution so momentum on addressing items identified by DWR can be maintained.

SWRCB staff at the June 21, 2023 State Water Board meeting released a draft timeline for conducting probationary hearings for Subbasins deemed inadequate by DWR. As of that meeting, there were six such Subbasins. State Water Board members will consider whether to accept its staff's recommendations. According to the draft schedule, the Delta-Mendota Subbasin will have a probationary hearing in September 2024 unless a consolidated GSP that sufficiently identifies deficiencies is adopted and submitted prior to that date. The first probationary hearing for a subbasin could be held as soon as December of this year if SWRCB members accepts the draft recommendations.

General SGMA Activities

Groundwater level data for the Delta-Mendota subbasin was submitted to DWR by the July 1, 2023 deadline. GSAs are now in the window for collecting water quality data.

3. Drainage Activity Summary

Grassland Basin Drainage Management Steering Committee Activity Summary
The Grassland Bypass Channel gates were closed on March 24th, ending the discharge of storm-induced drainage from the Grassland Drainage Area. Remaining drainage flows have been managed internally by the San Joaquin River Improvement Project since that time. No significant storms are forecasted and it is not anticipated the gates will be opened again in the near future.

GBP Activities

- Grassland Bypass Project Annual Monitoring Report (AMR): The 2019 Order requires an AMR be developed and submitted by April 30th. This report covers the 2022 calendar year and requires a detailed analysis and summary of all of the data collected at each of the monitoring sites. Regional Board staff responded with some technical questions which we are in the process of addressing. A revised AMR was prepared to address questions from the Regional Board, and submitted on June 14.
- General administration: Review and approve consultant billing. Field review of drainage conditions and correspondence with SJRIP manager.
- Mud Slough Restoration Project: The Water Authority adopted the CEQA for the project in December 2021. GBP management staff met with CDFW on May 30th to review their concerns and are working with stakeholders to resolve remaining issues. A second meeting with CDFW is planned for August 15.
- Grassland Water District Monitoring Wells: A total of 10 observation wells are planned to be installed to monitor groundwater levels and quality within the San Joaquin River Improvement Project and in a portion of Grassland Water District to the north. All 10 observation wells have been installed, with the last well completed in June. The GBD are working on developing a monitoring plan to measure groundwater levels and quality.

64

- Compliance Monitoring: Monitoring in compliance with the 2019 revised WDRs and 2019 Use Agreement is a continuous and daily effort. Regular flow, water quality and toxicity monitoring is required at eight locations at a frequency that varies from monthly to daily. Special monitoring for fish and invertebrate selenium levels has occurred annually, along with efforts to collect particulate samples for selenium analysis.
- Grassland Drainage Area Coalition: Work continues to provide coverage for farmers within the Grassland Drainage Area for the Irrigated Lands Regulatory Program. Reporting forms were sent to farmer members in late 2022 for reporting 2022 nitrogen application.
- Proposition 84 Grant: Work is ongoing to support the Prop 84 Grant administered by Panoche Drainage District for improvements to the San Joaquin River Improvement Project. The Short Term Storage Basins construction is in progress but will take some time to complete. Other projects are in design phase.

San Joaquin Valley Drainage Authority Activity Summary

- Participated in conference calls with the Regional Board to respond to their questions on surface water quality management plans and required follow up. Working with the Regional Board to formulate a more efficient focused outreach program to address sediment and surface water quality impacts to receiving waters.
- Westside San Joaquin River Watershed Coalition: Work continues to provide coverage under the Irrigated Lands Regulatory Program for farmers within the Westside San Joaquin River Watershed Coalition. The work includes managing the monitoring program, assisting farmers with the necessary reporting to comply with the program and preparing reports for the Regional Board; the Annual Monitoring Report was submitted to the Regional Board on June 30, 2023. Coalition staff are updating the membership roll in preparation for a July 31, 2023 submittal to the Regional Board.
- Groundwater Protection Formula, Values and Targets: Coalitions have developed a methodology to establish nitrogen loading Values and Targets as required by the WDRs. Coalition staff and consultants were part of a panel that presented the Targets to the Regional Board in April 2023; approval of the targets was granted June 30,2023 with two conditions that must be met by April 2024 and July 2024 respectively.
- Management Practices Effectiveness Program: Attend conference call meetings of the MPEP group. Developing work schedules to implement nitrogen control measures for farmer member compliance.
- Central Valley Groundwater Monitoring Collaborative: Attend conference call meetings to give direction to program. Work with other coalitions and staff to develop an updated groundwater monitoring CQAP. Submitted 2022 Annual Groundwater Monitoring report to the Regional Board.
- Management Zones: Work continued to develop plan for compliance within the Westside Coalition. SJVDA Board of Directors directed staff to begin the initial organization of the Management Zone by joining the Valley Water Collaborative. Staff is currently working to prepare the contracts and agreements that will used going forward.
- Salt Control Program: Phase I of the Salt Control Program involves the development of a Prioritization and Optimization Study (P&O Study). Currently, consultants are compiling data in order to characterize current salinity conditions of both surface and groundwater

across the Central Valley. Phase I of the Salt Control Program is expected to last years. This work is being supported through the SJVDA budget.

- Prop 84 Real Time Program Grant: Work continues on maintaining the stations, gathering monitoring data, and computer modeling to determine and manage salt discharges to the San Joaquin River. As of March 2023, grant funds billed is $595,942 with $259,058 remaining. The project has been extended to December of this year.

VIII. B.

Anthea Hansen

From: Anthea Hansen
Sent: Friday, July 7, 2023 10:57 AM
To: Orvil Mckinnis; Adam Scheuber; Chase Hurley (churley@waterandlandsolutions.com); Vince Lucchesi (VLucchesi@pattersonid.org); Lon Martin; Danny Wade; Bobby Pierce; cwhite@sjrecwa.net; Matt Brady
Cc: Toni Russell; Janet Roy; Joe McGahan; Chris Linneman; DAVID CORY; Jarrett Martin; Alejandro Paolini
Subject: RE: Management Zone Initial Organizing Process

Hi Orvil,

Maybe a suggestion is to draft a letter to all of the permittees on behalf of the SJVDA, and have each of us sign for our respective agencies, to get the collective word out. We can include the background on the VWC/MZ route we are taking. Then we can split up the list and follow up with the personal contact as described in item 2.

Just a thought....

Anthea

From: Orvil Mckinnis <OMckinnis@summerseng.com>
Sent: Wednesday, July 5, 2023 8:37 AM
To: Adam Scheuber <ascheuber@delpuertowd.org>; Chase Hurley (churley@waterandlandsolutions.com) <churley@waterandlandsolutions.com>; Vince Lucchesi (VLucchesi@pattersonid.org) <VLucchesi@pattersonid.org>; Lon Martin <lonmartin@att.net>; Danny Wade <danny@trqid.com>; Bobby Pierce <bobby.pierce@weststanislausid.org>; cwhite@sjrecwa.net; Matt Brady <mbrady@agreserves.com>
Cc: Anthea Hansen <ahansen@delpuertowd.org>; Toni Russell <TRussell@pattersonid.org>; Janet Roy <jroy@slwd.net>; Joe McGahan <jmcgahan@summerseng.com>; Chris Linneman <linneman@summerseng.com>; DAVID CORY <farmeratlaw@comcast.net>; Jarrett Martin <JMartin@ccidwater.org>; Alejandro Paolini <alejandro@hmrd.net>
Subject: Management Zone Initial Organizing Process

Dear Board Members,

Per your direction, the Coalition is moving forward with the process to join the Valley Water Collaborative(VWC) and form a Management Zone (MZ). This is an unprecedented and monumental task the San Joaquin Valley Drainage Authority (SJVDA) is being required to facilitate. We are currently working with the VWC to produce the initial agreement(s) to make the relationship official. In the interim, it is imperative that the Coalition begin the process of reaching out to the various Discharge Permittees (Permittees) who will become part of our MZ. To that end, I would like to propose a couple of scenarios to get the word out to those various Permittees that they will soon be receiving a Notice to Comply from the Regional Board, that they will be required to join a MZ, and that a MZ is being formed to allow them to comply.

As you are all connected, at varying degrees, to the Districts that form the SJVDA and you might have some institutional knowledge of the Permittees in question, I would like to offer you the opportunity to assist in this process. Here is what I am proposing:

1. You take the lead in making the initial contact with the permittee and provide them some background on the MZ. If successful, you can then direct them to our contact at the VWC to get them signed up. Or,

67

2. You could make the initial contact with the permittee and explain that you are aware of/support the MZ and then direct them to our contact at the VWC to answer their question and then get them signed up. Or,
3. The Coalition/VWC will take the lead in making the initial contact with the permittee and provide them with the information needed to facilitate them joining the MZ. Also making the Permittee in your area aware that the Water District is on-board with the MZ and that, if needed, you are available to answer their questions. Or,
4. The Coalition/VWC will take the lead in making the initial contact with the permittee and provide them with information on the MZ and get them signed up. You can follow the progress anonymously.

I recognize that you and your related Districts are fully engaged in providing water and drainage services to your constituents, but I want to make sure that you are comfortable with the MZ process going forward. I would also add that if you opt to engage with the City, Dairy, Poultry, Food Processors, et. al., by no effort of your own, you might become their preferred contact for future MZ activities.

Please provide your response to me as soon as it is feasible; we need to get the process moving forward. If you wish to engage with the Permittees on behalf of the MZ, I will provide you with a comprehensive list that you can work from. If you would rather the Coalition take the lead, please indicate that to me as well.

I appreciate your time and assistance in getting the MZ process moving forward.

Orvil Mckinnis
P.O. Box 1122
Hanford, CA 93232
(559) 582-9237
(559) 582-7632 (FAX)
omckinnis@summerseng.com

68

VIII. B.

Westside San Joaquin River Watershed Coalition
2022 Paperwork Status Update for Del Puerto WD & Oak Flat WD as of 7/17/2023

Survey Type	recvd	total	pct recvd
INMPSR	99	111	89%

IDNo	Member Name	FE Req?	INMPSR Req?	2022 INMPSR Status	2022 paperwork req. met?
25034A	Koster, A & B Farming, LP	no	yes	not recvd	INMPSR missing
25040A	Gonzalez Farms	no	yes	not recvd	INMPSR missing
25053B	Tatla & Singh	no	yes	not recvd	INMPSR missing
25053C	Tatla, Jasbir	no	yes	not recvd	INMPSR missing
25055A	Singh, Rajinder et ux.	no	yes	not recvd	INMPSR missing
25085A	Brooks, Mark	no	yes	not recvd	INMPSR missing
25120A	Baba Atwal Farms Inc.	no	yes	not recvd	INMPSR missing
25125A	Craven Farming Company	no	yes	not recvd	INMPSR missing
25144A	Sardar Ranch	no	yes	not recvd	INMPSR missing
25145A	NISRA Farms, LLC	no	yes	not recvd	INMPSR missing
25169A	Esprio, Maria	no	yes	not recvd	INMPSR missing
25170A	Basra & Dhillon Farms, Inc.	no	yes	not recvd	INMPSR missing

Blank

VIII. D.

THIS JUST IN … State Water Board announces tentative schedule for probationary hearings for 6 critically overdrafted groundwater basins

mavensnotebook.com/2023/06/21/this-just-in-state-water-board-announces-tentative-schedule-for-probationary-hearings-for-6-critically-overdrafted-groundwater-basins/

Press Release/Notice Breaking News June 21, 2023 0 418

June 21, 2023

From the State Water Resources Control Board:

Moving to address the potential for severe impacts to water users and infrastructure in certain groundwater basins that lack plans for sustainable management, the State Water Resources Control Board has proposed a tentative schedule for probationary hearings for all six basins referred by the Department of Water Resources (DWR) for state intervention under the Sustainable Groundwater Management Act (SGMA) earlier this year.

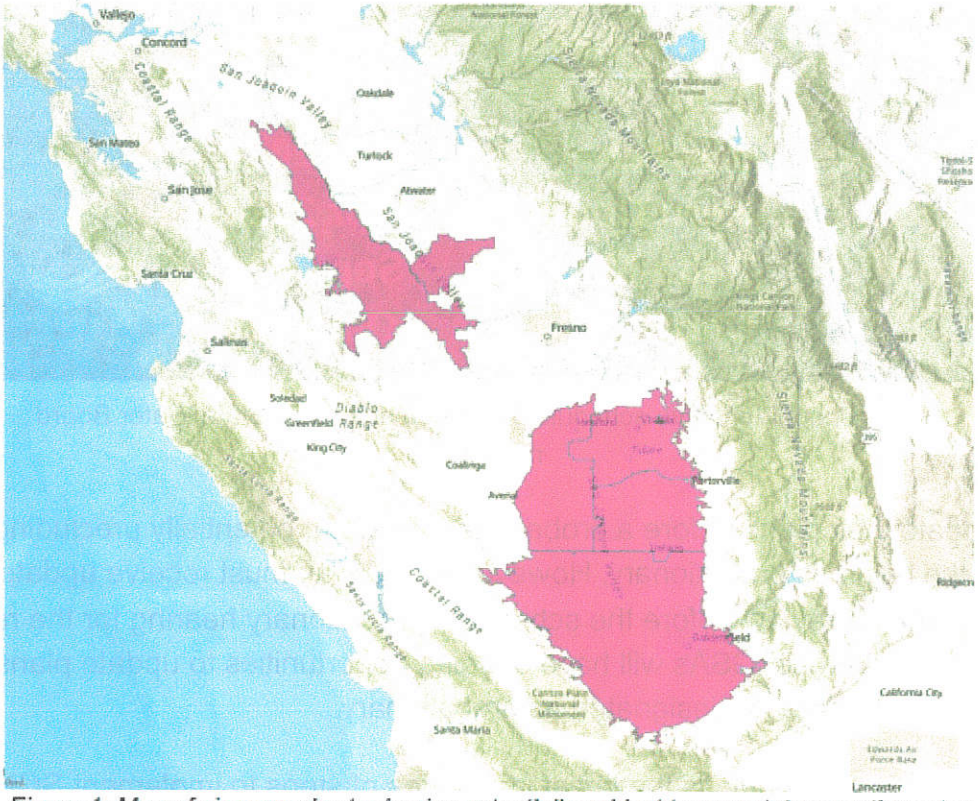


Figure 1: Map of six groundwater basins potentially subject to new state reporting rules

Per the proposed schedule, the first two probationary hearings, for the Tulare Lake Subbasin in Kings County and Tule Subbasin in Tulare County, would proceed in December 2023 and January 2024, respectively. By October 2024 the State Water Board would hold hearings for

70

all four remaining basins – Kaweah, Kern County, Delta-Mendota and Chowchilla – in that order.

"The key thing to remember is that a probationary hearing is only that, a hearing," said Eric Oppenheimer, chief deputy director for the State Water Board. "No determination about whether a basin will be placed on probation has been made. All probationary hearings will be publicly noticed and robust public participation is anticipated and welcomed, especially from water users in the basins themselves."

Since it is not feasible for the board to conduct hearings on all six basins simultaneously, staff used key factors to determine the proposed sequence of the hearings. These factors included the potential for urgent impacts to drinking water supplies, impacts to infrastructure from subsidence, the amount of overdraft in the basins and the degree of inadequacy in the plans submitted by the basins' groundwater sustainability agencies (GSAs).

Screenshot of tentative schedule presented at today's State Water Board meeting.

GSAs can update their plans before a probationary hearing, potentially precluding the need to designate the basin as probationary. However, board staff must receive updated GSPs with sufficient time for review before the scheduled probationary hearing for the revised plan to be considered. Likewise, GSAs will have ongoing opportunities to update plans to address deficiencies even if a basin is designated as probationary.

The tentative hearing schedule is the latest in a series of steps to implement SGMA, which is intended to make vulnerable groundwater resources more robust for generations to come through a mix of long-term and near-term measures. While the law recognizes that groundwater management is best accomplished at the local level, it has triggers that provide for state intervention if certain conditions and goals are not addressed in groundwater sustainability plans, or GSPs.

Probation is the first phase of the state intervention process during which the board will work with GSAs to resolve failures in their plans and require many groundwater pumpers in the basin to report information about their groundwater use. With some exceptions, pumpers who are required to report will also be required to pay fees.

The tentative schedule sets hearing dates far enough in advance to allow for the required public noticing stipulated by SGMA regulations. The board will provide at least 90 days' notice to cities and counties, and 60 days' notice to all known well owners, before it holds a probationary hearing for a basin.

More information about the state intervention process under SGMA is available on the board's website.

The State Water Board's mission is to preserve, enhance and restore the quality of California's water resources and drinking water for the protection of the environment, public health and all beneficial uses, and to ensure proper water resource allocation for present and future generations.

72

Blank

VIII. D.

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.

NORTHERN &
CENTRAL
DELTA-
MENDOTA

MEMORANDUM

TO: Northern Delta-Mendota Region Management Committee Members and Alternates

FROM: John Brodie, Water Resources Program Manager

DATE: July 5, 2023

RE: Providing direction to the Northern Delta-Mendota Region representative to the Delta-Mendota Subbasin Coordination Committee to approve a consultant to prepare a single GSP for the Delta-Mendota Subbasin and a $1.5 million budget augmentation to compensate the consultant for GSP work.

BACKGROUND

On March 2, 2023, the California Department of Water Resources (DWR) issued a Determination Letter stating that the six Delta-Mendota Subbasin Groundwater Sustainability Plans (GSPs) were 'inadequate." DWR referred the GSPs to the State Water Resources Control Board (SWRCB) for further review. SWRCB has the option of placing the Subbasin on probation until the GSPs address the deficiencies identified by DWR in the Determination Letter.

To address those deficiencies, the Delta-Mendota Subbasin Coordination Committee, with the support of the 23 Groundwater Sustainability Agencies (GSAs) in the Subbasin, began the process of consolidating the six GSPs into a single GSP. On May/June x, a request for proposals (RFP) was issued for a consultant or team to prepare a single GSP for the Subbasin.

As of the June 23, 2023 deadline to submit responses, one consultant responded to the RFP.

ISSUES FOR DECISION

To continue the timely response to the inadequate determination and possible state intervention in the subbasin, the Northern Delta-Mendota Region Management Committee (NRMC) must decide whether to direct its representative to the Coordination Committee to select the submitted response to the RFP and approve a $1.5 million budget augmentation to the Coordinated budget (Fund 63) to pay for the consultant's work.

75

RECOMMENDATION

Staff recommends the following:

That the NRMC direct its representative to the Coordination Committee to approve selection of a consultant to prepare a single GSP for the Delta-Mendota Subbasin and approve a $1.5 million budget augmentation to the Coordinated Budget (Fund 63) to pay for the consultant's work.

ANALYSIS

Based on the June 21, 2023 meeting of the SWRCB, the Delta-Mendota Subbasin faces a possible probationary hearing by the SWRCB in September 2024. Without approval, time and momentum will be lost and work to have the single GSP ready and possibly adopted in advance of the proposed September 2024 probationary hearing will be at least delayed. The respondent is currently working on the initial parts of the subbasin's response to the inadequate determination, and approval of both the consultant and budget augmentation will provide a seamless transition to completing the necessary tasks to reach approval.

BUDGET

The total proposed budget augmentation which will be considered by the San Luis and Delta-Mendota Water Authority (SLDMWA) Board at its July 13, 2023 meeting is $1,500,000. Under the proposed new one vote = one share cost sharing framework in the MOA, the NRMC will contribute an estimated 1/8 of Coordinated expenses[1].

Under this scenario:

Draft MOA Cost Share
Fund 63 budget: $1,500,000.00
Northern Mgt. Committee Share (1/8): $187,500

During the previous three budget years, the NRMC has been reserving $100,000 annually for the required five-year periodic update to the Northern & Central GSP. Under the consultant's submitted budget estimate, just over half of the in-house reserve would be used to pay for the NRMC share to prepare a single GSP for the Subbasin.

The consultant's proposed budget to prepare the single GSP is included as Appendix A to this memo.

[1] Based on the assumption that all eight existing seats on the Coordination Committee are maintained.

PROJECT BUDGET FOR COMPLETING THE RESPONSE TO THE INADEQUATE DETERMINATION ISSUED BY CA DWR FOR THE DELTA - MENDOTA SUBBASIN GROUNDWATER SUSTAINABILITY PLANS

TASKS	EKI Labor									Expenses			TOTAL
	CAD/ GIS	Anona Dutton - Officer and Chief Engineer-Scientist	Christopher Heppner - Supervising I, Engineer-Scientist	Amir Mani - Senior I, Engineer-Scientist	Meredith Durant - Senior I, Engineer-Scientist	Engineer-Scientist, Grade 1	Engineer-Scientist, Grade 2	Engineer-Scientist, Grade 4	TOTAL EKI Labor, Including 4% Comm. Charge (1)	CAD/GIS Charge (per hour)	OTHER DIRECT COSTS	TOTAL EXPENSES (1)	
	144	332	309	286	286	231	218	178	($)	$20	10%	($)	($)
Task 1 - Data Compilation, Review, and Analysis		30	30	30	10	60	75	65	$75,348	$0		$0	$75,348
Subtotal	0	30	30	30	10	60	75	65	$75,348	$0	$0	$0	$75,348
Task 2 - Describe Current Groundwater Conditions for Each Applicable SI													
Subtask 2.1 – Develop Current Groundwater Conditions	40	25	40	8		50	80	80	$74,816	$800	$1,000	$1,900	$76,716
Subtask 2.2 – Prepare Qualitative Description of PM/A Impacts		15	30	30			75		$40,747	$0		$0	$40,747
Subtask 2.3 – Quantitative Projection of PM/A Impacts		25	10	150		250		300	$172,058	$0	$1,000	$1,100	$173,158
Subtotal	40	65	80	188	0	300	155	380	$287,620	$800	$2,000	$3,000	$290,620
Task 3 - Subbasin Monitoring Network	80	80	100			120	150	80	$149,386	$1,600	$1,000	$2,700	$152,086
Subtotal	80	80	100	0	0	120	150	80	$149,386	$1,600	$1,000	$2,700	$152,086
Task 4 - Analysis of New Information													
Subtask 4.1 - Further Analysis and Potential Revisions to SMCs	24	50	80			100	100	120	$115,477	$480	$1,000	$1,580	$117,057
Subtask 4.2 - Further Analysis and Update to the Basin-wide Water Budget		30		80		80		120	$75,587	$0	$1,000	$1,100	$76,687
Subtask 4.3 - (Optional) CVHM2-DM Development and Calibration		40	20	150		250		250	$171,194	$0	$2,000	$2,200	$173,394
Subtotal	24	120	100	230	0	430	100	490	$362,259	$480	$4,000	$4,900	$367,139
Task 5 - Revision of Plan Elements													
Subtask 5.1 - Revision of Plan Area and Basin Setting Chapters	40	32	40				100	120	$74,780	$800	$500	$1,350	$76,130
Subtask 5.2 - Revision of Water Budget and Sustainable Yield Sections	2	32		40		40		75	$46,740	$40	$500	$590	$47,330
Subtask 5.3 - Revision of Sustainable Management Criteria Chapter	2	40	72				80	100	$73,898	$40	$500	$590	$74,488
Subtask 5.4 - Revision of P/MA and Plan Implementation Chapters	2	32	32	32			60	60	$55,860	$40	$500	$590	$56,450
Subtask 5.5 - Revision of Executive Summary and Introduction Chapter		32					60	60	$35,759	$0	$500	$550	$36,309
Subtotal	46	168	144	72	0	40	300	415	$287,100	$920	$2,500	$3,700	$290,800
Task 6 - A Description of Other Information		60	40	40	16		120	120	$99,649	$0	$500	$550	$100,199
Subtotal	0	60	40	40	16	0	120	120	$99,700	$0	$500	$600	$100,200
Task 7 - Project Management and Coordination													
Subbasin CC/TWG meetings (13 in-person, 13 remote)		156	52	26			78		$95,992	$0	$4,000	$4,400	$100,392
Bi-weekly one-hour planning meetings (remote 26)		52							$17,955	$0	$500	$550	$18,505
Coordination with hydrologically connected basins (8, 1-hr each)		16			16				$10,284	$0		$0	$10,284
Meetings with DWR/ SWRCB (8 1-hr remote, 4 2-hr in-person)		36	16	16			16		$25,958	$0	$1,000	$1,100	$27,058
Project Schedule		24			24		0		$15,425	$0		$0	$15,425
Project communications and project management tasks		40			32				$23,329	$0	$500	$550	$23,879
Subtotal	0	324	68	42	72	0	94	0	$189,000	$0	$6,000	$6,600	$195,600
TOTAL With Optional Task(s):	**190**	**847**	**562**	**602**	**98**	**950**	**994**	**1,550**	**1,450,300**	**$7,600**	**16,000**	**$21,400**	**$1,471,700**
TOTAL Without Optional Task(s):	**190**	**807**	**542**	**452**	**98**	**700**	**994**	**1,300**	**1,279,100**	**$3,800**	**14,000**	**$19,200**	**$1,298,300**
Contingency-July 31, 2024 Completion Date (Without Optional Task)	**200**	**810**	**580**	**490**	**90**	**770**	**1,170**	**1,430**	**1,383,502**	**$3,800**	**12,500**	**$17,550**	**$1,401,052**
Contingency- March 29, 2024 Completion Date (Without Optional Task)	**210**	**770**	**620**	**500**	**80**	**810**	**1,250**	**1,560**	**1,435,855**	**$1,900**	**7,750**	**$10,425**	**$1,446,280**

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:
   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."

BUDGET ASSUMPTIONS

March 2023 and July 2023 Accelerated Timelines:

EKI will not undertake optional Subtask 4.3 under accelerated timelines. Meetings will be scheduled more frequently as necessary, but there will be a proportional reduction in their number. EKI anticipates maintaining the same level of deliverables by expanding the team to handle the required tasks. The contingency budget accounts for increased coordination and effort (Tasks 1-6), as well as reduced expenses due to fewer meetings (Task 7) and the removal of Subtask 4.3.

78

DELTA-MENDOTA SUBBASIN RESPONSE TO INADEQUATE DETERMINATION

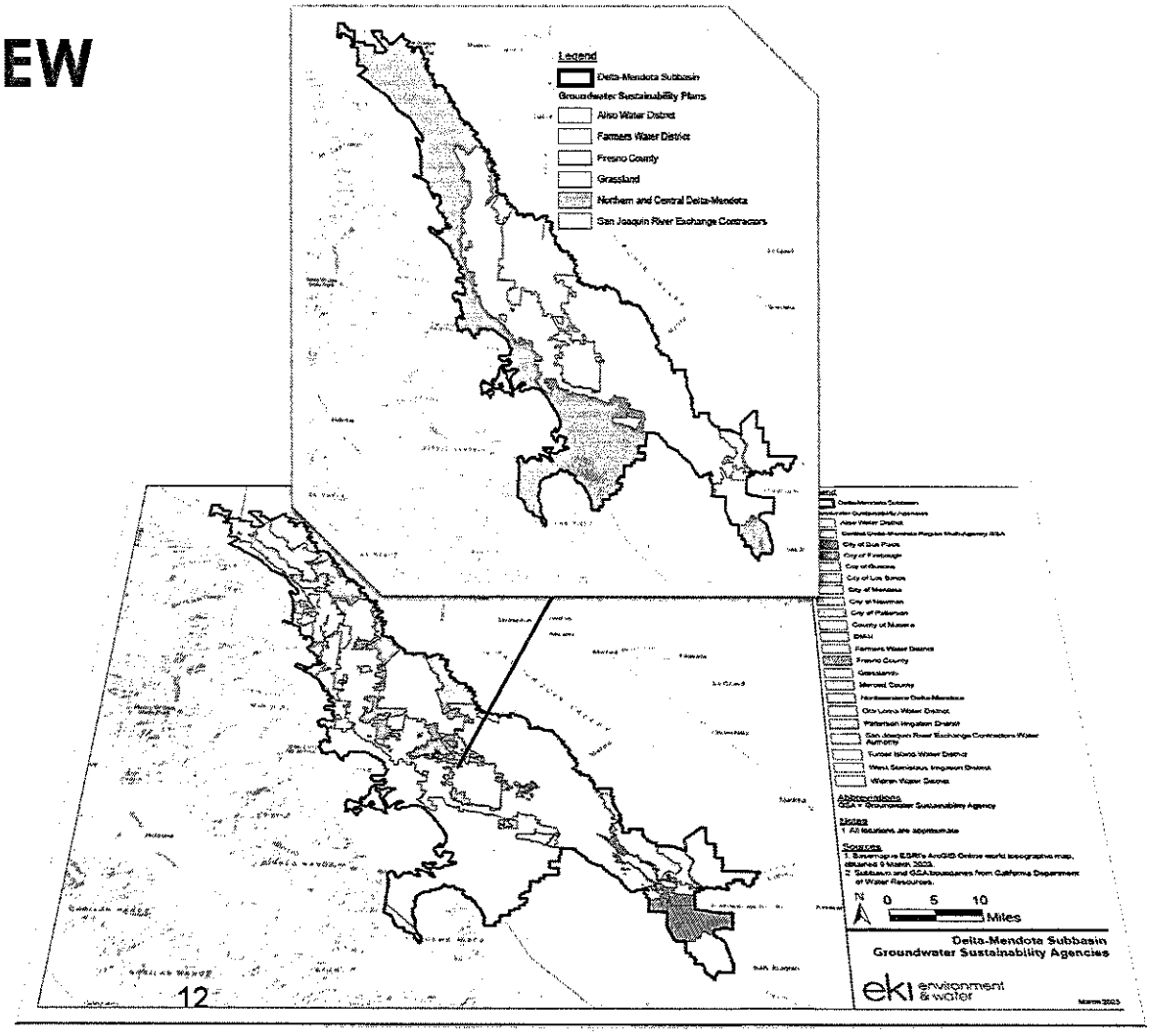
10 JULY 2023

TECHNICAL MEETING #10

eki environment & water

PRESENTATION OVERVIEW

- Introduction to EKI Team
- Overview of Major Tasks and Proposed Approach
- Project Timeline
- Anticipated Needs and Collaboration Opportunities



eki

80

Confidential Draft – For discussion purposes only

Anona Dutton, PG, CHg
Principal-in-Charge/Project Manager
(Meetings & Coordination Lead)

Chris Heppner, PhD, PG
Supervising Hydrogeologist
(SMC Lead)

Amir Mani, PhD, PE
Senior Engineer
(Water Budget Lead)

Meredith Durant, PE
Senior Environmental Engineer
(Deputy PM, Meetings & Coordination)

John Fio
Principal Hydrogeologist
(Technical Advisor)

Aaron Lewis
Water Resources Engineer
(Technical Advisor)

Sarah Hodson, PE
(SMC and GSP Update)

Sarah Gerenday, PhD
(SMC, GSP Update, Meetings & Coordination)

Susan Xie, PE
(SMC and GSP Update)

Nigel Chen, PhD, PE
(Water Budget)

Karthik Ramesh
(Water Budget)

eki

TECHNICAL COORDINATION WITH CC/TWG

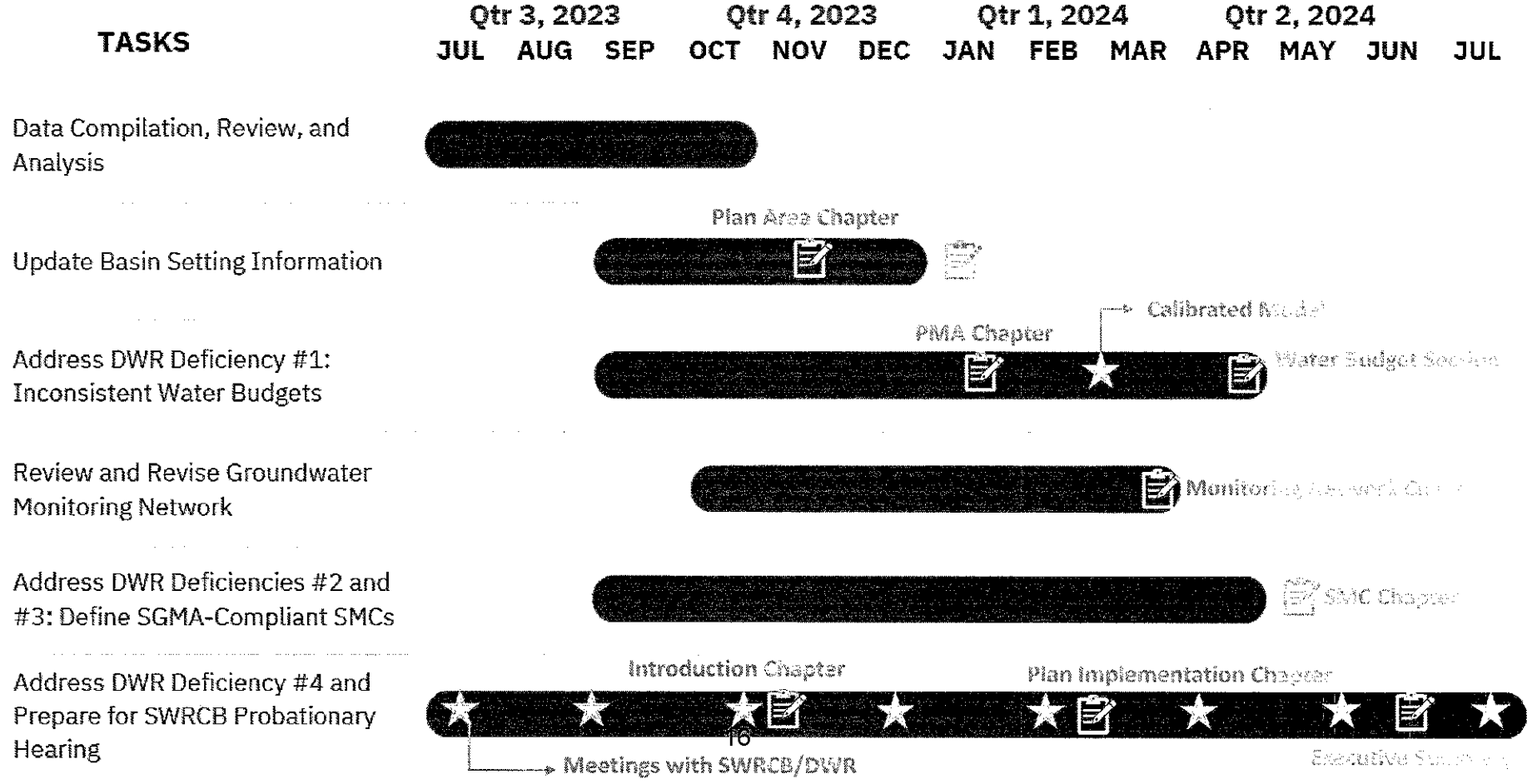
- All steps of the GSP revision will be closely coordinated with the Coordination Committee (CC) / Technical Working Group (TWG) / GSA Groups
  - Publish a Request for Information (RFI) to obtain underlying data.
  - Assess new data and update SMC discussions conducted since March as needed. Define revised SMCs for Depletion of ISWs.
  - Draft chapters of the GSP will be delivered for GSA review as they are prepared to expedite review.
  - Extract a sub-grid of the CVHM2-SJB to develop a subbasin-wide model (CVHM2-DM):
    - Surface water delivery and GW pumping data will be revised based on local information.
    - Model will be extended to 2022 and recalibrated.
    - Project scenarios that include climate change central tendencies and important P/MAs (demand management and top-tiered supply augmentation projects) will be simulated.
- TWG and CC will be regularly updated on technical progress through presentations at bi-monthly meetings.

COORDINATION WITH SWRCB / DWR

- Technical work conducted on GSP revisions will be communicated to the SWRCB staff during regularly scheduled meetings.
- GSP revisions will directly follow SWRCB feedback.
  - July meeting with SWRCB will provide initial input.
  - Focus will be to present the single GSP approach, and the significant effort undertaken since March 2023.
  - Frequent updates and ongoing engagement of Board staff will minimize efforts needed if/when SWRCB deficiencies are announced.
  - Single GSP will be a concise document to highlight responses to the deficiencies and facilitate speedy review by the SWRCB staff.
- Final single-GSP draft is scheduled to be delivered to SWRCB in July 2024.
  - This timeline may need to be adjusted based on the timing of the hearing notice and additional deficiencies identified by the SWRCB.
  - Presenting a GSP in July is expected to provide enough time for SWRCB to review prior to the hearing.

Confidential Draft – For discussion purposes only

PROJECT TIMELINE

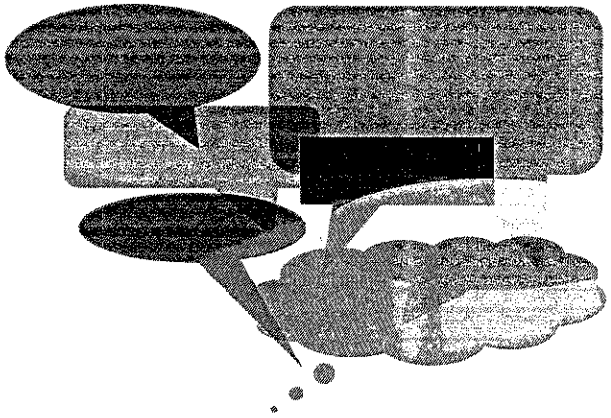


84

ANTICIPATED NEEDS / COLLABORATION OPPORTUNITIES

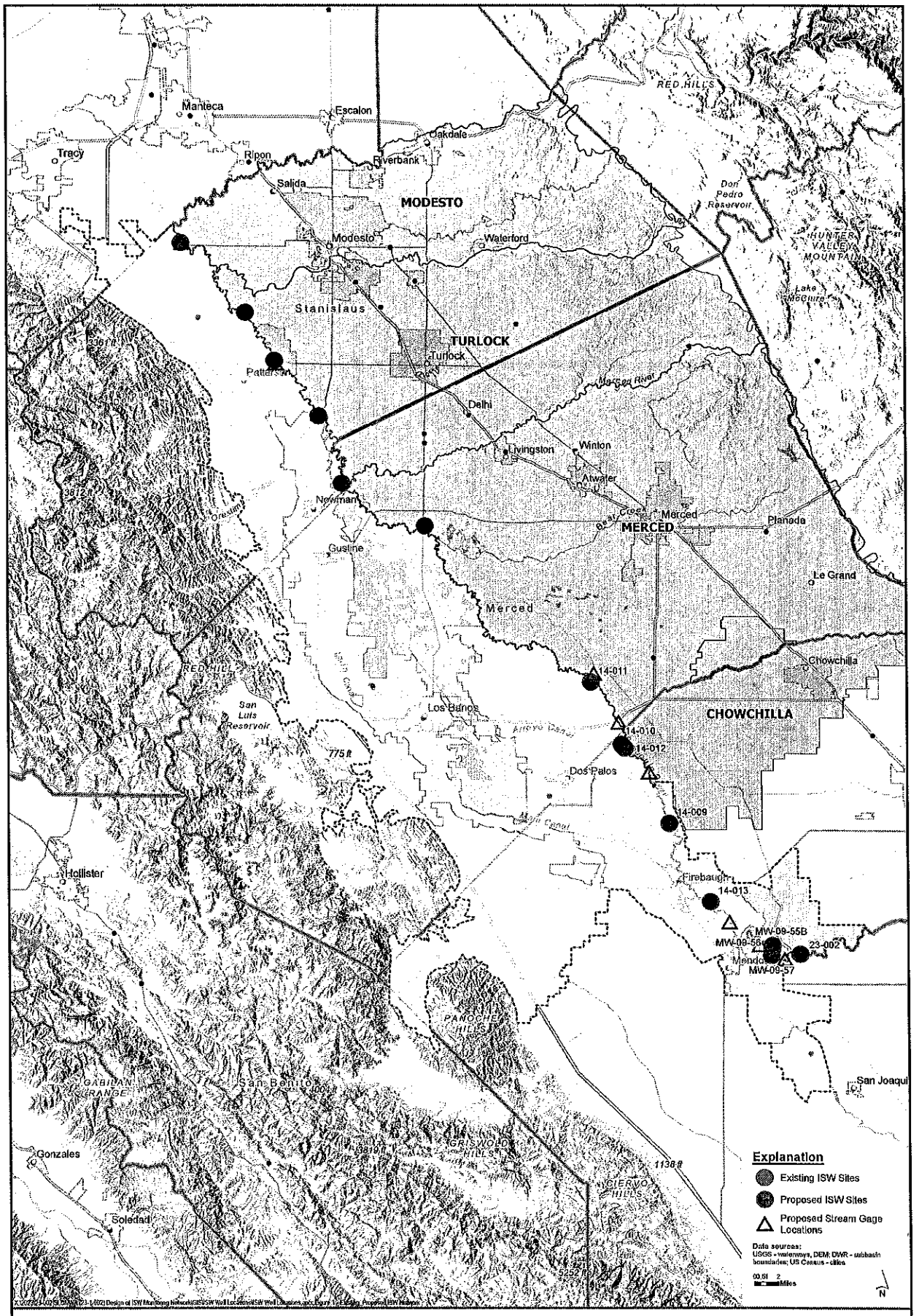
- First round of RFI will be published in July. Responses are expected within a month and data review is expected to be done by September.
  - Water budget related data and underlying Annual Reports' data
  - Editable versions of the revised GSPs and appendices.
  - Map packages and GIS data.
- P/MA Chapter and technical specifications of important P/MAs to be developed with the GSAs' input (Sept-Jan).
- Individual chapters will be delivered to review starting in October. Review timeline will be relatively short.
- Introduction and Plan Area Chapters will be written with help from GSP groups (Oct-Dec).
  - Outreach and engagement efforts and meetings' summary to be developed by GSAs.

QUESTIONS



eki

86



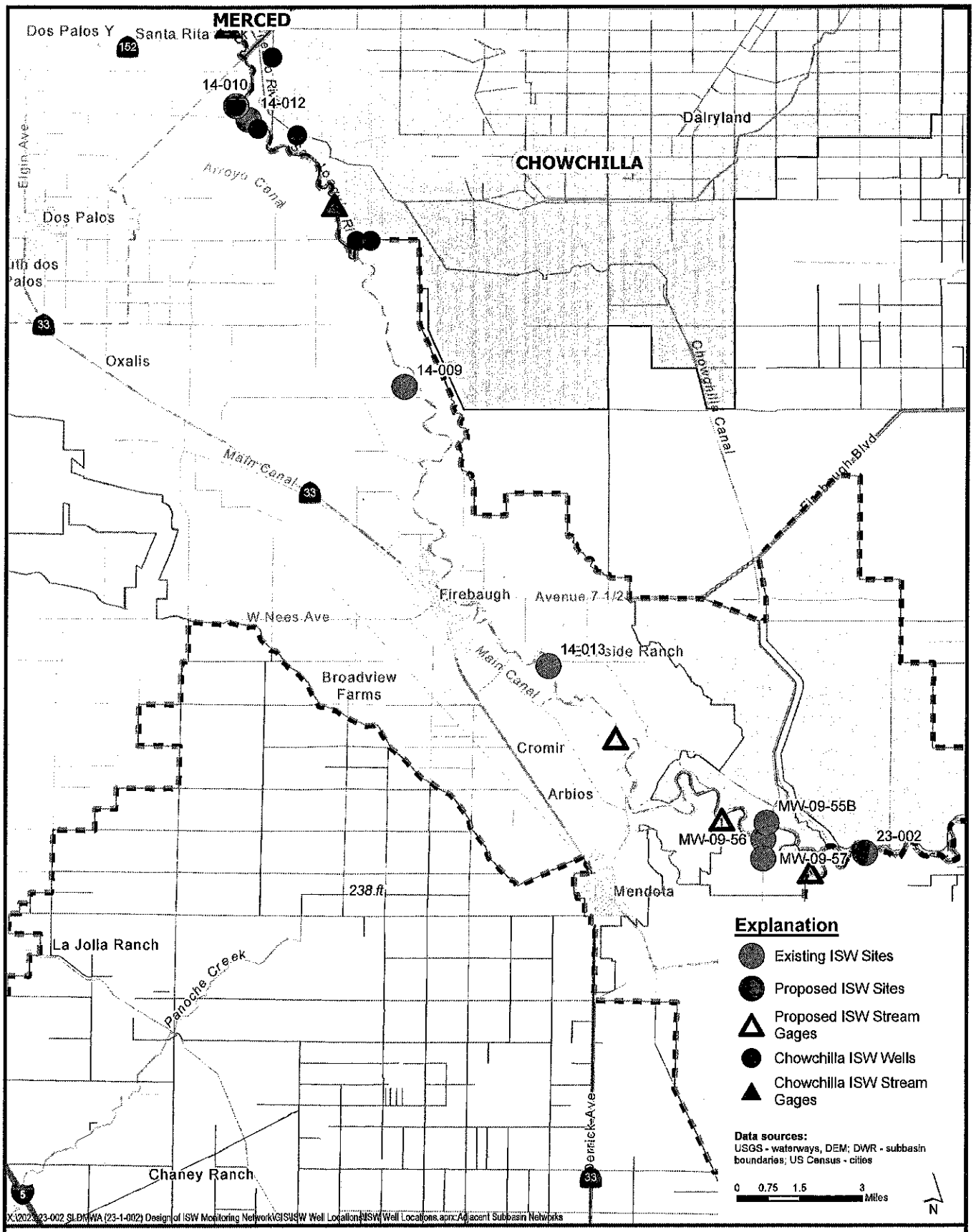
Luhdorff & Scalmanini
Consulting Engineers

Proposed and Existing ISW Monitoring Network

Delta-Mendota Subbasin
Interconnected Surface Water Monitoring Network

Figure 1

87

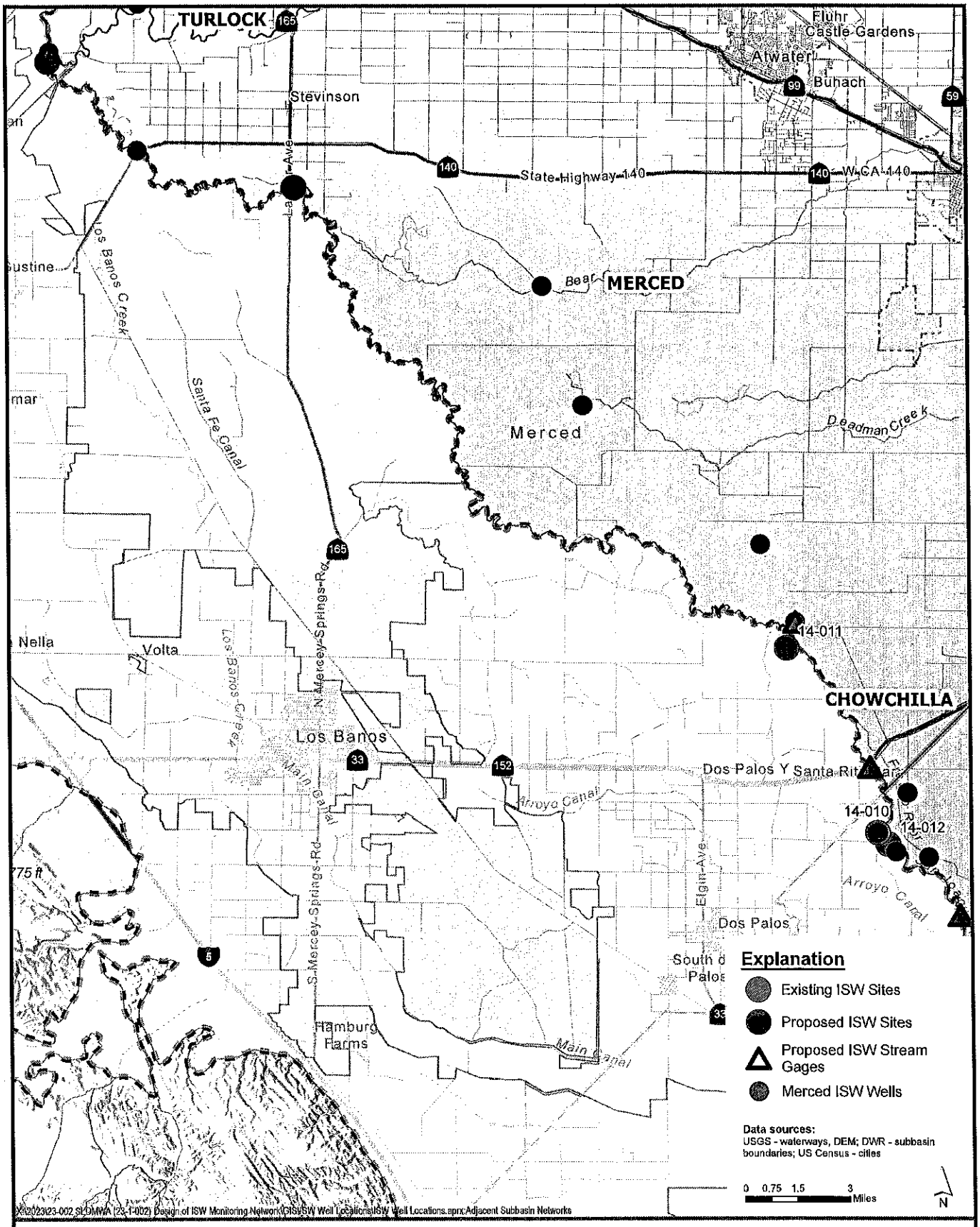


Luhdorff & Scalmanini
Consulting Engineers

Chowchilla ISW Monitoring Network

Delta-Mendota Subbasin
Interconnected Surface Water Monitoring Network

Figure 2



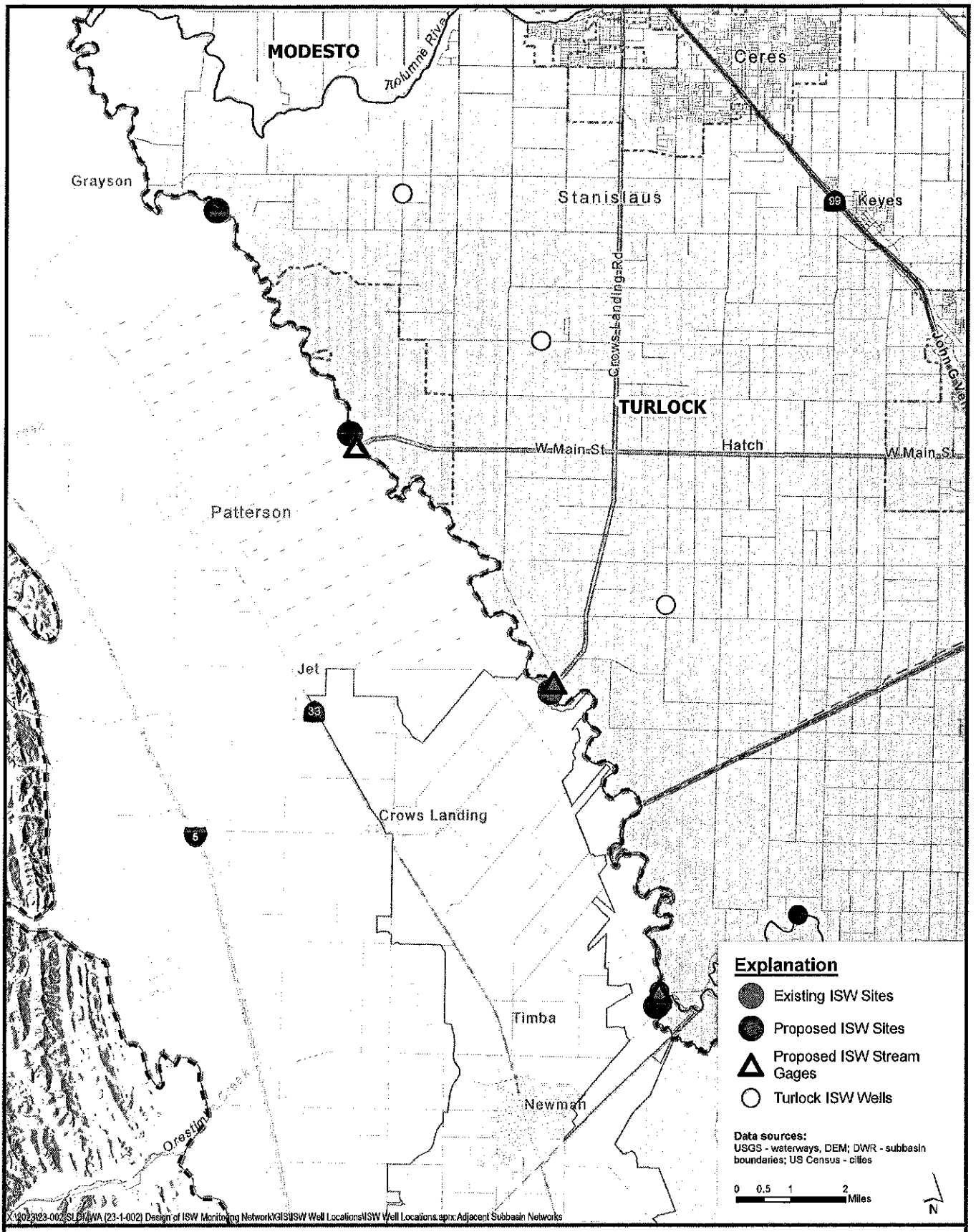
Luhdorff & Scalmanini
Consulting Engineers

Merced ISW Monitoring Network

Delta-Mendota Subbasin
Interconnected Surface Water Monitoring Network

Figure 3

89



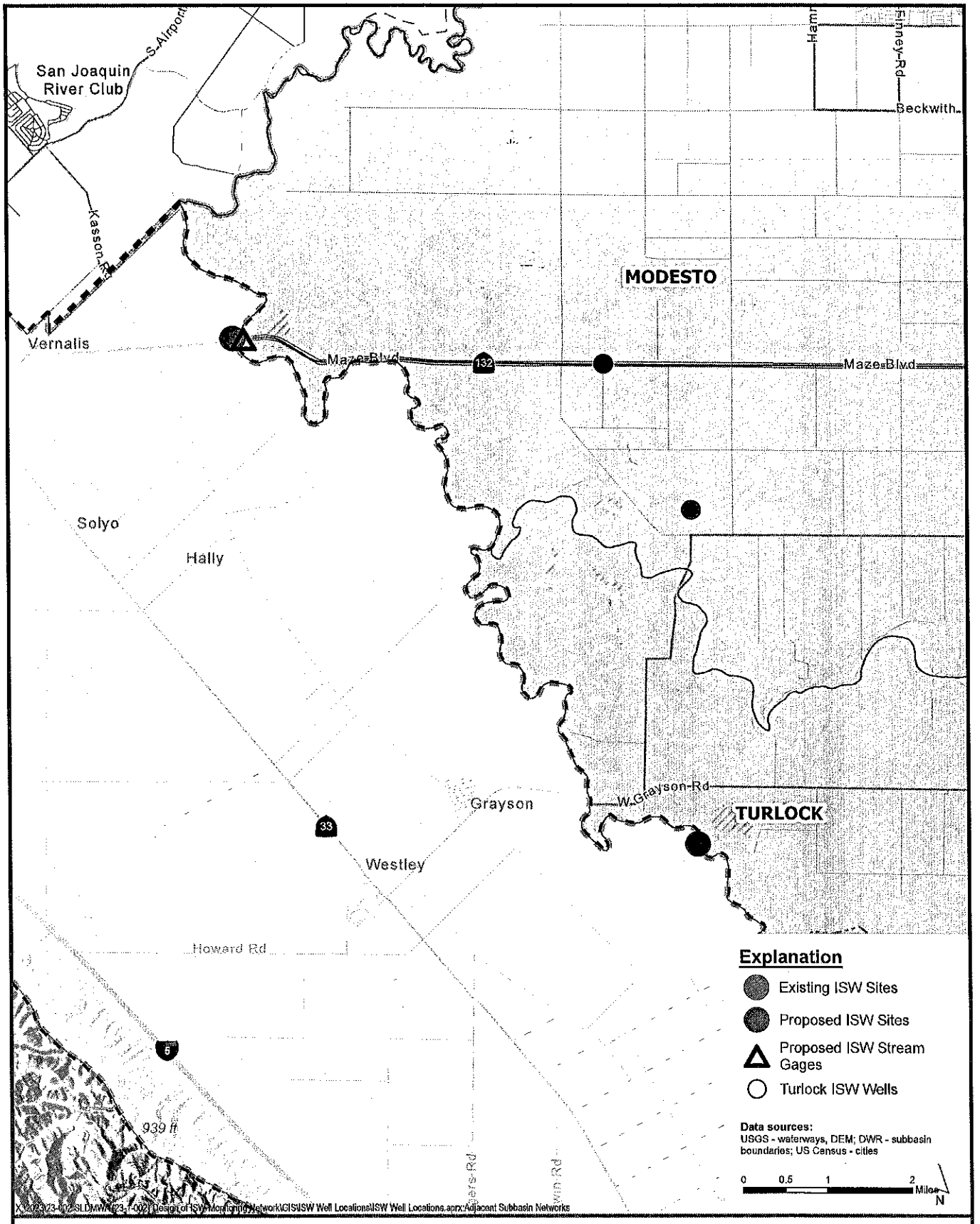
Luhdorff & Scalmanini
Consulting Engineers

Turlock ISW Monitoring Network

Delta-Mendota Subbasin
Interconnected Surface Water Monitoring Network

Figure 4

96



Luhdorff & Scalmanini
Consulting Engineers

Modesto ISW Monitoring Network

Delta-Mendota Subbasin
Interconnected Surface Water Monitoring Network

Figure 5

91

Draft – For discussion purposes only

DELTA-MENDOTA SUBBASIN RESPONSE TO INADEQUATE DETERMINATION

26 JULY 2023

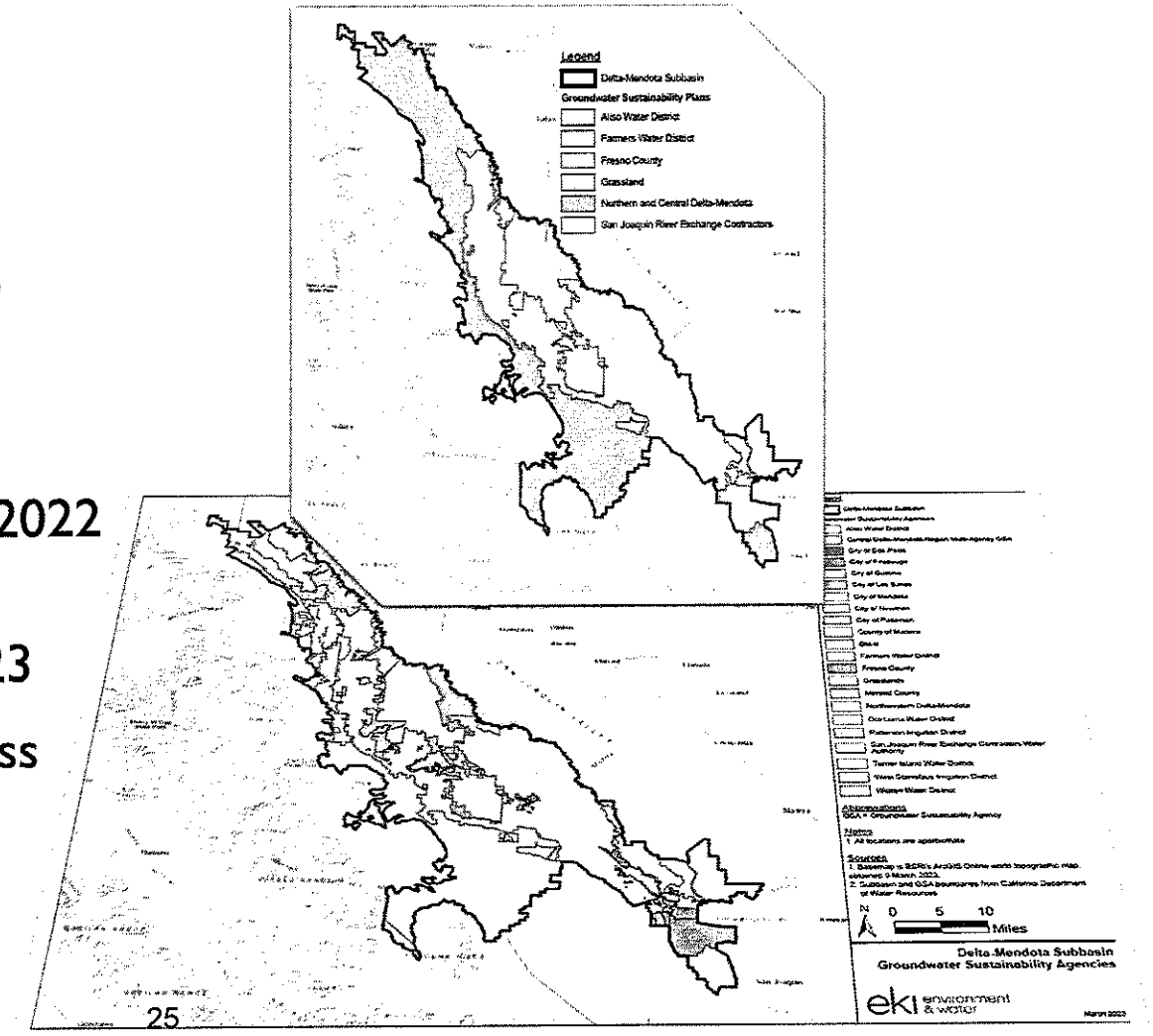
STATE WATER RESOURCES CONTROL BOARD MEETING #2

eki environment & water

92

BACKGROUND

- 23 GSAs formed by 2017
- 6 GSPs submitted January 2020
- DWR issued incomplete letter January 23, 2022
- 6 Revised GSPs submitted July 2022
- DWR issued Inadequate Determination on March 2, 2023
- State Board intervention process triggered



eki

92

SUMMARY OF DWR DETERMINED DEFICIENCIES

Deficiency #1: *"The GSPs do not use the same data and methodologies"*

Deficiency #2: *"The GSPs have not established common definitions of undesirable results in the Subbasin"*

Deficiency #3: *"The GSPs in the Subbasin have not set sustainable management criteria in accordance with the GSP regulations"*

Deficiency #4: *"The management areas established in the Plan have not sufficiently addressed the requirements specified in 23 CCR § 354.20"*

SUBBASIN GSA ACTIONS TO DATE

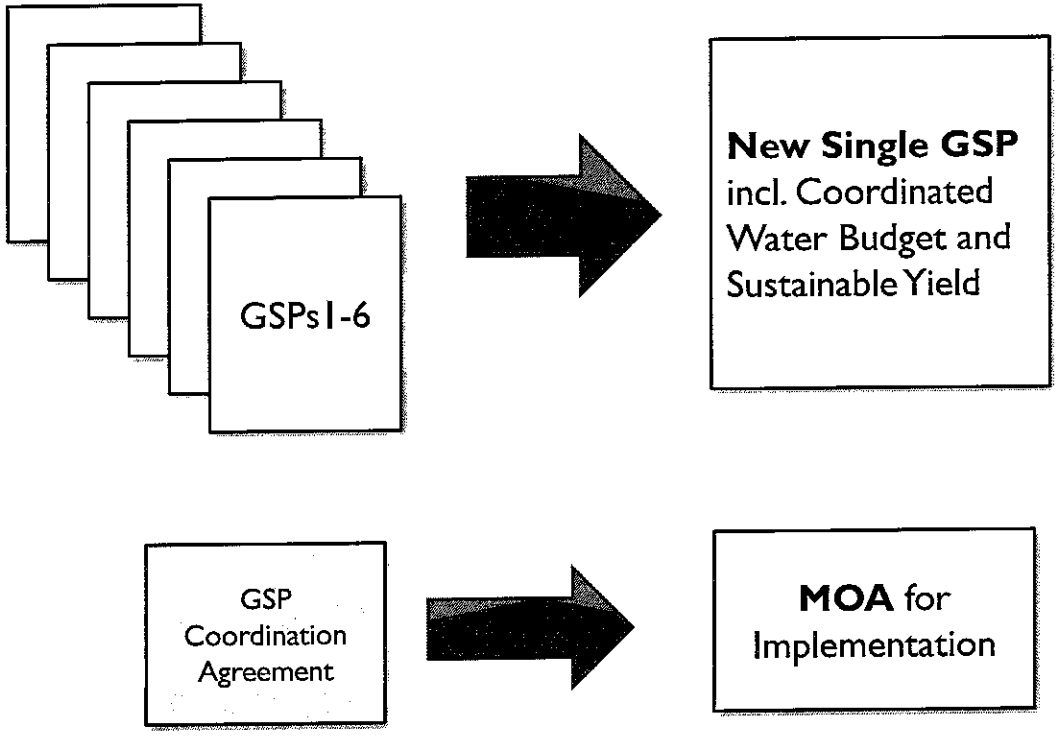
- Meeting near weekly of CC and TWG on Technical and Policy Issues
- Active engagement with the State Board and DWR
- Retained EKI to begin to address technical deficiencies / Revise GSP by mid-2024
- Drafting MOA to address on-going SGMA implementation with target adoption by October 2023

ADDRESS DEFICIENCIES #1 & #4

eki

Increase Basin-Wide Coordination

ADDRESS DEFICIENCY #1 & #4 - PREPARE SINGLE GSP AND ELIMINATE MANAGEMENT AREAS

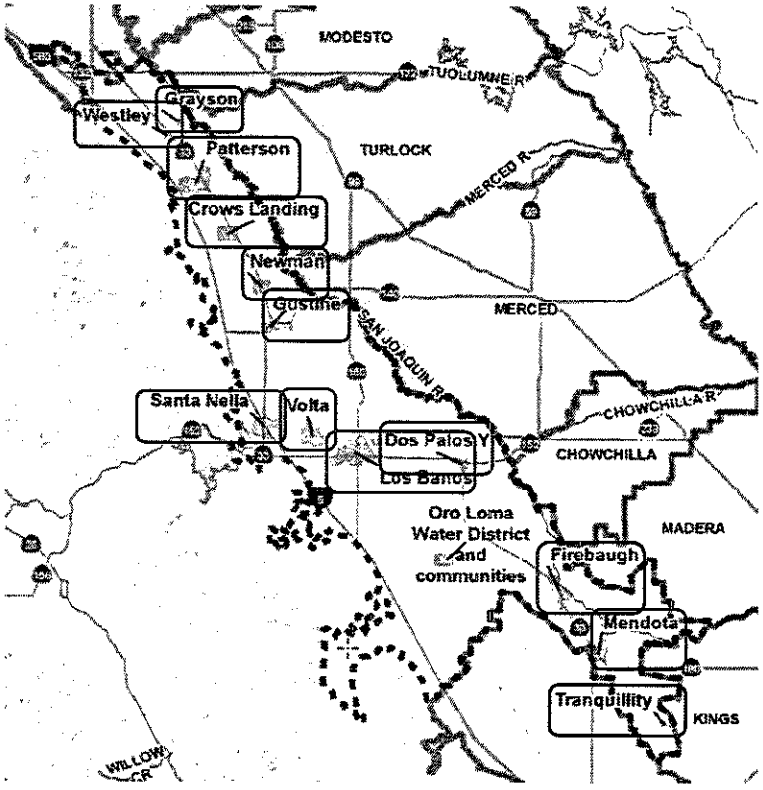


+ Highest chance to avoid probation. Simplifies process/coordination/impl.

! Eliminates multiple GSP structure

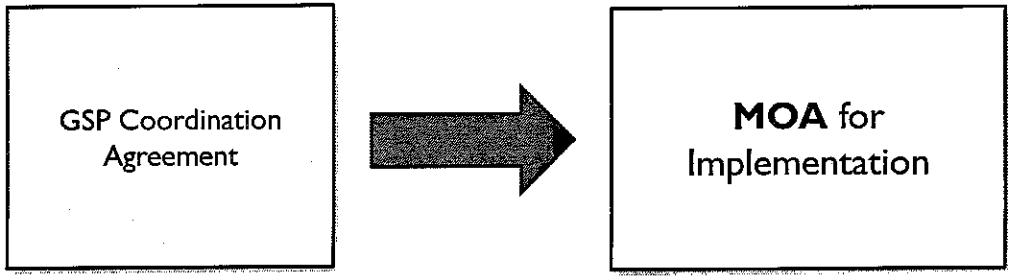
DESIGN PRINCIPLES FOR REVISED MONITORING NETWORKS

1. Each GSA will have a minimum of one Representative Monitoring Well (RMW) per aquifer where pumping occurs within its boundaries.
2. Incorporate wells from existing public water systems (PWS), where data are already being collected and drinking water beneficial uses are present.
3. Additional RMWs identified to address monitoring network gaps in Subbasin or achieve necessary data densities.
4. Avoid or screen out areas where degraded conditions already exist and where drinking water beneficial uses are not present. (e.g. COC concentrations > 3x MCL)



COORDINATION AGREEMENT TO MEMORANDUM OF AGREEMENT (MOA)

- If the Subbasin adopts a single GSP, then existing Coordination Agreement (as defined by SGMA) is no longer needed
  - Remains in effect until one GSP is adopted.
- Memorandum of Agreement will replace Coordination Agreement
  - Goes into effect when single GSP is adopted.



31

Baker Manock & Jensen
ATTORNEYS AT LAW

99

MOA

- Emphasizes the powers of the individual GSAs
- Describes the commitment by the GSAs to have a Subbasin-wide monitoring network
- Adaptive Management Process for addressing MT exceedances
  - Location based on GSA, but can determine if intra- or inter-basin impacts
  - Plan to address exceedances and brainstorming amongst the Coordination Committee
  - Implement P&MAs

ADDRESS DEFICIENCY #1

Subbasin-wide water budget

DWR DEFICIENCIES FOR WATER BUDGET

Deficiency #1: "The GSPs do not use the same data and methodologies"

- "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."

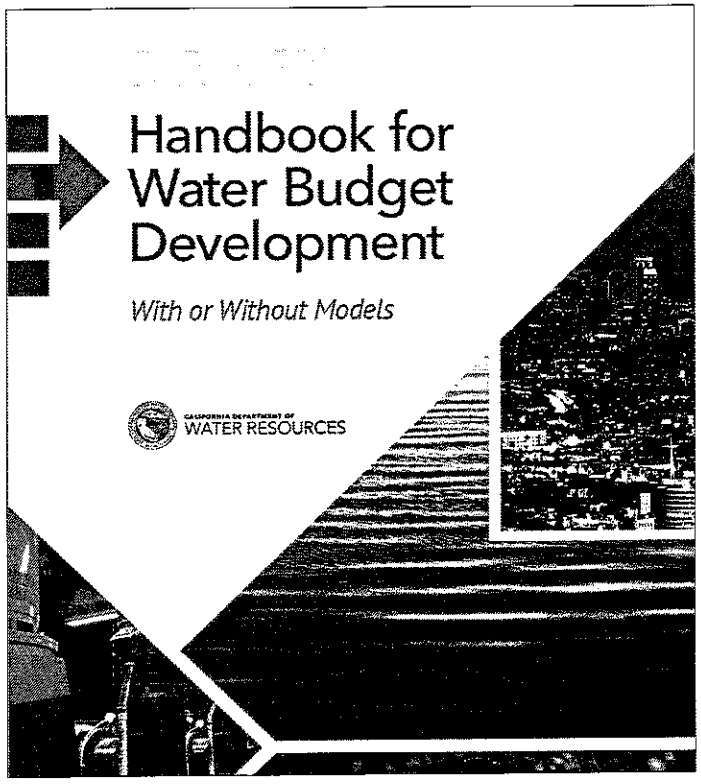
WATER BUDGET GUIDELINES

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-srd-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-et-out + Q-ep-out + Q-egw-out + Q-tt-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	-	
	Total Outflow		
STORAGE CHANGE	Change in Land System Storage		Unsaturated Zone Budget: In - Out
	Land System Mass Balance Error		

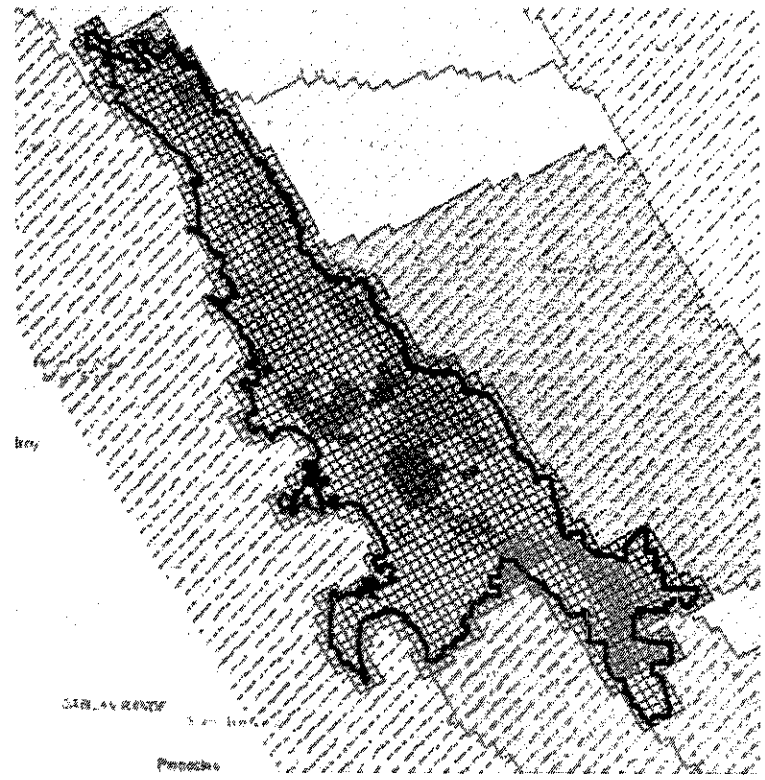
Figure 8-36 Groundwater System Budget Components and MODFLOW-OWHM Water Budget Elements

GROUNDWATER SYSTEM WATER BUDGET (Acre-Feet)			
	Component	Credit(+)/ Debit(-)	Model Output
INFLOWS	Recharge of Applied Water	+	Zone Budget: Farm Rec Recharge
	Recharge of Precipitation	+	Zone Budget: Farm Rec 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 Extraction	-	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		



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

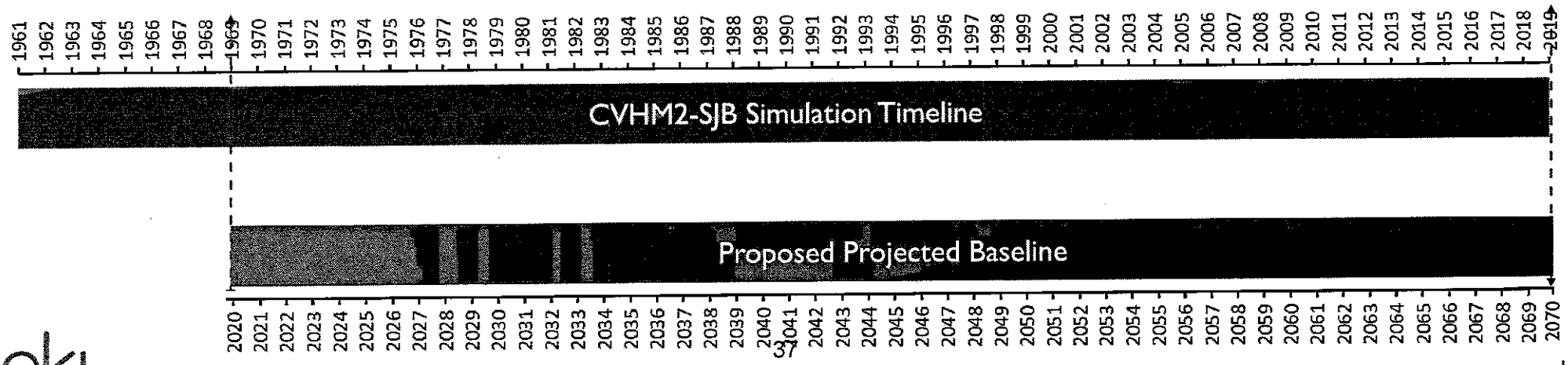
- Historical: WY 2003-2018
- Current: WY 2019
- Future: WY 2020-2070

2022 GSP Current

2022 GSP Historical Baseline

Proposed Historical Baseline

Proposed Current



eki

501 105

HISTORICAL GW WATER BUDGET (WY 2003-2018)

Average annual rates in AFY

	Inflow to Basin (+)			Outflow from Basin (-)				
Aquifer	Recharge	Net Subsurface Inflow	GW Gain from Stream	GW Extraction	Net Drain	Net Subsurface Outflow	GW ET	GW Storage Change
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**

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

106

CURRENT WATER BUDGET (WY 2019)

Average annual rates in AFY

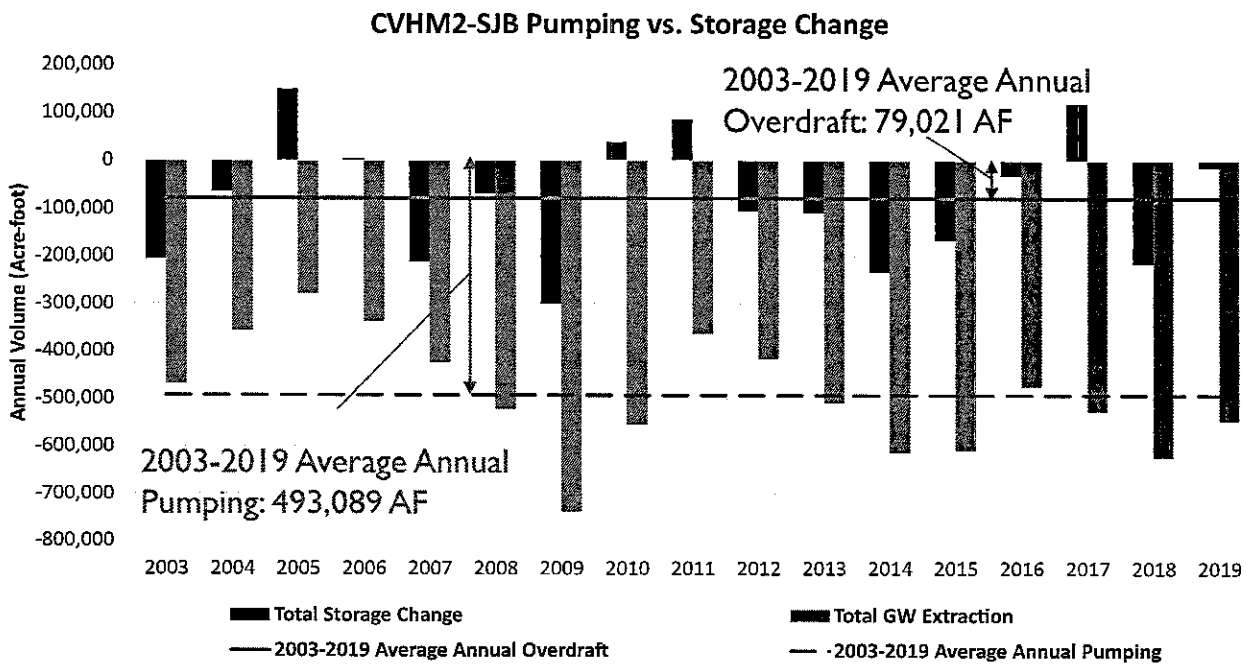
	Inflow to Basin (+)			Outflow from Basin (-)				
Aquifer	Recharge	Net Subsurface Inflow	GW Gain from Stream	GW Extraction	Net Drain	Net Subsurface Outflow	GW ET	GW Storage Change
Upper Aquifer	443,095	-	128,277	-306,975	-70,288	-67,480	-77,901	**51,225**
Lower Aquifer	2,884	158,193	8,944	-241,162	-	-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

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

27

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.



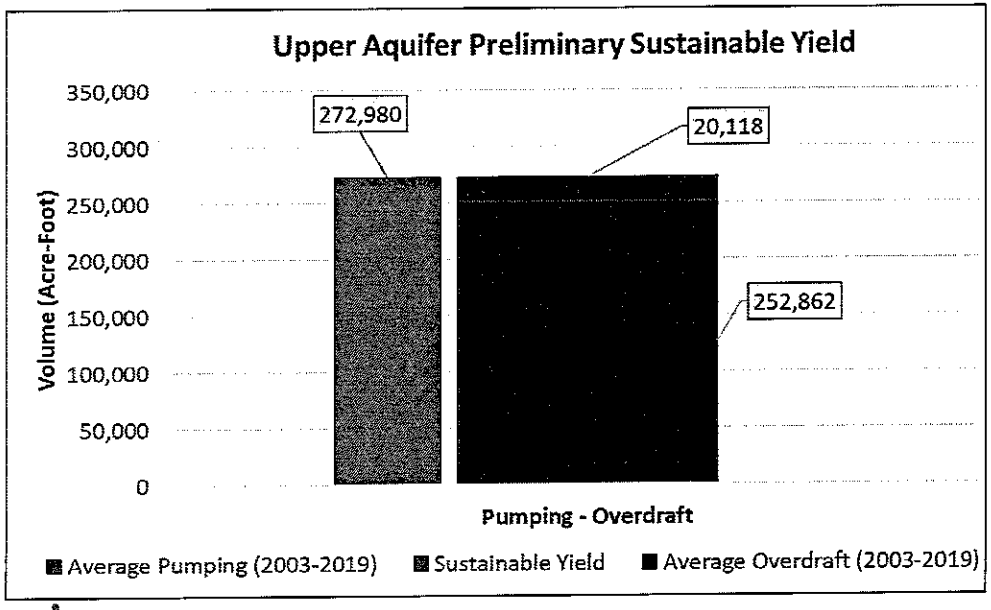
GW Storage Change from CVHM2-SJB includes changes due to subsidence.

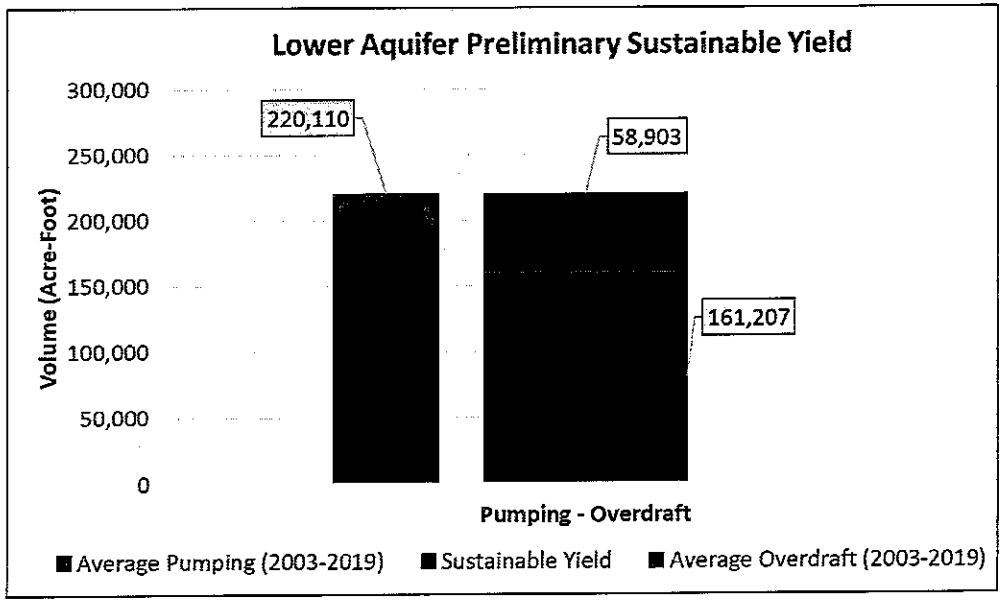
eki

208

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

- Upper aquifer: ~253,000 AFY
- Lower Aquifer: ~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)
- Projected unimpaired and managed streamflow, as well as surface water deliveries, will be implemented using DWR change factors and CALSIM-II simulations for CC2030 and CC2070 in CVHM2-SJB.
- A selected set of P/MAs, including demand management MAs and Tier I supply augmentation, will be incorporated in the model to estimate sustainable yield and assess set SMCs.

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 ET

Increase in Subsurface Inflow

Increase in Pumping But Minimal Loss of Additional Storage

Increase in Pumping & Additional Loss of Storage

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

ADDRESS DEFICIENCIES #2 & #3

eki

SMC #1:

Chronic Lowering of Groundwater Levels

02

DWR DEFICIENCIES FOR GROUNDWATER LEVELS

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 these historic low groundwater levels 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 plums, 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 **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.

PROCESS REQUIRED TO JUSTIFY SMCs

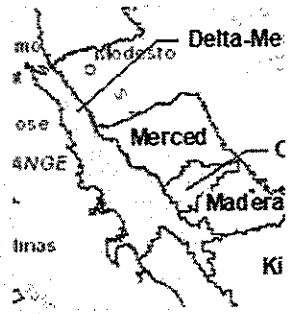
Undesirable Results (URs) (CCR §354.26)

- 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

Minimum Thresholds (MTs) (CCR § 354.28)

- 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
• Holders of overlying GW rights (ag users, domestic well owners) • Municipal Well Operators • Environmental Users of GW (GDEs, managed wetlands)	• Well impacts analysis to assess vulnerability of well dewatering • Analysis of GDE health (using PULSE data)* * Recognize that managed wetlands are also supported by surface water	• Compare MOs/MTs to those in adjacent basins to assess potential impacts to GW gradients 	• GW Storage • Subsidence • Interconnected Surface Water • Water Quality 	• Not applicable for water levels

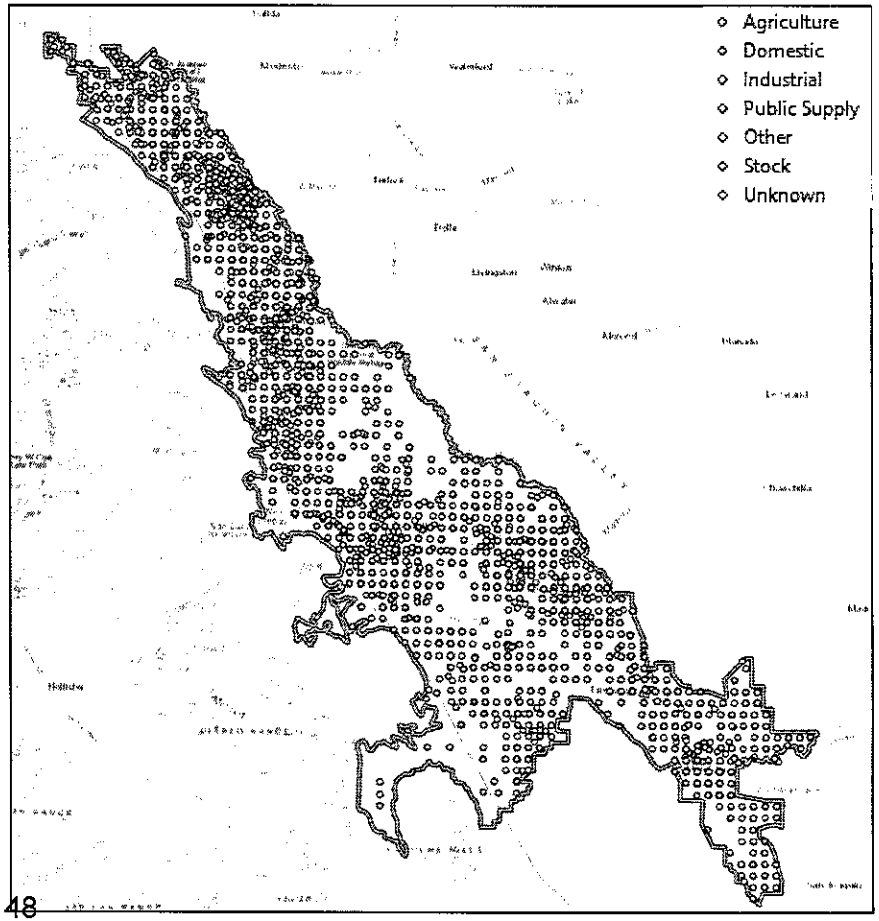
eki

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

eki

48

116

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	Questions: • **How much well dewatering is significant & unreasonable?** • **In other words, what percentage of wells being dewatered is significant & unreasonable, and why?** Translate answer to MT exceedances at RMS locations: MT exceedances at X% of RMS locations over XX period				

↑ ↑

Need justification for choices

50

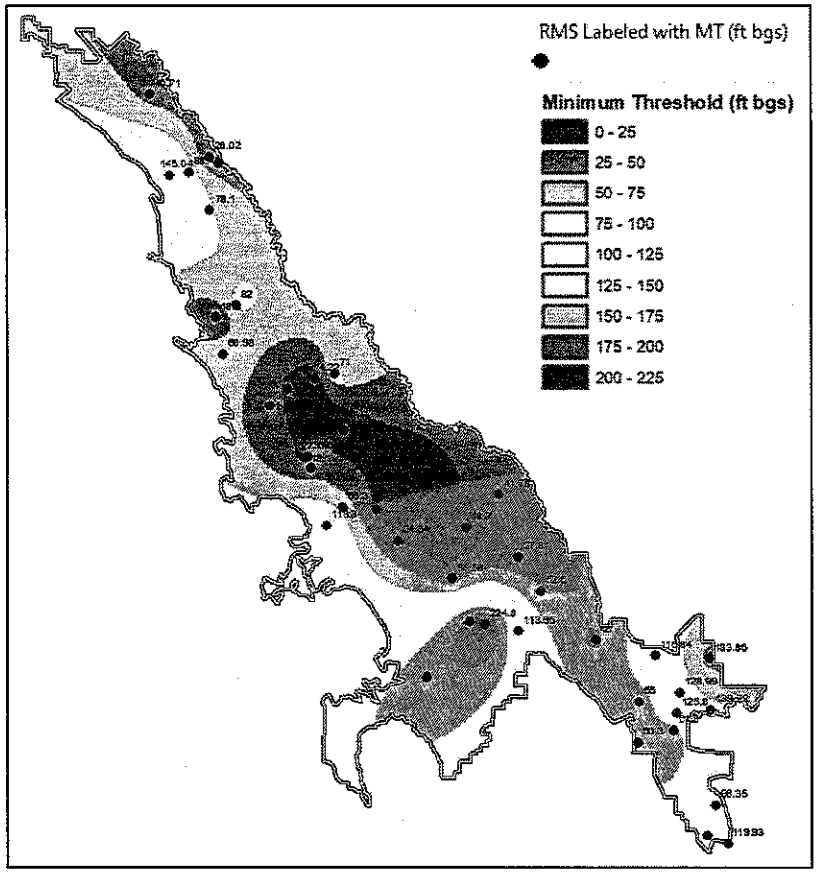
eki

118

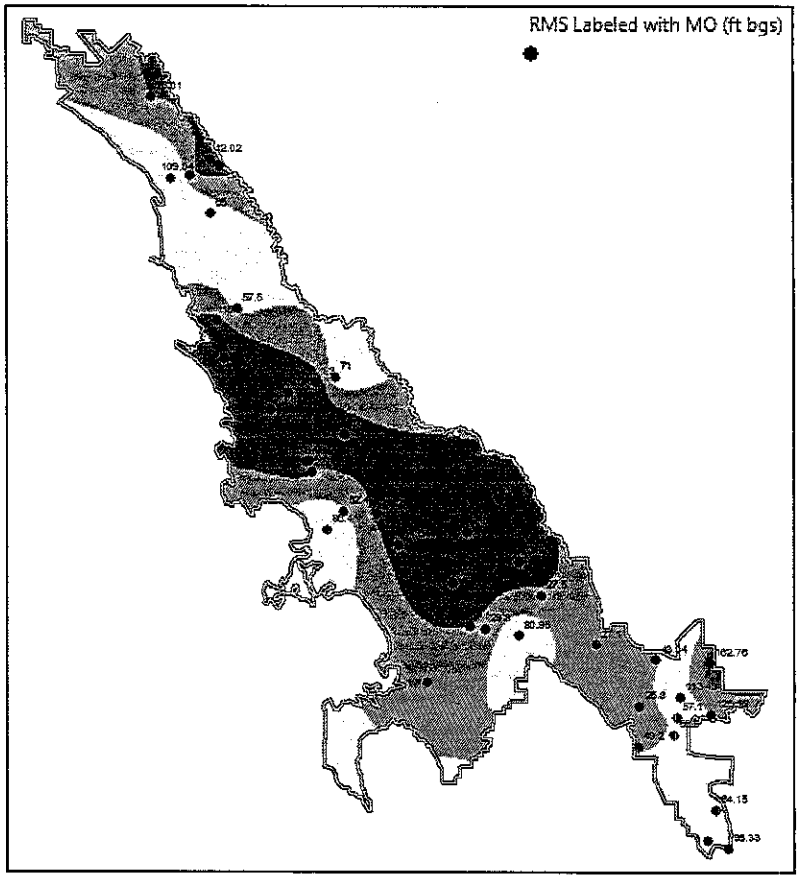
PROPOSED WATER LEVEL URs AND MTs/MOs

- **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

RMS AND SMC CONTOURS – UPPER AQUIFER

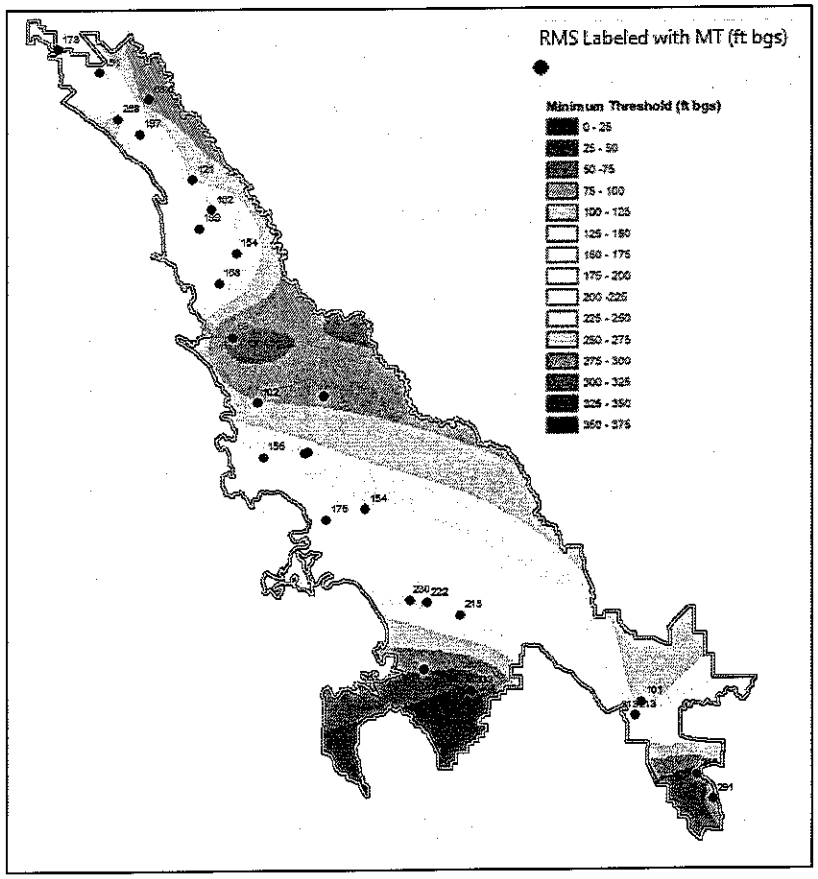


MT Contours – Upper Aquifer

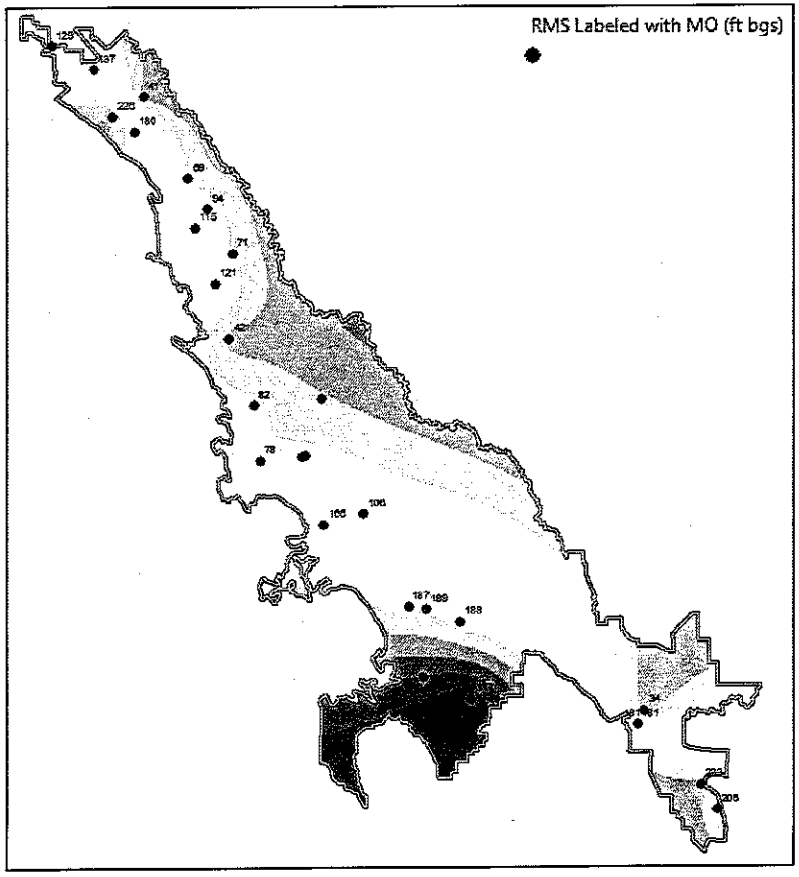


MO Contours – Upper Aquifer

RMS AND SMC CONTOURS – LOWER AQUIFER



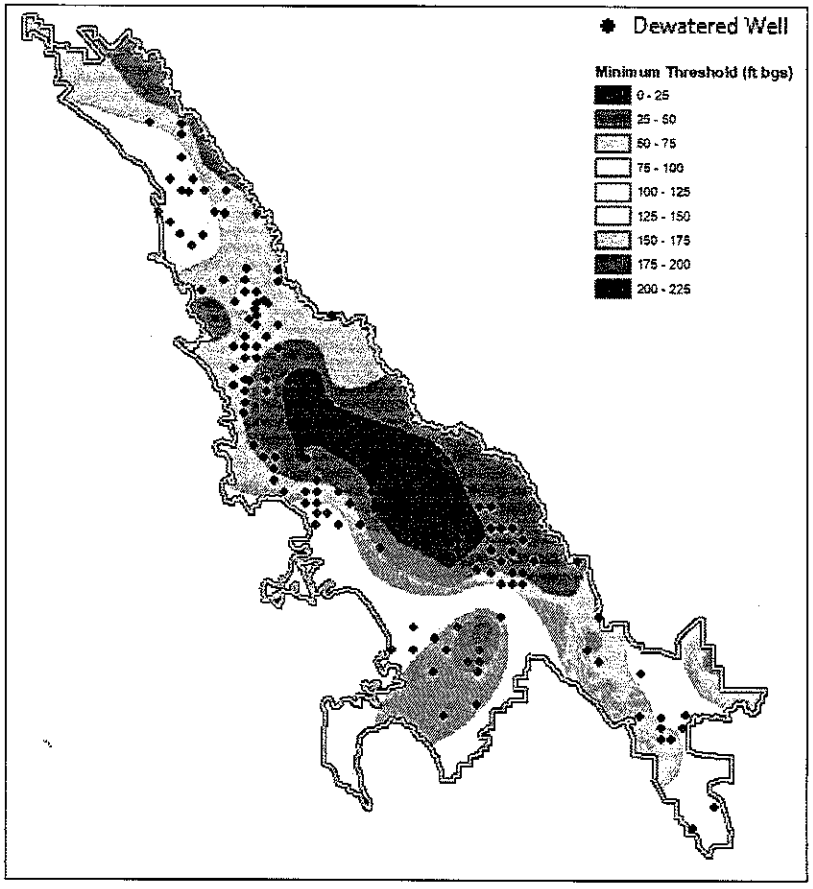
MT Contours – Lower Aquifer



MO Contours – Lower Aquifer

WELL IMPACTS ANALYSIS AT SMCs – UPPER AQUIFER

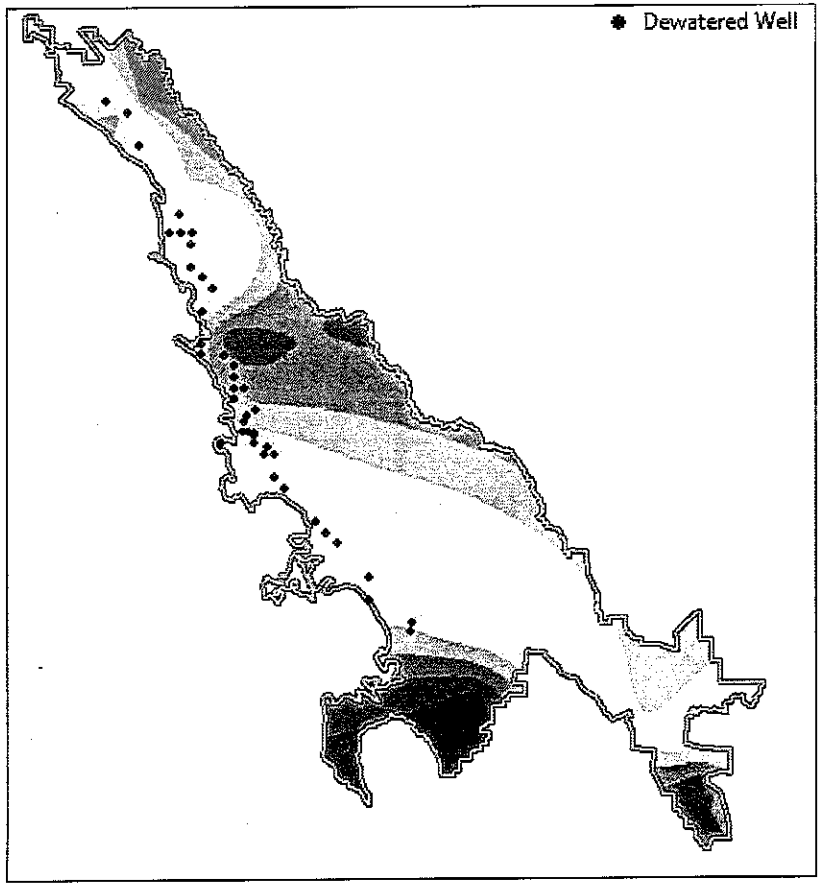
- 1.5% of wells dewatered at MOs
  - 46 out of 3,051 total wells
  - 31 out of 1,739 domestic wells (1.8%)
- 5.4% of wells dewatered at MTs
  - 165 out of 3,051 total wells
  - 128 out of 1,739 domestic wells (7.4%)



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%)

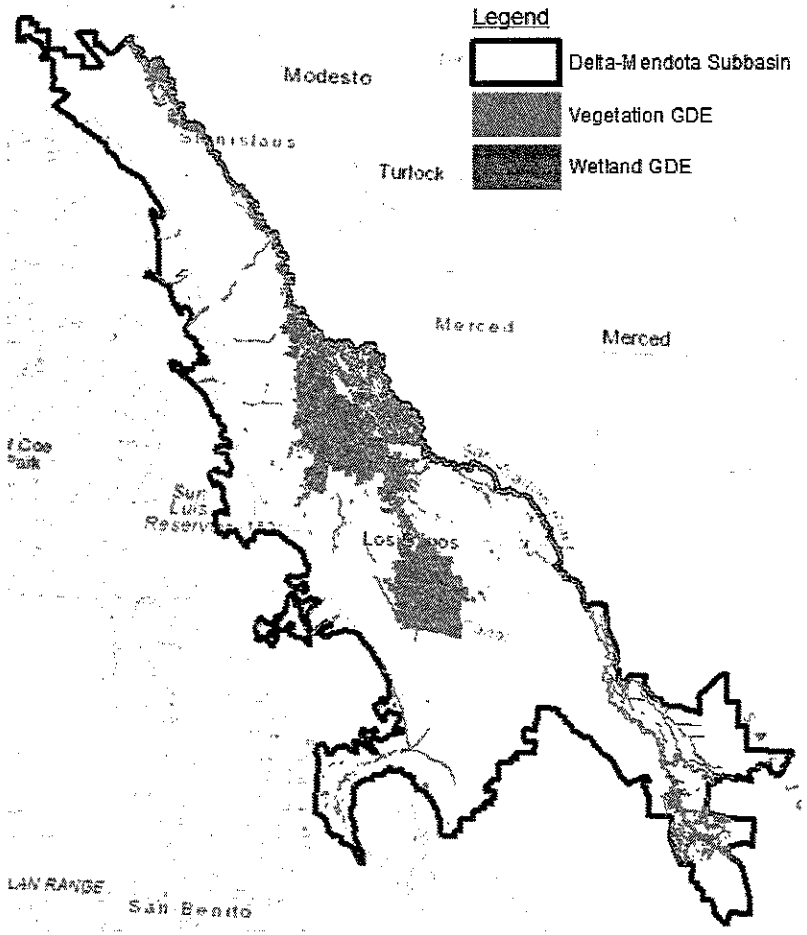


Wells Dewatered at MTs – Lower Aquifer

eki

183

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%)

124

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

NDVI Trend (2009 - 2018)

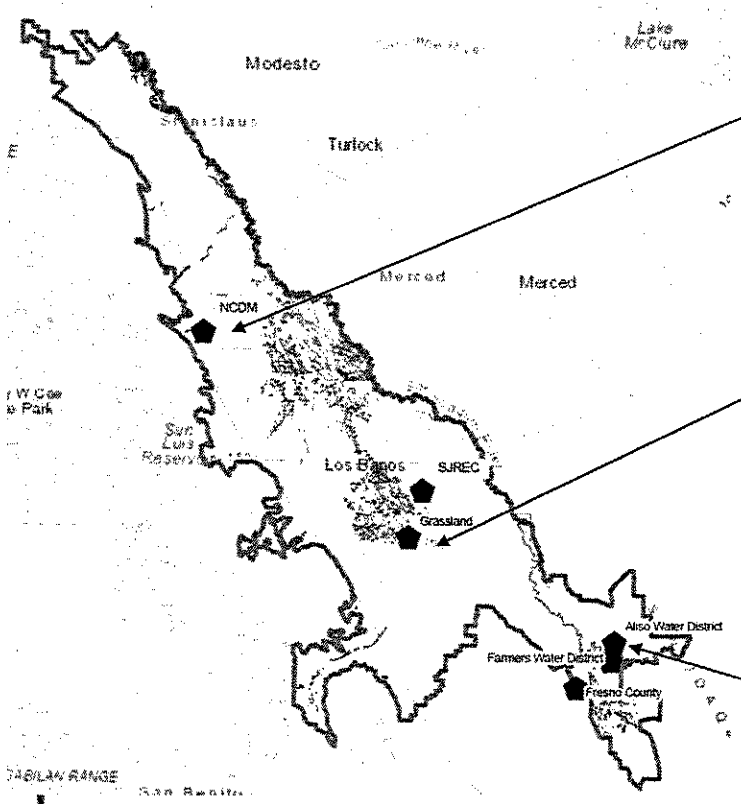
- Large increase
- Moderate increase
- Little or no change
- Moderate decrease
- Large decrease

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

eki

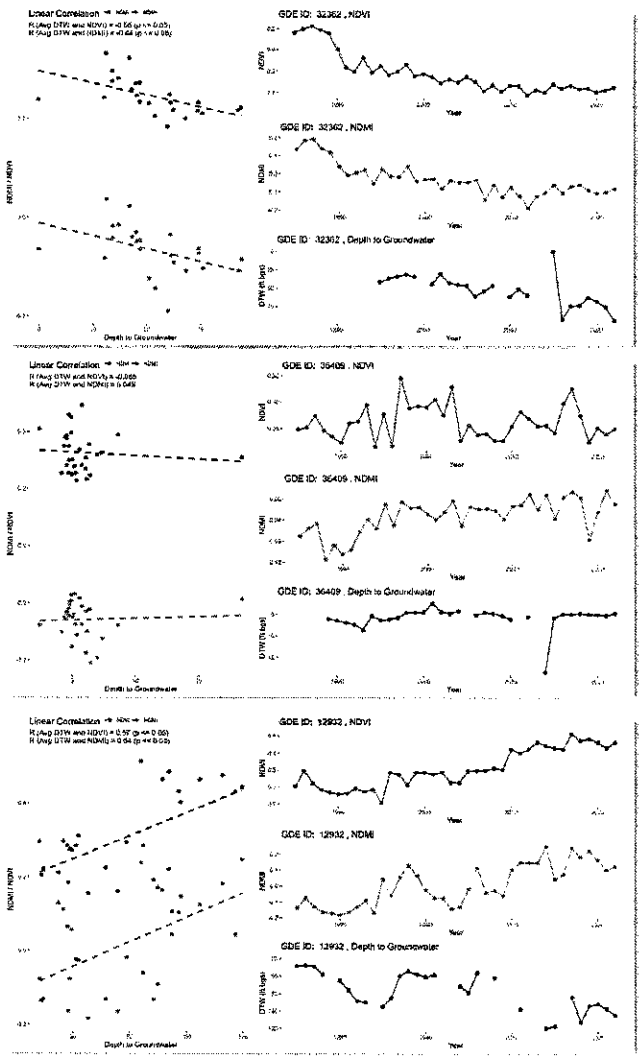
VEGETATIVE GDE HEALTH AND NEARBY RMS WATER LEVELS



Decreasing GDE health with decreasing water levels

Relatively stable GDE health and water levels

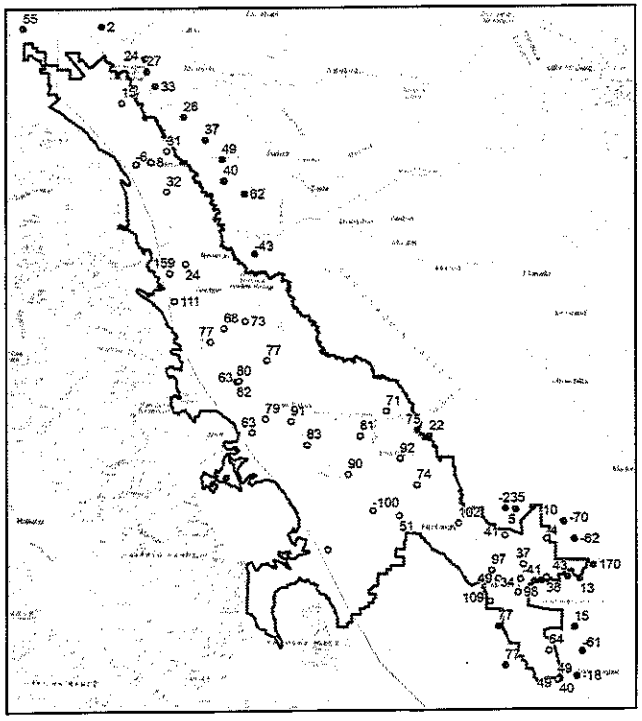
Increasing GDE health with decreasing water levels



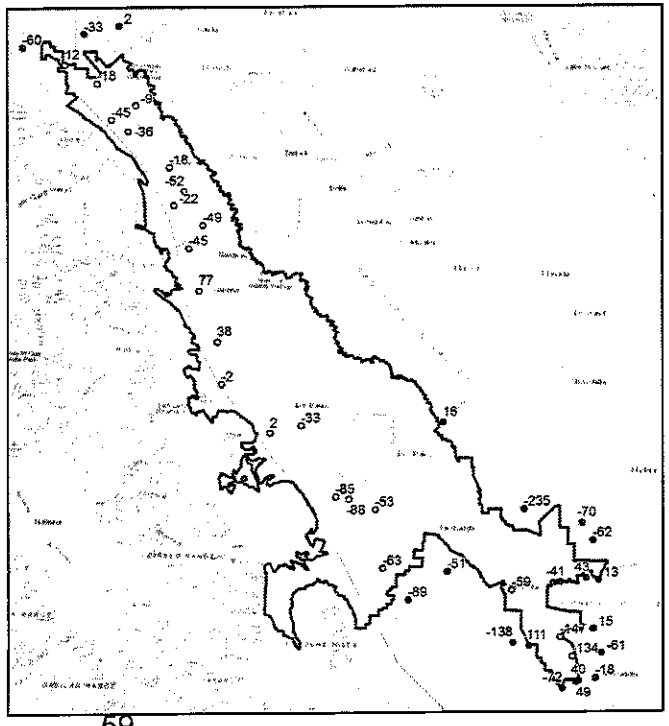
124

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*

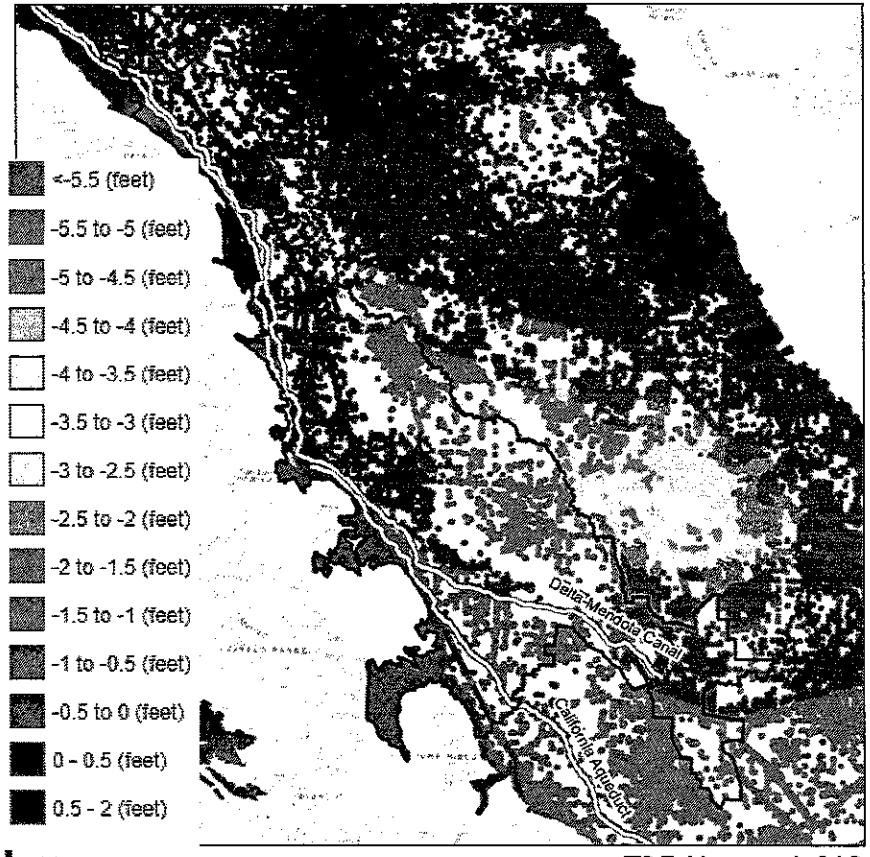


Lower Aquifer*

** 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.*

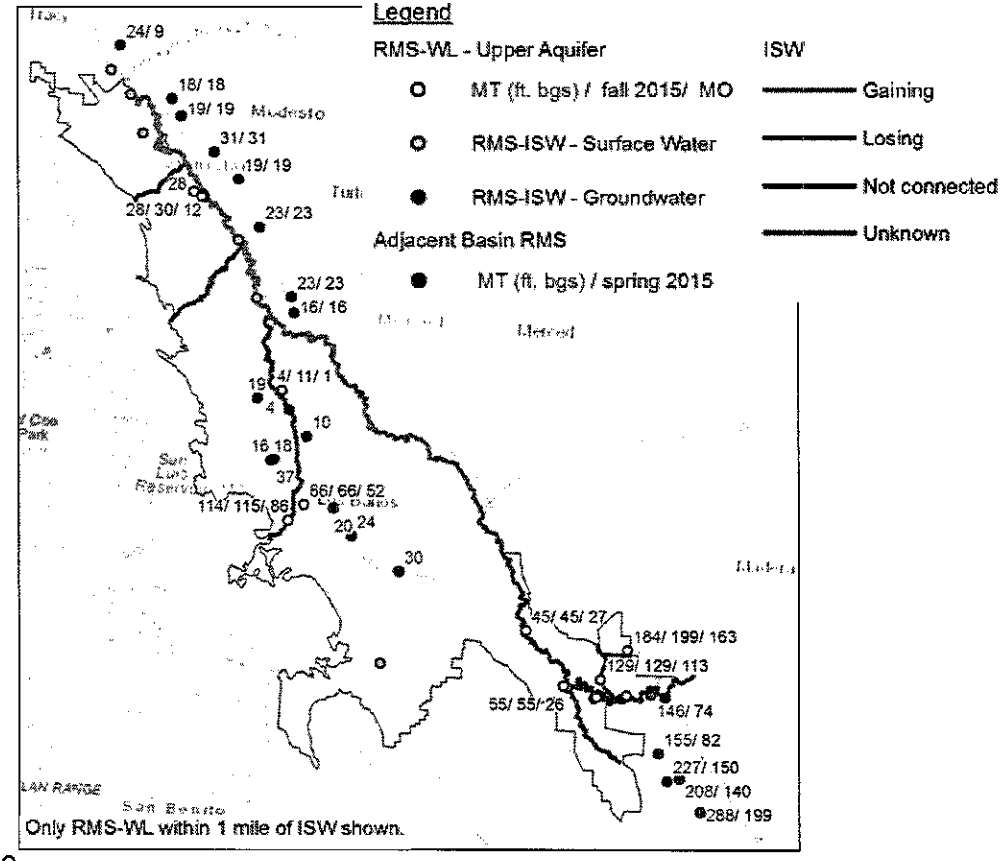
RELATED SUSTAINABILITY INDICATORS

Ground Subsidence June 2015 – June 2022



TRE Altamira InSAR

Interconnected Surface Water



eki

38

ASSESSMENT OF RELATED SUSTAINABILITY INDICATORS

- **GW Storage:** Do GW level MTs allow for adequate flexibility for operation of the basin during drought periods? **YES**
- **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? **YES**
- **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**

UR DEFINITION & JUSTIFICATION

UR Criteria	UR Justification
MT exceedances at 25% of RMS for two consecutive years (four seasonal measurements)	**Groundwater Pumpers** • 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. • Domestic well mitigation program. **Groundwater Dependent Ecosystems** • 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%).

ek..

130

MT/MO JUSTIFICATIONS

Impacts to Beneficial Users	Impacts to Adjacent Basins	Impacts to Other Sustainability Indicators
• Less than 10% of wells will be impacted, which is lower than the anticipated natural replacement rate given current well ages - Offset with well mitigation program. • 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%.	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.	• 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. ** Delayed subsidence from historic lows may still occur for years*

eki

131

ADDRESS DEFICIENCIES #2 & #3

eki

SMC #2:

Reduction of Groundwater Storage

32

DWR DETERMINATION: REDUCTION OF GROUNDWATER STORAGE SMC DEFICIENCIES

Deficiency #2: "The GSPs have not established common definitions of undesirable results in the Subbasin"

- (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**."

Deficiency #3: "The GSPs in the Subbasin have not set sustainable management criteria in accordance with the GSP regulations"

- "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…"

eki

133

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 5-year drought buffer
    - More than a 15% decrease in the volume of usable groundwater in storage relative to WY 2019 baseline
- **Minimum Thresholds/ Interim Milestones / Measurable Objectives:**
  - Use groundwater level SMCs as a proxy; no separate MTs/IMs/MOs

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 more than 5 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 68
4. CVHM2-SJB lower aquifer assumed to be model layer 9 – 13

eki

136

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 69
4. CVHM2-SJB lower aquifer assumed to be model layer 9 – 13

UR DEFINITION & JUSTIFICATION

UR Criteria	UR Justification
> 15% decrease in volume of useable groundwater storage	**Groundwater Pumpers** • The total amount that would be lost in the combined aquifer system going from 2019 levels to groundwater level MTs is only approximately 8%. • A percentage much lower than 15% suggests minimal change in water availability Impacts are not significant and unreasonable because, multiple decades worth of water remains in storage when water levels are at MTs. • Even if groundwater level MTs were exceeded in ALL RMS, less than 10% of domestic wells would be impacted. • Domestic well mitigation program. **Groundwater Dependent Ecosystems** • Based on NDVI trends between 2009 and 2018, the average change in GDE area increased by ~37%, which represents the historical range of GDE health fluctuation. • A UR criterion of 15% of RMS falls within the range of GDE health by area fluctuations observed between 2009-2018 (37%).

MT/MO JUSTIFICATIONS

Impacts to Beneficial Users	Impacts to Adjacent Basins	Impacts to Other Sustainability Indicators
• Less than 8% of storage would be lost and less than 10% of wells will be impacted, which is lower than the anticipated natural replacement rate given current well ages - Offset with well mitigation program. • 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%.	Use of groundwater level MTs as proxy means groundwater will not be below 2016 historical lows in the D-M basin. These are generally as high or higher than those set in adjacent basins.	• Impacts no worse than recent historic lows, SGMA baseline. • MTs limited to no lower than historic lows theoretically prevents additional subsidence* and groundwater quality degradation due to groundwater extraction. ** Delayed subsidence from historic lows may still occur for years*

ADDRESS DEFICIENCIES #2 & #3

eki

SMC #3:

Degraded Water Quality

140

DWR DEFICIENCIES FOR WATER QUALITY

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)"
- "… **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"

- "**No analysis** has been conducted to justify the use of 50 percent [of RMS with MT exceedances] as a threshold"
- "Minimum thresholds associated with **other constituents of concern**, such as boron, nitrate as nitrogen, and unquantified "poor quality groundwater" have been removed from the revised Plan and **no justification** for the removal of these constituents has been provided"

REQUIREMENTS FOR WATER QUALITY SMCs

- The **minimum threshold** for degraded water quality shall be the degradation of water quality, including the migration of contaminant plumes that impair water supplies or other indicator of water quality …that may lead to undesirable results [23 CCR § 354.28(c)(4)].
  - based on the number of supply wells, a volume of water or a location of an isocontour that exceeds <u>concentrations of constituents … of concern</u> for the basin
  - consider local, state and federal water quality standards applicable to the basin
- The **measurable objective** shall be … quantitative values using the same metrics and monitoring sites as are used to define the (MTs) [23 CCR § 354.30(b)].

143

PRELIMINARY CONSTITUENTS OF CONCERN

Potential COCs identified for Delta-Mendota Subbasin by SWRCB in letter dated 22 November 2022

- 1,2,3-TCP
- Arsenic
- Boron*
- Gross Alpha radioactivity
- Hexavalent Chromium [Cr(VI)]
- Nitrate (NO_3)
- Total Dissolved Solids (TDS)

Water Boards

State Water Resources Control Board

November 22, 2022

Monica Salais
GSP Review Section Manager
Sustainable Groundwater Management Office
Department of Water Resources
Monica.Salais@water.ca.gov

Shane Edmunds
GSP Review Section Manager
Sustainable Groundwater Management Office
Department of Water Resources
Shane.Edmunds@water.ca.gov

GROUNDWATER QUALITY CONSIDERATIONS FOR HIGH AND MEDIUM PRIORITY GROUNDWATER BASINS

The State Water Resources Control Board (State Water Board) staff is providing this letter in support of the Department of Water Resources' (DWR) review pursuant to the Sustainable Groundwater Management Act (SGMA) (Water Code § 10720 et seq.) and the regulations implementing SGMA (SGMA regulations) (Cal Code Regs., tit. 23, § 350 et seq.) of groundwater sustainability plans (GSPs) submitted by groundwater sustainability agencies (GSAs) in high and medium priority groundwater basins subject to SGMA.

This letter is to inform you that, based on an assessment of more than 24 GSPs, State Water Board staff have identified that many of the GSPs do not comprehensively describe or set appropriate sustainable management criteria (SMC) for groundwater quality.

Water Quality Impacts on Groundwater and Requirements for GSAs under SGMA
SGMA is not a remedial statute and does not attempt to resolve all groundwater quality issues but requires that operation of a basin within its sustainable yield, as defined by SGMA, does not cause undesirable results, including water quality degradation. Water Code Section 10727.2 and the SGMA regulations require GSAs to characterize groundwater quality and identify associated undesirable results in the GSPs for their basins. In addition, any projects or management actions adopted by a GSA within their GSP should not cause degradation of water quality that could lead to an undesirable result.

E. Joaquin Esquivel, Chair | Eileen Sobeck, Executive Director

1001 I Street, Sacramento, CA 95814 | Mailing Address: P.O. Box 100, Sacramento, CA 95812-0100 | www.waterboards.ca.gov

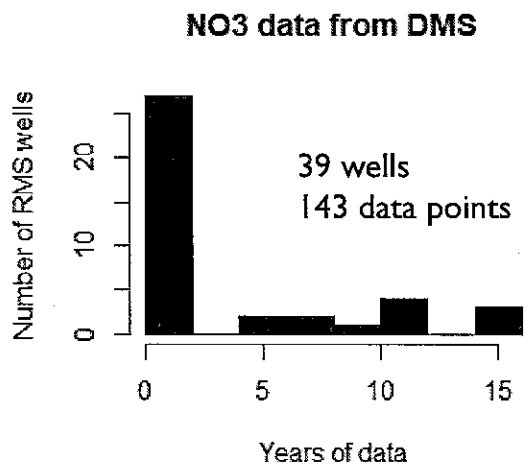
* Prior COC from 2020 GSP

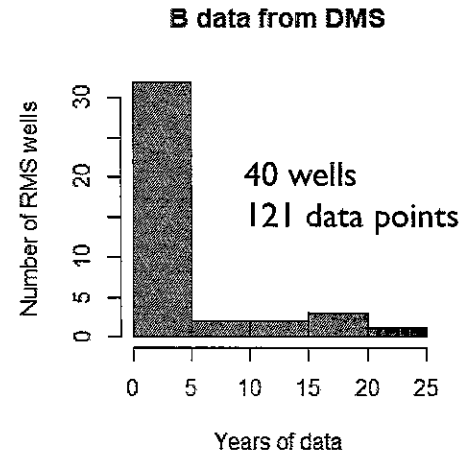
eki

143

DATA SOURCES USED TO ASSESS POTENTIAL COCs

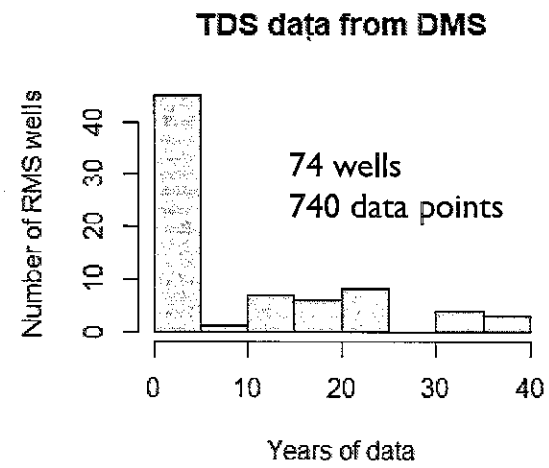
- **Delta-Mendota DMS**
  - 3 constituents (B, NO_3, and TDS)
  - 1,004 data points
  - 77 wells
  - 40 years





- **GAMA**
  - All constituents
  - ~39,800 data points
  - ~ 2,700 wells
  - ~ 90 years

- **SWRCB GW Quality Visualization Tool**
  - All constituents except B
  - ~19,650 data points
  - 1,961 wells
  - 82 years

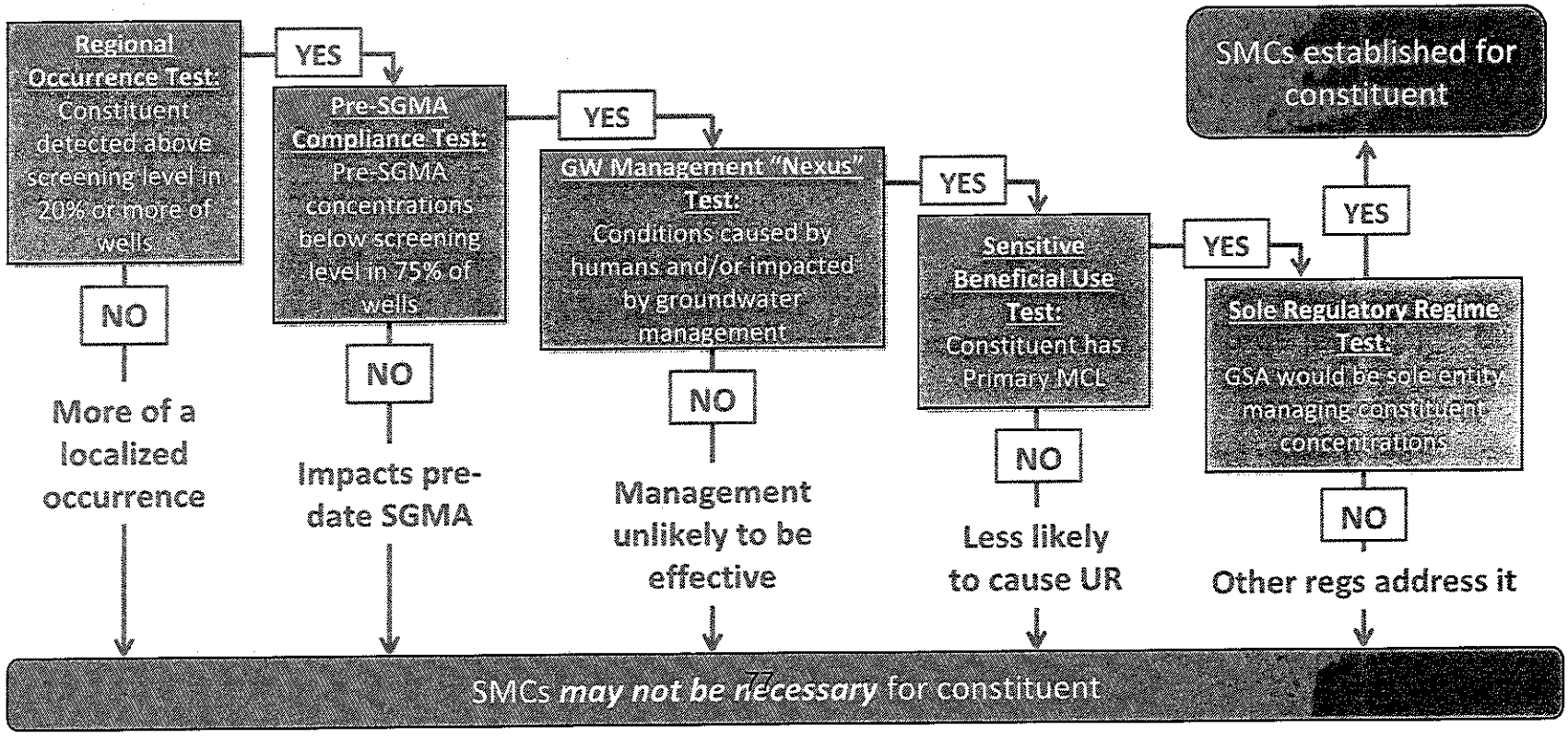


eki

Draft – For discussion purposes only

SCREENING PROCESS TO FOCUS ON COCs THAT ARE APPROPRIATE TO ADDRESS VIA SGMA

Constituents with Available Data and a Screening Level for any Beneficial Use



eki

POTENTIAL TESTS TO SCREEN OUT COCs

- **Regional occurrence** – Screening level/MCL exceeded in >20% of GAMA wells in last 10 years of data? ["...effects caused by groundwater conditions occurring throughout the basin" (CWC § 10721(x))]

- **Pre-SGMA compliance** – At least 50% of wells were **in compliance** with screening level/MCL prior to SGMA? [SGMA does not require GSPs to address URs that occurred before, and have not been corrected by, January 1, 2015. (CWC § 10727.2(b)(4))]

- **GW management nexus** – Is it anthropogenic, and/or is there a correlation between groundwater levels and concentrations? [*Department staff recognize that GSAs are not responsible for improving existing degraded water quality conditions. GSAs are required, however, to manage future groundwater extraction to ensure that groundwater use subject to its jurisdiction does not significantly and unreasonably exacerbate existing degraded water quality conditions. ... the analysis should be on whether groundwater extraction is causing the degradation in contrast to only looking at whether a specific project or management activity results in water quality degradation. Department staff recommend that the SVBGSA coordinate with the appropriate water quality regulatory programs and agencies ... to understand and develop a process for determining when groundwater management and extraction is resulting in degraded water quality in the Subbasin (180/400-Ft Aquifer, page 26-27)*]

- **Sensitive beneficial use** – Does it have a primary MCL? [23 CCR § 354.28 directs that "the Agency shall consider local, state, and federal water quality standards applicable to the basin"]

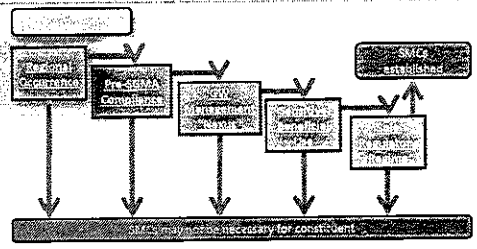
- **Sole regulatory regime** – Would the GSA be the only entity regulating the constituent in groundwater or well water?

eki

"NO" answers indicate constituent can potentially be screened out on basis of test

REGIONAL OCCURRENCE TEST (GAMA)

Screening Level/MCL exceeded in >20% of GAMA wells 2013 – 2023?



Well Category	% of GAMA Wells Exceeding Screening Level/MCL for Given Constituent						
	Gross Alpha	Arsenic	Boron	Cr (VI)	Nitrate	1,2,3-TCP	TDS
Municipal	4%	18%	44%	47%	12%	15%*	29%
Water Supply, Other	*no data*	13%	57%	43%	13%	*insufficient data*	43%
Domestic	*no data*	0%	44%	0%	22%	*insufficient data*	53%
Irrigation / Industrial	*no data*	0%	18%	33%	0%	*insufficient data*	36%

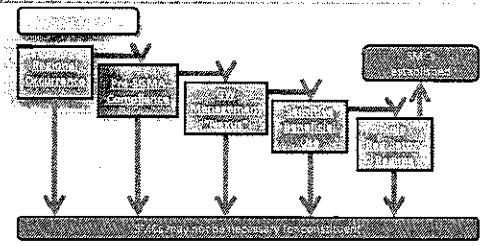
Yes (may need SMC) / No (may not need SMC)

Notes

1. * Reporting limits for some 1,2,3-TCP data points are higher than the MCL. In these cases, NDs may or may not have MCL exceedance. GAMA used reporting limit as the reported values.
2. "Insufficient data" indicates data quality or quantity not supporting regional occurrence test. For example, reporting limit is greater than MCLs.

Draft – For discussion purposes only

REGIONAL OCCURRENCE TEST (SWRCB)



Screening level/MCL exceeded in >20% of SWRCB-reported wells 2013 – 2023?

Well Category	% of SWRCB-Reported Wells Exceeding MCL for Given Constituent						
	Gross Alpha	Arsenic	Boron	Cr (VI)	Nitrate	1,2,3-TCP	TDS
Municipal	4%	18%	*no data*	31%	12%	5%	29%
Water Supply, Other	–	–	*no data*	–	–	–	43%
Domestic	–	–	*no data*	–	22%	–	50%
Irrigation / Industrial	–	–	*no data*	–	–	–	36%

Yes (may need SMC) / No (may not need SMC)

Notes

1. Screening levels set at MCLs except for Cr(VI) which uses a HBSL of 20 µg/L.
2. -- indicates either no exceedances or no measurements. SWRCB's SGMA Groundwater Quality Visualization Tool does not distinguish between constituents with no measurements or no exceedances. https://www.waterboards.ca.gov/sgma/water-quality-visualization-tool.html
3. Boron not included in SWRCB data set.

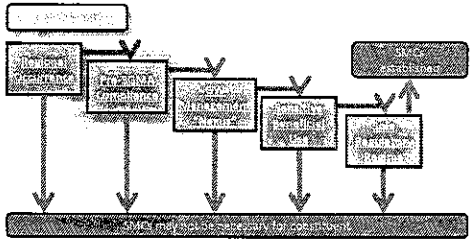
eki

148

ARSENIC, GROSS ALPHA, AND 1,2,3-TCP REMOVED BY REGIONAL OCCURRENCE TEST

Potential COC	Regional Occurrence (% exceedance)	Pre-SGMA Compliance	GW Management Nexus	Sensitive Beneficial Use	Other Regulatory Regime
Arsenic	Muni: 18% Other supply: 3% Domestic: 0%	✗			
Boron	Muni: 44% Other supply: 57% Domestic: 44%	⇨			
Cr(VI)	Muni: 47% Other supply: 43% Domestic: 0%	⇨			
Gross Alpha	Muni: 4% Other supply: insufficient data Domestic: insufficient data	✗			
Nitrate	Muni: 12% Other supply: 13% Dom: 22%	⇨			
TDS	Muni: 29% Other supply: 43% Domestic: 53%	⇨			
1,2,3-TCP	Muni: 15% Other supply: insufficient data Domestic: insufficient data	✗			

PRE-SGMA COMPLIANCE TEST (GAMA)



At least 50% of GAMA wells **in compliance with screening level/MCL** Pre-SGMA?

Well Category	% of GAMA Wells in Compliance with Screening Level/MCL for Given Constituent						
	Gross Alpha	Arsenic	Boron	Cr (VI)	Nitrate	1,2,3-TCP	TDS
Municipal	88%	84%	61%	55%	92%	18%	64%
Water Supply, Other	0%	88%	41%	78%	87%	*insufficient data*	55%
Domestic	*no data*	100%	*no data*	100%	87%	*insufficient data*	25%
Irrigation / Industrial	*no data*	86%	*no data*	33%	86%	*insufficient data*	57%

Yes (may need SMC) / No (may not need SMC)

Notes

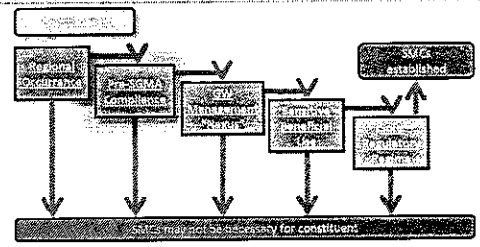
1. Reporting limits (0.12 ug/L) for some 1,2,3-TCP data points are higher than the MCL. In these cases, NDs may or may not have MCL exceedance.
2. "Insufficient data" indicates data quality or quantity not supporting regional occurrence tests. For example, reporting limit is greater than MCLs.
3. Data from 2005-2014 are used for this analysis.

eki

150

Draft – For discussion purposes only

PRE-SGMA COMPLIANCE TEST (SWRCB)



At least 50% of SWCRB-reported wells **in compliance with MCL** PRE-SGMA?

Well Category	% of SWRCB-Reported Wells in Compliance with MCL for Given Constituent						
	Gross Alpha	Arsenic	Boron	Cr (VI)	Nitrate	1,2,3-TCP	TDS
Municipal	88%	83%	*no data*	73%	92%	–	64%
Water Supply, Other	*no data*	88%	*no data*	78%	87%	–	55%
Domestic	–	–	*no data*	–	–	–	–
Irrigation / Industrial	*no data*	*no data*	*no data*	*no data*	*no data*	*no data*	*no data*

Yes (may need SMC) / No (may not need SMC)

Notes

1. Screening levels set at MCLs except Cr(VI) which uses a HBSL of 20 µg/L.
2. Data from 2005-2014 are used for this analysis.
3. – indicates either no exceedances or no measurements. SWRCB's SGMA Groundwater Quality Visualization Tool does not distinguish between constituents with no measurements or no exceedances. https://www.waterboards.ca.gov/sgma/water-quality-visualization-tool.html
4. 35 domestic wells sampled with no detected exceedances. Constituents tested for are not specified.
5. No irrigation/industrial or monitoring wells measured.
6. Boron is not included in SWRCB data set.

eki

151

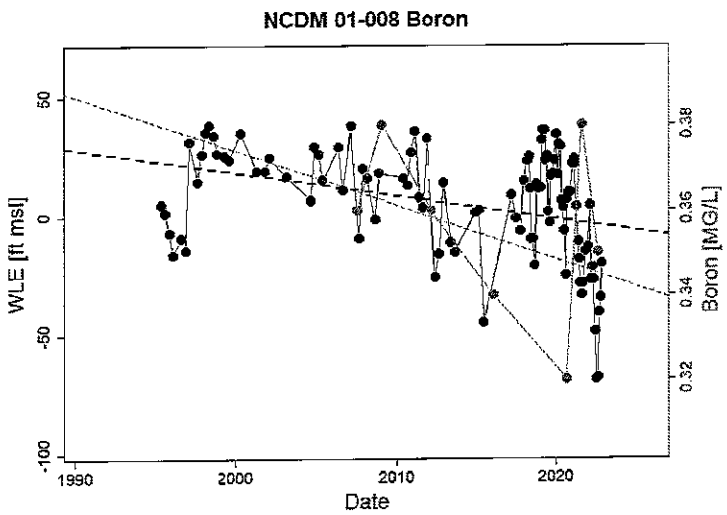
COCs REMAINING AFTER PRE-SGMA COMPLIANCE TEST

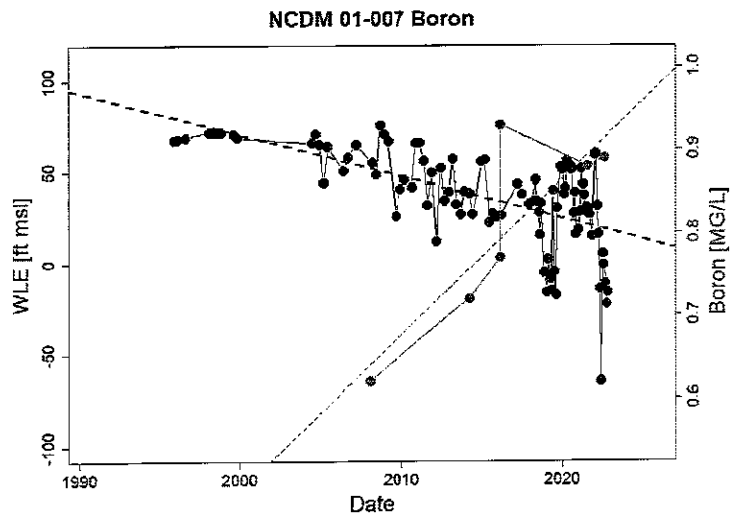
Potential COC	Regional Occurrence (% exceedance)		Pre-SGMA Compliance		GW Management Nexus	Sensitive Beneficial Use	Other Regulatory Regime
Arsenic	Muni: 18% Other supply: 3% Domestic: 0%	✗	Muni: 84% Other supply: 88% Domestic: 100%				
Boron	Muni: 44% Other supply: 57% Domestic: 44%	⇨	Muni: 61% Other supply: 41% Domestic: no data	⇨			
Cr(VI)	Muni: 47% Other supply: 43% Domestic: 0%	⇨	Muni: 55% Other supply: 78% Domestic: 100%	⇨			
Gross Alpha	Muni: 4% Other supply: insufficient data Domestic: insufficient data	✗	Muni: 88% Other supply: 0% Domestic: no data				
Nitrate	Muni: 12% Other supply: 13% Dom: 22%	⇨	Muni: 92% Other supply: 87% Dom: 87%	⇨			
TDS	Muni: 29% Other supply: 43% Domestic: 53%	⇨	Muni: 64% Other supply: 55% Domestic: 25%	⇨			
1,2,3-TCP	Muni: 15% Other supply: insufficient data Domestic: insufficient data	✗	Muni: 18% Other supply: insuff. data Domestic: insuff. data				

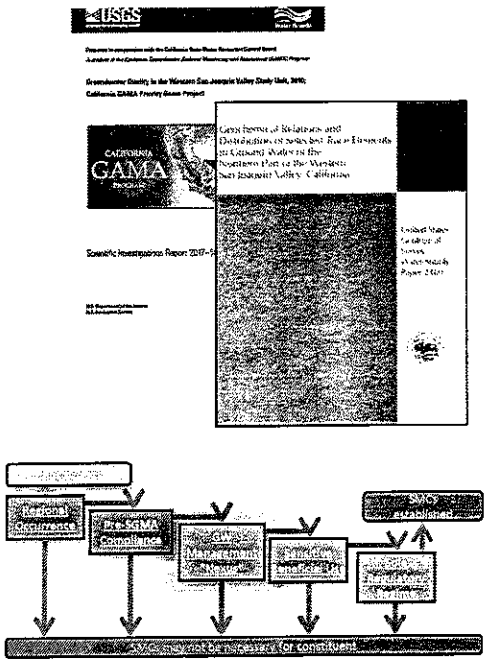
eki

GW MANAGEMENT NEXUS TEST: BORON

- Boron primarily from Coast Range marine shale and hydrothermal fluids.
- Where DMS data are available, correlation between Water Level (WL) and Water Quality (WQ) trends not statistically significant or clear result of groundwater recharge or extraction





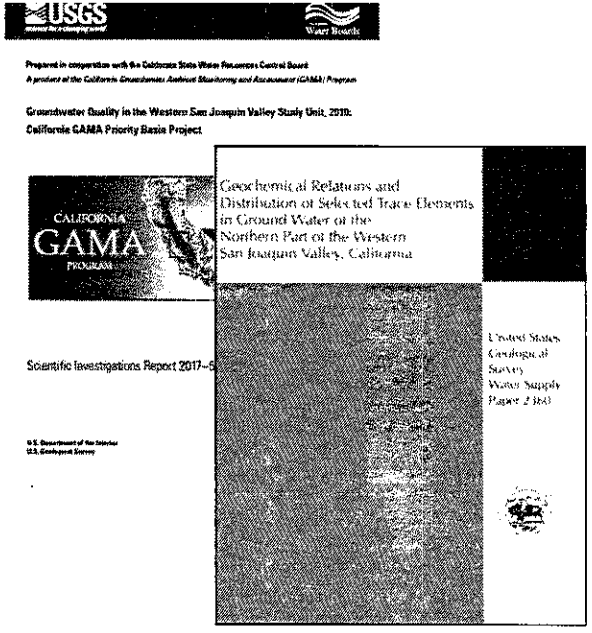


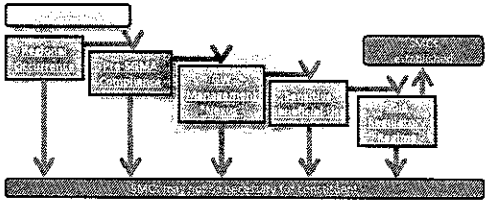
eki

153

GW MANAGEMENT NEXUS TEST: CHROMIUM AND ARSENIC

- Chromium and Arsenic primarily related to sediment source and redox conditions.
- GAMA wells show few significant trends which do not appear spatially correlated with RMS water levels.



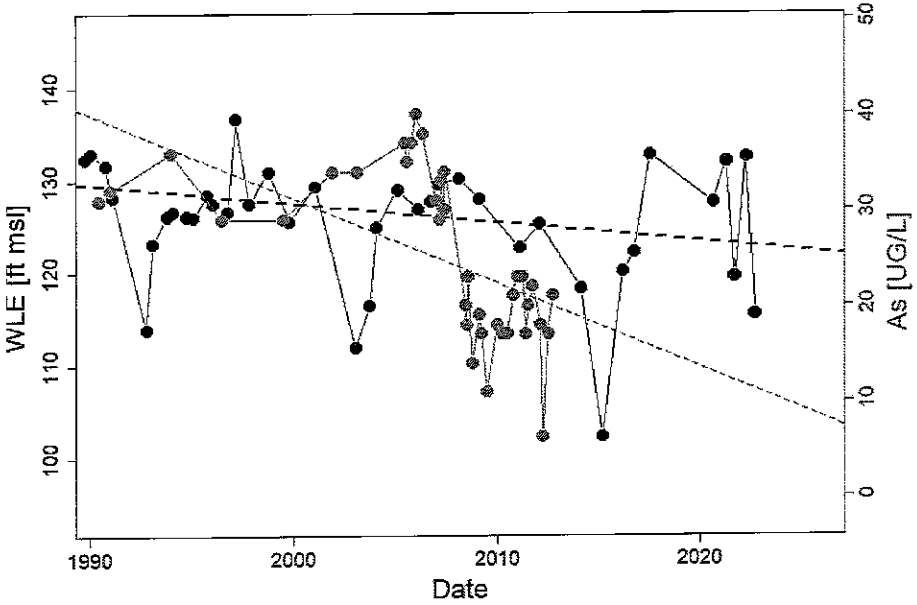


152

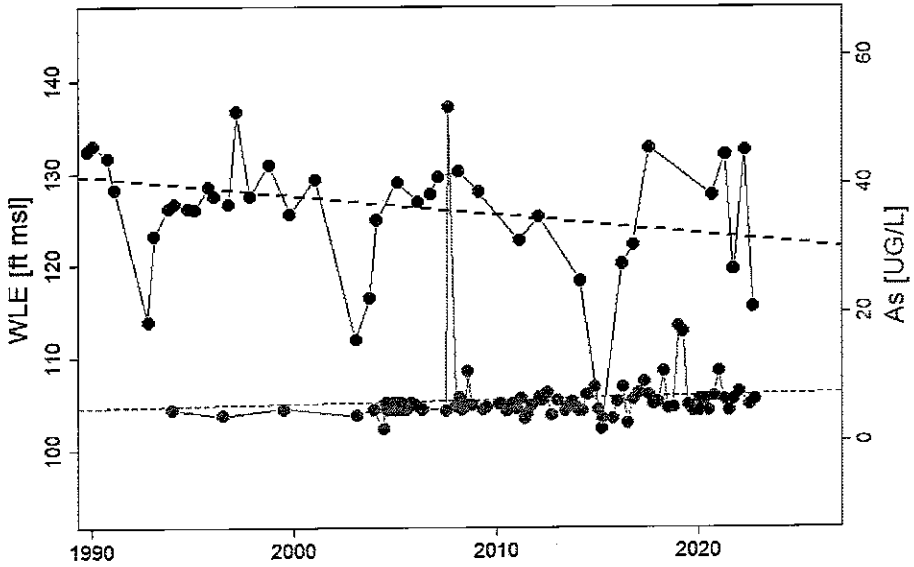
Draft – For discussion purposes only

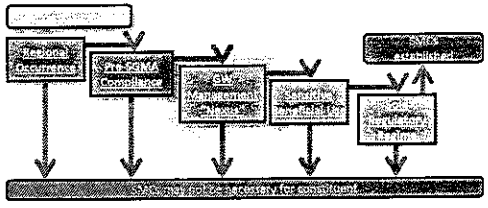
NO CORRELATION BETWEEN ARSENIC (As) CONCENTRATION AND NEARBY WATER LEVEL

RMS 23-001 and GAMA CA1010005-009-009 (2,257 ft. apart)



RMS 23-001 and GAMA CA1010005-010-010 (4,450 ft. apart)





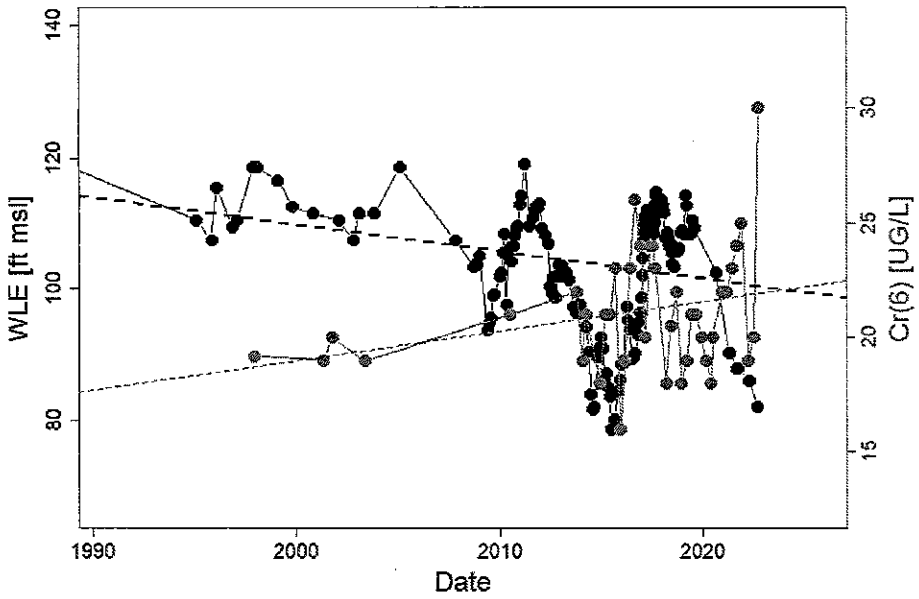
eki

155

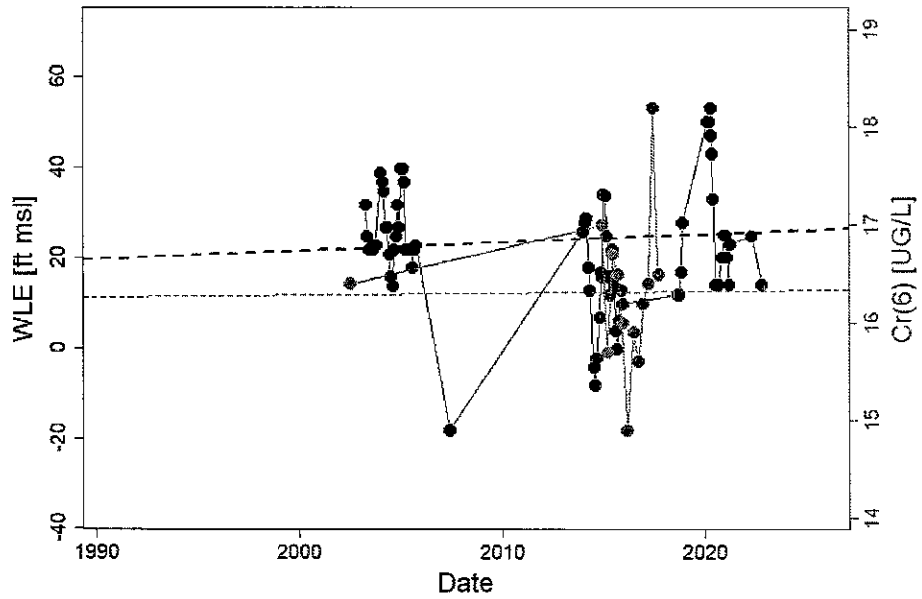
Draft – For discussion purposes only

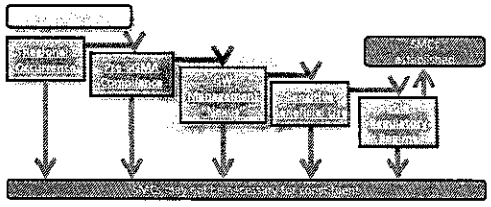
NO CORRELATION BETWEEN Cr(VI) CONCENTRATION AND NEARBY WATER LEVEL

RMS 14-004 and GAMA CA2410005-012012 (4,062 ft. apart)



RMS 02-002 and GAMA CA5010017-005-005 (3,750 ft. apart)



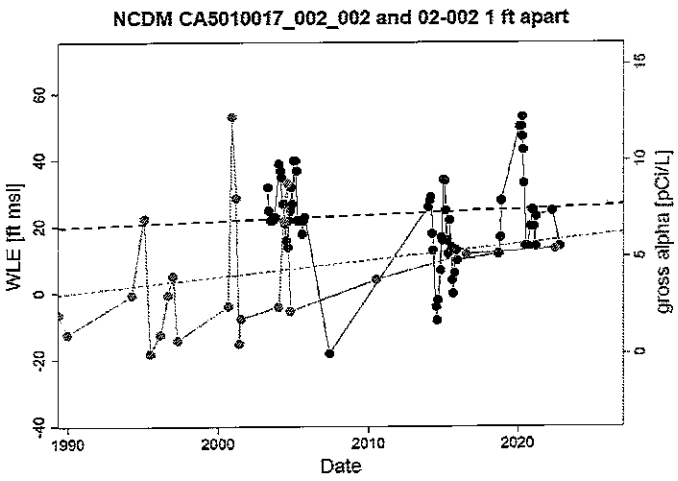


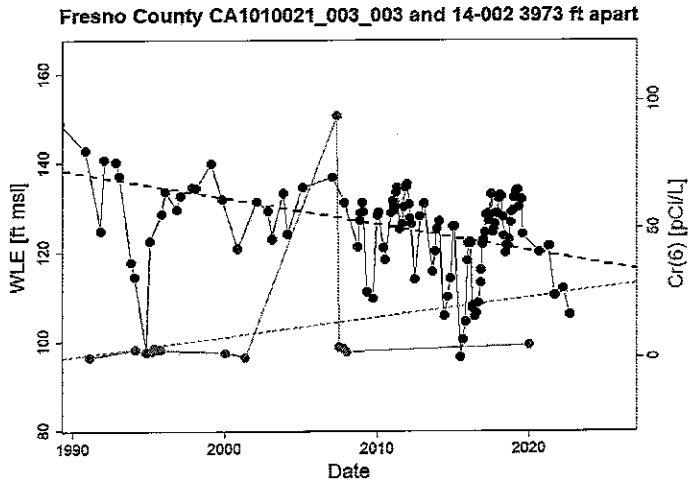
eki

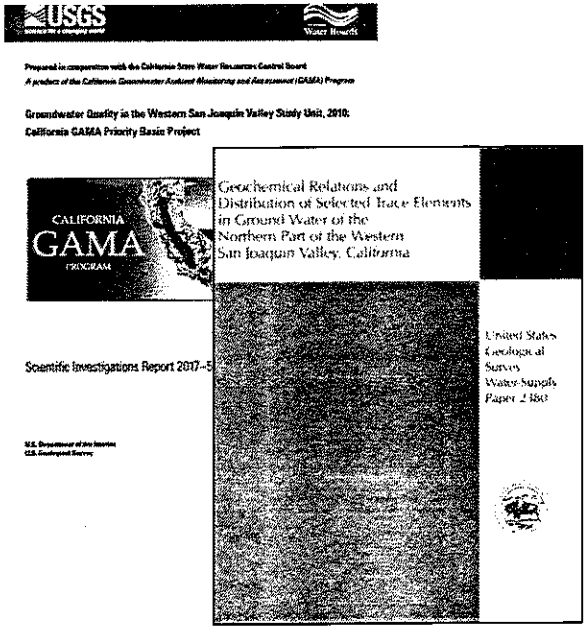
156

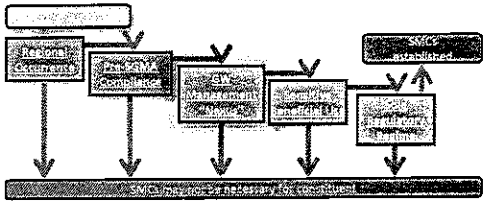
GW MANAGEMENT NEXUS TEST: GROSS ALPHA

- Gross alpha radioactivity primarily caused by decay of uranium in sediments.
- GAMA wells show few significant trends which do not appear spatially correlated with RMS water levels.



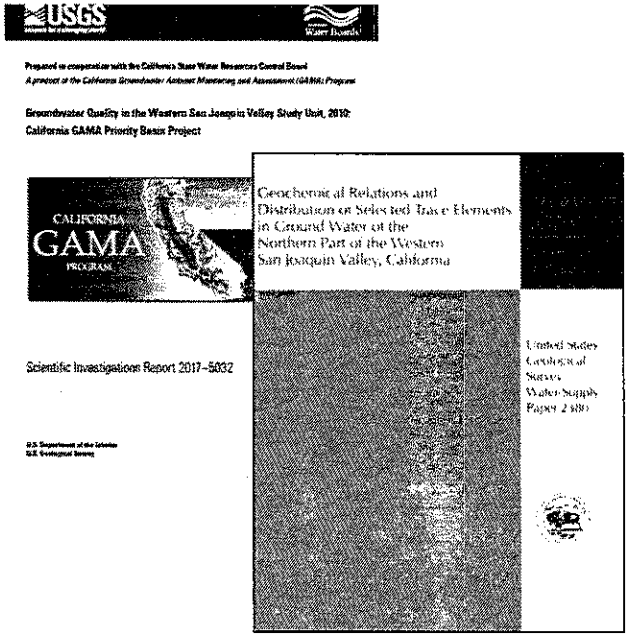


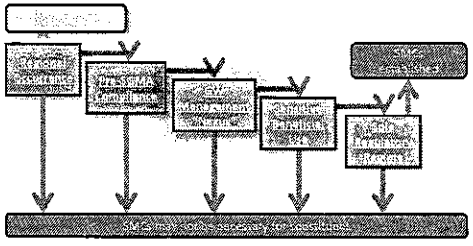




GW MANAGEMENT NEXUS TEST: TDS

- TDS primarily originates from marine sediments and hydrothermal fluids; however,
  - Additional anthropogenic point sources – e.g., Steffens/ Spreckels plume
  - May migrate due to regional groundwater levels and pumping patterns – e.g., Western Saline Front

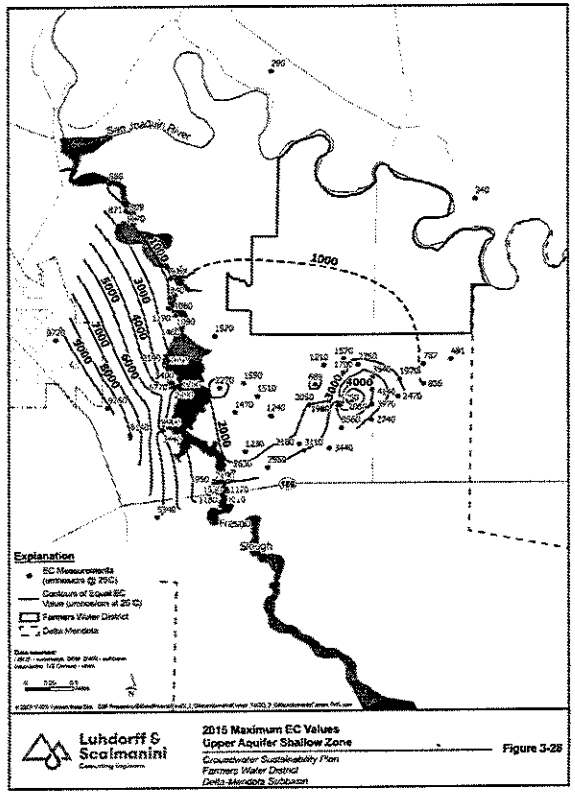


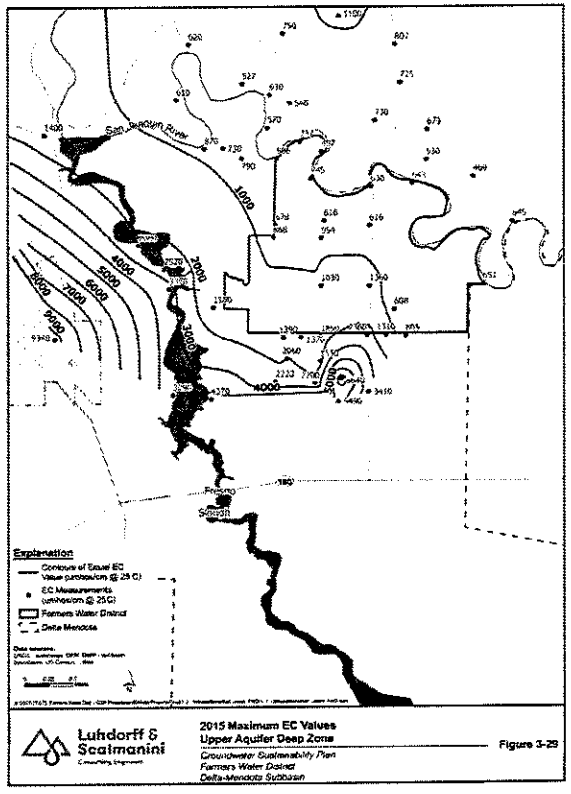


158

GW MANAGEMENT NEXUS TEST: TDS - WESTERN SALINE FRONT

- Zone of high salinity water in upper aquifer in southern end of Basin
- Originally due to marine sediments
- Migrating westward due to groundwater pumping in Madera County
- EC increases of ~40 µmhos/cm/yr in some areas





eki

154

Draft – For discussion purposes only

BORON & CR(VI) REMOVED BY GW MANAGEMENT NEXUS TEST

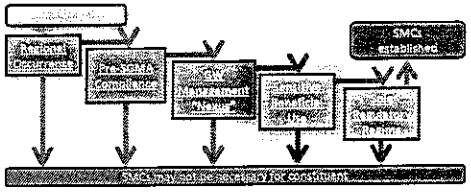
Potential COC	Regional Occurrence (% exceedance)	Pre-SGMA Compliance	GW Management Nexus	Sensitive Beneficial Use	Other Regulatory Regime
Arsenic	Muni: 18% Other supply: 3% Domestic: 0%	Muni: 84% Other supply: 88% Domestic: 100%	Primarily naturally occurring. No relationship to water levels.		
Boron	Muni: 44% Other supply: 57% Domestic: 44%	Muni: 61% Other supply: 41% Domestic: no data	Primarily naturally occurring. No relationship to water levels.		
Cr(VI)	Muni: 47% Other supply: 43% Domestic: 0%	Muni: 55% Other supply: 78% Domestic: 100%	Primarily naturally occurring. No relationship to water levels.		
Gross Alpha	Muni: 4% Other supply: insufficient data Domestic: insufficient data	Muni: 88% Other supply: 0% Domestic: no data	Primarily naturally occurring. No relationship to water levels.		
Nitrate	Muni: 12% Other supply: 13% Dom: 22%	Muni: 92% Other supply: 87% Dom: 87%	Anthropogenic. May be affected by recharge.		
TDS	Muni: 29% Other supply: 43% Domestic: 53%	Muni: 64% Other supply: 55% Domestic: 25%	Natural and anthropogenic. May be affected by pumping.		
1,2,3-TCP	Muni: 15% Other supply: insufficient data Domestic: insufficient data	Muni: 18% Other supply: insuff. data Domestic: insuff. data	Anthropogenic. May be affected by recharge.		

eki

160

SENSITIVE BENEFICIAL USE TEST

Constituent	Screening Level	Screening Level Type
Arsenic	10 µg/L	Primary MCL
Boron	1 mg/L	Notification Level
Hexavalent Chromium	10 µg/L	Draft Primary MCL
Gross Alpha Radioactivity	15 pCi/L	Primary MCL
Nitrate (as N)	10 mg/L	Primary MCL
Total Dissolved Solids	500 mg/L "recommended" 1,000 mg/L "upper"	Secondary MCL
1,2,3-TCP	0.005 µg/L	Primary MCL



Presence of MCL = Potable use deemed sensitive by OEHHA and SWRCB

eki

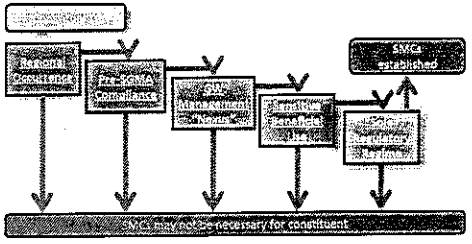
191

COCs REMAINING AFTER SENSITIVE BENEFICIAL USE TEST

Potential COC	Regional Occurrence (% exceedance)	Pre-SGMA Compliance	GW Management Nexus	Sensitive Beneficial Use	Other Regulatory Regime
Arsenic	Muni: 18% Other supply: 3% Domestic: 0%	Muni: 84% Other supply: 88% Domestic: 100%	Primarily naturally occurring. No relationship to water levels.	Primary MCL	
Boron	Muni: 44% Other supply: 57% Domestic: 44%	Muni: 61% Other supply: 41% Domestic: no data	Primarily naturally occurring. No relationship to water levels.	Notification Level	
Cr(VI)	Muni: 47% Other supply: 43% Domestic: 0%	Muni: 55% Other supply: 78% Domestic: 100%	Primarily naturally occurring. No relationship to water levels.	Primary MCL	
Gross Alpha	Muni: 4% Other supply: insufficient data Domestic: insufficient data	Muni: 88% Other supply: 0% Domestic: no data	Primarily naturally occurring. No relationship to water levels.	Primary MCL	
Nitrate	Muni: 12% Other supply: 13% Dom: 22%	Muni: 92% Other supply: 87% Dom: 87%	Anthropogenic. May be affected by recharge.	Primary MCL	
TDS	Muni: 29% Other supply: 43% Domestic: 53%	Muni: 64% Other supply: 55% Domestic: 25%	Natural and anthropogenic. May be affected by pumping.	Secondary MCL	
1,2,3-TCP	Muni: 15% Other supply: insufficient data Domestic: insufficient data	Muni: 18% Other supply: insuff. data Domestic: insuff. data	Anthropogenic. May be affected by recharge.	Primary MCL	

OTHER REGULATORY REGIME TEST

- Drinking Water Quality:
  - Public Water Systems – water quality served to customers is regulated by the SWRCB Division of Drinking Water and required to meet all drinking water standards
    - Local governments must be notified of boron in excess of notification level, but additional action is not required.
  - Domestic Wells – water quality is unregulated
- Groundwater Quality related to Agricultural Land Use Management
  - Irrigated Lands Regulatory Program (IRLP)
    - Addresses monitoring and mitigation of NO_3 in domestic wells, but does not address migration in groundwater
  - Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) / Basin Plan



Draft – For discussion purposes only

COCs REMAINING AFTER OTHER REGULATORY REGIME TEST

Potential COC	Regional Occurrence (% exceedance)	Pre-SGMA Compliance	GW Management Nexus	Sensitive Beneficial Use	Other Regulatory Regime
Arsenic	Muni: 18% Other supply: 3% Domestic: 0%	Muni: 84% Other supply: 88% Domestic: 100%	Primarily naturally occurring. No relationship to water levels.	Primary MCL	Muni: CA Title 22 Domestic: none
Boron	Muni: 44% Other supply: 57% Domestic: 44%	Muni: 61% Other supply: 41% Domestic: no data	Primarily naturally occurring. No relationship to water levels.	Notification Level	Muni: H&S Code §116455 (notification) Domestic: none
Cr(VI)	Muni: 47% Other supply: 43% Domestic: 0%	Muni: 55% Other supply: 78% Domestic: 100%	Primarily naturally occurring. No relationship to water levels.	Primary MCL	Muni: CA Title 22 Domestic: none
Gross Alpha	Muni: 4% Other supply: insufficient data Domestic: insufficient data	Muni: 88% Other supply: 0% Domestic: no data	Primarily naturally occurring. No relationship to water levels.	Primary MCL	Muni: CA Title 22 Domestic: none
Nitrate	Muni: 12% Other supply: 13% Dom: 22%	Muni: 92% Other supply: 87% Dom: 87%	Anthropogenic. May be affected by recharge.	Primary MCL	IRLP, CV-SALTS Muni: CA Title 22 Domestic: none
TDS	Muni: 29% Other supply: 43% Domestic: 53%	Muni: 64% Other supply: 55% Domestic: 25%	Natural and anthropogenic. May be affected by pumping.	Secondary MCL	IRLP, CV-SALTS Muni: CA Title 22 Domestic: none
1,2,3-TCP	Muni: 15% Other supply: insufficient data Domestic: insufficient data	Muni: 18% Other supply: insuff. data Domestic: insuff. data	Anthropogenic. May be affected by recharge.	Primary MCL	Muni: CA Title 22 Domestic: none

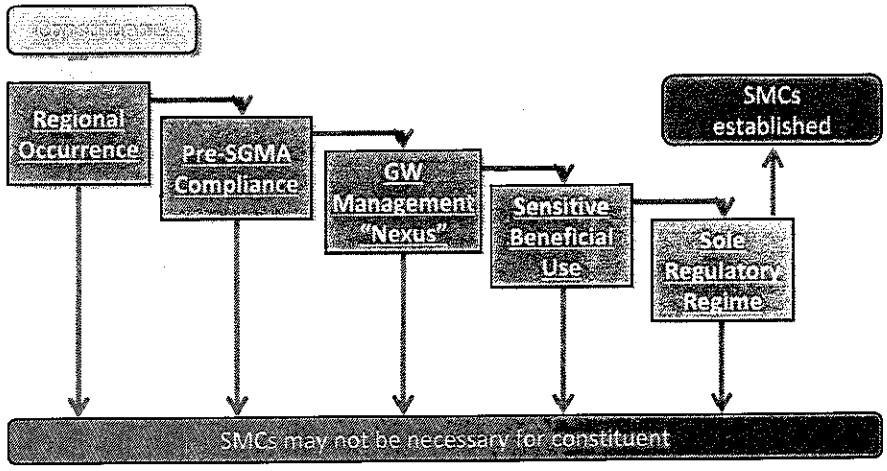
eki

164

Draft – For discussion purposes only

PRIORITY COCs REMAING AFTER SCREENING

- NO_3
- TDS



Potential COC	Regional Occurrence (% exceedance)	Pre-SGMA Compliance	GW Management Nexus	Sensitive Beneficial Use	Other Regulatory Regime
Arsenic	Muni: 18% Other supply: 3% Domestic: 0%	Muni: 84% Other supply: 86% Domestic: 100%	Primarily naturally occurring. No relationship to water levels.	Primary MCL	Muni: CA Title 22 Domestic: none
Boron	Muni: 44% Other supply: 57% Domestic 44%	Muni: 61% Other supply: 43% Domestic: no data	Primarily naturally occurring. No relationship to water levels.	Notification Level	Muni: H&S Code §116455 (notification) Domestic: none
Cr(VI)	Muni: 47% Other supply: 43% Domestic: 0%	Muni: 55% Other supply: 78% Domestic: 100%	Primarily naturally occurring. No relationship to water levels.	Primary MCL	Muni: CA Title 22 Domestic: none
Gross Alpha	Muni: 4% Other supply: insufficient data Domestic: insufficient data	Muni: 88% Other supply: 0% Domestic: no data	Primarily naturally occurring. No relationship to water levels.	Primary MCL	Muni: CA Title 22 Domestic: none
Nitrate	Muni: 12% Other supply: 13% Dom: 22%	Muni: 92% Other supply: 87% Dom: 87%	Anthropogenic. May be affected by recharge.	Primary MCL	IRLP, CV-SALTS Muni: CA Title 22 Domestic: none
TDS	Muni: 29% Other supply: 43% Domestic: 53%	Muni: 64% Other supply: 55% Domestic: 25%	Natural and anthropogenic. May be affected by pumping.	Secondary MCL	IRLP, CV-SALTS Muni: CA Title 22 Domestic: none
1,2,3-TCP	Muni: 15% Other supply: insufficient data Domestic: insufficient data	Muni: 18% Other supply: insuff. data Domestic: insuff. data	Anthropogenic. May be affected by recharge.	Primary MCL	Muni: CA Title 22 Domestic: none

eki

165

PROPOSED APPROACH TO WATER QUALITY COCs

SWRCB COCs	GSP Monitoring & Management Plan
Nitrate TDS	Basin-wide issues for all beneficial users; GSAs will establish SMCs and conduct monitoring & reporting as part of SGMA process
Arsenic Hexavalent Chromium Gross Alpha radioactivity	Naturally occurring; Already monitored by PWS and regulated by SWRCB for drinking water beneficial users; GSAs will coordinate with PWS to evaluate data
1,2,3-TCP	Localized occurrence; Already monitored by PWS and regulated by SWRCB for drinking water beneficial users; GSAs will coordinate with PWS to evaluate data
Boron	Naturally occurring; Issue for agricultural beneficial users; GSAs will coordinate with PWS to evaluate data

WATER QUALITY UNDESIRABLE RESULTS

- **Undesirable Results:** UR occurs if MTs are exceeded at **25%** or more of RMS for two consecutive years as a result of groundwater recharge or extraction.

WATER QUALITY URs AND MTs/MOs

- **Minimum Thresholds:**
  - For RMS/COC with pre-2015* conc. less than MCL: **MT = MCL**
  - For RMS/COC with pre-2015* conc. between MCL and exclusion threshold: **MT = Greater of:**
    - **20% above pre-2015 conc.**
    - **Projected 2040 concentration (if sufficient data available)**
- **Measurable Objectives:**
  - For RMS/COC with pre-2015* conc. less than MCL: **MO = MCL**
  - For RMS/COC with pre-2015* conc. between MCL and exclusion threshold: **MO = Greater of:**
    - **10% above pre-2015 conc.**
    - **Projected 2040 concentration (if sufficient data available)**
- **Exclusion threshold:** 3x MCL - corresponds with 3,000 mg/L TDS, at which water is not considered suitable for municipal or domestic supply (SWRCB Resolution 88-63).
- **Interim Milestones:** Glide path between current concentration and MO

* For RMS/COC that do not have pre-SGMA data, set interim MTs/MOs at MCL, and conduct monitoring to establish baseline based on at least 2 years of monitoring data and use to set permanent MTs/MOs.

UR DEFINITION & JUSTIFICATION

UR Criteria	UR Justification
MT exceedances at 25% of RMS for two consecutive years as a result of groundwater recharge or extraction	**Groundwater Pumpers** • SMCs are set to be protective of drinking water, which is the most sensitive beneficial use in areas already not already degraded. • A percentage much lower than 25% suggests a primarily local impact, whereas much larger percentage suggests a widespread impact inconsistent with the Sustainability Goal. • If 25% of RMS are impacted, the majority of wells still support potable use, and high quality water is still available for blending with lower quality water if needed.

ek. 1/29

MT/MO JUSTIFICATIONS

Impacts to Beneficial Users	Impacts to Adjacent Basins	Impacts to Other Sustainability Indicators
• SMCs are set to be protective of drinking water, which is the most sensitive beneficial use in areas already not already degraded.	Adjacent basins have also used MCLs to set MOs and MTs, so their ability to meet their Sustainability Goals will not be impacted by Delta-Mendota's MOs and MTs.	Water quality does not impact other sustainability indicators.

ADDRESS DEFICIENCIES #2 & #3

eki

SMC #4:

Subsidence

171

DWR DEFICIENCIES FOR SUBSIDENCE

Deficiency #2: "The GSPs have not established common definitions of undesirable results in the Subbasin"

- (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.

Deficiency #3: "The GSPs in the Subbasin have not set sustainable management criteria in accordance with the GSP regulations"

- 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**

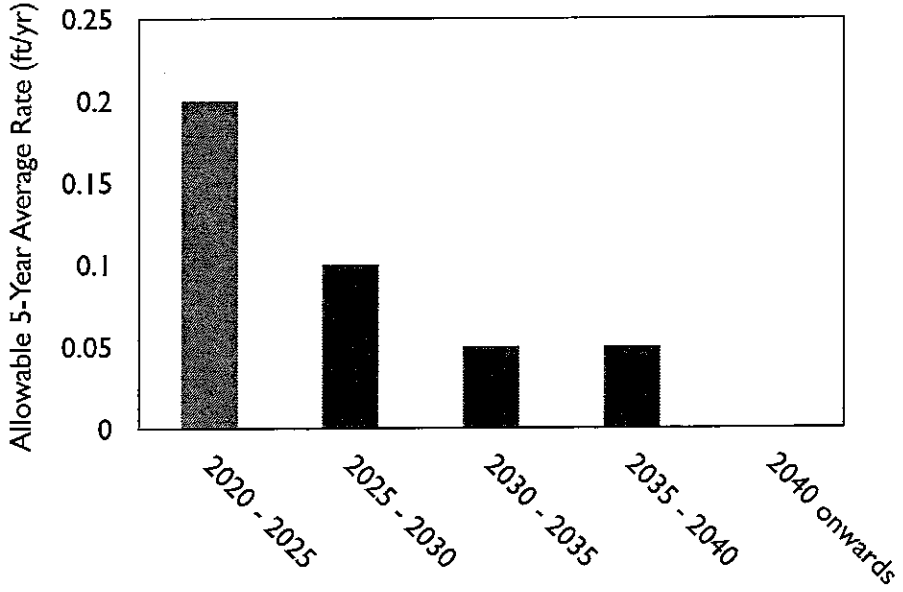
CONVERTING SMC SUBSIDENCE AMOUNTS TO RATES

Minimum Threshold/ Measurable Objective

SMC	Extent	5-Year Average Rate
Minimum Threshold	≤2 ft. by 2040	0.2 ft/year
Measurable Objective	0 ft. after 2040	0 ft/year after 2040

Interim Milestones

Time interval	Subsidence (ft)	5-Year Average 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



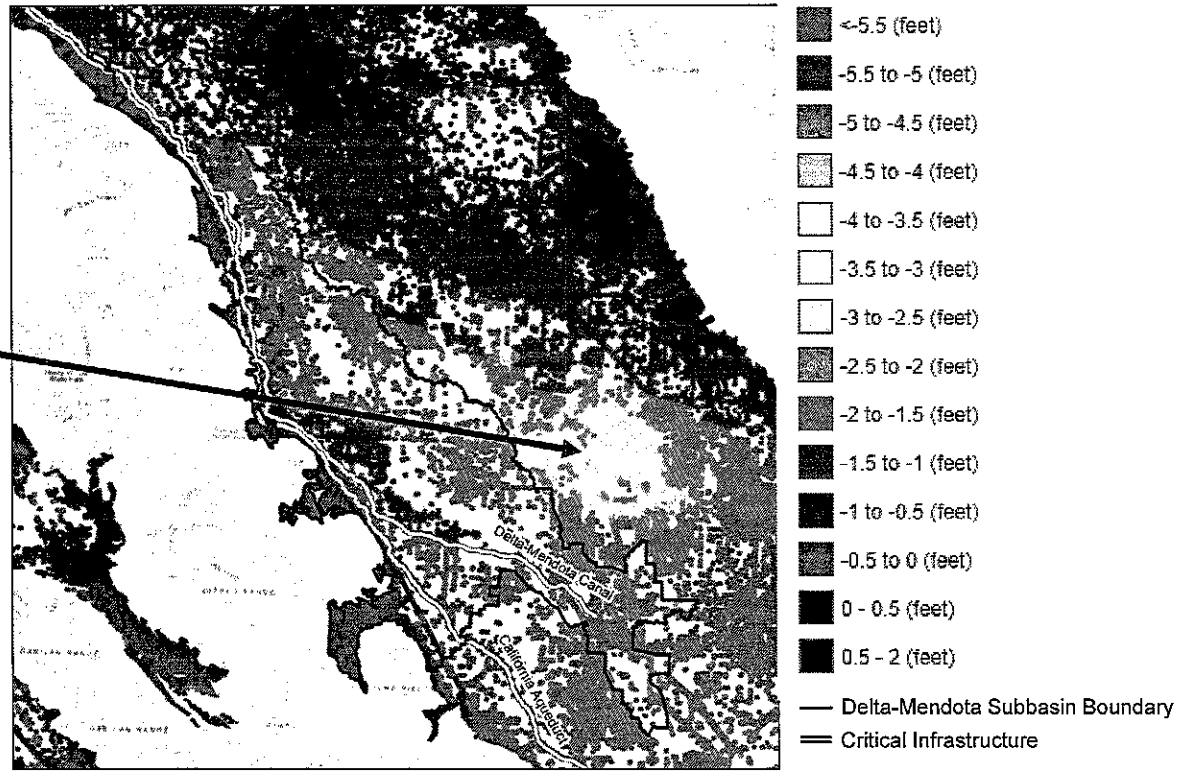
EKI

173

SUBSIDENCE PRIMARILY ORIGINATING OUTSIDE OF SUBBASIN

- Subsidence hotspot is located OUTSIDE of the Delta-Mendota (DM) Subbasin and impacting conditions in the DM Subbasin.
- This issue is outside of DM GSA control

Vertical displacement June 2015 – June 2022



106 TRE Altamira InSAR

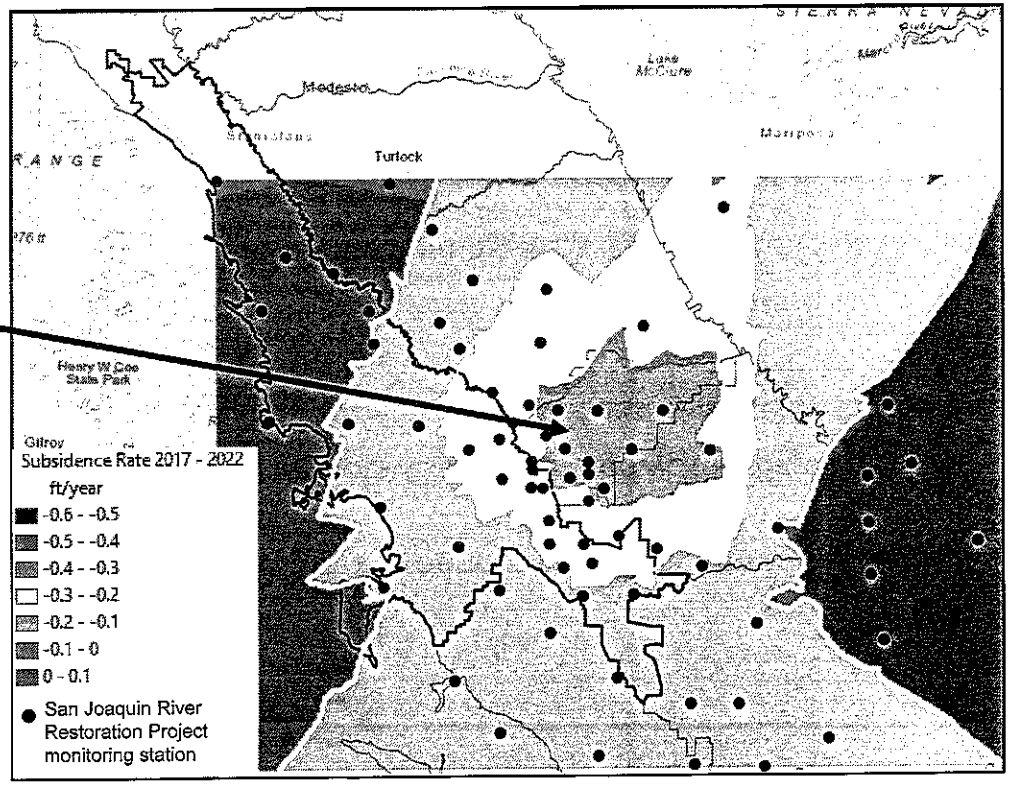
eki

174

USBR SURVEY DATA SUPPORTS SUBSIDENCE HOTSPOT LOCATION

- Subsidence hotspot is located OUTSIDE of the Delta-Mendota (DM) Subbasin and impacting conditions in the DM Subbasin.
- This issue is outside of DM GSA control

Subsidence Rates December 2017 – December 2022



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

eki

PROPOSED LAND SUBSIDENCE SMCs

- **Undesirable Results:**
  - UR occurs if MTs are exceeded at **25%** or more of RMS 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 between 2020 and 2040, maximum 5-year average rate of 0.2 feet per year
- **Interim Milestones:**
  - No more than 1.0 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

UR DEFINITION & JUSTIFICATION

UR Criteria	UR Justification
MT exceedances at 25% of RMS based on a 5-year average rate due to groundwater extraction in the Subbasin	• 5 years of subsidence is unlikely to exceeded the maximum amount of subsidence if previous rates did not exceed the MT rate. • A percentage much lower than 25% suggests a primarily local impact, whereas much larger percentage suggests a widespread impact inconsistent with the Sustainability Goal. • The majority of subsidence occurring is not due to activities within the Subbasin.

MT/MO JUSTIFICATIONS

Impacts to Beneficial Users	Impacts to Adjacent Basins	Impacts to Other Sustainability Indicators
MOs and MTs are designed to prevent subsidence that exceeds protective design standards[1] for critical infrastructure (i.e., Delta-Mendota Canal, California Aqueduct, and Chowchilla Bypass).	Adjacent basins are experiencing similar or greater subsidence than Delta-Mendota and will not be harmed by activity in the Delta-Mendota Subbasin.	• Subsidence may result in a loss of groundwater storage; however, subsidence that does not exceed MTs is unlikely to cause groundwater storage to exceed MTs. • Subsidence MOs and MTs will prevent damage to critical infrastructure, thereby avoiding increased pumping that could occur if surface water deliveries were impeded.

Source:
(1) 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).

NEXT STEPS / ON-GOING EFFORTS

- Continue to meet with State Board and DWR
- Pursue adoption of MOA between Subbasin GSAs to support SGMA implementation
- Continue GSA/stakeholder outreach
- Keep working to address DWR deficiencies
- Prepare updated GSP by end of July 2024

eki

Blank

Delta-Mendota Subbasin Seasonal High Groundwater Level Execeedences and Trends

DMS Site ID	Local Well ID	Aquifer Designation	GSP Group	WY2023 Spring MT Exceedance	Recent Downward Trend	Notes
09-001	2480-72	Upper	Aliso Water District GSP			No seasonal high '23 measurement reported
09-002	12S16E31G001M	Upper (Composite)	Aliso Water District GSP			No seasonal high '23 measurement reported
09-003	13S15E14M001M	Upper	Aliso Water District GSP			No seasonal high '23 measurement reported
09-004	13S16E30A001M	Upper	Aliso Water District GSP			No seasonal high '23 measurement reported
10-001	FWD-R-8	Upper	Farmers Water District GSP			Above MO in Jan. '23
12-001	SPRECK-MW-7	Upper	Fresno County GSP			No seasonal high '23 measurement reported
13-001	HANS-7C1	Upper	Fresno County GSP		X	Above MO in Jan. '23
13-003	TL-HS-3	Upper	Fresno County GSP			B/w MT and MO in Jan. '23
13-004	USGS-31J6	Lower	Fresno County GSP		X	B/w MT and MO in Apr. '23
11-001	WF 300	Lower	Grassland GSP		X	N/A - no numeric SMC set until 5 years of data collection
11-002	WF 530	Lower	Grassland GSP		X	N/A - no numeric SMC set until 5 years of data collection
11-003	WF 630	Lower	Grassland GSP			N/A - no numeric SMC set until 5 years of data collection
11-004	WF 730	Lower	Grassland GSP		X	N/A - no numeric SMC set until 5 years of data collection
11-005	V1 Deep	Lower	Grassland GSP		X	N/A - no numeric SMC set until 5 years of data collection
11-006	V2 Deep	Lower	Grassland GSP		X	No numeric SMC
11-007	V1 Shall	Upper	Grassland GSP			B/w MT and MO
11-008	V1 mid	Upper	Grassland GSP			B/w MT and MO
11-009	V2 Shall	Upper	Grassland GSP			Above MO
11-013	BSS	Upper	Grassland GSP			Above MO
11-014	08S09E34G001M	Upper	Grassland GSP			No measurement since Oct. 2020
11-015	08S10E30E001M	Upper	Grassland GSP			No measurement since Oct. 2020
11-016	11S11E04N001M	Upper	Grassland GSP			No measurement since Oct. 2020
11-017	11S12E30H002M	Upper	Grassland GSP			Above MO
11-019	3PU-2	Upper	Grassland GSP	X	X	
19-003	AB	Upper	Grassland GSP			
01-001	MP030.43R	Lower	Northern & Central Delta-Mendota Region GSP			Above MO since Nov. '22
01-002	MP033.71L	Lower	Northern & Central Delta-Mendota Region GSP			Above MO since Oct. '18
01-003	MP45.78R	Lower	Northern & Central Delta-Mendota Region GSP		X	Above MO since Jan. '23
01-004	MC10#2	Upper	Northern & Central Delta-Mendota Region GSP		X	B/w MT and MO since Dec. '22 following exceedance b/c Jul. and Nov. '22
01-005	MP058.28L	Upper	Northern & Central Delta-Mendota Region GSP	X	X	MT exceedances in Feb. and Mar. '23; B/w MT and MO since Apr. '23, frequent exceedances of MTs since 2016 (lots of fluctuation around MT)
01-006	91	Lower	Northern & Central Delta-Mendota Region GSP			Measured bi-annually; Downward trend until Oct. '22, trend reversed with Mar. '23 measurement
01-007	MP021.12L	Lower	Northern & Central Delta-Mendota Region GSP			B/w MT and MO since Jan. '23 after exceedances b/w May and Nov. '22

VIII. D.

Delta-Mendota Subbasin Seasonal High Groundwater Level Exceedences and Trends

DMS Site ID	Local Well ID	Aquifer Designation	GSP Group	WY2023 Spring MT Exceedance	Recent Downward Trend	Notes
01-008	MP051.66L	Lower	Northern & Central Delta-Mendota Region GSP		X	Above MO in Mar. '23, trending downward again
02-002	WELL 02 - NORTH 5TH STREET	Lower	Northern & Central Delta-Mendota Region GSP			B/w MT and MO since Jun. '20
02-009	Keystone well	Upper	Northern & Central Delta-Mendota Region GSP			Above MO in Feb. '23
03-001	PiDMW2	Upper	Northern & Central Delta-Mendota Region GSP			B/w MT and MO since Apr. '19
03-002	MW-3	Upper	Northern & Central Delta-Mendota Region GSP			B/w MT and MO since Oct. '14
03-003	WSJ003	Upper	Northern & Central Delta-Mendota Region GSP			N/A - no numeric SMC set until 5 years of data collection
04-001	121	Lower	Northern & Central Delta-Mendota Region GSP			Above MO since Nov. '22
06-001	P259-1	Lower	Northern & Central Delta-Mendota Region GSP		X	B/w MO and MT since Aug. '22; Well very sensitive to pumping (based on seasonal downward trend and subsequent rebound after irrigation season)
06-002	P259#3	Upper	Northern & Central Delta-Mendota Region GSP		X	Above MT since Sep. '22
06-003	WSID3	Lower	Northern & Central Delta-Mendota Region GSP			Above MO since Nov. '22, following MT exceedance in Sep. '22
06-004	MP031.31L1-L2Well1	Upper	Northern & Central Delta-Mendota Region GSP			Above MO since Dec. '22
07-002	MC15-1	Lower	Northern & Central Delta-Mendota Region GSP			Above MO since Mar. '23
07-003	MC15-2	Upper	Northern & Central Delta-Mendota Region GSP			Above MO since Mar. '23
07-005	MP091.68R	Lower	Northern & Central Delta-Mendota Region GSP		X	Above MO in Feb. through Apr. '23; B/w MO and MT in May '23
07-007	MC18-1	Lower	Northern & Central Delta-Mendota Region GSP			Above MO since Dec. '22
07-008	PWD 48	Lower	Northern & Central Delta-Mendota Region GSP			N/A - well hasn't been monitored since 2021; in process of replacing in network
07-009	KRCDTID03	Upper	Northern & Central Delta-Mendota Region GSP		X	Measured bi-annually; B/w MT and MO in Apr. '23 following MT exceedance in Oct. '22
07-010	KRCDTID02	Upper	Northern & Central Delta-Mendota Region GSP			Above MO in Apr. '23
07-012	GDA003	Upper	Northern & Central Delta-Mendota Region GSP			N/A - no numeric SMC set until 5 years of data collection
07-014	TW-4	Lower	Northern & Central Delta-Mendota Region GSP		X	Measured bi-annually; B/w MT and MO in Apr. '23 following MT exceedance in Oct. '22
07-015	TW-5	Lower	Northern & Central Delta-Mendota Region GSP		X	Above MO in Apr. '23
07-016	Well 01	Lower	Northern & Central Delta-Mendota Region GSP		X	Above MO since mid Apr. '23
07-017	Well 1	Upper	Northern & Central Delta-Mendota Region GSP			N/A - no numeric SMC set until 5 years of data collection
07-018	WSJ001	Upper	Northern & Central Delta-Mendota Region GSP			N/A - no numeric SMC set until 5 years of data collection
07-028	MP093.27L (Well 500)	Lower	Northern & Central Delta-Mendota Region GSP		X	B/w MT and MO in Apr. '23; MT exceedances b/w May and Nov. '22
07-031	CDMGSA-01C	Lower	Northern & Central Delta-Mendota Region GSP			N/A - no numeric SMC set until 5 years of data collection
07-032	CDMGSA-01D	Lower	Northern & Central Delta-Mendota Region GSP			N/A - no numeric SMC set until 5 years of data collection
07-035	MP098.74L	Upper	Northern & Central Delta-Mendota Region GSP			B/w MT and MO since Dec. '16
08-002	Well M-1/MP102.04L	Upper	Northern & Central Delta-Mendota Region GSP			Above MO since Nov. '22
14-001	CCID Well #2	Upper	San Joaquin River Exchange Contractors GSP		X	Above MO
14-002	1005	Upper	San Joaquin River Exchange Contractors GSP		X	Above MO
14-003	1006	Upper	San Joaquin River Exchange Contractors GSP			Above MO

181

Delta-Mendota Subbasin Seasonal High Groundwater Level Execeedences and Trends

DMS Site ID	Local Well ID	Aquifer Designation	GSP Group	WY2023 Spring MT Exceedance	Recent Downward Trend	Notes
14-004	1008	Upper	San Joaquin River Exchange Contractors GSP		X	Above MO
14-005	1011	Upper	San Joaquin River Exchange Contractors GSP			Above MO
14-006	1014	Upper	San Joaquin River Exchange Contractors GSP		X	Above MO
14-007	1043	Upper	San Joaquin River Exchange Contractors GSP			Above MO
14-008	2410	Upper	San Joaquin River Exchange Contractors GSP			Above MO
14-019	1050	Lower	San Joaquin River Exchange Contractors GSP			B/w MT and MO
14-020	1027	Lower	San Joaquin River Exchange Contractors GSP			B/w MT and MO
14-021	1056	Lower	San Joaquin River Exchange Contractors GSP			At MO
23-001	3199	Upper	San Joaquin River Exchange Contractors GSP			Measurement discontinued as of Apr. '23

Blank

VIII. D.

BE WELL prepared

What do I do if my well goes dry?

For domestic well owners or residents on groundwater wells, follow these four initial steps if you think your well has gone dry

1 Contact a Certified Well Professional

A certified well professional can diagnose the cause of a dry well, and in some cases, it may be easy to fix. Find a Certified Well Professional in your area:
wellowner.org/find-a-contractor
If a well professional determines that your well is dry due to lowering of groundwater levels, **go to Step 2**.

2 Contact Your Local Emergency Response Entity or Service Provider

In the counties of San Joaquin, Stanislaus, Mariposa, Merced, Madera, Fresno, Kings, Tulare, and Kern: first call **Self-Help Enterprises** (a service provider) at 559-802-1685 or email: **droughtsupport@selfhelpenterprises.org**.
In all other counties, find your County Emergency Drought Contact here: **www.waterboards.ca.gov/drought/emergency_contacts.html**, or contact your county Sheriff's Office of Emergency Services.

3 Make Sure Your Dry Well is Reported

You should report a dry well on the California Department of Water Resource's Dry Well Reporting System: **mydrywell.water.ca.gov/report** (voluntary). If you are receiving support from Self-Help Enterprises, they will help make sure your dry well is reported to the state.

4 Check on Your Neighbors and Share This Information!

It is important to look after our neighbors and communities during drier and drought years.

183

For additional information and resources, visit: water.ca.gov/bewellprepared

Blank

VIII.E.

Anthea Hansen

From: Kelsey Bradley <kbradley@woodardcurran.com>
Sent: Tuesday, July 11, 2023 3:11 PM
To: Anthea Hansen; Lauren Viers; John Brodie
Cc: Leslie Dumas
Subject: RE: SGMA Implementation Round 1 Invoice Reconciliation & Reimbursements

Hi Anthea,

Lauren and I are meeting this afternoon to make sure we are on the same page and then I will work on putting together the revisions to invoices 2 and 3. I'm hoping we can have this wrapped up in the next week or so.

Thank you,

Kelsey Bradley, PE
Project Engineer | She/Her/Hers

Woodard & Curran

925.627.4157 kbradley@woodardcurran.com

From: Anthea Hansen <ahansen@delpuertowd.org>
Sent: Tuesday, July 11, 2023 9:53 AM
To: Lauren Viers <lauren.viers@sldmwa.org>; John Brodie <john.brodie@sldmwa.org>; Kelsey Bradley <kbradley@woodardcurran.com>
Cc: Leslie Dumas <ldumas@woodardcurran.com>
Subject: RE: SGMA Implementation Round 1 Invoice Reconciliation & Reimbursements

Leslie/Kelsey,

Please let me know your status on revisions to invoices 2 & 3.

Thanks,
Anthea

Anthea G. Hansen
General Manager
Del Puerto Water District
PH 209-892-4470/FAX 209-892-4469

From: Lauren Viers <lauren.viers@sldmwa.org>
Sent: Monday, July 10, 2023 4:48 PM

184

To: Anthea Hansen <ahansen@delpuertowd.org>; John Brodie <john.brodie@sldmwa.org>; Kelsey Bradley <kbradley@woodardcurran.com>
Cc: Leslie Dumas <ldumas@woodardcurran.com>
Subject: SGMA Implementation Round 1 Invoice Reconciliation & Reimbursements

Good afternoon,

I have attached a reconciliation of Invoice 1 and the breakdown for the reimbursements for your review.

A few items to note:

- Invoice 1 was revised to include the invoices that were originally excluded by Woodard & Curran on the submittal
- Invoice 2, the Component 9 Category E expenses were reclassed to Category B.
- The credit amount from Invoice 1 does not clear yet for component 9. We will need Fresno or Farmers to submit expenses under this category in order to clear the credit as they are the only members with a budget in this category.
- The credit in category 10 will clear in invoice 3.
- I have highlighted on page 2 of the PDF the amounts that need to be submitted for invoice 2 and 3 and also the amounts that will be reimbursed for invoices 2 and 3. The amounts will be different since we over submitted in invoice. We will not be submitting that to DWR since Del Puerto will already have those funds they will reimburse the full amount.

Please let me know if you have any questions in your review, would like any additional support for what I provided, or if you would like to set a meeting to discuss further.

Lauren Viers, Accountant III
San Luis & Delta-Mendota Water Authority
PO Box 2157
Los Banos, CA 93635
P: 209.826.9694
F: 209.826.9698

185

Anthea Hansen

From: Kelsey Bradley <kbradley@woodardcurran.com>
Sent: Monday, July 3, 2023 11:24 AM
Subject: SGM Round 1 Implementation Grant: Submittal #4
Attachments: 4600014644_InvoiceBackup_202XQX.xlsx; Del Puerto Progress Report Template_QX202X.docx; Del Puerto Progress Report_2023Q1.pdf; 4600014644_Invoice3_2023Q1.pdf; Appendix A.docx

Hi all,

It's time to start compiling invoices and any other required materials (such as progress reports describing the work in the invoice and any final deliverables) for the 4th quarterly progress report and reimbursement request under the SGM Round 1 grant. This report will cover the second quarter of 2023, April 1, 2023 – June 30, 2023.

Submittal #4
Materials due to Woodard & Curran: **Friday, July 28th**
Notes/Directions:

- Please markup invoices with the following:
  - A callout clearly indicating the amount being requested for reimbursement under each Component Category.
  - As needed, updated invoice amounts to remove any charges related to travel or meals (as these are not reimbursable).
- Fill out the progress report template, attached. Refer to the highlighted portions, and please also update/provide materials for the appendices, as applicable. Note, Appendix A is the Deliverable Due Date Schedule, which is also attached and should be updated. The Submittal 3 progress report and invoice package are also attached for your reference.
- Complete the Invoice Backup spreadsheet, attached, for your respective Component(s).

We would like to have all items invoiced for each reporting period submitted quarterly to avoid going back and invoicing for prior quarters in the future. This means we need to invoice all requested expenses for the period from April 1, 2023 through June 30, 2023 in this package.

- The deadline for Woodard & Curran to submit the 2023, Q2 submittal package is **Tuesday, August 29th**.

Please respond to this email by **COB Friday, July 14th and let me know if you plan to submit materials by July 28th** for the 2023, Q2 progress report/reimbursement request or if you don't have anything to submit for this round.

Thank you and have a great July 4th holiday!

Kelsey Bradley, PE
Project Engineer | she/her/hers

Woodard & Curran

186

Blank

As of 7/17/23

Well Registrations Not Yet Received

VIII. F.

Name
Amaravati Farms, LLC
Borges, Frank J.
Borges & Machado
DSS Company Corp.
Granite Construction
IDC Farms
Ingram Creek Ranch
Isquierdo, Julian
J&J California Farms
KDR Farms
L2 Farms
Lara Brothers Farms
Lara, Michael
LAT Farming Trust
Naimi's Ranch, Inc.
NISRA Farms
Pimentel Farms
R.C. Capital Investments
R & R Farms
RDC Farms GP
Recology Blossom Valley Organics
Rubino, JP LLC
Shiraz Ranch, LLC
Singh, Baljinder & Ritu
Singh, Rajinder et ux
T & M Farms
Tatla, Jasbir
Tatla & Singh
Traina Foods

Blank