



AGENDA

GROUNDWATER SUSTAINABILITY PLANNING ADVISORY COMMITTEE (GSPAC) at the

CARPINTERIA VALLEY WATER DISTRICT
1301 SANTA YNEZ AVE
CARPINTERIA, CA, 93013
CONFERENCE ROOM

Tuesday, April 25, 2023, at 5:30 p.m.

1. CALL TO ORDER
2. ROLL CALL (Bob McDonald)
3. BUSINESS
 - a. Meeting Minutes for GSPAC Meeting, March 28, 2023 (Bob McDonald – 5 Mins)
 - b. Parking Lot Item Discussion. (David O' Rourke & Bob McDonald - 20 Mins)
 - RWQCB Irrigated Lands Program
 - Joint Powers Agreement
 - Flood Control facilities
 - Good enough for GSP
 - Can Wood Placement in Degraded Channel Networks Result in Large-Scale Water Retention?
 - c. Wrap up of SMC with approach with Rationale. (David O Rourke 40-Mins)
 - d. Introduction to Projects and Management actions (David O Rourke 10-Mins)
 - e. GSA Fees for Fiscal Year 24 and beyond (Bob McDonald - 20 Mins)
 - f. Items for future Meetings (Susan Harden 5-Mins)
4. Public Comment (Public comment may be limited to 3 minutes per speaker if necessary 15 Mins).
5. Attendance and Topics at next meeting on May 23rd (5-Mins)
6. ADJOURNMENT.

The above matters are the only items scheduled to be considered at this meeting.

Note: The above Agenda was posted at Carpinteria Valley Water District Administrative Office in view of the public no later than 5:00 p.m., April 21, 2023. The Americans with Disabilities Act provides that no qualified individual with a disability shall be excluded from participation in, or denied benefits of, the District's programs, services, or activities because of any disability. If you need special assistance to participate in this meeting, please contact the District Office at (805) 684-2816. Notification at least twenty-four (24) hours prior to the meeting will enable the District to make appropriate arrangements. Materials related to an item on this Agenda submitted to the Board of Directors after distribution of the agenda packet are available for public inspection in the Carpinteria Valley Water district offices located at 1301 Santa Ynez Avenue, Carpinteria during normal business hours, from 8 am to 5 pm.

Hi Bob et al,

I wanted to share some thoughts on the advisory board that I have been mulling over for the last few weeks. I also realize that with this epic winter we're getting, and more rain in the forecast, my attitude is very different than it would be if we had had yet another dry winter.

First of all, i want to be clear that I enjoy these meetings, learning more about our local water and all the moving pieces, and I continue to look forward to serving the GSA advisory committee in whatever way I can.

That said, I was surprised by the technical tone of our previous meeting — which was mostly a recycling of information that had already been shared during public meetings. Of course the numbers are important, and of course we should be debating what our minimum thresholds should be (in real-world, observable, numerical terms — which is what we will be doing)... but that's the east stuff. Nobody wants salty water. Nobody wants to race our neighbors to the bottom of a briney aquifer.

The more difficult questions have to do with the ineffable stuff. How much effort should be putting into this in the first place? What about the budget? What is the minimum requirement from the state? Are we spinning our wheels just to spin our wheels? Can we put this thing to rest quickly and inexpensively? What conditions would trigger resurrection? It seems to me that our aquifer is actually quite robust and immune from many of the horror stories we have heard about (ie subsidence). And now that we are awash with rain, we can certainly breathe more easily.

As a farmer, I operate in the world of "good enough". I have frankly been impressed with the technical knowledge of the team you have assembled, and all the maps and charts a great resources. Pueblo and GSI have done a very professional job here. But I have a feeling this work doesn't come cheap. Furthermore, it is presented as a finished product, not a working document. And then when it is presented to us again at the advisory committee meetings, it comes as a fait accompli.

Put it this way: Are we buying a Mercedes or a Honda civic? If we can navigate this state mandate with a Honda civic, why should we buy the Mercedes? The civic is "good enough". We don't need bling.

Speaking of cars, Perhaps this is a "parking lot" topic. But, I think we should back up a little, examine the mandate itself, and craft some general rules about the formation of the GSA itself, and it's budget. It would be my hope that we quickly identify our MT's and MO's, but with the overarching goal that we put this thing to bed as quickly and quietly as possible, with as small of a budget as possible.

Thanks for your time. Please pass this letter to the other members of the advisory group. Or read it during the meeting tonight. I'm sorry to miss it.

Robert Abbott

Bob,

It was great speaking with you last week about the Carpinteria Groundwater Sustainability Plan (GSP). First, thanks for adding the paper I sent to the agenda for the next meeting. While this paper on water storage is an important part of the literature, it was just meant as an example of some related work I'm familiar with in the Pacific Northwest. The topic I'm really looking to discuss on the agenda is sustainability, and how we're thinking about sustainability in the Carpinteria GSP.

In the context of infrastructure development I've seen sustainability defined as: "...development that meets the needs of the present without compromising the ability of future generations to meet their own needs." Is that consistent with how we're thinking about sustainability for the Carpinteria GSP?

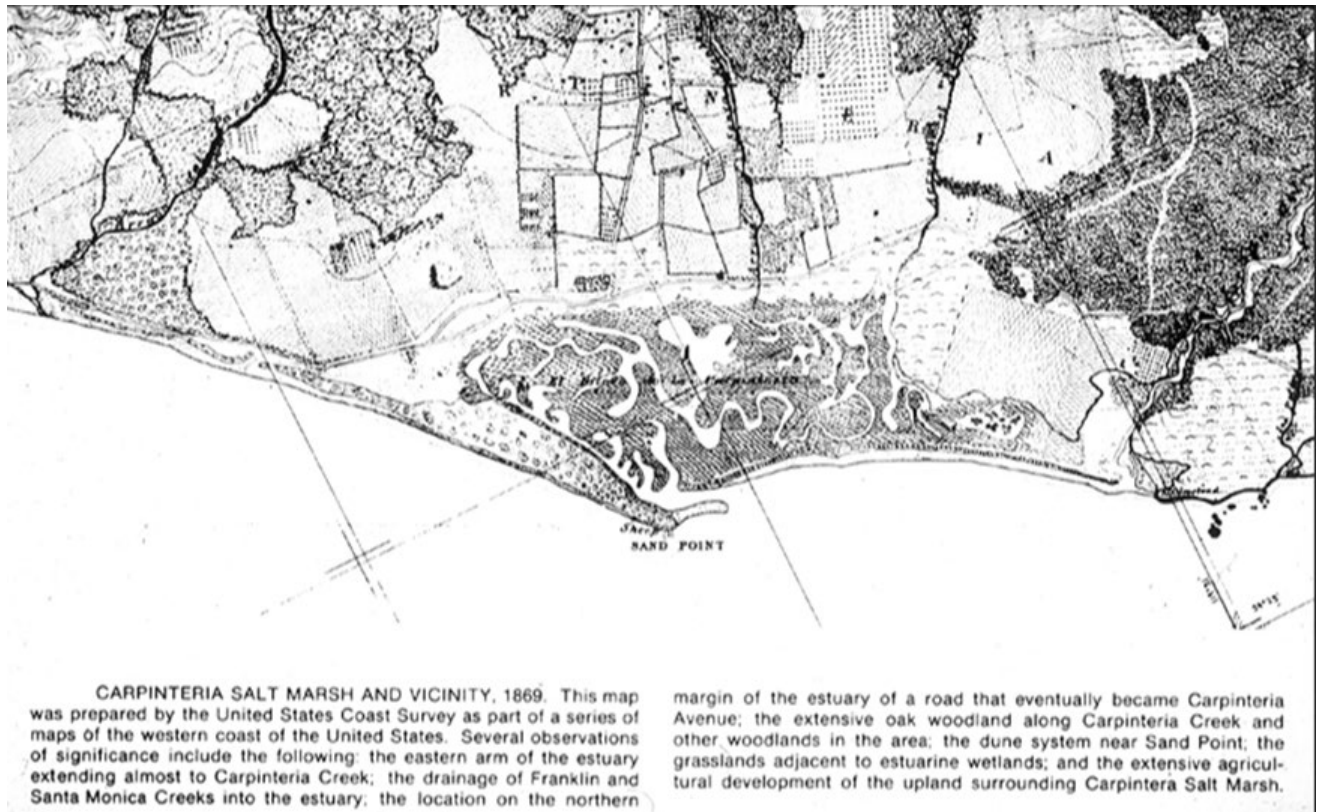
You may recall from my application I have an Envision Sustainability Professional (ENV SP) credential with the [Institute for Sustainable Infrastructure](#) (ISI). Envision is a system for identifying sustainable approaches during the planning, design, and construction of infrastructure projects, and uses five categories of sustainability indicators: quality of life, leadership, resource allocation, natural world, and climate & resilience. While I'm not suggesting to use Envision for developing the Carpinteria GSP, I did want to describe it as a way of highlighting an approach to sustainability that involves tradeoffs at the intersection of economic, social, and environmental concerns. In my experience, decisions on these tough questions are usually best made with as much information as possible.

Toward that end, when I've worked on similar projects to the Carpinteria GSP (that involve beneficial uses of natural resources), it's worked well to move through a step-by-step process that includes:

- 1) Describing the natural processes that support the natural resource
- 2) Describing the extent to which the natural processes have been disrupted over time
- 3) Describing the current condition of the resource
- 4) Determining the extent to which the current condition is acceptable
- 5) Determining what actions can be taken to address any unacceptable conditions identified in #4

To start for Step #1, I looked for historical maps that show conditions early in Carpinteria's development. This map of early Carpinteria in 1869 is really interesting:

[chart-1869.jpg \(750×465\) \(ucnrs.org\)](#)



I haven't seen the descriptions that go along with this map but I'm wondering what it would have been like back then? Where were the groundwater recharge and discharge areas? Were there freshwater springs and wetlands in the lower basin? Did the streams flow year-round from the mountains to salt marsh and ocean? What was the groundwater storage potential in the basin?

For more information I looked for other historic wetland maps online but didn't readily find any. I did find information on steelhead trout in the local streams (pictures below), which would indicate ample historic surface water resources: [https://www.conceptioncoast.org/all_steelhead_report_final 2002-06-21.pdf](https://www.conceptioncoast.org/all_steelhead_report_final%2002-06-21.pdf)

1) Carpinteria Creek 1942- Courtesy George Bliss



2) Carpinteria Creek 2000- Courtesy Santa Barbara News Press



3) Carpinteria Slough 1988- Courtesy Peter Robinson



For Steps #2 and #3, I think much of this work has already been done, though I'd check to see that impacts have been fully characterized for groundwater and related resources.

In terms of Step #4, I think this will be an important point of discussion for the advisory committee. For example, I see the Carpinteria basin was selected by the State as a high priority basin due to declining groundwater levels: [SGMA Basin Prioritization Dashboard \(ca.gov\)](https://www.sgma.ca.gov/basin-prioritization). In addition, as we discussed in previous advisory committee meetings, inland groundwater levels in some locations are currently below sea level. And how will climate change be considered?

Finally, for Step #5, in my experience it's usually best to save that discussion for after we have a common understanding of the problems we're trying to solve (based on the analysis in Steps #1-#4).

When we're ready for Step #5, I suggest we try to consider as many feasible solutions as we can, and then assess the cost/benefit and tradeoffs for each solution.

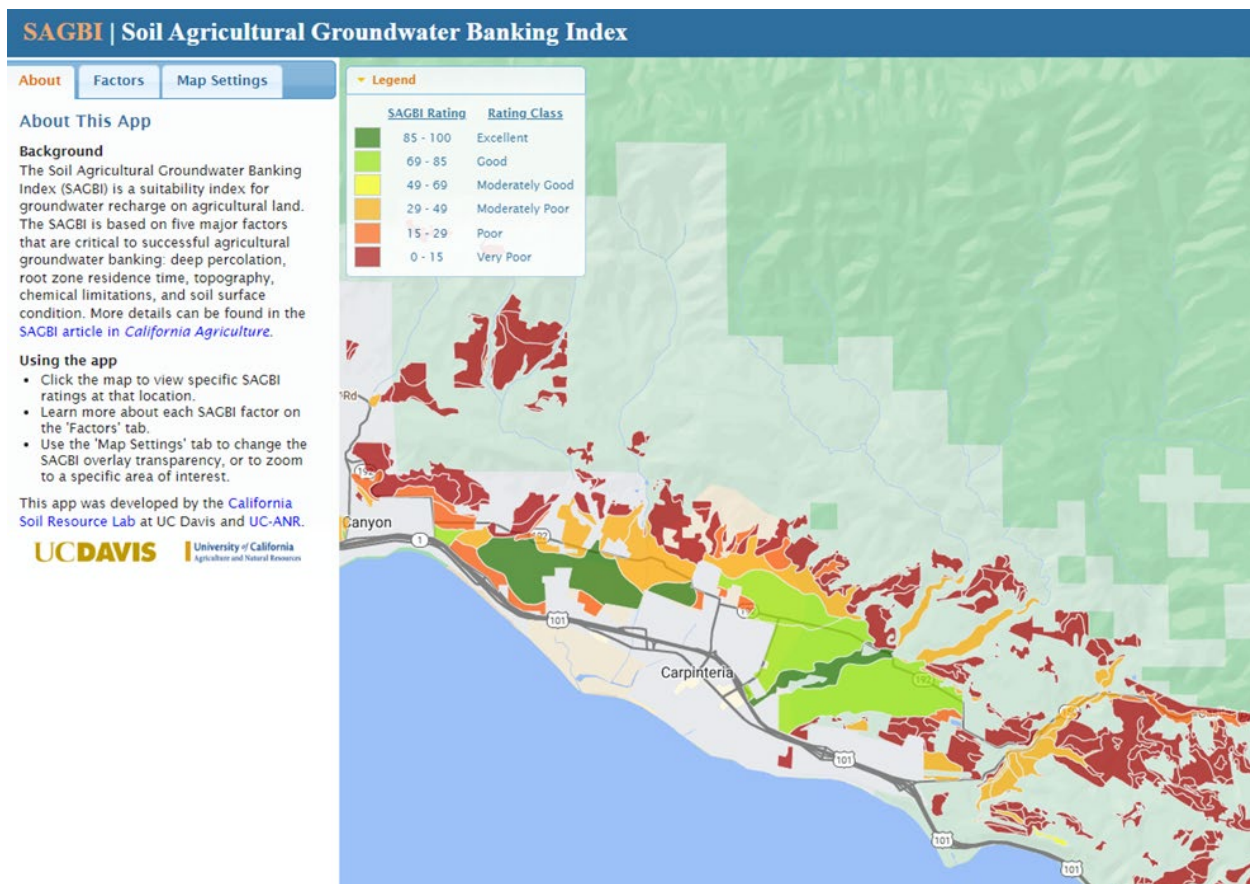
Thanks again for our discussion on Friday. I look forward to continuing to work with you and the advisory committee on this important project.

Respectfully,

Alan Soicher, PG, PHG, ENV SP

P.S. Since the advisory committee member addresses are not on this email, can you please forward to committee members prior to the meeting?

P.P.S. I took a look at the UC Davis website on groundwater recharge potential on agricultural lands: [SAGBI | California Soil Resource Lab \(ucdavis.edu\)](http://SAGBI.CaliforniaSoilResourceLab.ucdavis.edu) and copied the figure below. Their analysis indicates Excellent and Good ratings in parts of the lower basin, including within the "Confined Area" on the figures in draft GSP Chapter 3.



GSPAC Meeting #3

Sustainable Groundwater Management Act

Sustainable Management Criteria

April 25, 2023



Meeting Discussion Outline

1. Brief review of GSP Development, Sustainability Management Criteria
2. Parking Lot Discussion
 1. Good Enough for GSP
 2. Discussion of creek de-lining, wood placement
3. Review of Proposed SMCs
 1. Discussions with Ag representatives
4. Introduction to Projects and Management Actions
5. GSA fees for Fiscal Year 24 and beyond



Quick Review of SGMA and Sustainable Management Criteria (SMCs)

SIX SUSTAINABILITY INDICATORS

Pathway to Sustainability



Seawater Intrusion



**Water Quality
Degradation**



**Chronic Lowering of
Groundwater Levels**



**Interconnected Surface
Water Depletions**



**Reduction of
Groundwater Storage**



Land Subsidence

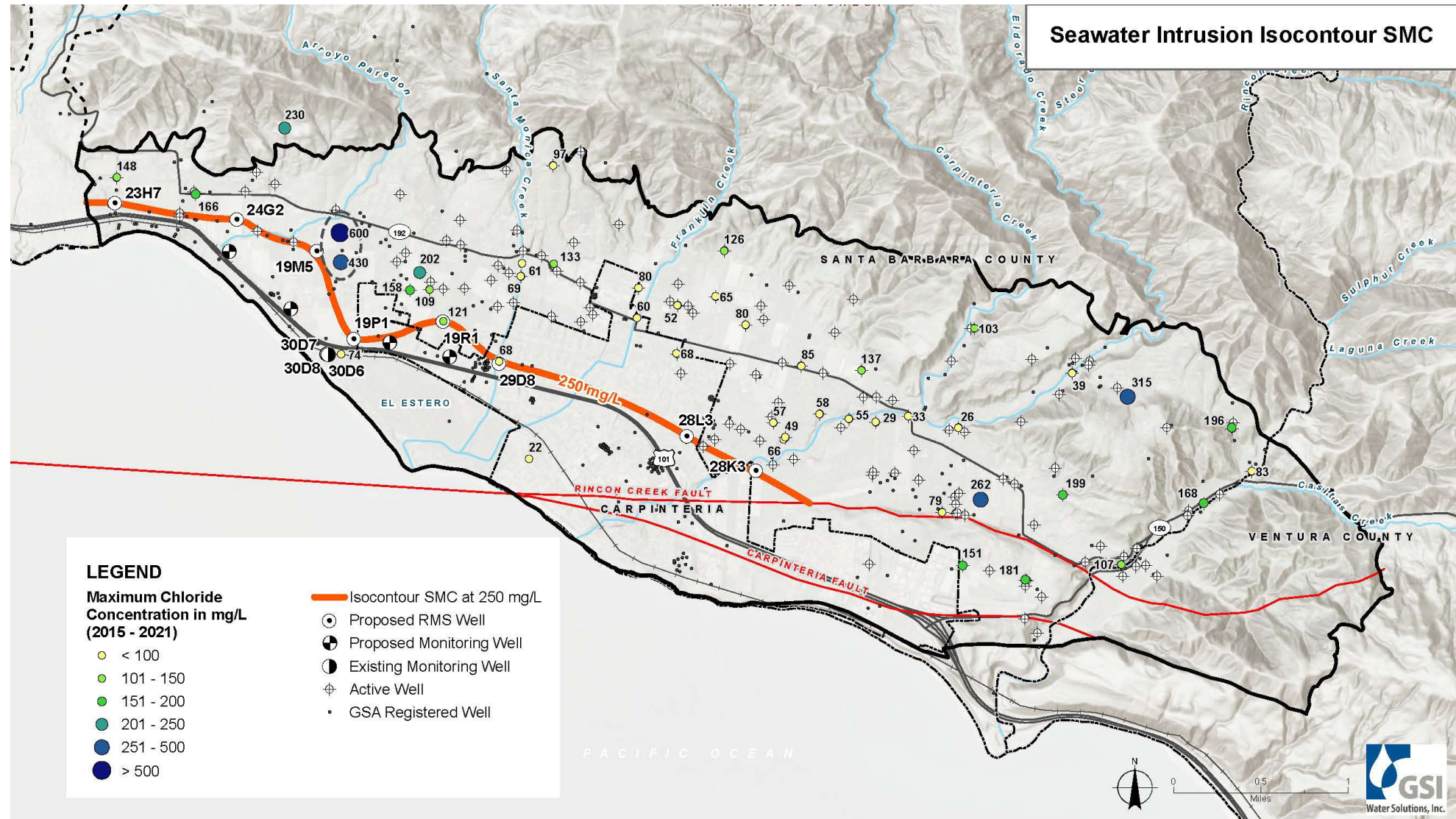
SGMA allows all indicators except the water quality sustainability indicator to be assessed using **WATER LEVELS** as a proxy metric for direct measurement.



SEAWATER INTRUSION

Seawater Intrusion SMCs – Isocontour

- Isocontour defined along active wells near coast.
- MT = 250 mg/L (Secondary MCL).
- MO = 142 mg/L (Basin plan “no problem” level for agriculture)
- Specifically excludes area near Arroyo Paredon Creek with documented high chlorides
- Additional MWs proposed seaward of isoconotur





CHRONIC LOWERING OF
GROUNDWATER LEVELS &

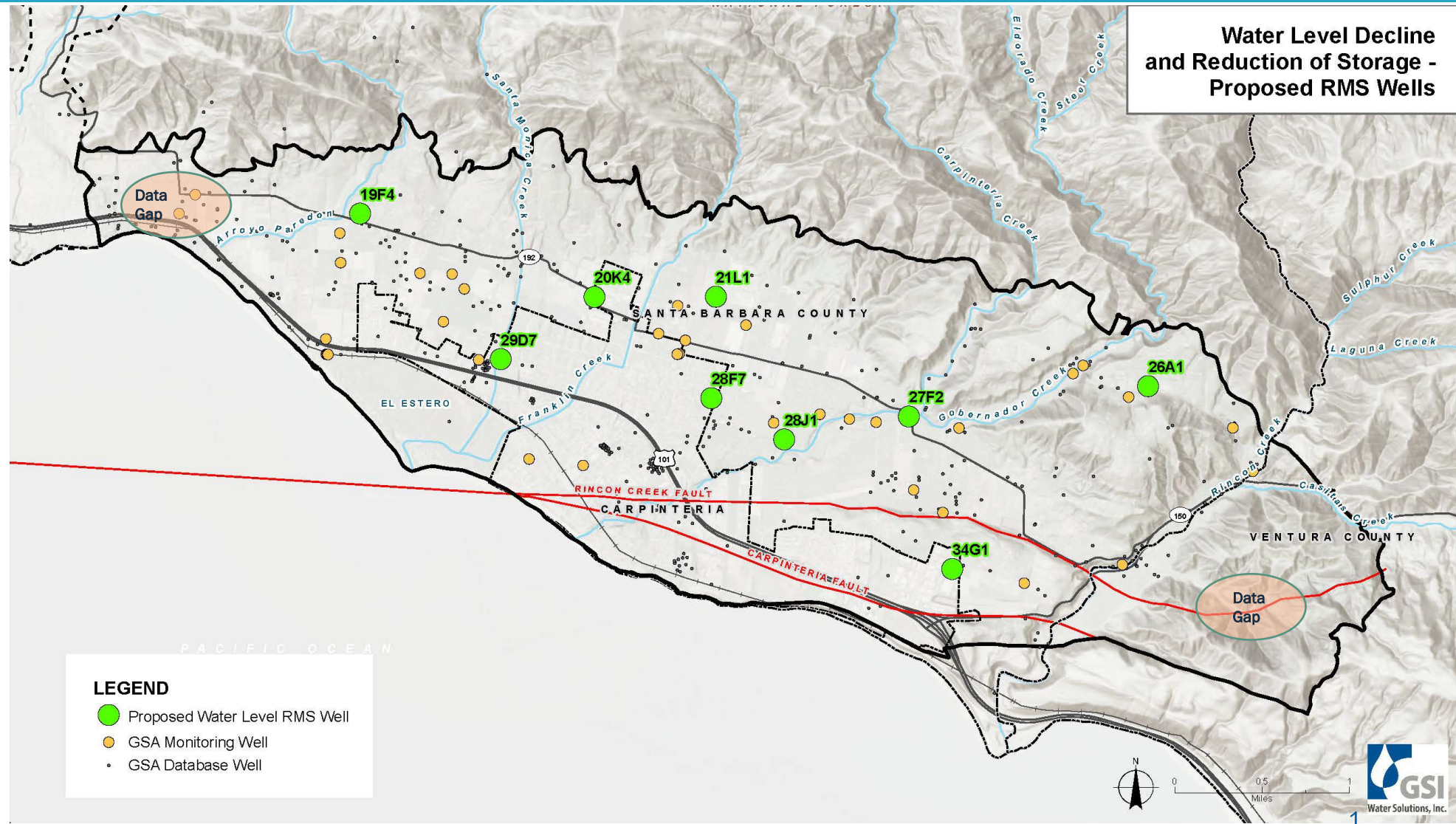


REDUCTION OF
GROUNDWATER STORAGE

Water Level Decline and Reduction of GW in Storage Proposed RMS Wells

Considerations :

- Long Period of Record
- Construction details
- Spatial distribution
- Accessibility
- Representative
- Data Gaps at Basin edges



GW Level
Declines
&
Reduction
in Storage



Considerations for MOs. Review water levels at RMS wells.

- Recent “average” operational water levels.
- SGMA Baseline: Consider 2015 conditions

GW Level Declines & Reduction in Storage



Conditions causing undesirable results must be significant and unreasonable

Considerations for MTs.

Review recent low water levels at RMS wells:

- Were undesirable effects observed? Not reported.
- Consider reduction of Saturated Thickness beyond some threshold as potentially undesirable.
- In inland areas it may be reasonable to set MTs lower than recently observed low water levels.
- How to evaluate; other basins use multiple years of exceedance before triggering action.
- May be written as representing normal conditions (excluding significant drought, undesirable results)

GW Level Declines & Reduction in Storage



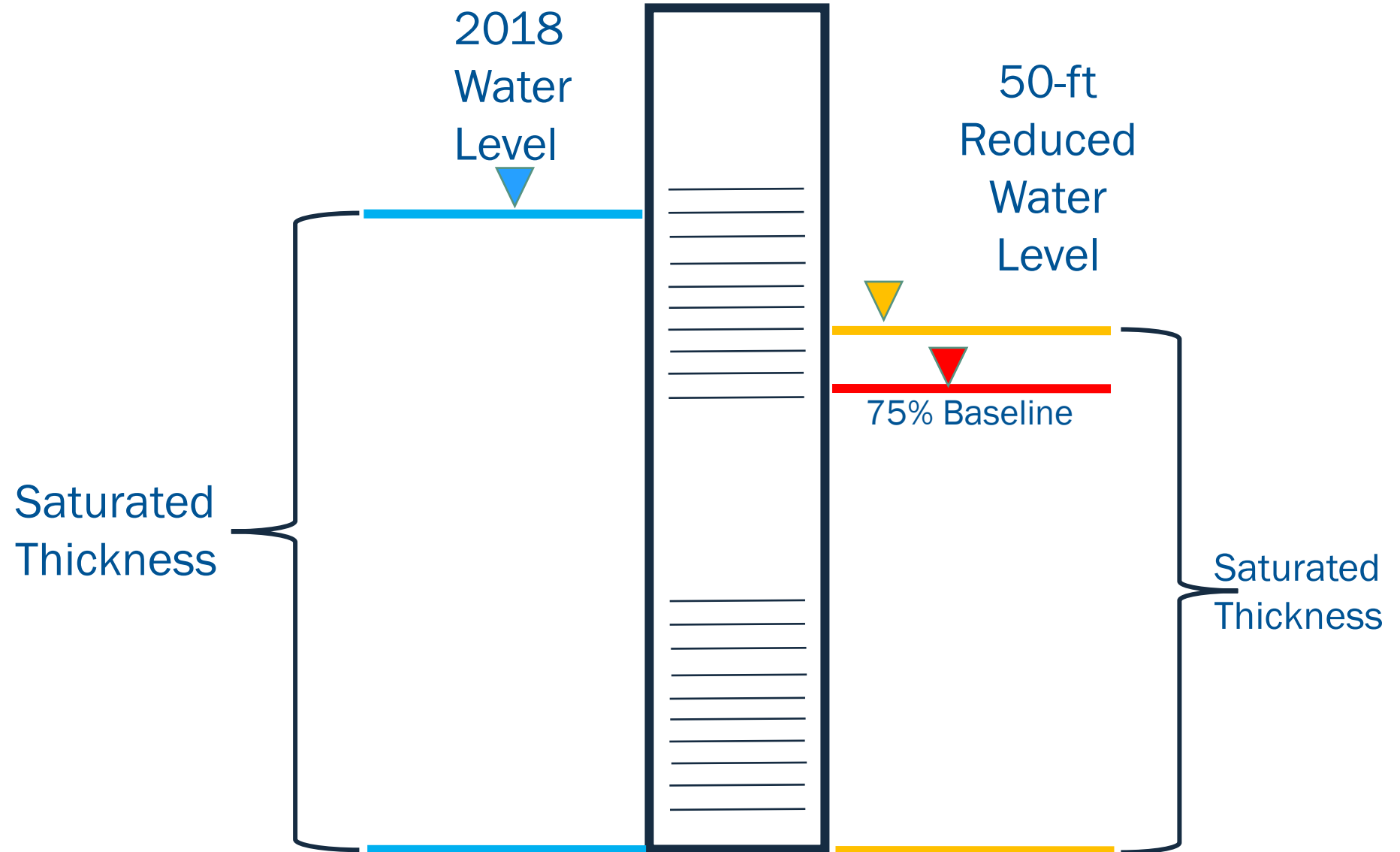
Well Impact Analysis of MTs Below Recent Low WLS

Impact Analysis of Reduced Groundwater Elevation Surface.

- Take GW Elevation Surface from Fall 2018 as representative of Recent Low Water Levels
- Water Levels lower than 2018 water levels is acceptable.
 - Recent low WLS are not the historical lows (1950s drought)
 - Water levels have recovered from past droughts (1950s, 1990s, 2010s)
- Reduce this surface in increments of 5 feet from 5 to 50 feet below Fall 2018 Water Levels
- Compare these GW Elevations at well locations for wells with screen interval data.
- Compare Saturated Thickness and Intersection of WL with screen (<75% Baseline Saturated Thickness).
- Analysis not based on modeling, but will be corroborated with future model runs.

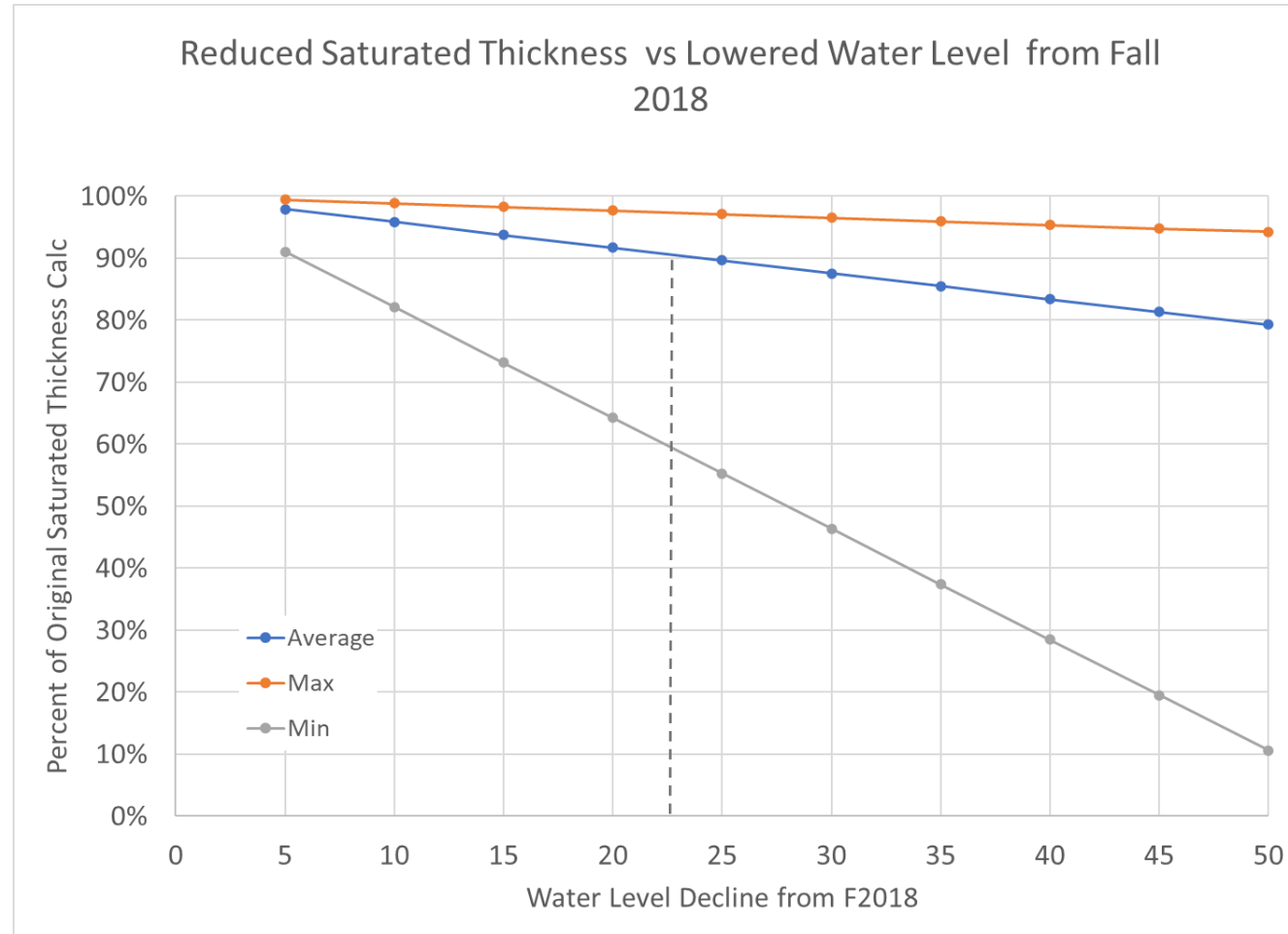
Well Impact Analysis of MTs Below Recent Low WLS

GW Level
Declines
&
Reduction
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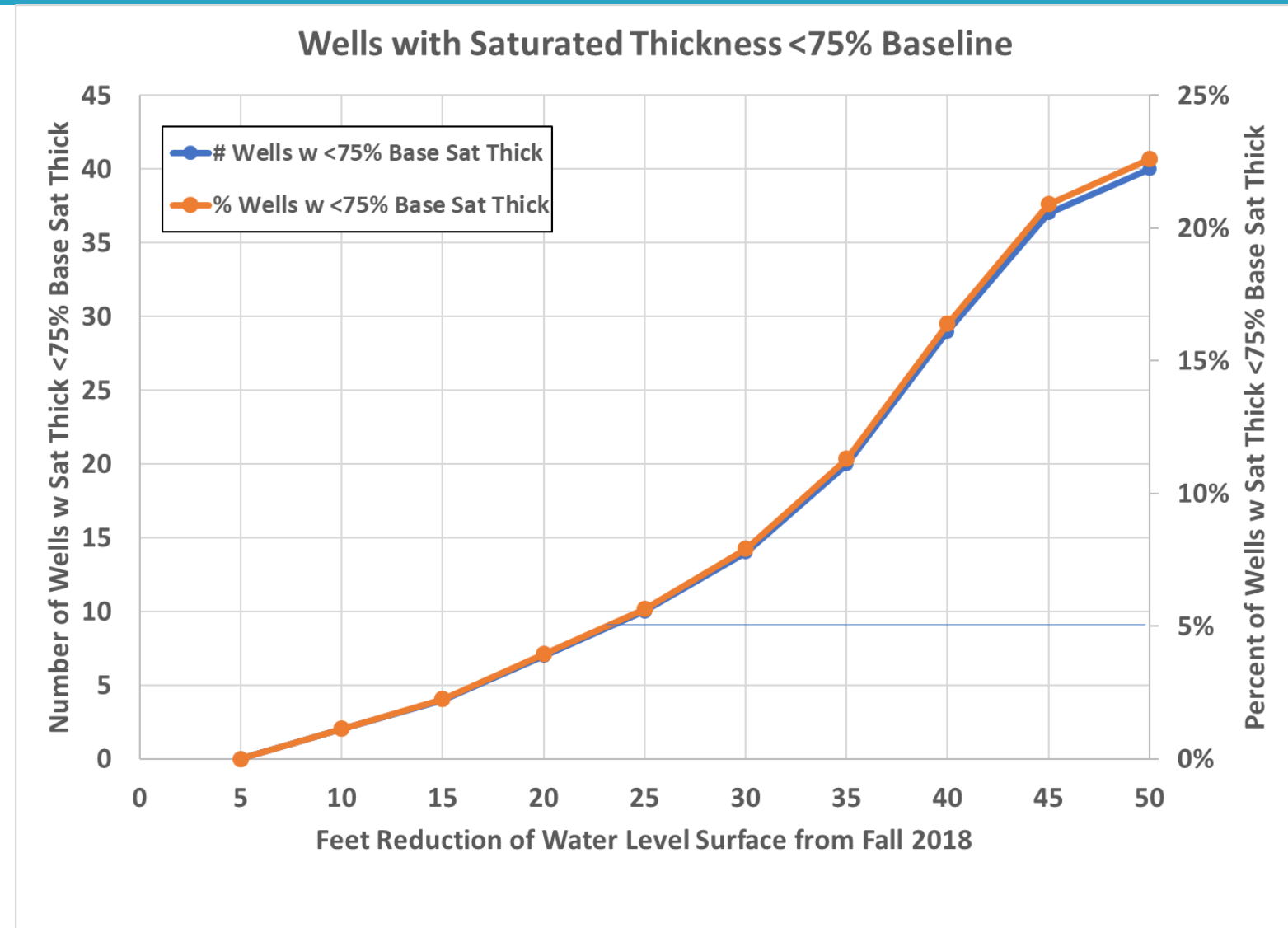
Well Impact Analysis of MTs Below Recent Low WLs

- 90% Of Average Saturated Thickness is maintained with a water level decline of 20-25 feet below 2018 lows.
- Since no undesirable results were reported in 2018, this seems like a reasonable threshold.



Well Impact Analysis of MTs Below Recent Low WLs

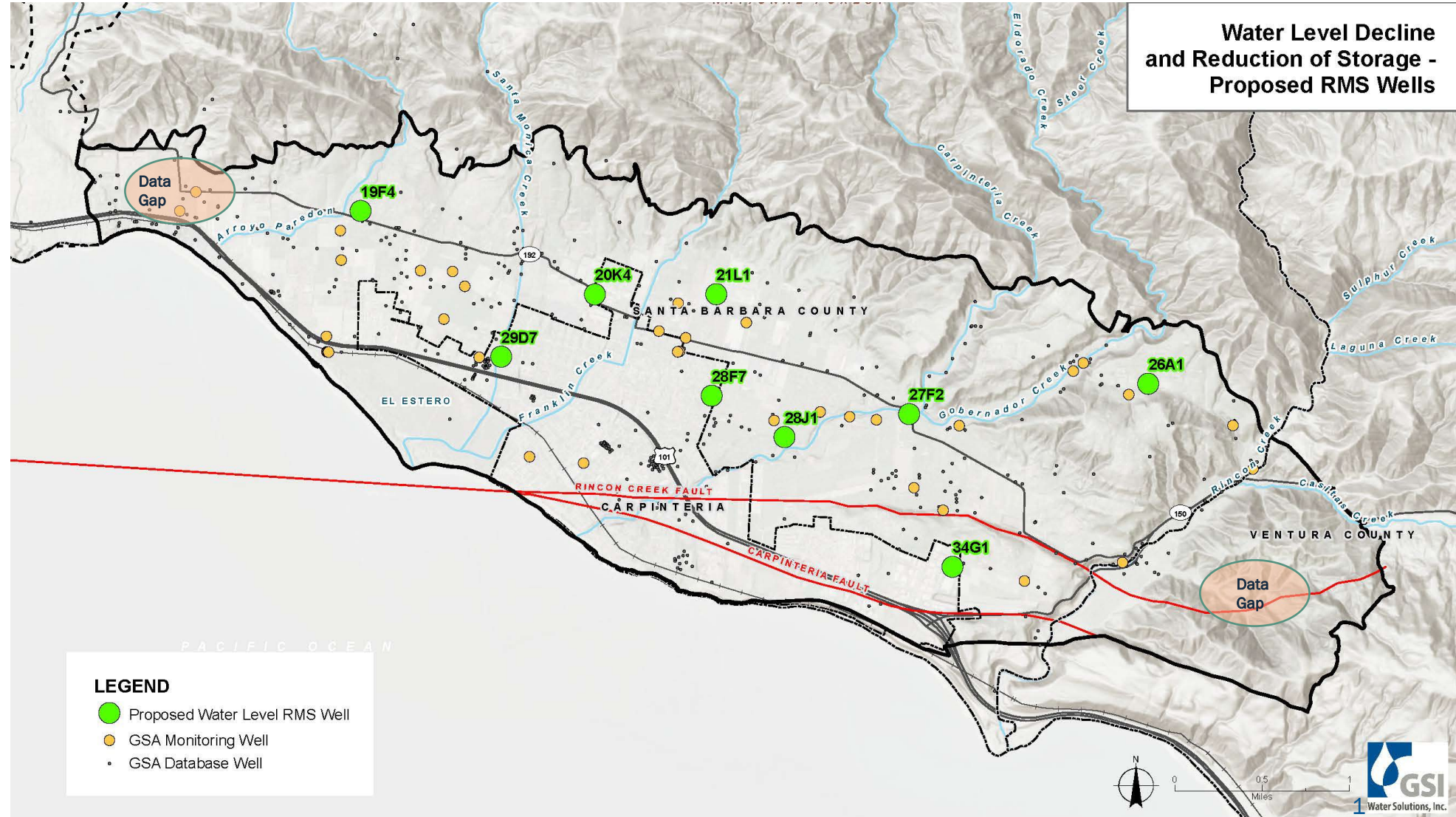
- If water levels are reduced 20 feet below 2018 levels, less than 5% of wells in the Basin fall below the 75% Saturated Thickness threshold.
- Since no undesirable results were reported in 2018, this seems like a reasonable threshold.



Water Level Decline and Reduction of GW in Storage Proposed RMS Wells

Considerations :

- Long Period of Record
- Construction details
- Spatial distribution
- Accessibility
- Representative
- Data Gaps at Basin edges



Water Level Decline and Reduction of GW in Storage

Summary of MTs/MOs

	RMS Wells	MT	MO
1	19F4	145	90
2	20K4	145	60
3	21L1	160	80
4	27F2	235	115
5	26A1	295	220
6	28J1	235	110
7	28F7	165	90
Removed	~~29K2~~	--	--
8	29D7	115	35
9	34G1	245	200
SMCs presented as Depth to Water (DTW).			



Water Quality Degradation

Water Quality SMCs

Existing Sampling Program

1. SGMA not intended to manage to *improve* ambient water quality, just to avoid degradation due to groundwater management.
2. SMCs will be based on MCLs and RWQCB Basin Objectives while considering historical WQ data.
3. 2015 is baseline for SGMA conditions.
4. CVWD has maintained Semi-annual Data Collection since 2000.
 - a) General Mineral Constituents (Anions, Cations, Dissolved Solids, Nitrates, Electrical Conductance.
5. Continuance of current sampling program to be included in Carpinteria Basin GSP.

Water Quality SMCs

Water Quality RMS and Monitoring Wells

Constituents of Concern:

- Arsenic and Nitrate (Human Health)
- Chloride, TDS, Boron (Agriculture and General WQ)

LEGEND

- Chloride, Boron, and TDS RMS Well
- Arsenic and Nitrate RMS Well
- Water Quality Monitoring Well

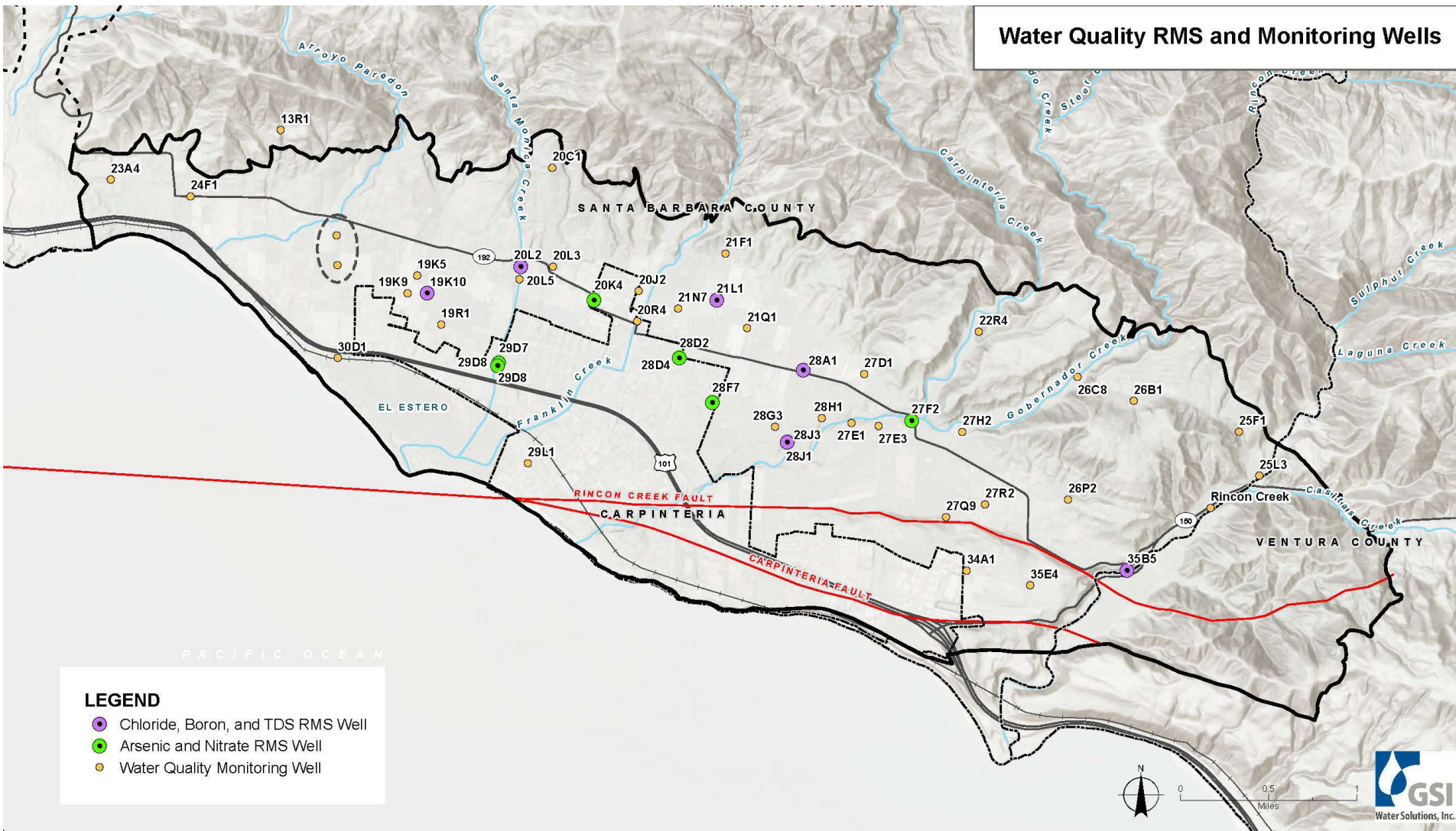


Water Quality SMCs

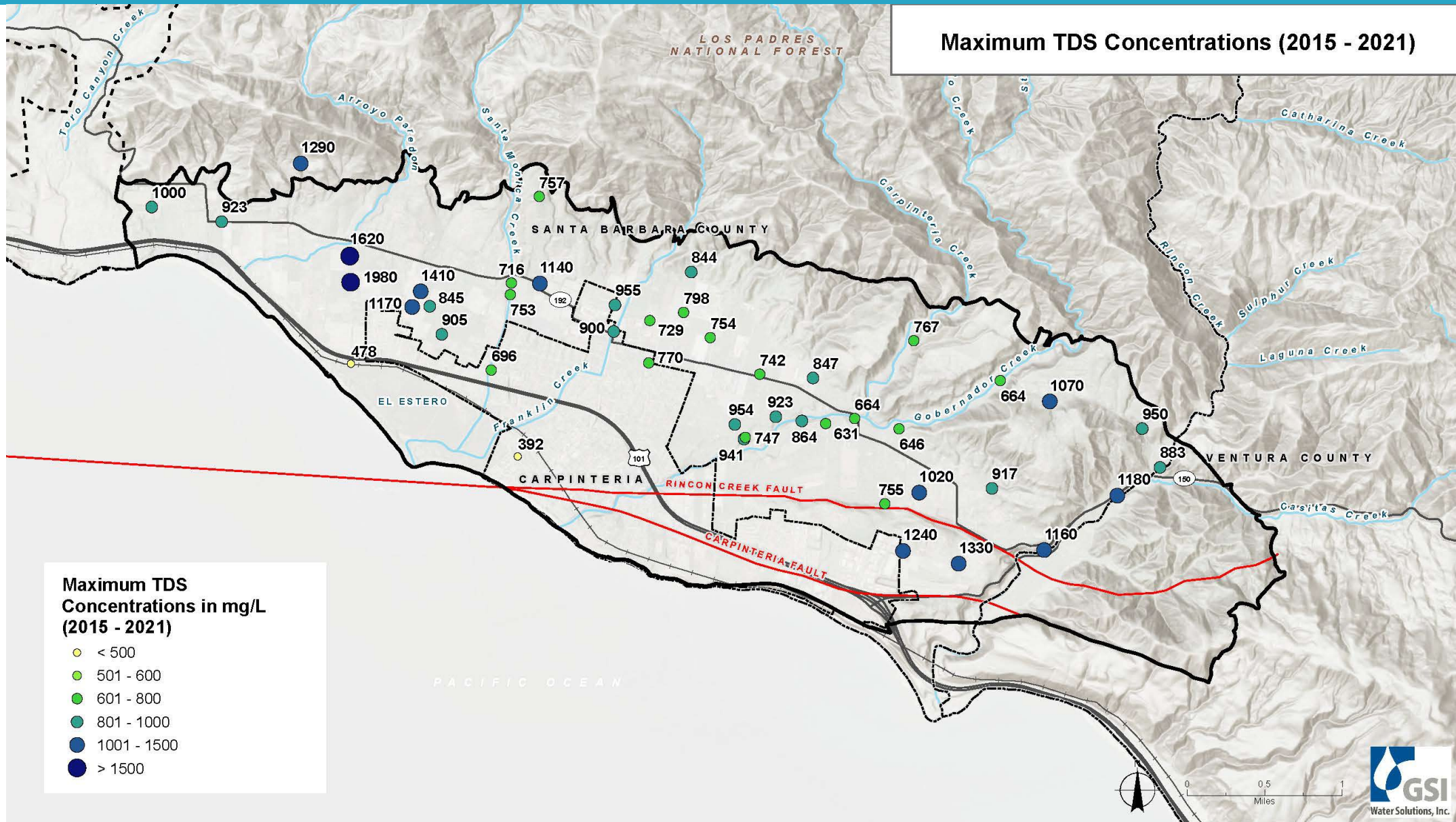
Proposed RMS Wells

RMS Wells

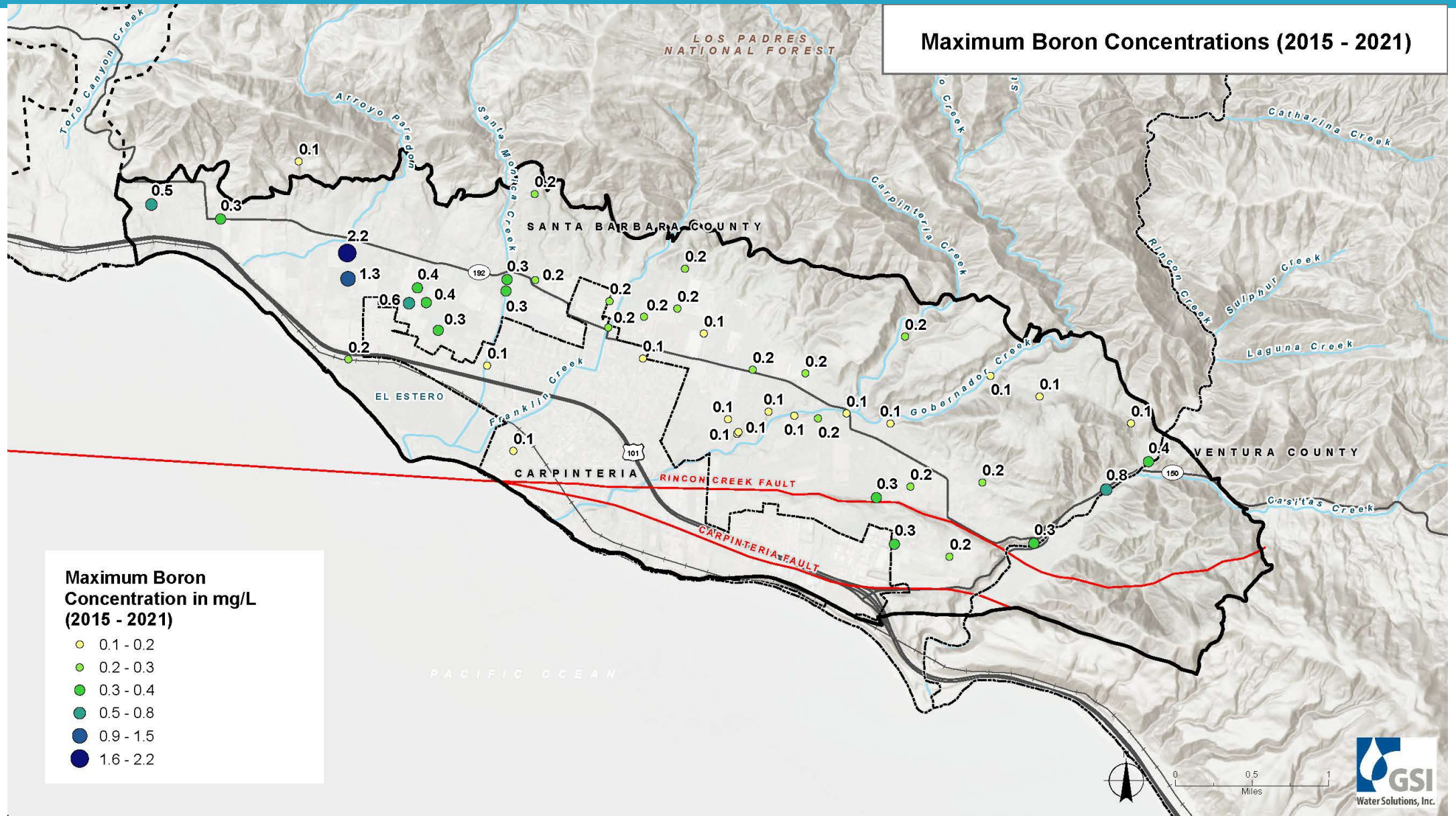
- Arsenic and Nitrate monitored at 5 CVWD Supply Wells ,RMS sites.
- Chloride, TDS, Boron monitored at 6 additional RMS sites



Water Quality TDS



Water Quality Boron



GSA Water Quality Monitoring Network

Water Quality MTs and RMS Wells

Constituent	MT	RMS Locations	Rationale
Arsenic	10 ug/L	5 CVWD supply Wells	MCL is federal regulation for drinking water. District is only potable water supplier in Basin
Nitrate (as N)	10 mg/L	5 CVWD supply Wells	MCL is federal regulation for drinking water. District is only potable water supplier in Basin
TDS	1,000 mg/L	5 CVWD + 6 monitor wells	MT set at secondary MCL
Chloride	142 mg/L	5 CVWD + 6 monitor wells	MT set at Basin Plan "no problem" ag threshold
Boron	0.75 mg/L	5 CVWD + 6 monitor wells	Carpinteria anti-degradation TM Monterey and Cambria permit limits are 0.75 mg/L



OTHER SMCS



Interconnected Surface
Water Depletion



Land Subsidence

Interconnected Surface Water and Groundwater

1. The HCM characterized creeks in the Basin as disconnected from the principal aquifer. Thus, not subject to management under SGMA.
2. There may be data gaps that might require additional characterization during implementation requiring shallow piezometers to document groundwater conditions.



Creeks in the Basin are disconnected from aquifer.

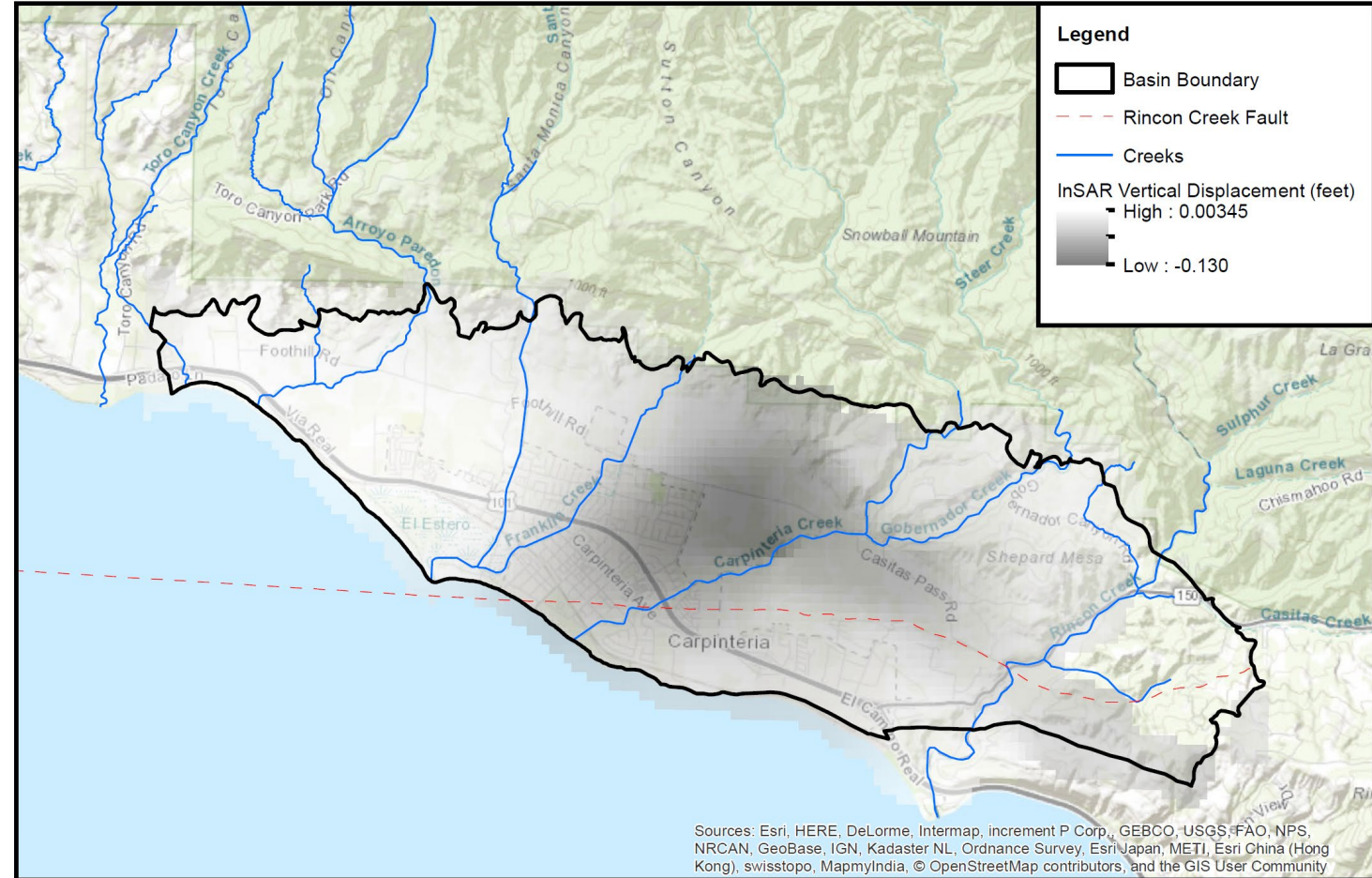
DWR guidance on this SI was unclear. Additional Guidance coming.

Likely to be model-based analysis in the future.

Subsidence – InSAR Data from DWR

Vertical Displacement (June 2015 – July 2022)

- Not historically in issue in the Basin
- Error bar of about 0.1 foot in InSAR data
- InSAR data will be reviewed annually upon publication by DWR.
- Proposed SMC of less than 0.1 foot subsidence per year (after accounting for data error).





Projects and Management Actions

Potential Projects

- Monitor Well Clusters along coast to monitor seawater intrusion (SGMA Grant funding applied for)
- IPR Project CAPP – Indirect Potable Reuse project using Basin Aquifer for storage
- Seawater Barrier Project – Injection wells along coast
- De-lining of creeks
- ASR Wells
- Recharge Basins

Potential Management Actions

- Technical assistance for water use efficiency
- Well metering/measurement
- Improved monitoring to address data gaps (SW/GW, West side, Ventura County side)



WHAT'S NEXT

WHAT'S NEXT: Upcoming Public Workshops



Public Presentations Completed!
Commence writing GSP chapter...



PUBLIC WORKSHOP.

GSA Public Workshop
May 17 2023•
6:00pm-8:00pm

Learn more or take action at
CarpGSA.org

GSPAC Schedule and Topics

April 25, 2023

GSPAC Meeting #3

1. Final presentation on SMCs?
2. How should climate change be considered in developing sustainable management criteria.
3. Is a pumping fee vs an acreage-based fee the most appropriate in Carpinteria?
4. Should the GSA require meters on wells?
5. Would stakeholders be interested in importing water at a cost to replace groundwater when needed?

May 23, 2023

GSPAC Meeting #4

1. Should individual well pumping rates be limited such that they do not affect neighboring wells?
2. Should new wells or expanded wells be limited? For good or just during drought?
3. If allocation for groundwater pumping is needed should crop type or water use type be considered in determining the allocation.
4. Should different management areas be created to address different priorities?



QUESTIONS?



CARPINTERIA GSA

GROUNDWATER SUSTAINABILITY AGENCY

FY 23/24 Budget and Charges



Background:

- In 2022 the GSA completed it's first rate setting process.
- The rates model was a fee based on parcel acreage for all parcels overlying the Carpinteria Groundwater basin.
- Total Revenues collected was approximately \$350K for FY23

FY 23/24 Budget and Charges



CARPINTERIA GSA
GROUNDWATER SUSTAINABILITY AGENCY

CARPINTERIA GROUNDWATER SUSTAINABILITY AGENCY						
3-YEAR OPERATING BUDGET - PROPOSED		2021/22	2022/23	2023/24	2024/25	2025/26
FY 2023-2024 · FY 2024-2025 · FY 2025-2026		Actual	Budget	Budget	Budget	Budget
Operating Budget						
Revenue						
20-4315	GSA MEMBER FEES	\$0	\$348,580	\$465,000	\$478,950	\$493,319
20-4314	GSA GRANT FUNDING	\$0	\$0	\$0	\$0	\$0
Total Revenue		\$0	\$348,580	\$465,000	\$478,950	\$493,319
Expenses						
20-570-6025	GSA PERSONNEL	\$39,108	\$99,389	\$122,887	\$130,891	\$136,985
20-570-6117	GSA DIRECTORS FEES	\$0	\$3,000	\$12,600	\$12,978	\$13,367
20-570-6118	GSA ADMINISTRATIVE EXPENSES	\$6,298	\$1,700	\$3,000	\$3,090	\$3,183
20-550-6308	GSA ANNUAL REPORTING	\$0	\$0	\$50,000	\$51,500	\$53,045
20-560-6307	GSA GROUNDWATER PROF SVCS	\$9,782	\$30,000	\$10,000	\$10,300	\$10,609
20-570-6309	GSA ADMIN PROF SERVICES	\$76,895	\$35,000	\$62,000	\$63,860	\$65,776
20-570-6310	GSA LEGAL PROFESSIONAL SERVICE	\$7,078	\$10,000	\$21,125	\$21,759	\$22,412
20-560-6607	GSA SUPPLIES & EQUIPMENT	\$506	\$2,500	\$3,600	\$3,708	\$3,819
20-550-6806	GSA WTR QUALITY & TESTING	\$10,807	\$8,000	\$20,000	\$20,600	\$21,218
20-599-7313	INTEREST EXPENSE	\$10,142	\$0	\$30,500	\$7,700	\$3,450
Total Expenses		\$160,616	\$189,589	\$335,712	\$326,386	\$333,864
Net Operating Revenue		-\$160,616	\$158,991	\$129,288	\$152,564	\$159,455
	DEBT SERVICE	\$0	\$133,333	\$79,288	\$102,564	\$109,455
	RESERVES	\$0	\$0	\$50,000	\$50,000	\$50,000
Surplus (Deficit)		-\$160,616	\$25,658	\$0	\$0	\$0

FY 23/24 Budget and Charges



CARPINTERIA GSA
GROUNDWATER SUSTAINABILITY AGENCY

CARPINTERIA GROUNDWATER SUSTAINABILITY AGENCY					
OPERATING BUDGET - PROPOSED		2022/23 Budget	2023/24 Budget		
Operating				Change \$	Change %
Revenue					
20-4315	GSA MEMBER FEES	\$ 348,580.00	\$465,000.00		
20-4314	GSA GRANT FUNDING	\$ -	\$ -		
Total Revenue		\$ 348,580.00	\$ 465,000.00	\$ 116,420.00	33%
Expenses					
20-570-6025	GSA PERSONNEL	\$ 99,389.00	\$122,887.13	\$ 23,498.13	24%
20-570-6117	GSA DIRECTORS FEES	\$ 3,000.00	\$ 12,600.00	\$ 9,600.00	320%
20-570-6118	GSA ADMINISTRATIVE EXPENSES	\$ 1,700.00	\$ 3,000.00	\$ 1,300.00	76%
20-550-6308	GSA ANNUAL REPORTING	\$ -	\$ 50,000.00	\$ 50,000.00	New
20-560-6307	GSA GROUNDWATER PROF SVCS	\$ 30,000.00	\$ 10,000.00	\$ (20,000.00)	-67%
20-570-6309	GSA ADMIN PROF SERVICES	\$ 35,000.00	\$ 62,000.00	\$ 27,000.00	77%
20-570-6310	GSA LEGAL PROFESSIONAL SERVICES	\$ 10,000.00	\$ 21,125.00	\$ 11,125.00	111%
20-560-6607	GSA SUPPLIES & EQUIPMENT	\$ 2,500.00	\$ 3,600.00	\$ 1,100.00	44%
20-550-6806	GSA WTR QUALITY & TESTING	\$ 8,000.00	\$ 20,000.00	\$ 12,000.00	150%
20-599-7313	INTEREST EXPENSE	\$ -	\$ 30,500.00	\$ 30,500.00	New
Total Expenses		\$ 189,589.00	\$ 335,712.13	\$ 146,123.13	77%
Net Operating Revenue		158,991	129,288	Change \$	Change %
	DEBT SERVICE	133,333	79,288	(54,045)	-41%
	RESERVES	-	50,000	50,000	New
Surplus (Deficit)		25,658	-		

FY 23/24 Budget and Charges



Fee allocation Work

- During 2022 and in the first quarter of 2023 Staff has been working on an approach that will utilize estimated pumping as the basis for the CGSA Fee.
- The information, model and mechanism were developed by staff in response to public input.
- Staff had proposed to utilize this model starting in FY 23/24, however the process for verifying well pumping assumptions is not complete and will not be complete by the Prop 218 noticing deadline on of April 26, 2023

FY 23/24 Budget and Charges



Fee Allocation Work

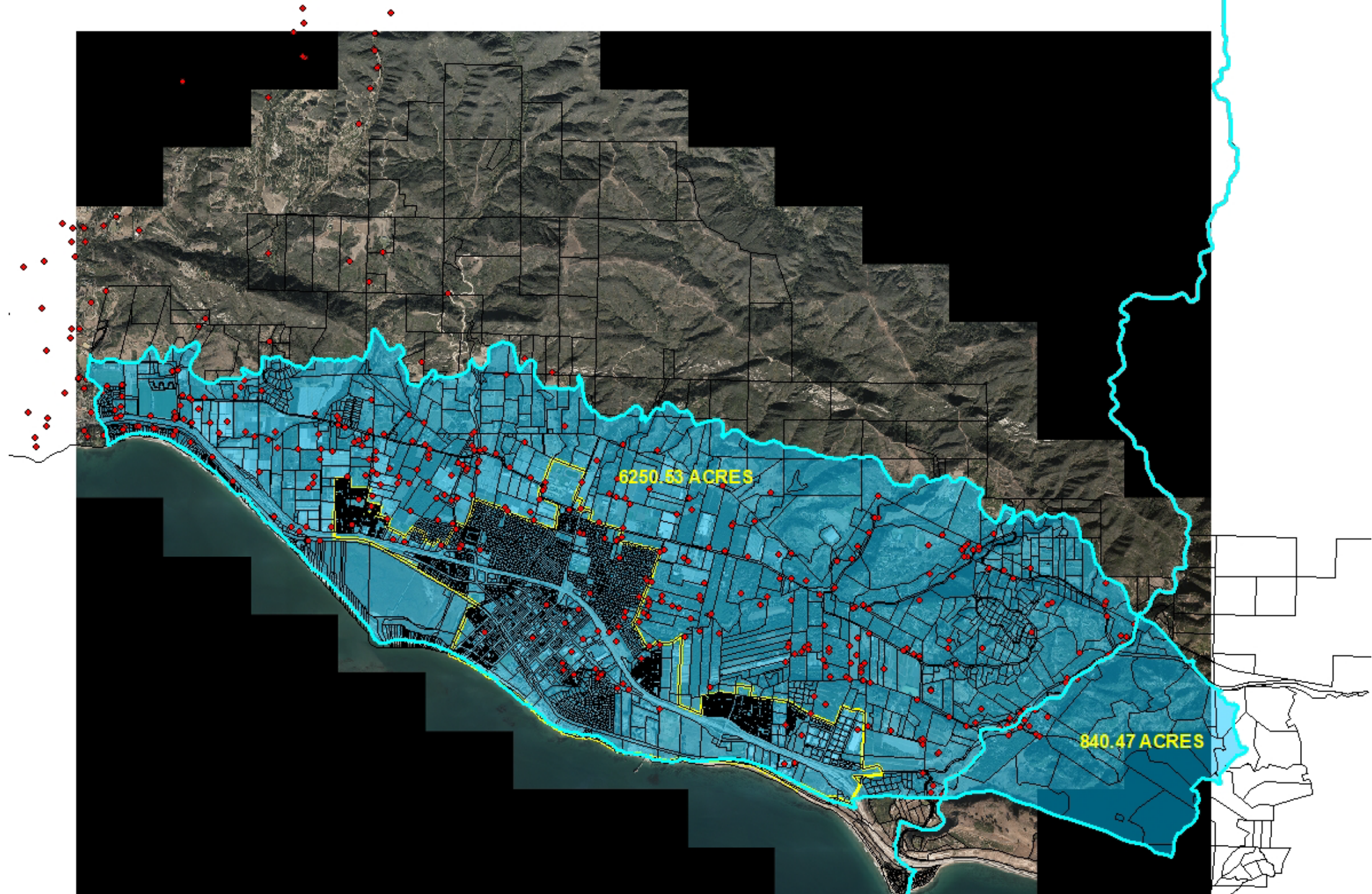
- since verification can't be completed in time for the 218 process, Staff proposes to use acreage based approach for one more year.
- This will allow the pumping-based approach to continue development through the remainder of 2023 and will be ready for FY 24/25

FY 23/24 Budget and Charges



Fee Allocation Work

- Pumping based approach would allocate about \$116.25/AF if 4000 AF were pumped by all users.
- Under the acreage-based approach for parcel not exempt that overly the basin there are a total of 7091 acres. The fee would be approximately \$66.60/acre up from \$48/Acre for FY 22/23.





CARPINTERIA GSA

GROUNDWATER SUSTAINABILITY AGENCY