

# Yolo Subbasin Groundwater Agency Board of Directors Meeting Agenda

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**Monday, March 20, 2023  
3:00 p.m. to 5:00 p.m.**

Woodland Police Department  
1000 Lincoln Ave, Woodland, CA 95695

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## NOTICE TO PUBLIC

Public documents relating to any open session item listed on this agenda that are distributed to all or most of the members of the Board of Directors less than 72 hours before the meeting are available for public inspection in the customer service area of the Yolo Subbasin Groundwater Agency's Administrative Office at 34274 State Highway 16, Woodland 95695. The full agenda packet can also be found on [www.yologroundwater.org](http://www.yologroundwater.org).

In compliance with the Americans with Disability Act, if you have a disability and need a disability-related modification or accommodation to participate in this meeting please contact YSGA office at (530) 662-3211. Requests must be made as early as possible, and at least one full business day before the start of the meeting.

All items on the agenda will be open for the public comment before final action is taken. Speakers are requested to restrict comments to the item as it appears on the agenda and stay within a three-minute time limit. The Chair has the discretion of limiting the total time for an item. Comments may also be submitted via email to [info@yolosga.org](mailto:info@yolosga.org) prior to the meeting or via teleconference chat during the meeting.

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- 3:00**     **1. CALL TO ORDER AND DETERMINATION OF QUORUM**
- 3:10**     **2. ADDING ITEMS TO THE POSTED AGENDA** -- In order to add an agenda item, it must fit into one of the following categories: a) A majority determination that an emergency (as designed by the Brown Act) exists; or b) A 4/5ths determination that the need to take action arose subsequent to the agenda being posted.

- 3:15**     **3. PUBLIC FORUM** -- The Public may address the Yolo Subbasin Groundwater Agency Board of Directors on any item of interest not appearing on the agenda that is within the subject matter of the YSGA.
- 3:20**     **4. CONSIDERATION: CONSENT ITEMS**, pages 3 to 20
- a. Approve January 23, 2023 Board of Directors Meeting Minutes, pages 4-9
  - b. Receive Fiscal Year 22/23 Financial Statements: 1/20-3/15/2023, pages 10-18
  - c. Receive minutes of Executive Committee: 1/17/23, pages 19-20
- 3:25**     **5. CONSIDERATION: FINANCIAL ITEMS**, pages 21 to 91
- a. Authorize Executive Officer to Enter into Agreement with LSCE to Proceed with Fee Study, pages 24-91
  - b. Approve Cost Share Contribution to Update Subbasin Model and Incorporate Dunnigan Area Recharge Program
- 3:35**     **6. UPDATE ON WATER LEGISLATION and REGULATORY ISSUES**,  
Ivy Brittain, Northern California Water Association
- 3:45**     **7. CALIFORNIA DEPARTMENT OF WATER RESOURCES UPDATE**,  
Report from Nicholas Vadpey on programs of interest to the YSGA
- 3:55**     **8. REPORT OF THE CHAIR AND EXECUTIVE OFFICER**, pages 92 to 105  
Executive Officer report on activities since last Board meeting.
- 4:00**     **9. WATER CONDITIONS UPDATE, Member Agency Roundtable**
- a. Update from the Ad Hoc Drought Task Force Committee
  - b. Statewide Conditions
  - c. Roger Cornwell / Bill Vanderwaal, Sacramento River Update
  - d. Tim Busch, Woodland Davis Clean Water Agency
  - e. Kristin Sicke, YCFC&WCD
- 4:10**     **10. UPDATE: GROUNDWATER SUSTAINABILITY PLAN IMPLEMENTATION**,  
pages 106 to 124
- a. Review of Annual Report for Water Year 2022, pages 108-124
  - b. Areas of Special Concern: Summary Update on Northwest of Winters
- 4:55**     **11. MEMBERS' REPORTS AND FUTURE AGENDA ITEMS** -- Yolo Subbasin Groundwater Agency Members are invited to briefly report on current issues and recommended topics for future Yolo Subbasin Groundwater Agency Board of Directors meetings.
- 4:58**     **12. NEXT MEETING** – June 19, 2023
- 5:00**     **13. ADJOURNMENT**

Consideration of items not on the posted agenda includes items in the following categories: 1) majority determination that an emergency (as defined by the Brown Act) exists; or 2) a 4/5ths determination that the need to take action arose subsequent to posting of the agenda. I declare under penalty of perjury that the foregoing agenda was posted by March 17, 2023 and made available to the public during normal business hours at the following location: Woodland Police Department at 1100 Lincoln Avenue, Woodland 95695 and YSGA's office at 34274 State Highway 16, Woodland 95695.

Kristin Sicke, Executive Officer

**Yolo Subbasin Groundwater Agency Board of Directors  
Meeting Agenda Report**

**MEETING DATE:** March 20, 2023

**AGENDA ITEM NO. 4**

**SUBJECT:** Consideration: Consent Items

INITIATED OR     BOARD  
REQUESTED BY:  STAFF  
                   OTHER \_\_\_\_\_

INFORMATION  
 ACTION:  MOTION  
 RESOLUTION

ATTACHMENT  YES    NO

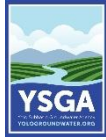
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**BACKGROUND**

- a. *Approve the January 23, 2023 Regular YSGA Board of Directors Meeting Minutes*  
Pursuant to Section 54957.5 of the Brown Act, copies of the draft minutes are available to the public at the Board meetings prior to their approval.
  
- b. *Receive Fiscal Year 2022-2023 Financial Statements: January 20-March 15, 2023*  
Receive financial statements for January 20 through March 15, 2023.
  
- c. *Receive Minutes of YSGA Executive Committee*  
Receive YSGA Executive Committee meeting minutes for January 17, 2023.

**RECOMMENDATION**

- a. Recommend adoption of January 23, 2023 Regular Board meeting minutes with any corrections.
- b. This agenda item is for informational purposes only. No Board action is required.
- c. This agenda item is for informational purposes only. No Board action is required.



# Yolo Subbasin Groundwater Agency

## Board of Directors Meeting Minutes

**Monday, January 23, 2023**

**3:15 p.m. to 5:00 p.m.**

**Remote Meeting Only – Attendance via GoToMeeting**

- 1. CALL TO ORDER and DETERMINATION OF QUORUM:** Meeting called to order at 3:15 p.m. by Roger Cornwell, Chair.  
Executive Officer Sicke conducted a roll call and determined a quorum was present.

The following Board members and (alternates) were in attendance:

City of Davis: Bapu Vaitla

City of West Sacramento: Verna Sulpizio-Hull

City of Winters: Carol Scianna, (Kurt Balasek)

City of Woodland: (Tania Garcia-Cadena)

Dunnigan Water District: David Schaad, (Bill Vanderwaal)

Esparto CSD: Charlie Schaupp

Reclamation District (RD) 108: (Bill Vanderwaal)

RD 307: James Johas

RD 537: Tom Ramos

RD 787: Roger Cornwell, (Dominic Bruno)

RD 999: Tom Slater

RD 1600: Michele Clark

RD 2035: (Mike Hall)

Yocha Dehe Wintun Nation: Marc Fawns

Yolo County: Gary Sandy

Yolo County Flood Control and Water Conservation District (YCFC&WCD): Tom Barth,  
(Kristin Sicke)

UC Davis: (Kelli O'Day)

Cal Am Water – Dunnigan: Evan Jacobs

Yolo County Farm Bureau: Lee Smith

Environmental Representative: Ann Brice

Absent: Madison CSD, RD 150, RD 730, RD 765, Rumsey Water Users Association, Colusa  
Drain Mutual Water Company

- 2. CONSIDERATION: RE-AUTHORIZE TELECONFERENCE MEETINGS AS A RESULT OF THE COVID-19 EMERGENCY**

Action: 1) find that, as a result of the COVID-19 emergency, meeting in

person would present imminent risks to the health and safety of attendees, and 2) hold meetings by teleconference as authorized by subdivision (e)(1)(C) of Section 54953 of the Government Code.

Motion: Yolo County (Sandy)

Second: City of Winters (Scianna)

Discussion: Kristin provided an overview of how teleconferencing rules will change at the expected end of the COVID-19 Emergency in February 2023. The Board will transition away from remote attendance in March.

Vote: Approved unanimously (roll call attached)

**3. ADDING ITEMS TO THE POSTED AGENDA:** Nothing to add.

**4. PUBLIC FORUM:** No public comment.

**5. CONSIDERATION: CONSENT ITEMS**

- a) Approve November 21, 2022 Regular YSGA Board of Directors Meeting Minutes
- b) Receive Fiscal Year 2022-2023 Financial Statements: November 3, 2022 – January 19, 2023
- c) Approve Payment of Bills in Approved Fiscal Year 22-23 Budget
- d) Receive minutes of Executive Committee: 11/9 and 12/19/22
- e) Consider Changing March 2023 Regular Meeting Time to 3:00 pm

Action: Approve items a), c), and e) as presented.

Motion: Cal Am Water (Jacobs)

Second: City of Davis (Vaitla)

Discussion: No further discussion.

Vote: Approved unanimously (roll call attached)

**6. CONSIDERATION: 2023 BOARD OFFICERS AND COMMITTEE MEMBERSHIP**

Since the Yolo Subbasin GSP has been submitted to DWR and the YSGA is in the implementation phase of administering the GSP, the YSGA Executive Committee recommended electing new Board officers. The Executive Committee appreciates Roger Cornwell and Jesse Loren serving as Chair and Vice Chair for the past four years, and recommends the Board now appoint Gary Sandy (Yolo County) and Lee Smith (Yolo County Farm Bureau) to serve as the YSGA Chair and Vice Chair, respectively. The Executive Committee is recommending that Kristin Sicke continue to serve as the Secretary and Treasurer.

The Executive Committee shall be comprised of the Chair, the Vice Chair, the Executive Officer, an Urban Representative, and an Agricultural Representative. The Executive Committee's Agricultural Representative, Lynnel Pollock (Colusa Drain MWC), has served on the Executive Committee for almost seven years and is ready to provide another Director with the opportunity to serve. In addition to the Chair and Vice Chair election discussed above, the YSGA Executive Committee recommends appointing the Urban and Agricultural Representatives of the Executive Committee as Kurt Balasek (City of Winters) and David Schaad (Dunnigan Water District), with Carol Scianna serving as the City

of Winters alternate representative.

There are currently no term limits in the YSGA JPA or Board policies. If desired, term limits can be designated in future bylaws.

Action: Approve item 6 as presented.

Motion: YCFC&WCD (Barth)

Second: City of Winters (Scianna)

Discussion: The Board agreed that the matter of term limits should be taken to the Ad Hoc Committee on Funding Mechanisms and Voting Structure.

Vote: Approved unanimously (roll call attached)

## **7. UPDATE ON WATER LEGISLATION, REGULATORY, & DELTA ISSUES**

David Guy and Ivy Brittain provided an update from NCWA:

The Governor's water supply strategy is placing emphasis on groundwater recharge projects and ensuring drinking water supplies are protected. There are discussions in Sacramento around water rights modernization, although it is not yet clear what that could look like. NCWA and partners are continuing work on Voluntary Agreements to ensure adequate Delta flows. NCWA's annual meeting will be held on March 3<sup>rd</sup> at Sierra Nevada Brewing.

Due to the large turnover in Congress, new headline-grabbing bills are likely to be introduced this year. There is also a current focus on regulatory streamlining which is likely to be reflected in legislative efforts. Another SGMA-focused bill is likely. The state's budget this year will be significantly less than previous years, so less funding will be available. However, there are still several water-related funding programs that are expected to continue.

## **8. CALIFORNIA DEPARTMENT OF WATER RESOURCES UPDATE**

A representative from the California Department of Water Resources was not available to provide an update.

## **9. REPORT OF THE CHAIR AND EXECUTIVE OFFICER**

Kristin Sicke, Executive Officer, provided a summary of her written update included in the agenda packet.

A December meeting hosted by NCWA at Dunnigan Water District provided an opportunity for Sacramento Valley water agencies and environmental agencies to discuss GSP Implementation and tour the Dunnigan Recharge Project. Current groundwater levels are approximately six feet lower than last year and four feet lower than in 2015. DWR has released a new INSAR subsidence dataset providing data up to October 1, 2022. The newest dataset shows some recovery between July and October 2022.

## **10. WATER CONDITIONS UPDATE, Member Agency Roundtable**

- a. Update from the Ad Hoc Drought Task Force Committee: The Committee continues to meet to coordinate drought response efforts.

- b. Statewide Conditions: There has been a significant amount of rainfall, which has alleviated drought conditions statewide.
- c. Roger Cornwell / Bill Vanderwaal, Sacramento River Update
  - Roger: Lake Shasta gained over 1 million acre-feet (AF) of storage in January. The reservoir is now about 54 percent full.
  - Bill gave an update on Dunnigan’s groundwater recharge project. Since October, groundwater levels have shown about 30 ft of recovery. During the storm event, excess water from the Tehama-Colusa Canal was diverted into Buckeye Creek, and 72 AF were diverted onto the farmer’s field.
- d. Tim Busch, Woodland Davis Clean Water Agency: The agency was using purchased water until early December 2022 when the Term 91 curtailment was rescinded. Woodland then started injecting into their ASR wells and has stored about 650 AF (as of January 23, 2023). Depending on water availability, an additional 2000-2500 AF could be stored through the winter. There is still a good chance that there could be curtailments this summer.
- e. Kristin Sicke, YCFC&WCD: After significant rainfall, the District now has about 27,000 AF of allocated water from Clear Lake and 114,000 AF stored in Indian Valley Reservoir. The District is anticipating selling at least 120,000 AF to growers this year.

## **11. UPDATE ON GROUNDWATER SUSTAINABILITY PLAN IMPLEMENTATION**

- a. *SGMA Implementation Grant Submission*: Kristin provided an overview of the submitted SGMA Implementation Grant application. The total grant request is about \$13 million. Decisions from DWR are expected in June 2023.
- b. *Executive Order N-7-22 Well Permitting Update*: Kristin updated the Board on the status of well permit review under the Executive Order.
- c. *Establishing a Framework for Forming the Management Area Advisory Committees*: Kristin continues to work to identify Committee members.
- d. *Investigation of Long-Term Funding Strategies*: The Executive Committee approved an expenditure of up to \$10,000 for Ludhorff and Scalmanini to develop a Technical Memorandum. The Memo will develop five-year revenue projections, consider viable cost allocation options, provide metrics on future changes, and provide a scope of work for a long-term fee study.

## **12. MEMBERS’ REPORTS AND FUTURE AGENDA ITEMS:**

Tom Barth suggested that Kevin O’Brien provide an overview of lessons learned from groundwater adjudication in the Ventura area at a future Board meeting.

## **13. NEXT MEETING** – March 20, 2023

## **14. ADJOURNMENT** – Chair Sandy adjourned the meeting at 4:29 p.m.

Respectfully submitted,



Kristin Sicke, Executive Officer

ROLL CALL YSGA Board of Directors							
	Agency	Name	Board/ Alternate	ATTENDANCE	VOTE - ITEM 2	VOTE - ITEM 5	VOTE - ITEM 6
1	City of Davis	Bapu Vaitla	<b>Board</b>	X	Aye	Aye	Aye
		Will Arnold	Alternate				
2	City of West Sacramento	Verna Sulpizio-Hull	<b>Board</b>	X	Aye	Aye	Aye
		Chris Ledesma	Alternate				
3	City of Winters	Carol Scianna	<b>Board</b>	X	Aye	Aye	Aye
		Kurt Balasek	Alternate	X			
		Wade Cowan	Alternate				
4	City of Woodland	Mayra Vega	<b>Board</b>				
		Tania Garcia-Cadena	Alternate	X (Item 6-end)	Absent	Absent	Aye
5	Dunnigan Water District	David Schaad	<b>Board</b>	X	Aye	Aye	Aye
		Bill Vanderwaal	Alternate	X			
6	Esparto CSD	Charles Schaupp	<b>Board</b>	X	Absent	Aye	Aye
		Manuel Quintana	Alternate				
7	Madison CSD	Leo Refsland	<b>Board</b>	Absent	Absent	Absent	Absent
8	RD 108	Hilary Reinhard	<b>Board</b>				
		Bill Vanderwaal	<b>Alternate</b>	X	Aye	Aye	Aye
9	RD 150	Warren Bogle	<b>Board</b>	Absent	Absent	Absent	Absent
10	RD 307	James Johas	<b>Board</b>	X	Aye	Aye	Aye
		Karen Chesnut	Alternate				
11	RD 537	Tom Ramos	<b>Board</b>	X (Item 5-end)	Absent	Aye	Aye
12	RD 730	Jim Heidrick	<b>Board</b>	Absent	Absent	Absent	Absent
13	RD 765	David Dickson, Jr.	<b>Board</b>	Absent	Absent	Absent	Absent
		Doug Dickson, Sr.	Alternate				
14	RD 787	Roger Cornwell	<b>Board</b>	X	Aye	Aye	Aye
		Dominic Bruno	Alternate	X			
15	RD 999	Tom Slater	<b>Board</b>	X	Aye	Aye	Aye
16	RD 1600	Michele Clark	<b>Board</b>	X	Aye	Aye	Aye
17	RD 2035	Kryiakos Tsakopoulos	<b>Board</b>				
		Mike Hall	Alternate	X	Aye	Aye	Aye
18	Rumsey Water Users Association	Ken Muller	<b>Board</b>	Absent	Absent	Absent	Absent
19	Yocha Dehe Wintun Nation	Marc Fawns	<b>Board</b>	X	Aye	Aye	Aye
		Jim Ethers	Alternate				
20	Yolo County	Gary Sandy	<b>Board</b>	X	Aye	Aye	Aye
		Jim Provenza	Alternate				
21	YCFC&WCD	Tom Barth	<b>Board</b>	X	Aye	Aye	Aye
		Kristin Sicke	Alternate	X			
22	UC Davis	Camille Kirk	<b>Board</b>				
		Kelli O'Day	Alternate	X (Item 6-end)	Absent	Absent	Aye
23	Cal Am Water -Dunnigan	Evan Jacobs	<b>Board</b>	X	Aye	Aye	Aye
		Audie Foster	Alternate				
24	Colusa Drain MWC	Lynnel Pollock	<b>Board</b>	Absent	Absent	Absent	Absent
		Jim Wallace	Alternate				
25	Yolo County Farm Bureau	Lee Smith	<b>Board</b>	X	Aye	Aye	Aye
		Denise Sagara	Alternate				
26	Environmental Rep.	Ann Brice	<b>Board</b>	X (Item 2-end)	Aye	Aye	Absent



Agency	Name	Attendance
<b><i>OTHER YSGA STAFF:</i></b>		
Executive Officer	Kristin Sicke	X
Legal Counsel, Downey Brand	Kevin O'Brien	X
YSGA Water Resources Tech.	Sarah Leicht	X
<b><i>PUBLIC AND AGENCY STAFF:</i></b>		
NCWA	Ivy Brittain	X
NCWA	David Guy	X
Yolo LAFCo	Christine Crawford	X
Yolo County	Elisa Sabatini	X
WDCWA	Tim Busch	X
Conoway Preservation Group	Byron Buck	X
Yolo RCD	Kate Reza	X
	Linda Bell	X
	Matt Frank	X
	Jan Hushbeck	X

## Yolo Subbasin Groundwater Agency

## Balance Sheet

As of March 15, 2023

	<u>Mar 15, 23</u>
<b>ASSETS</b>	
<b>Current Assets</b>	
<b>Checking/Savings</b>	
1000 · 1st Northern-Checking	24,209.38
1010 · 1st Northern-Savings	5,664.81
1020 · Yolo County Treasury	1,055,125.00
1025 · County Treasury FMV	3,968.00
<b>Total Checking/Savings</b>	<u>1,088,967.19</u>
<b>Accounts Receivable</b>	
1100 · Accounts Receivable	10,573.25
<b>Total Accounts Receivable</b>	<u>10,573.25</u>
<b>Other Current Assets</b>	
1150 · Prepaid Insurance	492.25
<b>Total Other Current Assets</b>	<u>492.25</u>
<b>Total Current Assets</b>	<u>1,100,032.69</u>
<b>TOTAL ASSETS</b>	<b><u>1,100,032.69</u></b>
<b>LIABILITIES &amp; EQUITY</b>	
<b>Liabilities</b>	
<b>Current Liabilities</b>	
<b>Accounts Payable</b>	
2000 · Accounts Payable	171.31
<b>Total Accounts Payable</b>	<u>171.31</u>
<b>Total Current Liabilities</b>	<u>171.31</u>
<b>Total Liabilities</b>	171.31
<b>Equity</b>	
3000 · Unassigned Fund Balance	-24,000.00
3010 · Nonspendable Fund Balance	492.00
3300 · Assigned Fund Balance	24,000.00
3200 · Retained Earnings	823,253.55
Net Income	276,115.83
<b>Total Equity</b>	<u>1,099,861.38</u>
<b>TOTAL LIABILITIES &amp; EQUITY</b>	<b><u>1,100,032.69</u></b>

## Yolo Subbasin Groundwater Agency

## Budget vs Actual

July 1, 2022 through March 15, 2023

	Jul 1, '22 - Mar 15, ...	Budget	% of Budget
<b>Ordinary Income/Expense</b>			
<b>Income</b>			
4000 · Member Contributions-Municipal	160,000.00	160,000.00	100.0%
4100 · Member Contributions-Rural	237,841.50	237,842.00	100.0%
4200 · Member Contributions-Affiliates	65,170.00	65,170.00	100.0%
4300 · Direct Contribution-White Areas	0.00	20,000.00	0.0%
4700 · Well Permitting Regulatory Fees	13,886.00	24,000.00	57.9%
4900 · Interest Income	7,978.86	5,000.00	159.6%
<b>Total Income</b>	<b>484,876.36</b>	<b>512,012.00</b>	<b>94.7%</b>
<b>Expense</b>			
5100 · Bank & Other Fees	801.24	500.00	160.2%
5300 · Insurance-General & Auto	2,081.50	2,000.00	104.1%
5500 · Membership Dues	2,220.00	3,000.00	74.0%
7000 · Admin. Expenses	918.61	5,000.00	18.4%
7100 · Project Mgmt-SGMA Implementatio	90,339.71	251,000.00	36.0%
7125 · Buckeye Creek Recharge Project	137.38	9,000.00	1.5%
7200 · Consultant Services	66,967.37	200,000.00	33.5%
7300 · Legal Services	9,746.00	20,000.00	48.7%
7350 · Audit Services - Financial	0.00	8,500.00	0.0%
7400 · GSP - Related Consultant Costs	24,627.00	50,000.00	49.3%
7500 · GW Monitoring-Real-time Sensors	393.74	0.00	100.0%
7600 · YC Groundwater Monitor Program	8,101.05	90,000.00	9.0%
7700 · GSP Verif in Well Permit Review	2,426.93	24,000.00	10.1%
<b>Total Expense</b>	<b>208,760.53</b>	<b>663,000.00</b>	<b>31.5%</b>
<b>Net Ordinary Income</b>	<b>276,115.83</b>	<b>-150,988.00</b>	<b>-182.9%</b>
<b>Net Income</b>	<b>276,115.83</b>	<b>-150,988.00</b>	<b>-182.9%</b>

**Yolo Subbasin Groundwater Agency**  
**Statement of Cash Flows**  
 July 1, 2022 through March 15, 2023

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	<b>Jul 1, '22 - Mar 15, 23</b>
<b>OPERATING ACTIVITIES</b>	
Net Income	276,115.83
Adjustments to reconcile Net Income to net cash provided by operations:	
1100 · Accounts Receivable	-9,873.25
2000 · Accounts Payable	-90,506.01
	175,736.57
Net cash provided by Operating Activities	175,736.57
Net cash increase for period	175,736.57
Cash at beginning of period	913,230.62
Cash at end of period	<b>1,088,967.19</b>

**Yolo Subbasin Groundwater Agency**  
**Profit & Loss**  
 July 1, 2022 through March 15, 2023

	Jul 22	Aug 22	Sep 22	Oct 22	Nov 22	Dec 22	Jan 23	Feb 23	Mar 1 - 15, 23	TOTAL
<b>Ordinary Income/Expense</b>										
<b>Income</b>										
4000 · Member Contributions-Municipal	160,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	160,000.00
4100 · Member Contributions-Rural	224,018.00	0.00	0.00	0.00	0.00	0.00	13,823.50	0.00	0.00	237,841.50
4200 · Member Contributions-Affiliates	60,170.00	0.00	0.00	0.00	0.00	0.00	5,000.00	0.00	0.00	65,170.00
4700 · Well Permitting Regulatory Fees	700.00	9,713.00	850.00	500.00	500.00	0.00	773.00	150.00	700.00	13,886.00
4900 · Interest Income	0.00	0.00	0.50	2,357.96	0.00	0.96	5,619.44	0.00	0.00	7,978.86
<b>Total Income</b>	<b>444,888.00</b>	<b>9,713.00</b>	<b>850.50</b>	<b>2,857.96</b>	<b>500.00</b>	<b>0.96</b>	<b>25,215.94</b>	<b>150.00</b>	<b>700.00</b>	<b>484,876.36</b>
<b>Expense</b>										
5100 · Bank & Other Fees	0.00	0.00	0.00	264.58	25.00	0.00	511.66	0.00	0.00	801.24
5300 · Insurance-General & Auto	604.75	0.00	0.00	1,476.75	0.00	0.00	0.00	0.00	0.00	2,081.50
5500 · Membership Dues	0.00	0.00	0.00	0.00	0.00	0.00	2,220.00	0.00	0.00	2,220.00
7000 · Admin. Expenses	14.69	0.00	677.78	54.66	118.41	0.00	41.76	11.31	0.00	918.61
7100 · Project Mgmt-SGMA Implementatio	0.00	0.00	45,325.14	0.00	0.00	0.00	45,014.57	0.00	0.00	90,339.71
7125 · Buckeye Creek Recharge Project	0.00	0.00	137.38	0.00	0.00	0.00	0.00	0.00	0.00	137.38
7200 · Consultant Services	5,877.50	14,298.00	1,137.50	8,015.31	20,924.06	13,491.25	3,063.75	160.00	0.00	66,967.37
7300 · Legal Services	0.00	886.00	3,208.50	3,342.50	256.50	1,060.50	992.00	0.00	0.00	9,746.00
7400 · GSP - Related Consultant Costs	0.00	0.00	0.00	0.00	0.00	20,656.00	3,971.00	0.00	0.00	24,627.00
7500 · GW Monitoring-Real-time Sensors	0.00	0.00	0.00	0.00	0.00	0.00	393.74	0.00	0.00	393.74
7600 · YC Groundwater Monitor Program	0.00	0.00	6,167.97	0.00	0.00	0.00	1,933.08	0.00	0.00	8,101.05
7700 · GSP Verif in Well Permit Review	0.00	0.00	274.75	0.00	0.00	0.00	2,152.18	0.00	0.00	2,426.93
<b>Total Expense</b>	<b>6,496.94</b>	<b>15,184.00</b>	<b>56,929.02</b>	<b>13,153.80</b>	<b>21,323.97</b>	<b>35,207.75</b>	<b>60,293.74</b>	<b>171.31</b>	<b>0.00</b>	<b>208,760.53</b>
<b>Net Ordinary Income</b>	<b>438,391.06</b>	<b>-5,471.00</b>	<b>-56,078.52</b>	<b>-10,295.84</b>	<b>-20,823.97</b>	<b>-35,206.79</b>	<b>-35,077.80</b>	<b>-21.31</b>	<b>700.00</b>	<b>276,115.83</b>
<b>Net Income</b>	<b>438,391.06</b>	<b>-5,471.00</b>	<b>-56,078.52</b>	<b>-10,295.84</b>	<b>-20,823.97</b>	<b>-35,206.79</b>	<b>-35,077.80</b>	<b>-21.31</b>	<b>700.00</b>	<b>276,115.83</b>

**Yolo Subbasin Groundwater Agency  
A/P Aging Summary  
As of March 15, 2023**

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	<u>Current</u>	<u>1 - 30</u>	<u>31 - 60</u>	<u>61 - 90</u>	<u>&gt; 90</u>	<u>TOTAL</u>
LedgerPro Bookkeeping	160.00	0.00	0.00	0.00	0.00	160.00
Yolo County Flood Control & WCD	0.00	11.31	0.00	0.00	0.00	11.31
<b>TOTAL</b>	<b><u>160.00</u></b>	<b><u>11.31</u></b>	<b><u>0.00</u></b>	<b><u>0.00</u></b>	<b><u>0.00</u></b>	<b><u>171.31</u></b>

**Yolo Subbasin Groundwater Agency  
Transaction List by Date  
February 21 through March 15, 2023**

Type	Date	Num	Name	Memo	Account	Cir	Split	Amount
<b>Feb 21 - Mar 15, 23</b>								
Payment	02/21/2023	4210	Colusa Drain Mutual Water Comany		1200 · Undeposited Funds	X	1100 · Accounts Receivable	5,000.00
Payment	02/21/2023	1172	Reclamation District 1600		1200 · Undeposited Funds	X	1100 · Accounts Receivable	1,731.00
Payment	02/21/2023	1391	Reclamation District 537		1200 · Undeposited Funds	X	1100 · Accounts Receivable	1,519.25
Deposit	02/21/2023			Deposit	1020 · Yolo County Treasury	X	-SPLIT-	8,250.25
Bill Pmt -Check	02/22/2023	268	Consero Solutions	January Services	1000 · 1st Northern-Checking		2000 · Accounts Payable	-2,351.25
Bill Pmt -Check	02/22/2023	269	Downey Brand LLP	Services through January 31, 2023	1000 · 1st Northern-Checking	X	2000 · Accounts Payable	-992.00
Bill Pmt -Check	02/22/2023	270	LedgerPro Bookkeeping	January 2023 Bookkeeping Services	1000 · 1st Northern-Checking		2000 · Accounts Payable	-450.00
Bill Pmt -Check	02/22/2023	271	Luhdorff & Scalmanini	Services through January 29, 2023	1000 · 1st Northern-Checking	X	2000 · Accounts Payable	-4,945.00
Bill Pmt -Check	02/22/2023	272	Stockholm Environment Institute, Inc.	December services	1000 · 1st Northern-Checking		2000 · Accounts Payable	-3,971.00
Transfer	02/23/2023			Funds Transfer	1020 · Yolo County Treasury	X	1000 · 1st Northern-Checking	-12,000.00
Bill	02/28/2023	2876	LedgerPro Bookkeeping	February 2023 Bookkeeping Services	2000 · Accounts Payable		7200 · Consultant Services	-160.00
Bill	02/28/2023	YSGA Expenses	Yolo County Flood Control & WCD	Copies & Postage 1/1 to 02/28/2022	2000 · Accounts Payable		7000 · Admin. Expenses	-11.31
Deposit	03/10/2023			Deposit	1020 · Yolo County Treasury		4700 · Well Permitting Regulatory Fees	700.00
<b>Feb 21 - Mar 15, 23</b>								

**Yolo Subbasin Groundwater Agency**

**Open Invoices**

As of March 15, 2023

Type	Date	Num	P. O. #	Name	Terms	Due Date	Aging	Open Balance
<b>Reclamation District 150</b>								
Invoice	01/01/2023	2022-59		Reclamation District 150	Net 30	01/31/2023	43	1,073.25
Total Reclamation District 150								1,073.25
<b>Reclamation District 2035</b>								
Invoice	01/01/2023	2022-60		Reclamation District 2035	Net 30	01/31/2023	43	9,500.00
Total Reclamation District 2035								9,500.00
<b>TOTAL</b>								<b>10,573.25</b>



# Yolo Subbasin Groundwater Agency Upcoming Cash Requirements

As of March 15, 2023

	<u>Type</u>	<u>Date</u>	<u>Num</u>	<u>Name</u>
Current				
	Bill	02/28/2023	2876	LedgerPro Bookkeeping
Total Current				
<b>1 - 30</b>				
	Bill	02/28/2023	YSGA Expenses	Yolo County Flood Control & WCD
Total 1 - 30				
<b>31 - 60</b>				
Total 31 - 60				
<b>61 - 90</b>				
Total 61 - 90				
<b>&gt; 90</b>				
Total > 90				
<b>TOTAL</b>				

## Yolo Subbasin Groundwater Agency Upcoming Cash Requirements

	Memo	As of March 15, 2023		Open Balance
		Due Date	Aging	
<b>Current</b>				
	February 2023 Bookkeeping Services	03/30/2023		160.00
Total Current				160.00
<b>1 - 30</b>				
	Copies & Postage 1/1 to 02/28/2022	03/10/2023	5	11.31
Total 1 - 30				11.31
<b>31 - 60</b>				
Total 31 - 60				
<b>61 - 90</b>				
Total 61 - 90				
<b>&gt; 90</b>				
Total > 90				
<b>TOTAL</b>				<b>171.31</b>

<b>Current Cash Balance {Checking &amp; Savings}</b>	<b>29,702.88</b>
<b>Ending Cash Balance After Paying All Bills</b>	<b>29,531.57</b>
<b>Desired Reserve in Checking/Savings</b>	<b>30,000.00</b>
<b>Ending Cash Reserve or (Transfer Needed)</b>	<b>(468.43)</b>

**Yolo Subbasin Groundwater Agency**  
**MINUTES of Executive Committee (EC) Meeting**  
**January 17, 2023, 10:00 a.m. – 11:00 a.m.**  
**Hosted virtually via GoToMeeting**

**Present:** Roger Cornwell, Kristin Sicke, Kurt Balasek, Sarah Leicht, Lynnel Pollock

**Public Attendees:** Carol Scianna

**Absent:** Kurt Balasek, Elisa Sabatini

1. **Call to Order:** Meeting was called to order by Roger Cornwell at 10:07 am.
2. **Adding Items to the Posted Agenda:** Nothing to add.
3. **Public Comment:** No comments.
4. **Administrative Items** (Sicke):
  - a) December 19, 2022 meeting minutes were approved.
  - b) Reviewed financials: 12/8/22– 1/16/23: Financials were provided with the agenda packet. Invoices for the second half of FY 22-23 membership will be sent out this week.
  - c) Discuss Proposed Election of Officers for 2023: The Committee discussed potential membership for Board Chair, Vice Chair, and rural representative on the Executive Committee. General consensus recommended Supervisor Sandy as Board Chair and a representative from Yolo County Farm Bureau, RD 787, or Dunnigan Water District as Vice Chair and rural representative. There are currently no terms for officer or committee membership designated in YSGA policies; however, they can be written into future bylaws if desired. Kristin is working with legal counsel to explore the creation of bylaws for the YSGA.
  - d) Payments to approve: Payments were provided with the agenda packet. SEI Invoice #8788 is above this committee's authorization and will go to the Board for approval.

Lynnel Pollock moved to approve administrative item a), which was seconded by Kristin Sicke and approved unanimously. Lynnel Pollock moved to approve administrative item d), which was seconded by Kristin Sicke and approved unanimously.

**5. Update on Merger of WRA and YSGA:** YSGA staff are working with the Westside IRWM Coordinating Committee to revise the Westside MOU to replace the WRA with the YSGA. Kristin is working on the WRA dissolution paperwork to be filed with the state.

- 6. Update on YSGA GSP Implementation Actions:** Discussion Item (Sicke)
- a) *Water Conditions Update:* Roger provided an update on water conditions along the Sacramento River. Agencies are now on flood watch and Shasta may spill in February. Clear Lake is at 3.75 feet Rumsey, and Indian Valley is at 108,000 AF. Groundwater levels are starting to recover and will likely continue showing recovery in the coming weeks.
  - b) *Management Area Public Advisory Committee Proposal:* Kristin is continuing to work to identify committee membership.
  - c) *Ad Hoc Committees:* The Ad Hoc Drought Contingency Planning Committee will meet soon to discuss the well permitting process.
  - d) *DWR's SGMA Implementation Grant Solicitation and Project Prioritization Process.* The Yolo Subbasin application was submitted in December with a grant request of approximately \$13 million. Decisions are expected this spring.

**7. January 23, 2023 Board of Directors Agenda Items**

- a) Consent Items:
  - i. Financials
  - ii. Payment of SEI Bill
  - iii. Minutes
- b) Election of Officers for 2023

**Yolo Subbasin Groundwater Agency**  
**MINUTES of Executive Committee (EC) Meeting**  
**January 17, 2023, 10:00 a.m. – 11:00 a.m.**  
**Hosted virtually via GoToMeeting**

**8. Other Updates & Future Executive Committee Agenda Items:** Yolo County Flood Control and Water Conservation District is moving forward with the assessment process. The next public meeting will be held in February. Kristin will also be presenting at upcoming Irrigated Lands Program meetings.

**9. Next Executive Committee Meeting Date:** To be scheduled via email.

**10. Adjourned** at 10:42 am.

Respectfully submitted,



Kristin Sicke  
Executive Officer

**Yolo Subbasin Groundwater Agency Board of Directors  
Meeting Agenda Report**

**MEETING DATE:** March 20, 2023

**AGENDA ITEM NO. 5**

**SUBJECT:** Consideration: Financial Items

INITIATED OR     BOARD                                     INFORMATION  
REQUESTED BY:  STAFF (*Item b.*)             ACTION:  MOTION  
    OTHER *Ad Hoc Committee (Item a.)*             RESOLUTION

ATTACHMENT     YES     NO

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**BACKGROUND**

- a. *Authorize Executive Officer to Enter into Agreement with LSCE to Proceed with Fee Study*

At the December 19, 2022 Executive Committee meeting, the Executive Officer requested authorization to proceed with a proposal from Ludhorff Scalmanini Consulting Engineers (LSCE) at an amount not-to exceed \$10,000 to complete a planning technical memorandum (TM) summarizing long-term funding strategy options for the YSGA.

The YSGA’s *Ad Hoc Committee for Reconsideration of Voting Structure and Expense Allocation* received a presentation on LSCE’s draft TM on February 24, 2023. The attached [draft TM](#) summarizes the YSGA’s long-term funding needs based on updated five-year revenue projections and discusses next steps to facilitate approval of a long-term funding mechanism to support GSP implementation over the next five years. [Appendix A of the draft TM](#) includes a proposal for proceeding with the YSGA’s *Operations and GSP Implementation Fee Project*, a formal Yolo Subbasin Fee Study. The proposed scope of work is estimated to cost approximately \$72,000 and includes the following tasks:

- Task 1:** Coordination and Communication
- Task 2:** Assessment and Parcel Evaluation
- Task 3:** Preparation of a Revenue Needs and Cost Allocation TM (includes up to three fee/allocation scenarios)
- Task 4:** Preparation of Fee Study Engineer’s Report
- Task 5:** Fee Approval
- Task 6:** Public Outreach
- Task 7:** Final Assessment Levies

As a reminder, YSGA staff included a request for reimbursing expenses related to a Yolo Subbasin Fee Study in DWR's SGMA Implementation grant solicitation (awards are expected in June 2023) and these costs could be reimbursed at a later date.

To initiate the process to determine the most viable solution for sustainably funding YSGA's administrative and technical services to the community in complying with the SGMA legislation, the *Ad Hoc Committee for Reconsideration of Voting Structure and Expense Allocation* recommends the Board of Directors consider authorizing the Executive Officer to enter into an agreement with LSCE to proceed with a Fee Study in the amount not to exceed \$73,000. YSGA staff will provide a summary presentation for the Board's consideration.

*b. Consider Approving Cost Share Contribution to Update Subbasin Model and Incorporate Dunnigan Area Recharge Program*

Dunnigan Water District is leading the way in advancing groundwater recharge this year. As highlighted in [DWR's video](#), Dunnigan Water District is working on a multi-benefit project to recharge up to 5,000 acre-feet annually into the aquifer while also providing up to 500 acres of shorebird habitat. To build out the Dunnigan Area Recharge Program, Dunnigan Water District is applying for grant funds through the [US Bureau of Reclamation WaterSMART Environmental Water Resources Grant](#) program. Without these funds, Dunnigan Water District will not be able to build long-term drought relief, which is critical to sustaining the area's economy and livelihood of its residents. Recharge activities supported by the Dunnigan Area Recharge Program will provide habitat for migratory waterfowl and enhance groundwater dependent ecosystems supporting the region's objective to implement multi-benefit projects.

The YSGA is committed to assisting this effort to build drought resiliency through groundwater recharge, and the YSGA appreciates the Bureau's efforts to improve ecological and watershed health concerns in conjunction with the state's prioritization of groundwater recharge projects as discussed in the [Governor's Water Supply Strategy](#) and further emphasized in Governor Newsom's recent [Executive Order N-3-23](#). To illustrate the regional and collaborative nature of this project to the Bureau, Dunnigan Water District is requesting the YSGA consider partnering with Dunnigan Water District and provide a letter of support and cost share contribution to the grant request.

The current opportunity is to update the YSGA's Yolo Subbasin groundwater model with the empirical data from this effort. The Executive Officer is requesting the Board of Directors consider authorizing up to \$19,000/year for a three-year period for SEI to modify and calibrate the Yolo Subbasin groundwater model with three recharge scenarios, modeling up to four ephemeral streams within the Dunnigan Area Recharge Program. The proposed

tasks are provided below, with total project cost listed. Cost share contributions would be 50% match over a three-year time period and would consider utilizing the remaining budget allocation of ~\$9,000 for the Buckeye Creek Recharge Project. YSGA staff will provide a summary presentation for the Board’s consideration.

**Yolo Subbasin Groundwater Model Updates for Dunnigan Area Recharge Program (SEI Proposal)**

1. Modify the model	\$ 9,256.00
2. Three recharge scenarios	
2A. Simulate actual recharge through 2025	\$ 7,883.59
2B. Simulate 1800 AF/year	\$ 1,368.00
2C. Simulate 5000 AF/yr	\$ 1,368.00
2D. Analysis	\$ 12,070.22
2E. Technical memo	\$ 9,091.59
3. Model up to four (4) ephemeral streams	
3A. Create separate model	\$ 10,192.00
3B. Create same streams within YSGA model	\$ 47,623.52
4. Calibrate the model using new gages	\$ 5,312.00
5. Project Management	\$ 26,858.07
<b>Groundwater Model Updates \$ 131,022.99</b>	

As a reminder, YSGA staff included a request for reimbursing expenses related to groundwater model enhancements in DWR’s SGMA Implementation grant solicitation (awards are expected in June 2023) and these costs could be reimbursed at a later date.

**RECOMMENDATION**

- a. Authorize Executive Officer to Enter into an agreement with LSCE to proceed with Yolo Subbasin Fee Study
- b. Consider Approving Cost Share Contribution to Update Subbasin Model and Incorporate Dunnigan Area Recharge Program

## DRAFT | TECHNICAL MEMORANDUM

DATE: February 09, 2023 Project No. 22-1-177

TO: Kristin Sicke, YSGA Executive Officer

FROM: Eddy Teasdale, PG, CHG, Supervising Hydrogeologist  
Jacques DeBra, Principal, Supervising Water Resource Planner

**SUBJECT: Yolo Subbasin Groundwater Agency - Financial Sustainability  
Summary and Recommendations**

### 1. INTRODUCTION

Luhdorff & Scalmanini, Consulting Engineers (LSCE) was hired to prepare a Technical Memorandum for the Yolo Subbasin Groundwater Agency (YSGA) to address the long term YSGA funding needs with a focus on SGMA compliance and GSP implementation. The Yolo Subbasin GSP was approved by the YSGA Board of Directors and submitted to the California Department of Water Resources (DWR) in accordance with the January 31, 2022 GSP submittal deadline. The YSGA is now focused on GSP implementation and addressing long term financial sustainability to maintain compliance with SGMA requirements and implement recommended management actions, projects, and programs to achieve groundwater sustainability in the Subbasin by 2042. This Technical Memorandum (TM) summarizes the YSGA's long-term funding needs based on updated five-year revenue projections and reviews next steps to facilitate approval of a long-term funding mechanism to support GSP implementation over the next five years. This work will leverage existing Subbasin information, YSGA membership, past regional budget allocations, GSP implementation and SGMA compliance costs, and recommendations for establishing a long-term funding mechanism for the YSGA by CY2024. The strength of the YSGA is member collaboration which will drive this process forward and result in cost-effective solutions to address long term YSGA funding sustainability challenges.

### 2. BACKGROUND

GSAs throughout California have been transitioning their focus from GSP development during the 2017-2022 period to GSP implementation with a focus on achieving sustainable GSA operations, SGMA compliance, GSP implementation, and financial sustainability. This TM identifies long term funding needs for GSP implementation and recommends best available funding mechanisms to support the YSGA 2024-2028 revenue needs required for achieving and maintaining SGMA compliance while meeting groundwater sustainability objectives. Financial sustainability is the key to successful GSP implementation and reliably meeting SGMA requirements over the next 20-year time horizon through 2042. This approach allows the YSGA to maintain local control over its groundwater resources



while avoiding any State imposed SGMA compliance fees. The YSGA service area 2019 land use map is included in **Attachment 1**.

### 3. YSGA GSP IMPLEMENTATION FUNDING NEEDS

The YSGA adopted 2022 GSP identified some estimated GSP implementation costs for some of the primary SGMA compliance actions. These cost estimates will be refined over the initial five-year GSP implementation period based on actual costs for maintaining SGMA compliance. The table below does not include Project Management Action (PMA) implementation costs which would be addressed through outside funding sources and/or local contributions from project proponents. The estimated GSP costs are in 2021 dollars and do not reflect any adjustments for inflation which would be experienced during GSP implementation. The overall funding needs for GSP implementation and SGMA compliance are outlined in Table 1 below. Revenue needs that were included in the GSP are compared to recommended revenue targets which represents a mix of consultant/staff involvement and recommended costs associated with GSP implementation recommendations while maintaining SGMA compliance. GSP implementation costs will be refined over time based on actual costs, level of effort required, and any efficiencies realized.

<b>Table 1. Overview of YGSA GSP Implementation Revenue Needs and Targets</b>		
<b>GSA Funding Need Category</b>	<b>GSP Annual Revenue Needs</b>	<b>Recommended Revenue Needs</b>
Annual Administration Costs	\$150,000	\$485,375 (*)
Sustainability Management	\$60,000	\$0
Annual Monitoring Program	\$90,000	\$25,000
Annual Reporting to DWR	\$50,000	\$50,000
Five-Year GSP Updates (**)	\$150,000	\$112,500
Surface-GW Interaction Modeling	\$0	\$20,000
GSA Coordination/Outreach	\$0	\$40,000
Data Management System Maintenance	\$0	\$25,000
Long Range Financial Planning/Fees	\$0	\$15,000
Grant Procurement	\$0	\$30,000
Contingency (10%)	\$0	\$31,750
<b>TOTAL</b>	<b>\$510,000</b>	<b>\$834,625</b>

(\*) – includes all Admin. Costs (legal, etc. plus 10% contingency for GSA operations).

(\*\*) – Assumes total budget of \$450,000 for 2027 GSP Update (Report plus modeling calibrations)

The recommended revenue needs for inclusion in the YSGA long term funding mechanism reflect additional costs that would be required to achieve GSP implementation and SGMA compliance in a sustainable fashion. Many GSAs are including similar cost items in their updated GSP implementation

budgets recognizing that there will be on-going GSA coordination, long term funding, data management system updates, and surface-groundwater interaction modeling actions that would be in the best interests of the YSGA and members to include in its upcoming five-year revenue projections. The Board will manage costs and budgets and look for cost savings to members during GSP implementation.

### YSGA Updated Five Year Revenue Projections

Transitioning to GSP implementation the YSGA is updating its long-term budget to reflect GSP implementation and SGMA compliance costs based on currently available information. Any long term funding mechanism the YSGA may pursue will be based on the updated revenue needs. Table 2 below includes the draft updated five-year revenue needs for the YSGA to continue operations, achieve SGMA compliance and implement GSP priority actions. See **Attachment 2** for updated revenue projections.

Table 2. YOLO SUBBASIN GSA - Long Term Funding Strategy TM					
Draft Five-Year GSA Operational Budget - GSP Implementation and SGMA Compliance Costs					
5-Year GSP Implementation Inflation Adjustment	0%	3%	3%	3%	3%
Proposed	Year 1	Year 2	Year 3	Year 4	Year 5
Cost Category-GSA Administration	2024	2025	2026	2027	2028
Project Management, SGMA Implementation (YFCWCDC)	\$251,000	\$251,000	\$251,000	\$251,000	\$251,000
Admin. Expenses (copies/postage/website/DMS Hosting)	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
Legal Services	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000
Audit Service - Financial	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000
Bank & Other Fees	\$750	\$750	\$750	\$750	\$750
Insurance - General & Auto	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500
Membership Dues	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000
Consultant Services	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000
Contingency (10%)	\$44,125	\$44,125	\$44,125	\$44,125	\$44,125
Sub-Total	\$485,375	\$485,375	\$485,375	\$485,375	\$485,375
5-Year GSP Cost Re-Allocation	0%	3%	3%	3%	3%
Cost Category-SGMA Compliance	2024	2025	2026	2027	2028
Annual Monitoring and Reporting	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000
Five Year GSP Update w/Modeling Calibrations	\$112,500	\$112,500	\$112,500	\$112,500	\$90,000
Surface-GW Interaction Modeling	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000
GSA Coordination & Outreach (w/in and between GSAs)	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000
Data Management System Maintenance	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000
Long Term Financial Planning/Fees	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000
Grant Procurement	\$0	\$0	\$0	\$0	\$0
Contingency (10%)	\$28,750	\$28,750	\$28,750	\$28,750	\$26,500
Sub-Total	\$316,250	\$316,250	\$316,250	\$316,250	\$291,500
TOTAL YGSA Administration (w/3% inflation adj.)	\$485,375	\$499,936	\$514,498	\$529,059	\$543,620
TOTAL YGSA SGMA Compliance (w/3% inflation adj.)	\$316,250	\$325,738	\$335,225	\$344,713	\$326,480
<b>TOTAL YGSA Operational Budget</b>	<b>\$801,625</b>	<b>\$825,674</b>	<b>\$849,723</b>	<b>\$873,771</b>	<b>\$870,100</b>

The GSP revenue projections did not include all long-term costs and therefore have been included to the updated YSGA five-year revenue projections. Costs for similar items have been evaluated vs. other GSAs and are reflected in Table 2. The administration costs in the GSP did not include all cost items such as office, financial, legal and contingency costs. And the Five-Year GSP update did not include the associated hydrologic modeling update that would be required as part of the work. That item has been updated and is projected to be \$450,000/year, slightly lower than the \$485,000 estimated in the Colusa Subbasin which is similar to the Yolo Subbasin and lower than the projected \$650,000 Solano Subbasin costs.

An additional five-year revenue projection scenario is included in **Attachment 2** which assumes that the GSP Implementation component of the YSGA SGMA Implementation Round 2 Application is approved which would lower required long term funding needs over the initial five-year implementation period. The YSGA will not be informed of DWR SGMA funding decisions until June 2023. The YSGA can plan its

long term funding mechanism accordingly based on whether or not DWR approves components of the YSGA SGMA grant funding application. Maintaining current YSGA membership will provide more flexibility in establishing long term funding mechanisms to keep GSA operational and SGMA compliance costs as low as possible. Project revenue needs are included in **Attachment 3** and will be funded separately.

#### 4. YSGA REVENUE NEEDS – COST ALLOCATION

Once the YSGA has approved its final five-year revenue projections for the 2024-2028 period, review of cost allocation options can be discussed and finalized. Cost allocation describes the process through which revenue needs would be collected from members. The current cost allocation for how revenues are cost shared is summarized in Table 3 below and included in **Attachment 4**. This methodology has been in place for five years and has been supported by members. Any changes to cost allocation should be carefully considered and there should be an understanding that more complex cost allocation methods may have additional associated administrative costs that would be recovered through the long term funding mechanism.

Table 3. Overview of Current YGSA Revenue Cost Allocation		
YGSA Member	FY22-23 Budget	Cost Allocation - % Revenue
City of Davis	\$40,000	8.20%
City of West Sacramento	\$40,000	8.20%
City of Woodland	\$40,000	8.20%
City of Winters	\$20,000	4.10%
Yocha Dehe Wintun Nation	\$10,000	2.05%
Esparto CSD	\$5,000	1.02%
Madison CSD	\$5,000	1.02%
<b>Sub-total Municipal Agencies</b>	<b>\$160,000</b>	<b>32.79%</b>
YFCWCD (200,000 acres)	\$100,000	20.49%
Yolo County (White Areas) (160,000 acres)	\$40,000	8.20%
Direct Contributions (White Areas) (40,000 acres)	\$20,000	4.10%
Other Contributions from Rural Agencies	\$40,000	8.20%
Dunnigan Water District (10,700 acres)	\$5,350	1.10%
Reclamation District 108 (23,200 acres)	\$11,600	2.38%
Reclamation District 150 (4,293 acres)	\$2,147	0.44%
Reclamation District 307 (5,941 acres)	\$2,971	0.61%
Reclamation District 537 (6,077 acres)	\$3,039	0.62%
Reclamation District 730 (4,498 acres)	\$2,249	0.46%

Reclamation District 765 (1,400 acres)	\$700	0.14%
Reclamation District 787 (9,400 acres)	\$4,700	0.96%
Reclamation District 999 (25,250 acres)	\$12,625	2.59%
Reclamation District 1600 (6,924 acres)	\$3,462	0.71%
Reclamation District 2035 (18,000 acres)	\$9,000	1.84%
<b>Sub-total Rural Agencies</b>	<b>\$257,843</b>	<b>52.84%</b>
University of California, Davis	\$40,000	8.20%
Colusa Drain Mutual Water Company	\$10,000	2.05%
California American Water Co. - Dunnigan	\$5,000	1.02%
Rumsey Water Users Association	\$170	0.03%
Yolo County Farm Bureau (private pumpers)	\$10,000	2.05%
Environmental Party Rep. (Ann Brice)	\$0	0.00%
<b>Sub-total Affiliated Parties</b>	<b>\$65,170</b>	<b>13.35%</b>
Interest Income	\$5,000	1.02%
<b>TOTAL</b>	<b>\$488,013</b>	<b>100%</b>

(\*) – Excludes well permitting fee revenues which are self-funded and would not be included in fee calculation.

#### **Current Member Category Cost Allocation**

Table 4 below summarizes the current cost allocation methodology in use by the YSGA to allocate member costs based on current revenue requirements for the FY22-23 budget.

<b>Table 4. Overview of YGSA Cost Allocation By Member Category</b>		
<b>GSA Member Funding Category</b>	<b>FY22-23 Budget Amount</b>	<b>Cost Allocation - % Revenue</b>
Municipal Agencies	\$160,000	32.79%
Rural Agencies	\$257,843	52.84%
Affiliated Agencies	\$65,170	13.35%
Interest Income	\$5,000	1.02%
<b>TOTAL</b>	<b>\$488,013</b>	<b>100%</b>
<b>GSA Member Funding Category</b>	<b>2024-28 Budget Projections</b>	<b>Cost Allocation - % Revenue</b>
Municipal Agencies	\$262,853	32.79%
Rural Agencies	\$423,579	52.84%
Affiliated Agencies	\$107,017	13.35%
Interest Income	\$8,176	1.02%
<b>TOTAL</b>	<b>\$801,625</b>	<b>100%</b>

(\*) – includes all GSA Operational and SGMA Compliance costs for the 2024-2028 period.

----- The YSGA can choose to change its current cost allocation methodology if it results in more equitable distribution of annual revenues required to operate the GSA and achieve SGMA compliance for member agencies. Options can be evaluated in the Fee Study if YSGA desires to include in the project work.

The YSGA recommended five-year revenue projection scenarios in **Attachment 2** includes a scenario which assumes that the GSP Implementation component of the YSGA 2022 SGMA Implementation Round 2 Application (**included in Attachment 5**) is approved by DWR which would lower required long term funding needs over the initial five-year implementation period. The YSGA will not be informed of DWR SGMA funding decisions until June 2023. The YSGA can plan its long-term funding mechanism accordingly based on whether DWR approves specific components of the YSGA SGMA grant funding application. Maintaining current YSGA membership will provide more flexibility in establishing long term funding mechanisms to keep the YSGA operational and SGMA compliance costs as low as possible.

## 5. FUNDING OPTIONS AND FEE COMPARISONS

GSAs throughout California have been grappling with long term GSA funding strategies and through 2022 a pattern has emerged. The majority of GSAs who have already approved long term fees have selected the Proposition 218 majority protest vote fee methodology. Table 5 below highlights the most common options considered and fee mechanisms used by GSAs when establishing these fees.

Table 5. Overview of Common Fee Options Considered by GSAs Through 2022		
Fee Option	Resulting Fees	Notes
No Project	\$300/well + 40/ac-ft.	Approved SWRCB SGMA Fees
Cost/Acre	\$1.00 - \$19.00/ac. range	Low implementation cost
Cost/Acre Foot	\$40-200+/ac-ft.	Based on metered use
Land Use Based	\$40/ac-ft.	Santa Rose Plain
Hybrid Cost/Acre	\$2.79/ac.	Solano GSA
Fee Mechanism	Deliverables	Notes
Proposition 218 Majority Protest	Fee Report/Public Mtg.	Notice to customers (*)
Proposition 26	Fee Report/Public Mtg.	Public meeting only (**)

(\*) – includes distribution of Prop. 218 Notice to customers > 45-days in advance of public hearing to approve fees. (\*\*) – Public meeting required at least 20-days before Board approval of fees.

LSCE recommends that the YSGA pursue the Proposition 218 Majority Protest fee mechanism approach to establish long term SGMA compliance fees because it has been implemented throughout California with no major legal challenges and involves more transparency and public review opportunities than the Proposition 26 approach. Outreach is a highly recommended element of developing a long term fee mechanism to provide those impacted by the fees an opportunity to review, understand and comment on proposed fees which the Board can take into account when considering fee approval. Evaluating other options may also be beneficial to the YSGA as part of due diligence in established long term GSA fees that are reasonable while maintaining local control over groundwater management decisions.

## Funding Option - Grants

Grant funding for SGMA compliance and GSP implementation is the priority for funding projects and actions related to GSP implementation actions. Grants can fund planning and/or implementation actions related to project delivery depending on the funding source and program. Grants are an opportunistic source of funding meaning applicants need to be prepared in advance of the funding solicitation window. The availability of grant funding will vary widely from year to year depending on which programs are soliciting grant applications, program and project funding availability, and priority purposes that determine which applications may be awarded grant funding. GSAs may need to provide an agency cost-share for some grant opportunities that would be funded through in-kind services and/or agency revenues or contributions. Grant funds are typically application-based and highly competitive (not guaranteed). A copy of the YGSA's SGMA Implementation Round 2 Application #1 ranked project component is included in **Attachment 5**. If this component is grant funded by DWR the YGSA will be able to establish lower long-term fees over the 2024-2028 period. LSCE can assist the YGSA procure future grant funding opportunities that will keep GSA costs as low as possible.

## Funding Option - Partner Funding

GSAs can work collaboratively with other local agencies and stakeholders to implement projects and management actions that achieve GSP priority actions in a cost-effective manner. Some GSA activities may receive funding support from local partners. In addition, some activities may be implemented by a local partner using their own sources of funding and not require a financial contribution from the GSAs. The GSAs can coordinate with local partners to incentivize activities that improve sustainable groundwater management and support their subbasin implementation.

## Funding Option - Bonds and Borrowing

Bonds and borrowing are a viable source of funding for infrastructure and capital-intensive projects. Bonds can serve as a low-cost source of financing (depending on market conditions) and are typically issued by public agencies in the form of General Obligation Bonds or Revenue Bonds. These bonds are secured by encumbering one or more sources of revenue and/or other assets available to the GSA or participating agency. The GSA can evaluate several types of bond related funding options depending on the project characteristics and bond market conditions. If secured, entities that seek to issue bonds must meet minimum revenue requirements (bond covenants) to ensure adequate revenues to repay debt service payments. State Revolving Funding Programs, WIFIA, IBank and revenue bonds are viable options depending on funding needs and financial market conditions.

Project proponents will be responsible for planning projects and securing funding for projects included in the GSP. The YGSA can support project efforts and can assist based on available resources. The YGSA should track progress on project implementation efforts and update the project priority list at least every five years so that projects are ready for funding opportunities when available.

LSCE can work with the YGSA to develop the best overall funding strategy based on funding needs, best available funding programs, and timing of funding requirements.

## Other GSA Fee Comparison

Many GSAs throughout California have established long term funding mechanisms to provide sustainable funding for GSA operations and SGMA compliance. Proposition 218 is the most common mechanism in place with a few agencies using Proposition 26 as a fee option. Very few GSAs can sustain their operations based strictly on local contributions. Recent GSA fee comparisons are presented below.

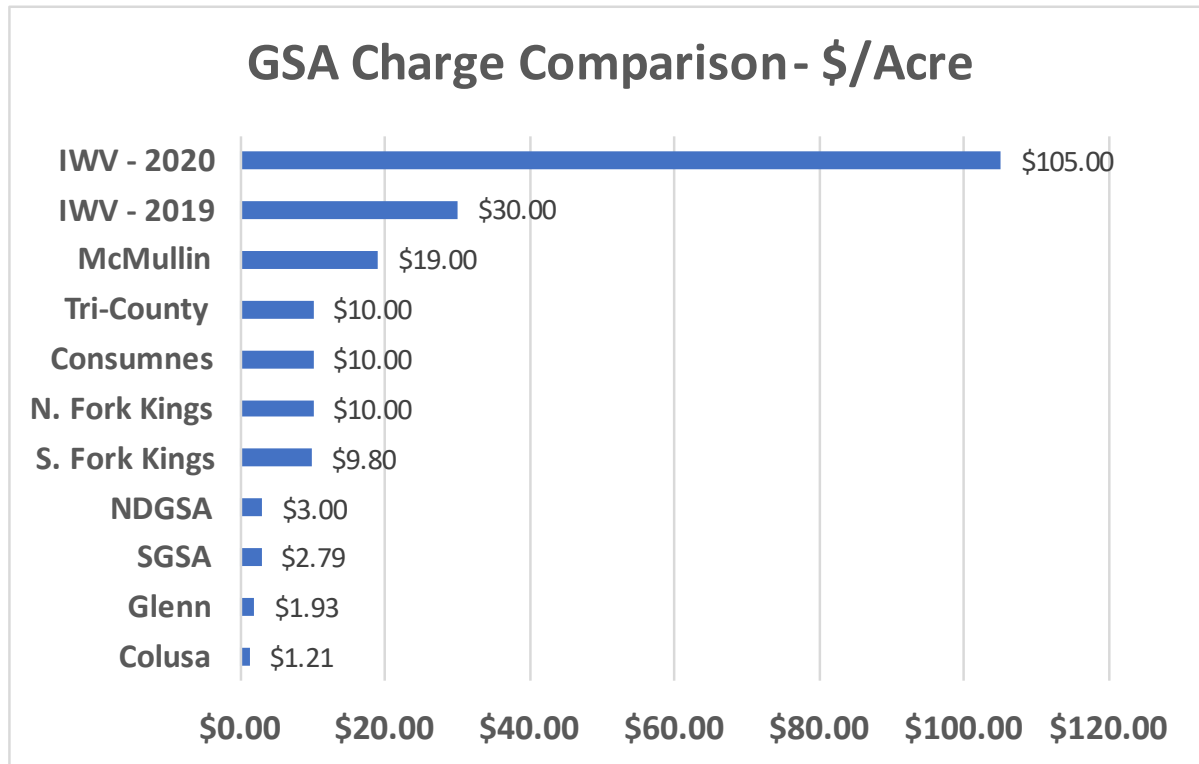


Table 6 takes a closer look at established GSA fees with some local agencies included for reference. The lowest current charge in the State is in the Colusa Subbasin with current CGA charges of \$1.00/acre.

GSA	Total GSP Implementation Costs	
	2022 Fee	Max. Rate
Colusa-CGA	\$1.00/ac.	\$1.21/ac.
Colusa-GGA	\$1.50/ac.	\$1.93/ac.
North Delta GSA	\$1.25/ac	\$3.00/ac
Solano GSA	\$2.79/ac	\$2.79/ac
Consumnes GSA	\$10.00/ac	\$10.00/ac
Tri-County GSA	\$10.00/ac	\$10.00/ac
McMullin GSA	\$19.00/ac	\$19.00/ac

## Substantial GSA Fees In Place

### Delta Mendota Subbasin – 2022/23 Fee Study and Adoption of 5-Year Fee Schedule

Madera	= \$246/ac
Chowchilla	= \$203/ac
Delta Mendota	= \$138/ac

Fees reflect costs of service based on GSA Admin., SGMA Compliance and Project Implementation costs.

### Kaweah GSA – 2022 Fee Schedule and Adoption

<u>Tier Description</u>	<u>Tier Usage – Per Year</u>	<u>Tier Charge</u>
Sustainable Yield	0 to 0.83 ac-ft/ac	\$ 75/ac-ft
Penalty Tier 1	0.84 to 1.66 ac-ft/ac	\$125/ac-ft
Penalty Tier 2	1.67 to 2.70 ac-ft/ac	\$250/ac-ft
Penalty Tier 3	> 2.70 ac-ft/ac	\$500/ac- ft

Fees reflect costs of service based on GSA Admin., SGMA Compliance and Project implementation costs.

### Santa Rosa Plain – 2021/22 Fee Study and Adoption

Santa Rosa Plain = \$40/ac-ft (groundwater use-based fee) + \$300/well

The Santa Rosa Plain GSA fee uses the Proposition 26 mechanism and assumes estimated water use for the non-urban land uses in their service area. Basing water consumption fees on estimated water use values is a risky policy approach which could be easily challenged in the future.

YSGA fees are proposed to include only GSA Administration and SGMA Compliance costs. Project proponents will be responsible for funding their projects based on outside funding sources and local cost share. YSGA fees for the 2024-2028 period are expected to be among the lowest in the State based on current five-year revenue projections and YSGA membership.



## 6. YSGA – NEXT STEPS

The YSGA has stated its intentions to establish long term fees for funding long term GSA operations by 2024. If the Proposition 218 funding mechanism approached is selected by the YSGA as the preferred fee approach, getting started on the project would require LSCE to receive a notice to proceed by February 15, 2023 in order to complete project deliverables with Board approval for providing updated County Tax Roll data to the County Assessor’s Office by August 10, 2023 for inclusion on the December 2023 tax bill.

A description of each project component is included for discussion.

### Public Outreach

Prepare outreach materials and provide to stakeholders throughout the project implementation period including website updates, FAQs, and Fact Sheets as needed. Providing information on upcoming project Board meetings in advance will facilitate stakeholder involvement in the project before Board action is considered on proposed fees developed through the project deliverables.

### Fee Options Evaluation

Evaluating several options is an effective means of selecting a final fee approach by understanding the pros and cons of each option and accounting for any on-going option implementation costs. Current five-year revenue projections assume that the administrative costs for fee implementation will be very low based on an easy to understand and implement fee approach.

An overview of common fee options evaluated by GSAs in developing long term fees/charges are summarized below with options highlighted that would be prudent for the YSGA to focus on as part of their fee options evaluation scope item. Other options may be considered that meet YSGA fee/charge evaluation criteria.

Table 7. Summary of Prop. 218 GSA Options To Consider		
Fee Methodology	Option Information	
	Fee Basis	Fee Basis
SWRCB Fees	SWRCB Compliance Fees	\$300/well + \$40/ac-ft
Flat Fee	\$/acre subject to Fee	\$/acre
Irrigation Fee	\$/ac-ft groundwater extraction	\$/ac-ft
Land Use Hybrid	Irrigated vs. Non-Irrigated	\$2.79/ac
Tiered Fee	Admin/SGMA Compliance tiers	Tier 1 = \$1/ac + tier 2/3
Other	TBD	TBD

Fees methodologies are based on available parcel level data and need to be assessed based on project option evaluation criteria that will be included in the Options Evaluation TM deliverable. LSCE recommends that YSGA consider Flat, Land Use Hybrid, and Tiered Fee methodologies for screening fee options and selecting the preferred fee approach with legal counsel review.

### Fee Report

The Fee Report documents fee options assessed by the GSA and documents the decision-making process for selecting any proposed fees that are included in the final Report. Outreach elements would be included in the Report and the approved Board Report would be available to members and stakeholders on the YSGA website.

### Proposition 218 Notice Distribution

If the Board approves a Proposition 218 based fee to fund GSA Operations and SGMA Compliance costs, the final decision on who receives a Proposition 218 Notice with the proposed fees will be based on which members choose to distribute a Proposition 218 Notice to collect their share of the GSA revenues and which members choose to be annual contributors for their share of the GSA revenues which is current practice.

The final Proposition 218 Notice distribution costs will not be known until each member agency weighs in on how they want to contribute their share of the GSA's operational revenue requirements once the Fee Report has been approved. An MOU or documentation of final member agency contribution preferences can be developed if needed to implement member agency contribution preferences.

**Attachment 6** includes a draft scope of work for YSGA review which includes a project budget and schedule indicating key milestones and Board engagement throughout the project delivery period. The cost of this work is included in the YSGA 2022 SGMA Implementation Round 2 Application submittal and is included in the #1 ranked project for GSP Implementation costs (**see Attachment 5**).

## ATTACHMENT 1

### **GSA Service Area**

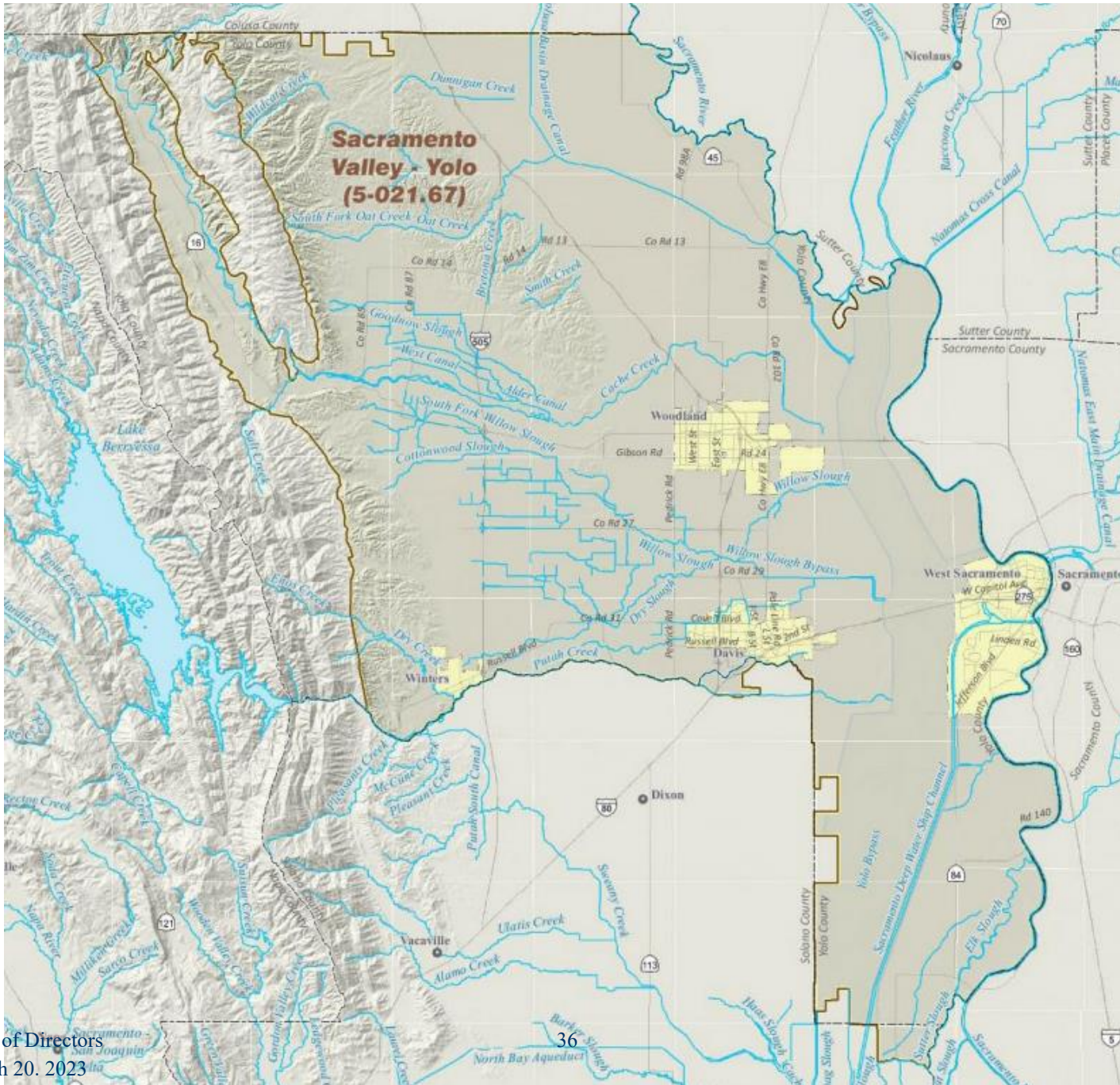
### **Boundary Map**

### **2019 Land IQ Map**

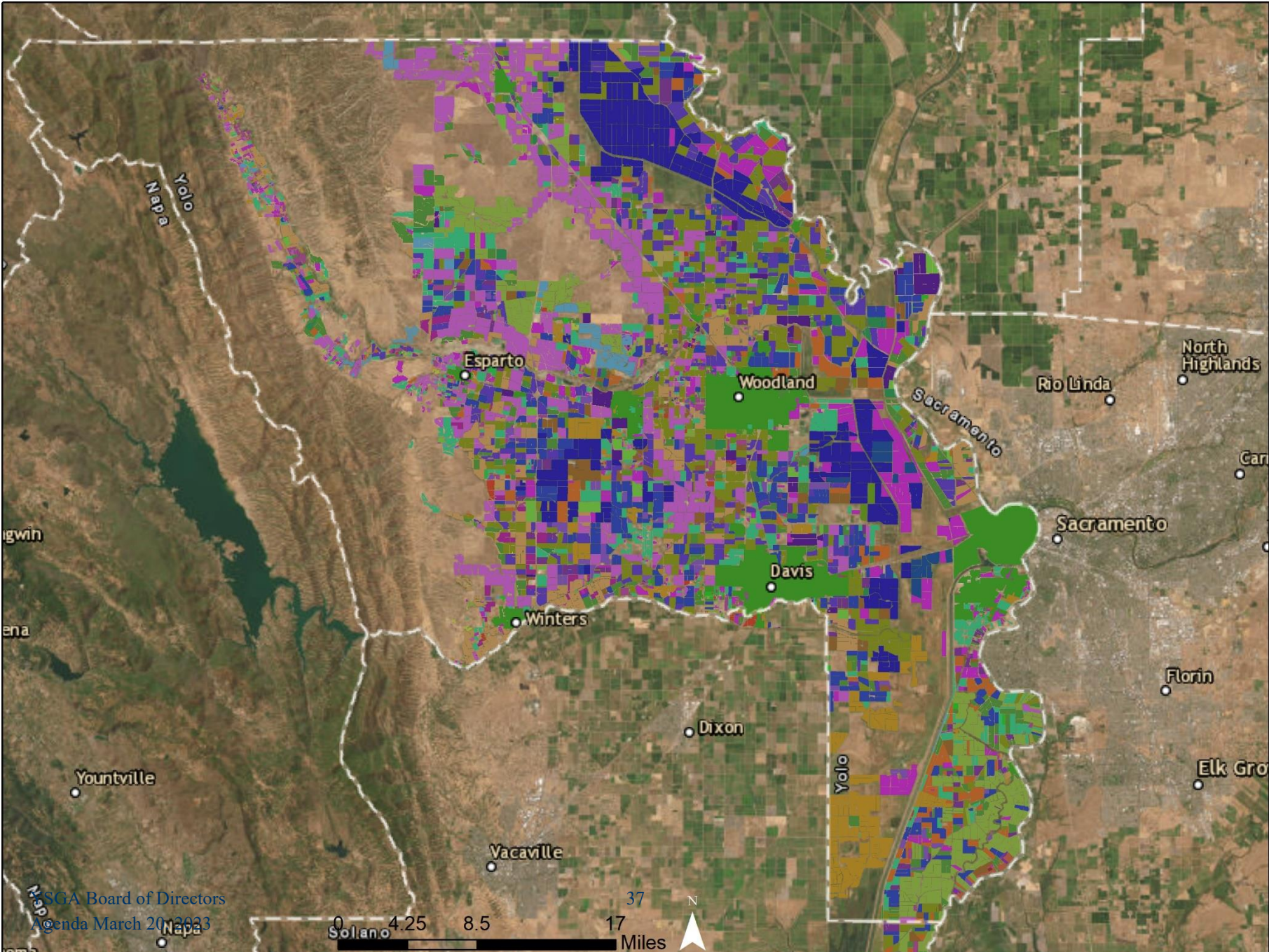
### **Management Area Map**



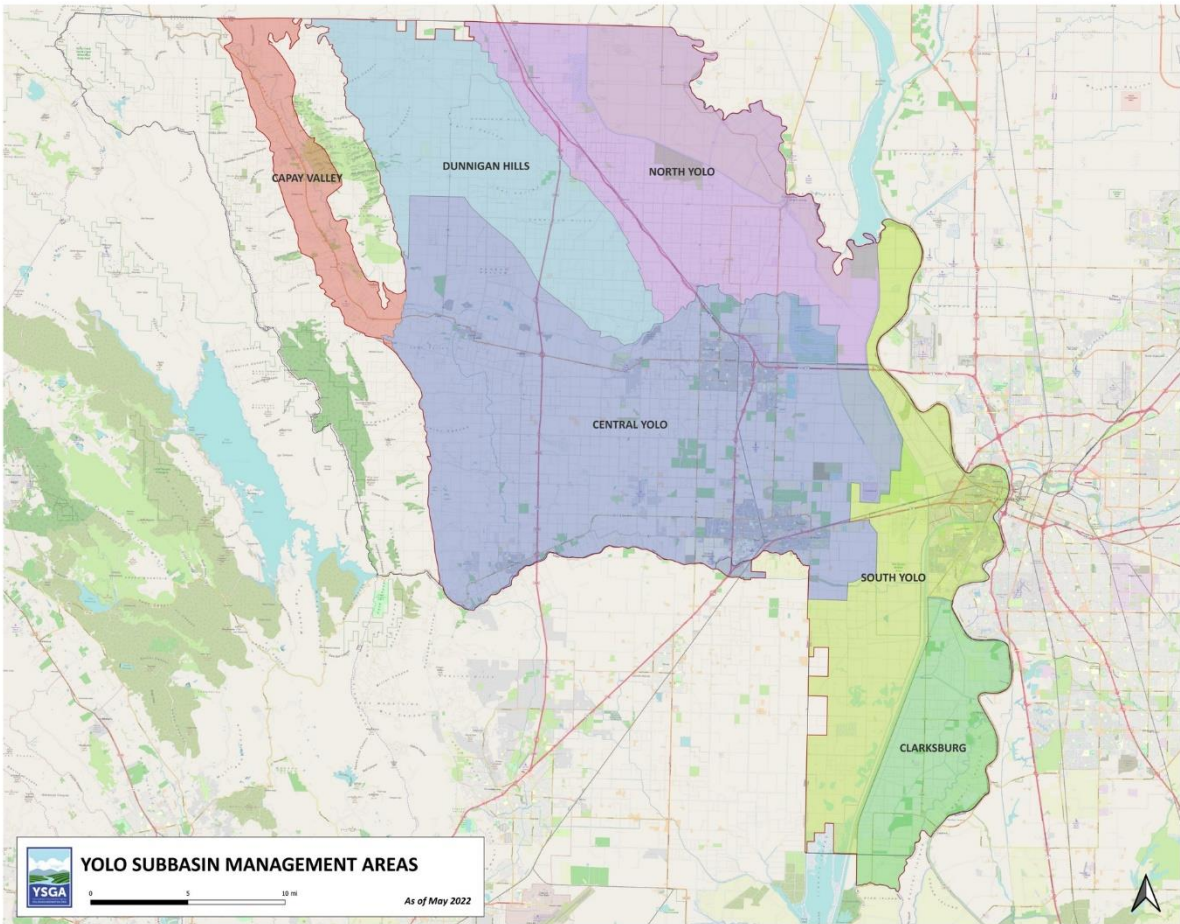
# Yolo County Subbasin Boundary Map



# Yolo County Subbasin – 2019 Land IQ Map



# Yolo Subbasin - Management Area Map



## ATTACHMENT 2

### **GSA Operations – Five-Year Revenue Projections (2024-2028)**

**Scenario 1: SGMA Implementation Round 2 Grant Award (#1 ranked project)**

**Scenario 2: Without any SGMA Implementation Round 2 Grant Awards**



**SCENARIO 1: WITH Round 2 SGMA IMPLEMENTATION GRANT FUNDS (GSP Implementation Project Only)**

<b>YOLO SUBBASIN GSA - Long Term Funding Strategy TM</b>					
<b>Five-Year GSA Operational Budget - GSP Implementation and SGMA Compliance Costs</b>					
5-Year GSP Implementation Inflation Adjustment	0%	3%	3%	3%	3%
<b>Proposed</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
<b>Cost Category-GSA Administration</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>
Project Management, SGMA Implementation (YCFCWCD)	\$251,000	\$251,000	\$251,000	\$251,000	\$251,000
Admin. Expenses (copies/postage/website/DMS Hosting)	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
Legal Services	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000
Audit Service - Financial	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000
Bank & Other Fees	\$750	\$750	\$750	\$750	\$750
Insurance - General & Auto	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500
Membership Dues	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000
Consultant Services	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000
Contingency (10%)	\$44,125	\$44,125	\$44,125	\$44,125	\$44,125
<b>Sub-Total</b>	<b>\$487,399</b>	<b>\$487,400</b>	<b>\$487,401</b>	<b>\$487,402</b>	<b>\$487,403</b>
5-Year GSP Cost Re-Allocation	0%	3%	3%	3%	3%
<b>Cost Category-SGMA Compliance</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>
Annual Monitoring and Reporting (*)	\$0	\$0	\$0	\$0	\$0
Five Year GSP Update w/Modeling Calibrations	\$112,500	\$112,500	\$112,500	\$112,500	\$90,000
Surface-GW Interaction Modeling (*)	\$0	\$0	\$0	\$0	\$0
GSA Coordination & Outreach (w/in and between GSAs) (*)	\$0	\$0	\$0	\$0	\$0
Data Management System Maintenance (*)	\$0	\$0	\$0	\$0	\$0
Long Term Financial Planning/Fees	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000
Grant Procurement	\$0	\$0	\$0	\$0	\$0
Contingency (10%)	\$12,750	\$12,750	\$12,750	\$12,750	\$10,500
<b>Sub-Total</b>	<b>\$140,250</b>	<b>\$140,250</b>	<b>\$140,250</b>	<b>\$140,250</b>	<b>\$115,500</b>
<b>TOTAL YGSA Administration (w/3% inflation adj.)</b>	<b>\$487,399</b>	<b>\$502,022</b>	<b>\$516,645</b>	<b>\$531,268</b>	<b>\$545,891</b>
<b>TOTAL YGSA SGMA Compliance (w/3% inflation adj.)</b>	<b>\$140,250</b>	<b>\$144,458</b>	<b>\$148,665</b>	<b>\$152,873</b>	<b>\$129,360</b>
<b>TOTAL YGSA Operational Budget</b>	<b>\$627,649</b>	<b>\$646,480</b>	<b>\$665,310</b>	<b>\$684,141</b>	<b>\$675,251</b>



**SCENARIO 2: NO GRANT FUNDS**

**Table 2. YOLO SUBBASIN GSA - Long Term Funding Strategy TM  
Draft Five-Year GSA Operational Budget - GSP Implementation and SGMA Compliance Costs**

5-Year GSP Implementation Inflation Adjustment	0%	3%	3%	3%	3%
<b>Proposed</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
<b>Cost Category-GSA Administration</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>
Project Management, SGMA Implementation (YCFCWCD)	\$251,000	\$251,000	\$251,000	\$251,000	\$251,000
Admin. Expenses (copies/postage/website/DMS Hosting)	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
Legal Services	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000
Audit Service - Financial	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000
Bank & Other Fees	\$750	\$750	\$750	\$750	\$750
Insurance - General & Auto	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500
Membership Dues	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000
Consultant Services	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000
Contingency (10%)	\$44,125	\$44,125	\$44,125	\$44,125	\$44,125
<b>Sub-Total</b>	<b>\$485,375</b>	<b>\$485,375</b>	<b>\$485,375</b>	<b>\$485,375</b>	<b>\$485,375</b>
5-Year GSP Cost Re-Allocation	0%	3%	3%	3%	3%
<b>Cost Category-SGMA Compliance</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>
Annual Monitoring and Reporting	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000
Five Year GSP Update w/Modeling Calibrations	\$112,500	\$112,500	\$112,500	\$112,500	\$90,000
Surface-GW Interaction Modeling	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000
GSA Coordination & Outreach (w/in and between GSAs)	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000
Data Management System Maintenance	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000
Long Term Financial Planning/Fees	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000
Grant Procurement	\$0	\$0	\$0	\$0	\$0
Contingency (10%)	\$28,750	\$28,750	\$28,750	\$28,750	\$26,500
<b>Sub-Total</b>	<b>\$316,250</b>	<b>\$316,250</b>	<b>\$316,250</b>	<b>\$316,250</b>	<b>\$291,500</b>
<b>TOTAL YGSA Administration (w/3% inflation adj.)</b>	<b>\$485,375</b>	<b>\$499,936</b>	<b>\$514,498</b>	<b>\$529,059</b>	<b>\$543,620</b>
<b>TOTAL YGSA SGMA Compliance (w/3% inflation adj.)</b>	<b>\$316,250</b>	<b>\$325,738</b>	<b>\$335,225</b>	<b>\$344,713</b>	<b>\$326,480</b>
<b>TOTAL YGSA Operational Budget</b>	<b>\$801,625</b>	<b>\$825,674</b>	<b>\$849,723</b>	<b>\$873,771</b>	<b>\$870,100</b>

## ATTACHMENT 3

### **YGSA 2022 GSP – Project Management Actions**

#### **Chapter 4 and 5 excerpts and Appendix J**



## 5.0 Projects and Management Actions

This section describes projects and management actions proposed by the YSGA and its member agencies to meet the sustainability goal for the Yolo Subbasin. The projects and management actions presented here represent the best available engineering and analysis completed to-date. This list will be updated throughout the planning and implementation period (2022 to 2042) to reflect additional analyses and new and emerging opportunities.

As described in the Subbasin water budget in **Section 2.3 – Water Budget Information**, the Subbasin has an estimated Sustainable Yield of 346 TAF annually. Groundwater pumping under Subbasin future scenarios to support urban and agricultural demands and to maintain surface water – groundwater interactions at their current level are as follows:

- Future baseline            320 TAF
- Future 2030                337 TAF
- Future 2070                358 TAF
- Future 2070 DEW        400 TAF
- Future 2070 WMW       325 TAF

Based on the water budget information, the Subbasin will exceed its sustainable yield only in the Future 2070 and Future 2070 DEW scenarios. In all other scenarios the Subbasin will maintain a relative groundwater balance. However, the YSGA and its member agencies have identified a list of projects and management actions for implementation that will ensure that the Subbasin’s groundwater resources and its beneficial users will not suffer undesirable results.

Throughout the remainder of this GSP, projects and management actions are referred to collectively as “management actions.”

### 5.1 Management Actions Processes

The following sections describe the processes required for management actions to be implemented, the sustainability indicator addressed and overview of the expected benefits. A summary list of all management actions being considered by the YSGA are provided in **Table 5-1** and the detail related to the following management action information is presented in **Appendix J – Table of Projects and Management Actions**.

#### 5.1.1 Goals and Objectives

Per Section 354.44 of DWR’s GSP emergency regulations, GSPs are to include management actions to address any existing or potential undesirable results for the identified relevant sustainability

indicators. The YSGA and its member agencies plan to implement management actions to protect against violating the minimum thresholds of the following sustainability indicators: (1) chronic lowering of groundwater levels, (2) reduction of groundwater storage, (3) degraded water quality, (4) impacts to surface water – groundwater connections, and (5) land subsidence. **Table 5-1** indicates the sustainability indicators that may be addressed by the proposed management actions.

### **5.1.2 Circumstances for Implementation**

Management actions will be implemented as determined by the YSGA or its member agencies and certain management actions may be implemented as soon as 2022 following the adoption of this GSP. **Table 5-1** provides an estimated timeline for implementation of each management action and the circumstances for implementing.

### **5.1.3 Public Noticing**

The public notice and outreach processes for the YSGA and its member agencies include public board meetings and the California Environmental Quality Act (CEQA) process each management action is required to undergo before implementation. The YSGA and its member agencies provide public noticing by publicly posting all board meeting notices, agendas, and minutes in accordance with Brown Act requirements. All projects funded or considered for implementation by the YSGA will be posted under a ‘Projects’ page on the [yologroundwater.org](http://yologroundwater.org) website. The YSGA is committed to an open and transparent process in identifying and implementing projects and management actions.

### **5.1.4 Permitting and Regulatory Process**

Permitting and regulatory requirements vary for the different management actions. Specific requirements will depend on the type of project, which could be recharge and infrastructure projects as well as administrative actions that improve data collection and analysis. The following is a list of the types of permitting at the federal, state, and county level that could apply, but not necessarily, to all management actions.

- Federal
  - If federal grants are used, National Environmental Policy Act documentation is required
  - National Pollution Discharge Elimination System stormwater program permit
- State
  - CEQA documentation may be required prior to implementation of some of the management actions. These documents include one or more of the following: Notice of Exemption, Initial Study, Negative Declaration, Mitigated Negative Declaration, and Environmental Impact Report
- Regional

- Yolo-Solano Air Quality Management District permit and regulations
- Local/County
  - Encroachment Permits
  - Yolo County Grading Permit
  - Yolo County Well Permit

### 5.1.5 **Implementation Timetable and Status**

The current status of each management action is included in **Appendix J – Table of Projects and Management Actions**. Since most management actions are in the conceptual phase of development, the timelines for permitting and regulatory process requirements and other particulars are estimated and subject to change. The implementation of the proposed projects and management actions identified in **Table 5-1** will be done through an adaptive management process. Ultimately the YSGA will work its member agencies to manage the groundwater basin to avoid undesirable results, as described in the previous sections.

The status of each management action is also provided in **Appendix J – Table of Projects and Management Actions**. Each management action is designated as follows:

**Conceptual:** The management action is identified but has not undergone significant planning, engineer or feasibility analyses.

**Not yet started:** This management action as undergone some initial evaluations but has advanced to an implementation phase. The management action will likely require additional feasibility analyses.

**Initiated:** The management action has undergone initial planning and feasibility assessments and being advanced to implementation.

**Ongoing:** The management action is part of an ongoing effort and will continue to be implemented to meet the sustainability goals of the YSGA.

### 5.1.6 **Expected Benefits**

**Table 5-1** provides the estimated benefits for each management. As previously stated, most of the proposed actions are in their conceptual phase of development; therefore, a range has been provided for the estimated benefits each action is expected to yield but is subject to change.

### 5.1.7 **Source of Water**

Some management actions require that the YSGA or its member agencies bring in supplemental water from outside the Subbasin to support its management actions. While not all management actions require water from outside the Subbasin, there are several that do. Where outside sources of water are required, the source of that water will be identified.

### **5.1.8 Legal Authority Required**

The YSGA is a GSA and has the legal authority to implement projects and management actions in order to achieve groundwater sustainability. Member agencies of the YSGA, who will be leading the implementation of management actions, will do so under the authorities of that agency.

### **5.1.9 Estimated Costs and Funding**

As previously stated, most of the projects are in a conceptual phase of development; therefore, costs may not be available. Where costs have been estimated, they are subject to change as the management action undergoes more detailed analysis.

## **5.2 Management Actions Descriptions**

Through the course of the implementation period, 2022 to 2042, the YSGA and its member agencies will implement a variety of management actions to protect groundwater sustainability. These management actions will include capital investment projects to develop additional water supplies to off-set groundwater pumping, a data collection and analysis program to better understand and manage the Subbasin, and improved outreach activities.

Many of the management actions will require additional planning, engineering, and environmental/regulatory analysis before they can be implemented. And the possibility exists that some project will not be feasible to implement. If the identified management actions cannot be implemented, the YSGA will consider additional management actions as needed to protect groundwater sustainability.

### **5.2.1 Projects and Management Actions**

There are existing and on-going projects and management actions that contribute to sustainability in the Yolo Subbasin. Proposed future, existing, and ongoing projects and management actions are described below. **Table 5-1** includes ongoing and proposed projects, with a brief description of the relevant sustainability indicator, status, expected benefits, and ongoing costs. These projects and management actions are proposed by the YSGA for development over the 20-year implementation period. **Appendix J – Table of Projects and Management Actions** contains more detailed information for each of the projects and management actions listed in **Table 5-1**.

**Table 5-1. YSGA Projects and Management Actions.**

MA / Project Number	MA / Project Name	Summary Description	Relevant Sustainability Indicators Affected			
			GW Levels	GW Quality	Land Subsidence	GW/SW
MA 1	Continued and Improved Groundwater Monitoring Program	Several groundwater monitoring programs exist within the Yolo Subbasin. Efforts to aggregate these monitoring programs include the Yolo County Water Resources Information Database (WRID) and DWR's Water Data Library. The WRID also receives well water level data from the cooperating agencies, monitoring about 550 wells distributed Countywide semi-annually. Most groundwater level data received or collected in the WRID is submitted to the state's Water Data Library. Existing programs monitor both water quality and water levels. Continuing to monitor groundwater conditions in the Yolo Subbasin is a critical component of a sustainable future. Improvements can be made to the current program by expanding monitoring efforts into data gaps, improving coordination between programs, and ensuring sustainable funding of monitoring efforts.	•	•	•	•
MA 2	Continue coordination efforts with other management and monitoring entities	Coordination efforts are ongoing related to groundwater management and monitoring in the Yolo Subbasin. Continuing these coordination efforts will yield better information and allow for a collaborative and conjunctive decision-making process. This includes evaluation of well permit applications and working with Yolo County in the well permitting process.	•	•	•	•
MA 3	Subsidence Monitoring Program	Continue to investigate subsidence and causes of subsidence in the Yolo Subbasin.			•	
MA 4	Preparedness through Increased Groundwater Recharge and Managed Aquifer Recharge Projects	This project encompasses all efforts to increase groundwater recharge in the Yolo Subbasin. This includes diversion of winter flows for groundwater recharge, increased groundwater infiltration from precipitation, aquifer storage and recovery projects, for example. Increased groundwater recharge efforts and winter diversions may result in creational of seasonal wetlands in some scenarios. YCFC&WCD proposes to divert winter flows from Cache Creek into the canal system to increase groundwater recharge. Groundwater recharge and recovery is central to good conjunctive management of surface and groundwater resources. Currently, by YCFC&WCD policy, 160 miles of surface water canals remain unlined, providing summertime groundwater recharge services that benefit the aquifer and riparian habitat. The recharged groundwater is used by beneficial users in the Subbasin. Utilizing TNC's Multi-Benefit Recharge Project Methodology Guidance Document will help make	•		•	

MA / Project Number	MA / Project Name	Summary Description	Relevant Sustainability Indicators Affected			
			GW Levels	GW Quality	Land Subsidence	GW/SW
		these projects successful. Managed wetlands within the Subbasin already provide multi-benefit recharge services, and increased coordination with wetland managers will provide opportunity for information sharing and potential managed aquifer recharge projects. Additional methods of groundwater recharge that will be considered include flood water and drain flows in the Yolo Bypass, drain flows in the Colusa Basin Drain, and application of irrigation water in excess of crop evapotranspiration needs.				
MA 5	Conjunctive Water Use Program	This conjunctive water use project envisions using a variety of methods (recharge/recovery, off-stream storage and canal system modernization) to effectively store and conjunctively use groundwater in the District's service area. The new water that will be developed can be used to the benefit of agriculture, environmental and municipal interests. A significant amount of work has already been completed on this project including establishment of a groundwater monitoring program	•			
MA 6	Increased outreach and information sharing of groundwater resources and knowledge within the Yolo Subbasin.	Information sharing, collaboration, and communication will be an important part of groundwater sustainability in the Yolo Subbasin. This project will convey information, best practices, funding opportunities, data, and observations to as wide of a group as possible. This project relates to the Communication and Engagement Plan that the YSGA has created for the Yolo Subbasin.	•	•	•	•
MA 7	Domestic Well Impact Mitigation Program	The YSGA is working to create a domestic well impact mitigation program to mitigate any potential impacts to domestic well users. This program will identify potential funding sources for both temporary and permanent domestic water solutions in cases where domestic well users are impacted due to changing groundwater conditions as a result of groundwater management actions. The minimum thresholds and measurable objectives established in this document are generally protective of domestic well users in the Yolo Subbasin. The Domestic Well Impact Mitigation Program will provide resources and information in cases where management actions result in impacts to domestic well users.	•			
MA 8	Surface Water Monitoring Program	There is no coordinated Countywide surface water monitoring program at present. However, on-going monitoring programs are in-place on various waterways, and a large number of smaller temporary investigations have occurred over the years. These individual surface water monitoring efforts need to be consolidated to improve the value of the data for implementation of actions identified in this GSP.	•	•	•	•



MA / Project Number	MA / Project Name	Summary Description	Relevant Sustainability Indicators Affected			
			GW Levels	GW Quality	Land Subsidence	GW/SW
MA 9	Management Consideration of Grey Areas in the Yolo Subbasin	During the formation of the GSA for the Yolo Subbasin, the eligible entities were identified based on SGMA's definition. Irrigated areas outside of water or irrigation district service areas were known as "white areas" since they did not have an eligible entity (other than the County) to form or become a GSA. The YSGA was formed in June 2017, with Yolo County serving as a member of the JPA to cover these "white areas". The YSGA now has the authority and responsibility for this area; however, there is still no formal mechanism for receiving revenues for SGMA implementation, which has made these areas slightly complicated, or now known as "grey areas". There is a desire for the YSGA to work closely with landowners in these "grey areas" to assess the best solution for implementing the GSP and ensuring future sustainability. Ideas for these areas include, annexing the property into an existing irrigation or reclamation district (as an "Area B" or an Improvement District); creating or forming a new water district; or simply implementing a county-wide assessment for all properties in the Yolo Subbasin.	•	•	•	•
MA 10	Coordination Efforts with Land Use Planning Entities	The YSGA and member entities will work on an as-needed basis with Yolo County and municipalities within the Yolo Subbasin to promote the sustainable use and protection of groundwater resources including GDEs and interconnected surface water bodies. These coordination efforts will include inputs to general plan updates in the future.	•	•	•	•
MA 11	Continued Investigation of subsurface geology and aquifer properties in the Yolo Subbasin	There are portions of the Yolo Subbasin where the geologic properties of the aquifer are well understood. Alternatively, there are areas where geologic conditions are not well described or understood. This Management Action would work to improve geologic information in areas of the subbasin where the aquifer is poorly described. This includes looking at existing geologic cross-sections, AEM surveys, and investigation of driller's reports.	•	•	•	•
MA 12	Coordinated Response to Minimum Threshold Exceedances	The YSGA will coordinate responses to minimum threshold exceedances. When a single well minimum threshold is exceeded, the YSGA will verify the exceedance, analyze causes and trends, and evaluate mitigation. When multiple wells exceed minimum thresholds, causes and trends will be evaluated by MA entities and potential mitigation actions (projects and management actions) will be identified. When wells exceed the minimum threshold for a MA, causes and trends will be evaluated, potential mitigation actions (projects and management actions) will be evaluated and a plan for implementation will be developed. This will involve basin-wide coordination.	•	•	•	•

MA / Project Number	MA / Project Name	Summary Description	Relevant Sustainability Indicators Affected			
			GW Levels	GW Quality	Land Subsidence	GW/SW
P 1	Identification of Locations Vulnerable to Damage from Subsidence - Catalog of Infrastructure Damage Reports	This project would improve the ability to define and quantify the sustainable management criteria for subsidence. Sustainability indicators for subsidence could be better informed if the impacts caused by potential subsidence were catalogued. The sustainable management criteria for subsidence would be improved by identifying infrastructure that would be negatively impacted by subsidence.			•	
P 2	Groundwater Model Enhancement Program/YSGA Model Improvements	To better understand groundwater conditions in the Yolo Subbasin, the YSGA model can be used. This project would continue working with the YSGA model to calibrate and refine model inputs, outputs, and parameterization. Improved data on evapotranspiration could be utilized in enhancing the total water balance in the Subbasin. A primary groundwater model enhancement could be to improve the accuracy of crop ET through development local crop coefficients based on remote sensing/energy balance analyses. This project would include incorporating improved land use datasets for future scenarios and revising "managed wetlands" classifications in the current YSGA model. Additionally, there are other existing models with finer scale, specifically in the Capay Valley that might be useful to calibrate and parameterize the YSGA model. This will be a continuous project, and updates to the model can be made when improved input datasets are made available or created.	•	•	•	•
P 3	Water Resources Information Database Project	This project would include updates to the existing WRID system, and potential additional projects related to data storage and sharing. This project would improve the hosting, visualization, and storage of data related to the YSGA and the Yolo GSP.	•	•	•	•
P 4	Topographic Mapping (LiDAR Project)	This project would improve topographic mapping of the Yolo Subbasin, including surface water bodies.			•	•
P 5	Additional monitoring wells along ephemeral streams, interconnected surface water bodies, and near GDEs	Additional monitoring wells along ephemeral streams in the subbasin may improve understanding of surface water/groundwater of ephemeral streams in the subbasin.	•			•
P 6	Vegetative and aquatic surveys in related to groundwater dependent ecosystems	This project would Improve the ecological inventory of GDEs in the Yolo Subbasin.				•

MA / Project Number	MA / Project Name	Summary Description	Relevant Sustainability Indicators Affected			
			GW Levels	GW Quality	Land Subsidence	GW/SW
P 7	AEM Flights to improve subsurface geology data	Airborne Electromagnetic (AEM) surveys can provide useful information about subsurface geology. This data could potentially be utilized to better understanding aquifer conditions in the Yolo Subbasin. The YSGA is proposing partnering with DWR to implement AEM surveys in areas where the data obtained will be particularly useful. From DWR's AEM Survey datasheet, "During an AEM survey, a helicopter tows electronic equipment that sends signals into the ground which bounce back. The process has been compared to taking an MRI of the ground subsurface. The data collected is used to create continuous images that are interpreted for underground geology. The resulting information will provide a standardized, statewide dataset that improves the understanding of aquifer structures. It can also help with the development or refinement of hydrogeologic conceptual models and can help identify areas for recharging groundwater."	•		•	•
P 8	Abandoned Well Incentive Program	Creation of an incentive program that would pay for the destruction of old, abandoned wells. There are other existing programs that could be the foundation for this proposal. The objectives of this program would be to provide landowners an incentive-based, volunteer program with the intent of protecting the quality of groundwater, eliminating the safety hazard of open wells to humans and livestock, and promoting the importance of water quality within the Yolo Subbasin.		•		
P 9	Modernization Project: Integrated Precision Water Management	YCFC&WCD will modernize 16 miles of its main canal. Automatic water control gates will allow the YCFC&WCD to operate its main system with more flexibility.	•			
P 10	Exchanges between CVP or SWP system and Cache Creek System	This project includes any potential surface water transfers between the CVP or SWP and the Yolo Subbasin. Potentially Sites Reservoir.	•			
P 11	Flood Monitoring Network Project	This project would install flow monitoring stations at canals and sloughs in order to optimize conveyance capacity for both agricultural operations and during rain events, which could occur at the same time. It is not known how much flow sloughs contribute to the canal systems during rain events.	•			
P 12	Yolo County Drains and Sloughs - Governance and Maintenance Study	YCFC&WCD and County will work together to develop a governance and maintenance study that will assist in providing effective rural storm water management responsibilities based on the defined governing bodies. Plan/investigation will initiate a legitimate storm water management program in Yolo County.	•			

MA / Project Number	MA / Project Name	Summary Description	Relevant Sustainability Indicators Affected			
			GW Levels	GW Quality	Land Subsidence	GW/SW
P 13	Zamora area winter recharge from Cache Creek via China Slough	This project would be the development of groundwater recharge capacity by utilizing China Slough and conveying water to the Zamora area. Utilizing existing YCFC&WCD infrastructure would allow for water to reach China Slough and be conveyed to the Zamora area. This project is related to another proposed project - West Adams Canal Renovation and China Slough Rehabilitation. The rehabilitation of China Slough would likely need to occur prior to any successful groundwater recharge events occurring.	•		•	
P 14	Dunnigan Hills Winter Runoff Capture for Recharge	Runoff water in Dunnigan Hills and Hungry Hollow could be diverted into N Adams canal and sent to Yolo-Zamora for winter recharge. This project would utilize excess water in Dunnigan Hills and Hungry Hollow and send it east towards the Yolo Zamora area.	•			
P 15	Winter Diversions from Tehama-Colusa Canal	This project would divert excess winter water from the Tehama Colusa Canal to the Yolo-Zamora area for winter recharge.	•			
P 16	Bird Creek surface water storage	160TAF of potential storage exists in the Bird Creek basin. Installing a dam along Bird Creek would potentially decrease North Yolo MAs reliance on groundwater. Developing a reliable surface water supply would be beneficial to users in White Areas of the Subbasin and could be particularly beneficial to water users whose reliance on groundwater is high.	•			
P 17	Bird Creek, Oat Creek, Buckeye Creek, 2047 Canal groundwater recharge infrastructure improvements	This project is a proposal to improve groundwater recharge in the North Yolo MA. There are a couple options for doing this. Small weirs could be installed to increase the retention time of surface water in the creeks. Additionally, surface water that remains in the 2047 Canal during winter could be rediverted to a ditch with better percolation properties. Areas with high infiltration rates are known by local entities and operators; diversions for groundwater recharge could be directed to these areas.	•			
P 18	Hardwood Subdivision Recharge	CalTrans utilized a parcel on the SW side of the Hardwood Subdivision of Dunnigan to build the County Road 6 overpass of I-5. This parcel is owned by stakeholders in the Yolo Zamora area and may be suitable for recharge. The parcel is currently not utilized for agricultural production and may be an ideal location to develop a groundwater recharge site.	•		•	

MA / Project Number	MA / Project Name	Summary Description	Relevant Sustainability Indicators Affected			
			GW Levels	GW Quality	Land Subsidence	GW/SW
P 19	Schaad Ranch/Buckeye Creek Recharge	Buckeye Creek runs through Schaad Ranch at approximately County Rd 88 where Buckeye Creek crosses it. There is a Dunnigan WD turnout nearby the stream course and several monitoring wells, including a DWR well nearby, also. 215 or other waters could be diverted into the stream course and small, temporary weirs placed or created to slow it and enable recharge.	•			
P 20	Trickle flow to ephemeral streams	The Tehama-Colusa Canal has several side gates used to dewater sections of the canal. These drain into ephemeral streams like Buckeye Creek in Yolo County. Additionally, there are several locations in Colusa and Glenn counties that may be suitable for similar projects. There is the potential to collaborate with CGA to streamline the permitting and regulatory process. Information on Buckeye Creek and the requirements for these side gates to be utilized are known. RD 108 and Dunnigan Water District are ideal partners to promote and implement this project.	•	•	•	•
P 21	Extension of Tehama Colusa Canal	This project would extend the existing Tehama Colusa Canal south. By extending the Tehama Colusa Canal, water users south of Bird Creek water users in the Yolo Zamora area of the North Yolo Management Area may be able to access additional surface water supplies in certain years. Easements may already exist on properties south of Bird Creek which would facilitate the extension of the TC canal.	•			
P 22	Conjunctive Use/groundwater recharge/surface water delivery extension to the area around Zamora	This project would enhance recharge, both actual and in-lieu, through extending surface water deliveries and exploring opportunities for enhanced recharge in the areas in and around Zamora.	•		•	•
P 23	Additional Extensometers in North Yolo MA	This project would help to better understand land subsidence in the North Yolo MA, additional extensometers are being proposed. This will provide a more complete understanding of where and when subsidence is occurring in this area.			•	
P 24	Add real time static level monitoring equipment to Washington Street well in Yolo	This project would help to better react to changes in available water and provide constant historical data that is shared directly to the GSA.	•	•	•	•
P 25	Add real time static level monitoring equipment to Ridgecut well in Knights Landing	This project would help to better react to changes in available water and provide constant historical data that is shared directly to the GSA.	•	•	•	•

MA / Project Number	MA / Project Name	Summary Description	Relevant Sustainability Indicators Affected			
			GW Levels	GW Quality	Land Subsidence	GW/SW
P 26	Sites West Sac. Valley Water Filtration System	This would be a Domestic Water Use Filtration System for Sites Reservoir Sphere of Influence in West Sac Valley. Project could focus on Colusa and North Yolo counties or extend northward into Shasta County.	•	•		
P 27	Sutter Buttes and Willows Fault Arsenic and Saltwater Study	This is a Proposed USGS Study to Follow Up on “Future Work” detailed in the Masters’ Thesis of Stephen Springhorn entitled “Stratigraphic Analysis and Hydrogeologic Characterization of Cenozoic Strata in the Sacramento Valley Near the Sutter Buttes.	•	•	•	
P 28	Forbes Ranch Regulating Pond	This project would develop and construct a 200-acre-foot regulating pond to reduce drainage and flood waters through the town of Madison and District canal system. Divert stormwater flows to the pond through the existing conveyance. The regulating pond would provide storm water retention during the winter and would allow for groundwater recharge in the spring and summer when capacity and water is available. The regulating pond would provide water quality benefits.	•	•		
P 29	West Adams Canal Renovation and China Slough Rehabilitation	This project would result in the enlargement and improvement of the YCFC&WCD’s West Adams, East Adams, and Acacia Canal system, and rehabilitation and improvement of China Slough (a natural storm drainage channel). YCFC&WCD’s canal system could be modernized to allow for a “demand” system and to ensure no spills. China Slough would need to be cleaned, an operating road constructed, and installation of about eight check structures. Improvement of this system would increase capacity for groundwater recharge, both in-lieu and actual.	•			
P 30	Diaz in-line reservoir	The Diaz in-line reservoir project would include the creation of an in-line reservoir on Clover Canal. This would help with water use efficiencies and encourage increased conjunctive use by making surface water easier to utilize. This location could also possibly used for increased groundwater recharge.	•			

MA / Project Number	MA / Project Name	Summary Description	Relevant Sustainability Indicators Affected			
			GW Levels	GW Quality	Land Subsidence	GW/SW
P 31	Magnolia Canal Loss Reduction and Extension Project	This is a proposed 1.5 miles of pipeline to extend and reduce loss in the Magnolia Canal system. This project might increase surface water usage in this area, and thus reduce groundwater demand. Currently, Magnolia Canal has high losses to groundwater, so this loss reduction project would likely decrease the current amount of surface water to groundwater recharge. Extending the canal, however, may allow for decreased reliance on groundwater at the end of Magnolia Canal. A cost-benefit analysis will be conducted prior to project implementation. Quantification of the changes in groundwater recharge will need to be made to determine the benefits of this proposed project.	•			
P 32	Demand Delivery on Yolo Central and Pleasant Prairie Canals	This project would increase surface water usage by making it easier and more convenient for water users to use surface water on the Yolo Central and Pleasant Prairie Canals. This project should result in lower groundwater demands and lower reliance on groundwater. Infrastructure would need to be developed on these canals to allow water users to more easily utilize surface water supplies.	•			
P 33	North of Winters multi-use, stormwater, and water storage pond, Winters North Area Stormwater Pond'	This project proposes developing and constructing a 5,000 acre-foot storm water retention pond in the north area of Winters to reduce drainage and flood waters from the Chickahominy Slough. The retention pond would also be used for groundwater recharge in times when the capacity and water was available. The retention pond would provide water quality benefits by allowing the sediments in the runoff to settle and lessening the transfer of pollutants and chemicals downstream. The surrounding area would have native vegetation that would promote benefits for wildlife habitat, and the property would allow for groups to visit and learn about the multi-beneficial, multi-agency partnership. Similar to the District's Chapman Reservoir, the project would install automated gates and monitoring devices at the retention pond that would be connected to the District's SCADA system for real-time management.	•			
P 34	West Winters Aquifer Storage and Recovery (ASR) well field	Surface water from Putah Creek, or the YCFC&WCD canal system, could be injected west of Winters and extracted to blend with city of Winters wells exceeding arsenic or hex-chrome. Other city wells could be pumped directly to Putah Creek as in-lieu exchange for water injected to SARs field.	•			
P 35	Development of Surface Water Source for the city of Winters	Winters could purchase water from Solano Project, treat and blend with groundwater. Blending would reduce water quality issues and use of surface water would reduce reliance on groundwater. Long-term	•	•		

MA / Project Number	MA / Project Name	Summary Description	Relevant Sustainability Indicators Affected			
			GW Levels	GW Quality	Land Subsidence	GW/SW
		contracts would be required and because Winters historically declined Solano Project water rights, this could be problematic.				
P 36	City of Davis - ASR	This project would include researching the potential for ASR – placing treated surface water into the intermediate aquifer during winter months and using the stored water to augment surface water supplies in summer months. A feasibility study has been completed and pilot testing is underway.	•			•
P 37	Upstream Flow Management to Prevent Madison Flooding and to Facilitate GW Recharge	YCFC&WCD proposes to manage high flows from Lamb Valley, Cottonwood and S. Fork Willow Sloughs using the existing canal system as well as other means such as upstream check dams. During storm events Willow Slough floods the Town of Madison. The Canal system can be used to convey water away from the Town of Madison and reduce flood levels while also managing peak flows through use of check dams, particularly in Lamb Valley Slough. This project would increase groundwater recharge during winter storm events.	•			
P 38	Madison Farmer Field Stormwater Capture and Groundwater Recharge	This is a proposed modification of farmer fields around Madison, specifically those next to Highway 16 and those that will capture upstream flows. The two options considered include 1) 1,200 acres of farmer field modification for rainfall capture (8-inch-berm) and 2) modification of a farmer field near Cache Creek for rainfall and storm water runoff capture a 3-foot-high storm water detention basin. This project will require farmer participation and advanced planning for field modification.	•			
P 39	City of Davis -Site Survey for Hardscape Conversion to Pervious Pavement	This project proposes surveying public parking lots that currently have impervious surfacing to assess the practicality of converting these locations to pervious pavement when they are in need of resurfacing, maintenance or redesign. Portions of the pathways near the sites could potentially highlight permeable pavers in addition to the parking lots. Projects could be planned with improvements to incorporate bioswales, low water use plants, and other low-impact design measures into any landscape changes.	•			
P 40	City of Davis - West Area Pond Redesign	This would be a redesign the West Area Pond (detention basin) to utilize agricultural summer flows to enhance aquatic wildlife habitat and improve water quality. This proposal involves redirecting existing agricultural runoff through the Stonegate drainage pond and pumping it into the West Area Pond. This would enhance aquatic habitat while improving any water discharges through retention, enhancing opportunities for infiltration, transpiration and evaporation.	•			



MA / Project Number	MA / Project Name	Summary Description	Relevant Sustainability Indicators Affected			
			GW Levels	GW Quality	Land Subsidence	GW/SW
P 41	Sac River Water to Davis/Woodland	This project has already been implemented. The Woodland-Davis Clean Water Agency will continue to use Sacramento River water when available and supplement with groundwater when needed. The average surface water utilization is around 40,000 AFY. Effects of this project are being studied.	•			
P 42	City of Woodland - Well 31 ASR Project	The project involves the design and construction of a new municipal ASR well #31 near the site of the existing Well #6. The new ASR well will facilitate groundwater recharge by injecting treated surface water into the gravel layer approximately 500 feet below the surface when surplus Sacramento River water is available during winter months.	•	•		
P 43	City of Davis Leak Detection Survey	This project proposes hiring a consultant to use acoustical listening technology to survey water mains and laterals within the city of Davis water distribution area to detect and locate leaks. Prioritize leaks based on severity. Purchase leak detection equipment to install within distribution system to continuously monitor for potential leaks at key areas identified through the leak detection survey.	•	•		

MA / Project Number	MA / Project Name	Summary Description	Relevant Sustainability Indicators Affected			
			GW Levels	GW Quality	Land Subsidence	GW/SW
P 44	Woodland Recycled Water Utility Expansion Project (Phase II)	<p>The city of Woodland currently has tertiary treated Title 22 effluent from the City's Water Pollution Control Facility (WPCF) providing a firm capacity of approximately 2,700 gpm for recycled water. Woodland has an existing recycled water utility serving 2 City parks and a large industrial user in the industrial area northwest of the WPCF.</p> <p>The City has planned for an expansion of the recycled water utility into the Spring Lake Area of the City and also to serve the planned Woodland Research &amp; Technology Park. There are several existing large water users that would use the recycled water for irrigation of parks and roadside landscaping. Businesses in the Research Park would utilize recycled water for cooling buildings. In addition, recycled water would be available to extend into new development areas for landscape irrigation. Portions of recycled water pipelines in Spring Lake have already been constructed by development projects.</p> <p>Providing recycled water to these areas would reduce demands on the potable water distribution system and reduce the demand on the groundwater aquifer. The recycled water pipeline would be constructed in the City's existing right of way. The City has recently completed a Mitigated Negative Declaration for the project. The expected initial demand for recycled water would exceed 110-acre feet per year. The Capital Cost for the Project is approximately \$2.5M. The recycled water project includes construction of approximately 10,000 feet of 8-inch-diameter purple pipe and a 100,000-gallon storage tank. The project also provides recycled water for expansion (Phase III) to west of Highway 113.</p>	•	•		

MA / Project Number	MA / Project Name	Summary Description	Relevant Sustainability Indicators Affected			
			GW Levels	GW Quality	Land Subsidence	GW/SW
P 45	Woodland Recycled Water Utility Expansion Project (Phase III)	The city of Woodland currently has tertiary treated Title 22 effluent from the city's WPCF providing a firm capacity of approximately 2,700 gpm for recycled water. Woodland has an existing recycled water utility serving two city parks and a large industrial user in the industrial area northwest of the WPCF. The city has planned for an expansion of the recycled water utility into the Sports Park Area of the city and also to serve the planned SP1B and SP1C areas in the city's General Plan. There are several existing large water users that would use the recycled water for irrigation of parks and roadside landscaping. In addition, recycled water would be available to extend into new development areas for landscape irrigation. Providing recycled water to these areas would reduce demands on the potable water distribution system and reduce the demand on the groundwater aquifer. The recycled water pipeline would be constructed in the city's existing right of way. The city has recently completed a Mitigated Negative Declaration for the project. The expected initial demand for recycled water would exceed 70-acre feet per year. The Capital Cost for the Project is approximately \$925,000. The recycled water project includes construction of approximately 4,300 feet of 8-inch-diameter purple pipe.	•	•		
P 46	City of Davis -Recycled Water Pump Station	With the completion of secondary and tertiary improvements, the City's Wastewater Treatment Plant is now capable of producing tertiary disinfected effluent that meets the requirements of Title 22 of the CCR for recycled water. However, a final component of these upgrades is a means of delivering the recycled water produced at the WWTP to potential future customers. New infrastructure is necessary to convey recycled water from the WWTP to potential	•	•		
P 47	YCFC&WCD Winter Recharge	This project increases winter recharge by utilizing YCFC&WCD sloughs and canals. This is an ongoing project and can only be conducted under certain circumstances. The water diverted into unlined district canals varies on an annual basis between a minimum of 0 AFY and a maximum of around 30,000 AFY.	•			
P 48	City of Winters Recycled Water Utilization	The city of Winters Waste Water Treatment Facility is secondary treatment. This water is currently discharged to 170 acres on two spray fields. No water leaves the facility, and none of the effluent comes in contact with any surface waterway. In 2020, 267.4 acre-feet of water were discharged for percolation and evaporation. In 2019, 240 acre-feet were discharged for percolation and evaporation. This project is ongoing. There may be opportunities to develop the groundwater recharge aspect of this project.	•			

MA / Project Number	MA / Project Name	Summary Description	Relevant Sustainability Indicators Affected			
			GW Levels	GW Quality	Land Subsidence	GW/SW
P 49	Citrona Ditch Pressurization Project	This project would increase the adoption of surface water over groundwater when available. This is a 10-15 (cubic feet per second) cfs supply, for four customers on 10 fields.	•			
P 50	RD 2035 - Groundwater Studies	Reclamation District 2035's Ground Studies Project will consist of the identification and analysis of issues, if any, surrounding the quality and availability of groundwater within their district.	•	•	•	•
P 51	RD 2035 - Floodway Corridor Project	The project consists of piping (or lining) the Cross Bypass Canal and the installation of flow control and measurement devices to improve the conveyance system and increase water use efficiency.	•			
P 52	RD 2035 - Conjunctive Use Study	The project consists of the study and analysis of the coordinated use of surface and groundwater that could benefit the agricultural, urban, and environmental interests within, nearby and downstream of Yolo County, especially the North Delta region.	•			
P 53	Water Hexavalent Chromium (Cr6) Compliance Project	City of Winters Hexavalent Chromium related projects to improve water quality.		•		
P 54	UC Davis Arboretum Waterway Wetland Restoration and Enhancement	UC Davis is proposing to enhance the Arboretum Waterway, which captures stormwater discharge from 900 acres of the UC Davis campus, by establishing a wetland area to treat stormwater discharge and recycled water prior to discharge to Putah Creek.	•			
P 55	City of Woodland - North Regional Pond and Pump Station	This project involves the design and construction of an approximate 75-acre sedimentation pond and a pump station able to eventually accommodate a 120-cfs design flow. Project re-purposes an existing City evaporation pond that is no longer in use for any purpose. There may be some groundwater recharge benefits as a result of this project. The primary benefit is stormwater treatment and retention. This project is operational and is substantially completed.	•			
P 56	Improved hydrologic flows, increased runoff retention, and improved watershed health in the Capay Valley	These projects would improve groundwater levels, groundwater quality, and SW/GW Interaction in the Capay Valley Management Area. In the Capay Valley MA, this would include the creation of demonstration sites for capturing hillside run-off, process-based restoration in selected tributaries of Cache Creek, and improvement of overall watershed health to improve overall groundwater conditions. The processes established by these projects can be utilized throughout the subbasin.	•	•		•

MA / Project Number	MA / Project Name	Summary Description	Relevant Sustainability Indicators Affected			
			GW Levels	GW Quality	Land Subsidence	GW/SW
P 57	Enhanced water infiltration <i>via</i> grazing management and crop production practices in the Capay Valley	For every 1% increase in soil organic matter, water holding capacity can increase by 20,000 gallons per acre. Some crop production practices are known to improve water infiltration and water-holding capacity. Pilot projects, scaling, and community adoption are all components of these projects. This type of project could be expanded to the entire subbasin, or other areas within the subbasin.	•			
P 58	Oak woodland, riparian, and chaparral restoration in the Capay Valley	Develop a restoration plan and demonstration sites. Then scale-up the demonstration sites to other areas in the Capay Valley MA. Improving the health of oak woodlands, riparian areas, and chaparral can improve the hydrological and ecological function of these areas. Similar projects can be created for other areas within the Yolo Subbasin.	•			•
P 59	Establish an equipment and knowledge hub in the Capay Valley	A one-stop-service Equipment and Knowledge Hub will be established to make available services and equipment that support the projects described above and their application into perpetuity. Services and equipment will be tailored to the needs of livestock managers, crop producers and habitat restorationists. The aim will be to make available the knowledge and tools that are not readily available as yet and are necessary for farmers/ranchers/others to adopt practices for improving groundwater management. If successful, this knowledge hub could be expanded to other areas within the subbasin.	•	•	•	•
P 60	Rumsey and Guinda Ditch Winter Recharge	Development of groundwater recharge capacity by utilizing Rumsey and Guinda ditch and conveying water to the Capay Valley.	•			
P 61	Guinda Ditch summer irrigation and pipelines from Cache Creek to other side of Highway 16	Guinda ditch could be reactivated to provide additional Cache Creek water during the irrigation season to Capay Valley	•			
P 62	Yocha Dehe Wintun Nation - expansion of Surface Water Diversion	This is the continuation of an existing project that allows the YDWN to utilize surface water resulting in in-lieu recharge of groundwater.	•			
P 63	Improve Subsidence data collection and analysis in the Capay Valley MA	This encompasses projects to improve the understanding of subsidence in the Capay Valley. This can be done by installing extensometers or securing funding to better understand land subsidence in the Capay Valley.			•	

MA / Project Number	MA / Project Name	Summary Description	Relevant Sustainability Indicators Affected			
			GW Levels	GW Quality	Land Subsidence	GW/SW
P 64	Incorporation of Capay IGSM into the YSGA Model	This falls under the 'Updates to the YSGA Model' project that is applicable to the entire subbasin. The Capay Integrated Groundwater Surface water Model was developed by WRIME (now called RMC Water and Environment) in 2010 and updated by RMC in 2016. Components of this model may be incorporated into the YSGA Model to improve overall understanding of groundwater in the Capay Valley.	•			•
P 65	Yolo Bypass Conservation Projects	These are projects that relate to changes in land use, surface water flows, and groundwater use in the Yolo Bypass.	•			
P 66	Revisions to the YSGA Model for Urban Groundwater usage in the South Yolo MA	This project would ensure that the water budget for the South Yolo MA accurately reflects changes in urban groundwater usage in this area moving forward.	•	•	•	•
P 67	Methylmercury Impacts analyses for the Yolo Bypass	Yolo County proposes to collect data and analyze changes in methyl mercury production and bioaccumulation that could result from (1) a proposed Bay Delta Conservation Plan (BDCP) project to enhance fisheries habitat in the Yolo Bypass; and (2) a Central Valley Flood Protection Plan proposal to expand the Yolo Bypass to improve flood capacity		•		
P 68	West Sacramento Well Improvements that may Include ASR	Groundwater recharge and extraction project for groundwater storage, groundwater quality management, and system redundancy.	•	•		•
P 69	West Sacramento and city of Sacramento Intertie	Coordinate conjunctive use activities and provide emergency water supplies.	•	•		•
P 70	Dry well groundwater recharge on California Olive Ranch	<i>This proposed project would inject excess surface water</i> into the aquifer at a location on California Olive Ranch.	•			•
P 71	Projects to improve understanding of surface water/groundwater interaction around Oat Creek and Buckeye Creek/others in Dunnigan/North Yolo areas.	Additional streamflow monitoring and dedicated groundwater monitoring wells are proposed to better understand groundwater levels and surface water-groundwater interaction in the surface water bodies in the Dunnigan Hills area. Information from a recent pilot study on groundwater recharge in Oat Creek can be used to improve understanding of the creek's recharge potential.	•		•	

MA / Project Number	MA / Project Name	Summary Description	Relevant Sustainability Indicators Affected			
			GW Levels	GW Quality	Land Subsidence	GW/SW
P 72	Additional groundwater monitoring wells in the Dunnigan Hills MA	There are currently very few groundwater monitoring wells in the Dunnigan Hills MA. The addition of dedicated monitoring wells will improve the understanding of groundwater in this area. Few wells in this Management Area have long periods of record, but the YSGA has identified wells and landowners that would like to be involved in the groundwater monitoring program.	•	•	•	•
P 73	O'Halloran off-stream reservoir site	A proposed off-stream reservoir that would improve surface water delivery efficiency and conjunctive use. This project would also likely be utilized to generate peak-hour electricity.	•			
P 74	Additional groundwater monitoring wells in the Clarksburg MA	There are currently very few groundwater monitoring wells in the Clarksburg MA. The addition of dedicated monitoring wells will improve the understanding of groundwater in this area. This monitoring network would include water quality measurements in this area. There are few wells in this area with long periods of record, but monitoring could start now. Wells and landowners have been identified with interest in improving the groundwater monitoring network program.	•	•	•	•
P 75	Reclamation District 999 - Elk Slough Groundwater Quality Improvement and Flood Protection Project	Elk Slough is currently closed to the fresh water of the Sacramento River and is maintained by tidal inflows from Sutter Slough. Elk Slough water quality is typically similar to that of the river; however, when salinity intrusion increases during droughts, the slough water quality declines.	•	•		
P 76	Boards In Program	This would be a voluntary or financially incentivized program to have landowners keep the spill boards in their rice fields in during the winter. This would increase groundwater recharge in the subbasin and would be a multi-benefit project. Even though these fields tend to have low infiltration there would still be benefits out of this sort of program.	•			
P 77	Cover cropping, rangelands improvements, and other agricultural practices to improve groundwater recharge	Cover crops, compost application, and rangeland management strategies can provide multiple benefits, including increased groundwater recharge. This would be a landowner-based project, with potential incentives being created in the future.	•		•	•

### 4.11.3 Proposed Actions, Description, and Timeline to Address Data Gaps

Table 4-7 shows the potential actions that can be taken to address the known data gaps in the Yolo Subbasin.

**Table 4-7. Proposed Actions and Timeline to Address Data Gaps.**

Action Number	Data Gap Focus	Description	Affected Area	Timeline
1	Groundwater Monitoring	Obtain and digitize existing monitoring data from DWD	Dunnigan Hills	Within 5 years
2	Groundwater Monitoring	Incorporate existing wells into monitoring program	Dunnigan Hills, Hungry Hollow, Winters	Ongoing; completed within 5 years
3	Groundwater Monitoring	Outreach to expand voluntary monitoring program in data gap areas	All	Ongoing
4	Groundwater Monitoring	Utilize existing well completion databases to establish baseline groundwater levels	All	Within 5 years
5	Groundwater Monitoring	Continue monitoring of long-term monitoring wells with recent end to monitoring	Subbasin-wide- especially in South Yolo/Clarksburg	Ongoing, completed within 5 years
6	Groundwater Monitoring	Installation of additional real-time monitoring units	Yolo/Zamora	Ongoing
7	Groundwater Monitoring	Improvements to site access and well information for existing monitoring network	All	Ongoing
8	Groundwater Monitoring	Construction of additional monitoring wells	Interconnected Surface Waters, GDEs, Dunnigan Hills, data gaps	Ongoing, starting within 5 years
9	Groundwater Monitoring	Concentrated effort to link existing WCRs to current monitoring network	Subbasin-wide	Within 5 years
10	Groundwater Monitoring	Videologging of existing monitoring wells lacking screen intervals	Subbasin-wide	TBD
11	Subsidence Monitoring	Installation of continuous GPS stations or extensometers	TBD	TBD
12	Subsidence Monitoring	Design and implement accessible reporting of subsidence impacts	Subbasin-wide	Within 5 years
13	Subsidence Monitoring	Inventory areas most susceptible to subsidence	Subbasin-wide	TBD
14	Subsidence Monitoring	GPS-based surveys in the Capay Valley	Subbasin-wide/Capay Valley	Within 5 years
15	Surface Water & GDE	Additional streamflow gage(s) along Cache Creek	Cache Creek	Within 10 years



Action Number	Data Gap Focus	Description	Affected Area	Timeline
16	Surface Water & GDE	Additional shallow, nested monitoring wells along Putah Creek	Putah Creek	Within 5 years
17	Surface Water & GDE	Improve characterization of surface water and GDE status near smaller creeks, sloughs, and canals	Basinwide	Ongoing
18	Surface Water & GDE	Potential options to improve interconnected surface waters and classification of GDEs include seepage measurements, nested piezometers, and incorporation and analysis of existing streamflow gages.	Interconnected Surface Waters & GDEs	Ongoing
19	Surface Water & GDE	Refine and verify GDE dataset through coordination with local entities, surveys, and field work	Subbasin-wide	Ongoing
20	Surface Water & GDE	Develop and implement process for monitoring wetland, aquatic, and vegetative GDE presence and health	Subbasin-wide	TBD
21	Surface Water & GDE	Correct modeling of managed wetland acreage and water demands	Subbasin-wide	Within 5 years
22	HCM	Review upcoming and recent studies on base of freshwater	Subbasin-wide, North Yolo Management Area	Within 5 years
23	HCM	AEM surveys	Data Gaps, Capay Valley, Hungry Hollow, Western Edge	Within 5 years

# **Yolo Subbasin Groundwater Agency 2022 Groundwater Sustainability Plan**

Yolo County, CA

## **Appendix J**

### **Table of Projects and Management Actions**

**Appendix J. Proposed List of Projects and Management Actions - Yolo Subbasin**

Project/MA Number	MA Name	Circumstance for Implementation	Public Noticing Process	Permitting and Regulatory Process Requirements	Implementing YSGA Member Agency	Status	Timetable / Circumstances for Initiation	Timetable for Completion	Timetable for Accrual of Expected Benefits	Expected Benefits				Source(s) of Water, if Applicable	Legal Authority Required	Disadvantaged Community?	Management Area	Estimated Costs		
										Primary		Secondary						One-time Costs	Ongoing Costs (per year)	Potential Funding Source(s)
										Water Supply Augmentation	Water Demand Reduction	Water Quality Improvement	Water Management Feasibility / Efficiency							
MA 1	Continued and Improved Groundwater Monitoring Program	Ongoing	YSGA Board Meetings & Website	N/A	YSGA, Member Agencies	Ongoing	Ongoing	Continuous	2022	N/A	N/A			N/A	N/A	Yes	Yolo Subbasin	TBD	TBD	TBD
MA 2	Continue coordination efforts with other management and monitoring entities	Ongoing	YSGA Board Meetings & Website	N/A	YSGA, Member Agencies	Ongoing	Ongoing	Continuous	2022	N/A	N/A			N/A	N/A	Yes	Yolo Subbasin	TBD	TBD	TBD
MA 3	Subsidence Monitoring Program	Ongoing	YSGA Board Meetings & Website	N/A	YSGA, Member Agencies	Ongoing	Ongoing	Continuous	Ongoing	N/A	N/A			N/A	N/A	Yes	Yolo Subbasin	TBD	TBD	TBD
MA 4	Preparedness through Increased Groundwater Recharge and Managed Aquifer Recharge Projects	Ongoing	YSGA Board Meetings & Website	Project Specific	YSGA, Member Agencies	Ongoing	Ongoing	Continuous	Ongoing	TBD	N/A		•	Project Dependent	Project Dependent	Yes	Yolo Subbasin	TBD	TBD	TBD
MA 5	Conjunctive Water Use Program	Ongoing	YSGA Board Meetings & Website	Project Specific	YSGA, Member Agencies	Ongoing	Ongoing	Continuous	Ongoing	N/A	TBD		•	Project Dependent	N/A	Yes	Yolo Subbasin	TBD	TBD	TBD
MA 6	Increased outreach and information sharing of groundwater resources and knowledge within the Yolo Subbasin.	Upon adoption of Yolo GSP	YSGA Board Meeting & Website	N/A	YSGA, Member Agencies	Ongoing	2022-2027	Continuous	Continuous	N/A	N/A		•	N/A	N/A	Yes	Yolo Subbasin	TBD	TBD	TBD
MA 7	Domestic Well Impact Mitigation Program	Upon adoption of Yolo GSP	YSGA Board Meeting & Website	Project Specific	YSGA, Member Agencies	Not yet started	2022-2027	2027	Drought period following project implementation	N/A	N/A			N/A	N/A	Yes	Yolo Subbasin	TBD	TBD	TBD
MA 8	Surface Water Monitoring Program	Ongoing	YSGA Board Meetings & Website	N/A	YSGA, Member Agencies	Ongoing	Ongoing	Continuous	Continuous	N/A	N/A			N/A	N/A	No	Yolo Subbasin	TBD	TBD	TBD
MA 9	Management Consideration of Grey Areas in the Yolo Subbasin	Upon adoption of Yolo GSP	YSGA Board Meeting & Website	N/A	YSGA	Not yet started	Upon adoption of the Yolo GSP	Continuous	Continuous	N/A	N/A			N/A	N/A	Yes	Yolo Subbasin	TBD	TBD	TBD
MA 10	Coordination Efforts with Land Use Planning Entities	Upon adoption of Yolo GSP	YSGA Board Meetings & Website	N/A	YSGA, Member Agencies	Not yet started	Upon adoption of the Yolo GSP	Continuous	Continuous	N/A	N/A			N/A	N/A	Yes	Yolo Subbasin	TBD	TBD	TBD
MA 11	Continued Investigation of subsurface geology and aquifer properties in the Yolo Subbasin	Upon adoption of Yolo GSP	YSGA Board Meetings & Website	N/A	YSGA	Not yet started	Upon adoption of the Yolo GSP	Continuous	Continuous	N/A	N/A			N/A	N/A	Yes	Yolo Subbasin	TBD	TBD	TBD
MA 12	Coordinated Response to Minimum Threshold Exceedances	Upon adoption of Yolo GSP	YSGA Board Meeting & Website	Site and Project Dependent	YSGA, Yolo County, Member Agencies	Not yet started	Upon adoption of the Yolo GSP	Continuous	Continuous	N/A	N/A			N/A	N/A	Yes	Yolo Subbasin	TBD	TBD	TBD
P 1	Identification of Locations Vulnerable to Damage from Subsidence - Catalog of Infrastructure Damage Reports	Upon completion of feasibility analysis.	YSGA Board Meetings & Website	N/A	YSGA, Member Agencies	Not yet started	2022	2027	Immediately following project completion	N/A	N/A			N/A	N/A	Yes	Yolo Subbasin	TBD	TBD	TBD
P 2	Groundwater Model Enhancement Program/YSGA Model Improvements	Upon adoption of Yolo GSP	YSGA Board Meetings & Website	N/A	YSGA, Member Agencies	Ongoing	Ongoing	Continuous	Immediately following project completion	N/A	N/A			N/A	N/A	Yes	Yolo Subbasin	TBD	TBD	TBD
P 3	Water Resources Information Database Project	Upon adoption of Yolo GSP	YSGA Board Meetings & Website	N/A	YSGA, Member Agencies	Ongoing	Ongoing	Continuous	Continuous	N/A	N/A			N/A	N/A	Yes	Yolo Subbasin	TBD	TBD	TBD
P 4	Topographic Mapping (LIDAR Project)	Upon adoption of Yolo GSP	YSGA Board Meetings & Website	N/A	YSGA	Not yet started	Upon adoption of the Yolo GSP	TBD	Immediately following project completion	N/A	N/A			N/A	N/A	Yes	Yolo Subbasin	TBD	TBD	YSGA/Yolo County
P 5	Additional monitoring wells along ephemeral streams, interconnected surface water bodies, and near GDEs.	Upon completion of feasibility and permitting requirements	YSGA Board Meeting & Website	Project Specific	YSGA, Member Agencies	Not yet started	2022-2027	Continuous	Immediately following project completion	N/A	N/A			N/A	N/A	No	Yolo Subbasin	TBD	TBD	TBD
P 6	Vegetative and aquatic surveys in related to groundwater dependent ecosystems	Upon completion of feasibility and permitting requirements	YSGA Board Meeting & Website	Project Specific	YSGA, Member Agencies	Not yet started	2022-2027	Continuous	Immediately following project completion	N/A	N/A			N/A	N/A	No	Yolo Subbasin	TBD	TBD	TBD
P 7	AEM Flights to improve subsurface geology data	Upon completion of feasibility analysis.	YSGA Board Meeting & Website	N/A	YSGA	Not yet started	TBD	TBD	Immediately following project completion	N/A	N/A			N/A	N/A	Yes	Yolo Subbasin	TBD	TBD	TBD

Project/MA Number	MA Name	Circumstance for Implementation	Public Noticing Process	Permitting and Regulatory Process Requirements	Implementing YSGA Member Agency	Status	Timetable / Circumstances for Initiation	Timetable for Completion	Timetable for Accrual of Expected Benefits	Expected Benefits				Source(s) of Water, if Applicable	Legal Authority Required	Disadvantaged Community?	Management Area	Estimated Costs		
										Primary		Secondary						One-time Costs	Ongoing Costs (per year)	Potential Funding Source(s)
										Water Supply Augmentation	Water Demand Reduction	Water Quality Improvement	Water Management Feasibility / Efficiency							
P 8	Abandoned Well Incentive Program	Upon completion of feasibility and permitting requirements	YSGA Board Meeting & Website	Project Specific	YSGA	Ongoing	Ongoing	Continuous	Continuous	N/A	N/A	•	N/A	N/A	Yes	Yolo Subbasin	TBD	TBD	TBD	
P 9	Modernization Project: Integrated Precision Water Management	Ongoing	YSGA Board Meeting & Website	Project Specific	YCFCWCD	Ongoing	Ongoing	Continuous	Upon project completion	N/A	N/A	•	N/A	N/A	No	Yolo Subbasin	TBD	TBD	YCFCWCD	
P 10	Exchanges between CVP or SWP system and Cache Creek System	Upon completion of feasibility and permitting requirements	YSGA Board Meeting & Website	Project Specific	YSGA	Not yet started	TBD	Continuous	Continuous	TBD	N/A	•	Sites Reservoir, CVP, and SWP	TBD	Yes	Yolo Subbasin	TBD	TBD	TBD	
P 11	Flood Monitoring Network Project	Ongoing	YSGA Board Meeting & Website	N/A	YCFCWCD	Ongoing	Ongoing	Ongoing	Upon project completion	N/A	N/A		N/A	N/A	Yes	Yolo Subbasin	TBD	TBD	TBD	
P 12	Yolo County Drains and Sloughs - Governance and Maintenance Study	Ongoing	YSGA Board Meeting & Website	N/A	Yolo County	Ongoing	Ongoing	Ongoing	Upon project completion	N/A	N/A		N/A	N/A	Yes	Yolo Subbasin	\$150,000	TBD	TBD	
P 13	Zamora area winter recharge from Cache Creek via China Slough	Upon completion of feasibility and permitting requirements	YSGA Board Meetings & Website	TBD	YCFCWCD	Not yet started	Dependent on feasibility analysis	TBD	Wet year following project completion	2,000 AF/year	N/A		Cache Creek	TBD	Yes	North Yolo	\$1,172,160	TBD	ARP, DWR, SWRCB, YCFCWCD	
P 14	Dunnigan Hills Winter Runoff Capture for Recharge	Upon completion of feasibility and permitting requirements	YSGA Board Meetings & Website	TBD	YCFCWCD	Not yet started	Dependent on feasibility analysis	TBD	Wet year following project completion	TBD	N/A		Dunnigan Hills runoff	TBD	Yes	North Yolo	TBD	TBD	TBD	
P 15	Winter Diversions from Tehama-Colusa Canal	Upon completion of feasibility and permitting requirements	YSGA Board Meetings & Website	TBD	YCFCWCD	Not yet started	Dependent on feasibility analysis	TBD	Wet year following project completion	TBD	N/A		Tehama Colusa Canal	TBD	Yes	North Yolo	TBD	TBD	TBD	
P 16	Bird Creek surface water storage	Upon completion of feasibility and permitting requirements	YSGA Board Meetings & Website	TBD	DWD/RD 108/YSGA	Not yet started	Dependent on feasibility analysis	TBD	After completion of project	160TAF Total Storage	N/A		Bird Creek, Dunnigan Hills watershed	TBD	Yes	North Yolo	TBD	TBD	TBD	
P 17	Bird Creek, Oat Creek, Buckeye Creek, 2047 Canal groundwater recharge infrastructure improvements	Upon completion of feasibility and permitting requirements	YSGA Board Meetings & Website	TBD	DWD/RD 108/YSGA	Not yet started	Dependent on feasibility analysis	TBD	Wet year following project completion	TBD	N/A		Bird Creek, Oat Creek, Buckeye Creek	TBD	Yes	North Yolo	TBD	TBD	TBD	
P 18	Hardwood Subdivision Recharge	Upon completion of feasibility and permitting requirements	YSGA Board Meetings & Website	TBD	DWD/RD 108/YSGA	Not yet started	Dependent on feasibility analysis	TBD	After completion of project	TBD	N/A		Local runoff	TBD	Yes	North Yolo	TBD	TBD	DOT, DWR, NRCS	
P 19	Schaad Ranch/Buckeye Creek Recharge	Upon completion of feasibility and permitting requirements	YSGA Board Meetings & Website	TBD	DWD/RD 108/YSGA	Not yet started	Dependent on feasibility analysis	TBD	After completion of project	TBD	N/A		Buckeye Creek/	TBD	Yes	North Yolo	TBD	TBD	TBD	
P 20	Trickle flow to ephemeral streams	Upon completion of feasibility and permitting requirements	YSGA Board Meetings & Website	TBD	RD 108	Not yet started	Upon completion of feasibility analysis	TBD	Wet year following project completion	TBD	N/A	•	Tehama Colusa Canal	TBD	Yes	North Yolo	~\$8,000	\$16 - \$100 per Acre-foot	RD 108	
P 21	Extension of Tehama Colusa Canal	Upon completion of feasibility and permitting requirements	YSGA Board Meetings & Website	TBD	YSGA, DWD, RD 108	Not yet started	Upon completion of feasibility and permitting requirements	TBD	Wet year following project completion	TBD	N/A	•	Tehama Colusa Canal	TBD	Yes	North Yolo	TBD	TBD	TBD	
P 22	Conjunctive Use/groundwater recharge/surface water delivery extension to the area around Zamora (Placeholder for WGIM)	Upon completion of feasibility and permitting requirements	YSGA Board Meetings & Website	TBD	YSGA, DWD	Not yet started	Upon completion of feasibility and permitting requirements	TBD	Wet year following project completion	TBD	N/A	•	2047, 215, Sites Reservoir, excess winter flows	TBD	Yes	North Yolo	TBD	TBD	TBD	
P 23	Additional Extensometers in North Yolo MA	Upon completion of feasibility and permitting requirements	YSGA Board Meetings & Website	TBD	DWD/RD 108/YSGA	Not yet started	Upon identification of funding sources.	TBD	After completion of project	N/A	N/A		N/A	TBD	Yes	North Yolo	~\$1,000,000 per Extensometer	\$20-40k per year	TBD	
P 24	Add real time static level monitoring equipment to Washington Street well in Yolo	Ongoing	YSGA Board Meetings & Website	Completed	YCFCWCD/Cacheville CSD	Not yet started	Upon GSP Adoption	2023	2023	N/A	N/A		N/A	TBD	Yes	North Yolo	~ \$3,500	\$500	Yolo County, CSA	
P 25	Add real time static level monitoring equipment to Ridgecut well in Knights Landing	Ongoing	YSGA Board Meetings & Website	Completed	YCFCWCD/KLCS D	Not yet started	Upon GSP Adoption	2023	2023	N/A	N/A		N/A	TBD	Yes	North Yolo	~ \$3,500	\$500	Yolo County, KLCSA	
P 26	Sites West Sac, Valley Water Filtration System	Upon completion of feasibility and permitting requirements	YSGA Board Meetings & Website	TBD	YSGA	Not yet started	Upon completion of feasibility analysis	2030	2030	25,000 AF	N/A		Sites Reservoir	TBD	Yes	TBD	\$400,000,000	TBD	Federal Infrastructure Funding	
P 27	Sutter Buttes and Willows Fault Arsenic and Saltwater Study	Upon completion of feasibility and permitting requirements	YSGA Board Meetings & Website	N/A	YSGA	Not yet started	Upon GSP Adoption	TBD	Immediately after completion	N/A	N/A	•	N/A	TBD	Yes	TBD	\$1,000,000	TBD	DWR	

Project/MA Number	MA Name	Circumstance for Implementation	Public Noticing Process	Permitting and Regulatory Process Requirements	Implementing YSGA Member Agency	Status	Timetable / Circumstances for Initiation	Timetable for Completion	Timetable for Accrual of Expected Benefits	Expected Benefits				Source(s) of Water, if Applicable	Legal Authority Required	Disadvantaged Community?	Management Area	Estimated Costs		
										Primary		Secondary						One-time Costs	Ongoing Costs (per year)	Potential Funding Source(s)
										Water Supply Augmentation	Water Demand Reduction	Water Quality Improvement	Water Management Feasibility / Efficiency							
P 28	Forbes Ranch Regulating Pond	Upon completion of feasibility and permitting requirements	YSGA Board Meetings and Website	TBD	YCFCWCD	Not yet started	TBD	TBD	Irrigation season after project completion	TBD	N/A			Cache Creek/stormwater	TBD	No	Central Yolo	\$700,000	\$50,000	YCFCWCD
P 29	West Adams Canal Renovation and China Slough Rehabilitation.	Upon completion of feasibility and permitting requirements	YSGA Board Meetings and Website	TBD	YCFCWCD	Not yet started	TBD	TBD	Wet year following project completion	TBD	10,000 AF average annual reduction in GW demand		•	Cache Creek via District Canals	TBD	No	Central Yolo	\$15,671,929	Unknown	YCFCWCD
P 30	Diaz in-line reservoir	Upon completion of feasibility and permitting requirements	YSGA Board Meetings and Website	TBD	YCFCWCD	Not yet started	TBD	TBD	Irrigation season after project completion	TBD	N/A		•	Clover Canal	TBD	No	Central Yolo	TBD	TBD	TBD
P 31	Magnolia Canal Loss Reduction and Extension Project	Upon completion of feasibility and permitting requirements	YSGA Board Meetings and Website	TBD	YCFCWCD/Teichert	Undergoing pre-feasibility analysis	TBD	TBD	Irrigation season after project completion	200 - 800 AF	N/A		•	Magnolia Canal	TBD	No	Central Yolo	1.95 - 2.35 MM	TBD	Teichert
P 32	Demand Delivery on Yolo Central and Pleasant Prairie Canals	Upon completion of feasibility and permitting requirements	YSGA Board Meetings and Website	TBD	YCFCWCD	Undergoing pre-feasibility analysis	TBD	TBD	Irrigation season after project completion	TBD	N/A		•	Yolo Central and Pleasant Prairie	TBD	No	Central Yolo	TBD	TBD	TBD
P 33	North of Winters multi-use, stormwater, and water storage pond, 'Winters North Area Stormwater Pond'	Upon completion of feasibility and permitting requirements	YSGA Board Meetings and Website	TBD	YCFCWCD/City of Winters	Not yet started	TBD	TBD	Wet year following project completion	TBD	TBD	•	•	Cache Creek, Winters Canal	TBD	No	Central Yolo	TBD	TBD	TBD
P 34	West Winters Aquifer Storage and Recovery well field	Upon completion of feasibility and permitting requirements	YSGA Board Meetings and Website	TBD	City of Winters	Not yet started	TBD	TBD	TBD	TBD	TBD		•	Putah Creek	TBD	No	Central Yolo	TBD	TBD	TBD
P 35	Development of Surface Water Source for the City of Winters	Upon completion of feasibility and permitting requirements	YSGA Board Meetings and Website	TBD	City of Winters	Not yet started	TBD	TBD	TBD	TBD	TBD	•	•	Putah Creek	TBD	No	Central Yolo	TBD	TBD	TBD
P 36	City of Davis - Aquifer Storage and Recovery (ASR)	Ongoing	YSGA Board Meetings and Website	TBD	City of Davis	Pilot testing underway	Ongoing	Ongoing	Ongoing	TBD	N/A		•	Sac River	TBD	Yes	Central Yolo	TBD	TBD	TBD
P 37	Upstream Flow Management to Prevent Madison Flooding and to Facilitate GW Recharge	Upon completion of feasibility and permitting requirements	YSGA Board Meetings and Website	TBD	YCFCWCD/Madison CSD	Not yet started	TBD	TBD	Wet year following project completion	TBD	N/A	•		Lamb Valley, Cottonwood, S. Fork Willow Slough	TBD	No	Central Yolo	TBD	TBD	TBD
P 38	Madison Farmer Field Stormwater Capture and Groundwater Recharge	Upon completion of feasibility and permitting requirements	YSGA Board Meetings and Website	TBD	Madison CSD	Undergoing pre-feasibility analysis	TBD	TBD	Wet year following project completion	TBD	N/A			Runoff	TBD	No	Central Yolo	\$100,000 - \$400,000	TBD	TBD
P 39	City of Davis -Site Survey for Hardscape Conversion to Pervious Pavement	Upon completion of feasibility and permitting requirements	YSGA Board Meetings and Website	TBD	Davis	Not yet started	TBD	TBD	Immediately after completion	TBD	N/A			Precipitation	TBD	Yes	Central Yolo	\$40,000	\$0	City of Davis
P 40	City of Davis - West Area Pond Redesign	Upon completion of feasibility and permitting requirements	YSGA Board Meetings and Website	TBD	Davis	Not yet started	TBD	TBD	Immediately after completion	TBD	N/A			Precipitation	TBD	Yes	Central Yolo	\$100,000	TBD	City of Davis
P 41	Sac River Water to Davis/Woodland	Ongoing	YSGA Board Meetings and Website	TBD	City of Davis, City of Woodland	Implemented	Effects being studied	Ongoing	Ongoing	40,000 AF/year	N/A			Sac River	TBD	Yes	Central Yolo	Funding Secured	Funding Secured	Funding secured
P 42	City of Woodland - Well 31 ASR Project	Ongoing	YSGA Board Meetings and Website	Completed	City of Woodland	Pre-design	Ongoing	2027	Ongoing	2,000 gpm during injection	N/A			Treated surface water	TBD	Yes	Central Yolo	\$6,250,000	TBD	City of Woodland
P 43	City of Davis Leak Detection Survey	Ongoing	YSGA Board Meetings and Website	TBD	City of Davis	Options Being Explored	Ongoing	Ongoing	Ongoing	N/A	N/A	•		N/A	N/A	Yes	Central Yolo	\$150,000	TBD	TBD

Project/MA Number	MA Name	Circumstance for Implementation	Public Noticing Process	Permitting and Regulatory Process Requirements	Implementing YSGA Member Agency	Status	Timetable / Circumstances for Initiation	Timetable for Completion	Timetable for Accrual of Expected Benefits	Expected Benefits				Source(s) of Water, if Applicable	Legal Authority Required	Disadvantaged Community?	Management Area	Estimated Costs		
										Primary		Secondary						One-time Costs	Ongoing Costs (per year)	Potential Funding Source(s)
										Water Supply Augmentation	Water Demand Reduction	Water Quality Improvement	Water Management Feasibility / Efficiency							
P 44	Woodland Recycled Water Utility Expansion Project (Phase II)	Ongoing	YSGA Board Meetings and Website, City of Woodland Website	TBD	City of Woodland	Ongoing	Ongoing	TBD	Immediately after completion	110 acre-feet/year	N/A			WPCF effluent	TBD	Yes	Central Yolo	\$2,500,000	TBD	TBD
P 45	Woodland Recycled Water Utility Expansion Project (Phase III)	Ongoing	City of Woodland Website	TBD	City of Woodland	Ongoing	Ongoing	TBD	Immediately after completion	70 acre-feet/year	N/A			WPCF effluent	TBD	Yes	Central Yolo	\$925,000	TBD	TBD
P 46	City of Davis -Recycled Water Pump Station	Ongoing	City of Davis Website	TBD	City of Davis	Construction planned for Fall 2021 or early 2022	2022	2022	2023 - future	TBD	TBD			City of Davis Wastewater Treatment Plant	TBD	Yes	Central Yolo	\$1,800,000	TBD	TBD
P 47	YCFCWCD Winter Recharge	Upon completion of feasibility and permitting requirements	YCFCWCD Board Meetings and Website	TBD	YCFCWCD	Ongoing	Ongoing	Ongoing	Wet year following project completion	0-30,000 AF/year	N/A			Cache Creek System	TBD	Yes	Central Yolo	\$3,000,000	TBD	YCFCWCD
P 48	City of Winters Recycled Water Utilization	Ongoing	City of Winters	Completed	City of Winters	Ongoing	Ongoing	Ongoing	Currently Accruing	250 AF/year	N/A			City of Winters WWTF	N/A	No	Central Yolo	Funding Secured	Funding Secured	Funding secured
P 49	Citrona Ditch Pressurization Project	Upon completion of feasibility and permitting requirements	YSGA Board Meetings and Website	TBD	YCFCWCD	Not yet started	TBD	TBD	Irrigation season after project completion	TBD	N/A			Citrona Ditch	TBD	No	Central Yolo	TBD	TBD	TBD
P 50	RD 2035 - Groundwater Studies	Upon adoption of Yolo GSP	YSGA Board Meetings and Website	TBD	RD 2035	Ongoing	Ongoing	Ongoing	Immediately after completion	N/A	N/A			N/A	N/A	No	Central Yolo	TBD	TBD	TBD
P 51	RD 2035 - Floodway Corridor Project	Upon adoption of Yolo GSP	YSGA Board Meetings and Website	TBD	RD 2035	Not yet started	Upon adoption of Yolo GSP	TBD	Immediately after completion	N/A	N/A			N/A	N/A	No	Central Yolo	TBD	TBD	TBD
P 52	RD 2035 - Conjunctive Use Study	Upon adoption of Yolo GSP	YSGA Board Meetings and Website	TBD	RD 2035	Not yet started	Upon adoption of Yolo GSP	TBD	Immediately after completion	N/A	N/A			N/A	N/A	No	Central Yolo	TBD	TBD	TBD
P 53	Water Hexavalent Chromium (Cr6) Compliance Project	Ongoing	YSGA Board Meetings and Website	TBD	City of Winters	Ongoing	Ongoing	Ongoing	Ongoing	N/A	N/A			Groundwater, Putah Creek	TBD	No	Central Yolo	\$6 - 8,000,000	TBD	TBD
P 54	UC Davis Arboretum Waterway Wetland Restoration and Enhancement	Ongoing	YSGA Board Meetings and Website	TBD	UC Davis	Ongoing	Ongoing	Ongoing	Ongoing	N/A	N/A			Stormwater Discharge	TBD	Yes	Central Yolo	\$4,000,000	TBD	TBD
P 55	City of Woodland - North Regional Pond and Pump Station	Ongoing	YSGA Board Meetings and Website	TBD	Woodland	Completed	Completed	2022	Wet season after completion	N/A	N/A			South Canal and Gibson Channel	TBD	Yes	Central Yolo	\$8,000,000	\$100,000	Funding secured
P 56	Improved hydrologic flows, increased runoff retention, and improved watershed health in the Capay Valley	Upon adoption of Yolo GSP	YSGA Board Meeting & Website	TBD	Capay Valley Vision	Not yet started	Upon adoption of GSP	End 2022	2022-2040	Up to 50% increase in precip retention	N/A			Cache Creek/Precipitation	TBD	No	Capay Valley	\$25,000 - \$50,000, \$50,000/mile on tributaries	TBD	NRCS EQIP funds, CalFire
P 57	Enhanced water infiltration via grazing management and crop production practices in the Capay Valley	Upon adoption of Yolo GSP	YSGA Board Meeting & Website	TBD	Capay Valley Regeneration	Not yet started	2022	2026-2040	2027-2040	20,000 gallons/acre	TBD			Precipitation	TBD	No	Capay Valley	TBD	TBD	CA Healthy Soils funding
P 58	Oak woodland, riparian, and chaparral restoration in the Capay Valley	Upon adoption of Yolo GSP	YSGA Board Meeting & Website	TBD	Capay Valley Vision with Cache Creek Conservancy	Not yet started	2022	2027-2040	2028-2040	TBD	N/A			N/A	TBD	No	Capay Valley	TBD	TBD	TBD
P 59	Establish an equipment and knowledge hub in the Capay Valley	Upon adoption of Yolo GSP	YSGA Board Meeting & Website	N/A	Capay Valley Regeneration	Not yet started	Upon adoption of GSP	Ongoing	Ongoing	TBD	N/A			N/A	N/A	No	Capay Valley	TBD	TBD	TBD
P 60	Rumsey and Guinda Ditch Winter Recharge	Upon completion of feasibility and permitting requirements	YSGA Board Meeting & Website	TBD	YCFCWCD	Not yet started	Dependent on feasibility analysis	TBD	Wet year following project completion	2,000 AF/year	N/A			Cache Creek	TBD	No	Capay Valley	TBD	TBD	YCFCWCD
P 61	Guinda Ditch summer irrigation and pipelines from Cache Creek to other side of HWY 16	Upon completion of feasibility and permitting requirements	YSGA Board Meeting & Website	TBD	YCFCWCD	Not yet started	Dependent on feasibility analysis	TBD	Wet year following project completion	2,000 AF/year	N/A			Cache Creek	TBD	No	Capay Valley	TBD	TBD	YCFCWCD
P 62	Yocha Dehe Wintun Nation - expansion of Surface Water Diversion	Upon completion of feasibility and permitting requirements	YSGA Board Meetings and Website	TBD	Yocha Dehe Wintun Nation, YCFCWCD	Undergoing pre-feasibility analysis	TBD	TBD	Irrigation season after project completion	TBD	TBD			Cache Creek	TBD	No	Capay Valley	TBD	TBD	TBD
P 63	Improve Subsidence data collection and analysis in the Capay Valley management area	Upon completion of feasibility and permitting requirements	YSGA Board Meeting & Website	TBD	YSGA	Not yet started	Upon adoption of GSP	Ongoing	Ongoing	N/A	N/A			N/A	N/A	No	Capay Valley	TBD	TBD	TBD

Project/MA Number	MA Name	Circumstance for Implementation	Public Noticing Process	Permitting and Regulatory Process Requirements	Implementing YSGA Member Agency	Status	Timetable / Circumstances for Initiation	Timetable for Completion	Timetable for Accrual of Expected Benefits	Expected Benefits				Source(s) of Water, if Applicable	Legal Authority Required	Disadvantaged Community?	Management Area	Estimated Costs		
										Primary		Secondary						One-time Costs	Ongoing Costs (per year)	Potential Funding Source(s)
										Water Supply Augmentation	Water Demand Reduction	Water Quality Improvement	Water Management Feasibility / Efficiency							
P 64	Incorporation of Capay IGSM into the YSGA Model	Upon completion of feasibility, assessment of funds, and cost-benefit analysis.	YSGA Board Meeting & Website	N/A	YSGA	Not yet started	2022-2027	2027	2027-Future	N/A	N/A			N/A	N/A	No	Capay Valley	TBD	TBD	TBD
P 65	Yolo Bypass Conservation Projects	Upon completion of feasibility and permitting requirements	Yolo GSA Board Meetings & Website	TBD	Yolo County	Ongoing	Ongoing	Ongoing	Ongoing	TBD	TBD			N/A	TBD	No	South Yolo	TBD	TBD	TBD
P 66	Revisions to the YSGA Model for Urban Groundwater usage in the South Yolo MA	Upon completion of feasibility and permitting requirements	Yolo GSA Board Meetings & Website	TBD	YSGA	Not Yet Started	2022	2022-2027	After project completion	N/A	N/A			N/A	N/A	No	South Yolo	TBD	TBD	TBD
P 67	Methylmercury Impacts analyses for the Yolo Bypass	Upon completion of feasibility and permitting requirements	Yolo GSA Board Meetings & Website	TBD	Yolo County	Undergoing pre-feasibility analysis	Dependent on feasibility analysis	Ongoing	After Completion of Analyses	N/A	N/A	•		N/A	N/A	No	South Yolo	\$100,000	TBD	Yolo County
P 68	West Sacramento Well Improvements that may Include Aquifer Storage and Recovery	Upon completion of feasibility and permitting requirements	Yolo GSA Board Meetings & Website; City Council process	CEQA	City of West Sacramento	Undergoing pre-feasibility analysis	2021	2024	2024	500-1000 AFY	N/A	•	•	City of West Sacramento CVP Contract	West Sac and USBR	Yes	South Yolo	TBD	TBD	West Sac, State, and USBR
P 69	West Sacramento and City of Sacramento Interie	Upon completion of feasibility and permitting requirements	Yolo GSA Board Meetings & Website; City Council process	CEQA	City of West Sacramento	Undergoing pre-feasibility analysis	2021	2024	2024	500-5000 AFY	N/A	•	•	City of Sacramento Water Assets	West Sac, City of Sac, USBR	Yes	South Yolo	TBD	TBD	West Sac, State, and USBR
P 70	Dry well groundwater recharge on California Olive Ranch	Upon completion of feasibility and permitting requirements	Yolo GSA Board Meetings & Website	TBD	Water and Land Solutions LLC/California Olive Ranch	Not yet started	TBD	TBD	Wet year following project completion	TBD	N/A			TBD	N/A	Yes	Dunnigan Hills	TBD	TBD	TBD
P 71	Projects to improve understanding of surface water/groundwater interaction around Oat Creek and Buckeye Creek/others in Dunnigan/North Yolo areas.	Upon completion of feasibility and permitting requirements	Yolo GSA Board Meetings & Website	TBD	YSGA	Not yet started	Upon adoption of GSP	TBD	Continuous	N/A	N/A			N/A	N/A	Yes	Dunnigan Hills	TBD	TBD	TBD
P 72	Additional groundwater monitoring wells in the Dunnigan Hills MA	Upon completion of feasibility and permitting requirements	Yolo GSA Board Meetings & Website	TBD	YSGA	Not yet started	Upon adoption of GSP	TBD	Continuous	N/A	N/A			N/A	N/A	Yes	Dunnigan Hills	TBD	TBD	TBD
P 73	O'Halloran off-stream reservoir site	Upon completion of feasibility and permitting requirements	Yolo GSA Board Meetings & Website	TBD	YCFCWCD	Not yet started	Upon adoption of GSP	TBD	Wet year following project completion	N/A	N/A			Cache Creek System	TBD	Yes	Dunnigan Hills	TBD	TBD	TBD
P 74	Additional groundwater monitoring wells in the Clarksburg MA	Upon adoption of Yolo GSP	Yolo GSA Board Meetings & Website	TBD	YSGA	Not yet started	2022	Continuous	Ongoing	N/A	N/A			N/A	N/A	No	Clarksburg	TBD	TBD	TBD
P 75	Reclamation District 999 - Elk Slough Groundwater Quality Improvement and Flood Protection Project	Upon completion of feasibility and permitting requirements	Yolo GSA Board Meetings & Website	TBD	RD 999	Undergoing pre-feasibility analysis	Upon adoption of GSP	TBD	Following project completion	N/A	N/A	•		Elk Slough	TBD	No	Clarksburg	TBD	TBD	TBD
P 76	Boards In Program	Upon completion of feasibility and permitting requirements	Yolo GSA Board Meetings & Website	TBD	RD 108/DWD	Undergoing pre-feasibility analysis	Upon adoption of GSP	TBD	Wet year following project completion	N/A	N/A			Precipitation	TBD	No	North Yolo	TBD	TBD	TBD
P 77	Cover cropping, rangeland improvements, and other agricultural practices to improve groundwater recharge	Upon adoption of Yolo GSP	Yolo GSA Board Meetings & Website	TBD	YSGA	Ongoing	Ongoing	Continuous	Wet year following project completion	N/A	N/A			Precipitation, surface water supplies	N/A	Yes	Yolo Subbasin	TBD	TBD	TBD

## ATTACHMENT 4

### **YGSA Operations Fee – Current Cost Allocation**





**Yolo Subbasin Groundwater Agency**  
**July 1, 2022 to June 30, 2023**  
**Budget Allocation By Contributing Entity**

Revenue	FY21-22	FY22-23	% Allocation
City of Davis	\$40,000	\$40,000	8.20%
City of West Sacramento	\$40,000	\$40,000	8.20%
City of Woodland	\$40,000	\$40,000	8.20%
City of Winters	\$20,000	\$20,000	4.10%
Yocha Dehe Wintun Nation	\$10,000	\$10,000	2.05%
Esparto CSD	\$5,000	\$5,000	1.02%
Madison CSD	\$5,000	\$5,000	1.02%
<b>Sub-total Municipal Agencies</b>	<b>\$160,000</b>	<b>\$160,000</b>	<b>32.79%</b>
YFCWCDC (200,000 acres)	\$100,000	\$100,000	20.49%
Yolo County (White Areas) (160,000 acres)	\$40,000	\$40,000	8.20%
Direct Contributions (White Areas) (40,000 acres)	\$20,000	\$20,000	4.10%
Other Contributions from Rural Agencies	\$40,000	\$40,000	8.20%
Dunnigan Water District (10,700 acres)	\$5,350	\$5,350	1.10%
Reclamation District 108 (23,200 acres)	\$11,600	\$11,600	2.38%
Reclamation District 150 (4,293 acres)	\$2,147	\$2,147	0.44%
Reclamation District 307 (5,941 acres)	\$2,971	\$2,971	0.61%
Reclamation District 537 (6,077 acres)	\$3,039	\$3,039	0.62%
Reclamation District 730 (4,498 acres)	\$2,249	\$2,249	0.46%
Reclamation District 765 (1,400 acres)	\$700	\$700	0.14%
Reclamation District 787 (9,400 acres)	\$4,700	\$4,700	0.96%
Reclamation District 999 (25,250 acres)	\$12,625	\$12,625	2.59%
Reclamation District 1600 (6,924 acres)	\$3,462	\$3,462	0.71%
Reclamation District 2035 (18,000 acres)	\$9,000	\$9,000	1.84%
<b>Sub-total Rural Agencies</b>	<b>\$257,843</b>	<b>\$257,843</b>	<b>52.84%</b>
University of California, Davis	\$40,000	\$40,000	8.20%
Colusa Drain Mutual Water Company	\$10,000	\$10,000	2.05%
California American Water Company - Dunnigan	\$5,000	\$5,000	1.02%
Rumsey Water Users Association	\$170	\$170	0.03%
Yolo County Farm Bureau (private pumpers)	\$10,000	\$10,000	2.05%
Environmental Party Rep. (Ann Brice)	\$0	\$0	0.00%
<b>Sub-total Affiliated Parties</b>	<b>\$65,170</b>	<b>\$65,170</b>	<b>13.35%</b>
Interest Income	\$5,000	\$5,000	1.02%
Well Permitting Procedures - Regulatory Fee	\$0	\$0	0.00%
<b>Sub-total Other Revenue</b>	<b>\$5,000</b>	<b>\$5,000</b>	<b>1.02%</b>
<b>TOTAL REVENUES</b>	<b>\$488,013</b>	<b>\$488,013</b>	

## ATTACHMENT 5

**YGSA Operations Fee – 2022 YGSA SGMA IMPLEMENTATION ROUND 2 Project  
(#1 ranked, most likely to be funded by DWR)**



**ATTACHMENT 3**  
**APPLICATION WORK PLAN, BUDGET, AND SCHEDULE**

**Grant Proposal Title:** Yolo Subbasin GSP: Planning and Project Implementation – Yolo Subbasin GSP Implementation (Component 2)

**Applicant:** Yolo Subbasin Groundwater Agency

**A. General** (maximum of 22 points possible)

**Component Description.** Component 2 will complete tasks related to implementing the Yolo Subbasin Groundwater Sustainability Plan (GSP) to ensure groundwater sustainability by investing in data, analyses, and investigations to fill data gaps, educate beneficial users of the current groundwater conditions, and inform better decision-making. The YSGA needs funding for these tasks in order to develop the necessary institutional capacity and stakeholder buy-in to successfully achieve and maintain groundwater sustainability. Component 2 tasks will assist the YSGA is developing the appropriate management actions and projects to ensure sustainability and protect beneficial users in the future.

Component 2 proposes the following tasks: 1) Development of GSP Annual Reports, GSP Updates based on DWR's Comments, and a Fee Study for Long-Term Financing of the Yolo Subbasin Groundwater Agency (YSGA); 2) Completion of Groundwater Model Enhancements; 3) Development of an Approach to Refine Interconnected Surface Water Sustainable Management Criteria; 4) Completion of GPS Subsidence Surveys; 5) Development of a Hungry Hollow Area Projects and Management Actions White Paper; and 6) Enhancement to the Monitoring Network to Address Data Gaps.

- 1) **Develop GSP Annual Reports, GSP Updates based on DWR's Comments, and a Fee Study for Long-Term Financing of the YSGA** includes development of annual reports for Water Years 2022, 2023, 2024, and 2025, and completion of updates to the GSP. This will support the YSGA in preparing the 2027 GSP Update based on comments received from DWR on the 2022 GSP. This task will also include the necessary outreach and communication for refining the GSP, incorporating new technical tasks (discussed below), and successfully implementing the GSP. This task also includes a fee study and public outreach component for the long-term financing of the YSGA to identify an equitable mechanism for providing SGMA compliance across the Yolo Subbasin.
- 2) **Complete Groundwater Model Enhancements** involves updating the model and water budget in the GSP, calibrating and refining model inputs, outputs, and parameterization, and incorporating improved evapotranspiration data. Tasks include extending the historical simulation period from 2018 to 2022, incorporating updated land use data, forecasting land use changes and the impact to the water budget, updating surface water inputs to better reflect the reality of drought conditions, revising modeled demand of managed wetlands to better reflect on-the-ground conditions, incorporating Capay's Integrate Groundwater Surface Water Model, and modeling additional projects and management actions based on current drought conditions.
- 3) **Develop an Approach to Refine Interconnected Surface Water Sustainable Management Criteria** includes regional coordination and technical work to further refine the sustainable management criteria for undesirable result 6 (depletions of interconnected surface waters). This task will develop a technical methodology for using groundwater levels as proxies for developing the measurable objectives and minimum thresholds for interconnected surface water thresholds based on DWR's guidance and experts (consultants) of stream-aquifer interaction.
- 4) **Conduct GPS Subsidence Survey Updates** allows for ground-truthing of DWR's recent satellite dataset and includes identifying and marking new survey points in the Capay Valley, reconnaissance of existing stations, creating descriptions for and marking sites, creating an observation plan, schedule, and handbook, collecting, processing, analyzing data, and writing a report.
- 5) **Develop a Hungry Hollow Area Projects and Management Actions White Paper** includes developing a water budget for the Hungry Hollow watershed and hydrogeologic delineations, developing short-term on-farm pilot project opportunities, outreaching to the Hungry Hollow Area beneficial users, and identifying long-term projects and management actions. The Hungry Hollow Area is considered a Yolo Subbasin "Area of Special Concern" due to the recent trend in declining groundwater levels.
- 6) **Complete Monitoring Network Enhancements to Address Data Gaps** includes updating and maintaining the YSGA's data management system (WRID), mapping the Groundwater Dependent Ecosystems utilizing aerial imagery with the support of a college internship, and adding monitoring wells in data gap areas (by connecting to existing wells). Updating and maintaining the data management system includes converting the WRID to a modern interface for facilitating mobile data collection and allowing for storage of larger datasets, adding support for

additional sustainability indicators (such as water quality, subsidence, etc.), adding support for connection to DWR's Enterprise system, and updating the YSGA's website to support the WRID improvements.

Communities Served. Component 2 will serve the entire Yolo Subbasin since implementation of the GSP will provide benefits for the entire Subbasin; however, there will be additional, focused benefits to the Hungry Hollow Area – an “Area of Special Concern”. In developing the GSP, YSGA staff recognized areas with a recent trend in declining groundwater levels or with recent land subsidence activity as “Areas of Special Concern”. There are four primary “Areas of Special Concern” in the Yolo Subbasin: the area overlying the Plainfield Ridge, the Yolo-Zamora area, The Hungry Hollow area, and the area surrounding northwest Winters.

The entirety of the Yolo Subbasin is considered an underrepresented community, and approximately 18% and 42% is covered by Severely Disadvantaged and Disadvantaged Communities, respectively. Additionally, approximately 0.3% of the area of the Subbasin is Yocha Dehe Wintun Nation tribal property, which will benefit from ensuring groundwater sustainability in the Capay Valley Management Area and the Yolo Subbasin.

Measurable Objectives and Minimum Thresholds. The tasks in Component 2 are important management actions and projects identified in the 2022 Yolo Subbasin GSP and are necessary for maintaining stable aquifer conditions and for administrating a successful GSA. Component 2 will ensure that minimum thresholds are avoided and measurable objectives are achieved over the long-term implementation of the GSP, as it will invest in the necessary data, analyses, and investigations to better inform decision-making processes by the YSGA.

Timeline and Feasibility. The YSGA would like to begin work on this component as soon as an executed grant agreement is secured with the California Department of Water Resources. The YSGA has begun updating the Yolo Subbasin groundwater model and drafting the Water Year 2022 Annual Report. The YSGA would like to proceed with a long-term financing plan in the first quarter of 2023 to implement sustainable funding in the Fiscal Year 2023/2024 cycle. The YSGA hopes to receive comments from DWR on the GSP by mid- to late-2023 and will work on incorporating necessary revisions to the GSP shortly after. Development of an approach to refine the interconnected surface water sustainable management criteria will align with the Sacramento Valley regional process to ensure economies of scale and creation of a comprehensive technical methodology. GPS Subsidence Surveys are scheduled for January through September 2024, and the Monitoring Network Enhancements are scheduled for January 2024 through June 2025. The YSGA will complete all tasks by April 30, 2026.

Component Goals, Objectives, and Needs. The goal of Component 2 is to ensure progress of the Yolo Subbasin Groundwater Sustainability Plan. The objectives are to assist with implementation of necessary projects and management actions, to secure a sustainable funding mechanism, to react to any comments from DWR on plan inadequacies, and to improve the GSP for the 2027 GSP Update. Additionally, an important objective of this proposal is to fund data gaps and improve our understanding of potential problems and optimal solutions. The YSGA needs funding for these tasks in order to develop the necessary institutional capacity and stakeholder buy-in to successfully achieve and maintain groundwater sustainability.

The YSGA needs these tasks to occur to help achieve the Yolo Subbasin GSP sustainability goal of **1) achieving sustainable groundwater management in the Yolo Subbasin by maintaining or enhancing groundwater quantity and quality through implementation of projects and management actions to support beneficial uses and users and operating within the established management criteria, 2) maintaining sustainable groundwater use through continued implementation of a monitoring and reporting program, and 3) maintaining sustainable operations over the implementation and planning horizon.**

**Description of Planning Component.** Component 2 includes a task to address DWR's comments on the GSP (once received) and to revise the GSP based on any inadequacies raised by DWR. Additionally, Component 2 includes a task to work with the Sacramento Valley GSAs and DWR Sustainable Groundwater Management Office (SGMO) staff to develop a methodology for identifying, monitoring, and protecting interconnected surface waters. Component 2 includes a task for enhancing the groundwater model to fill in GSP deficiencies and data gaps regarding future water budget scenarios and overall groundwater sustainability.

Development of a White Paper for the Hungry Hollow Area is necessary to quantify and better articulate the scope and scale of the problem (declining groundwater levels) in the northwest portion of the Central Yolo Management Area and part of the Dunnigan Hills Management Area. A finer-scale resolution water budget of the Yolo Subbasin water budget is needed to better assess the local overdraft potential and to establish a water budget (an allocation system) for ensuring sustainability in the future. The Yolo Subbasin GSP's water budget shows some evidence of a gradual decline in groundwater levels in

the Dunnigan Hills Management Area (of which the Hungry Hollow Area is a subset). Under baseline conditions (2018 land use), the model predicts groundwater extraction in the area will increase by 12,000 AF over the next 50 years. Additional monitoring and modeling is needed to understand the implications of continuing to extract groundwater from the aquifers in this area. In the Yolo Subbasin GSP, this is noted as an “Area of Special Concern”, and significant data gap within the groundwater monitoring program.

**Component Map.** Maps for Component 2 are provided on pages 6-9 of Attachment 4.

**Benefits to URC/Tribe/SDAC.** Component 2 covers the entire Yolo Subbasin, with an approximate benefit area (BA) of 541,000 acres, approximately 99,750 acres and 225,000 acres is composed of Severely Disadvantaged Communities (SDACs) and Disadvantaged Communities (DACs), respectively. Additionally, approximately 1,900 acres of the Capay Valley Management Area of the Yolo Subbasin, will benefit the Yocha Dehe Wintun Nation. Based on the ratio of area to BA, approximately \$113,250 and \$256,000 will benefit SDACs and DACs, respectively. And approximately \$2,142 will benefit local tribal property, Yocha Dehe Wintun Nation.

The entire grant request will benefit 100% of underrepresented communities in Yolo County and will serve beneficial users as a whole by ensuring compliance with SGMA and preparing for the five-year GSP update. Proposed tasks will plan, analyze, study, and survey to learn more about the Subbasin and appropriately prepare for a fiscally and hydrogeologically sustainable future.

**Positive Impacts to Small Water Systems or Shallow Domestic Wells.** Within the BA, the domestic well census (based on DWR’s OSWCR database) is estimated at 1,113 wells, which are located in the rural portions of the Yolo Subbasin (outside of cities, County Service Areas, and Community Service Districts). At least 1,113 domestic wells are expected to benefit from the YSGA proactively managing the Subbasin and ensuring fiscal stability. During the 2021-22 drought, there have been 48 unique dry domestic well reports submitted to the Yolo County Office of Emergency Services. Component 2 will serve domestic wells in the Yolo Subbasin by providing information and long-term funding to ensure continued management and oversight of the Subbasin so all beneficial users and uses of groundwater will be considered and protected.

By improving groundwater sustainability in the Subbasin, which includes many areas that are solely dependent on groundwater, the tasks as a whole support the Safe and Affordable Funding for Equity and Resilience (SAFER) program goals to provide safe, accessible, and affordable drinking water for all Californians. Within the Yolo Subbasin, there are 3 water systems identified as “failing” by the SAFER Needs Assessment: Bonfire Villiage Hotel (CA5700555), North Davis Meadows (CA5700788), and Fairfield School (CA5700623); these systems are entirely dependent on groundwater and serve a combined population of 423. An additional 5 water systems are “at-risk”, including: Campers Inn (CA5700554), Madison Service District (CA5700571), El Rio Villa (CA5700615), Rolling Acres (CA5700707), and Knights Landing Service District (CA5710004); all are entirely dependent on groundwater and serve a combined population of 2,768. Funding YSGA planning and implementation efforts will ensure that groundwater levels and quality continue to be sustainable for these vulnerable systems.

**Human Right to Water.** Component 2 addresses the Human Right to Water (AB 685, Section 106.3) and supports the established policy of the State that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking and sanitary purposes by improving groundwater sustainability in the Yolo Subbasin, which includes areas where residents are entirely dependent on groundwater for their water supply.

## PROJECT/COMPONENT DETAILS

### **B. Scope of Work and Deliverables** (maximum of 4 points possible)

All tasks of Component 2 are at 0% completion, other than Task 2 and Task 5, as staff and consultants have started updating the Yolo Subbasin groundwater model and drafting the Water Year 2022 Annual Report.

#### **Category (a): Component Administration**

##### **Task 1: Project Management**

The YSGA will manage the project, draft grant-related reports, and complete invoices.

##### Deliverables

- Project schedule
- Regular progress reports and invoices, as well as backup documentation, and draft and final completion reports (as provided in the YSGA's comprehensive reports and invoices submitted to DWR)

#### **Category (b): Planning/Design/Engineering**

##### **Task 2: Complete Annual Reports**

YSGA staff will incorporate water budget information and updated water conditions into each annual report, along with a detailed report on Subbasin activities and status as compared to the Yolo Subbasin GSP.

##### Deliverables

- GSP Annual Reports for Water Years 2022, 2023, 2024, and 2025

##### **Task 3: Review DWR's Comments and update GSP**

The YSGA will meet with DWR to review comments on the 2022 Yolo Subbasin GSP, and the YSGA will work with a consultant to update the Yolo Subbasin GSP and provided revisions accordingly.

##### Deliverables

- Responses to DWR comments and update to GSP.

##### **Task 4: Develop Fee Study for Long-Term Financing of the Yolo Subbasin Groundwater Agency**

The YSGA will hire a consultant to complete a fee study for evaluating the optimal Agency funding mechanism.

##### Deliverables

- Final Yolo Subbasin Fee Study

##### **Task 5: Groundwater Model Enhancements**

The YSGA will hire a consultant to update the groundwater model and water budget of the Yolo Subbasin GSP.

##### Deliverables

- Technical Memorandum summarizing Yolo Subbasin GSP Groundwater Model Enhancements

##### **Task 6: Develop an Approach to Refine ISW SMC**

The YSGA will work with a consultant, DWR, and the Sacramento Valley GSAs to determine the most appropriate technical methodology for approaching the monitoring and reporting of the interconnected surface water sustainable management criteria (ISW SWMC). A technical memorandum will summarize the evaluation of available data, the inter-basin coordination activities, and the recommended technical methodology for managing the ISW SMC.

##### Deliverables

- Technical Memorandum

##### **Task 7: Develop a Water Budget for the Hungry Hollow Area**

The YSGA will work with a consultant to develop a water budget to better define the scope and scale of the localized overdraft in the Hungry Hollow Area (an Area of Special Concern). The Yolo Subbasin's groundwater-surface water model within the MODFLOW/WEAP platform will be updated and refined for the smaller-scale analysis.

### Deliverables

- Water Budget Summary Report Determining Sustainable Yield for Hungry Hollow Area

### **Task 8: Develop On-Farm Pilot Projects for the Hungry Hollow Area**

The YSGA will work with the Hungry Hollow Area beneficial users and stakeholders to identify and develop a guide for on-farm practices to enhance groundwater recharge. The YSGA will work with a consultant and stakeholders to develop a guidance document that details the necessary data and tools for determining and implementing on-farm pilot projects.

### Deliverables

- On-Farm Pilot Project Guidance Document for Hungry Hollow Area

### **Task 9: Develop a Long-Term Projects and Management Actions White Paper for the Hungry Hollow Area**

The YSGA will work with a consultant and the Hungry Hollow Area (HHA) beneficial users to create a consensus-based process and develop a plan of long-term projects and management actions (PMA) for the HHA utilizing the sustainable yield in the Water Budget Summary Report (Task 7) and incorporating on-farm pilot project guidance (Task 8).

### Deliverables

- Project Management Actions White Paper for Hungry Hollow Area

### **Task 10: GPS Subsidence Surveys**

The YSGA will work with a consultant and YSGA member agency contributors to complete a ground-based GPS subsidence survey of the Yolo Subbasin, which will include an incorporation of new survey points, reconnaissance of existing stations, and data collection, processing, and analysis. A report will be provided that summarizes the survey results, which will be provided to all YSGA member agencies and will be posted to the YSGA's website.

### Deliverables

- GPS Survey Report for Yolo Subbasin

### **Task 11: Monitoring Network Enhancements to Address Yolo Subbasin Data Gaps**

The YSGA will work with a consultant to update and maintain the YSGA's data management system (WRID) to convert to an ESRI-based interface, add support for additional sustainability indicators, add support for live connection to DWR's Enterprise system, and update the YSGA's website to support the WRID improvements. The YSGA will partner with a college internship opportunity to map GDEs utilizing aerial imagery. The YSGA will connect to existing wells in data gap areas to enhance the Yolo Subbasin monitoring network. A technical memorandum will be developed summarizing the updates and enhancements to the WRID and website, the GDE survey results, and monitoring well incorporations.

### Deliverables

- Technical memorandum

### **Category (c): Implementation/Construction and Category (d): Monitoring/Assessment**

None, this is a planning/studying/surveying project.

### **Category (e): Engagement/Outreach**

### **Task 12: Engagement and Outreach**

The YSGA will work with a consultant to engage stakeholders on annual reports and revisions to the GSP, along with the long-term financing evaluation. Engagement and outreach opportunities will occur at regularly scheduled YSGA meetings, along with community workshops specific to the item of interest. The YSGA will work with a consultant to facilitate all community involvement and consensus-based PMA development opportunities for the HHA.

### Deliverables

- Convening up to eight Community Workshops (4 for GSP-Related Updates; 4 for HHA engagement)

**C. Budget** (maximum of 1 point possible)

**Table 1a: Budget Summary**

Components	Grant Amount
Component 2: Yolo Subbasin GSP Implementation	\$1,721,000
<b>Total:</b>	<b>\$1,721,000</b>

**Table 1b: Component Budget Summaries**

**Component 2: Yolo Subbasin GSP Implementation**

Component 2 serves a need of a DAC, SDAC, Tribe and/or Underrepresented Community since it's covering the entire Yolo Subbasin.

(check all that apply): DAC, SDAC, Tribe, and/or Underrepresented Community

Budget Categories	Grant Amount
(a) Component Administration	\$225,000
(b) Environmental / Engineering / Design	\$1,271,000
(c) Implementation / Construction	N/A
(d) Monitoring / Assessment	N/A
(e) Engagement / Outreach	\$225,000
<b>Total:</b>	<b>\$1,721,000</b>

The majority of tasks within Component 2 relate to planning, studying, analyzing, and surveying, which will also entail administration by the YSGA and communication and outreach. Developing the GSP Annual Reports, updating the GSP, and completing a fee study for long-term financing is estimated to cost approximately \$350,000 (consultant and staff time involved). Completing groundwater model enhancements is estimated to cost approximately \$231,000 (quote provided by SEI) for the necessary activities involved. Developing an approach to refine the ISW SMC is estimated to cost approximately \$200,000, which includes staff and consultant time in coordinating with Sac Valley GSAs and DWR. Developing the HHA PMA White Paper is expected to cost approximately \$440,000 based on consultant proposal budgets for developing a water budget, delineating hydrogeologic distinctions, constructing PMAs with the community, and developing a guide for on-farm pilot project opportunities. The update to the Yolo Subbasin GSP Subsidence Survey network and report is estimated to cost approximately \$190,000 including staff and consultant time (proposal provided by Jim Frame).

The cost estimates provided for activities are based on quotes provided by consultants for relevant technical memorandums, reports, and studies in addition to staff time expected for completing activities, along with staff time needed for managing, coordinating, and completing report-writing activities. Additionally, the budget includes cost estimates for incorporating additional monitoring wells (based on professional knowledge) and working with a nearby university's internship program. The budget table is consistent with the scope of work and the schedule.



**D. Schedule** (maximum of 1 point possible)

<b>Categories</b>	<b>Start Date</b>	<b>End Date</b>
<b>Component 2: Yolo Subbasin GSP Implementation</b>	<b>November 1, 2022</b>	<b>April 30, 2026</b>
(a) Component Administration	11/01/2022	04/30/2026
(b) Environmental / Engineering / Design	11/01/2022	04/30/2026
(c) Implementation / Construction	N/A	N/A
(d) Monitoring / Assessment	N/A	N/A
(e) Engagement / Outreach	01/01/2023	04/30/2026

The schedule is feasible for this Component since the YSGA will receive assistance from consultants, and all activities can be staged throughout the three and a half-year grant cycle. Since it's all planning activities, there will not be any permitting or construction delays that will pose issues. The only thing that may slide initiation of certain tasks would be the delay in entering into a grant agreement with DWR (since the majority of these activities need grant funding assistance for implementation). Environmental compliance and permitting documentation are not required as part of this planning/studying/surveying project.

The schedule coincides with the scope of work and budget table.

## ATTACHMENT 6

### **YGSA Operations Fee – 2023 Draft Scope of Work**



**EXHIBIT A**

**SCOPE OF SERVICES**

**YOLO SUBBASIN**

**GROUNDWATER AGENCY (YSGA) OPERATIONS AND  
GSP IMPLEMENTATION FEE PROJECT**

The Yolo Sub-basin Groundwater Sustainability Agency (YSGA) will be administering the implementation of the YSGA operations and GSP implementation fee project by and between the YSGA and Luhdorff and Scalmanini Consulting Engineers (LSCE). Project expenses and progress will be tracked by task consistent with the LSCE scope of services listed below.

## YSGA Scope of Services

### Task 1. Coordination and Communication

The LSCE Team will coordinate with the YGSA as required throughout the project. The LSCE Team will provide a request for information at the start of Task 1 to ensure inclusion of all important information related to developing the draft Technical Memorandum (Task 3) and Engineer's Report deliverable (Task 4). The LSCE Team will share analyses and evaluation metrics and discuss relevance for developing recommended fees that meet future YGSA revenue needs. An important step, the Outreach Plan elements specific to the Fee Study will be developed within the first 30-days from Notice to Proceed, in coordination with the GSA. Upon approval, the Fee Study elements of the Outreach Plan will be included in GSA stakeholder meeting processes to ensure transparency and opportunities for stakeholder review within the project schedule. The LSCE Team will conduct bi-weekly project calls to address issues and policy matters in a timely manner, provide regular progress reports, support the GSA in preparing key handouts and presentations as needed during the project, plan for legal counsel review of key fee assumptions and Engineer's Report review, communicate with the appropriate County Offices and other parties as needed, and coordinate with the GSA to respond to property owner inquiries concerning the proposed fees.

#### Task 1 Deliverables

- Conduct Bi-weekly team conference calls - prepare agendas/minutes.
- Provide periodic progress reports (monthly to be submitted with invoices).
- Prepare GSA meeting handouts and presentations as needed.
- Prepare fee study element of outreach plan (in coordination with GSAs).
- Review Task 3 and Task 4 deliverables with legal counsel (in a timely manner and as requested by the GSA).
- Communicate and coordinate with appropriate County Offices and other parties as needed.
- Respond to property owner inquiries regarding proposed fees in coordination with the GSA.
- Conduct Board Workshop (Board Meeting #1) - prepare agenda/high level meeting summary.
- Conduct Advisory/Ad-hoc Meeting #1 – Review Long Term GSA Funding Strategy- prepare agenda/high level meeting summary.

### Task 2. Assessment and Parcel Evaluation

Evaluation of data received regarding the fee assessment and parcels included in the fee, which will be incorporated accordingly in Tasks 3 and 4. A draft parcel assessment list will be prepared for review. The goal is to ensure all parcels subject to the proposed GSP implementation fee are included in assessment rolls with the most updated and accurate information available. This includes, but is not limited to, parcel

number and location in the Subbasin, land use designation, ownership type, parcel size, water source, and any other relevant parcel related data that would facilitate fair and equitable fees recommendations in Task 3 or 4. Identify other data sources to address data gaps and synchronize the final updated assessment and parcel data in a master file (excel and GIS) for use in Task 3. It is assumed that, based on available data, we can accurately identify parcels owned by Federal, State, and/or Tribal owners, which are not subject to fees.

### **Task 2 Deliverables**

- Acquire and analyze current property data from the Yolo County Assessors' Offices or other appropriate Yolo County Departments, other real property information vendors and title companies, and perform Assessor data comparisons with other property data sources and validation services.
- Research parcel attributes & ownership information to appropriately calculate and assign the benefit assessments to each parcel for each year.
- Parcel Data Master File to include excel and GIS files at a minimum

### **Task 3. Preparation of Revenue Needs & Cost Allocation Technical Memorandum**

Based on the evaluation of data from Tasks 1 and 2, the LSCE Team will review the GSA operations and GSP implementation costs and other documentation related to project actions and GSP implementation provided by the GSA and create a cash flow model that will summarize, and categorize GSA revenue needs (i.e., GSA operations and GSP implementation costs) to be included in the fee study. The LSCE Team will concurrently develop up to three (3) options that are compliant with relevant laws and regulations, which could include SGMA and Propositions 26 and 218, for allocating costs to different lands/groundwater users within the GSA boundary.

The results of the analysis will be presented to the GSA and documented in a concise Technical Memorandum (TM). This analysis will be based on GSA direction and comments received at the Board Workshop (Board Meeting #1) and input from the Ad Hoc Committee. To inform cost allocation options, the LSCE Team will consider existing SGMA compliance funding strategies developed by other GSAs throughout California and will incorporate any insights into this project based on similar work with other GSAs with similar challenges and Subbasin conditions.

This task will involve analysis to support cost allocation and resulting fee option approaches approved by the Board, based on the GSA's five-year GSP implementation revenue needs, to be included in the TM deliverable. The analysis will be structured to address cost allocation issues considering the variety of property owners who would be subject to a fee. Cost allocation options will be compliant with relevant laws and regulations, which could include SGMA and Propositions 26 and 218, and may include different benefit- and cost-based methodologies. The LSCE Team will prepare recommended cost allocation approaches based on fee options that are feasible based on the availability of parcel level data and supporting information.

The TM will provide recommendations for cost allocation to be discussed with the GSA and stakeholder groups as identified in the Fee Study element of the Outreach Plan. A workshop for the GSA may be included if needed to develop an understanding of the proposed fees that would support the operational and GSP implementation costs during the initial five-year SGMA compliance period (2023-2028). The TM will document the anticipated outcome of different cost allocation scenarios and illustrate the resulting range of fees to different classes of landowners in the GSA service area boundary. Final analysis results and recommendations will be included in the TM deliverable which will be shared with the Board for any final edits or direction. The TM and results of this task will inform and be included in the Engineer's Report developed under Task 4. Any fees developed under this task will be compliant with applicable laws and regulations, which could include Propositions 26, 218 and SGMA.

### ***GSP Implementation Revenue Needs – Key Items to be Addressed***

- Incorporate operational and GSP implementation revenue needs over the next five years (this information would be prepared by the LSCE Team in coordination with the GSA).
- Any other revenue needs identified by the GSA.

### ***Cost Allocation – Key Items to be Addressed***

- Allocate costs between landowners and/or groundwater users within the GSA service area boundary.
- Allocate costs by operational and GSP implementation categories.
- Allocate costs by land use/other land or resource-based parameters.

### ***Cost Allocation For Up To Three (3) Fee/Allocation Scenarios***

The three (3) scenarios will be developed following direction from the Board Workshop (Board Meeting #1) and input received from the Ad Hoc Committee. An example of a set of scenarios is listed below for illustration purposes.

- Scenario 1: fee per acre (\$/acre) – total costs/total acres
- Scenario 2: Separate GSA Administrative and GSP Implementation Cost Fees
- Scenario 3: Separate irrigated vs. non-irrigated based fee cost allocation

Legal counsel review comments and recommendations will be reflected in TM task deliverables.

The TM will include cost allocation assumptions analyzed and corresponding fee results in easy-to-read data tables and graphical representations that will be presented for comparison by the GSA and stakeholders with recommendations for key items or approaches to be included in the Fee Study (Task 4).

### **Task 3 Deliverables**

- Prepare Draft Technical Memorandum (TM) – for GSA and stakeholder review and comment.
- Board Meeting #2: GSA TM Fee Study Workshop – to discuss draft TM recommendations- prepare agenda/high level meeting summary.

- Conduct Advisory/Ad-hoc Meeting #2 relating to fee options- prepare agenda/high level meeting summary.
- Final TM – with cost allocation analyses results under proposed fee scenarios, incorporating Board workshop comments and recommendations, and GSA fee implementation processes.

#### **Task 4. Preparation of Fee Study Engineer’s Report**

Based on the evaluation of data from Tasks 1 and 2, and results and recommendations from Task 3, the draft Fee Study Engineer’s Report (Report) will be prepared in accordance with applicable laws and regulations, which could include SGMA and Propositions 26 and 218 requirements, and will consider long-term fee administrative costs as part of the fee option evaluation process. The draft Report will utilize the updated five-year GSA SGMA compliance revenue needs (based on initial five-year GSP operations and implementation revenue needs’ projections prepared in Task 3), and address cost allocation issues for property owners, subject to the fee, that benefit from GSP implementation and SGMA compliance. The Report will include fee options evaluated and recommended fees to be discussed with the GSA and stakeholder groups as identified in the Fee Study element of the Outreach Plan. A workshop for the GSAs may be included if needed to develop an understanding of the proposed fees that support the operational and GSP implementation costs during the initial five-year period (2023-2028). Any fees developed under this task will be compliant with applicable laws and regulations, which could include Propositions 26 and 218 and SGMA.

#### ***GSP Implementation Revenue Needs – Key Items to be Addressed***

- Incorporate updates to operational and GSP implementation revenue needs over the next five years (this information will be prepared as part of Task 3).
- Any other revenue needs identified by the GSA as needed for SGMA compliance.

#### ***Cost Allocation – Key Items to be Addressed***

- Allocate costs between landowners and/or groundwater users within the Subbasin.
- Allocating costs by operational and GSP implementation categories.
- Parcel size, type, land use and water source.
- Cost allocation scenario results presented in the Task 3 deliverable.

#### ***Develop Recommended Fees***

- Consider fee options based on cost of service and equity perspectives.
- Consider GSP revenue projections over upcoming five-year fee period.
- Determine annual fee increases over five-year fee implementation period.
- Consider inflation adjustments over the period to any proposed fees.
- Prepare Notice and Protest Form or other necessary forms in compliance with applicable laws and regulations.
- Include legal counsel review comments and recommendations in Report Task deliverables.

The Board will have the opportunity to review the draft Report and provide any final comments that would be incorporated into the final Report for Board approval prior to distribution of the Notices to landowners subject to the recommended fees.

#### **Task 4 Deliverables**

- Prepare Draft Engineer’s Report – for GSA and stakeholder review and comment.
- Board Meeting #3: Conduct (1) GSA Fee Study Workshop – discuss draft Report recommendations.
- Final Engineer’s Report – with final Notice, proposed fees, and GSA adoption process.
- Prepare required notices and forms for communications with landowners.

#### **Task 5. Fee Approval**

The LSCE Team will coordinate with the GSA to plan for Board Meeting #4 at which the Board would be conducting a public hearing and considering approval of the recommended fees included in the Fee Study Engineer’s Report prepared in Task 4 and approved by the Board. The LSCE Team will assist with writing the staff report, preparing meeting presentation materials, preparing any required legal notices, and being available at the public hearing to address any questions or concerns that may arise prior to fee approval by the Board. The LSCE Team will be prepared to count or tally any ballots or protests as required by the selected approach. The outreach plan will be designed to inform stakeholders and have easy access to key information and meeting dates, times and locations well in advance of any Board action to approve any new SGMA compliance fees. The LSCE Team will work with GSA staff to ensure that outreach materials are updated and available to all stakeholders in advance of any Board fee approval process regarding SGMA compliance. It is important that the sequence of events from the initial Board workshop through fee approval follow all applicable laws and regulations, which may include the Proposition 218 process public notification requirements. The LSCE Team has extensive experience with SGMA and fee implementation compliance requirements and will coordinate with the GSA early in the project schedule to ensure that the Fee Study can move forward in a timely manner. Based on the results of Tasks 3 and 4, the LSCE Team will prepare a draft final assessment levies master file for GSA review and approval at least 45 days prior to the County’s preparation of the data in Yolo County’s preferred format. The LSCE Team will coordinate with the GSA to make any final adjustments to the assessment roll with adequate notice to Yolo County following the public hearing for fee adoption. The LSCE Team will brief the GSA in a timely manner regarding any data gaps or questionable records for parcels to be included in the final assessment roll. The LSCE Team will also coordinate with the GSA early in the process to determine if any special fee billing arrangements will be required to ensure adequate revenues are collected as part of the fee process.

#### **Task 5 Deliverables**

- Assist GSA to prepare Board Fee Approval agenda item and associated documentation including legal notices.
- Board Meeting #4: Conduct (1) GSA Fee Approval Meeting – make Board presentation, answer questions related to public hearing, and support Board fee approval processes.
- The LSCE Team to provide updated assessor’s data file to the appropriate Yolo County Office, properly formatted per Yolo County’s preferred formatting.



- Provide a test file to the appropriate Yolo County Office at least 30 days prior to the preparation of the data.

## **Task 6. Public Outreach**

The LSCE Team will coordinate with the GSA and stakeholders throughout the Fee Study to ensure project deliverables meet GSA and stakeholder needs and are consistent with the approved Fee Study element of the Outreach Plan from Task 1. The LSCE Team will support the GSA as they will lead the public outreach efforts. The LSCE Team will coordinate with the GSA in the development of outreach materials, meeting presentations, and other documentation required to complete specified public outreach objectives. The work will be integrated with existing outreach efforts and coordinated through established GSA and stakeholder outreach processes. The LSCE Team will support the GSA for public outreach meetings and/or workshops. The LSCE Team will help address concerns related to GSA operations and GSP implementation revenue needs, cost of service or allocation questions or issues, Proposition 26 and/or 218 or other relevant laws and regulations requirements and compliance, and SGMA requirements. The LSCE Team will also coordinate with the GSA on property owner outreach and response to fee-related questions. This task may involve development of a fee fact sheet, FAQ document, and other related items as needed to complete the project on schedule and within budget while keeping stakeholders informed throughout the process.

### **Task 6 Deliverables**

- Fee related documentation development: Fact Sheet, FAQs, Fee Study related documents.
- Prepare required notices and forms (example: Proposition 218 Notice and Protest Form).
- Presentation materials for public meetings and workshops.
- Provide progress reports on Fee Study element of Outreach Plan implementation efforts.
- Website updates and legal notification requirements.

## **Task 7. Final Assessment Levies And Mailing of Notices**

The LSCE Team will coordinate with the GSA to obtain a tax code from the appropriate Yolo County Office early in the project schedule to ensure that the Fee Study can move forward in a timely manner. Based on the results of Task 2, the LSCE Team will prepare a draft final assessment levies master file for GSA review and approval at least 45 days prior to the Yolo County preparation of the data in the Yolo County's preferred format. LSCE will coordinate with the GSA to make any final adjustments to the assessment roll with adequate notice to the appropriate County Office following the public hearing for fee adoption. The LSCE Team will brief the GSA in a timely manner related to any data gaps or questionable records for parcels to be included in the final assessment roll. The LSCE Team will also coordinate with the GSA early in the process to determine if any special fee billing arrangements will be required to ensure adequate revenues are collected as part of the fee process.

LSCE will be responsible for preparation of any required Notice and YGSA would be responsible for mailing of the Notice directly to landowners subject to any SGMA compliance fees approved by the Board.

**Task 7 Deliverables**

- Obtain a tax code from the appropriate County Office.
- Submit the final assessment roll as it may be revised following the public hearing to the appropriate County Office, properly formatted per Yolo County’s preferred formatting.
- Provide a test file to the appropriate County Offices at least 30 days prior to the preparation of the data.
- Preparation and mailing of any required Notice including coordination with any necessary entities.

DRAFT

YOLO GSA Project Budget

TASK #	TASK DESCRIPTION	TASK BUDGET
1.	Coordination and Communication	\$8,049
2.	Assessment and Parcel Information	\$4,550
3.	Options Evaluation Technical Memorandum	\$18,986
4.	Fee Report	\$23,600
5.	Fee Approval	\$3,945
6.	Public Outreach	\$8,924
7.	Final Assessment Levies	\$4,170
<b>TOTAL</b>		<b>\$72,224</b>

*Note: Task Budget assumes LSCE is not mailing Prop. 218 Notices as part of Task 7.*

YOLO GSA Project Schedule – Final Dates To Be Determined Upon Agreement Execution

Notice To Proceed:	February 15, 2023
Develop Outreach Plan:	February 29, 2023
Board Mtg. #1 - Workshop:	March 2023
Board Mtg. #2 – Options Review:	April 2023
Board Mtg. #3 - Fee Report Approval:	May 2023
Prop. 218 Notice Distribution:	May 2023 (if Prop. 218 approach is approved)
Board Mtg. #4 - Fee Approval:	July 2023
Final Tax Rolls To Appropriate County Office:	August 2023

*Notes:*

*Outreach implementation – February through July 2023.*

*Budget includes 4 GSA Board Meetings and 2 Advisory/Ad-hoc meetings during Project implementation.*

LSCE will invoice the GSA by project task for easy tracking of project expenditures.

**Yolo Subbasin Groundwater Agency Board of Directors**  
**Meeting Agenda Report**

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**MEETING DATE:** March 20, 2023

**AGENDA ITEM NO. 8**

**SUBJECT:** Report of the Chair and Executive Officer

INITIATED OR  BOARD

INFORMATION

REQUESTED BY:  STAFF

ACTION:  MOTION

OTHER \_\_\_\_\_

RESOLUTION

ATTACHMENT  YES  NO

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**BACKGROUND**

The YSGA Chair and Executive Officer will provide either an oral or written report on recent activities.

A written report from the YSGA Executive Officer is attached.

**RECOMMENDATION**

This agenda item is for informational purposes only. No Board action is required.

**Date:** March 17, 2023  
**To:** YSGA Board of Directors  
**From:** Kristin Sicke, Executive Officer  
**Subject:** Report of the Executive Officer

### **Recommendation**

For informational purposes only. No Board action required.

### **Background**

Following is an update to the Board of Directors of the YSGA on activities and issues related to the ongoing implementation of the Sustainable Groundwater Management Act (SGMA). This report should be considered as a summary document so that Board members and other interested parties can quickly read about the general activities taking place between YSGA Board meetings. Board members should feel free to contact me at any time for more detail or with ideas and/or questions that they might have regarding the program.

Since the January 23, 2023 meeting of the YSGA Board of Directors the following activities have taken place.

### **Program Administration**

One meeting was held by the YSGA Executive Committee (EC) on February 22, 2023. The EC, consisting of Chair Sandy, Vice-Chair Smith, David Schaad, Kurt Balasek, and Executive Officer Kristin Sicke, discussed logistical issues related to YSGA administration and the implementation of the Groundwater Sustainability Plan (GSP). The YSGA EC members primarily discussed the process for forming the Management Area Advisory Committees and ways to reduce the administrative burden caused by the Committees.

The YSGA *Ad Hoc Drought Contingency Planning Committee* met on February 16, 2023 to review drought conditions and discuss the YSGA's methodology for providing written verification to the County Environmental Health Department. The Governor announced a new Executive Order (N-3-23), which rescinded some components of drought requirements that were in Executive Order N-7-22; however, Paragraph 9 related to GSA written verification for well permitting was still in effect. The Committee received an update on the status of well permitting activities within the County. Since this meeting, the Executive Officer has worked closely with Legal Counsel to develop additional documentation related to the process for providing written verification.

The YSGA *Ad Hoc Committee for Reconsideration of the Funding Mechanism and Voting Structure* met on February 24, 2023 to receive a presentation of LSCE's draft TM related to a long-term fee study investigation. Eddy Teasdale and Jacques DeBra provided examples of funding strategies pursued by other GSA's, presented the results of their initial YSGA 5-year revenue projections, and provided a proposed schedule for a long-term fee study and Proposition 218 process.

YSGA staff continue to coordinate with stakeholders and to schedule and participate in community meetings for ensuring successful outreach during GSP implementation. Staff also continue to communicate with Solano Subbasin GSA, N. American Subbasin, Sutter Subbasin, and Colusa Groundwater Authority on data/information sharing and project opportunities.

The Yolo Groundwater website <http://yologroundwater.org> was updated as needed. A calendar of current events is posted to the website.

### **Program Implementation**

- GSP Public Outreach
  - Ongoing correspondence with concerned stakeholders, well drillers, and well applicants to answer questions about SGMA and the revised well permitting process.
  - Dunnigan Groundwater Recharge and Woodland ASR projects were featured in local and state news.
  - Participated in DWR's Groundwater Awareness Week Kick-Off event to promote Yolo Subbasin groundwater recharge projects.
- WY 2022 Annual Report
  - Worked with SEI to update the YSGA model to have it run up to Water Year 2022 (previously it ran up to WY 2018)
    - Updated land use data with 2018 and 2019 LandIQ data
    - Updated water deliveries for WY 2019-WY 2021 with agencies assistance
    - Updated groundwater elevations data and groundwater graphing tool
    - Completed several model runs to test and analyze the model response
  - Compiled 2022 monitoring network information related to:
    - Changes to monitoring network
    - Hydrologic conditions
    - Groundwater levels and quality (TDS, Nitrate, Boron, and Arsenic)
    - Land subsidence from DWR's InSAR datasets
    - Depletion of interconnected surface waters
- Projects and Management Actions
  - Coordinated with Yolo County in the well permitting process in accordance with Executive Order N-7-22
  - Received approved well permits and reviewed pending well permits from Yolo County's Environmental Health Division
- Data Management/Website Updates
  - Worked with DWR to assign state well numbers to new monitoring wells
  - Created new website page to showcase ongoing projects:  
<https://www.yologroundwater.org/ysga-projects>
- Monitoring Network
  - Provided water level readings in coordination with Yolo County OES for individuals expressing concern over declining groundwater levels and individuals with dry wells
  - Addressed portions of the monitoring network improvement plan
  - Working to install real-time units and/or continuous dataloggers at additional sites
  - Continued implementation of citizen science program for individual well monitoring
  - Worked with DWR to plan installation of 3 multi-completion wells in data gap areas.
- Areas of Special Concern
  - Continued adding monitoring wells in these areas
  - Hosted meeting of Hungry Hollow area stakeholders on February 15, 2023 to discuss continued data and information gathering
- Drought Response
  - Worked with Yolo County OES to continue coordinated water delivery
  - Prepared for and participated in YSGA's Ad Hoc Drought Task Force

## **Program Outreach**

Staff participated in a number of meetings/workshops/discussions related to SGMA and groundwater recharge and protection, which include the following:

1. Participated in Inter-subbasin EDF Accounting Platform Pilot Coordination Meetings (January 31, February 16, March 16; Sicke, Leicht, and Fisher)
2. YSGA / Yolo County Farm Bureau Coordination Meeting (February 1; Directors Sagara and Smith; Sicke)
3. Continued coordination with Yolo County staff about well permitting process (February 9, March 1; Sicke, Leicht)
4. Participated in Meeting with NCWA, Yolo County Farm Bureau, and Cities of Woodland and Davis for Priority 2 Basin Planning (February 10; Director Sagara; Sicke)
5. Hosted meeting of Hungry Hollow area stakeholders to discuss continued data and information gathering (February 15; Sicke and Leicht)
6. Participated in ACWA's Groundwater Committee and Well Permitting Review Subcommittee (February 15 and 23; Sicke)
7. Hosted Ad Hoc Drought Contingency Planning Committee meeting (February 16; Directors Scianna, Pollock, Schaad, Brice, Refsland, Clark, Cornwell, Kirk, Fawns, Barth, Smith, and Muller; Sicke and Leicht)
8. Discussion with County staff about Cache Creek recharge potential (February 17; Sicke, Sabatini, and Leicht)
9. Hosted YSGA Executive Committee Meeting (February 22; Directors Sandy, Balasek, Smith, Schaad; Sicke, Sabatini, Leicht)
10. Hosted YSGA Ad Hoc Committee for Reconsideration of Voting Structure and Expense Allocation (February 24; Directors Barth, Cornwell, Garcia-Cadena, Pollock, Ramos, Sagara, and Smith; and Sicke, Sabatini, Leicht)
11. Participated in California Irrigation Institute's 2023 Annual Conference (February 27-28; Sicke and Leicht)
12. Participated in NCWA's Annual Meeting (March 3; Directors Barth, Cornwell, Vanderwaal; Sicke)
13. Participated in Westside Sacramento IRWM Coordinating Committee Meeting (March 8; Leicht)
14. Participated in DWR's Groundwater Awareness Week Event. YSGA staff shared information about groundwater recharge projects in [Dunnigan](#) and [Woodland](#). A video of the event can be found [here](#). (March 6; Sicke, Leicht, and Fisher)
15. Participated in NCWA's Groundwater Management Task Force Meeting (March 13; Sicke)

## **Other Items of Note**

On February 13, 2023, Governor Newsom issued [Executive Order N-3-23](#) outlining measures to protect the state's water reserves from the impact of recent extreme weather events. While the Order maintains the statewide drought emergency, it also directs state agencies to provide recommendations for what drought response actions ought to be maintained and what actions should be deemed no longer necessary. The Order also includes provisions that seek to improve the state's ability to bolster water supplies during wet years. Of direct significance to the YSGA are items relating to groundwater supplies (paragraphs 2 and 4), one of which seeks to further facilitate coordination between state agencies to expedite state permitting of groundwater recharge projects, and the other which modifies paragraph 9 of [Executive Order N-7-22](#) pertaining to well permitting.

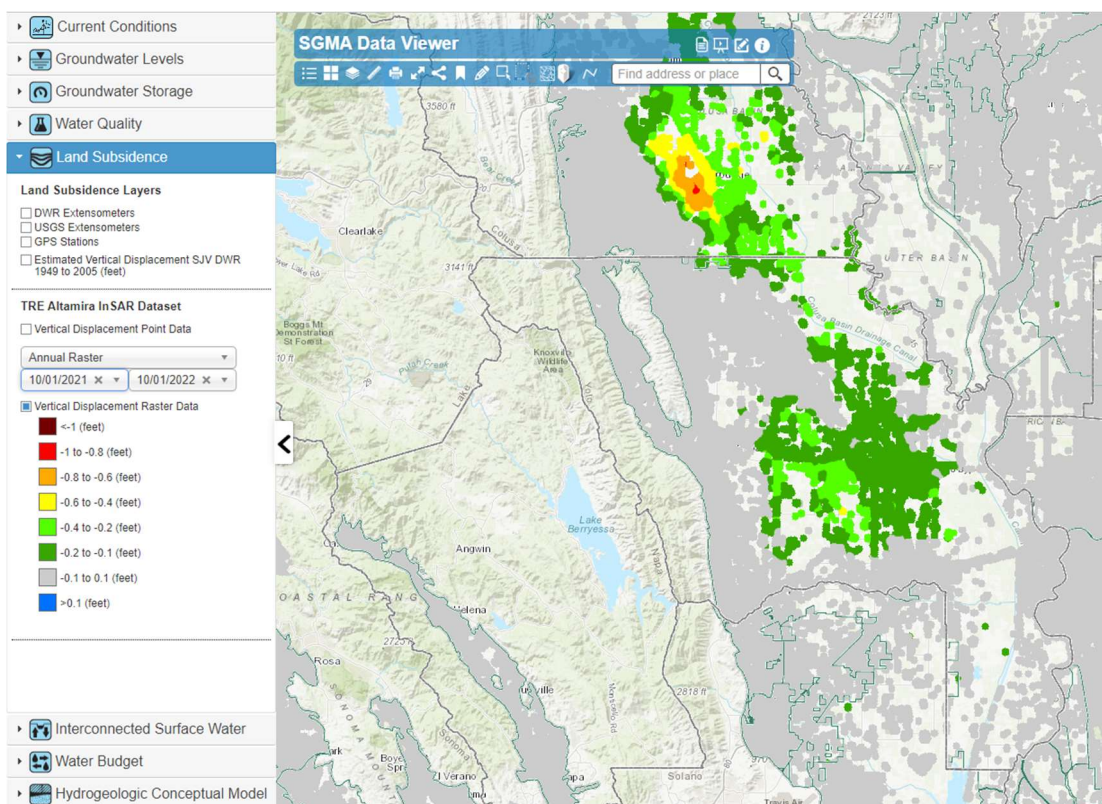
Governor Newsom also issued [Executive Order N-4-23](#) on March 10, 2023. The Order suspends certain regulations on permitting and water use to enable local water agencies to utilize floodwaters for groundwater recharge.

[Assembly Bill 1563](#) was introduced to the California Legislature on February 17, 2023. This bill would require any permit for a new well or modification to an existing well to receive verification from the applicable groundwater sustainability agency that the proposed well is consistent with the adopted groundwater sustainability plan.

Governor Newsom has released his proposed Fiscal Year 2023-24 budget, and as expected, there is a \$22.5B deficit in the fiscal year, which is necessitating cuts, deferrals, and shifting of funds from the General Fund to other sources. The Budget Summary can be found at the following link: <https://ebudget.ca.gov/2023-24/pdf/BudgetSummary/FullBudgetSummary.pdf>.

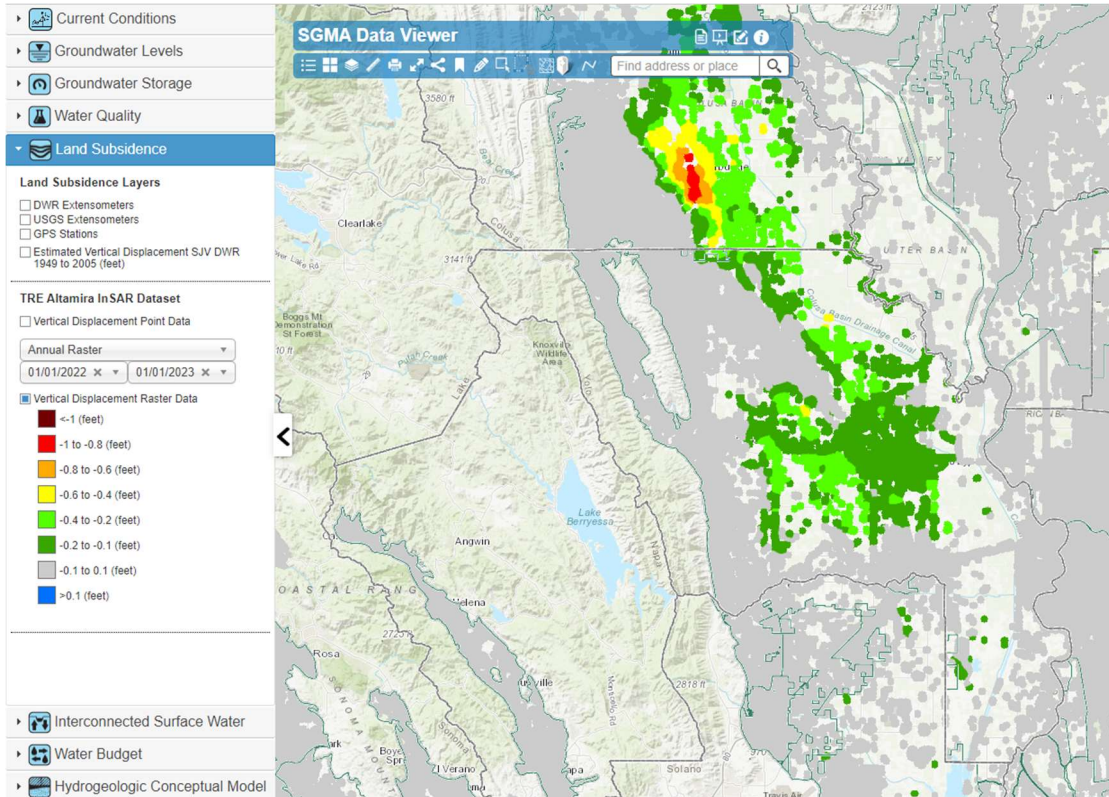
DWR's TRE ALTAMIRA InSAR Subsidence Dataset has been updated with data through January 1, 2023, which can be found on DWR's SGMA Data Viewer at the following link: <https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#landsub>

Visual comparison of subsidence results from October 1, 2022 and January 1, 2023 are provided below.



***InSAR Subsidence Data illustrating vertical displacement from October 1, 2021 to October 1, 2022.***

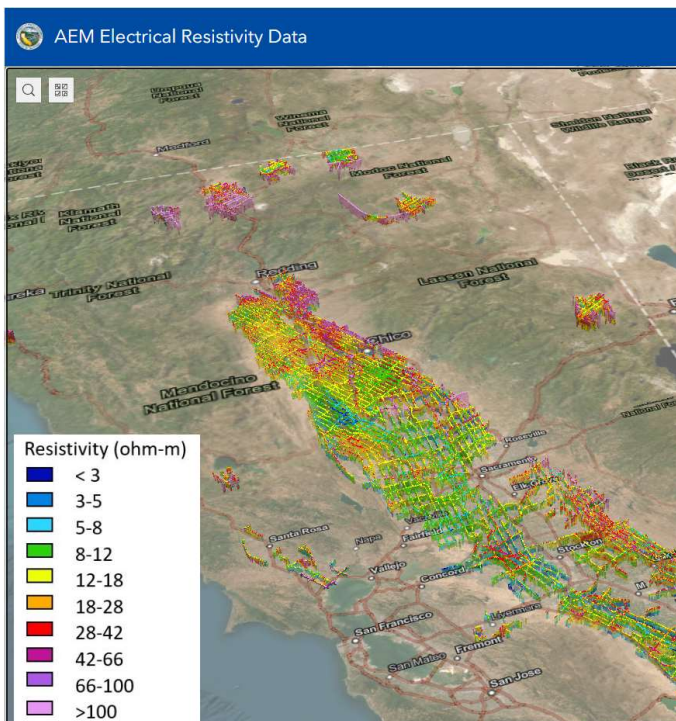




***InSAR Subsidence Data illustrating vertical displacement from January 1, 2022 to January 1, 2023.***

The YSGA is actively tracking DWR’s release of the summary report from DWR’s Airborne Electromagnetic Surveys (AEM) interpretation data.

The AEM Electrical Resistivity Data is shown below and can be viewed at the following link:  
<https://data.cnra.ca.gov/dataset/aem/resource/29c4478d-fc34-44ab-a373-7d484afa38e8>.



The AEM Interpretation Data for other parts of California can be found at the following link:

[https://data.cnra.ca.gov/dataset/aem/resource/29c4478d-fc34-44ab-a373-7d484afa38e8?view\\_id=1b9a2f93-8f8f-4318-90e3-56a071f66ade](https://data.cnra.ca.gov/dataset/aem/resource/29c4478d-fc34-44ab-a373-7d484afa38e8?view_id=1b9a2f93-8f8f-4318-90e3-56a071f66ade).

January and March rain events have filled the reservoirs! To observe current conditions on the State's major water supply reservoirs, visit the following link: <https://cdec.water.ca.gov/resapp/RescondMain>

The YCFC&WCD is expected an unallocated irrigation season: with approximately [161,200 AF in Indian Valley Reservoir](#) and greater than [7.56 feet at Clear Lake \(150,000 AF entitlement\)](#).

The 6-Day Forecast for precipitation can be found on NOAA's California Nevada River Forecast Center's website: <https://www.cnrfc.noaa.gov/precipForecast.php?cwa=RSA&imgNum=1>.

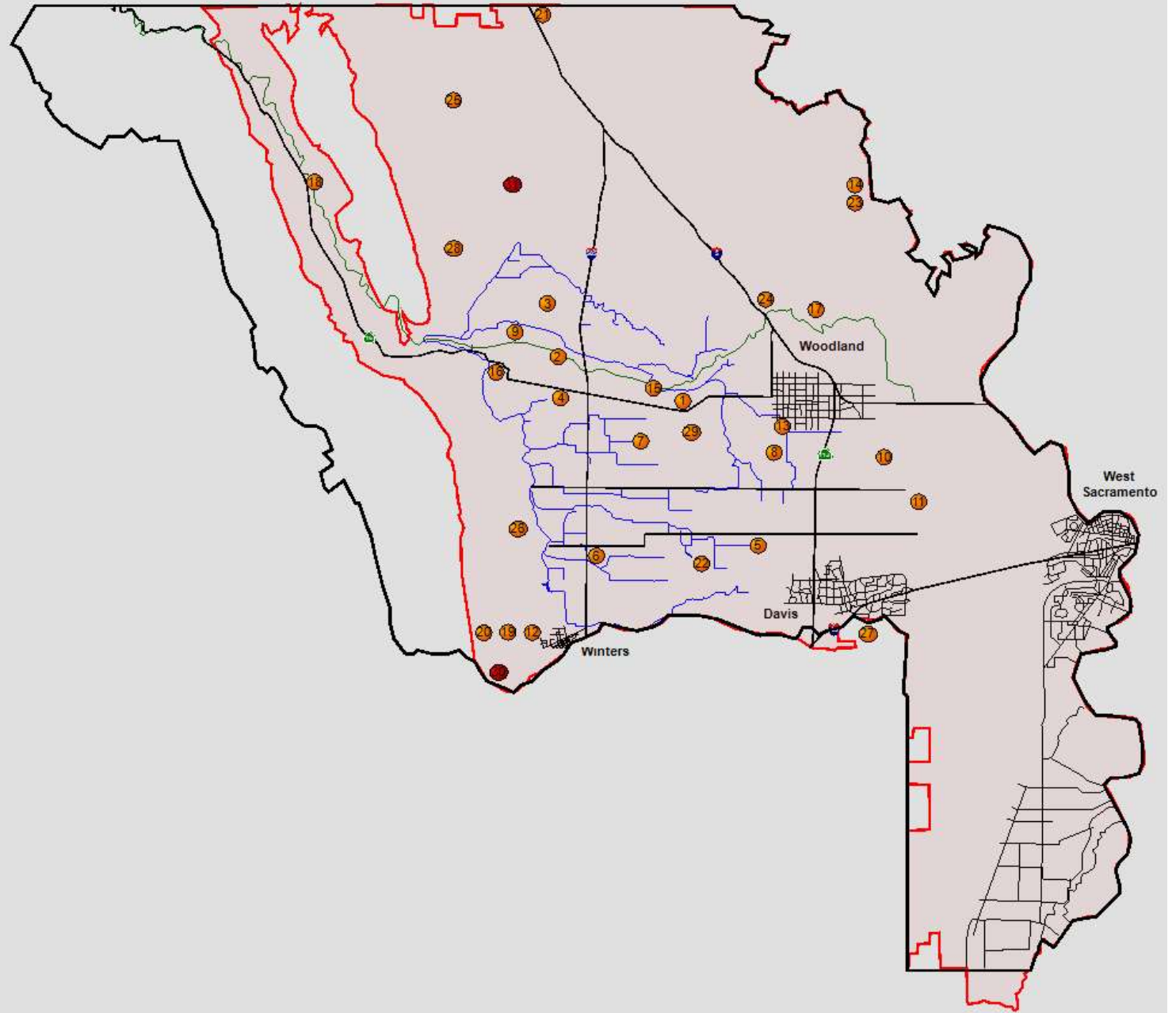
### **Current Groundwater Conditions**

Groundwater levels are beginning to show steady recovery due to the recent rainfall. When compared to last year's elevations (as shown on the historical depth to water table below), this March's water levels are on average five feet higher. When compared to 2015 elevations, this March's groundwater levels are on average one foot higher.

Included below are the following graphics that illustrate the current groundwater conditions and monitoring efforts.

1. A location map of the 28 real-time monitoring locations currently operating in the Yolo Subbasin (Well 20 is no longer in commission and we are working on a replacement; and Wells 30 and 31 are new continuous datalogger sites).
2. A table showing historical groundwater elevations on a specific date (March 17, 2023 in this example).
3. A tiled hydrograph of the real-time monitoring wells illustrating depth to water for March 17, 2022 to March 17, 2023.
4. The final 2022 hydrograph of average groundwater levels based on 123 monitored wells throughout Western Yolo County. These measurements are normally taken twice annually, once in the spring when groundwater levels are at their highest and again in the fall when groundwater levels are at their lowest. Fall measurements were completed the week of August 29 and September 5, 2022 as illustrated in the hydrograph. Visit [sgma.yologroundwater.org](http://sgma.yologroundwater.org) for more detailed information. Spring 2023 measurements are expected in late March/early April 2023.

**Well Monitoring**  
Continuous



- SCADA Links
- Comparison Trends
- Comparison Table

**Legend**

Real-Time Site	●
Data Logger Site	●
YSGA	—
County	—

# Well Monitoring

SCADA Links

Well Map

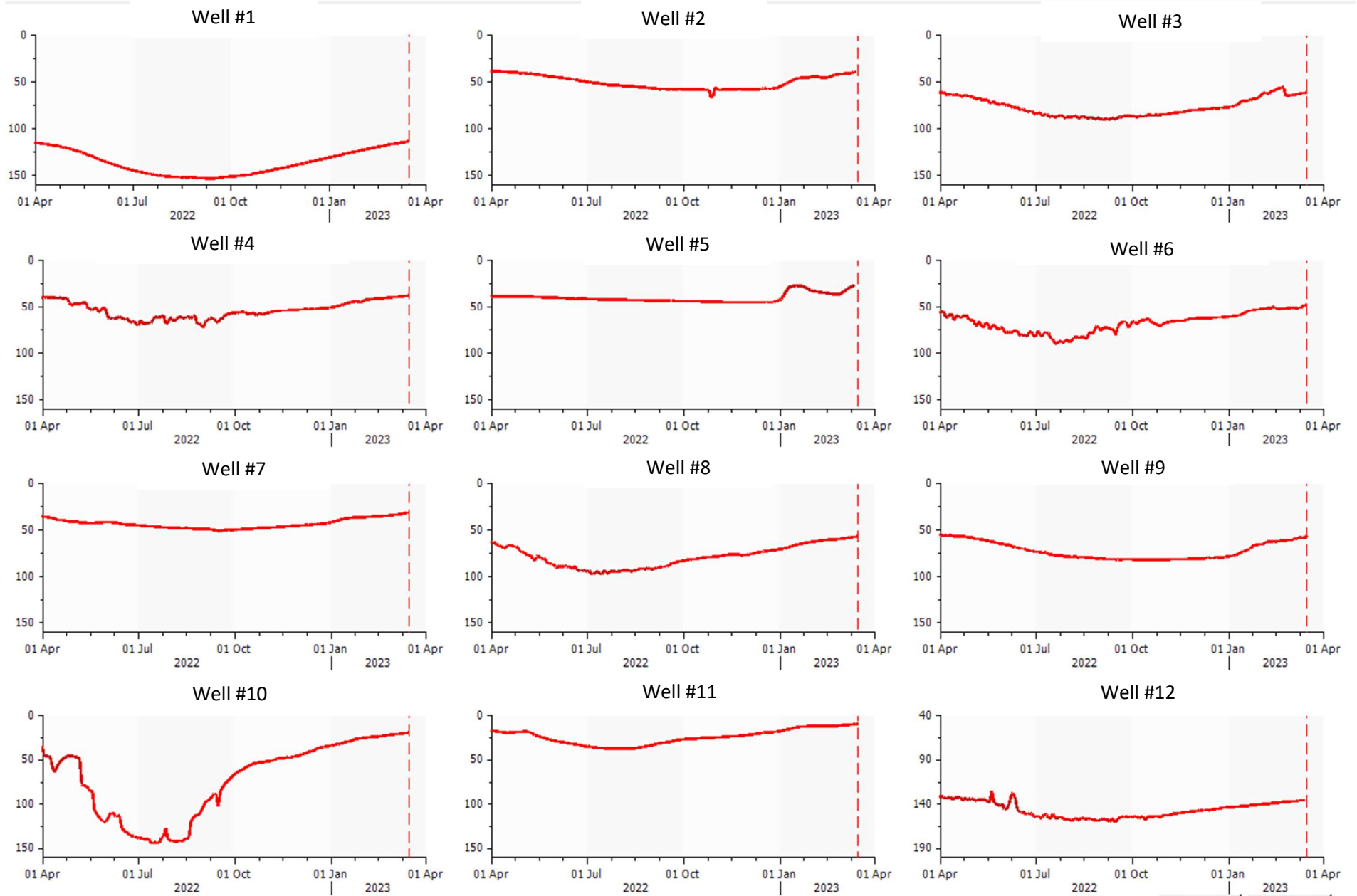
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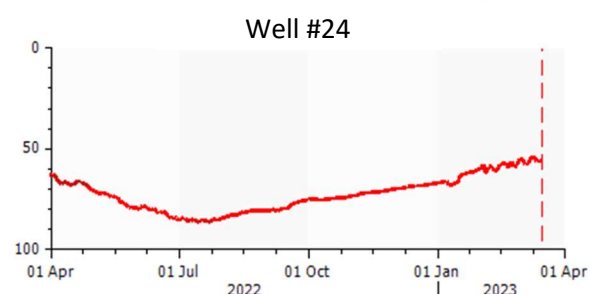
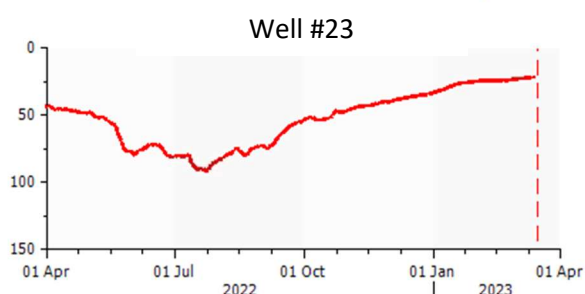
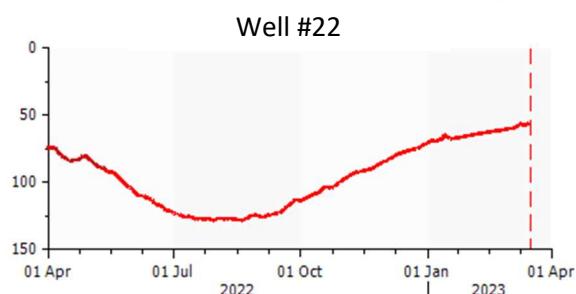
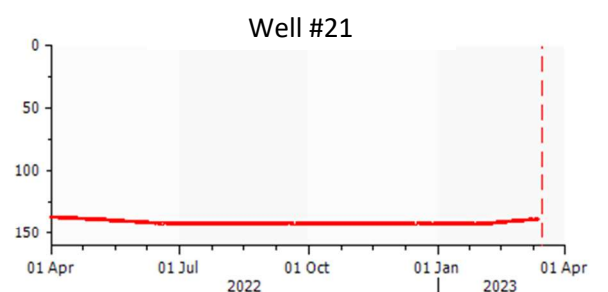
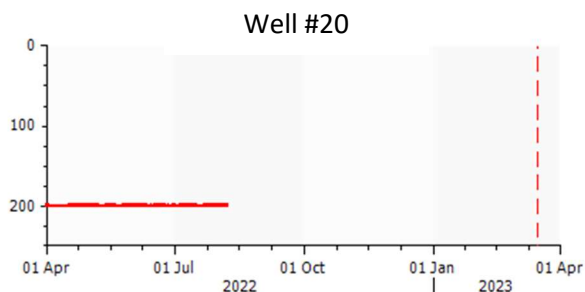
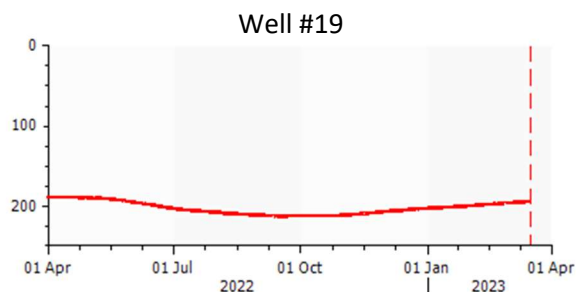
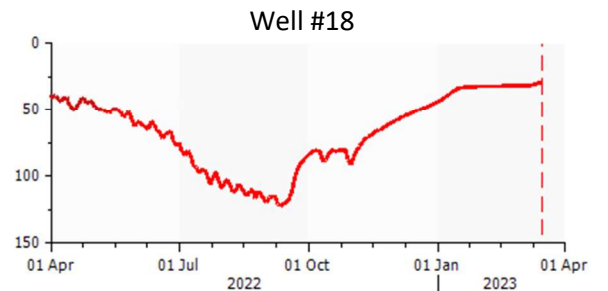
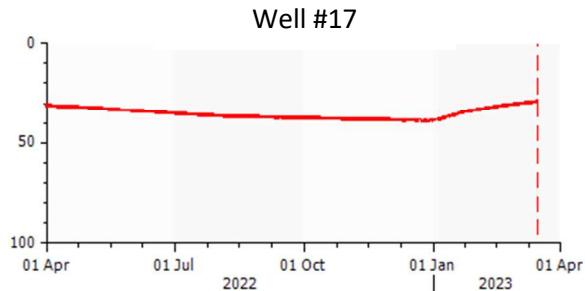
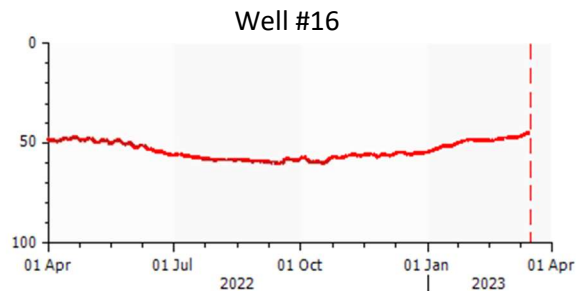
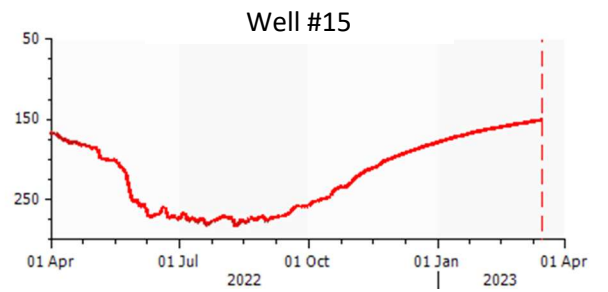
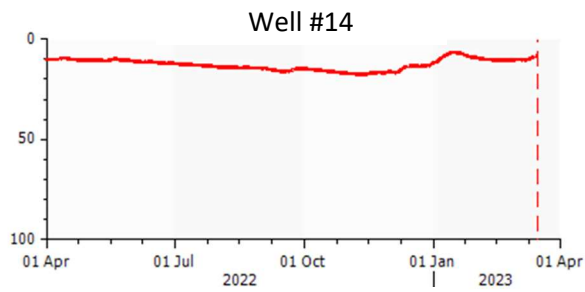
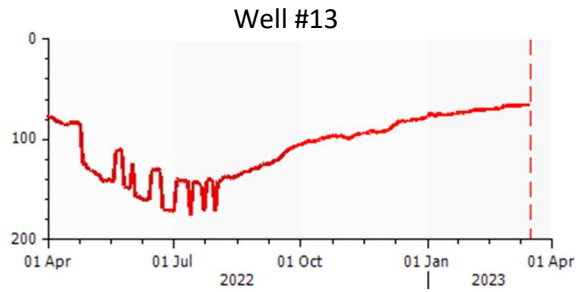
03/17

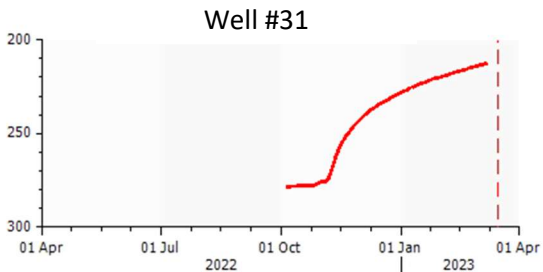
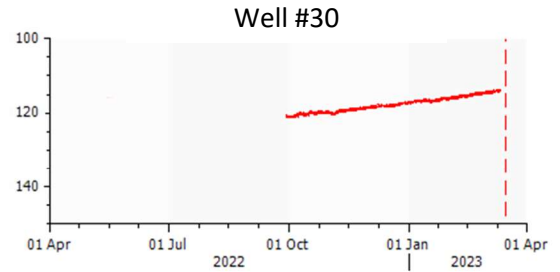
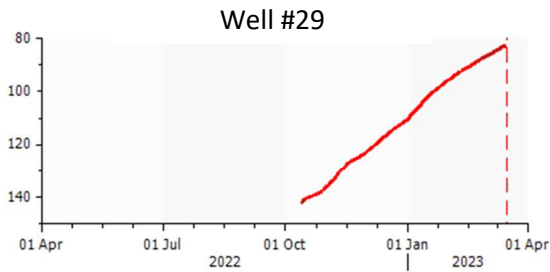
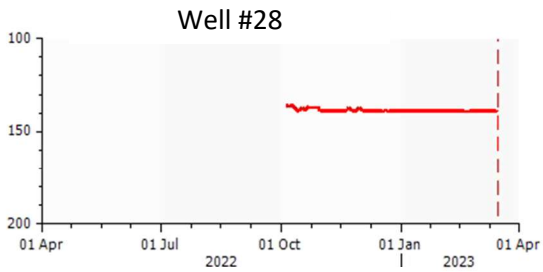
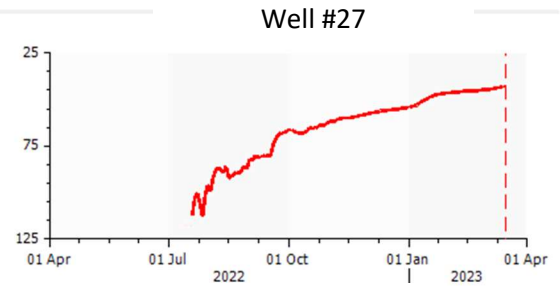
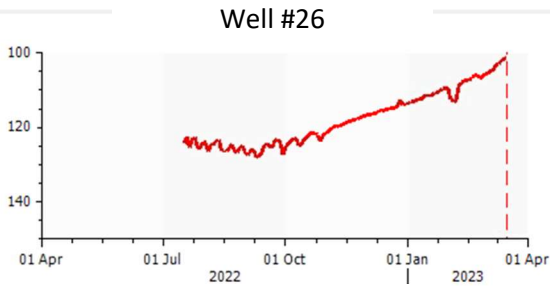
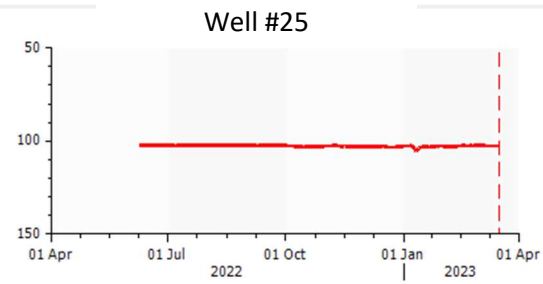
Depth to Water Historical Comparison  
(Daily Average DTW in feet)

Well	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Δ 2022 - 2023	Δ 2015 - 2023
1.	81.7	77.4	79.2	79.8	92.0	101.2	103.0	90.0	88.7	89.8	86.6	95.8	113.7	113.5	.1	-12.4
2.	31.5	28.7	29.8	44.2	36.0	39.0	39.5	23.7	30.2	24.4	30.1	32.3	37.3	38.2	-.9	.8
3.		41.8	39.4	40.4	50.7	59.2	58.5	38.4	40.0	37.6	40.2	44.8	60.1	61.8	-1.8	-2.7
4.		24.6	26.0	27.7	31.6	38.6	38.5	21.1	26.8	18.8	28.1	36.4	37.5	37.3	.2	1.3
5.		20.5	21.3	23.3	29.8	29.0	38.0	14.0	28.2	9.3	22.9	30.2	37.9	27.1	10.9	1.9
6.			37.9	36.7	43.3	54.5	52.5	26.6	35.9	20.6	36.6	50.2	57.2	47.8	9.5	6.8
7.				21.1	21.1	32.0	33.2	16.4	21.0	15.0	20.0	26.8	33.4	30.8	2.6	1.2
8.					49.5	59.9	62.2	46.0	42.8	36.8	41.3	47.7	62.9	56.5	6.4	3.4
9.					49.0	56.7	56.9	37.4	40.5	34.1	41.8	48.1	54.3	54.4	-.1	2.4
10.						25.2	25.6	11.8	12.9	7.5	14.5	19.5	30.2	18.5	11.7	6.7
11.						11.3	11.1	5.6	8.6	5.5	9.8	13.0	15.1	9.1	6.0	2.2
12.										111.9	106.9	117.7	133.2	135.2	-2.0	
13.									60.0	46.2	54.1	60.8	75.1	65.0	10.1	
14.										7.2	9.8	10.1	11.3	8.3	3.0	
15s.										33.3	37.0	45.6	44.0	40.3	3.8	
15d.										107.6	110.1	127.6	160.9	150.8	10.1	
16.										25.6	34.7	36.6	47.2	45.8	1.4	
17.											20.7	26.8	30.6	28.9	1.7	
18.											33.7	40.8	39.2	29.2	10.0	
19.											165.6	175.0	187.5	194.1	-6.6	
20.																
21.											117.6	127.0	136.0	137.8	-1.8	
22.													68.9	57.7	11.2	
23.													41.2	21.6	19.6	
24.													65.2	55.7	9.4	
25.													102.7			
26.													101.5			
27.													42.7			
28.													139.2			
29.													82.4			

----- Working on a replacement -----

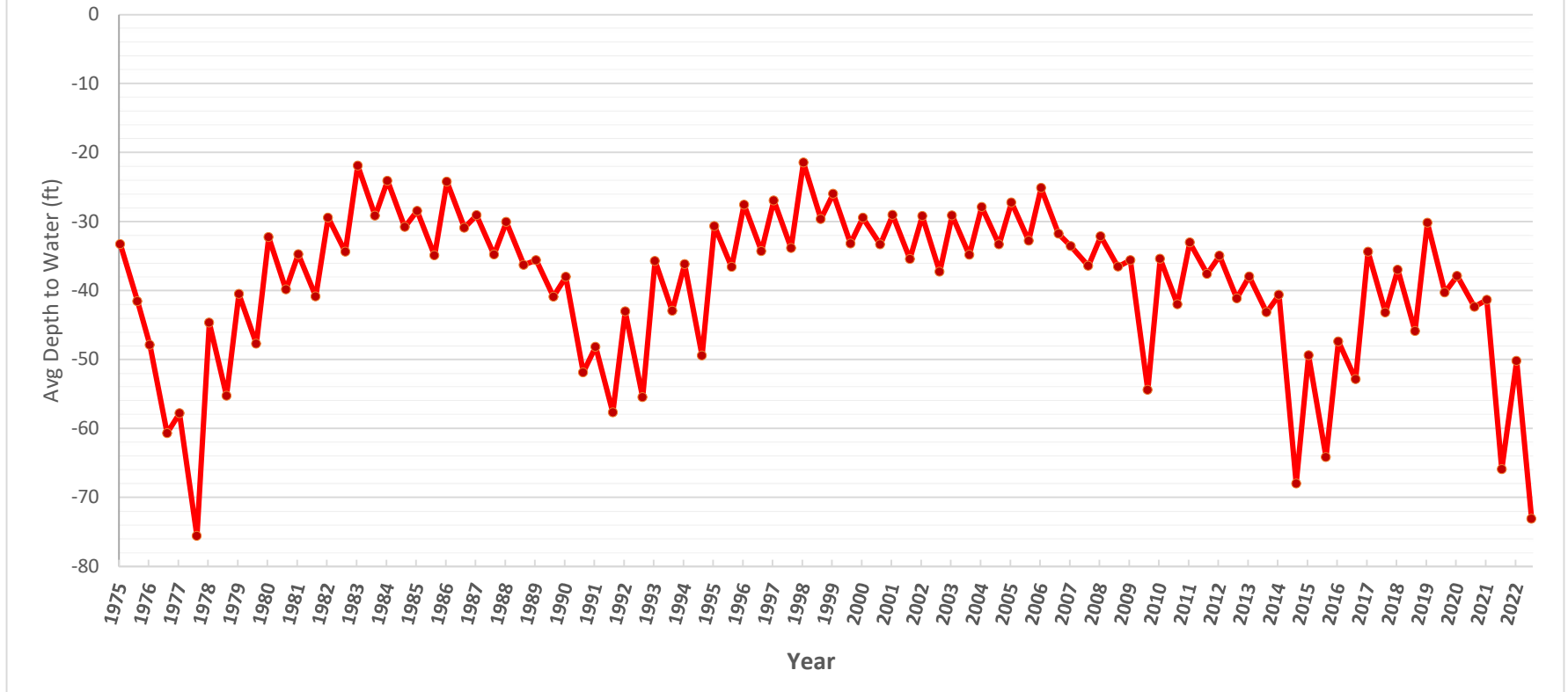






# YCFCWCD Average Groundwater

Depth by Season (Fall 2022 is 123 wells)\*\*



Mid-March 2021 Average Depth to Water ~ 41 feet  
 Mid-August 2021 Average Depth to Water ~ 66 feet  
 Early March 2022 Average Depth to Water ~ 50 feet  
 Measured September 2022 Average Depth to Water ~73 feet

Of Note:

- 1977 Drawdown from Spring to Fall ~18 feet
- 2014 Drawdown from Spring to Fall ~ 27 feet
- 2021 Drawdown from Spring to Fall ~25 feet
- 2022 Drawdown from Spring to Fall ~23 feet



## *Executive Order N-7-22 Well Permitting Update*

Pursuant to paragraph 9 of [Executive Order N-7-22](#) and [Executive Order N-3-23](#), YSGA must review certain well permit applications covered by the Executive Orders, and provide written verification to the County's Environmental Health Division that the proposed well application is consistent with the Yolo Subbasin GSP before the County may issue a permit. The YSGA Board of Directors held two special Board meetings on April 6 and May 6, 2022 to consider the process for developing the YSGA's Well Permitting Procedures. At the special May 6 Board meeting, the Board adopted [Resolution No. 22-01](#) to direct staff to complete the process of developing, adopting, and implementing procedures for complying with the Executive Order.

YSGA staff has continued to work with Yolo County's Environmental Health (YCEH) Division and assisted in the development of a questionnaire form requesting additional data and information from the permit applicant to ensure appropriate evaluation consistent paragraph 9 requirements. YSGA staff reviewed YCEH's draft Technical Memorandum for implementing a temporary agricultural well permitting procedure that considers the appropriate setbacks to ensure nearby wells are not impacted. The final YCEH Technical Memorandum was released on December 14, 2022 and can be reviewed [here](#).

As of March 16, 2023 and since April 1, 2022:

- 62 well permit applications have been transferred from YCEH for YSGA written verification
- 3 applications were revised to Domestic Wells
- 1 well permit application was technically located in the Solano Subbasin (outside of the Yolo Subbasin, but in the County boundaries)
- Of the 58 relevant well permit applications
  - ✓ 18 replacement well permits have received YSGA written verification
  - ✓ 17 new well permit applications have received YSGA written verification
  - ✓ 23 new well permit applications are currently in the queue
    - 4 applications pending receipt of a completed questionnaire from the applicant
    - 19 applicants submitted completed questionnaires and are currently under review

**Yolo Subbasin Groundwater Agency Board of Directors**  
**Meeting Agenda Report**

**MEETING DATE:** March 20, 2023

**AGENDA ITEM NO. 10**

**SUBJECT:** Groundwater Sustainability Plan Implementation

INITIATED OR     BOARD  
REQUESTED BY:  STAFF  
                   OTHER \_\_\_\_\_

INFORMATION  
 ACTION:  MOTION  
                   RESOLUTION

ATTACHMENT  YES     NO

---

**BACKGROUND**

*a. Review of Annual Report for Water Year 2022*

The second annual report for the Yolo Subbasin is due to the California Department of Water Resources by April 1, 2023. Annual reports provide information on groundwater conditions and information about GSP implementation that has occurred in the last water year. This annual report will contain a narrative description of subbasin conditions in water year 2022. It includes updated monitoring well hydrographs, elevation contours, estimates of surface water and groundwater use, and estimated change in groundwater storage for the Subbasin. It also includes an evaluation of the Subbasin’s progress with respect to sustainable management criteria, and information about current activities towards GSP implementation.

Staff will provide a presentation to the Board summarizing the report’s methodology and main findings. The attached document provides a draft summary of the status of water year 2022 sustainability indicators: groundwater elevations and storage, groundwater quality, land subsidence, and depletion of interconnected surface waters.

*b. Areas of Special Concern Update: Summary Presentation on Northwest of Winters*

At the June 2021 Board meeting, YSGA staff provided [a presentation on Areas of Special Concern within the Yolo Subbasin](#), which reported on a potentially emerging trend of declining groundwater levels in and around the City of Winters and the Hungry Hollow area. As follow-up to that presentation, Grant Davids (landowner in the Golden Bear community) has coordinated with staff to provide a summary presentation on current conditions and potential near-term projects and management actions for balancing the local aquifer.

**RECOMMENDATION**

This agenda item is for informational purposes only. No Board action is required.

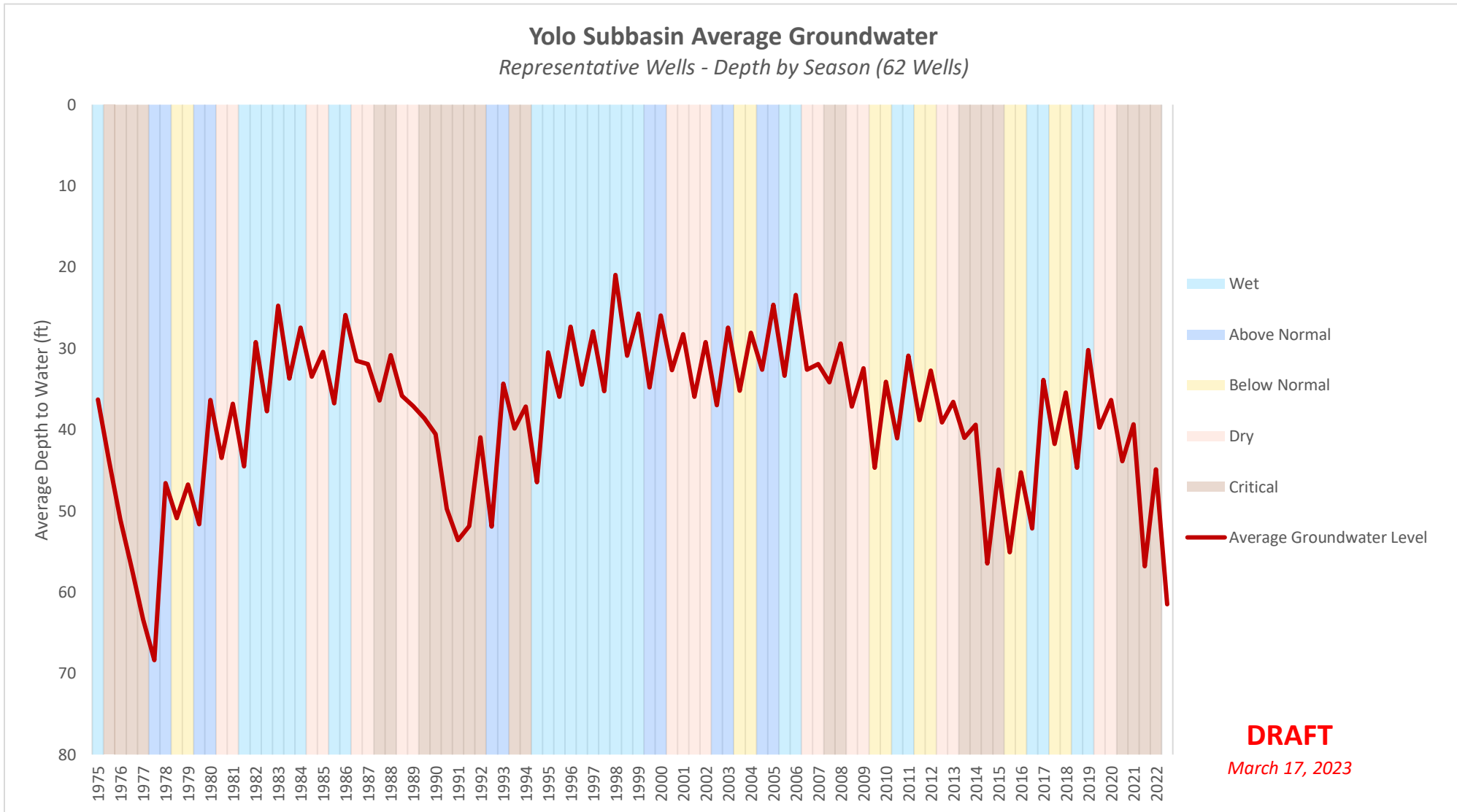
# YOLO SUBBASIN ANNUAL REPORT WATER YEAR 2022 **DRAFT** CONDITIONS ASSESSMENT SUMMARY

## Contents

GROUNDWATER ELEVATIONS AND STORAGE .....	2
GROUNDWATER QUALITY .....	7
LAND SUBSIDENCE .....	12
DEPLETION OF INTERCONNECTED SURFACE WATERS .....	17

# GROUNDWATER ELEVATIONS AND STORAGE

**Yolo Subbasin Average Groundwater**  
*Representative Wells - Depth by Season (62 Wells)*



**DRAFT**  
 March 17, 2023

**CAPAY VALLEY REPRESENTATIVE MONITORING WELL GROUNDWATER ELEVATIONS**

State Well Number	Representative Well Number	Measurable Objective	Minimum Threshold	Fall 2018	Spring 2019	Fall 2019	Spring 2020	Fall 2020	Spring 2021	Fall 2021	Spring 2022	Fall 2022	5 yr Fall Average	Distance to Measurable Objective
<i>DWR assigned well number</i>	<i>YSGA GSP Well Number</i>	<i>Groundwater Elevation</i>	<i>Groundwater Elevation</i>	<i>Groundwater Elevation, ft. MSL</i>										<i>5-year average minus MO</i>
				<i>Shaded values are below the minimum threshold value</i>										<i>Fall 2018-Fall 2022</i>
				<i>*** represents no measurement</i>										
10N02W16R001M	276	215.0	207.7	217.0	219.9	216.7	216.2	214.6	214.2	211.2	215.2	209.9	213.9	-1.1
10N02W18F001M	277	315.6	304.2	325.6	312.9	318.5	317.8	325.9	314.8	311.2	314.8	312.2	318.7	3.0
10N03W02R002M	280	319.5	308.2	312.7	322.5	316.6	316.7	313.3	313.4	309.3	312.5	310.2	312.5	-7.0
11N03W09Q001M	285	383.7	355.8	382.2	394.4	384.9	389.3	382.3	381.6	377.6	387.4	382.4	381.9	-1.8
11N03W23L001M	287	296.0	287.6	298.5	301.0	298.9	298.7	298.2	***	285.9	298.6	286.0	293.5	-2.5
11N03W23N001M	288	287.3	271.0	295.3	301.6	298.3	297.5	294.5	289.3	284.4	297.4	286.7	291.9	4.6
11N03W33F001M	289	351.1	341.2	351.5	356.2	351.6	352.0	351.3	351.2	344.4	351.4	345.8	349.0	-2.1
12N03W20D001M	293	382.8	376.4	383.4	387.1	382.4	383.6	382.0	382.4	380.0	383.6	378.0	381.2	-1.6
11N03W35D003M	415	280.7	273.0	***	293.1	282.1	284.1	281.2	283.1	275.9	286.1	278.1	279.3	-1.4
10N03W24B002M	416	324.8	281.1	327.8	345.9	343.7	339.6	327.2	326.6	310.4	305.2	303.1	322.5	-2.4

**DRAFT**  
March 17, 2023

**NORTH YOLO REPRESENTATIVE MONITORING WELL GROUNDWATER ELEVATIONS**

State Well Number	Representative Well Number	Measurable Objective	Minimum Threshold	Fall 2018	Spring 2019	Fall 2019	Spring 2020	Fall 2020	Spring 2021	Fall 2021	Spring 2022	Fall 2022	5 yr Fall Average	Distance to Measurable Objective
<i>DWR assigned well number</i>	<i>YSGA GSP Well Number</i>	<i>Groundwater Elevation</i>	<i>Groundwater Elevation</i>	<i>Groundwater Elevation, ft. MSL</i>										<i>5-year average minus MO</i>
				<i>Shaded values are below the minimum threshold value</i>										<i>Fall 2018-Fall 2022</i>
				<i>*** represents no measurement</i>										
11N01E02D001M	127	-13.3	-88.3	-17.4	16.2	-10.3	7.6	-27.2	5.6	-37.1	0.5	-33.1	-25.0	-11.7
11N01E16P001M	128	-33.1	-129.8	0.4	26.3	-24.1	17.3	-25.9	10.5	-58.5	-8.0	-86.9	-39.0	-5.9
12N01E03R002M	129	9.1	-44.3	-1.0	20.6	3.5	19.2	-9.0	15.3	-12.9	16.3	-2.9	-4.5	-13.6
12N01E26A002M	131	-4.2	-46.1	-5.0	19.3	-2.0	13.0	-12.5	5.6	-29.7	3.3	-8.6	-11.6	-7.4
10N03E33B011M	153	3.8	-73.3	8.6	***	7.5	14.2	3.1	11.3	1.7	10.8	-23.4	-0.5	-4.3
12N01W14M001M	178	10.5	-30.9	-7.5	19.3	-7.5	10.8	-14.9	-5.9	-29.5	-33.7	-28.5	-17.6	-28.1
12N01W26L002M	431	13.1	-43.8	-12.8	10.5	-5.6	6.0	-16.3	-9.2	-35.3	-17.3	-41.7	-22.4	-35.4
10N01E02Q002M	251	32.1	-32.6	17.1	40.4	20.3	32.6	17.6	22.5	***	***	-6.4	12.1	-20.0
10N02E06B001M	405	26.0	-85.7	18.6	37.6	28.6	29.6	23.6	25.0	-8.1	15.6	1.7	12.9	-13.2
12N01W05B001M	411	49.5	-25.3	18.7	30.5	20.6	25.6	15.5	16.5	4.4	8.6	0.9	12.0	-37.5
10N02E09N001M	410	12.9	-63.7	7.3	36.6	23.0	28.0	17.1	23.2	-3.4	15.7	-11.3	6.5	-6.4
10N02E03R002M	420	12.2	-39.2	-9.8	31.8	6.5	22.3	***	15.7	***	4.4	-36.7	-13.4	-25.6
11N02E20K004M	421	28.8	-31.6	25.7	33.4	29.5	32.9	26.8	29.1	20.9	24.4	17.1	24.0	-4.9

**DRAFT**  
March 17, 2023

CENTRAL YOLO REPRESENTATIVE MONITORING WELL GROUNDWATER ELEVATIONS

State Well Number	Representative Well Number	Measurable Objective	Minimum Threshold	Fall 2018	Spring 2019	Fall 2019	Spring 2020	Fall 2020	Spring 2021	Fall 2021	Spring 2022	Fall 2022	5 yr Fall Average	Distance to Measurable Objective	
<i>DWR assigned well number</i>	<i>YSGA GSP Well Number</i>	<i>Groundwater Elevation</i>	<i>Groundwater Elevation</i>	<i>Groundwater Elevation, ft. MSL</i>									<i>Fall 2018- Fall 2022</i>	<i>5-year average minus MO</i>	
				<i>Shaded values are below the minimum threshold value</i>											
				<i>*** represents no measurement</i>											
08N02E15A002M	114	-25.1	-61.3	***	***	0.4	16.8	-9.6	10.0	-28.6	-15.8	-31.2	-17.3	7.9	
08N03E07N001M	132	-22.0	-78.0	***	***	***	***	***	***	-28.9	-7.5	-32.3	***	***	
09N03E33B002M	151	4.7	-35.3	4.8	19.0	3.6	15.0	-2.1	12.9	-4.2	11.4	-9.3	-1.5	-6.2	
08N02E18M002M	170	20.4	1.5	18.5	30.1	27.7	***	20.9	22.5	8.9	14.1	5.5	16.3	-4.1	
08N01E07R001M	220	82.3	16.5	60.5	87.6	74.1	72.2	***	65.1	46.5	59.6	42.5	55.9	-26.3	
08N01W09C001M	222	110.9	40.3	72.0	92.6	78.2	82.6	85.4	88.6	69.0	73.9	51.9	71.3	-39.6	
08N01W13G003M	224	80.0	47.8	70.9	***	78.4	77.8	71.8	73.3	58.8	61.4	53.3	66.6	-13.4	
08N01W20R005M	229	72.8	36.4	44.7	75.4	60.9	72.0	45.0	59.6	31.2	47.2	26.1	41.6	-31.2	
10N01E34A003M	430	27.6	-47.4	11.0	42.0	28.0	35.5	18.6	25.9	-33.9	11.1	***	5.9		
09N01E07D001M	231	111.1	68.3	102.4	109.6	104.7	104.5	99.2	97.2	76.5	93.0	75.7	91.7	-19.4	
09N01E20E001M	233	104.8	67.1	106.7	108.8	106.0	105.0	105.7	98.9	91.7	94.7	85.7	99.2	-5.6	
09N01E24D001M	234	52.2	7.6	41.5	51.5	49.5	47.3	45.3	40.7	29.1	36.4	27.4	38.6	-13.6	
09N01E31D001M	235	104.6	68.3	103.7	111.3	106.1	100.7	101.8	92.6	70.9	79.0	64.8	89.4	-15.2	
09N01W08Q001M	239	185.1	152.2	185.7	186.3	184.7	178.3	184.5	174.9	172.9	168.9	161.1	177.8	-7.3	
09N01W21E001M	240	163.4	144.7	160.4	171.1	153.7	165.1	162.4	159.4	149.5	150.3	141.9	153.6	-9.8	
09N02E07L001M	246	24.7	-45.4	2.2	37.6	18.4	28.2	***	23.4	-19.6	10.2	-26.8	-6.5	-31.1	
09N02E32M001M	248	29.1	-7.0	16.2	44.2	27.1	32.7	21.6	27.2	-2.7	18.4	-18.1	8.8	-20.3	
09N03E19R002M	250	6.7	-14.1	2.5	18.7	3.3	15.0	-0.6	12.9	-6.0	12.7	9.8	1.8	-4.9	
10N01E23Q002M	254	26.8	-43.0	16.8	44.9	31.7	37.7	23.0	29.6	-12.2	16.0	-25.0	6.9	-20.0	
10N01E29K001M	256	77.8	58.4	80.0	87.2	81.8	80.8	80.2	79.5	77.2	79.4	77.5	79.3	1.5	
10N01W08B001M	261	139.5	73.3	136.0	144.9	141.9	140.5	137.3	135.7	106.9	123.3	90.4	122.5	-17.1	
10N01W21J001M	265	127.5	90.9	127.5	137.0	130.6	131.2	129.7	129.3	115.4	124.4	106.1	121.9	-5.7	
10N01W32E001M	268	169.9	144.5	169.6	174.9	169.6	167.1	168.6	164.1	152.0	158.2	146.8	161.3	-8.6	
10N01W35Q001M	269	120.5	93.0	121.9	128.7	124.0	116.2	123.3	110.0	104.8	113.4	98.8	114.5	-6.0	
10N02W14A001M	275	137.8	91.1	136.0	148.7	138.4	138.8	137.2	134.1	104.8	125.4	91.3	121.6	-16.2	
10N02W26P001M	279	241.7	212.7	220.6	225.6	219.7	221.4	211.2	***	***	207.7	207.0	214.6	-27.2	
10N02E29A001M	406	35.7	9.9	29.6	38.3	35.9	37.4	***	***	***	26.5	23.7	29.7	-6.0	
09N02E22H002M	400	22.9	-24.8	22.4	28.6	26.8	28.4	23.3	24.2	14.0	14.3	13.2	19.9	-3.0	
10N02E36E001M	401	22.1	9.0	20.4	28.7	19.8	25.8	19.6	23.6	14.1	22.0	9.4	16.6	-5.5	
09N01E26N001M	403	71.7	32.2	53.5	76.3	66.1	64.8	61.0	58.7	46.3	46.6	35.4	52.4	-19.3	
09N01W23D001M	404	135.8	82.9	119.7	136.0	128.6	122.1	122.8	121.6	67.9	113.2	39.5	95.7	-40.1	
08N01W22G500M	419	71.9	6.5	39.5	79.5	58.5	78.5	47.5	62.5	16.5	41.5	9.5	34.3	-37.6	



**SOUTH YOLO REPRESENTATIVE MONITORING WELL GROUNDWATER ELEVATIONS**

State Well Number	Representative Well Number	Measurable Objective	Minimum Threshold	Fall 2018	Spring 2019	Fall 2019	Spring 2020	Fall 2020	Spring 2021	Fall 2021	Spring 2022	Fall 2022	5 yr Fall Average	Distance to Measurable Objective
<i>DWR assigned well number</i>	<i>YSGA GSP Well Number</i>	<i>Groundwater Elevation</i>	<i>Groundwater Elevation</i>	<i>Groundwater Elevation, ft. MSL</i>										<i>5-year average minus MO</i>
				<i>Shaded values are below the minimum threshold value</i>										
				<i>*** represents no measurement</i>										
08N03E32L001M	122	-1.9	-71.8	-10.1	16.4	-56.5	8.8	-18.4	2.9	-31.1	-0.6	***	-29.0	-27.1
06N03E07M001M	160	9.9	-10.8	-2.8	14.7	-2.0	12.2	-5.4	***	-7.0	4.7	-7.9	-5.0	-14.9
08N03E31N001M	422	-7.0	-49.3	-10.2	14.3	-9.0	2.9	-20.8	***	-34.2	-12.1	-40.3	-22.9	-15.8
07N03E04Q001M	423	0.5	-27.1	-1.4	16.9	-0.9	7.7	***	***	-7.7	7.4	-6.0	-4.0	-4.5

**DUNNIGAN HILLS MONITORING WELL GROUNDWATER ELEVATIONS**

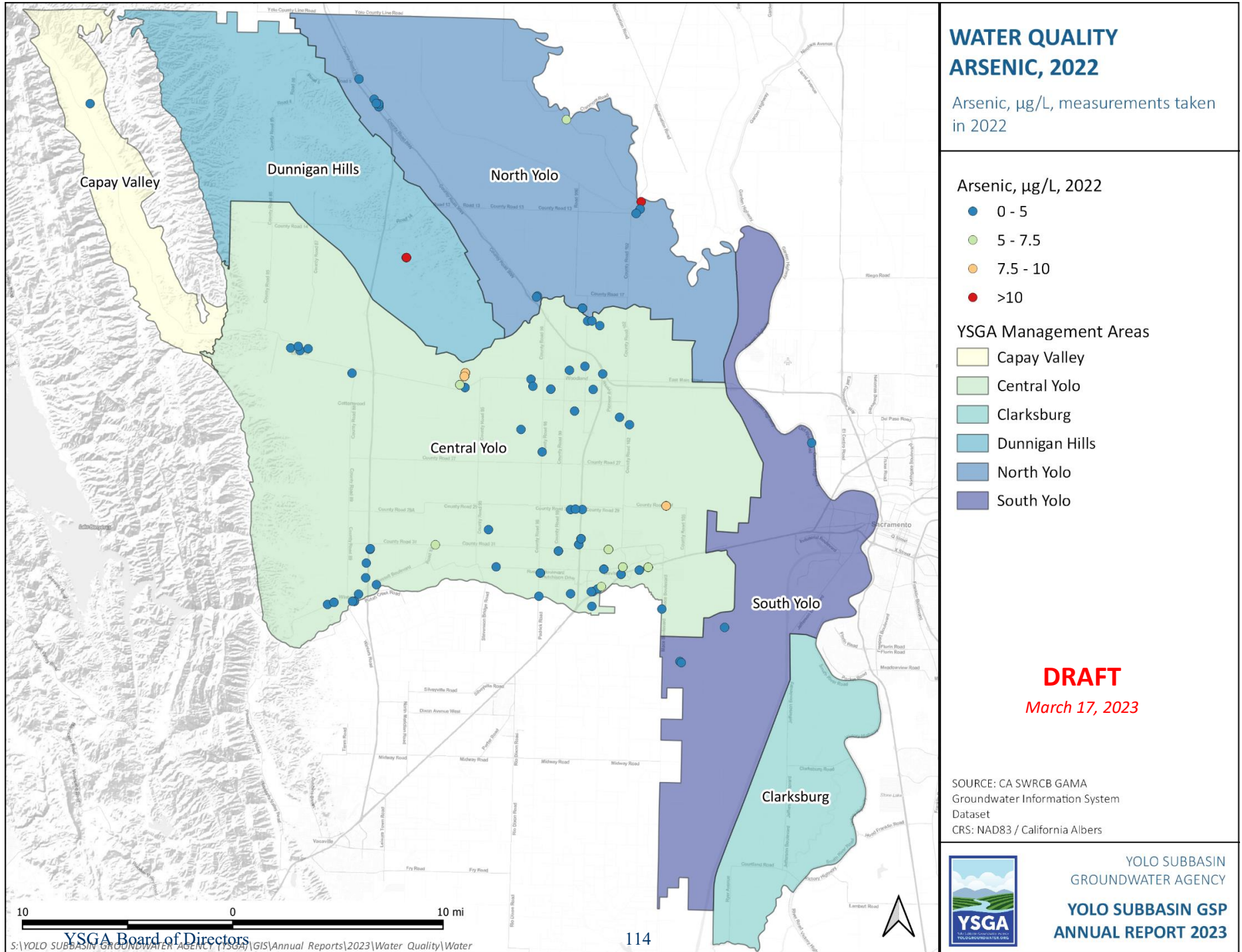
State Well Number	Representative Well Number	Measurable Objective	Minimum Threshold	Fall 2018	Spring 2019	Fall 2019	Spring 2020	Fall 2020	Spring 2021	Fall 2021	Spring 2022	Fall 2022	5 yr Fall Average	Distance to Measurable Objective
<i>DWR assigned well number</i>	<i>YSGA GSP Well Number</i>	<i>Groundwater Elevation</i>	<i>Groundwater Elevation</i>	<i>Groundwater Elevation, ft. MSL</i>										<i>5-year average minus MO</i>
				<i>Shaded values are below the minimum threshold value</i>										
				<i>*** represents no measurement</i>										
10N01E18C001M	253	143.1	132.8	137.8	138.0	140.1	137.5	138.5	135.4	134.5	133.8	132.9	136.8	-6.3
10N01W02Q001M	260	128.3	73.6	76.8	94.6	86.0	91.0	79.8	78.4	46.2	71.6	46.1	67.0	-61.3
10N01E15D001M	402	17.5	-69.6	-53.0	6.3	5.1	17.7	-2.3	7.4	-23.6	-9.6	-26.6	-20.1	-37.6

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March 17, 2023

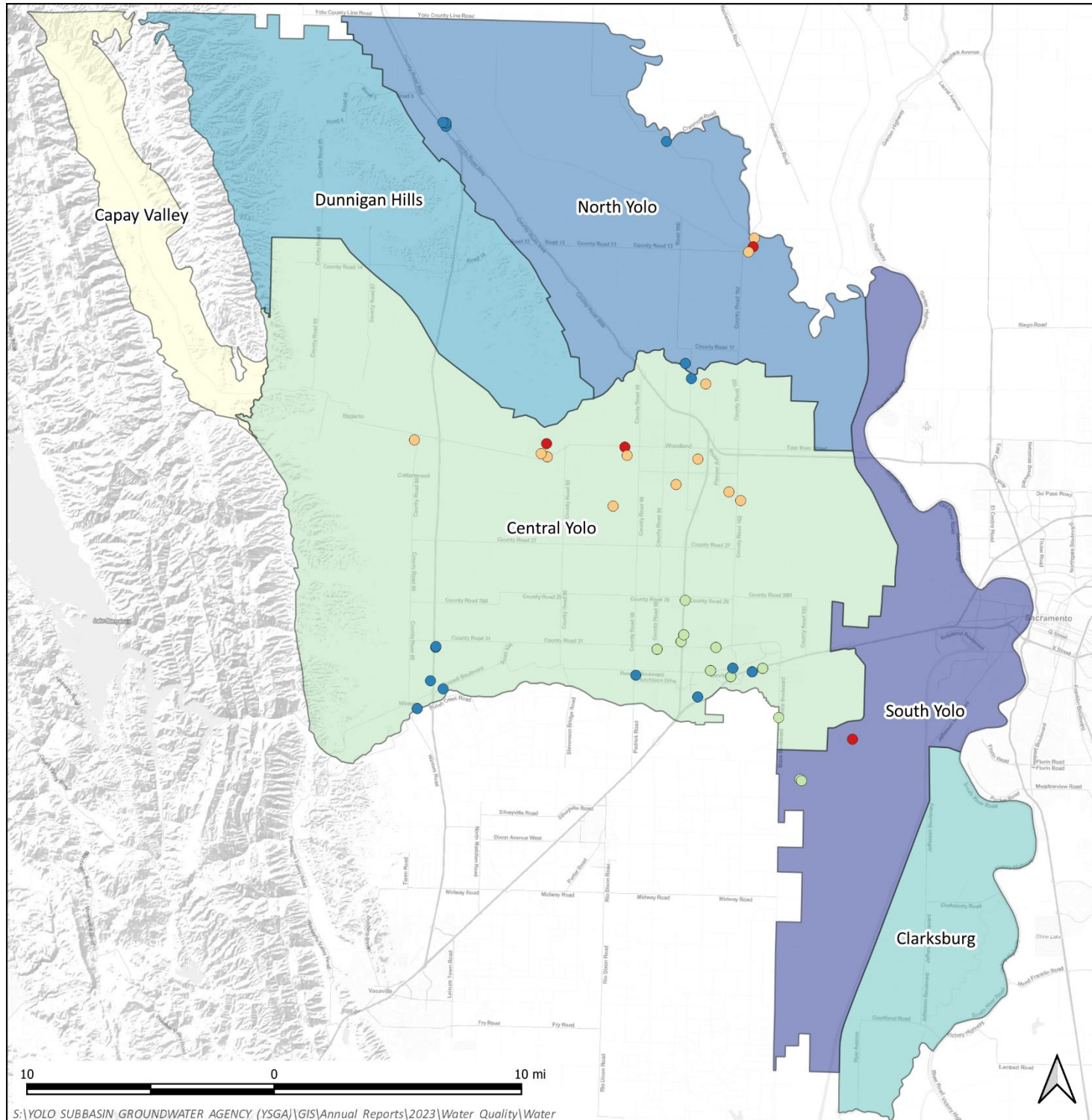
# GROUNDWATER QUALITY

## WATER QUALITY – ARSENIC, 2022



# WATER QUALITY BORON, 2022

Boron, mg/L, measurements taken in 2022



## Boron, mg/L, 2022

- 0 - 0.7
- 0.7 - 1
- 1 - 2.5
- >2.5

## YSGA Management Areas

- Capay Valley
- Central Yolo
- Clarksburg
- Dunnigan Hills
- North Yolo
- South Yolo

**DRAFT**  
March 17, 2023

SOURCE: CA SWRCB GAMA  
Groundwater Information System  
Dataset  
CRS: NAD83 / California Albers



YOLO SUBBASIN  
GROUNDWATER AGENCY  
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## WATER QUALITY NITRATE, 2022

Nitrate as N, ppm  
Measurements taken in 2022

Nitrate as N, ppm, 2022

- 0 - 5
- 5 - 7.5
- 7.5 - 10
- >10

YSGA Management Areas

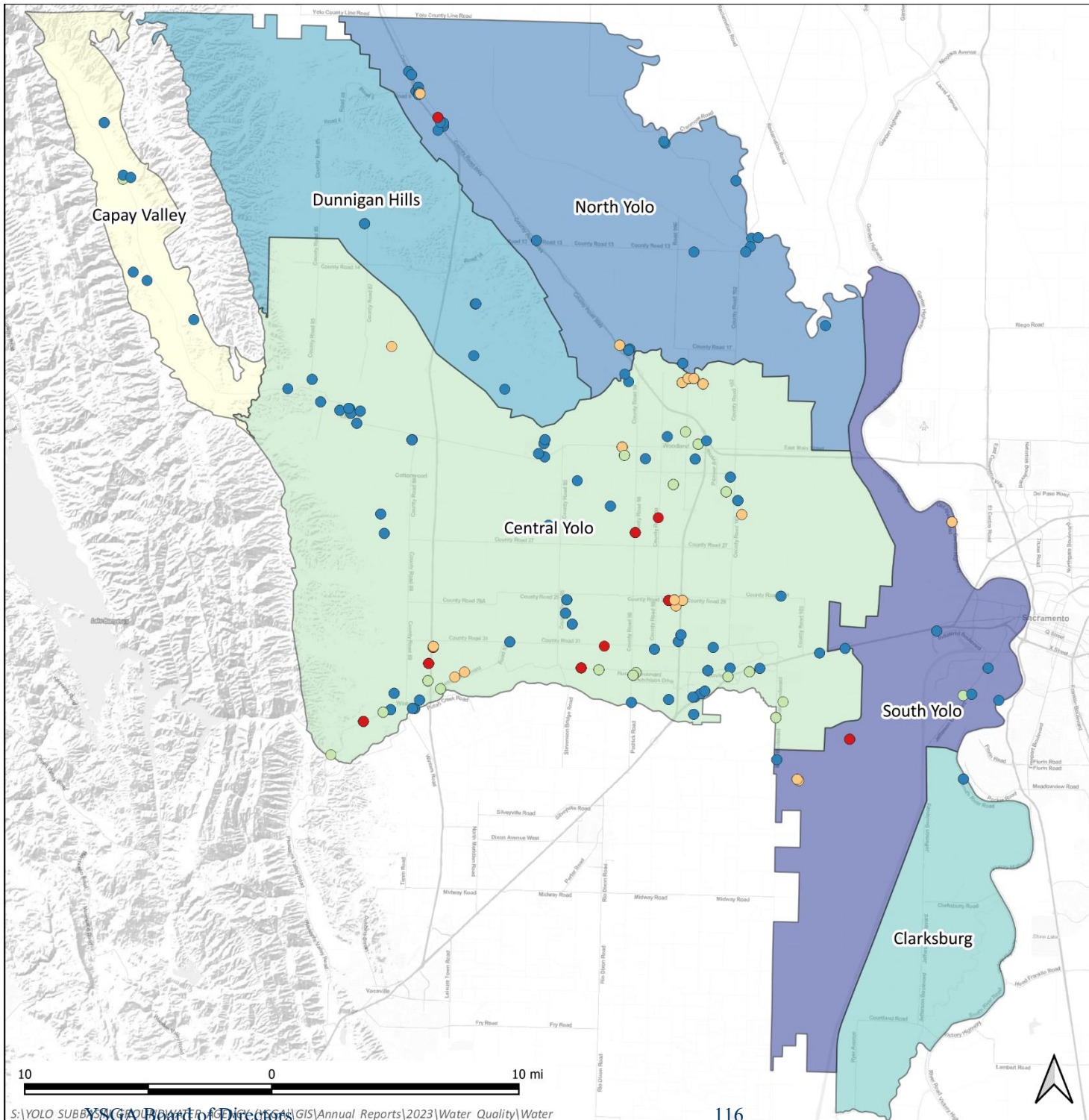
- Capay Valley
- Central Yolo
- Clarksburg
- Dunnigan Hills
- North Yolo
- South Yolo

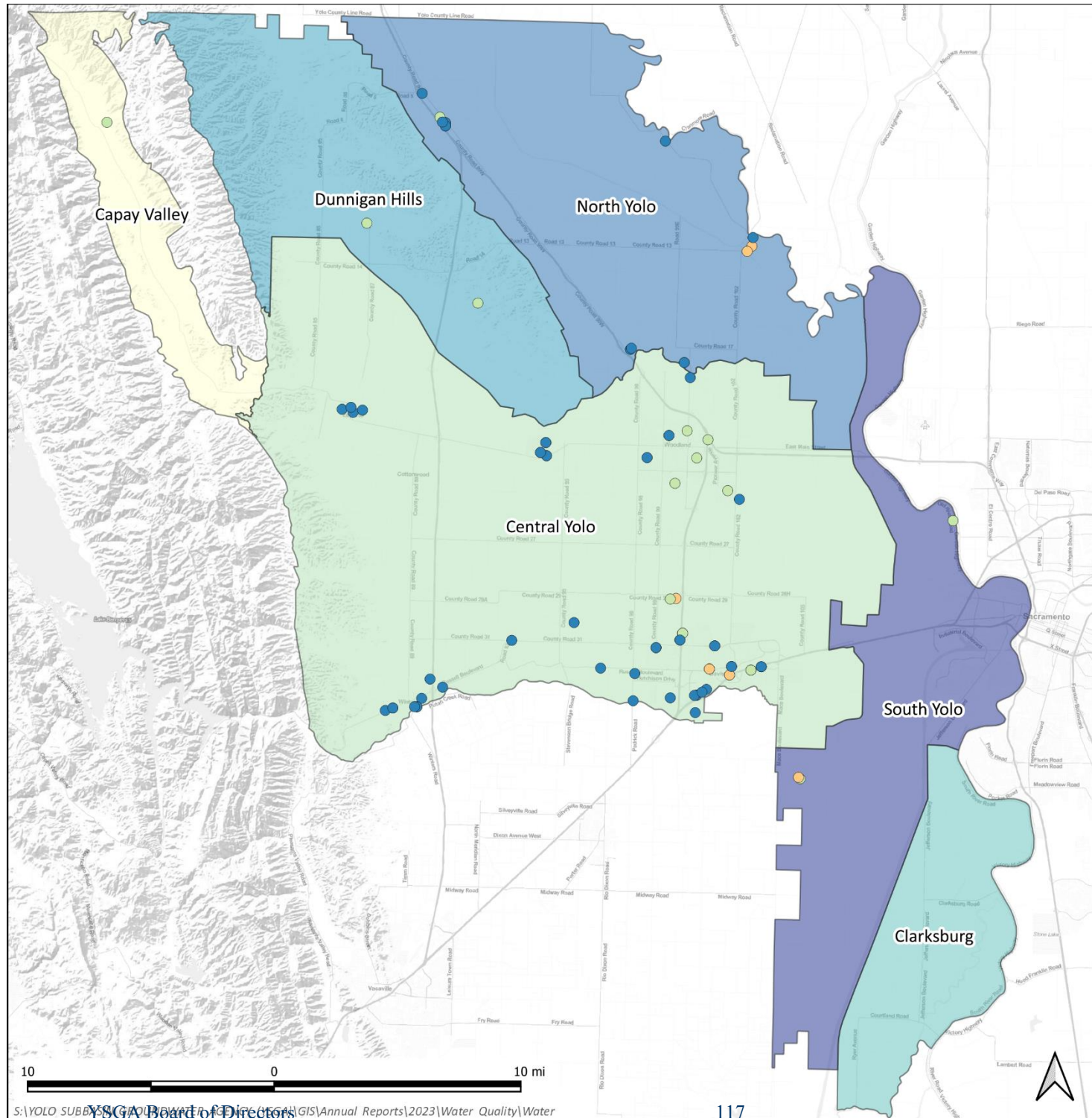
**DRAFT**  
March 17, 2023

SOURCE: CA SWRCB GAMA  
Groundwater Information System  
Dataset  
CRS: NAD83 / California Albers



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## WATER QUALITY TDS, 2022

Total Dissolved Solids, mg/L  
Measurements taken in 2022

TDS, mg/L, 2022

- 0 - 500
- 500 - 750
- 750 - 1000

YSGA Management Areas

- Capay Valley
- Central Yolo
- Clarksburg
- Dunnigan Hills
- North Yolo
- South Yolo

**DRAFT**

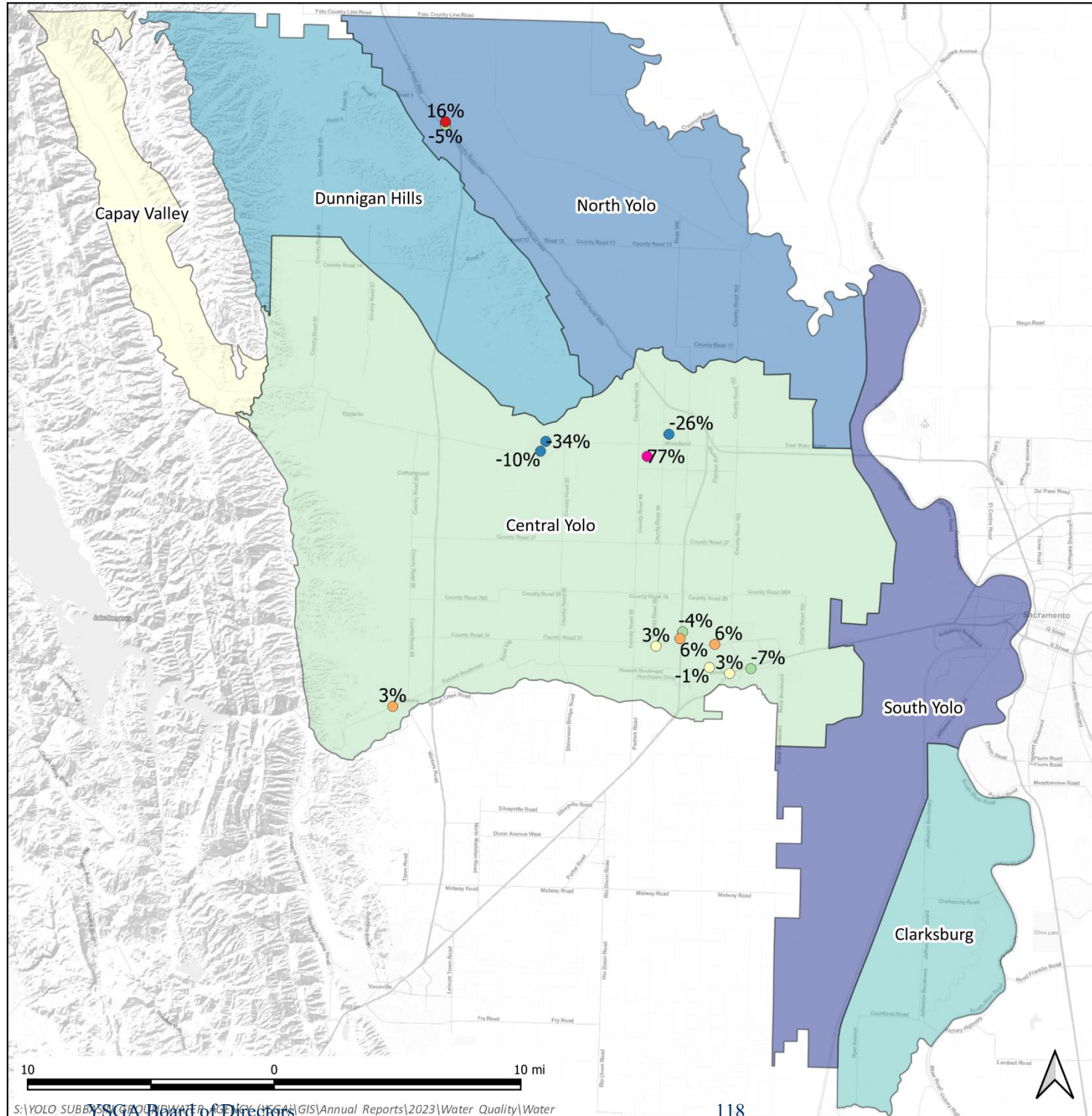
March 17, 2023

SOURCE: CA SWRCB GAMA  
Groundwater Information System  
Dataset  
CRS: NAD83 / California Albers



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## WATER QUALITY TDS % CHANGE, 2020-2022

Total Dissolved Solids, mg/L  
Measurements taken in 2020-2022

### TDS Percent Change 2020-22

- -35% to -8%
- -8% to -3%
- -3% to +3%
- +3% to +8%
- +8% to +20%
- +20% to +77%

### YSGA Management Areas

- Capay Valley
- Central Yolo
- Clarksburg
- Dunnigan Hills
- North Yolo
- South Yolo

**DRAFT**

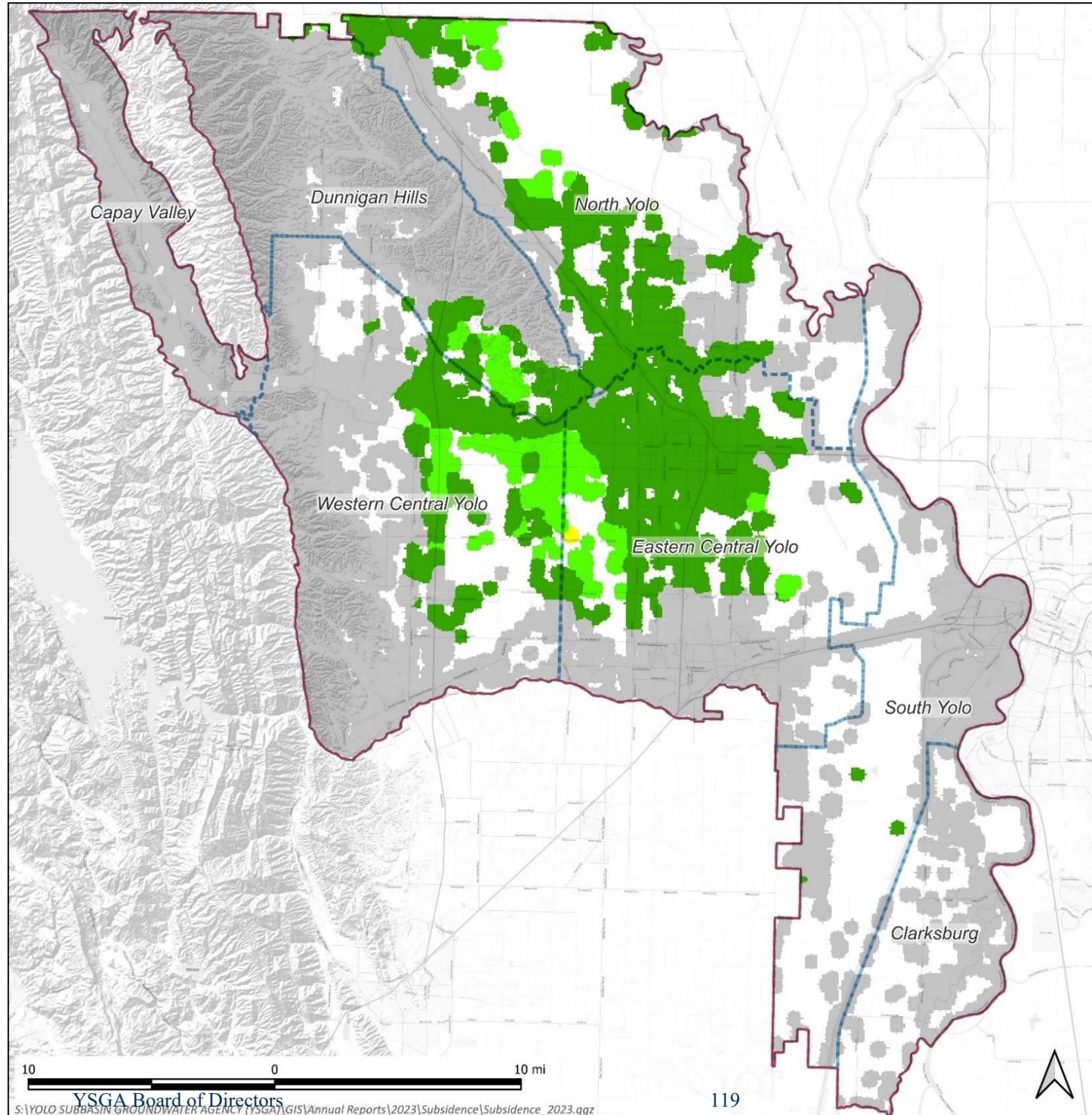
March 17, 2023

SOURCE: CA SWRCB GAMA  
Groundwater Information System  
Dataset  
CRS: NAD83 / California Albers



YOLO SUBBASIN  
GROUNDWATER AGENCY  
**YOLO SUBBASIN GSP  
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10 0 10 mi



### VERTICAL DISPLACEMENT WATER YEAR 2022

InSAR Vertical Displacement  
Oct. 2021 - Oct. 2022

- Yolo Subbasin Boundary
- Management Areas and Sub-Management Areas

Vertical Displacement Annual Rate

- < -1 (feet)
- 1 to -0.8 (feet)
- 0.8 to -0.6 (feet)
- 0.6 to -0.4 (feet)
- 0.4 to -0.2 (feet)
- 0.2 to -0.1 (feet)
- 0.1 to 0.1 (feet)
- > 0.1 (feet)

**DRAFT**

March 17, 2023

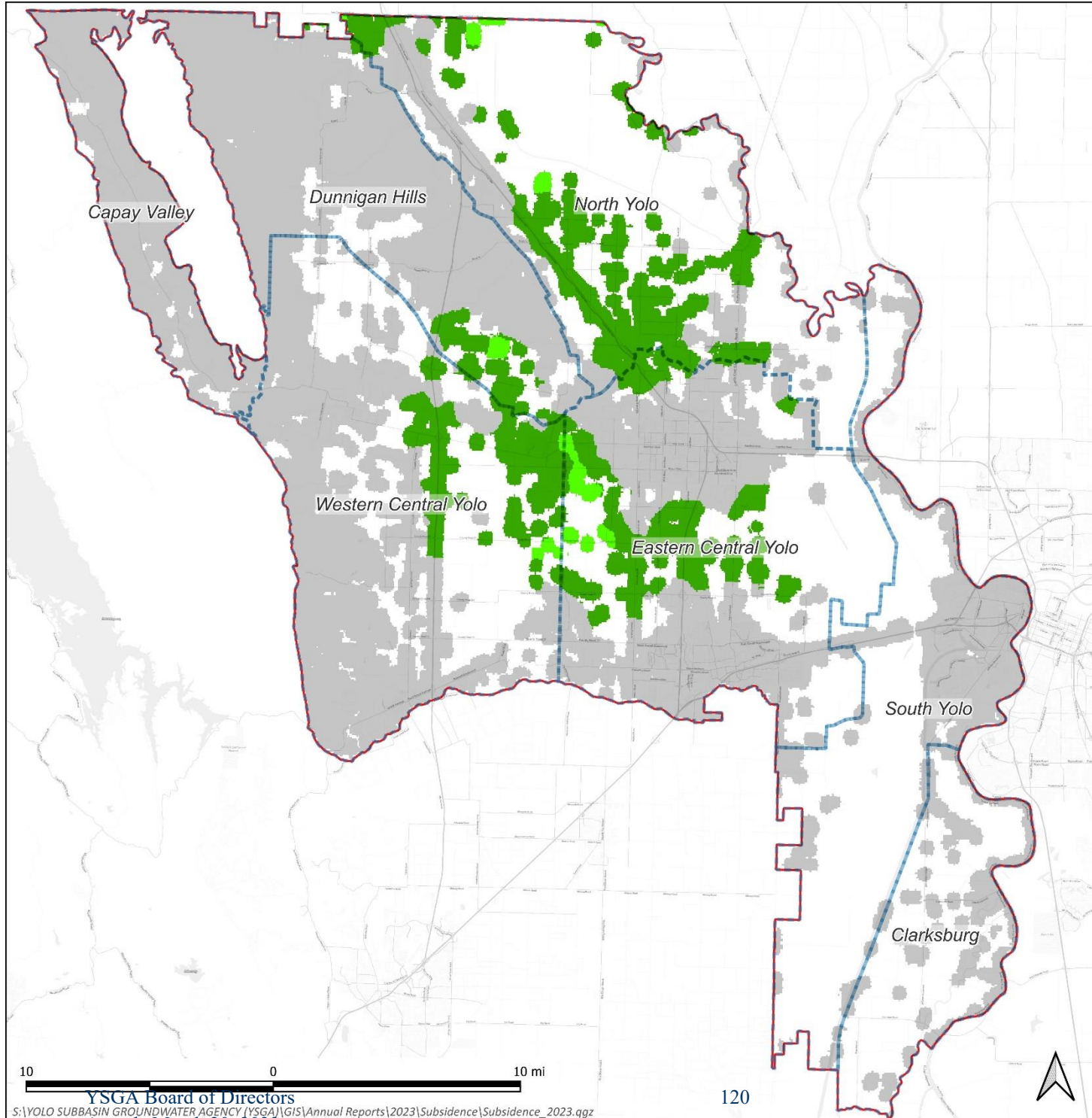
SOURCE: CA DWR TRE Altamira InSAR  
Dataset  
CRS: NAD83 / California Albers



YOLO SUBBASIN  
GROUNDWATER AGENCY  
**YOLO SUBBASIN GSP  
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10 0 10 mi

**VERTICAL DISPLACEMENT – 3 YEAR AVERAGE**



**VERTICAL DISPLACEMENT  
3 YEAR AVERAGE**

InSAR Vertical Displacement  
Oct. 2019 - Oct. 2022

- Yolo Subbasin Boundary
  - Management Areas and Sub-Management Areas
- Average Annual Displacement**
- < -1 (feet)
  - 1 to -0.8 (feet)
  - 0.8 to -0.6 (feet)
  - 0.6 to -0.4 (feet)
  - 0.4 to -0.2 (feet)
  - 0.2 to -0.1 (feet)
  - 0.1 to 0.1 (feet)
  - > 0.1 (feet)

**DRAFT**

*March 17, 2023*

SOURCE: CA DWR TRE Altamira InSAR  
Dataset  
CRS: NAD83 / California Albers

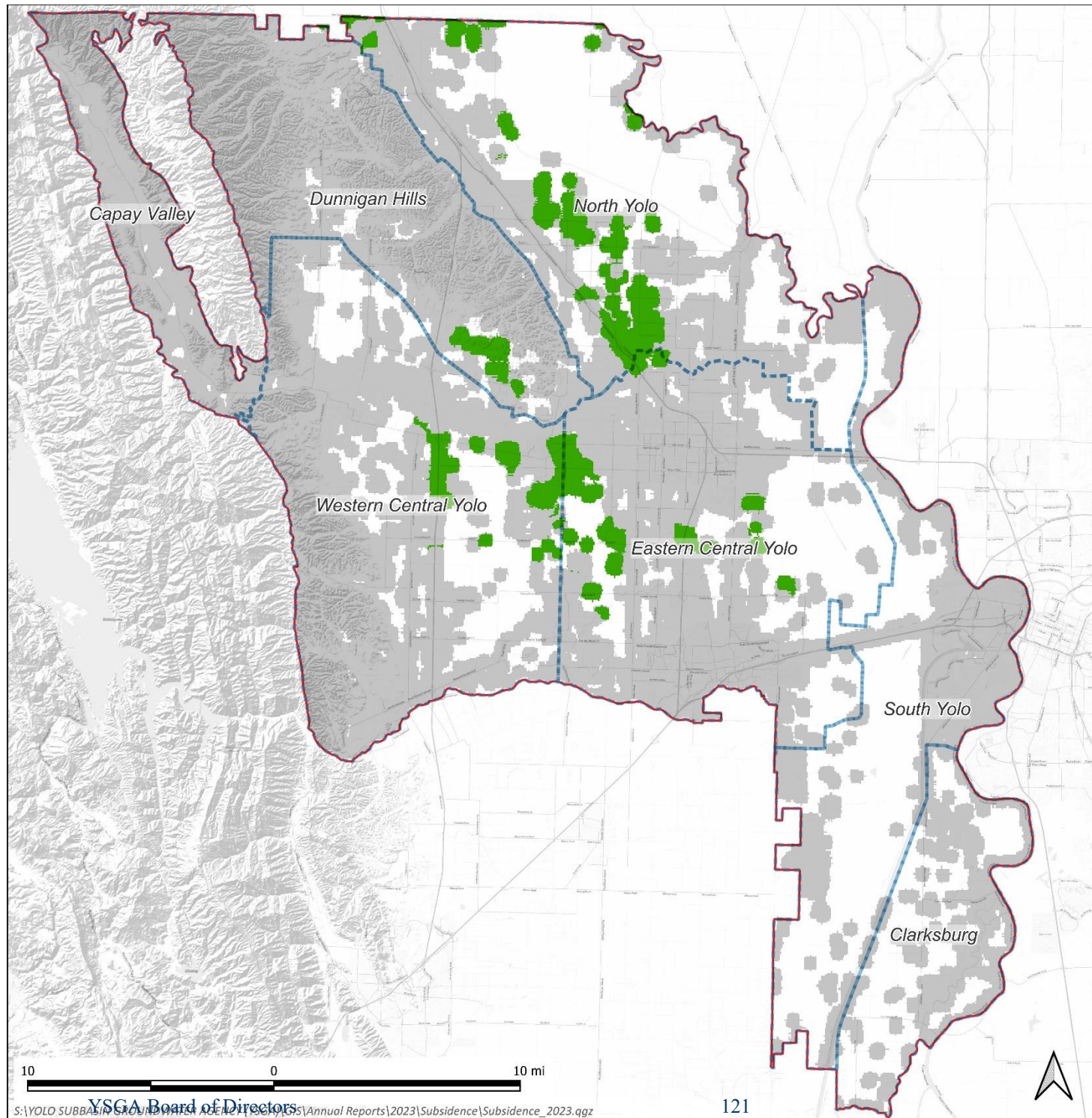


YOLO SUBBASIN  
GROUNDWATER AGENCY  
**YOLO SUBBASIN GSP  
ANNUAL REPORT 2023**

10 0 10 mi



**VERTICAL DISPLACEMENT – 5 YEAR AVERAGE**



**VERTICAL DISPLACEMENT  
5 YEAR AVERAGE**

InSAR Vertical Displacement  
Oct. 2017 - Oct. 2022

- Yolo Subbasin Boundary
  - Management Areas and Sub-Management Areas
- Average Annual Displacement**
- < -1 (feet)
  - 1 to -0.8 (feet)
  - 0.8 to -0.6 (feet)
  - 0.6 to -0.4 (feet)
  - 0.4 to -0.2 (feet)
  - 0.2 to -0.1 (feet)
  - 0.1 to 0.1 (feet)
  - > 0.1 (feet)

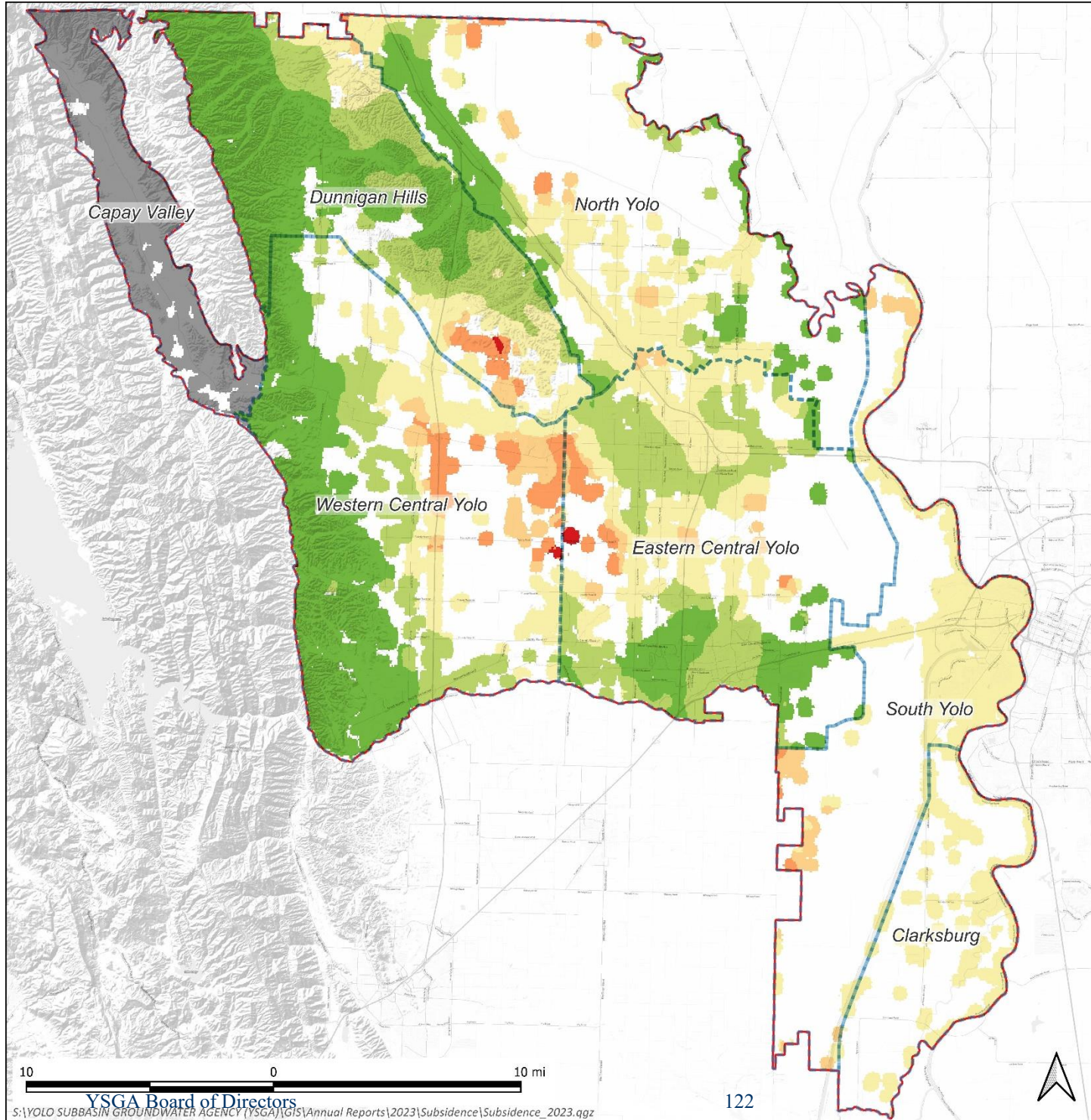
**DRAFT**  
March 17, 2023

SOURCE: CA DWR TRE Altamira InSAR  
Dataset  
CRS: NAD83 / California Albers



YOLO SUBBASIN  
GROUNDWATER AGENCY  
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10 0 10 mi



## LAND SUBSIDENCE MINIMUM THRESHOLD EVALUATION

InSAR Vertical Displacement  
5-Year Average, WY 2018-2022

- Yolo Subbasin Boundary
- Management Areas and Sub-Management Areas

Distance to Minimum Threshold\*

- > 1" below MT
- 0.5" to 1" below MT
- 0.25" to 0.5" below MT
- Within 0.25" of MT
- 0.25" to 0.5" above MT
- > 0.5" above MT

\*No minimum threshold value established in Capay Valley

**DRAFT**

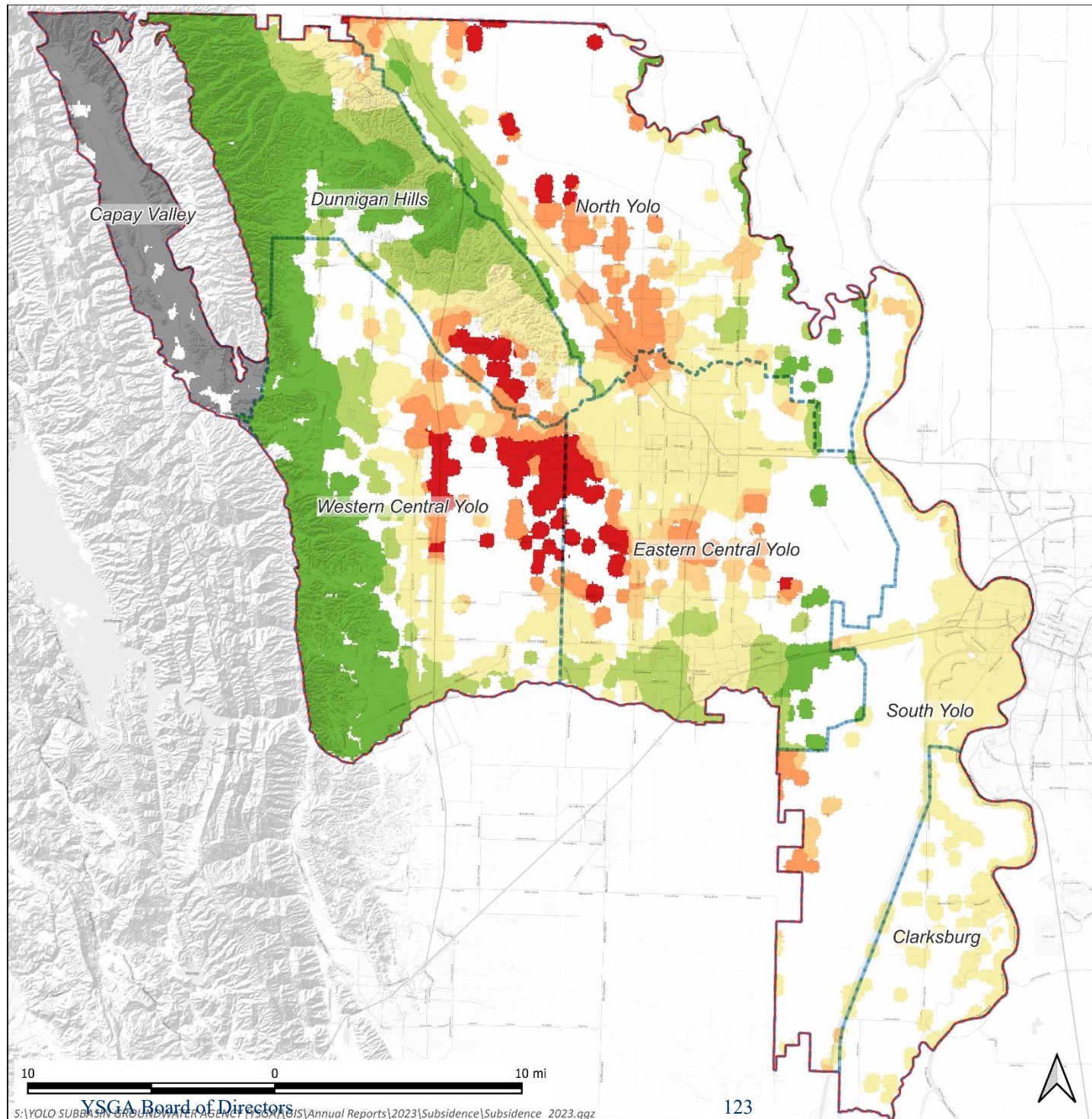
March 17, 2023

SOURCE: CA DWR TRE Altamira InSAR Dataset  
CRS: NAD83 / California Albers



YOLO SUBBASIN  
GROUNDWATER AGENCY  
**YOLO SUBBASIN GSP  
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LAND SUBSIDENCE MEASURABLE OBJECTIVE EVALUATION



**LAND SUBSIDENCE MEASURABLE OBJECTIVE EVALUATION**  
 InSAR Vertical Displacement  
 3-Year Average, WY 2020-2022

- Yolo Subbasin Boundary
- Management Areas and Sub-Management Areas
- Distance to Measurable Objective\***
- > 1" below MO
- 0.5" to 1" below MO
- 0.5" to 0.25" below MO
- Within 0.25" of MO
- 0.25 to 0.5" above MO
- > 0.5" above MO

\*No measurable objective value established in Capay Valley

**DRAFT**  
 March 17, 2023

SOURCE: CA DWR TRE Altamira InSAR Dataset  
 CRS: NAD83 / California Albers



YOLO SUBBASIN  
 GROUNDWATER AGENCY  
**YOLO SUBBASIN GSP  
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10 0 10 mi

## DEPLETION OF INTERCONNECTED SURFACE WATERS

### INTERCONNECTED SURFACE WATERS REPRESENTATIVE GROUNDWATER ELEVATIONS

ISW Management Zone	State Well Number	Representative Well Number	Measurable Objective Value	Minimum Threshold Value	Fall 2018	Spring 2019	Fall 2019	Spring 2020	Fall 2020	Spring 2021	Fall 2021	Spring 2022	Fall 2022	5-year Spring Average	Distance to Measurable Objective
Upper Cache Creek	11N03W23L001M	287	298.7	287.6	298.5	301.0	298.9	298.7	298.2	***	285.9	298.6	286.0	299.1	0.4
Upper Cache Creek	11N03W33F001M	289	354.3	341.2	351.5	356.2	351.6	352.0	351.3	351.2	344.4	351.4	345.8	352.5	-1.8
Upper Cache Creek	12N03W20D001M	293	385.2	376.4	383.4	387.1	382.4	383.6	382.0	382.4	380.0	383.6	378.0	384.0	-1.3
Upper Sac River	10N02E03R002M	420	23.9	-39.2	-9.8	31.8	6.5	22.3	***	15.7	***	4.4	-36.7	17.5	-6.4
Upper Sac River	12N01E03R003M	427	29.3	-35.4	14.1	28.7	14.7	23.4	6.4	20.6	-26.7	18.6	-19.5	20.5	-8.8
Upper Sac River	11N02E20K004M	421	33.5	-31.6	25.7	33.4	29.5	32.9	26.8	29.1	20.9	24.4	17.1	28.9	-4.5
Lower Sac River	09N03E33B002M	151	15.7	-35.3	4.8	19.0	3.6	15.0	-2.1	12.9	-4.2	11.4	-9.3	13.4	-2.3
Lower Sac River	10N02E36E001M	401	26.8	9.0	20.4	28.7	19.8	25.8	19.6	23.6	14.1	22.0	9.4	23.8	-3.0
Lower Sac River	08N04E19N001M	428	8.7	-1.3	3.3	11.2	3.5	7.5	2.0	6.9	2.0	7.1	1.4	7.7	-1.0
Putah Creek	08N02E18M002M	170	29.7	1.5	15.5	30.1	23.5	***	13.5	22.5	8.9	14.1	5.5	21.3	-8.3
Putah Creek	08N01W20R005M	229	91.6	36.4	44.7	75.4	60.9	72.0	45.0	59.6	31.2	47.2	26.1	61.9	-29.8
Putah Creek	08N01E17F001M	429	76.0	56.1	63.2	78.5	66.6	***	63.7	64.4	***	***	***	69.8	-6.2

### LOWER CACHE CREEK REPRESENTATIVE GROUNDWATER ELEVATIONS

ISW Management Zone	State Well Number	Representative Well Number	Measurable Objective Value	Minimum Threshold Value	Fall 2018	Spring 2019	Fall 2019	Spring 2020	Fall 2020	Spring 2021	Fall 2021	Spring 2022	Fall 2022	Years Below MT Value	5-year Spring Average	Distance to Measurable Objective
Lower Cache Creek	10N01W21J001M	265	132.7	131.6	127.5	137.0	130.6	131.2	129.7	129.3	115.4	124.4	106.1	3.5	129.6	-3.1
Lower Cache Creek	10N02W14A001M	275	145.4	143.2	136.0	148.7	138.4	138.8	137.2	134.1	104.8	125.4	91.3	3.5	135.9	-9.6
Lower Cache Creek	10N01W23P001M	424	115.8	116.7	113.4	118.4	***	112.2	111.8	115.7	106.3	114.1	***	2.5	115.0	-0.8
Lower Cache Creek	10N01E22H500M	425	61.2	55.1	52.8	65.5	53.1	57.3	54.4	50.1	38.4	41.2	***	2	49.6	-11.6
Lower Cache Creek	10N01W16G500M	426	138.0	132.6	129.6	139.5	133.0	133.0	129.5	130.2	102.7	123.2	102.8	2.5	131.5	-6.5