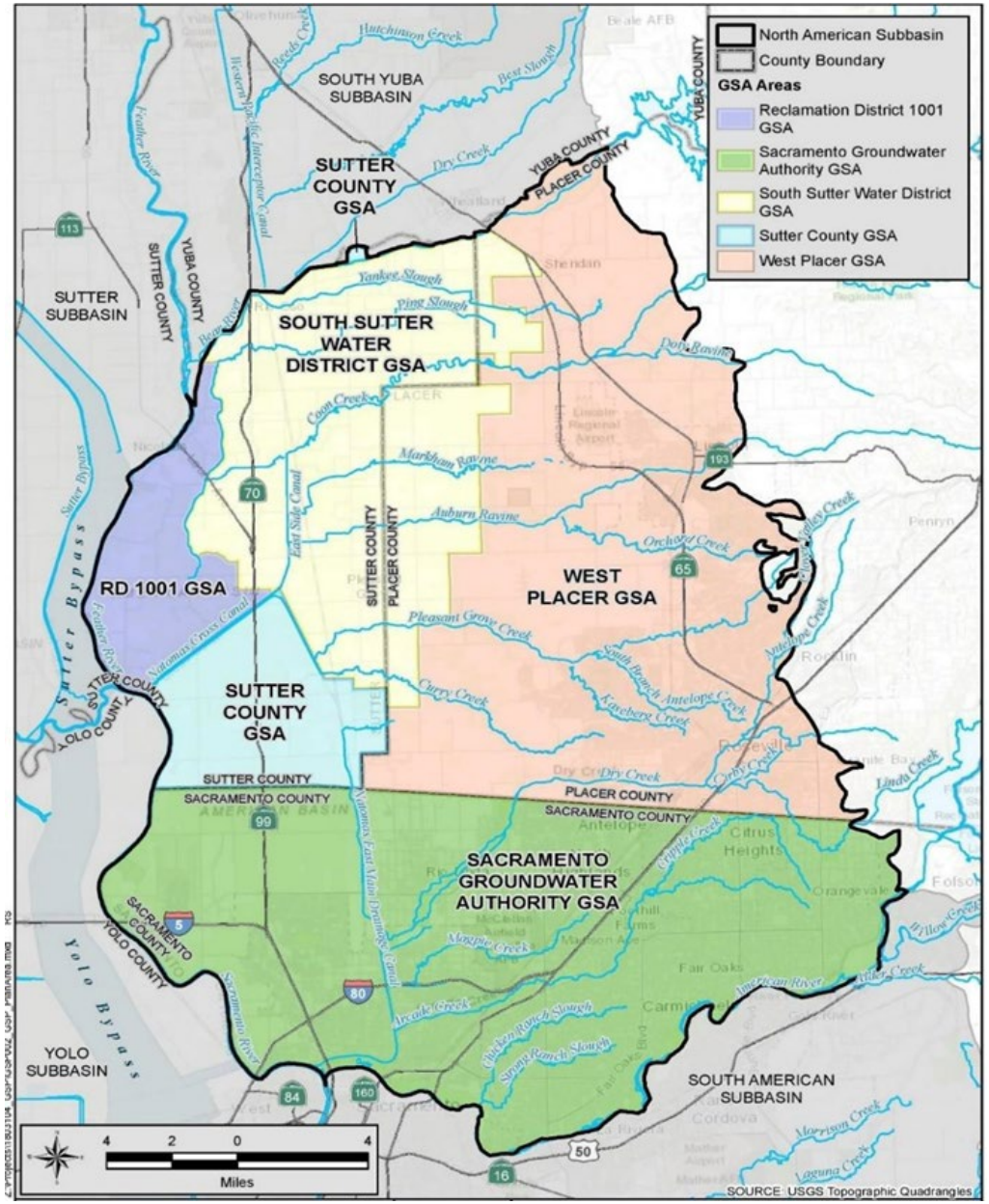
Sacramento Groundwater Authority

Item 7: Sacramento Regional Water Bank Update
&
Item 8: Sustainable Groundwater Management Act (SGMA) – Groundwater Sustainability Plan (GSP) Implementation and Water Accounting Framework (WAF) Update

Trevor Joseph, Manager of Technical Services

April 11, 2024



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1. Sustainable Groundwater Management Act (SGMA) – North American Subbasin (NASb)
   - Groundwater Sustainability Plan (GSP)
   - Annual Report
2. SGA Department of Water Resources (DWR) Round 2 Grant
3. SGA 2012 Water Accounting Framework (WAF) – 2023 Calculations
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NASb Groundwater Sustainability Agencies (GSAs) – Timeline of Activities

SGMA

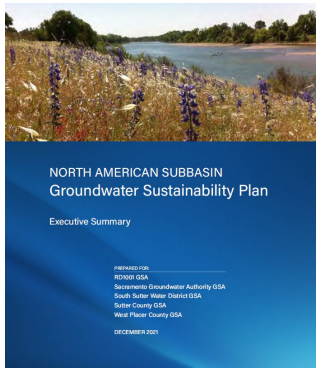
Non SGMA

GSP development and adoption

GSP Implementation Begins and continues…

2025

5-year updates (~~2026~~, 2031, 2036, 2041)



2016 to 2021

Prior Groundwater Management Plan Development and Implementation

2023

Dec

2024

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Annual Reporting

Projects and Management Actions

Groundwater Sustainability Agency (GSA) Coordination

Outreach and Engagement

Monitoring and Data Management

Budgeting and Funding

SGM Round 2 Grant Implementation

Analysis of Pumping Targets to Optimize Conjunctive Use

Regional Contamination Issues Committee (RCIC)

Monitoring and Data Management

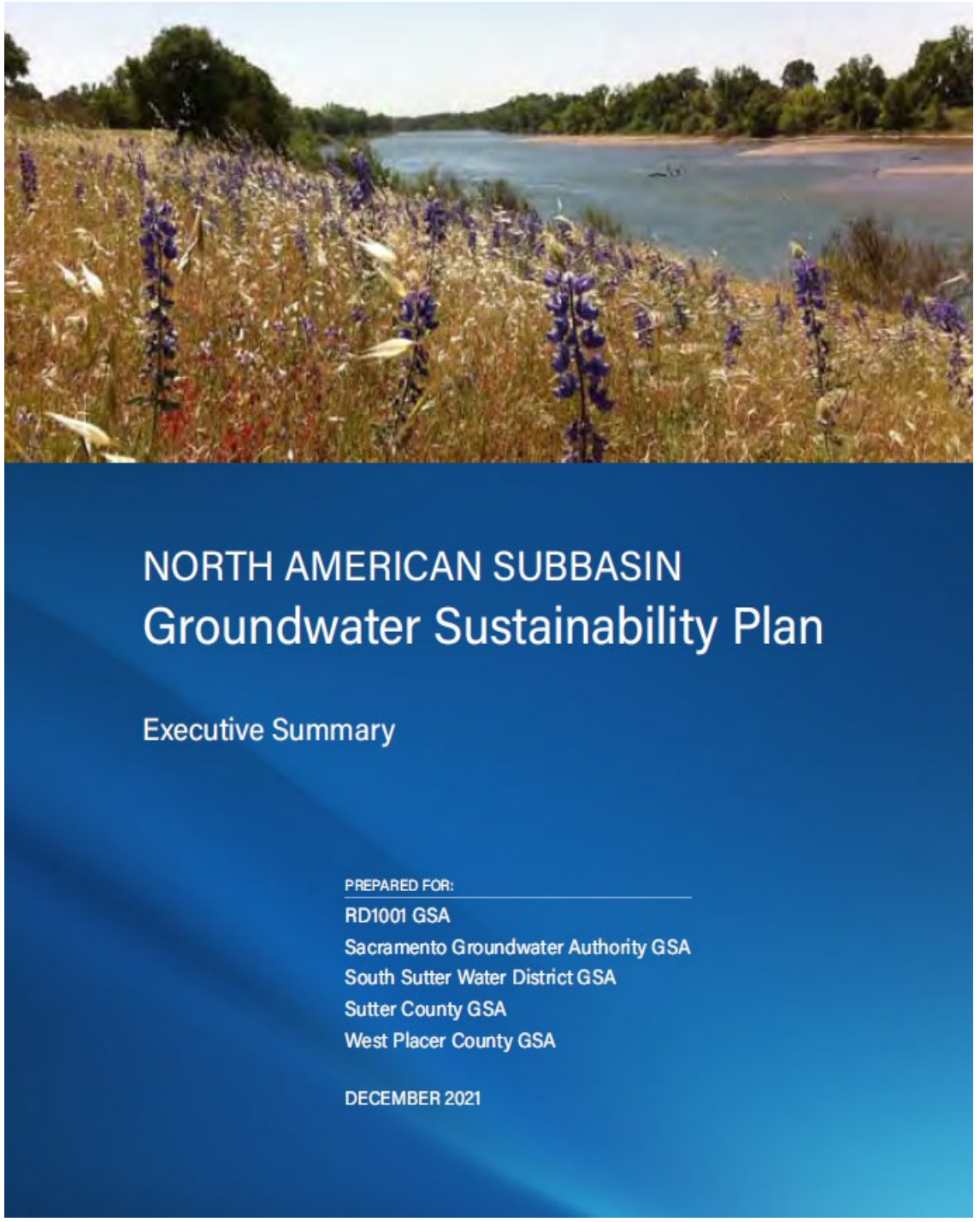
Other: Well Permitting, General Plan Evaluation, Future Grants, etc

GSP Adopted and Submitted

- GSP Submitted January 24, 2022
- Public Comments closed
  April 16, 2022
- DWR has 2 years to review GSP
  - DWR Provided "*Approved Determination*" July 2023

GSP available at:

nasbgroundwater.org



DWR – NASb
GSP Approval Determination

CALIFORNIA DEPARTMENT OF WATER RESOURCES
SUSTAINABLE GROUNDWATER MANAGEMENT OFFICE
715 P Street, 8th Floor | Sacramento, CA 95814 | P.O. Box 942836 | Sacramento, CA 94236-0001

July 27, 2023

Trevor Joseph
Sacramento Groundwater Authority
2295 Gateway Oaks Dr, Suite 100
Sacramento, CA, 95833
tjoseph@rwah2o.org

RE: Sacramento Valley – North American Subbasin 2022 Groundwater Sustainability Plan

Dear Trevor Joseph,

The Department of Water Resources (Department) has evaluated the groundwater sustainability plan (GSP) submitted for the Sacramento Valley – North American Subbasin and has determined the GSP is approved. The approval is based on recommendations from the Staff Report, included as an exhibit to the attached Statement of Findings, which describes that the North American Subbasin satisfies the objectives of the Sustainable Groundwater Management Act (SGMA) and substantially complies with the GSP Regulations. The Staff Report also proposes recommended corrective actions that the Department believes will enhance the GSP and facilitate future evaluation by the Department. The Department strongly encourages the recommended corrective actions be given due consideration and suggests incorporating all resulting changes to the GSP in future updates.

Recognizing SGMA sets a long-term horizon for groundwater sustainability agencies (GSAs) to achieve their basin sustainability goals, monitoring progress is fundamental for successful implementation. GSAs are required to evaluate their GSPs at least every five years and whenever the Plan is amended, and to provide a written assessment to the Department. Accordingly, the Department will evaluate approved GSPs and issue an assessment at least every five years. The Department will initiate the first periodic review of the North American Subbasin no later than January 24, 2027.

Please contact Sustainable Groundwater Management staff by emailing sgmps@water.ca.gov if you have any questions related to the Department's assessment or implementation of your GSP.

DWR Recommendations:

1. Further define bottom of subbasin
2. Schedule to address data gaps related to the identification of interconnected surface water
3. Enhance information and definition of degraded water quality (particularly for the public water supply well group), including describing potential impacts to beneficial uses and users
4. Further establish sustainable management criteria for land subsidence
5. Further establish sustainable management criteria for stream depletion associated with interconnected surface water DWR guidance
6. Enhance clarity on presentation of data related to all representative monitoring sites in the chronic lowering of groundwater levels, degraded water quality, and depletion of interconnected surface water monitoring networks ensuring internal consistency between info provided in different sections of the GSP and the SGMA portals MNM portal

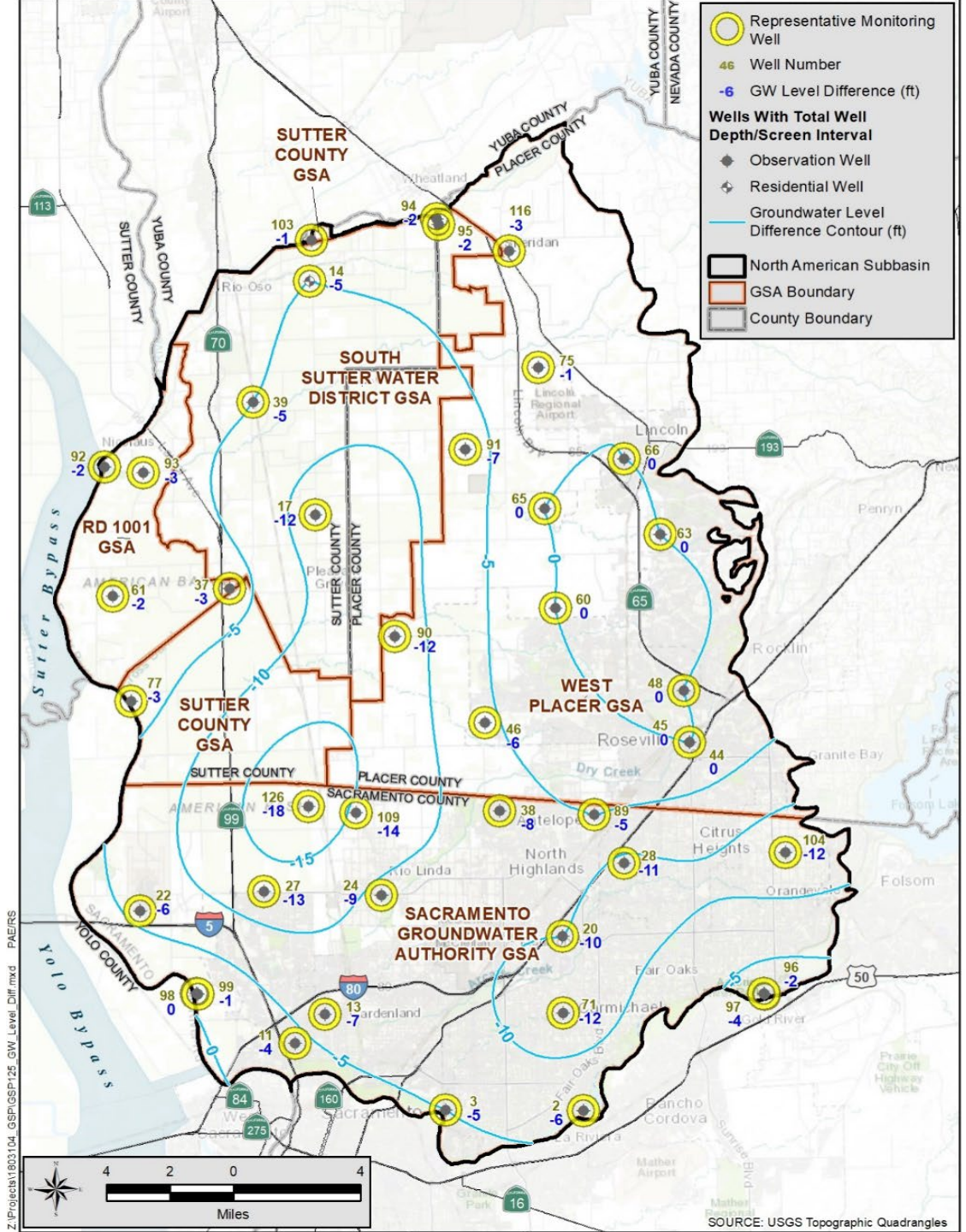
Groundwater Budget from Model

Model Scenario	Groundwater Use (acre-feet)	Change in Storage (acre-feet)
Current Conditions	303,300	14,900
Projected Conditions	325,300	5,400
Projected Conditions with Climate Change	345,100	-3,500

Estimated sustainable yield = 336,000 acre-feet per year

Projected Groundwater Level Changes

- 50-year simulation
- Subtracted projected declines from baseline to establish minimum thresholds
- Compared the effects of these future levels on beneficial uses and users



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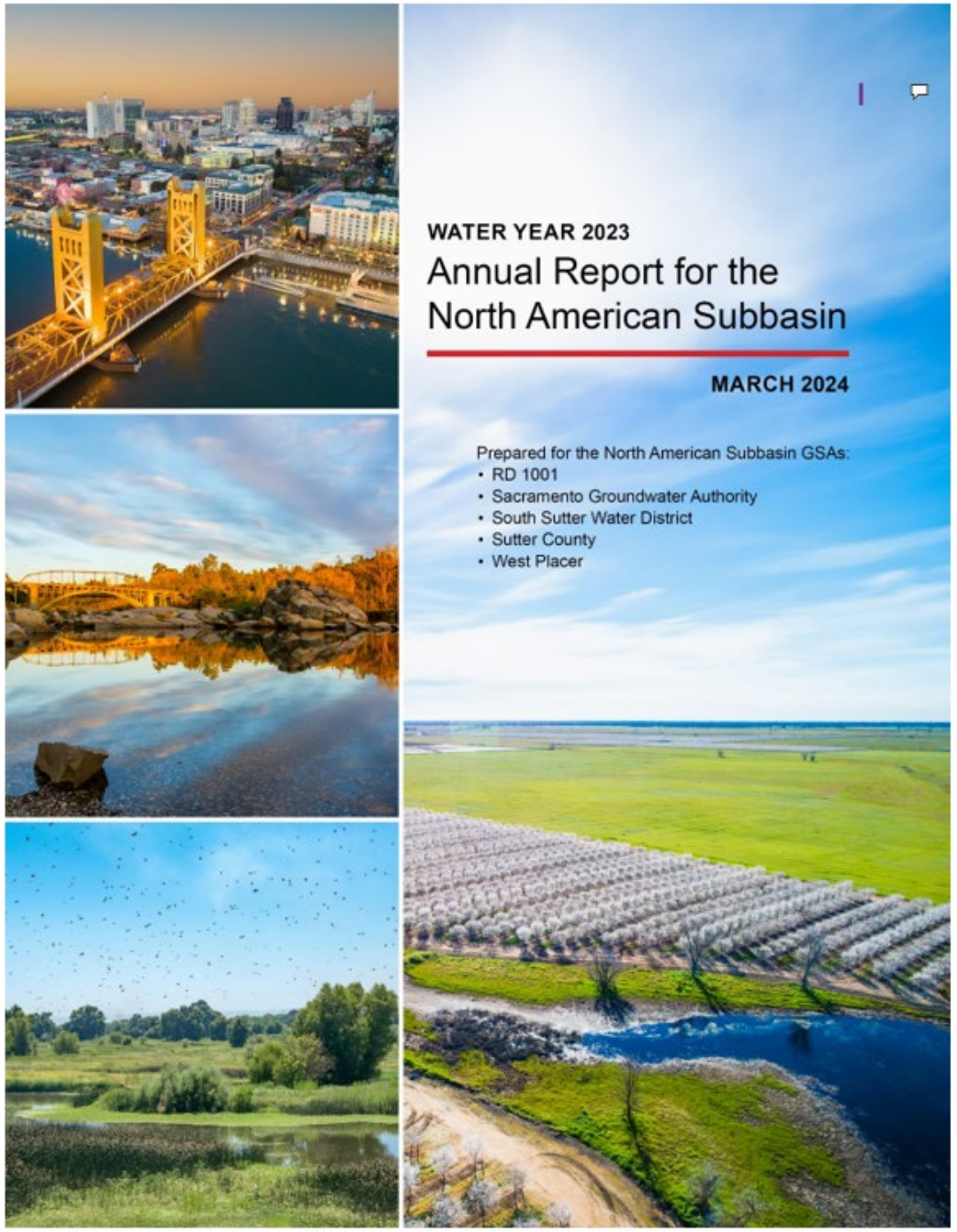
Annual Report

- Hydrology
- Water Use
- Water Budget
- Groundwater Levels
- Groundwater Storage
- GSP Implementation
- Sustainability Indicators

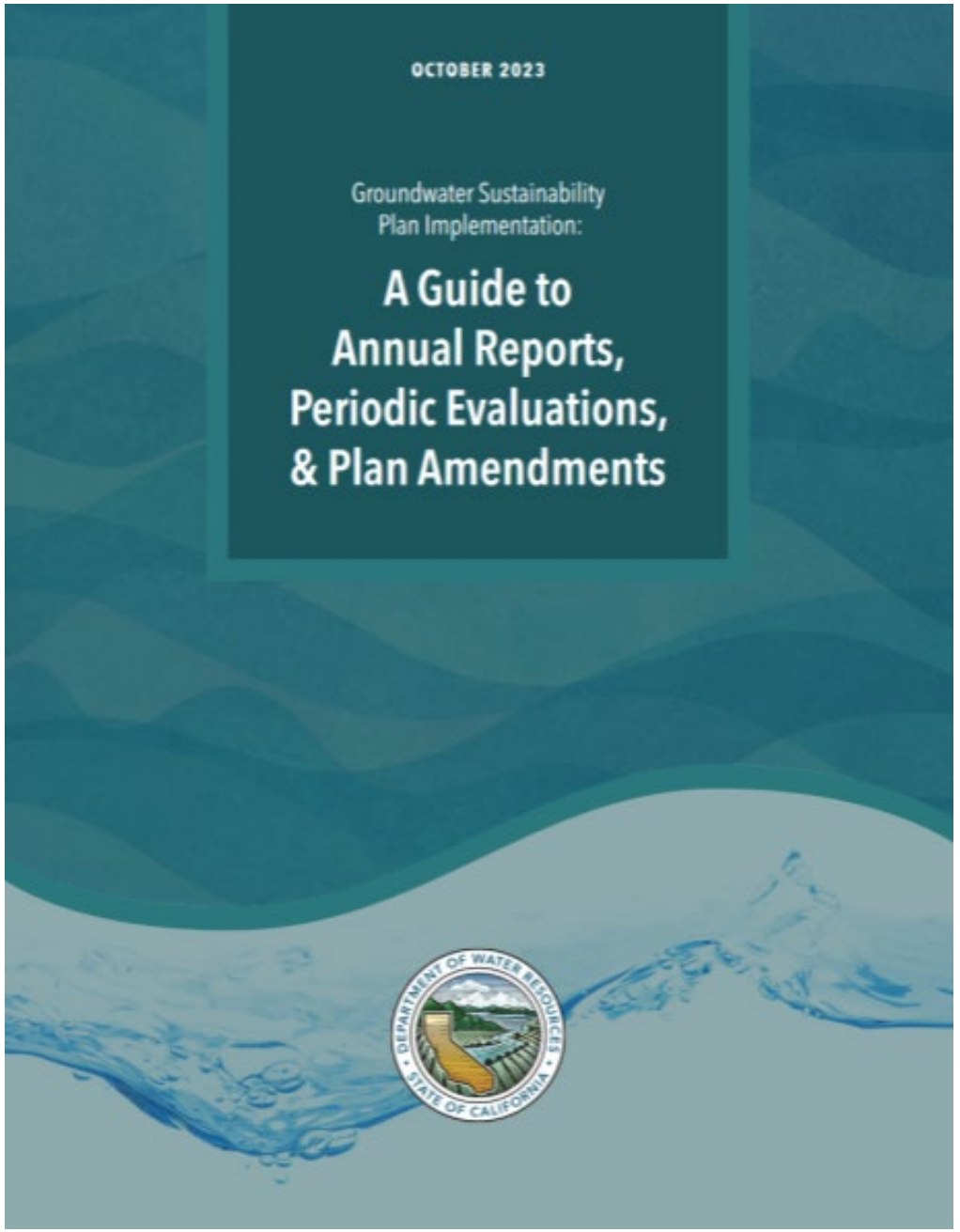


DWR Annual Report Guidance

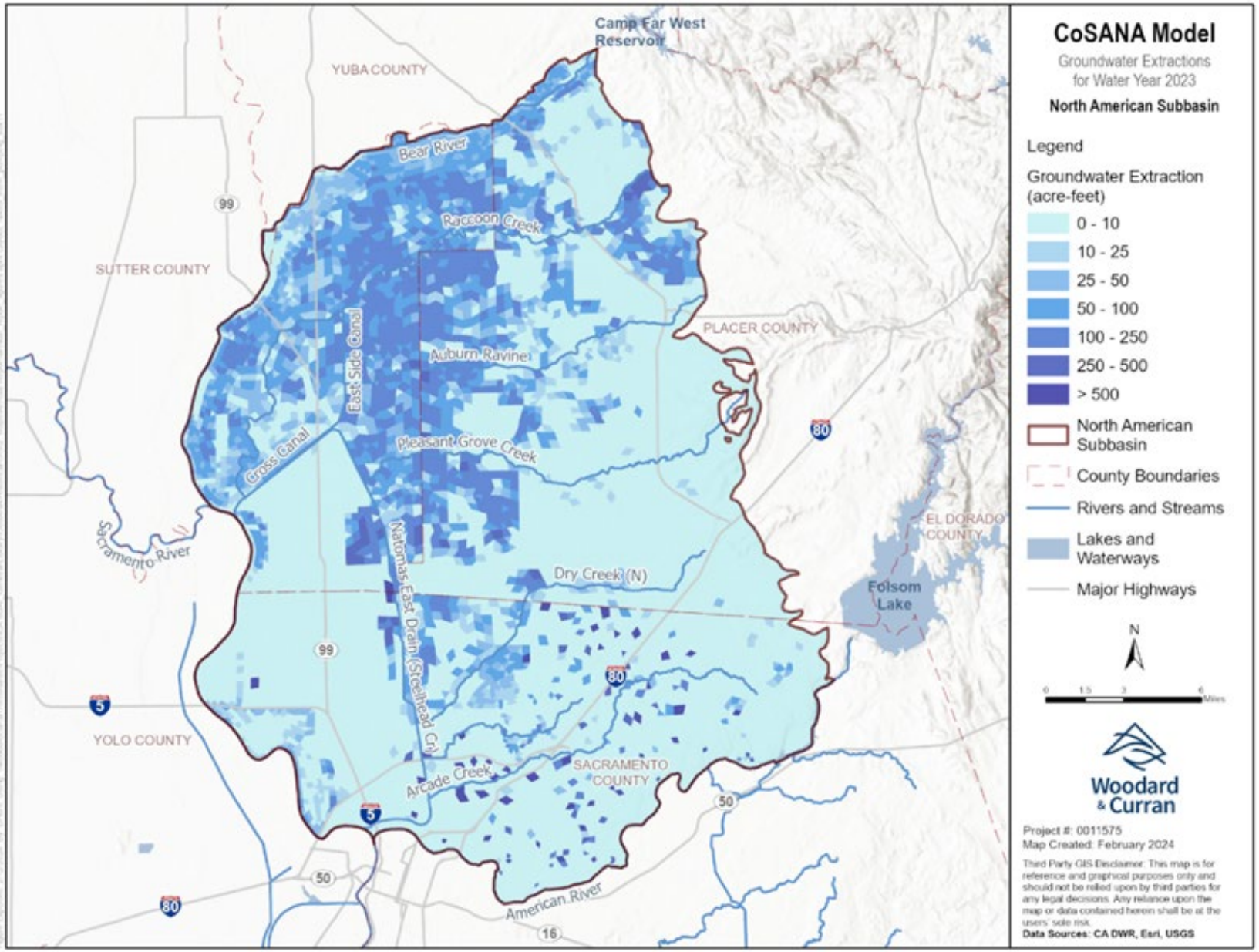
DWR SGMO Webinar

DWR Annual Reports Review:

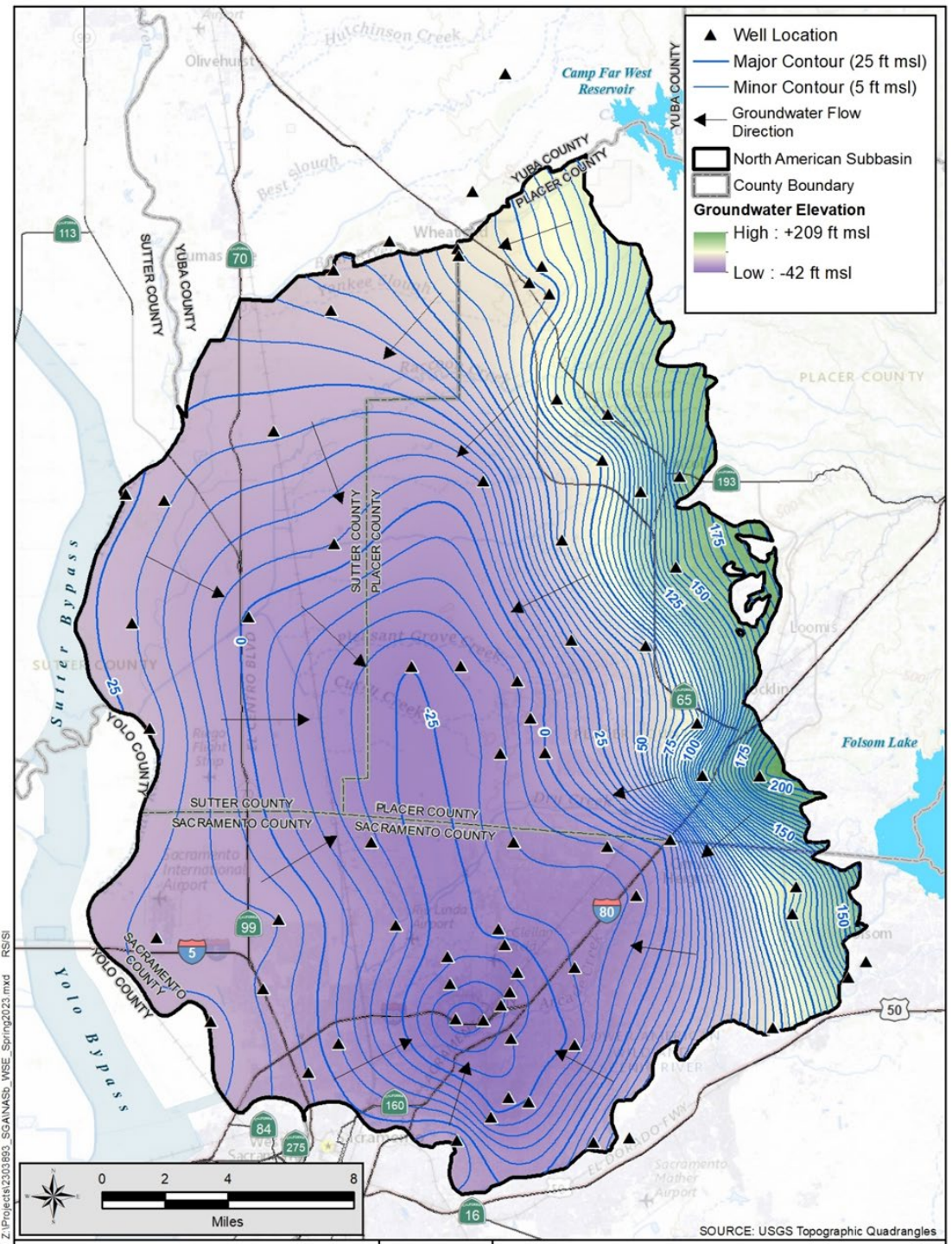
- Starting with this year's AR submittals, DWR will review and provide comments to all GSAs (hoping to finalize the review of the 120 ARs expected to be submitted to them by April 1, within 2 months)
- Now that the AR guidance is available and DWR has completed all their GSP reviews, they now have time to review ARs and provide written comments
- DWR will also review all previously submitted ARs as part of the 5-yr Periodic Review.



CoSANA Model – Groundwater Extractions for WY 2023



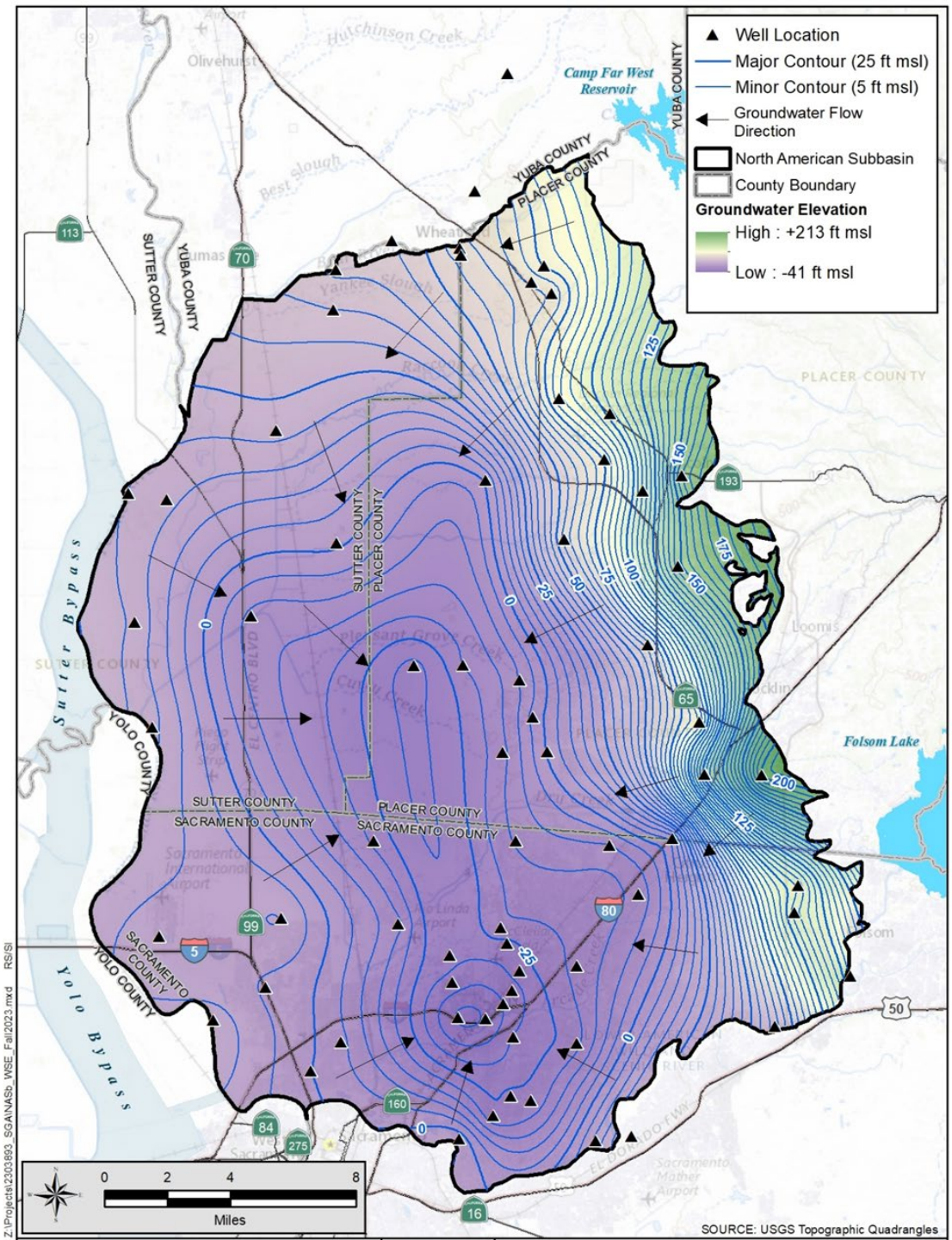
NORTH AMERICAN Subbasin

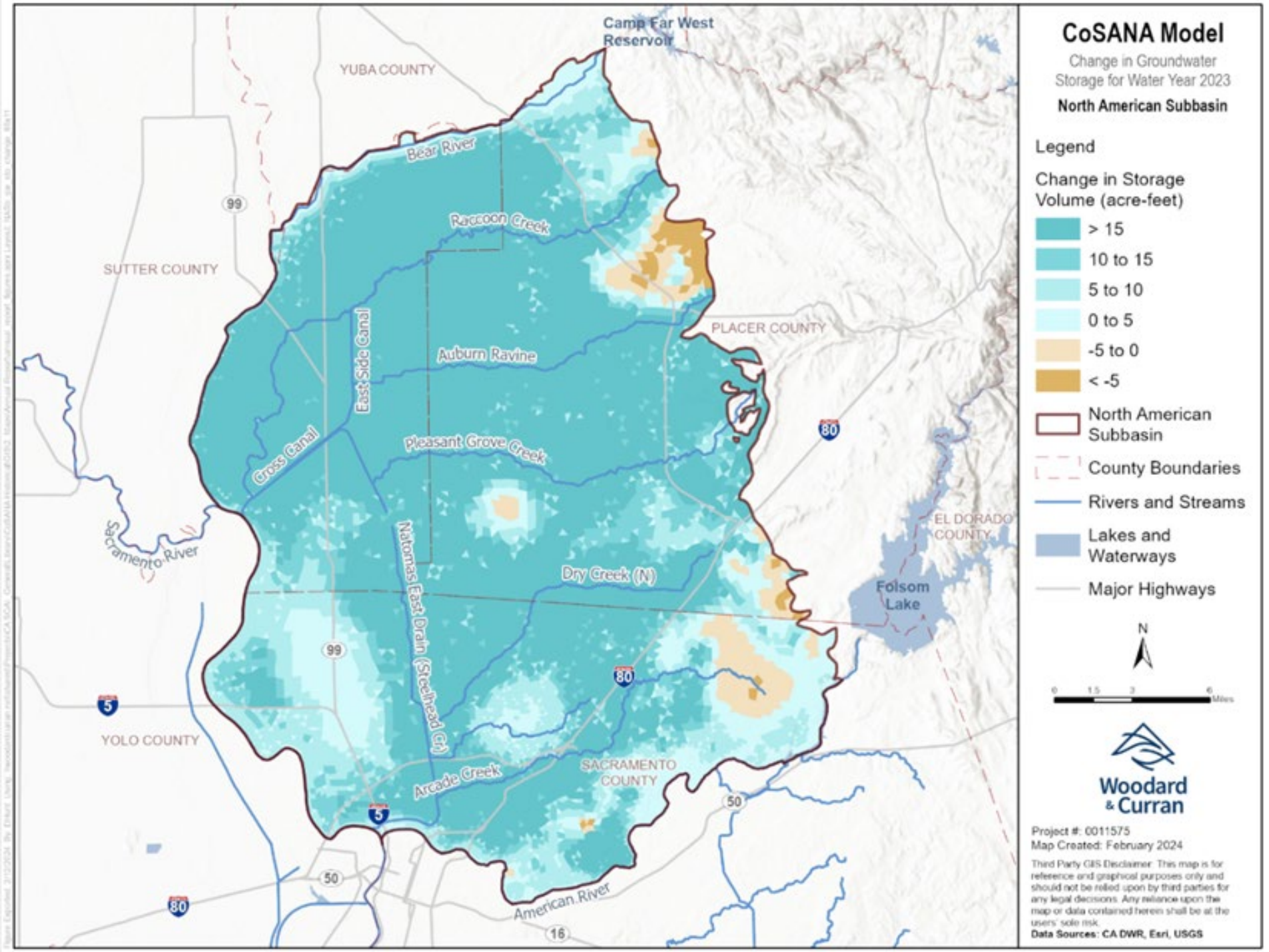


Spring 2023 Groundwater Elevation Contour Map

One change from AR is groundwater flow direction arrows will be denoted in white

Fall 2023 Groundwater Elevation Contour Map





CoSANA Model

Change in Groundwater Storage for Water Year 2023

North American Subbasin

Legend

Change in Storage Volume (acre-feet)

- > 15
- 10 to 15
- 5 to 10
- 0 to 5
- -5 to 0
- < -5

North American Subbasin

County Boundaries

Rivers and Streams

Lakes and Waterways

Major Highways

N

0 1.5 3 6 Miles

Woodard & Curran

Project #: 0011575

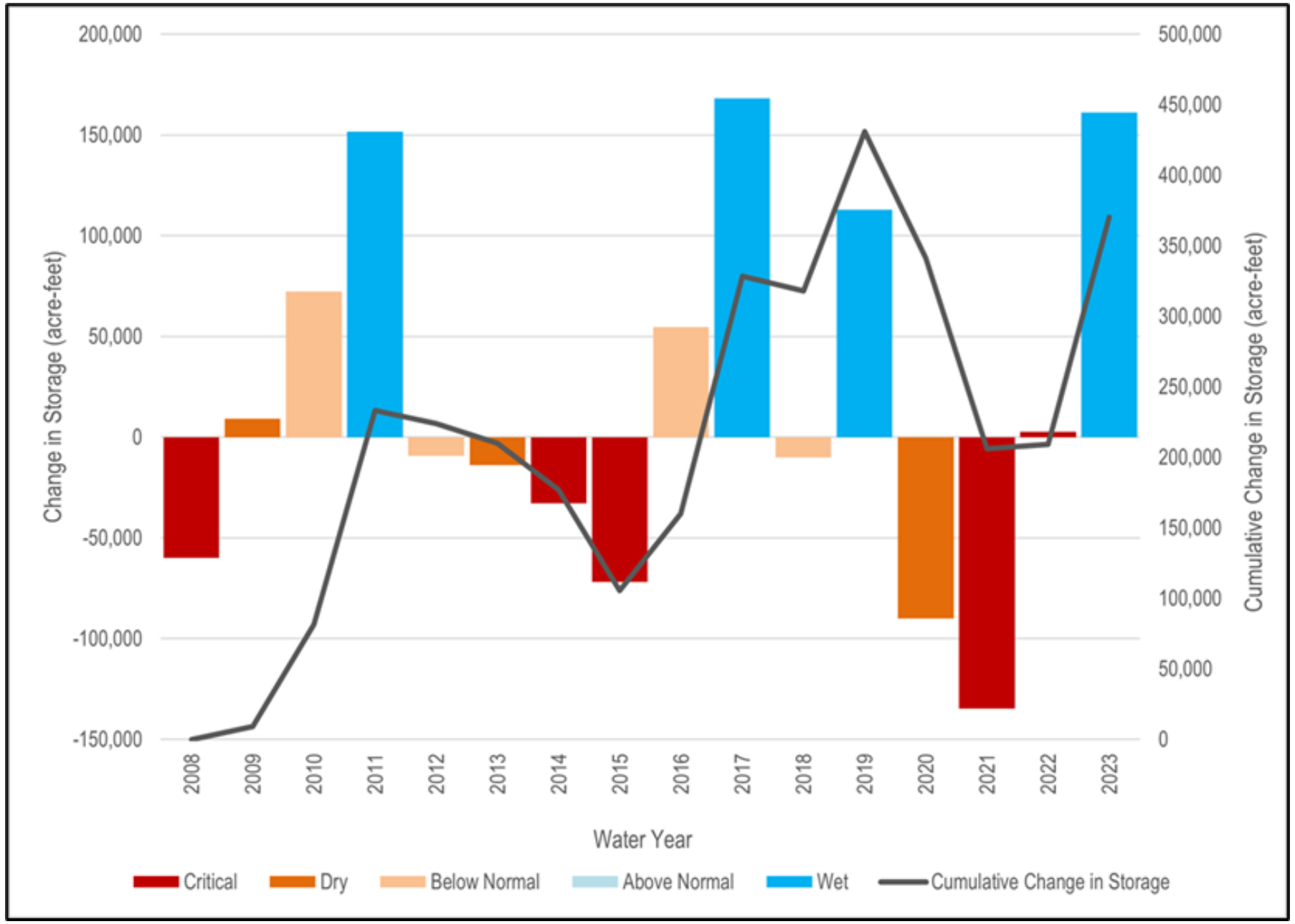
Map Created: February 2024

Third Party GIS Disclaimer. This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions. Any reliance upon the map or data contained herein shall be at the users' sole risk.

Data Sources: CA DWR, Esri, USGS

CoSANA Model (Fall 2022 to Fall 2023) Estimated Change in Groundwater Storage for WY 2023

NORTH AMERICAN Subbasin

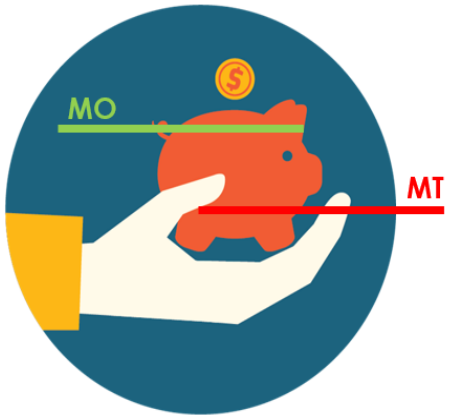


Cumulative Change in Groundwater Storage for WY 2023 (and WYs 2008 – 2022)

NORTH AMERICAN Subbasin

Water Level Sustainable Management Criteria and Sustainable Yield

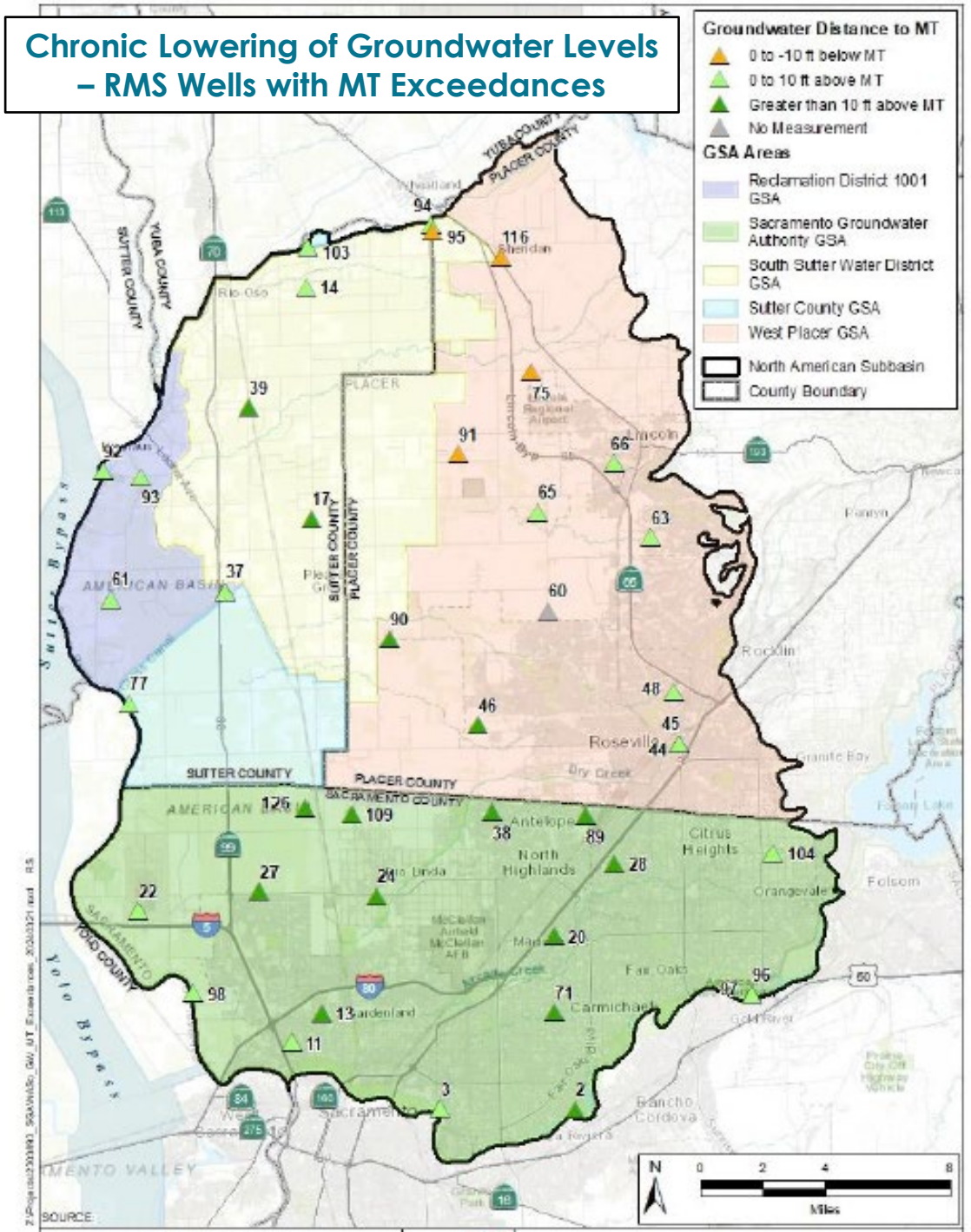
Measurable Objectives and Minimum Thresholds



Measurable Objective (MO) = levels that reflect desired conditions...that enable GSA to achieve sustainability

Minimum Threshold (MT) = levels at a site that when exceeded, either individually or at a combination of sites, may cause undesirable results

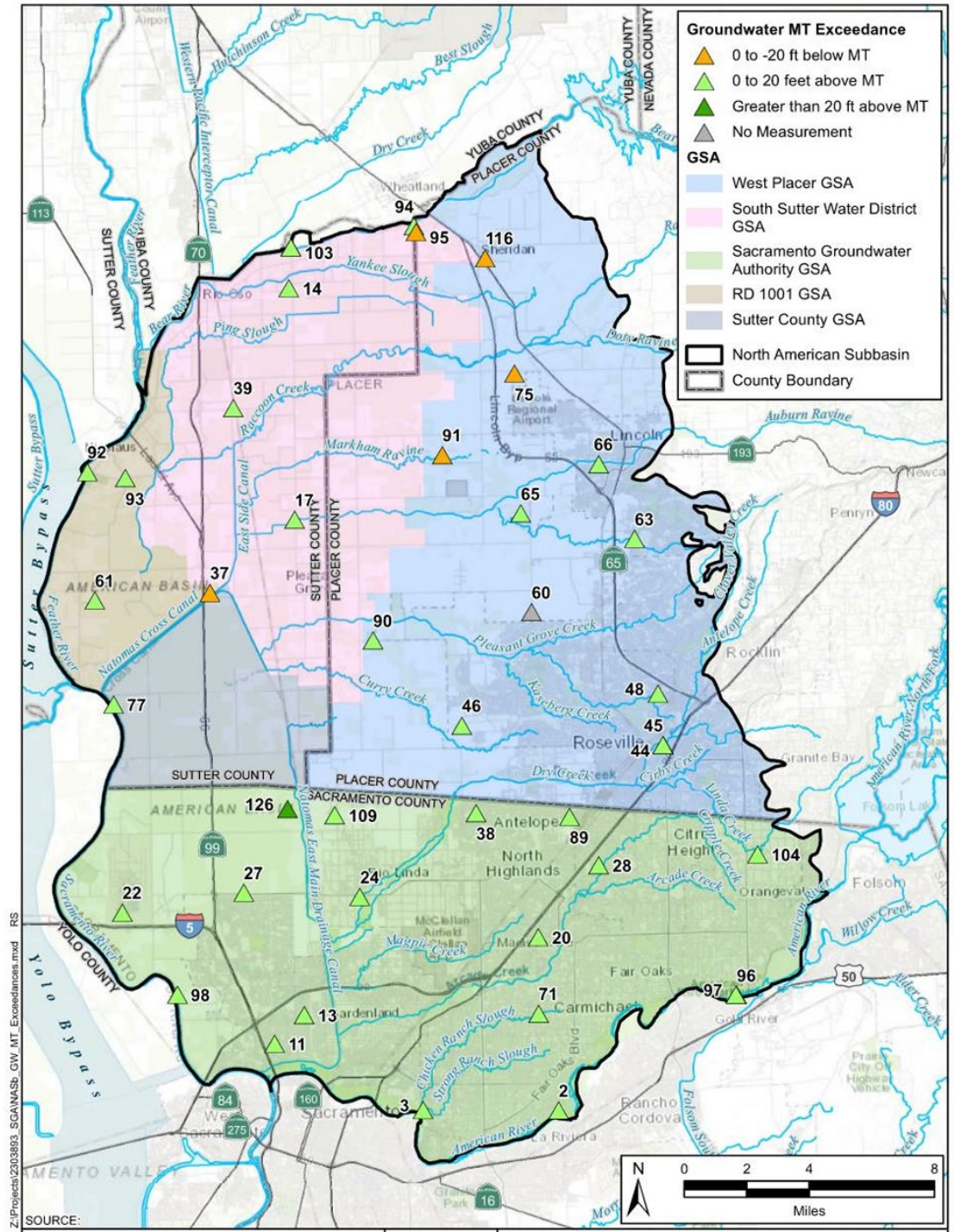
Chronic Lowering of Groundwater Levels – RMS Wells with MT Exceedances



Chronic Lowering of Groundwater Levels

DWR Assigned Well Number	NASb GSP RMS Number	Local Well Name	20-Year MO	MT	Spring 2019	Fall 2019	Spring 2020	Fall 2020	Spring 2021	Fall 2021	Spring 2022	Fall 2022	Spring 2023	Fall 2023	5-Year Spring Average	Distance to 20-Year MO
DWR Assigned Well Number	NASb GSP RMS Number		Groundwater Elevation (ft msl)	Groundwater Elevation (ft msl)	Groundwater Elevation (ft msl) Shaded Values Below are Below the MT Value --- Represents No Measurement										Spring 2019 - Spring 2023	5-year Average minus 20-Year MO (ft above or below MO)
385828N1213385W001	2	SGA_MW06	5	1	13.79	12.34	12.59	9.24	9.69	7.79	9.44	7.78	13.09	11.97	12	7
385841N1214185W001	3	SGA_MW04	-1	-5	9.94	3.14	2.59	0.19	0.89	-1.36	0.34	-0.42	7.58	3.39	4	5
386160N1215054W001	11	Bannon Creek Park	-2	-5	5.31	0.46	1.66	-1.09	-0.40	-1.54	0.26	-1.74	4.65	0.16	2	4
386292N1214877W001	13	Chuckwagon Park	-13	-15	-5.99	-7.29	-7.19	-8.94	-8.69	-10.49	-9.39	-11.34	-4.54	-3.79	-7	6
389669N1214897W001	14	13N04E23A002M	45	26	51.38	45.58	45.28	40.98	39.88	28.88	32.18	27.88	36.64	34.72	41	-4
388593N1214885W003	17	AB-2 shallow	13	-17	24.23	19.37	19.8	10.01	11.61	-8.41	3.07	-7.69	7.24	0.91	13	0
386635N1213486W001	20	SGA_MW05	-25	-37	-13.93	-17.38	-13.68	-22.28	-16.78	-27.98	-19.63	-27.43	-19.44	-18.26	-17	8
386782N1215943W004	22	AB-4 shallow	4	-1	12.24	8.07	8.59	4.98	6.26	4.93	9.03	3.46	11.45	7.53	10	6
386836N1214536W001	24	SGA_MW02	-23	-27	-13.86	-14.16	-13.36	-15.11	-14.96	-16.86	-15.46	-16.91	-14.21	-13.91	-14	9
386864N1215222W003	27	AB-3 shallow	-1	-4	10.76	10.43	8.52	8.91	7.95	8.06	8.75	5.70	9.53	9.81	9	10
386964N1213120W001	28	Twin Creeks Park	-19	-28	-7.9	-9.45	-6.40	-12.75	-9.20	-16.10	-12.30	-16.00	-13.45	-12.85	-10	9
388260N1215394W004	37	SUT-P1	20	10	29.24	21.59	19.23	18.71	16.50	18.65	16.51	12.21	24.81	19.50	21	1
387216N1213842W001	38	Lone Oak Park	-21	-27	-12.23	-13.48	-10.53	-15.03	-12.88	-17.68	-15.23	-16.91	-15.18	-14.43	-13	8
389116N1215238W003	39	AB-1 shallow	31	3	40.18	33.63	34.16	27.46	27.08	9.70	17.66	5.39	22.92	21.38	28	-3
387515N1212725W001	44	WPMW-10A	140	133	139.31	136.21	137.21	135.21	136.11	134.01	135.51	134.37	139.56	134.81	138	-2
387517N1212727W001	45	WPMW-9A	143	135	141.56	138.46	140.66	137.86	139.26	136.76	138.53	137.46	142.08	136.86	140	-3
387623N1213915W001	46	SVMW West - 1A	-22	-32	-14.25	-18.35	-12.35	-17.45	-13.81	-20.70	-16.55	-21.25	-16.48	-16.27	-15	7
387755N1212753W001	48	WPMW-4A	78	75	76.97	77.77	78.47	79.07	79.47	79.07	79.19	79.07	79.37	81.68	79	1
388145N1213491W001	60	WPMW-2A [1]	26	22	26.98	26.80	29.25	27.48	28.30	23.80	26.10	24.70	27.20	---	28	2
388235N1216079W001	61	Sutter County MW-5A	18	10	21.42	17.98	17.15	16.80	14.34	10.88	14.95	14.40	20.7	18.4	18	0
388476N1212872W001	63	WPMW-3A	147	145	147.97	147.43	147.57	147.43	147.29	146.60	147.51	146.90	148.60	148.00	148	1
388604N1213544W003	65	MW 1-3	55	49	58.01	54.02	58.37	56.47	57.88	55.23	57.03	54.74	58.31	56.86	58	3
388826N1213078W002	66	MW 5-2	112	108	112.64	109.80	110.51	108.65	109.31	108.05	110.96	108.93	112.59	110.05	111	-1
386280N1213493W001	71	WCMSS	-32	-40	-19.76	-20.06	-15.26	-28.76	-20.26	-27.76	-22.41	-29.31	-22.76	-21.26	-20	12
389255N1213566W003	75	MW 2-3	94	89	97.53	89.70	95.19	87.79	91.72	83.83	88.58	83.04	90.95	84.72	93	-1
387749N1215975W001	77	SREL-1-27-F1	16	9	28.45	14.51	14.061	11.55	13.84	11.57	11.84	10.38	22.22	16.26	18	2
387191N1213287W001	89	Roseview Park - 315	-13	-22	-6.21	-7.51	-4.86	-9.41	-6.61	-11.91	-9.46	-11.76	-10.46	-10.06	-8	5
388026N1214432W002	90	WPMW-12A	-30	-45	---	-22.93	-13.98	-27.28	-18.93	-34.54	-23.08	-35.53	-24.63	-30.95	-20	10
388882N1214005W002	91	WPMW-11A	13	3	---	14.34	22.47	13.43	19.55	6.04	12.58	0.52	11.48	0.72	17	4
388829N1216110W001	92	RDMW-101	18	15	---	19.98	19.69	17.92	17.65	16.73	19.49	16.46	26.35	19.71	21	3
388798N1215885W001	93	RDMW-102	16	12	---	17.02	19.26	13.86	15.48	10.40	15.33	11.03	20.85	16.28	18	2
389950N1214148W002	94	RDMW-103	65	58	---	65.97	68.09	61.09	62.99	54.13	59.71	50.68	65.76	58.38	64	-1
389919N1214141W002	95	RDMW-104	65	57	---	65.18	67.20	59.91	61.80	52.01	58.52	51.08	64.58	56.68	63	-2
386348N1212319W001	96	Aerojet - 1516 [2]	70	67	72.72	69.8	70.87	70.2	69.89	69.43	69.76	69.72	73.89	---	71	1
386351N1212323W001	97	Aerojet - 1518 [2]	59	57	64.92	62.85	62.5	61.46	60.56	59.87	60.42	60.48	65.56	62.97	63	4
386397N1215624W001	98	URS71000-700+00C	10	7	9.76	9.98	11.80	9.85	9.04	7.74	10.38	7.60	16.03	11.84	11	1
389857N1214880W001	103	BR-1B	45	36	49.45	43.92	46.81	43.95	40.46	36.28	40.99	36.97	43.86	41.17	44	-1
387000N1212180W001	104	SGA_MW08	99	97	107.06	106.96	107.21	106.71	106.76	106.31	106.21	105.76	105.76	105.46	107	8
387218N1214677W001	109	SGA_MW01	-30	-33	-17.16	-18.01	-15.66	-18.61	-16.51	-20.41	-18.26	-20.61	-18.71	-21.08	-17	13
389791N1213727W001	116	Old Well #2	76	68	79.03	77.45	78.3	72.93	72.98	67.22	69.10	65.30	69.05	66.05	74	-2
387251N1214954W001	126	DeWit	-13	-25	---	---	---	---	4.95	-2.30	5.30	-3.80	6.85	5.30	6	19

Notes: [1] Reason for missing Fall 2023 data is because the well has been destroyed

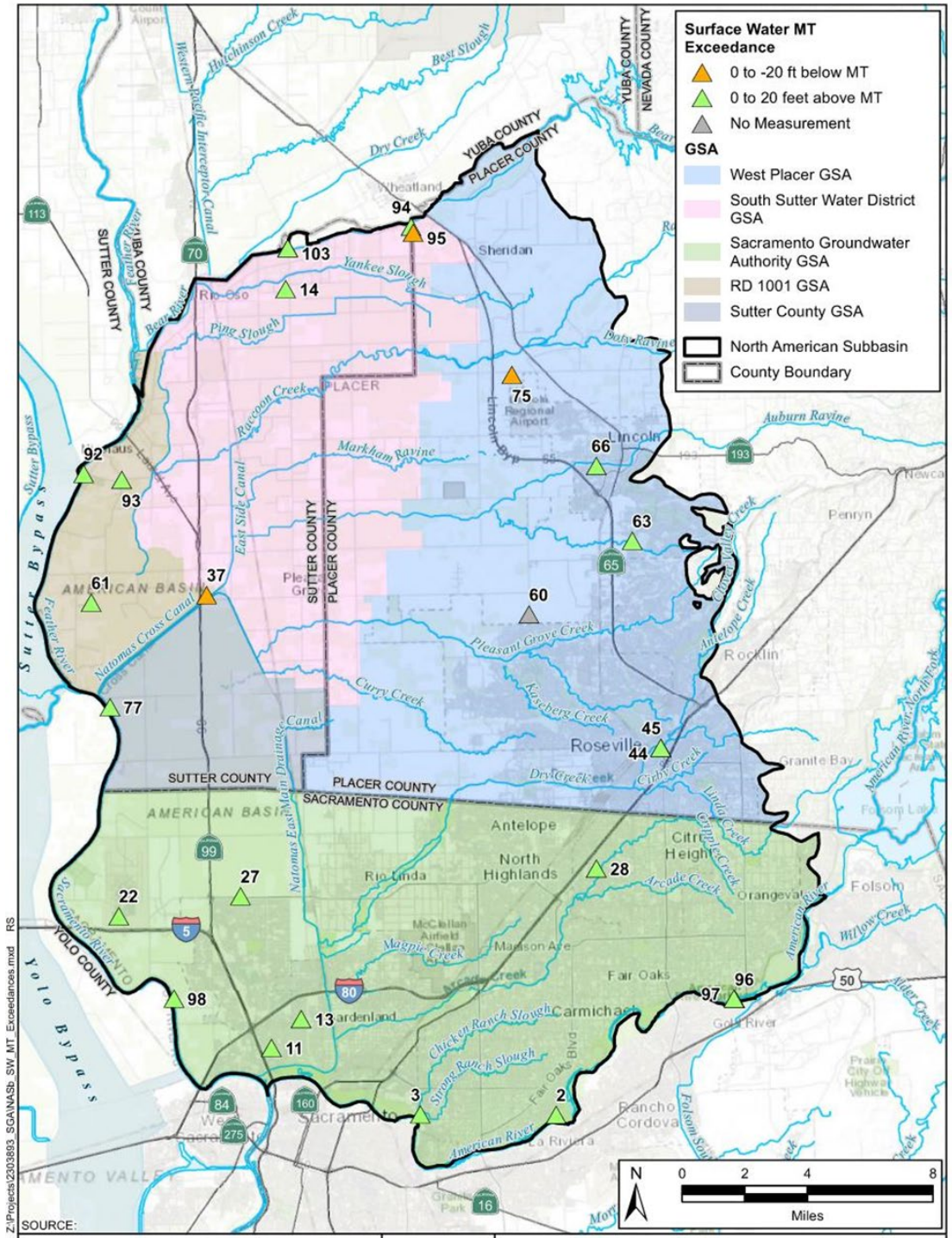


Chronic Lowering of Groundwater Levels – RMS Wells with MT Exceedances

NORTH AMERICAN Subbasin

Depletion of Surface Water and Minimum Thresholds

DWR Assigned Well Number	Representative Well Number	Local Well Name	20-yr Measurable Objective	Minimum Threshold	Spring 2019	Fall 2019	Spring 2020	Fall 2020	Spring 2021	Fall 2021	Spring 2022	Fall 2022	Spring 2023	Fall 2023	5-yr Spring Average	Distance to 20-year Measurable Objective
DWR Assigned Well Number	NASb GSP Well Number	Local Well Name	Groundwater Elevation (feet msl)	Groundwater Elevation (feet msl)	Groundwater Elevation (feet msl) Shaded Values Below are Below the Minimum Threshold Value --- Represents No Measurement										Spring 2019 - Spring 2023	5-year Average minus 20-year Measurable Objective (feet above or below MO)
385828N1213385W001	2	SGA_MW06	5	1	13.79	12.34	12.59	9.24	9.69	7.79	9.44	7.78	13.09	11.97	12	7
385841N1214185W001	3	SGA_MW04	-1	-5	9.94	3.14	2.59	0.19	0.89	-1.36	0.34	-0.42	7.58	3.39	4	5
386160N1215054W001	11	Bannon Creek Park	-2	-5	5.31	0.46	1.66	-1.09	-0.40	-1.54	0.26	-1.74	4.65	0.16	2	4
386292N1214877W001	13	Chuckwagon Park	-13	-15	-5.99	-7.29	-7.19	-8.94	-8.69	-10.49	-9.39	-11.34	-4.54	-3.79	-7	6
389669N1214897W001	14	13N04E23A002M	45	26	51.38	45.58	45.28	40.98	39.88	28.88	32.18	27.88	36.64	34.72	41	-4
386782N1215943W004	22	AB-4 shallow	4	-1	12.24	8.07	8.59	4.98	6.26	4.93	9.03	3.46	11.45	7.53	10	6
386864N1215222W003	27	AB-3 shallow	-1	-4	10.76	10.43	8.52	8.91	7.95	8.06	8.75	5.70	9.53	9.81	9	10
386964N1213120W001	28	Twin Creeks Park	-19	-28	-7.9	-9.45	-6.4	-12.75	-9.20	-16.10	-12.30	-16.00	-13.45	-12.85	-10	9
388260N1215394W004	37	SUT-P1	20	10	29.24	21.59	19.23	18.71	16.50	18.65	16.51	12.21	24.81	19.5	21	1
387515N1212725W001	44	WPMW-10A	140	133	139.31	136.21	137.21	135.21	136.11	134.01	135.51	134.37	139.56	134.81	138	-2
387517N1212727W001	45	WPMW-9A	143	135	141.56	138.46	140.66	137.86	139.26	136.76	138.53	137.46	142.08	136.86	140	-3
388235N1216079W001	61	Sutter County MW-5A	18	10	21.42	17.98	17.15	16.8	14.34	10.88	14.95	14.40	20.7	18.4	18	0
388476N1212872W001	63	WPMW-3A	147	145	147.97	147.43	147.57	147.43	147.29	146.60	147.51	146.90	148.6	148	148	1
388826N1213078W001	66	MW 5-2	112	108	112.64	109.8	110.51	108.65	109.31	108.05	110.96	108.93	112.59	110.05	111	-1
389255N1213566W003	75	MW 2-3	94	89	97.53	89.7	95.19	87.79	91.72	83.83	88.58	83.04	90.95	84.72	93	-1
387749N1215975W001	77	SREL-1-27-F1	16	9	28.45	14.51	14.061	11.55	13.84	11.57	11.84	10.38	22.22	16.26	18	2
388829N1216110W001	92	RDMW-101	18	15	---	19.98	19.69	17.92	17.65	16.73	19.49	16.46	26.35	19.71	21	3
388798N1215885W001	93	RDMW-102	16	12	---	17.02	19.26	13.86	15.48	10.40	15.33	11.03	20.85	16.28	18	2
389950N1214148W002	94	RDMW-103	65	58	---	65.97	68.09	61.09	62.99	54.13	59.71	50.68	65.76	58.38	64	-1
389919N1214141W002	95	RDMW-104	65	57	---	65.18	67.2	59.91	61.80	52.01	58.52	51.08	64.58	56.68	63	-2
386348N1212319W001	96	Aerojet - 1516	70	67	72.72	69.8	70.87	70.2	69.89	69.43	69.76	69.72	73.89	---	71	1
386351N1212323W001	97	Aerojet - 1518	59	57	64.92	62.85	62.5	61.46	60.56	59.87	60.42	60.48	65.56	62.97	63	4
386397N1215624W001	98	URS71000-700+00C	10	7	9.76	9.98	11.8	9.85	9.04	7.74	10.38	7.60	16.03	11.84	11	1
389857N1214880W001	103	BR-1B	45	36	49.45	43.92	46.81	43.95	40.46	36.28	40.99	36.97	43.86	41.17	44	-1



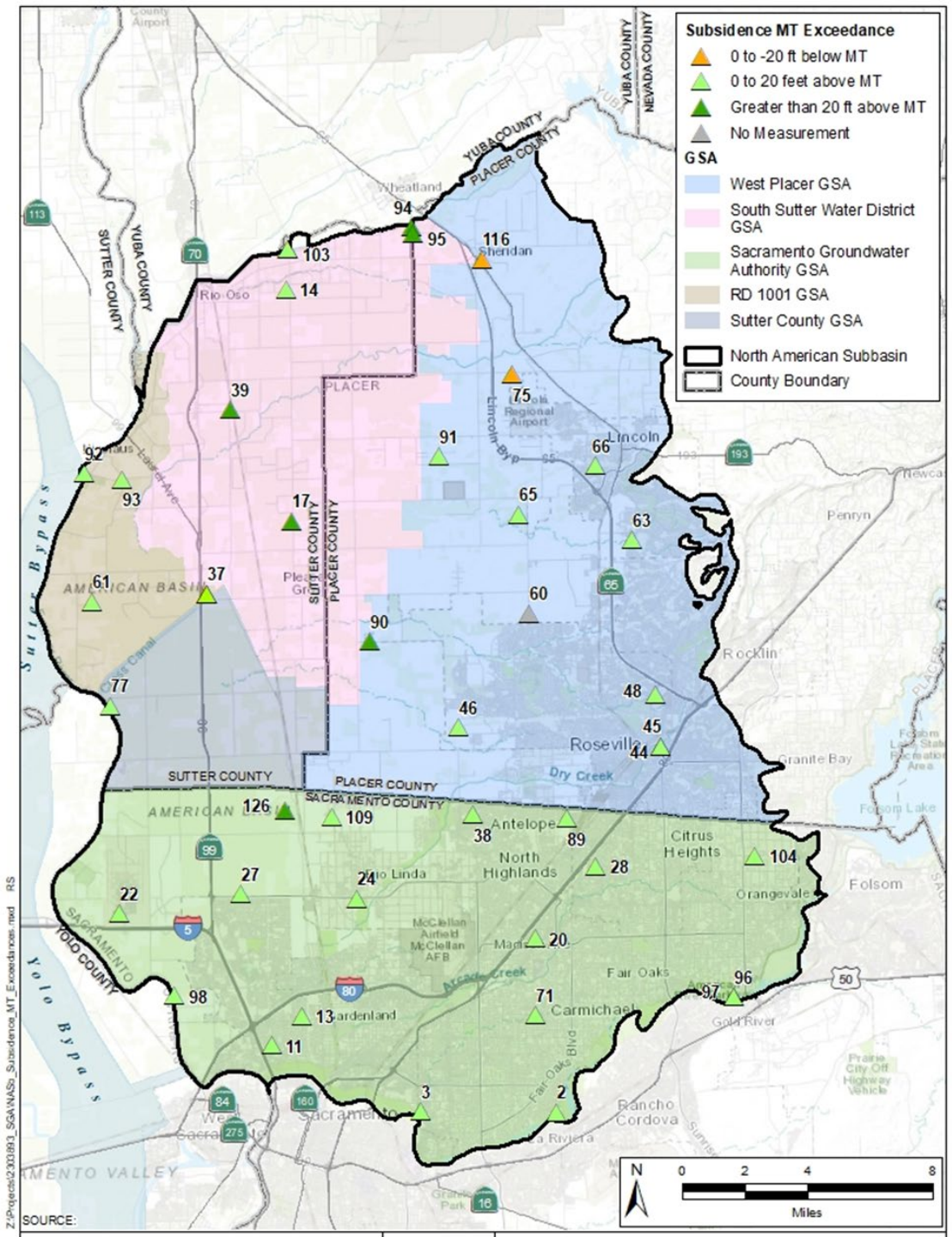
Depletion of Surface Water MT Exceedances

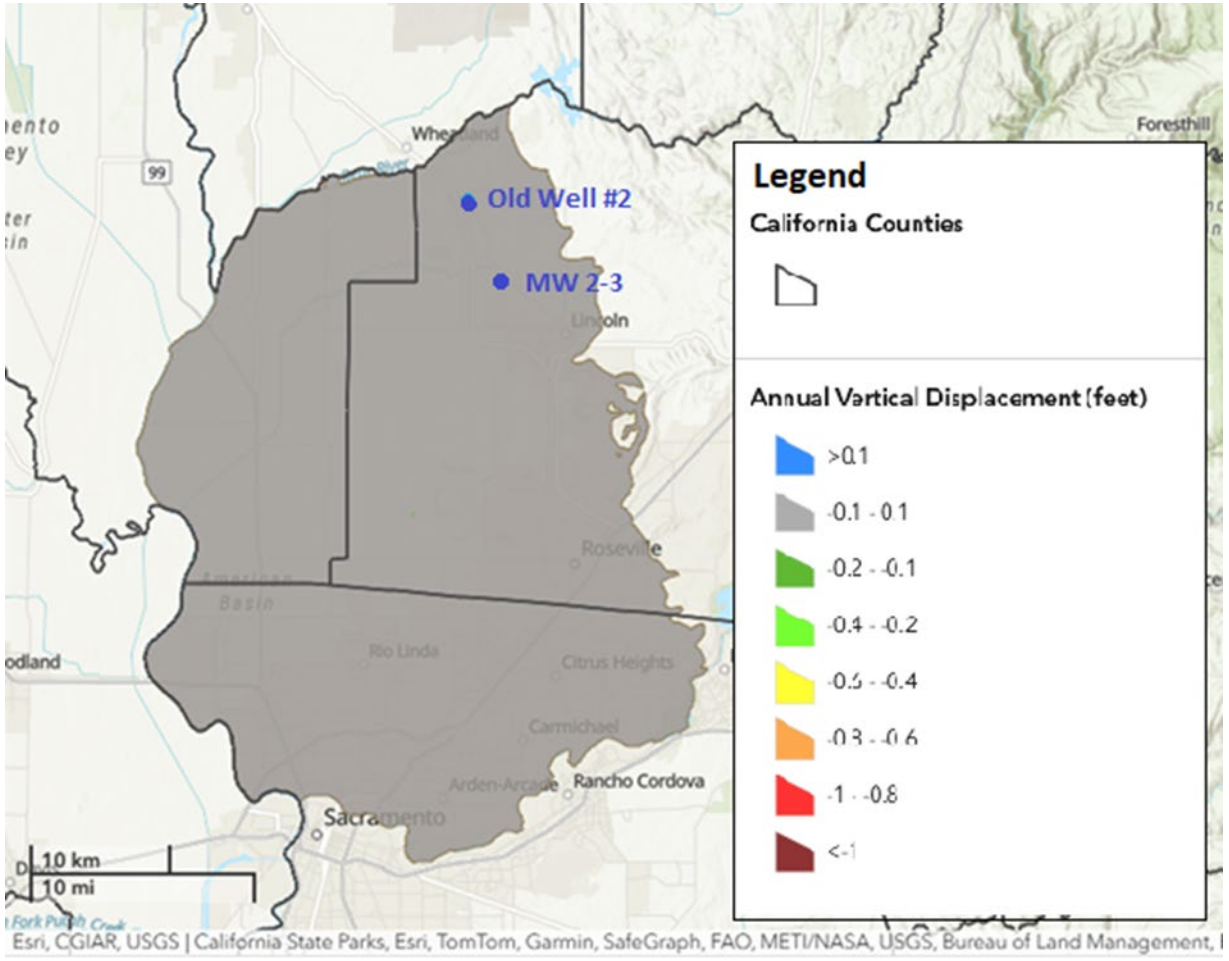
NORTH AMERICAN Subbasin

Land Subsidence Groundwater Levels and Minimum Thresholds

DWR Assigned Well Number	Representative Well Number	Local Well Name	20-yr Measurable Objective	Minimum Threshold	Spring 2019	Fall 2019	Spring 2020	Fall 2020	Spring 2021	Fall 2021	Spring 2022	Fall 2022	Spring 2023	Fall 2023	5-yr Fall Average	Distance to 20-year Measurable Objective
DWR Assigned Well Number	NASb GSP Well Number	Local Well Name	Groundwater Elevation (feet msl)	Groundwater Elevation (feet msl)	Groundwater Elevation (feet msl) Shaded Values Below are Below the Minimum Threshold Value --- Represents No Measurement										Spring 2019 - Spring 2023	5-year Average minus 20-year Measurable Objective (feet above or below MO)
385828N1213385W001	2	SGA_MW06	5	1	13.79	12.34	12.59	9.24	9.69	7.79	9.44	7.78	13.09	11.97	12	7
385841N1214185W001	3	SGA_MW04	-1	-5	9.94	3.14	2.59	0.19	0.89	-1.36	0.34	-0.42	7.58	3.39	4	5
386160N1215054W001	11	Bannon Creek Park	-2	-5	5.31	0.46	1.66	-1.09	-0.40	-1.54	0.26	-1.74	4.65	0.16	2	4
386292N1214877W001	13	Chuckwagon Park	-13	-15	-5.99	-7.29	-7.19	-8.94	-8.69	-10.49	-9.39	-11.34	-4.54	-3.79	-7	6
389669N1214897W001	14	13N04E23A002M	45	15	51.38	45.58	45.28	40.98	39.88	28.88	32.18	27.88	36.64	34.72	41	-4
388593N1214885W003	17	AB-2 shallow	13	-21	24.23	19.37	19.8	10.01	11.61	-8.41	3.07	-7.69	7.24	0.91	13	0
386635N1213486W001	20	SGA_MW05	-25	-37	-13.93	-17.38	-13.68	-22.28	-16.78	-27.98	-19.63	-27.43	-19.44	-18.26	-17	8
386782N1215943W004	22	AB-4 shallow	4	-1	12.24	8.07	8.59	4.98	6.26	4.93	9.03	3.46	11.45	7.53	10	6
386836N1214536W001	24	SGA_MW02	-23	-27	-13.86	-14.16	-13.36	-15.11	-14.96	-16.86	-15.46	-16.91	-14.21	-13.91	-14	9
386864N1215222W003	27	AB-3 shallow	-1	-4	10.76	10.43	8.52	8.91	7.95	8.06	8.75	5.70	9.53	9.81	9	10
386964N1213120W001	28	Twin Creeks Park	-19	-28	-7.9	-9.45	-6.4	-12.75	-9.20	-16.10	-12.30	-16.00	-13.45	-12.85	-10	9
388260N1215394W004	37	SUT-P1	20	8	29.24	21.59	19.23	18.71	16.50	18.65	16.51	12.21	24.81	19.5	21	1
387216N1213842W001	38	Lone Oak Park	-21	-27	-12.23	-13.48	-10.53	-15.03	-12.88	-17.68	-15.23	-16.91	-15.18	-14.43	-13	8
389116N1215238W003	39	AB-1 shallow	31	-5	40.18	33.63	34.16	27.46	27.08	9.70	17.66	5.39	22.92	21.38	28	-3
387515N1212725W001	44	WPMW-10A	140	133	139.31	136.21	137.21	135.21	136.11	134.01	135.51	134.37	139.56	134.81	138	-2
387517N1212727W001	45	WPMW-9A	143	131	141.56	138.46	140.66	137.86	139.26	136.76	138.53	137.46	142.08	136.86	140	-3
387623N1213915W001	46	SVMW West - 1A	-22	-32	-14.25	-18.35	-12.35	-17.45	-13.81	-20.70	-16.55	-21.25	-16.48	-16.27	-15	7
387755N1212753W001	48	WPMW-4A	78	72	76.97	77.77	78.47	79.07	79.47	79.07	79.19	79.07	79.37	81.68	79	1
388145N1213491W001	60	WPMW-2A	26	21	26.98	26.8	29.25	27.48	28.30	23.80	26.10	24.70	27.2	---	28	2
388235N1216079W001	61	Sutter County MW-5A	18	-1	21.42	17.98	17.15	16.8	14.34	10.88	14.95	14.40	20.7	18.4	18	0
388476N1212872W001	63	WPMW-3A	147	145	147.97	147.43	147.57	147.43	147.29	146.60	147.51	146.90	148.6	148	148	1
388604N1213544W003	65	MW 1-3	55	38	58.01	54.02	58.37	56.47	57.88	55.23	57.03	54.74	58.31	56.86	58	3
388826N1213078W001	66	MW 5-2	112	104	112.64	109.8	110.51	108.65	109.31	108.05	110.96	108.93	112.59	110.05	111	-1
386280N1213493W001	71	WCMSS	-32	-40	-19.76	-20.06	-15.26	-28.76	-20.26	-27.76	-22.41	-29.31	-22.76	-21.26	-20	12
389255N1213566W003	75	MW 2-3	94	86	97.53	89.7	95.19	87.79	91.72	83.83	88.58	83.04	90.95	84.72	93	-1
387749N1215975W001	77	SREL-1-27-F1	16	9	28.45	14.51	14.061	11.55	13.84	11.57	11.84	10.38	22.22	16.26	15	-1
387191N1213287W001	89	Roseview Park - 315	-13	-22	-6.21	-7.51	-4.86	-9.41	-6.61	-11.91	-9.46	-11.76	-10.46	-10.06	-8	5
388026N1214432W002	90	WPMW-12A	-30	-65	---	-22.93	-13.98	-27.28	-18.93	-34.54	-23.08	-35.53	-24.63	-30.95	-20	10
388882N1214005W002	91	WPMW-11A	13	-18	---	14.34	22.47	13.43	19.55	6.04	12.58	0.52	11.48	0.72	17	4
388829N1216110W001	92	RDMW-101	18	14	---	19.98	19.69	17.92	17.65	16.73	19.49	16.46	26.35	19.71	21	3
388798N1215885W001	93	RDMW-102	16	8	---	17.02	19.26	13.86	15.48	10.40	15.33	11.03	20.85	16.28	18	2
389950N1214148W002	94	RDMW-103	65	36	---	65.97	68.09	61.09	62.99	54.13	59.71	50.68	65.76	58.38	64	-1
389919N1214141W002	95	RDMW-104	65	36	---	65.18	67.2	59.91	61.80	52.01	58.52	51.08	64.58	56.68	63	-2
386348N1212319W001	96	Aerojet - 1516	70	67	72.72	69.8	70.87	70.2	69.89	69.43	69.76	69.72	73.89	---	71	1
386351N1212323W001	97	Aerojet - 1518	59	57	64.92	62.85	62.5	61.46	60.56	59.87	60.42	60.48	65.56	62.97	63	4
386397N1215624W001	98	URS71000-700+00C	10	6	9.76	9.98	11.8	9.85	9.04	7.74	10.38	7.60	16.03	11.84	11	1
389857N1214880W001	103	BR-1B	45	36	49.45	43.92	46.81	43.95	40.46	36.28	40.99	36.97	43.86	41.17	44	-1
387000N1212180W001	104	SGA_MW08	99	97	107.06	106.96	107.21	106.71	106.76	106.31	106.21	105.76	105.76	105.46	107	8
387218N1214677W001	109	SGA_MW01	-30	-33	-17.16	-18.01	-15.66	-18.61	-16.51	-20.41	-18.26	-20.61	-18.71	-21.08	-17	13
389791N1213727W001	116	Old Well #2	76	68	79.03	77.45	78.3	72.93	72.98	67.22	69.10	65.30	69.05	66.05	74	-2
387251N1214954W001	126	DeWit	-13	-25	---	---	---	---	4.95	-2.30	5.30	-3.80	6.85	5.3	6	19

Land Subsidence MT Exceedances

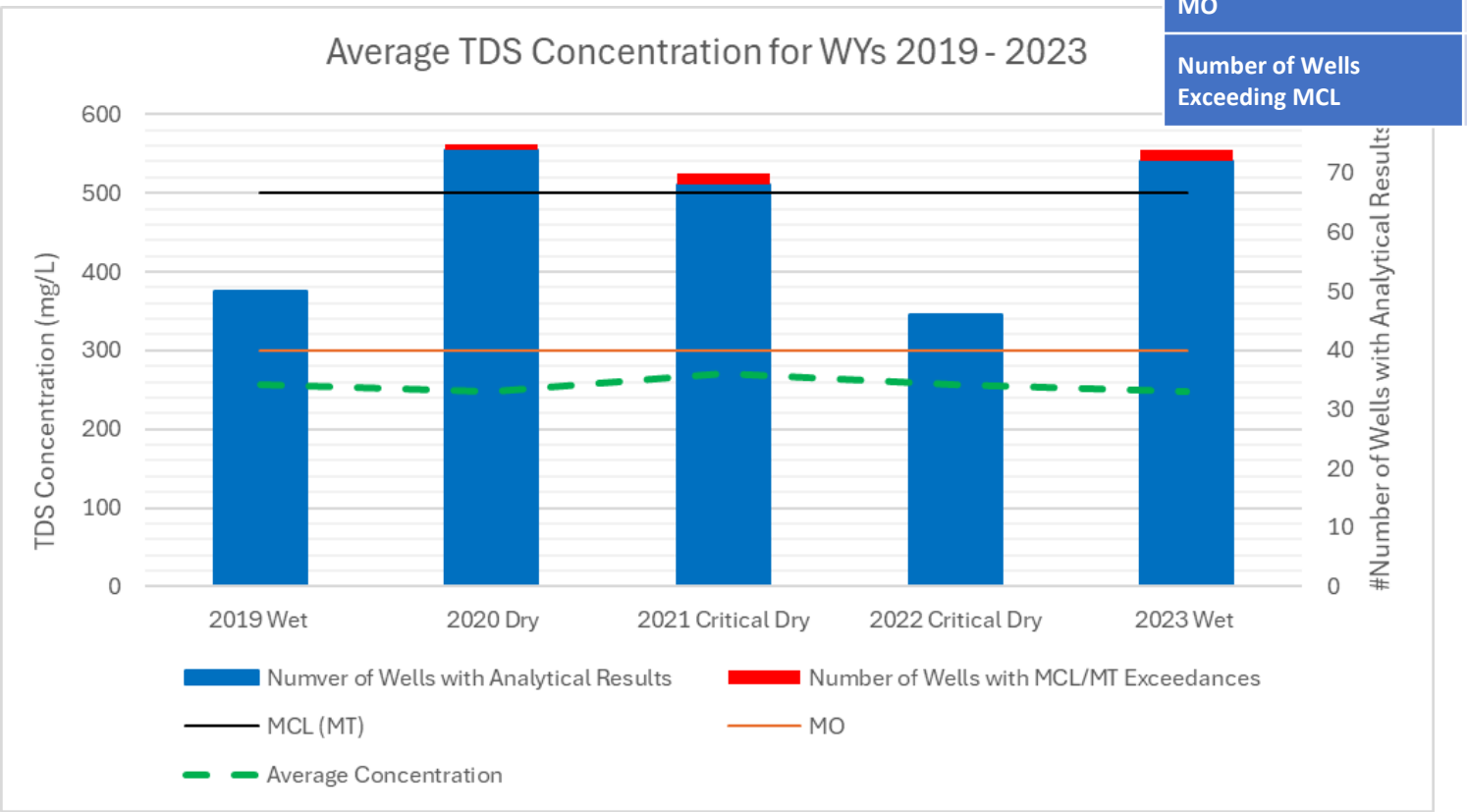




NORTH AMERICAN Subbasin

Water Quality – Total Dissolved Solids (TDS) Analysis

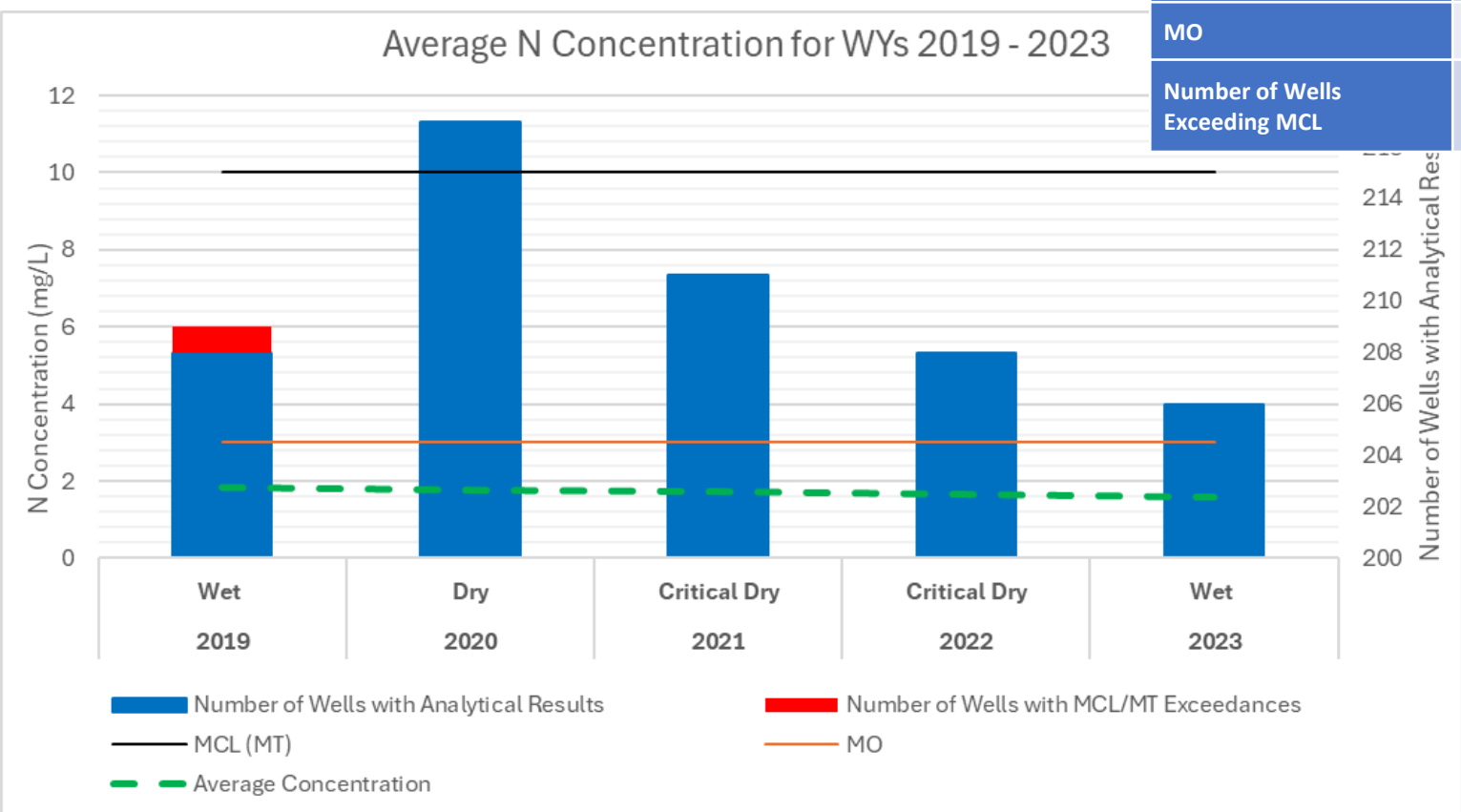
TDS	WY 2019	WY 2020	WY 2021	WY 2022	WY 2023
Number of Wells with Analytical Results	50	75	70	46	74
Date Range of Samples	12/19/2018 - 9/17/2019	10/10/2019 - 9/3/202	11/19/2020 - 8/25/2021	12/7/2021 - 8/30/2022	10/6/2022 - 10/16/2023
Units	mg/L	mg/L	mg/L	mg/L	mg/L
Minimum Concentration	42	38	48	10	47
Maximum Concentration	460	500	650	471	510
Average Concentration[1]	256	247	270	256	247
MCL or Notification Level (MT)[2]	500	500	500	500	500
MO	300	300	300	300	300
Number of Wells Exceeding MCL	0	1	2	0	2



NORTH AMERICAN Subbasin

Water Quality – Nitrate (as N) Analysis

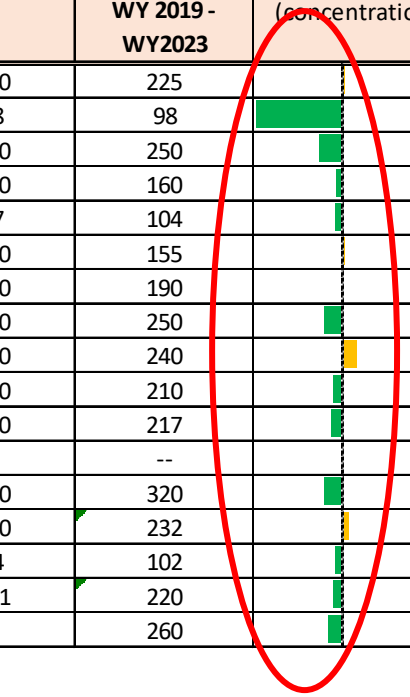
N	WY 2019	WY 2020	WY 2021	WY 2022	WY 2023
Number of Wells with Analytical Results	209	217	211	208	206
Date Range of Samples	11/6/2018 - 9/23/2019	10/10/2019 - 9/23/2020	10/9/2020 - 9/27/2021	11/17/2021 - 9/27/2022	10/13/2022 - 9/25/2023
Units	mg/L	mg/L	mg/L	mg/L	mg/L
Minimum Concentration	<0.5	<0.5	<0.5	<0.5	<0.5
Maximum Concentration	10.10	9.60	9.80	9.40	9.10
Average Concentration[1]	1.84	1.75	1.72	1.65	1.58
MCL or Notification Level (MT)[2]	10	10	10	10	10
MO	8	8	8	8	8
Number of Wells Exceeding MCL	1	0	0	0	0



NORTH AMERICAN Subbasin

Shallow Aquifer - Total Dissolved Solids (TDS)

Well Number	Representative Well Number	Local Well Name	20-yr Measurable Objective	Minimum Threshold	2019	2020	2021	2022	2023	5-yr Average	Concentration to 20-year Measurable Objective
DWR Assigned Well Number, DDW Assigned PWS-Source Number, GeoTracker Assigned Well Number	NASb GSP Water Quality Well Number	Local Well Name	Concentration (mg/L)	Concentration (mg/L)	Concentration (mg/L) Shaded Values Below are Above the Minimum Threshold Value --- Represents No Measurement					WY 2019 - WY2023	5-year Average minus 20-year Measurable Objective (concentration above or below MO)
388593N1214885W003	17	AB-2 shallow	220	500	200	--	--	--	250	225	5
386635N1213486W001	20	SGA_MW05	300	500	--	--	--	--	98	98	-202
386836N1214536W001	24	SGA_MW02	300	500	--	--	--	--	250	250	-50
386864N1215222W003	27	AB-3 shallow	170	500	150	--	--	--	170	160	-10
388260N1215394W004	37	SUT-P1	120	500	110	--	--	--	97	104	-17
389116N1215238W003	39	AB-1 shallow	150	500	140	--	--	--	170	155	5
387623N1213915W001	46	SVMW West - 1A	TBD	500	--	--	180	--	200	190	
389740N1213606W001	80	Cemetery (IRLP)	290	500	--	--	240	--	260	250	-40
387749N1215975W001	89	Roseview Park - 315	210	500	--	--	--	--	240	240	30
388026N1214432W002	90	WPMW-12A	230	500	210	200	210	--	220	210	-20
388882N1214005W002	91	WPMW-11A	240	500	220	--	210	--	220	217	-23
3400396-001	99	Main Well	TBD	500	--	--	--	--	--	--	
387218N1214677W001	109	SGA_MW01	360	500	--	--	--	--	320	320	-40
L10007939295	133	LW-1	220	500	240	200	220	240	260	232	12
3410002-013	177	Well 22 - Northrop	120	500	--	110	--	--	94	102	-18
3110025-014	298	Tinker Road Well	240	500	160	220	280	200	241	220	-20
3110048-005	299	Well 03	290	500	260	--	--	260	--	260	-30



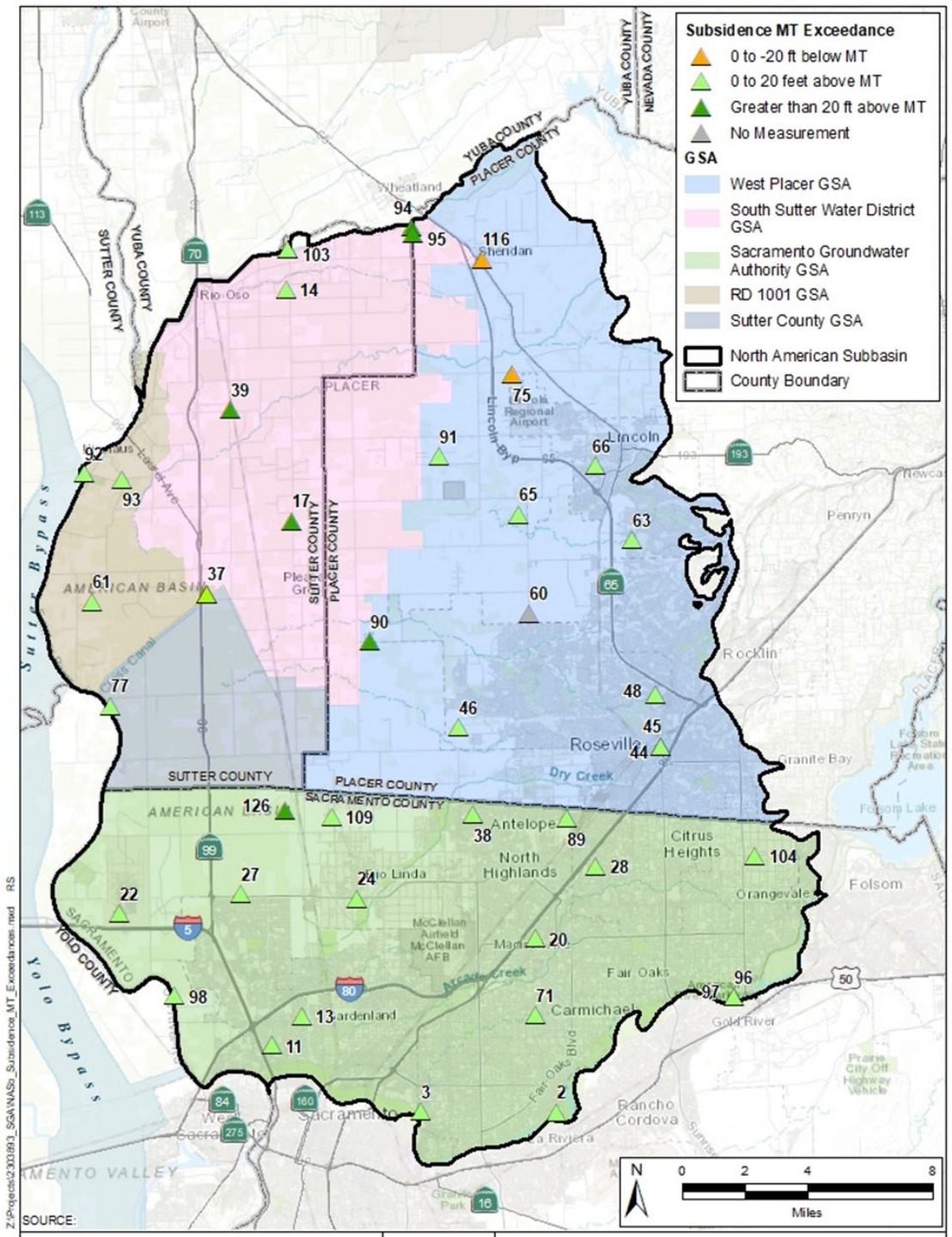
NORTH AMERICAN Subbasin

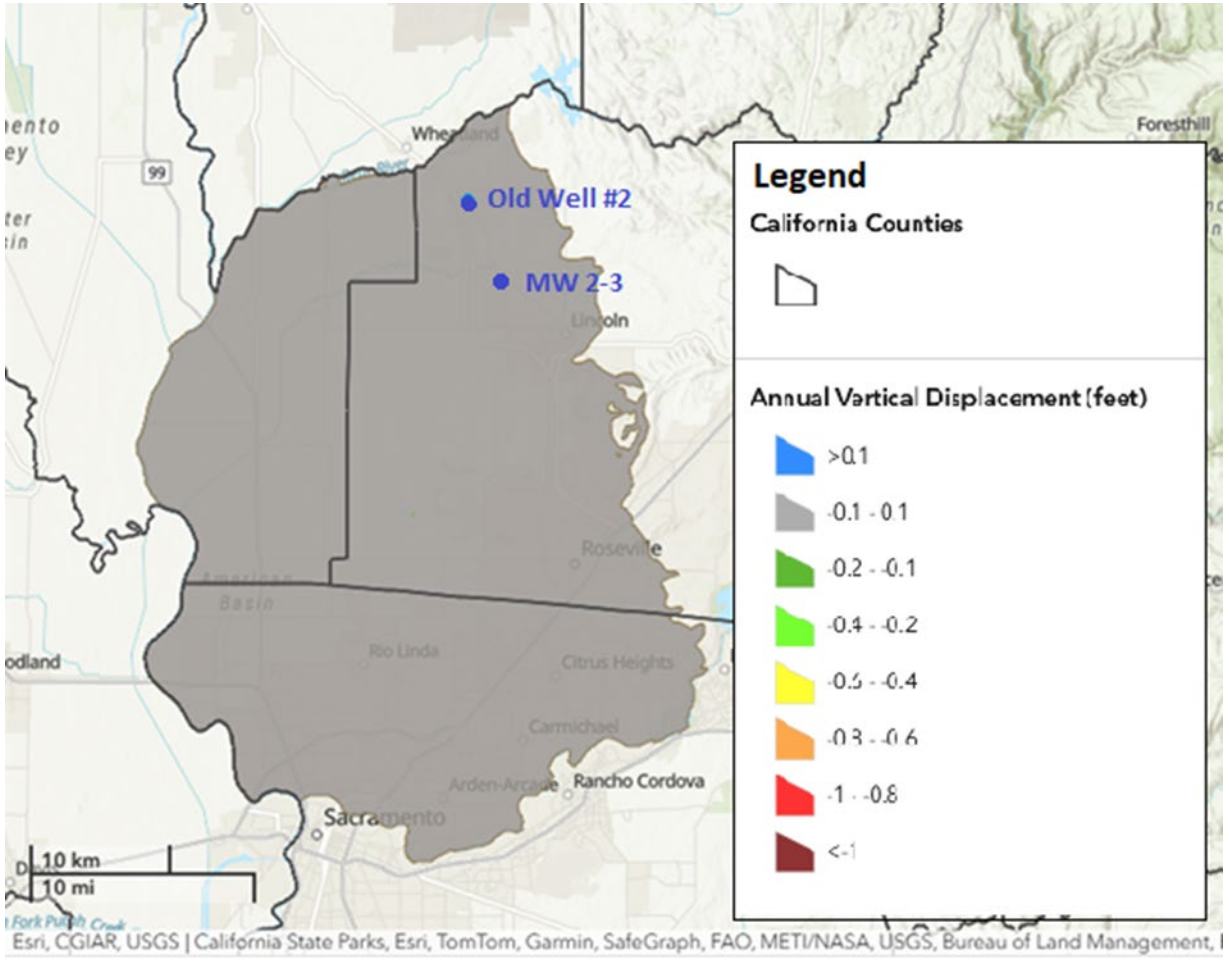
Shallow Aquifer – Nitrate (N)

Well Number	Representative Well Number	Local Well Name	20-yr Measurable Objective	Minimum Threshold	2019	2020	2021	2022	2023	5-yr Average	Distance to 20-year Measurable Objective	
DWR Assigned Well Number, DDW Assigned PWS-Source Number, GeoTracker Assigned Well Number	NASb GSP Water Quality Well Number	Local Well Name	Concentration (mg/L)	Concentration (mg/L)	Concentration (mg/L) Shaded Values Below are Above the Minimum Threshold Value --- Represents No Measurement					WY 2019 - WY2023	5-year Average minus 20-year Measurable Objective (concentration above or below MO)	
388593N1214885W003	17	AB-2 shallow	ND	10	--	--	--	--	<0.23	<0.23	ND	ND
386635N1213486W001	20	SGA_MW05	1.7	10	--	--	--	--	0.63	0.63		-1.07
386836N1214536W001	24	SGA_MW02	4.5	10	--	--	--	--	6.2	6.2		1.7
386864N1215222W003	27	AB-3 shallow	ND	10	--	--	--	--	<0.23	<0.23	ND	ND
388260N1215394W004	37	SUT-P1	ND	10	--	--	--	--	<0.23	<0.23	ND	ND
389116N1215238W003	39	AB-1 shallow	ND	10	--	--	--	--	<0.23	<0.23	ND	ND
387623N1213915W001	46	SVMW West - 1A	TBD	10	--	--	1.6	--	1.8	1.7		
389740N1213606W001	80	Cemetery (IRLP)	TBD	10	--	--	1.5	--	1.4	1.45		
387749N1215975W001	89	Roseview Park - 315	TBD	10	--	--	--	--	1.1	1.1		
388026N1214432W002	90	WPMW-12A	0.64	10	0.58	0.33	0.73	--	0.72	0.59		-0.05
388882N1214005W002	91	WPMW-11A	1.1	10	1	--	1.2	--	1.3	1.17		0.07
3400396-001	99	Main Well	ND	10	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	ND	ND
387218N1214677W001	109	SGA_MW01	1	10	--	--	--	--	6	6		5.00
L10007939295	133	LW-1	4	10	3.2	3.6	3.0	3.9	4	3.5		-0.46
3410002-013	177	Well 22 - Northrop	ND	10	<0.4	<0.4	<0.4	<0.4	<0.23	<0.37	ND	ND
3110025-014	298	Tinker Road Well	4.26	10	4.18	3.87	3.83	3.75	3.72	3.87		-0.39
3110048-005	299	Well 03	1.42	10	1.29	1.61	--	1.82	--	1.57		0.15

NORTH AMERICAN Subbasin

Land Subsidence





NORTH AMERICAN Subbasin

Projects and Management Actions and Supplemental Projects

Projects

#1: Regional Conjunctive Use Expansion - Phase 1

#2: Natomas Cross Canal Stability Berm and Channel Habitat Enhancement Project

Management Actions

#1: Complete Planning for Sacramento Regional water Bank

#2: Explore Improvements with NASb Well Permitting Programs

#3: Proactive Coordination with Land Use Agencies

#4: Domestic/Shallow Well - Data Collection and Communication Program

#5: GDE Assessment Program

Supplemental Projects

- Regional Water Authority - Expansion of the Sacramento Regional Water Bank (Phase 2)
- Placer County Water Agency - RiverArc
- South Sutter Water District - Water System Conveyance System Improvements
- Natomas Mutual Water Company - Service Area Expansion
- Expansion City of Lincoln – Recycled Water Conjunctive Use
- Placer County - Sustainable Agricultural Groundwater Recharge Program

Public Outreach and Engagement Activities

AGENCY ACTIVITIES	DATE	COMMUNICATION TACTICS / TOOLS	KEY MESSAGES
RWA	October 2022	Public Meeting	Conducted large hybrid public meeting (Stakeholder Forum #1) to obtain feedback and provide an update on the development of the Sacramento Regional Water Bank (Management Action #1).
SGA GSA	10/13/2022	Board Meeting	Update on the Groundwater Sustainability Program.
SGA GSA	12/8/2022	Board Meeting	Update on the Groundwater Sustainability Program.
RWA	February 2023	Public Meeting	Conducted large hybrid public meeting (Stakeholder Forum #2) to obtain feedback and provide an update on the development of the Sacramento Regional Water Bank (Management Action #1).
NCMWC / Sutter GSA	2/14/2023	Annual Meeting	SGMA update presentation.
NASb GSAs	3/9/2023	Email blast	Groundwater Awareness Week, groundwater facts, GSA information.
WPGSA	3/14/2023	Email blast, Facebook, Twitter, e-newsletter, postcard mailer	Groundwater Awareness Week, groundwater facts, GSA information.
SGA GSA	4/13/2023	Board Meeting	Update on the Sustainable Groundwater Management Act (SGMA) and Groundwater Management Program.
NASb GSAs	4/19/2023	Email blast	WY2022 Annual Report has been submitted; how to comment.
NASb GSAs	4/25/2023	Email blast	WY2022 Annual Report has been submitted; how to comment.
WPGSA	5/8/2023	Ag Commission public meeting presentation	WY2022 Annual Report overview, current conditions, GSP implementation activities.
NCMWC / Sutter GSA	5/9/2023	Board Meeting	Review of GSP WY2022 Annual Report.
SSWD GSA	5/30/2023	Board Meeting	Ongoing GSP activities, funding, and general updates.
NASb GSAs	6/15/2023	Email blast	NASb 2023 Public Meeting Announcement.
NASb GSAs	6/22/2023	NASb Public Meeting	WY2022 Annual Report, current conditions, ongoing GSP implementation activities.
SGA GSA	8/18/2023	Special Board Meeting	Update(s) on the NASb WY2022 Annual Report annual public meeting debrief; the NASb GSP Approval from the DWR; the DWR Sustainable Groundwater Management Round II Grant Recommendation; and, the Sacramento Regional Water Bank.
SSWD GSA	8/29/2023	Board Meeting	Update on GSP approval status.
RD1001 GSA	Monthly	Groundwater updates	Monthly agendas include standing item for sustainable groundwater updates.
RWA	Monthly	Water Agency Meetings	Conducted monthly meetings with project proponents (i.e., water agencies) on the development of the Sacramento Regional Water Bank (Management Action #1).
RWA	Continuous	Question and Answer Interactive Forum	Developed question and answer forum to support the development of the Sacramento Regional Water Bank (Management Action #1).
RWA	Continuous	Website and Videos	Developed website and series of educational videos on recharge, groundwater, water banking, and climate change to support the development of the Sacramento Regional Water Bank (Management Action #1).

Agenda

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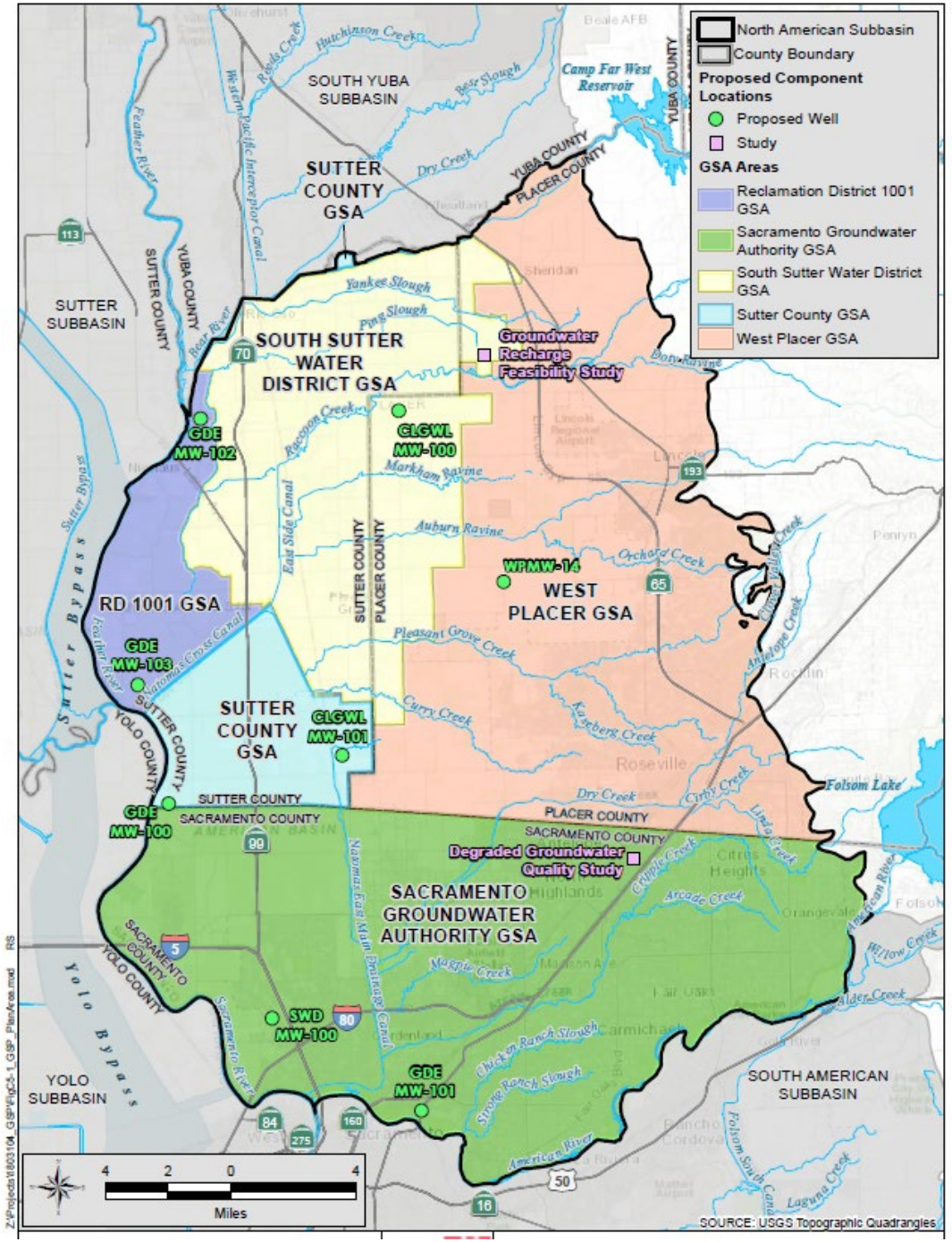
3. SGA 2012 Water Accounting Framework (WAF) – 2023 Calculations
4. Sacramento Regional Water Bank – Project Status

NASb Grant Components

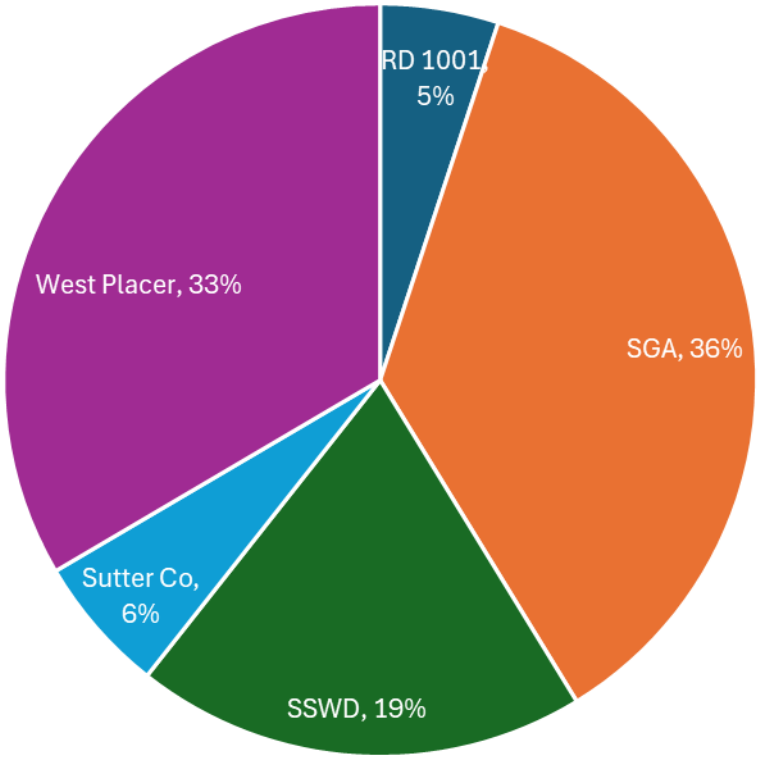
Advancing NASb SGM Components *- Status*

1. Grant Administration ($293K) - *SGA Staff time, some consultant time*
2. Groundwater Recharge Feasibility Study ($437K) – *In progress, site visit planned for early April 9, 2024, first progress report to be submitted April 30th for activities between Oct 4, 2022, and Dec 31, 2023*
3. Groundwater Quality Degradation Study ($242K) – *Planning stages, MSA with West Yost under way*
4. Groundwater Monitoring Wells Construction ($600K) – *Not yet started*
5. Groundwater Monitoring Well/Emergency Supply Well ($376K) - *Not yet started*
6. GSP Update and Annual Reporting ($838K) – *First progress report to be submitted April 30th for consultant activities between Oct 4, 2022, and Dec 31, 2023*
7. CoSANA Model Upgrade and Enhancements ($776K) – *Planning stages, MSA with Woodard & Curran under way*



Exact locations of proposed components may vary

NASb GSP Implementation – Budget



2022 ANNUAL BUDGET AND FOUR-YEAR PROJECTION SUMMARY					
GSA Name	Estimated Annual Contribution by GSAs (a)				
	2022	2023	2024	2025	2026
Reclamation District 1001	11,673	11,673	11,673	11,673	11,673
Sacramento Groundwater Authority	83,171	83,171	83,171	83,171	83,171
South Sutter Water District	44,521	44,521	44,521	44,521	44,521
Sutter County	13,583	13,583	13,583	13,583	13,583
West Placer Groundwater Sustainability Agency	76,912	76,912	76,912	76,912	76,912
TOTAL	**$229,860**	**$229,860**	**$229,860**	**$229,860**	**$229,860**
FIVE-YEAR TOTAL	**$1,149,300**				

NOTES:

a. The Parties acknowledge the need to establish an aggregate contingency budget of up to 20%. Any future use of any portion of the contingency budget shall be provided to each GSA for review and approved by a unanimous vote of the Parties at a GSA Basin Coordination Meeting before implementation. Upon approval of the use of the contingency budget, SGA will invoice the Parties to collect the agreed upon contingency amount.

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Water Accounting Framework

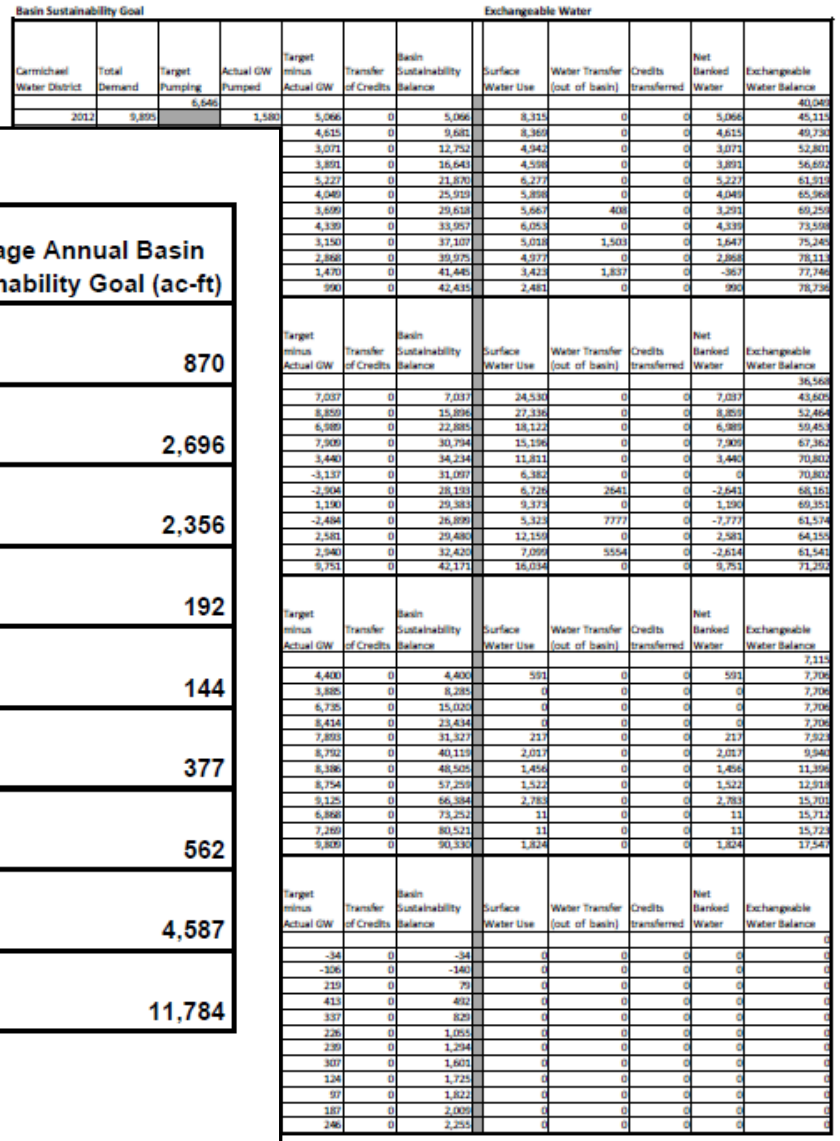
Table 1. Central Unit Basin Sustainability Goals

Agency	Groundwater Pumping prior to SGA Formation (ac-ft) (1)	% Total Groundwater Pumping prior to SGA Formation	Sustainable Pumping Estimate (ac-ft) (2)	Average Annual Basin Sustainability Goal (ac-ft)
Carmichael Water District	7,516	7.4	6,646	870
City of Sac	23,287	22.9	20,591	2,696
California American Water	20,351	20.0	17,995	2,356
Del Paso Manor Water District	1,657	1.6	1,465	192
Golden State Water Company	1,242	1.2	1,098	144
Rio Linda/Elverta Community Water District	3,259	3.2	2,882	377
Sacramento, County of	4,850	4.8	4,288	562
Sacramento Suburban Water District	39,622	38.9	35,035	4,587
Total	101,784	100	90,000	11,784

1) Data based on average pumping 1993 through 1997.

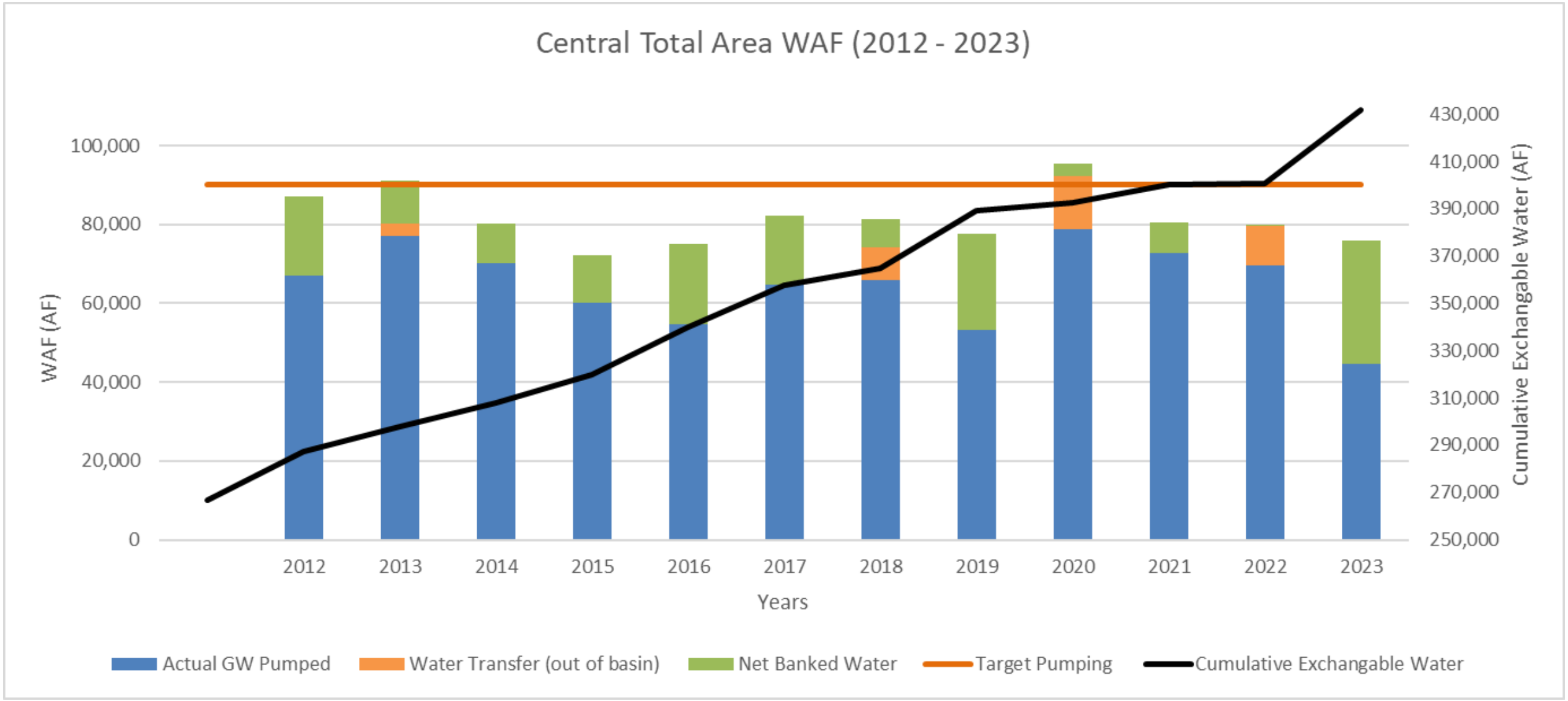
2) The sustainable pumping estimate reflects observations of extractions and drawdowns based on facilities in the basin as of 2004. This should not be construed as a fixed volume of water that can be extracted from the basin under future facilities and operations.

Water Accounting Framework, Phase III



Draft 2023 Results

Water Accounting Framework (cont.)



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Water Bank Project – Major Activities

Regional Water Authority
BUILDING ALLIANCES IN NORTHERN CALIFORNIA

Institutional Components:

☑ Goals, Objectives, Principles, and Constraints	
☑ Roles/Responsibilities and Org Structure	
↻ Water Accounting System (WAS)—Concepts	Q1/Q2 2024
☐ Water Accounting System (WAS)—Tool Development	2025
↻ Contractual, Financial, and Legal	Q4 2024 +

Project Description/Scoping:

☑ Proposed Project Preview	
☑ Water Bank Project Benefits and Outcomes	
↻ Project Description	ongoing

Communication & Engagement:

↻ Stakeholder Forums	TBD
↻ Water Bank website and content	ongoing

CEQA/NEPA:

↻ Compliance Process	ongoing
☑ NOP (subject to change)	
☑ Scoping (subject to change)	
↻ Document Preparation	ongoing
☐ Noticing/Consultation and Coordination	Q2 2024 +
☐ Other Requirements	Q1 2024 +

Modeling & USBR Guidelines:

☐ CoSANA/CalSim Modeling	Q2-Q3 2024
☐ Streamflow Accretions/Depletions	Q3-Q4 2024
☐ Federal Acknowledgement Process	2024/25

Administrative:

↻ Project Management and Budget Planning	ongoing
↻ Grants and Funding	ongoing
↻ Contractor Support and Procurement	ongoing

Water Bank – Project Outcomes

Regional Water Authority
BUILDING ALLIANCES IN NORTHERN CALIFORNIA

Federal Acknowledgement

Enables (1) any CVP contract supply to be banked outside the service area of that contractor, and (1) recovery of that supply by CVP and non-CVP contractors

Environmental Compliance

Through CEQA and NEPA documents, evaluates (1) expansion of existing conjunctive use, and (2) Reclamation acknowledgement of Water Bank

Water Accounting System

Accommodates multiple accounts that support all participating agencies and GSAs

External Partners

Through pilot opportunities, establishes relationships and develops institutional knowledge with external partners

Supports securing long-term agreements that provide consistent and reliable benefits to the region

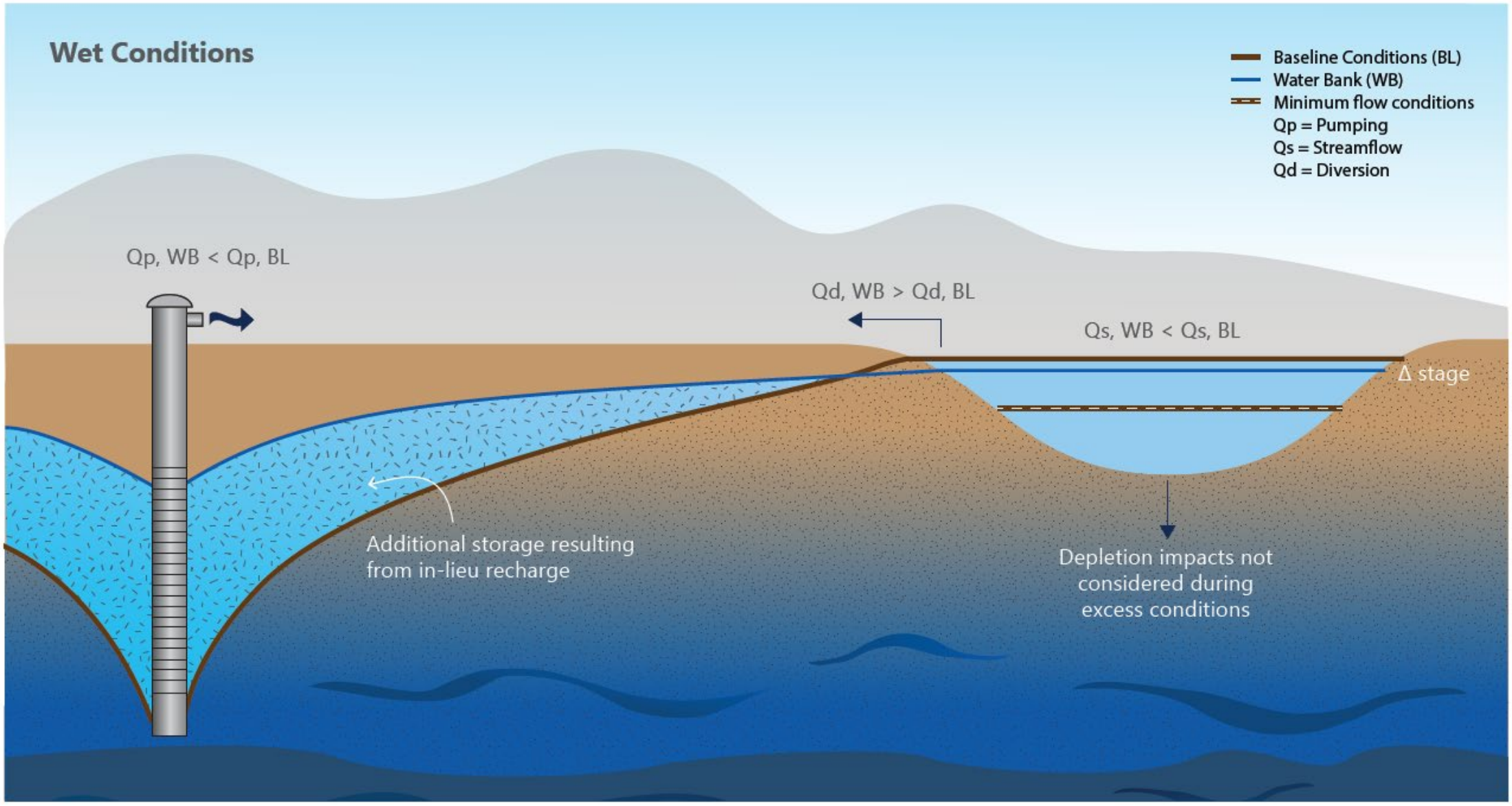
Surface Water/ Groundwater Interaction

Advances science and understanding of both accretion and depletions associated with water banking operations

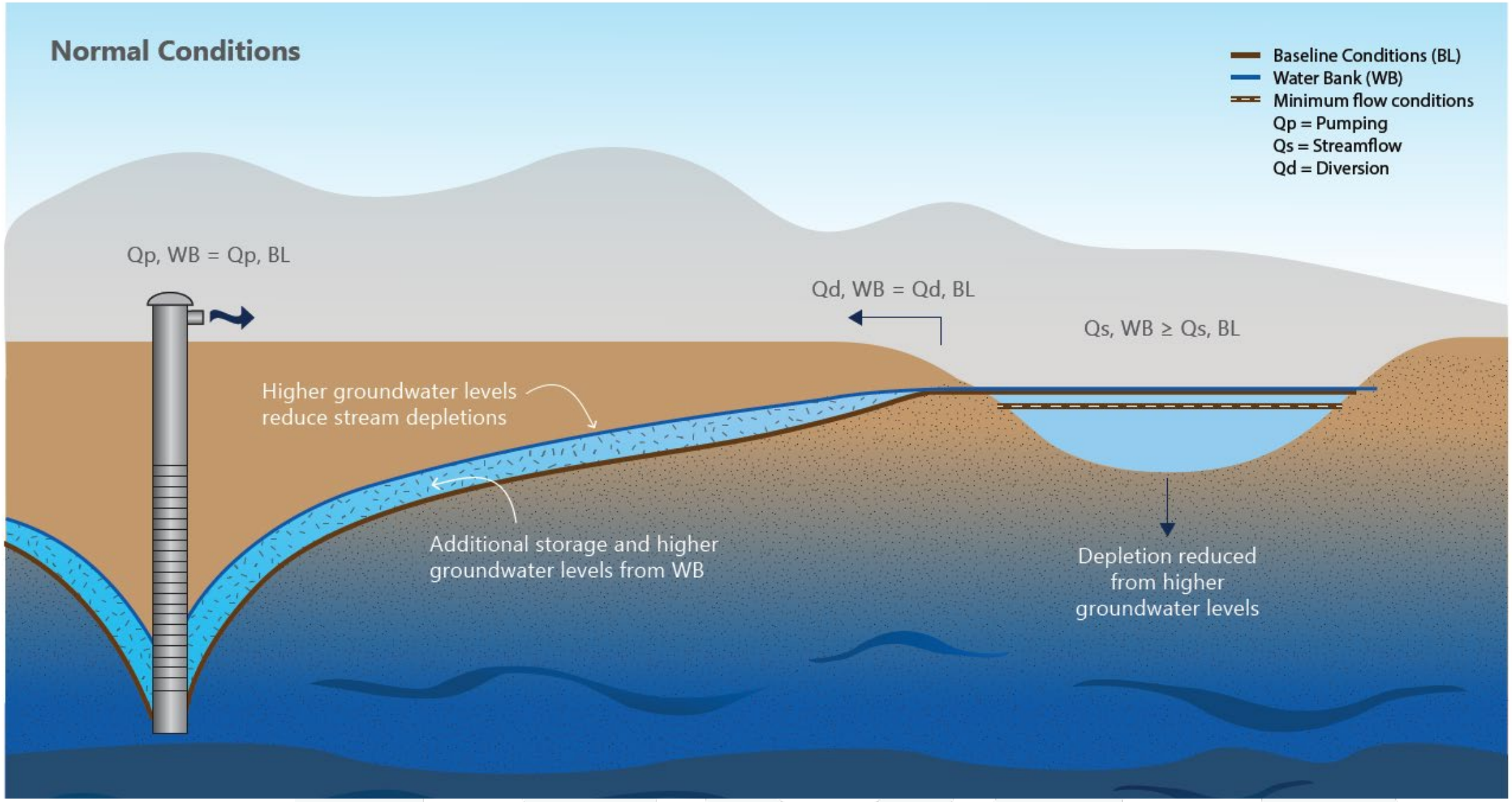
Financial Agreements

Develops framework to encourage broad, active, and beneficial implementation of conjunctive use by all participating agencies

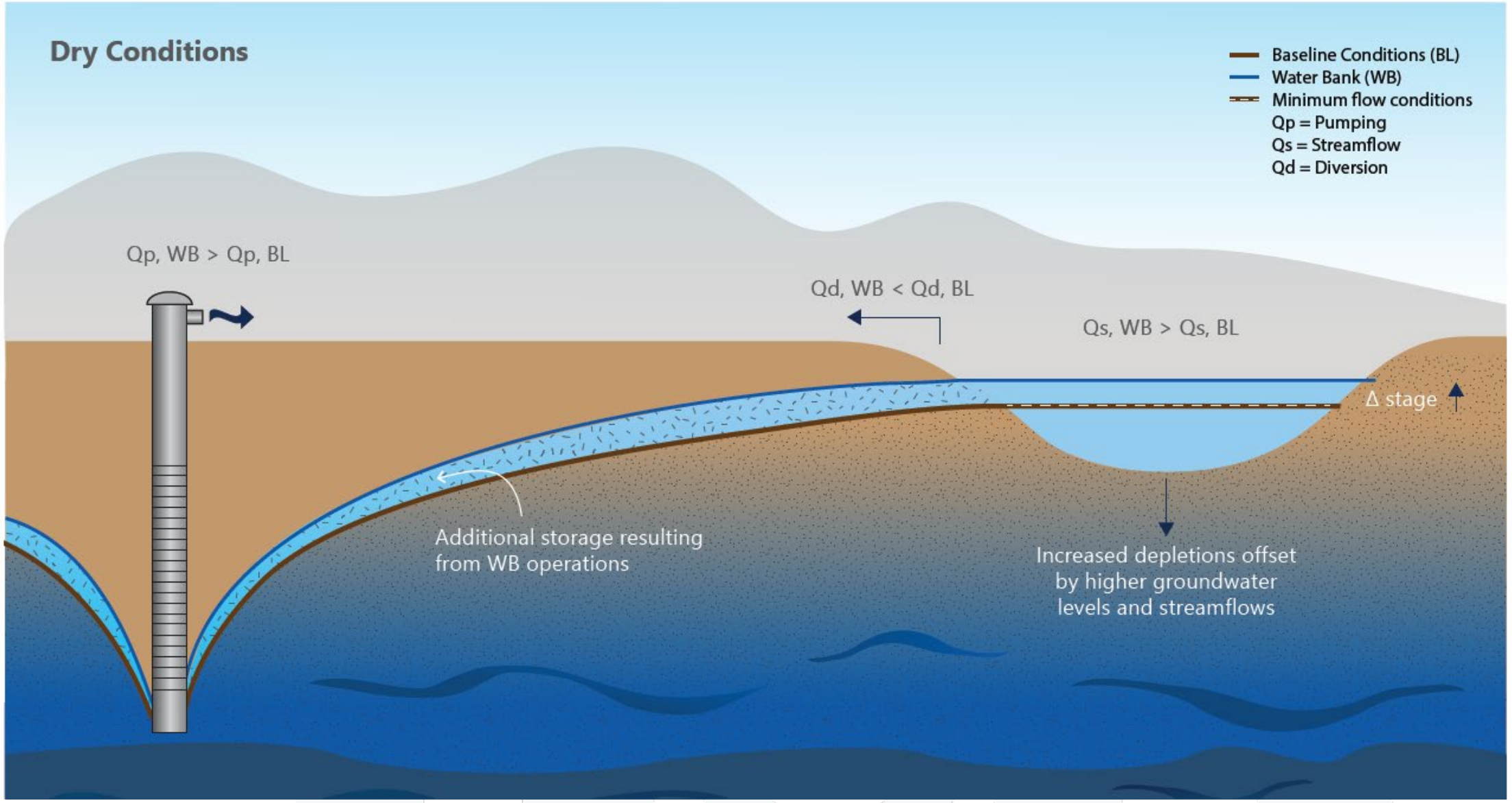
Interconnected Surface Water & Groundwater



Interconnected Surface Water & Groundwater (cont.)



Interconnected Surface Water & Groundwater (cont.)



Questions