

KAWEAH SUBBASIN

WY 2024 ANNUAL MONITORING REPORT



EAST KAWEAH
GROUNDWATER SUSTAINABILITY AGENCY



GREATER KAWEAH
GROUNDWATER
SUSTAINABILITY
AGENCY



PROVOST&PRITCHARD

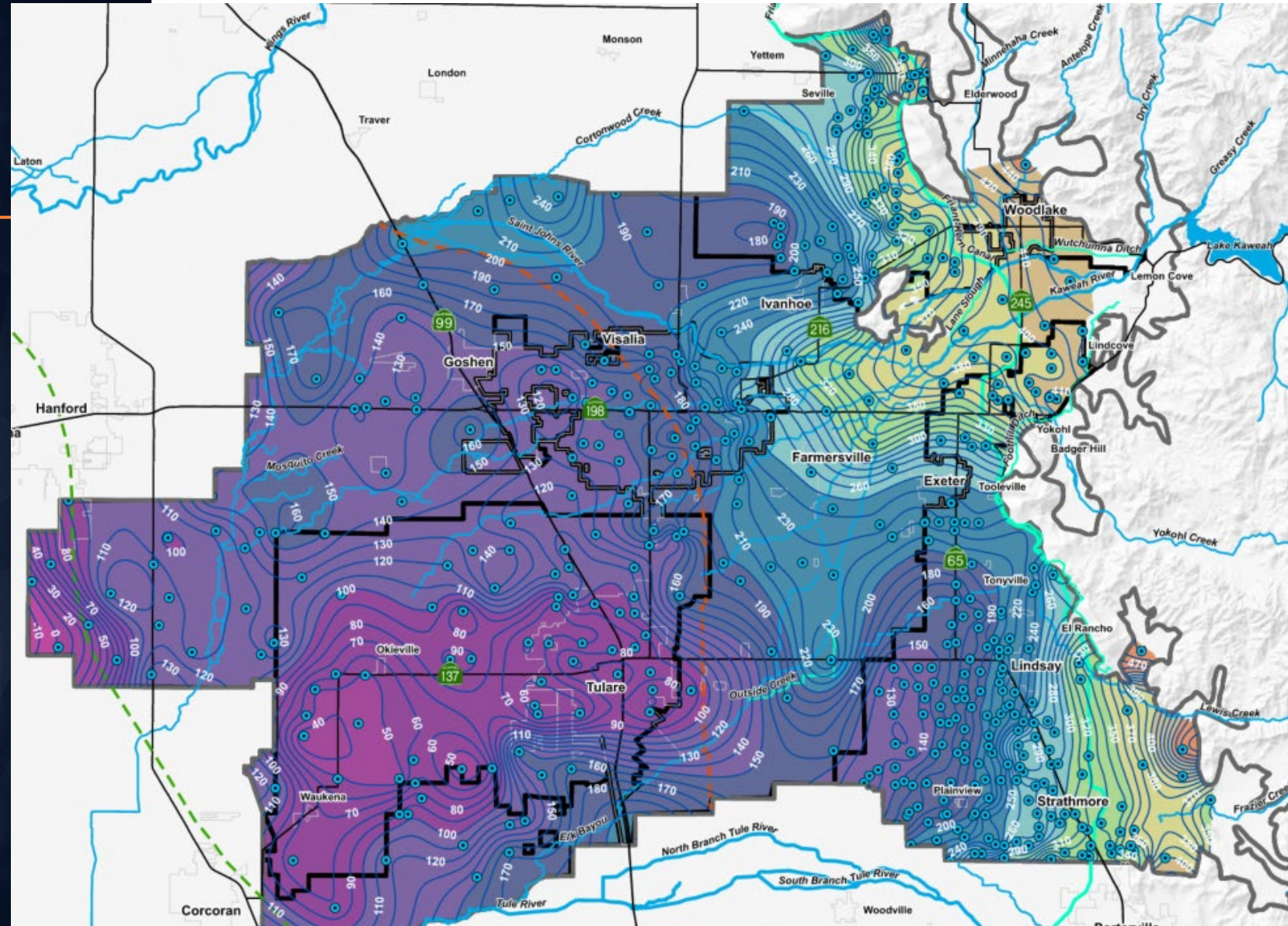
REPORT OVERVIEW

- Annual Reports are due April 1 reporting on prior Water Year
 - Water Year is October 1 – September 30
- Provides a “1 Year Snapshot” on most items. We include prior Water Year for a reference
- Items included:
 - Data from Monitoring Networks and comparison to Sustainable Management Criteria (SMC)
 - Water supply usage (surface and groundwater)
 - GSP Implementation Status
- Future reporting will transition to align with GSP updates

GROUNDWATER CONTOURS

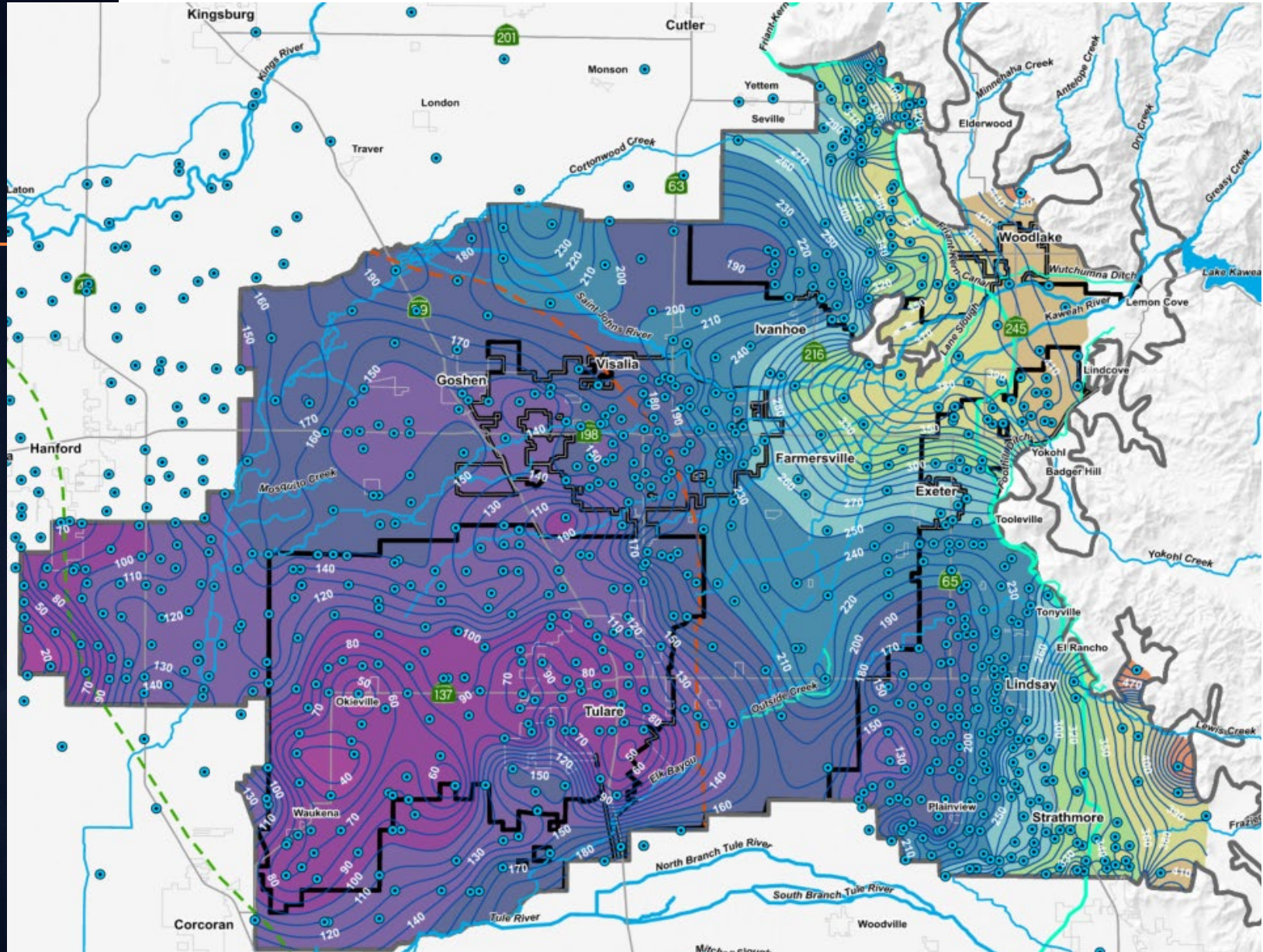
Fall 2023

General gradient is towards the southwest.



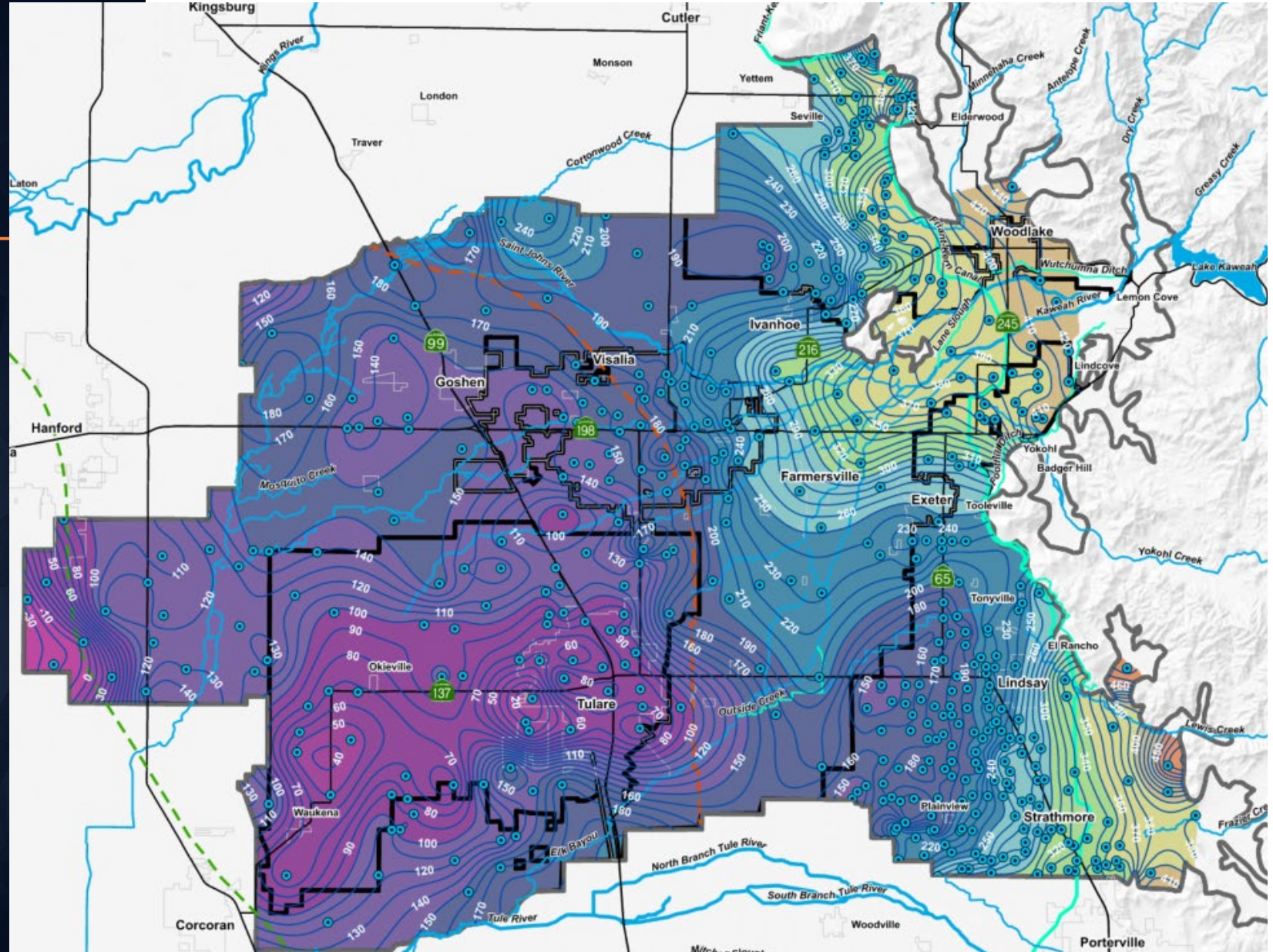
GROUNDWATER CONTOURS

Spring 2024



GROUNDWATER CONTOURS

Fall 2024

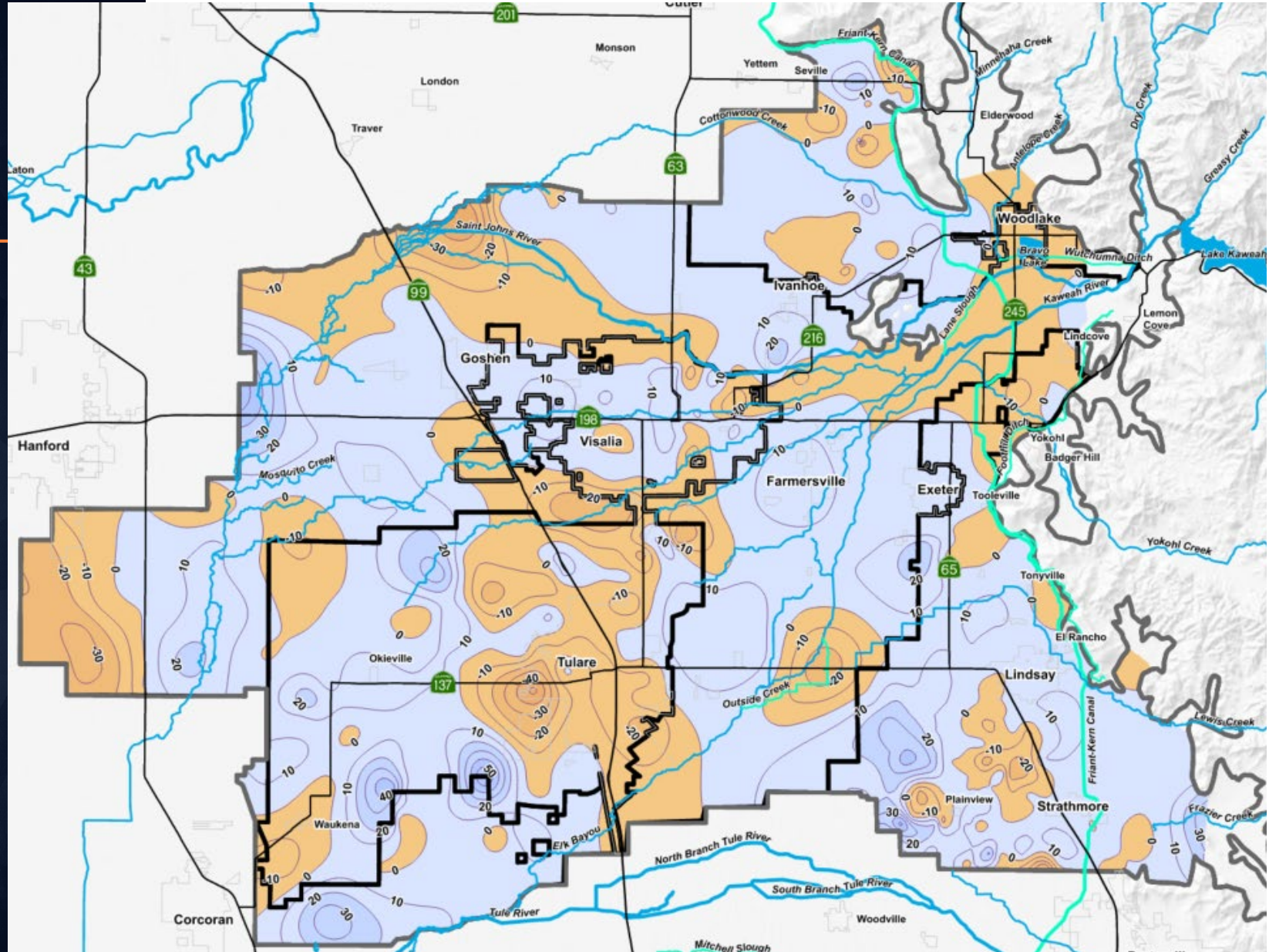


GROUNDWATER CONTOURS

Fall to Fall change

Change +~100,000AF

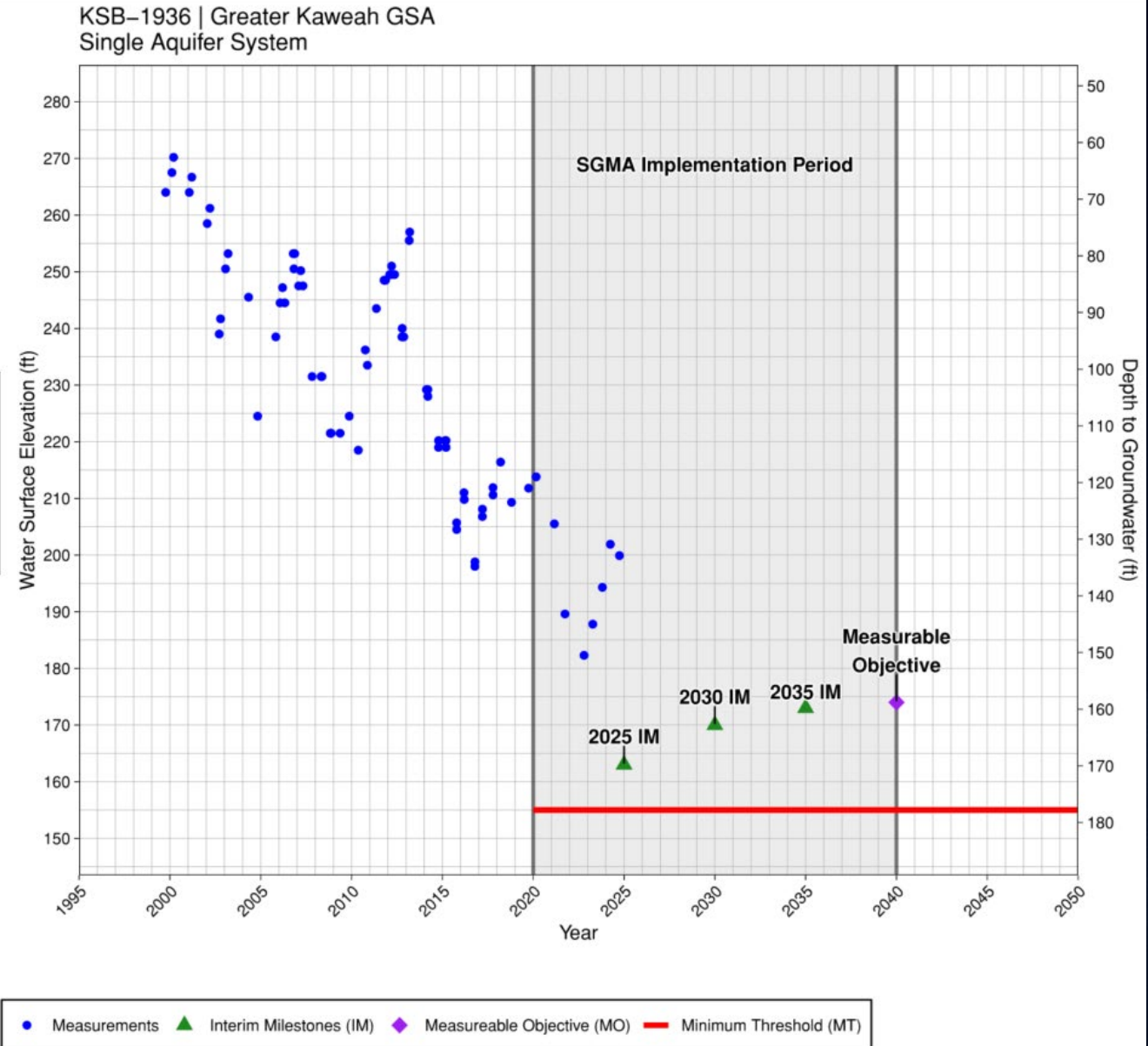
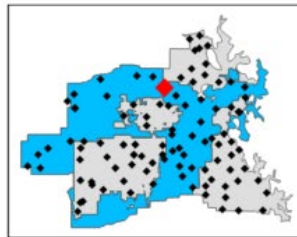
Most declines appear to be in regions that saw prolonged flow/recharge during 2023



HYDROGRAPHS

Most wells have seen rebound due wet years.

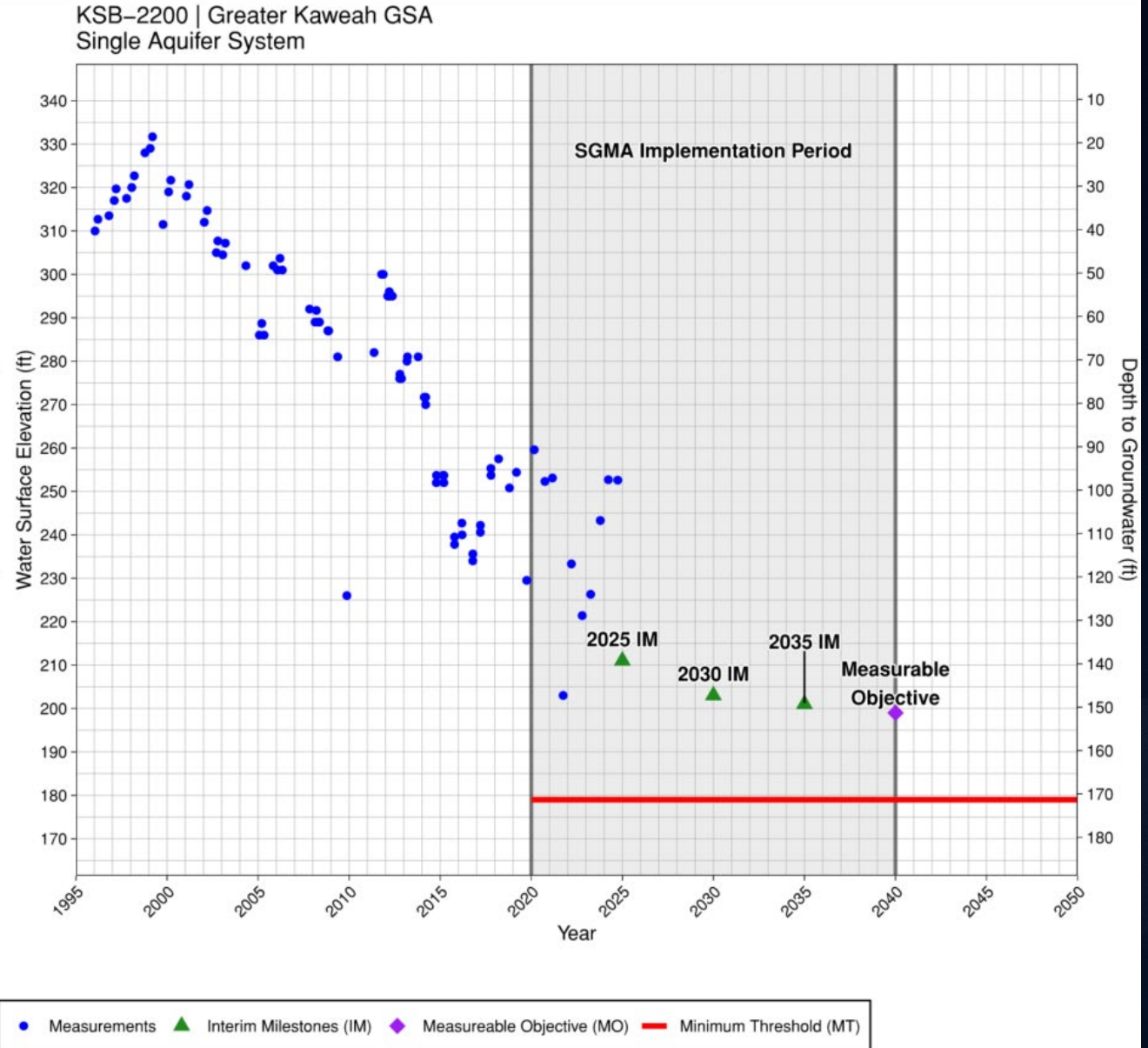
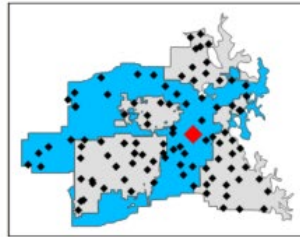
Some flattening of the trend since SGMA.



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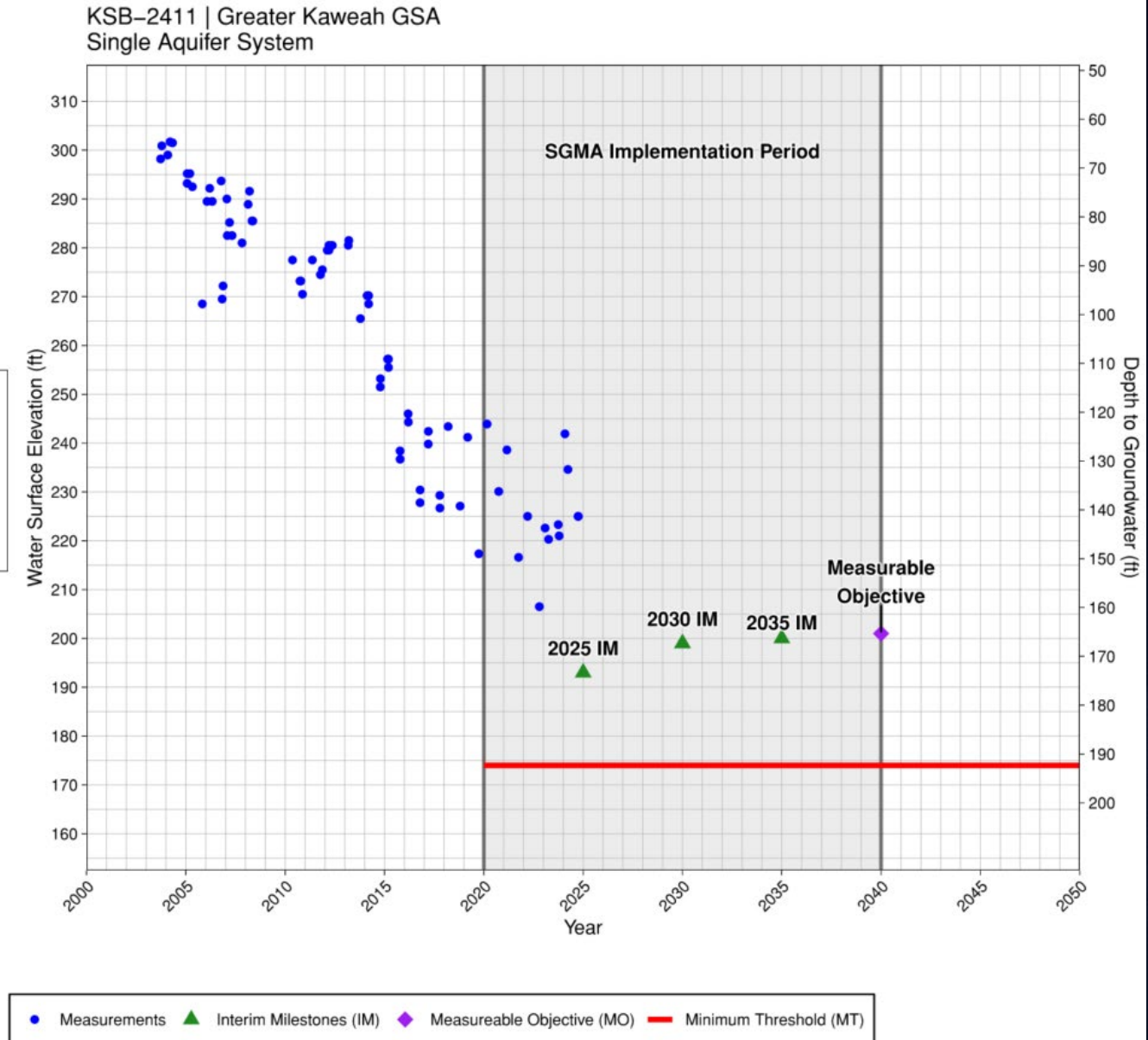
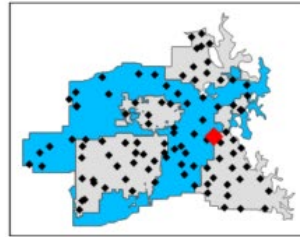
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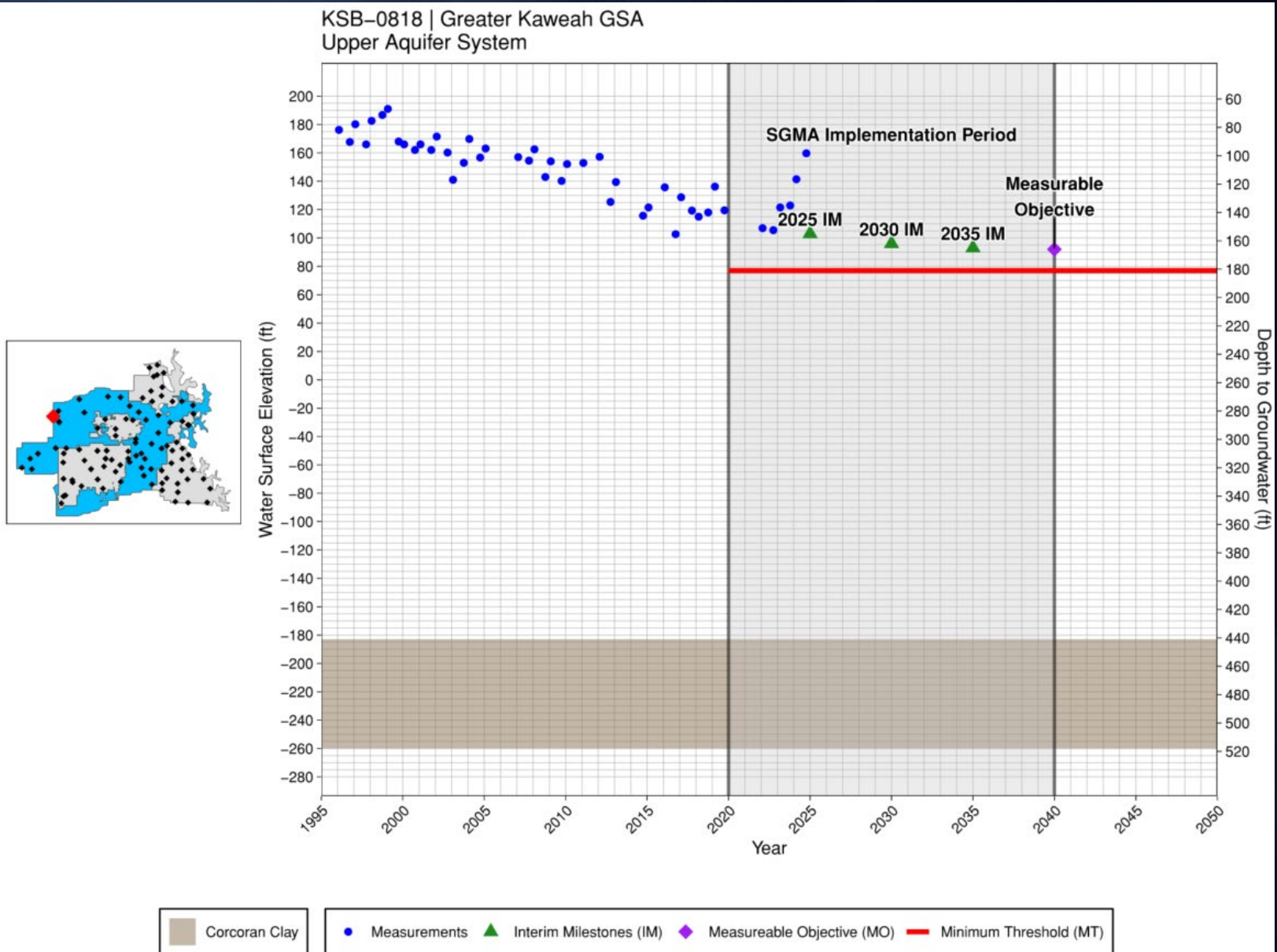
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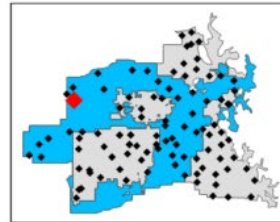
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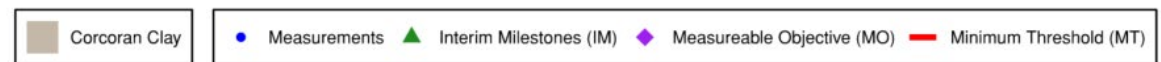
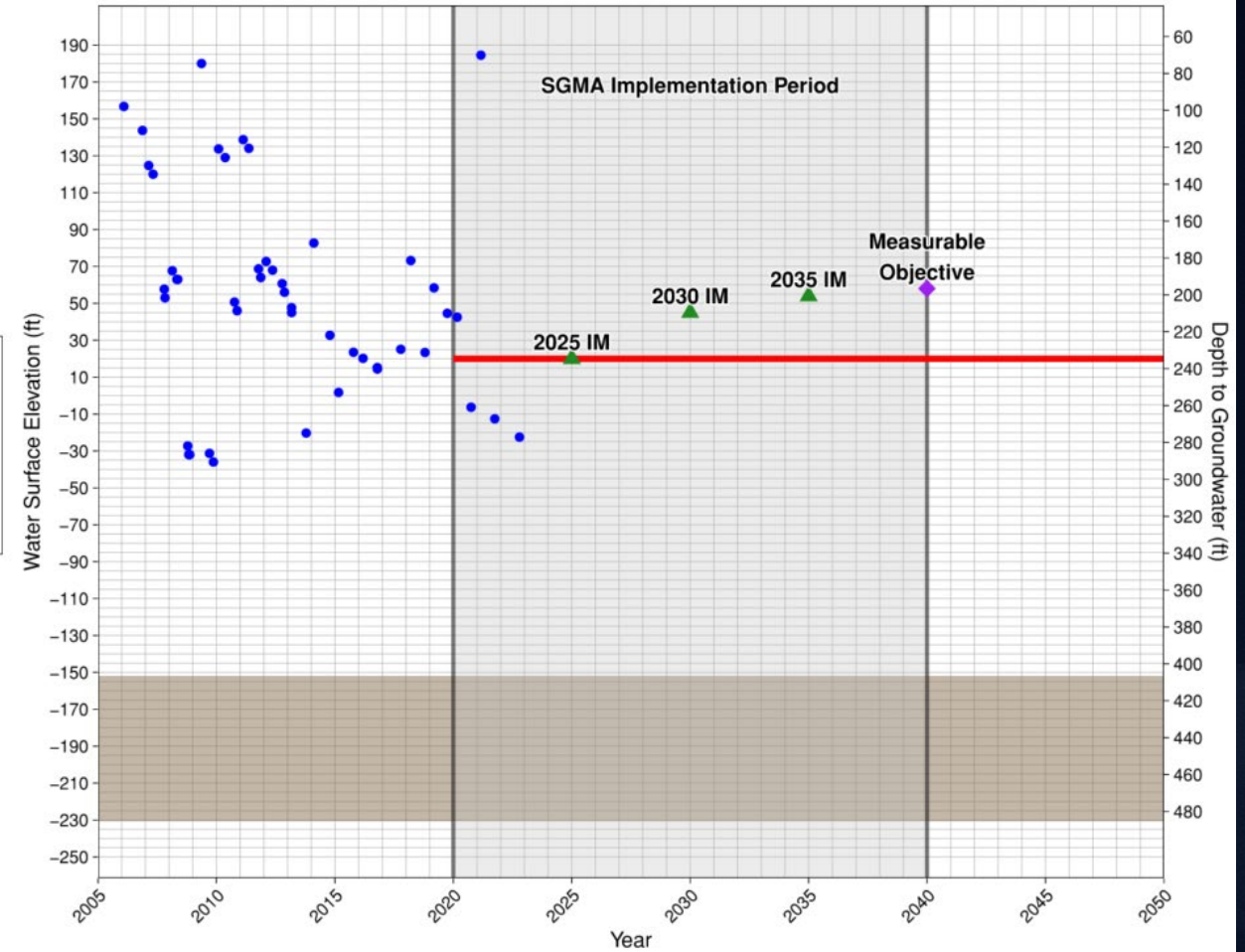
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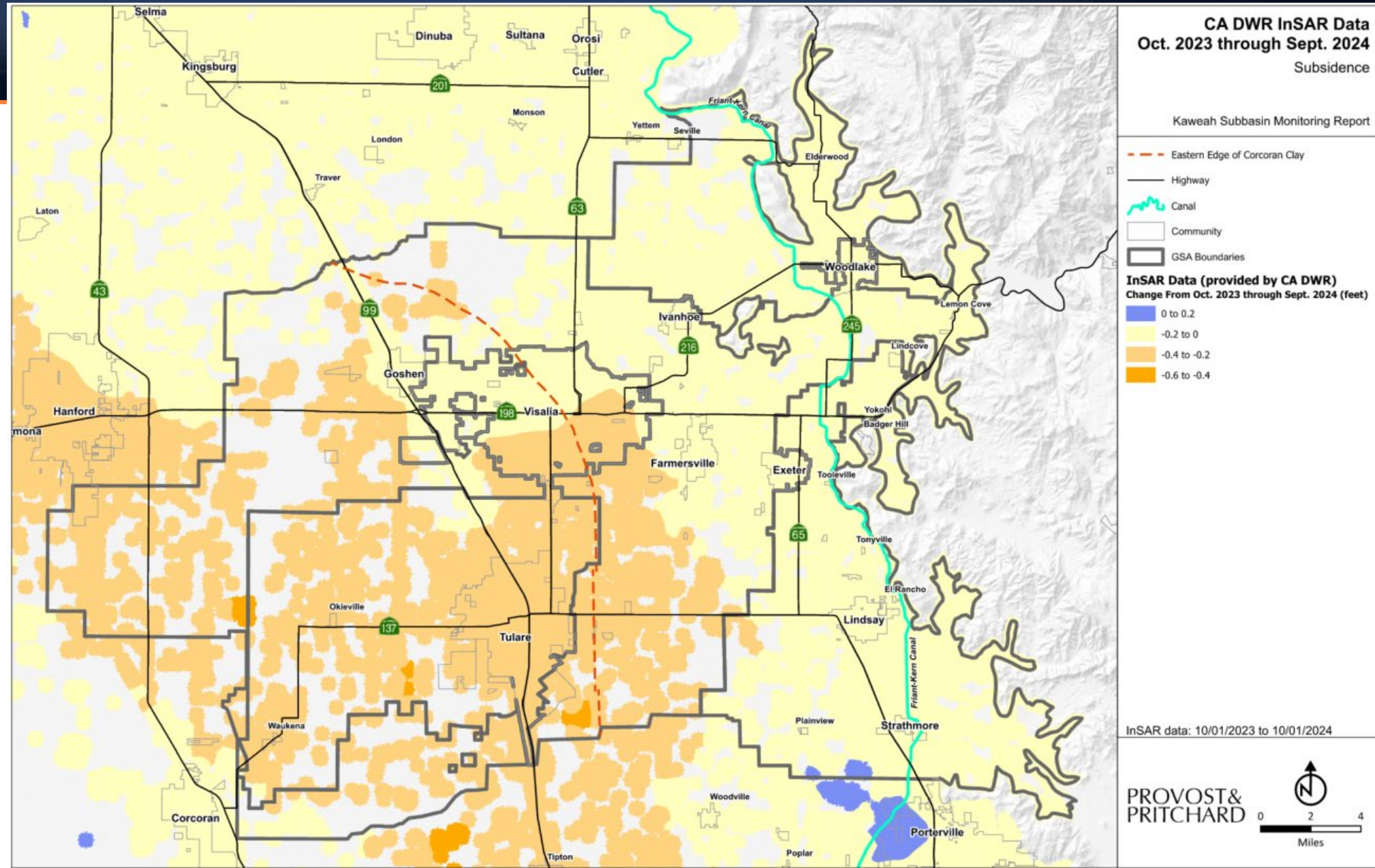
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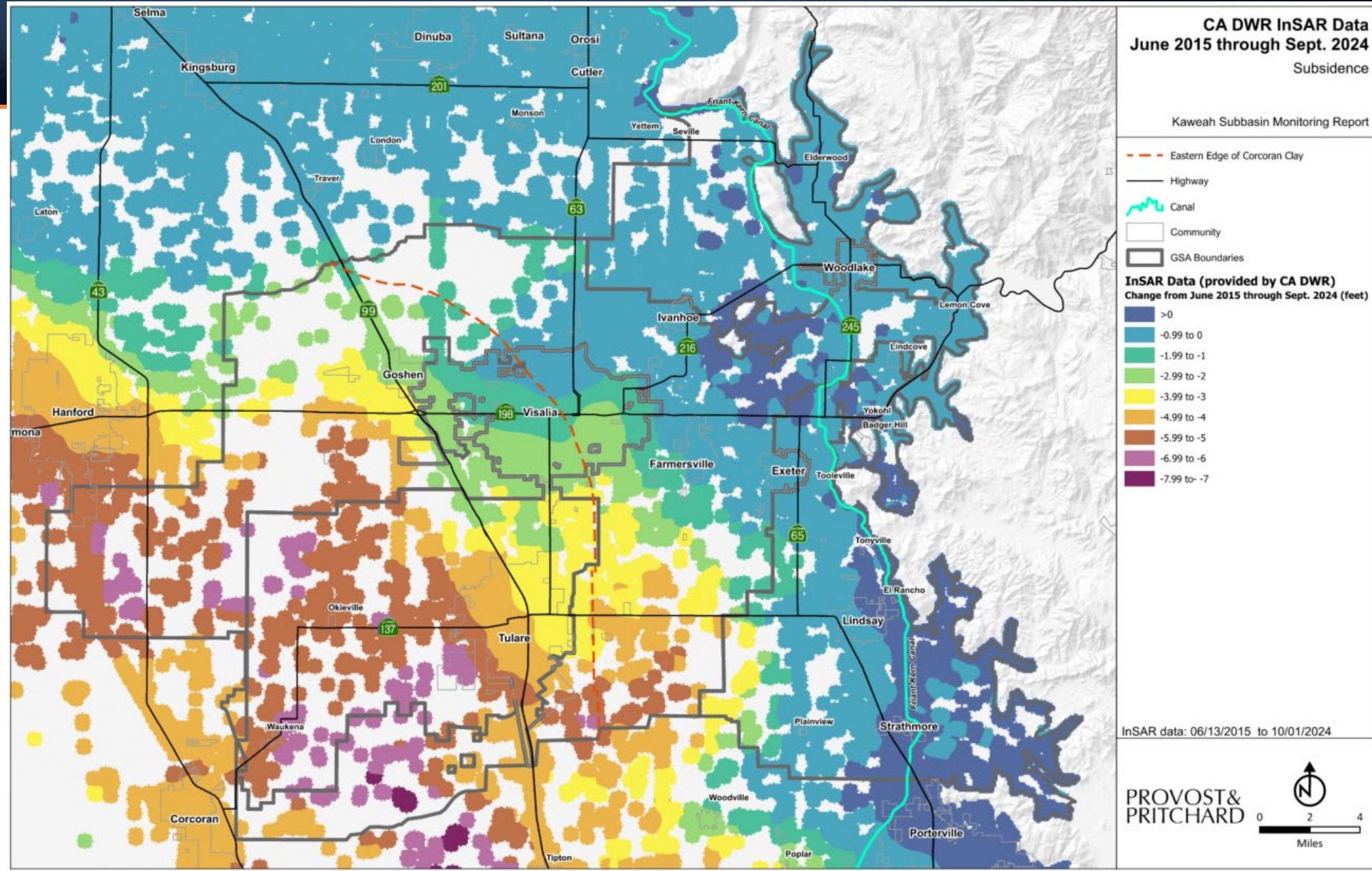
KSB-0905 | Greater Kaweah GSA
Lower Aquifer System



SUBSIDENCE



SUBSIDENCE



SURFACE WATER USE

Last two years have provided more surface water in the Subbasin than the average since SGMA has began.

WY 2024 was close to an average condition for the Subbasin.

Table 3-2 Kaweah Subbasin Surface Water Diversions

Water Year	Total Diversions	Kaweah River	CVP Supplies	Other
2023	1,216,200	917,800	287,200	11,200
2024	589,300	378,100	197,500	13,700
Average*	502,900	321,100	140,200	9,500

**Average based on WY 2015 – 2024.*

Note: All values rounded to nearest 100 Acre-Feet (AF).

Table 3-3 Kaweah Subbasin Surface Water Use

Water Year	Total	Agriculture	M&I	Recharge	Conveyance Losses
2023	1,216,200	670,100	1,400	316,800	227,900
2024	589,300	419,300	1,700	38,400	130,000
Average*	502,800	302,900	1,600	99,600	98,700

**Average based on WY 2015-2024*

Note: All values rounded to nearest 100 Acre-Feet (AF).

GROUNDWATER USE

Ag is largest usage. Groundwater use estimated utilizing LandIQ, surface water, and precipitation data

Urban is metered data.

Some of the other is estimated based on assumptions from 2020 GSP.
(Likely some changes in the future)

Table 3-4 Kaweah Subbasin Groundwater Extraction Summary

Use	Method	Accuracy	WY 2023	WY 2024
Agricultural	Land Use	±20%	216,100	499,000
Urban	Meter	±5%	57,200	59,200
Other	Estimated	±20%	21,800	21,800
		Total	295,100	580,000

Note: All values are rounded to nearest 100 Acre-Feet (AF).

“Urban” includes the metered pumping from larger cities and communities.

“Other” includes Small systems, rural domestic, and M&I.

GROUNDWATER CHANGE IN STORAGE

Table 3-7 Kaweah Subbasin Change in Groundwater Storage Table

							Kaweah Subbasin				
Water Year	Rainfall			EKGSA Change in Storage	GKGSA Change in Storage	MKGSA Change in Storage	Change in Storage	Cumulative Change in Storage Since WY 1997	Cumulative Change in Storage Since WY 2015	Cumulative Change in Storage Since WY 2020	GW Extraction
	Inches	% of Average	Water Period								
2014	4.65	49%	Dry	-155,000	-337,000	-215,000	-707,000	-1,686,000			
2015	6.16	64%	Dry	-140,000	-293,000	-182,000	-615,000	-2,301,000	-615,000		1,067,600
2016	9.77	102%	Normal	-40,000	-80,000	-69,000	-189,000	-2,490,000	-804,000		807,500
2017	13.96	146%	Wet	56,000	512,000	293,000	861,000	-1,629,000	57,000		511,400
2018	6.17	64%	Dry	-53,000	-243,000	-102,000	-398,000	-2,027,000	-341,000		903,800
2019	10.74	112%	Wet	52,000	91,000	66,000	209,000	-1,818,000	-132,000		686,300
2020	8.03	84%	Dry	-41,000	-194,000	-183,000	-418,000	-2,236,000	-550,000	-418,000	1,023,200
2021	4.53	47%	Dry	-141,000	-276,000	-89,000	-506,000	-2,742,000	-1,056,000	-924,000	1,038,200
2022	7.37	77%	Dry	-67,000	-157,000	-118,000	-342,000	-3,084,000	-1,398,000	-1,266,000	924,900
2023	16.8	174%	Wet	220,000	551,000	230,000	1,001,000	-2,083,000	-397,000	-265,000	295,100
2024	11.9	122%	Wet	36,000	45,000	13,000	94,000	-1,989,000	-303,000	-171,000	580,000
Max	22.75	234%		220,000	551,000	335,000	1,001,000				1,067,600
Min	4.42	45%		-155,000	-337,000	-215,000	-707,000				295,100
Average	9.74	100%		-23,000	-32,000	-16,000	-71,000				784,000

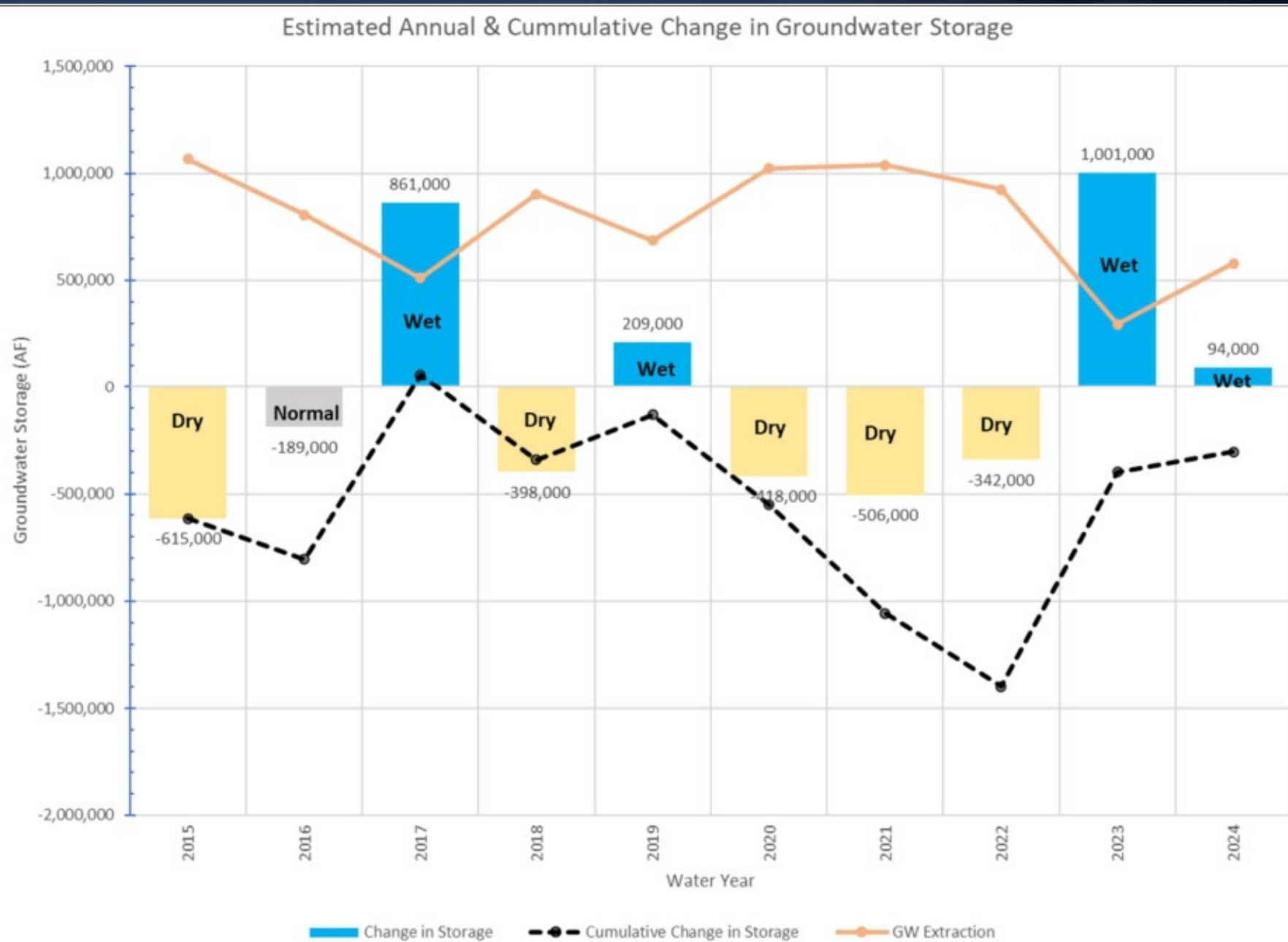


Figure 3-3 Kaweah Subbasin Groundwater Change in Storage

GROUNDWATER LEVEL SMC

Tracking relative to each wells
MO and MT.

Some changes (locations and
SMC) through 2024 GSP
updates.

Table 5-1 Groundwater Levels Monitoring Network Comparison to Sustainable Management Criteria

East Kaweah GSA	Spring 2023	Fall 2023	Spring 2024	Fall 2024
Above MO	7	9	15	18
In MoOF	10	8	9	10
Within 20% of MT	8	4	1	2
Below MT	4	2	1	1
Dry	1	1	0	0
No Data Available	10	16	10	5
Greater Kaweah GSA	Spring 2023	Fall 2023	Spring 2024	Fall 2024
Above MO	26	24	23	18
In MoOF	0	2	0	0
Within 20% of MT	0	0	1	2
Below MT	1	0	0	0
Dry	0	0	1	1
No Data Available	12	13	15	20
Mid-Kaweah GSA	Spring 2023	Fall 2023	Spring 2024	Fall 2024
Above MO	13	16	15	19
In MoOF	1	0	3	2
Within 20% of MT	0	0	1	1
Below MT	0	2	0	0
Dry	0	0	0	0
No Data Available	20	16	16	12
No MO/MT	4	4	0	0

GROUNDWATER QUALITY SMC

Nitrate is most prevalent.

Major changes (locations and constituents) through 2024 GSP updates will change this reporting in WY 2025.

Table 5-2 Groundwater Quality Monitoring Network Comparison to Sustainable Management Criteria

Area	Attribute	Constituent									
		AS	CL	CR6	DBCP	NA	NO3N	PCATE	PCE	1,2,3-TCP	TDS
EKGSA	Count of Exceedances	2	2	0	0	11	21	2	-	2	2
GKGSA	Count of Exceedances	5	1	1	0	0	17	0	0	3	1
MKGSA	Count of Exceedances	5	0	0	0	0	6	0	2	15	0
Subbasin	Count of Total Wells	220	220	220	220	220	220	220	220	220	220
Subbasin	Count of Exceedances	12	3	1	0	11	44	2	2	20	3
Subbasin	Percent of Exceedances	5%	1%	0%	0%	5%	20%	1%	1%	9%	1%

SUBSIDENCE SMC

Different from maps, this tracks cumulative since 2020.

Largest cumulative is a little over 2'

Table 5-7 GKGSa Subsidence Monitoring Summary

Subsidence Monitoring Station	Responsible Agency	MT (cumulative feet)	MO (cumulative feet)	2020 Elevation	2023 Elevation	2024 Elevation	WY2024 Subsidence ¹ (ft)	Cumulative Subsidence ^{1,2} (ft)
DH6686	Cal Trans	3.5	0	318.97	318.52	318.423	0.095	0.547
DH6691	Cal Trans	1.4	0	-	-	-	-	-
DH6719	Cal Trans	9.0	0	-	-	-	-	-
DH6739	Cal Trans	9.0	0	255.65	254.45	254.459	-0.009	1.191
GT2135	Cal Trans	9.0	0	-	-	-	-	-
K001	KDWCD	0.8	0	462.45	462.51	462.55	-0.04	-0.1
K003	KDWCD	2.7	0	363.71	363.72	363.86	-0.145	-0.15
K00X	KDWCD	1.5	0	-	-	-	-	-
K012	KDWCD	9.0	0	223.1	221.25	220.78	0.467	2.32
K015	KDWCD	9.0	0	298.28	297.67	297.69	-0.021	0.59
K016	KDWCD	9.0	0	335.16	334.28	333.98	0.302	1.18
K02A1	KDWCD	0.8	0	414.68	414.83	-	-	-
S228	CHSTP	9.0	0	219.3	217.32	-	-	-

¹Negative subsidence value indicates a rise in surface elevation

²Cumulative subsidence calculated as difference in elevation between 2020 and most recent year

QUESTIONS