



“Plan A” - MKGSA Allocation



Aaron Fukuda

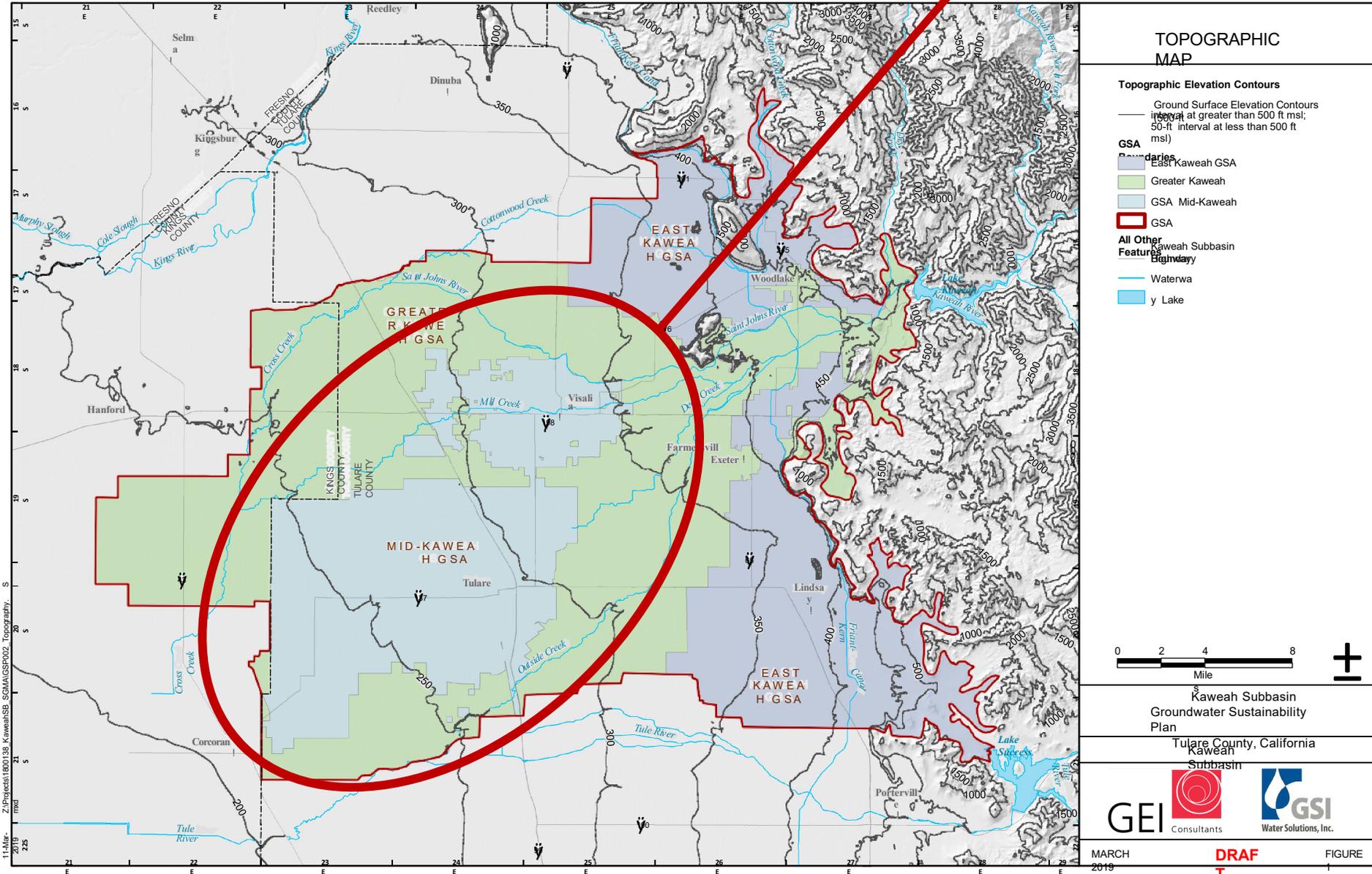
akf@tulareid.org

559-707-8928: Mobile

559-686-3425: Office

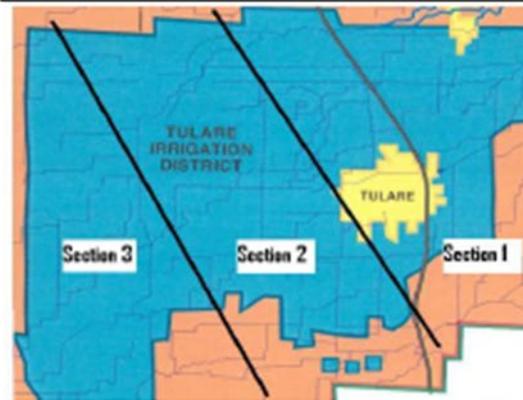
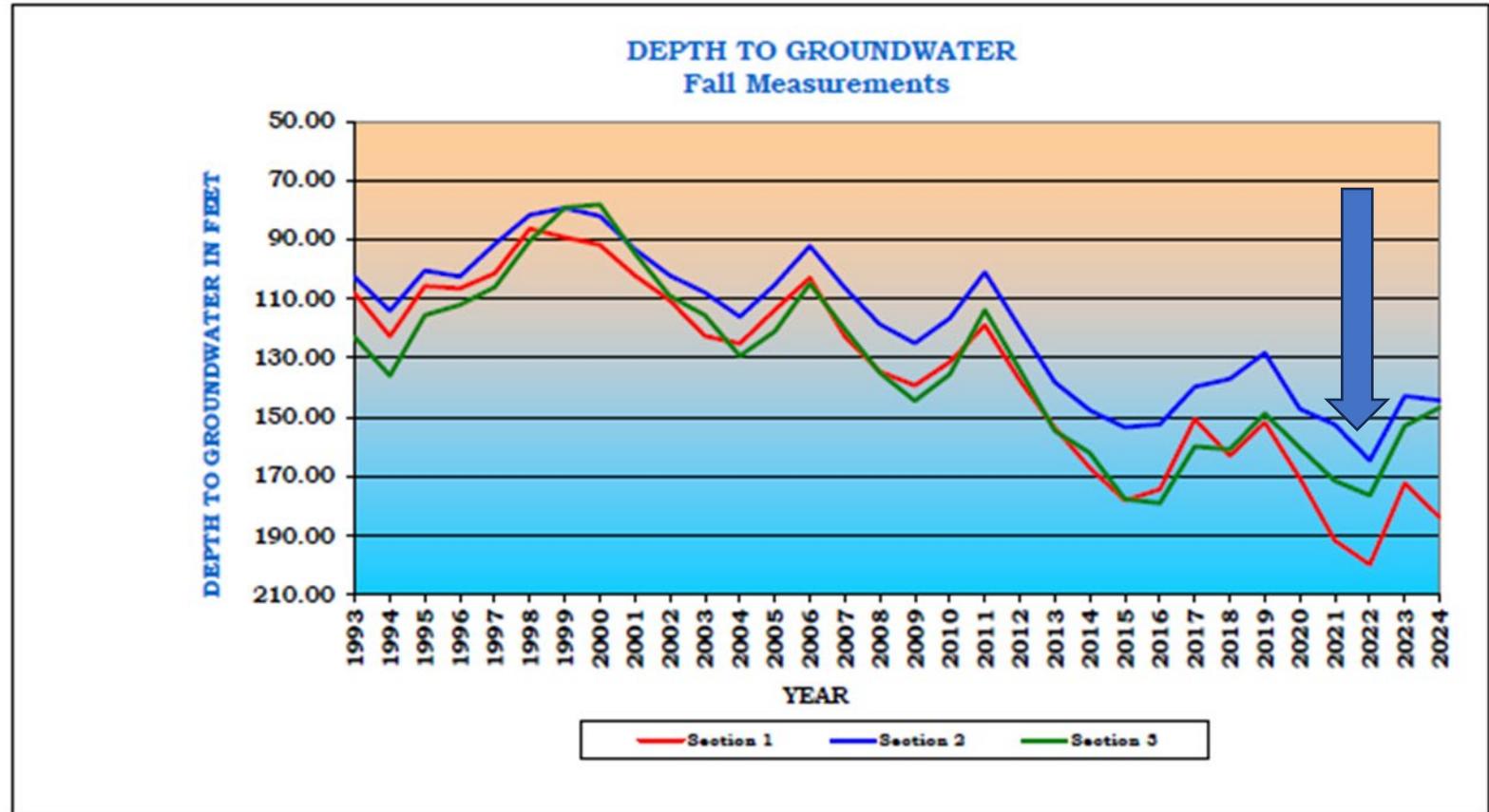
Kaweah Sub Basin

Mid-Kaweah GSA



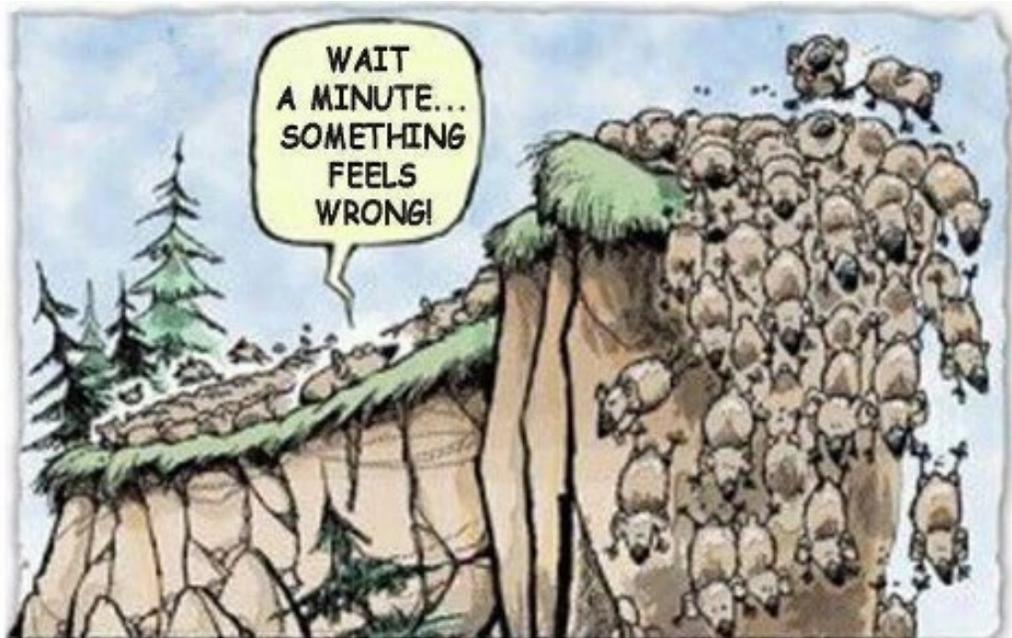
Historical Depth to Groundwater – 2021 Pivot Point

Conditions	Number	Percentage
Trending on Sustainability Path	2	5.8%
Below 2025 IM	2	5.8%
Trending to be below 2025 IM ahead of 2025	16	47%
Below MT	1	2.9%
Dry or no recent Data	13	38%
Totals	34	



	2018	2019	2020	2021	2022	2023	2024
Section 1	163	152	171	192	200	172	184
Section 2	137	128	147	152	165	143	144
Section 3	161	149	160	171	176	153	147
Averages	154	143	159	172	180	156	158

Option #1



Option #2



Plan A / Plan B – GSAs Face Reality

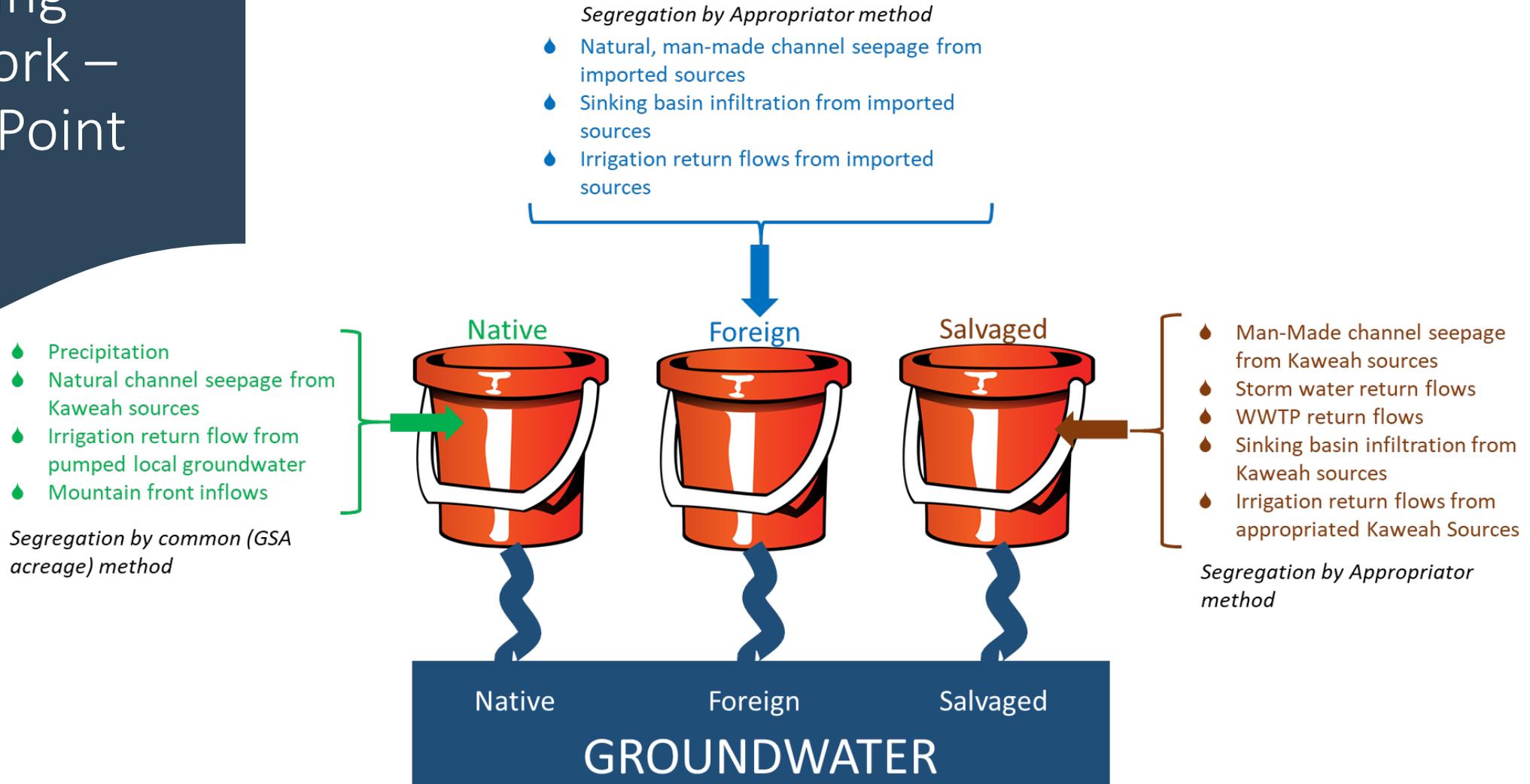
2020 Plan

- Plan A – Projects
- Plan B – Demand Management (Allocations)

Current Plan

- Plan A – Demand Management (Allocations)
- Plan B - Projects

Water Accounting Framework – Starting Point



The Story Begins

SGMA Compliance on The Ground in 2022

We are here to help;

We are going to allocate;

We are going to restrict; and

We are going to charge

You for GROUNDWATER.

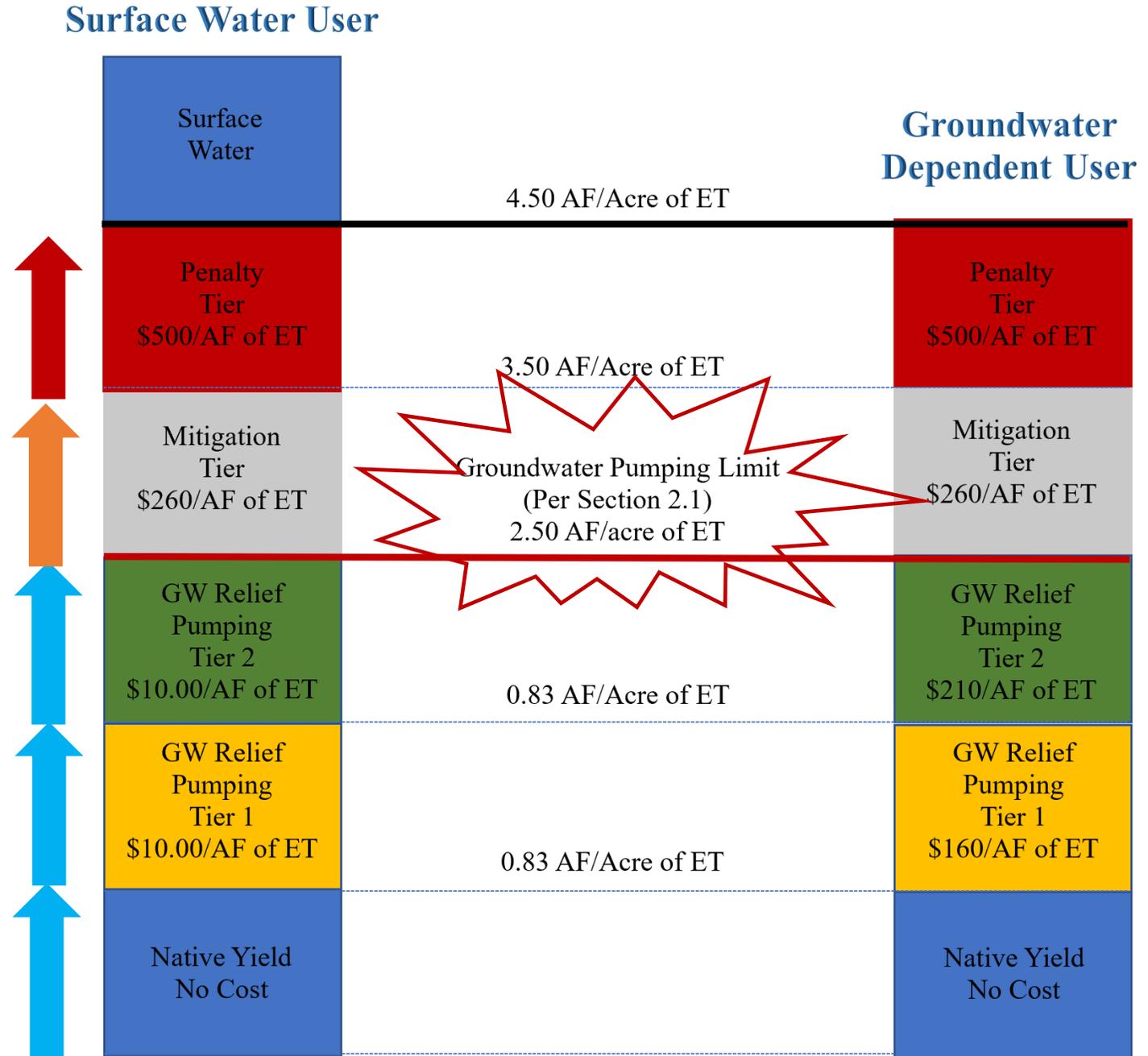


MKGSA Emergency Ordinance



Emergency Ordinance - Groundwater Pumping Limit

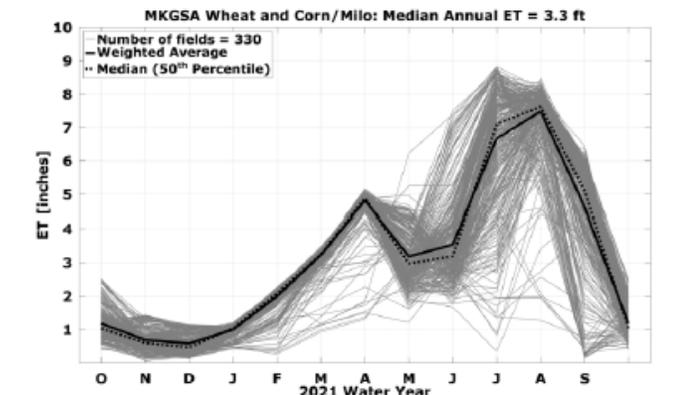
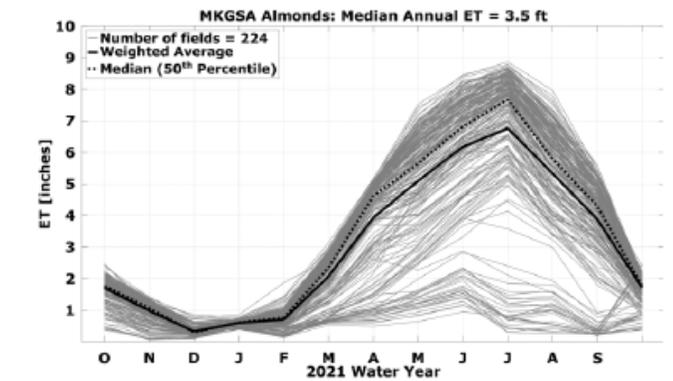
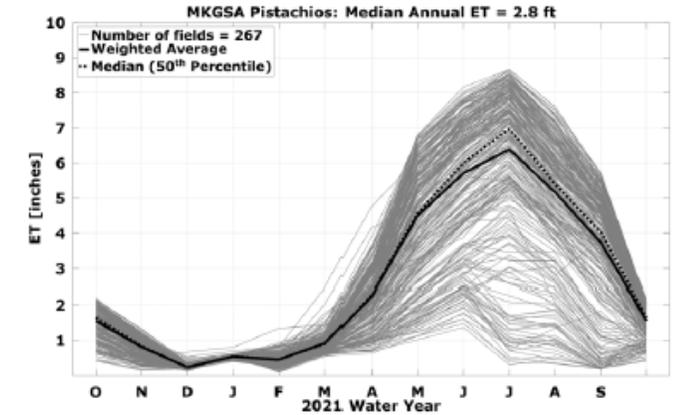
- Pumping Limit (“Cap”): 2.5 AF/acre as ET
 - Native Yield – 10”
 - Relief Pumping Tier 1 – 10”
 - Relief Pumping Tier 2 – 10”
 - Costs: Service Fees and Replacement Fees
- Mitigation Tier – 1 AF/Acre
 - Allows for buffer as we begin the program
 - Pricing based upon cost to replace water
- Penalty Tier – 1 AF/Acre
 - High Penalty Fees
 - Loss of future water allocation on a 1:1 ratio



How Do You Measure?

Land IQ – Crop Evapotranspiration (2021)

Table 1. Total average ET by crop type per in the MKGSA**	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Annual ET	Total	Number
	2020	2020	2020	2021	2021	2021	2021	2021	2021	2021	2021	2021	WY2021	Area	Fields
	[in]	[ft]	[acres]	[# fields]											
Pears-Bartletts*	2.29	1.24	0.30	0.61	0.73	2.29	4.85	6.78	7.83	8.45	7.36	5.45	4.0	15	1
Alfalfa	2.44	1.24	0.68	0.85	1.94	2.89	4.85	5.73	6.81	7.88	6.42	5.32	3.9	9007	185
Wheat and Sudan Grass	0.93	0.63	0.72	1.06	2.21	3.28	4.90	2.95	5.21	8.01	7.83	6.22	3.7	199	5
Walnuts	2.13	1.15	0.28	0.60	0.73	1.46	3.63	6.17	7.37	8.23	6.66	5.12	3.6	4750	188
Prunes*	2.14	1.09	0.22	0.58	0.73	1.60	4.00	5.87	7.77	8.20	6.32	4.94	3.6	53	7
Wheat and Dry Beans*	1.01	0.54	0.24	0.97	2.13	3.35	5.09	4.40	3.77	7.96	7.98	5.14	3.5	57	1
Almonds	1.76	1.06	0.29	0.61	0.76	2.34	4.61	5.65	6.83	7.68	5.79	4.29	3.5	8564	224
Pomegranates*	2.17	1.16	0.26	0.62	0.75	1.39	3.44	5.47	6.69	7.74	6.22	5.18	3.4	3	2
Sudan Grass*	1.17	0.44	0.13	0.58	0.49	0.80	1.52	5.98	7.72	8.29	6.70	6.25	3.3	38	1
Wheat and Corn / Milo	1.03	0.59	0.46	1.04	2.08	3.26	4.89	2.97	3.19	7.10	7.63	5.11	3.3	13471	330
Oats and Corn / Milo	0.92	0.50	0.47	1.07	2.22	3.34	5.00	2.36	3.40	7.46	7.26	4.40	3.2	104	3
Dry Beans and Corn / Milo*	1.77	0.48	0.33	0.81	1.62	3.02	4.60	2.95	2.86	5.90	7.80	5.86	3.2	74	2
Cherries	1.78	0.92	0.27	0.57	0.59	1.54	3.41	5.13	6.49	7.17	5.66	4.26	3.1	300	16
Grapes	1.60	0.78	0.18	0.53	0.41	0.84	1.94	4.96	6.74	7.68	6.33	4.98	3.1	430	14
Bush Berries*	1.64	0.98	0.34	0.67	0.63	1.42	3.19	4.01	6.04	7.34	4.87	3.92	2.9	98	5
Oranges-Navels & Misc*	2.08	1.12	0.52	0.92	1.47	1.76	2.86	4.71	5.79	5.37	4.52	3.87	2.9	79	8
Cotton	0.86	0.31	0.23	0.45	0.32	0.68	1.08	2.62	5.95	8.50	7.73	5.40	2.8	2778	66
Pistachios	1.64	0.83	0.22	0.54	0.45	0.89	2.28	4.58	6.00	6.98	5.41	4.03	2.8	8633	267
Nursery*	2.15	1.06	0.32	0.56	0.59	0.85	1.49	3.18	5.64	7.06	4.74	4.34	2.7	22	2
Wheat and Pumpkins*	2.04	0.49	0.20	0.53	0.84	2.68	4.46	1.94	1.88	4.60	6.44	5.40	2.6	19	2
Lettuce*	1.14	0.52	0.33	0.75	1.24	1.57	2.55	3.18	3.99	4.46	5.79	4.82	2.5	47	2
Field Corn	0.84	0.34	0.24	0.47	0.38	0.75	1.44	5.54	7.72	8.36	2.92	0.27	2.4	5127	117
Native Pasture	1.35	0.62	0.17	0.60	0.67	1.43	2.73	2.86	3.88	4.68	3.71	2.62	2.1	115	29
Milo Maize (single crop)*	1.17	0.65	0.22	0.56	0.64	1.70	3.16	3.58	4.65	4.24	2.77	1.39	2.1	4	2
Oranges-Valencia*	0.88	0.58	0.29	0.60	0.74	0.87	1.22	2.54	4.07	5.04	4.10	2.64	2.0	51	3
Wheat (single crop)	1.02	0.45	0.25	0.87	2.01	3.16	4.76	2.71	2.42	1.61	1.98	0.38	1.8	624	23
Strawberries*	0.70	0.38	0.30	0.51	0.47	1.24	2.55	3.27	4.18	4.64	1.83	0.48	1.7	3	2
Tangerines*	0.88	0.56	0.24	0.46	0.34	0.79	1.18	2.72	4.08	3.58	3.08	2.49	1.7	33	5
Truck Crops*	0.78	0.37	0.13	0.55	0.88	1.79	2.67	2.12	2.79	3.26	2.47	1.39	1.6	15	2
Idle Crop Land*	1.50	0.75	0.32	0.58	0.48	1.22	2.20	2.23	2.58	1.67	1.44	0.53	1.3	37	2
Non-Agricultural Land	0.70	0.37	0.20	0.48	0.50	1.23	1.92	1.60	1.95	1.72	1.99	0.81	1.1	1073	59
No Crop During Year	0.75	0.35	0.19	0.47	0.35	0.98	1.46	1.50	2.01	1.42	1.19	0.46	0.9	711	32



Kaweah Subbasin Water Dashboard – Grower Online Water Accounts

Shared View

Dashboard

WD1779

Tulare Irrigation District
Aaron Fukuda
(559) 686-3425

Member Menus

- Home
- Water Accounts
- Farm Map
- Explore Usage

WA0000027: Tulare Irrigation District

P.O. Box 1920 Tulare, CA 93275
Aaron Fukuda · 5596863425 · akf@tulareid.org

Water Account Summary Table Definitions

*Mid-Kaweah GSA Emergency Groundwater Extraction Ordinance is in effect as of May 1, 2022.
East Kaweah GSA Emergency Groundwater Allocation Policy is effective retroactively from October 1, 2021, through September 30, 2022.
Greater Kaweah GSA approved Rules and Regulations setting a groundwater pumping cap for water year 2023 on September 27th, 2022. Call (559)302-9987 if you have any questions.*

Groundwater Sustainability Agency	Billing Period	Billing Usage to Date	Water Supply	Usage to Date		Last Year's Usage		Parcel Acres	Field Acres
				Land IQ ET Oct 2021 - August 2022		Land IQ ET Oct 2020 - Sept 2021			
Mid-Kaweah GSA	May 22 - Sep 22	5.3 AF	251.15 AF	29.23 AF	0.52 AF/field ac	28.66 AF	0.51 AF/field ac	10037	56.76
Greater Kaweah GSA	N/A	N/A	N/A	0.02 AF	0.00 AF/field ac	0.09 AF	0.00 AF/field ac	69393	0.00

Water Supply Summary Table Definitions

MKGSA 2022 (May 22 - Aug 22)

+ Total Water supply	251.15 AF
+ Precipitation	0.23 AF
Precipitation Credit <small>80% of total precipitation for (May 22 - Aug 22)</small>	0.23 AF
+ Surface Water Deliveries	<i>Not Currently Available</i>
+ Groundwater Allocations (2.5 AF/Ac)	250.93 AF
Native <small>SW: 0.84 AF/parcel ac</small>	<small>\$0/AF</small> <small>SW: 84.31 AF</small>
Tier 1 <small>SW: 0.83 AF/parcel ac</small>	<small>\$10/AF</small> <small>SW: 83.31 AF</small>
Tier 2 <small>SW: 0.83 AF/parcel ac</small>	<small>\$10/AF</small> <small>SW: 83.31 AF</small>
Mitigation Tier <small>\$260/AF</small>	More Information
Penalty Tier <small>\$500/AF</small>	More Information
+ Groundwater Credits	TBD
+ Recharge and Banking Credits and Debits	TBD
+ Prohibited Tier 3 Groundwater Pumping	
Dairy Operations	<i>Not Currently Available</i>

WA0000027: Tulare Irrigation District Field & APN Map

[Getting Started Guide](#)

Contact Us

Roadmap

Tulare ID / MKGSA 2023 Recharge - Allocations

The Negative Turned Positive



1,300 Acres of
Recharge Ponds



300 miles of unlined
earthen canals

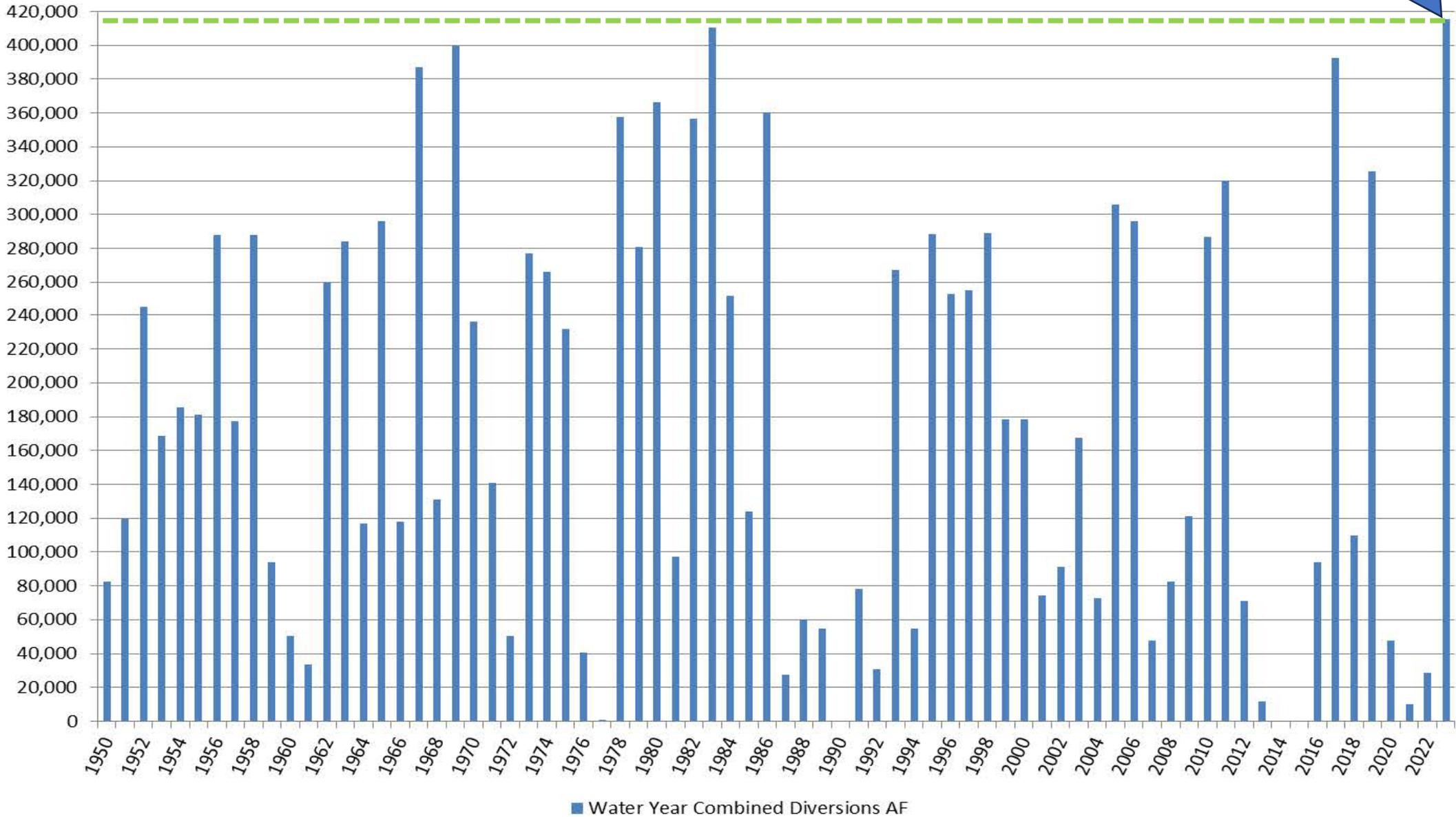


Winter / Over
Irrigation

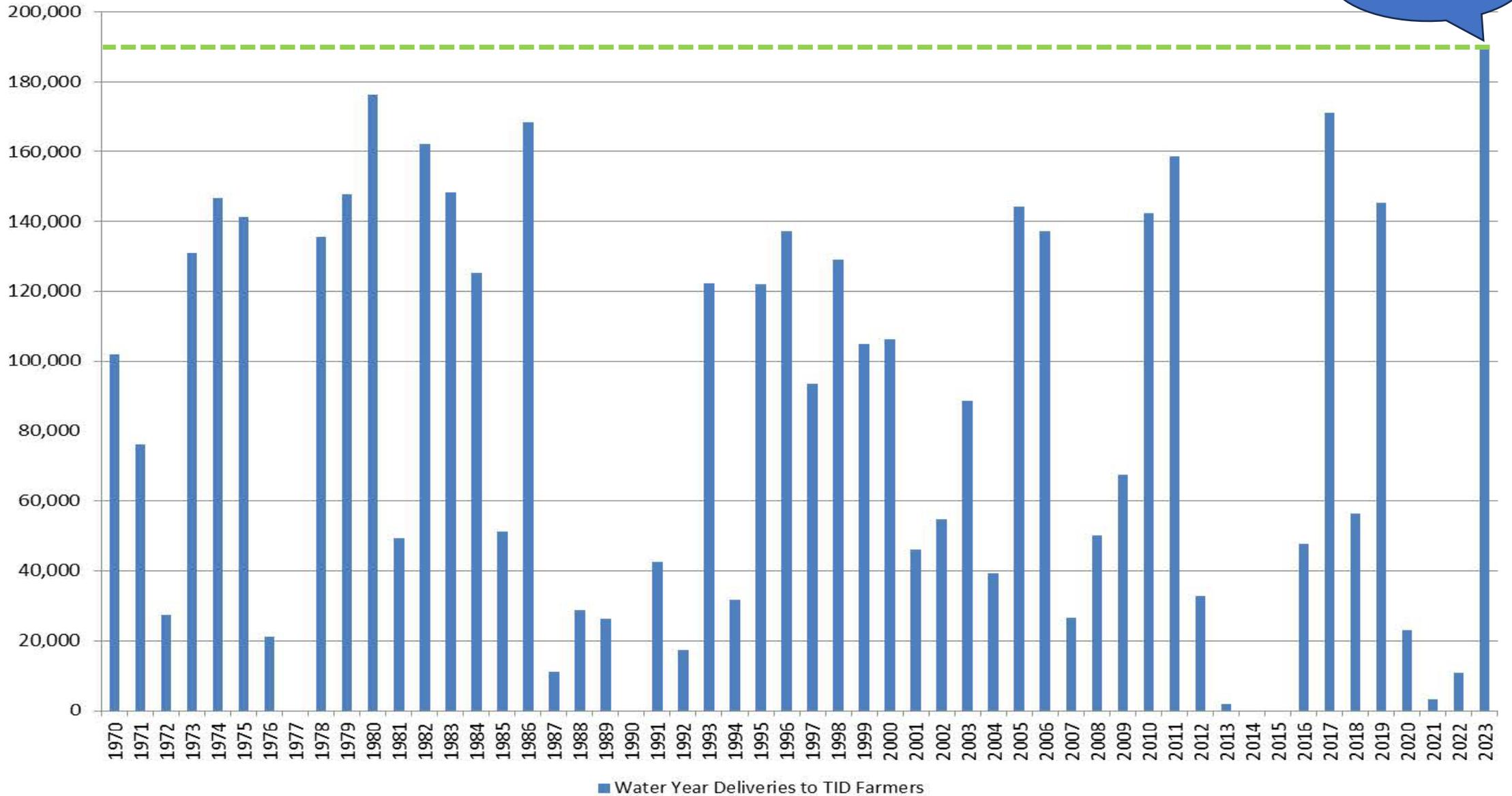


Water Year Combined Diversions to TID Acre-Feet 1950 - 2023

414,000 AF

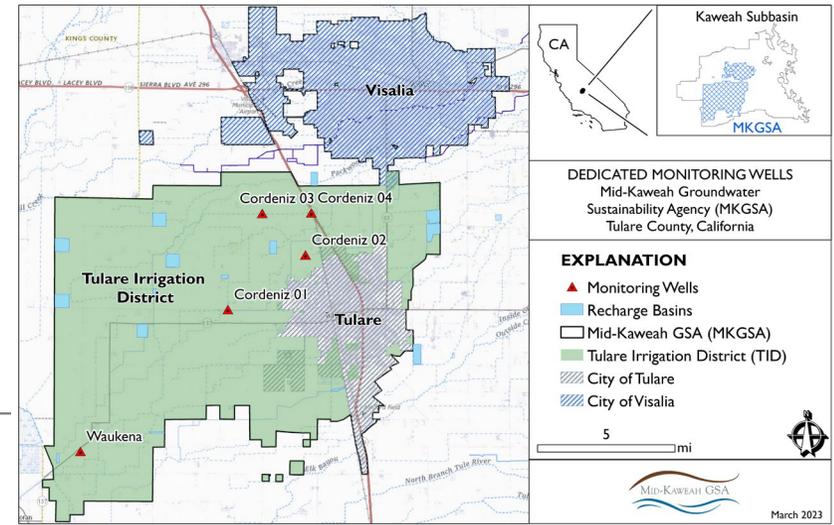
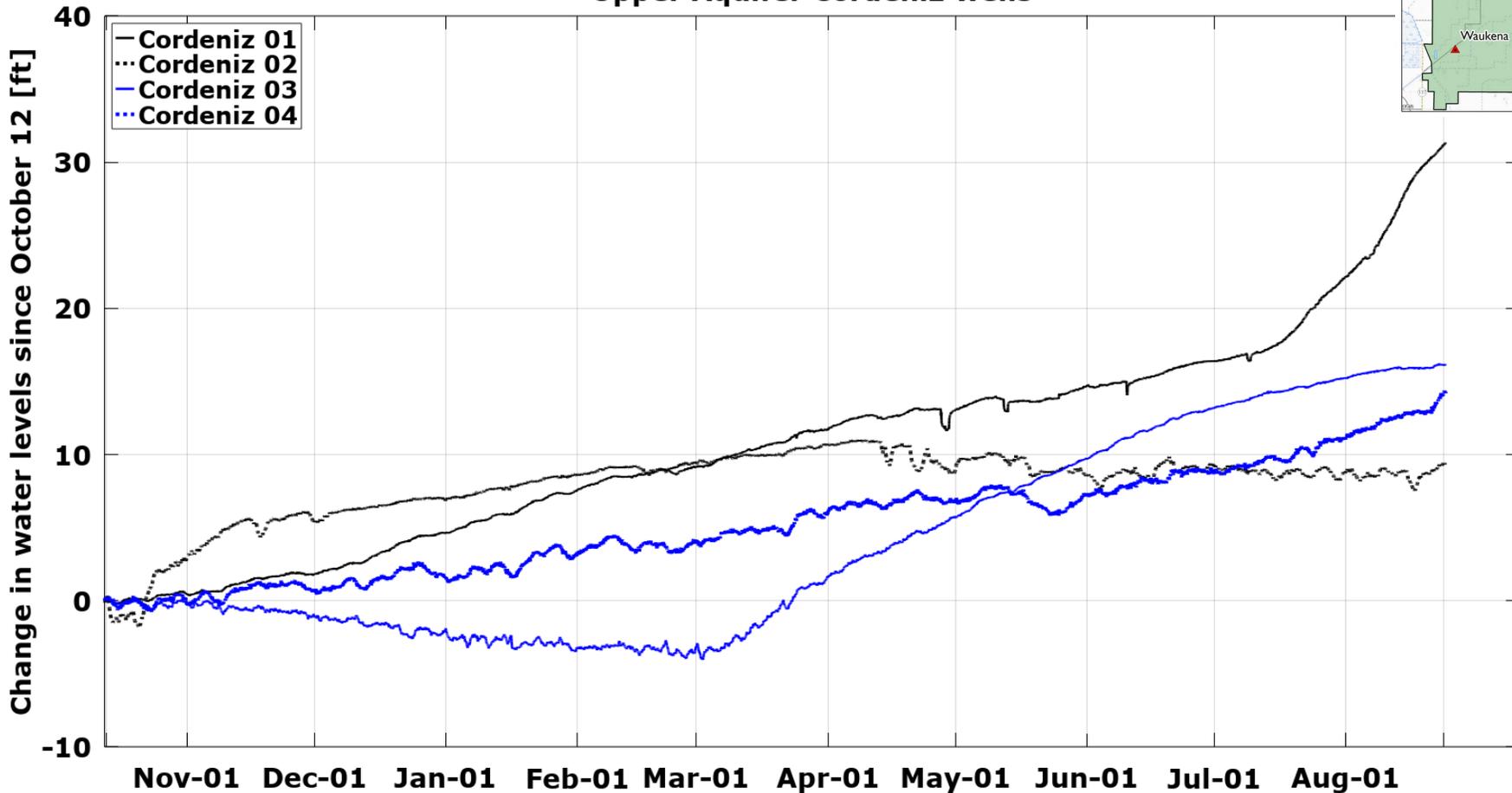


Water Year Deliveries to TID Farmers Acre-Feet 1970-2023



Summer Groundwater Levels

Upper Aquifer Cordeniz wells



The MKGSA Allocation Story Takeaways

Don't call it Demand Management – Growers hate growing less crops

Keep your cellphone charged – engage with growers and landowners

- Listen to your landowners and incorporate their feedback
- Don't develop the program in your office

All of the GSAs in a subbasin have to do it together

Makes sure you build tools to support your growers

- Measurement that is uniform and easy
- Tracking that is accessible and intuitive

Be ready to make mistakes, correct, and move on

Aaron Fukuda – Tulare Irrigation District

(559) 686-3425

akf@tulareid.org

www.tulareid.org



Thank You

