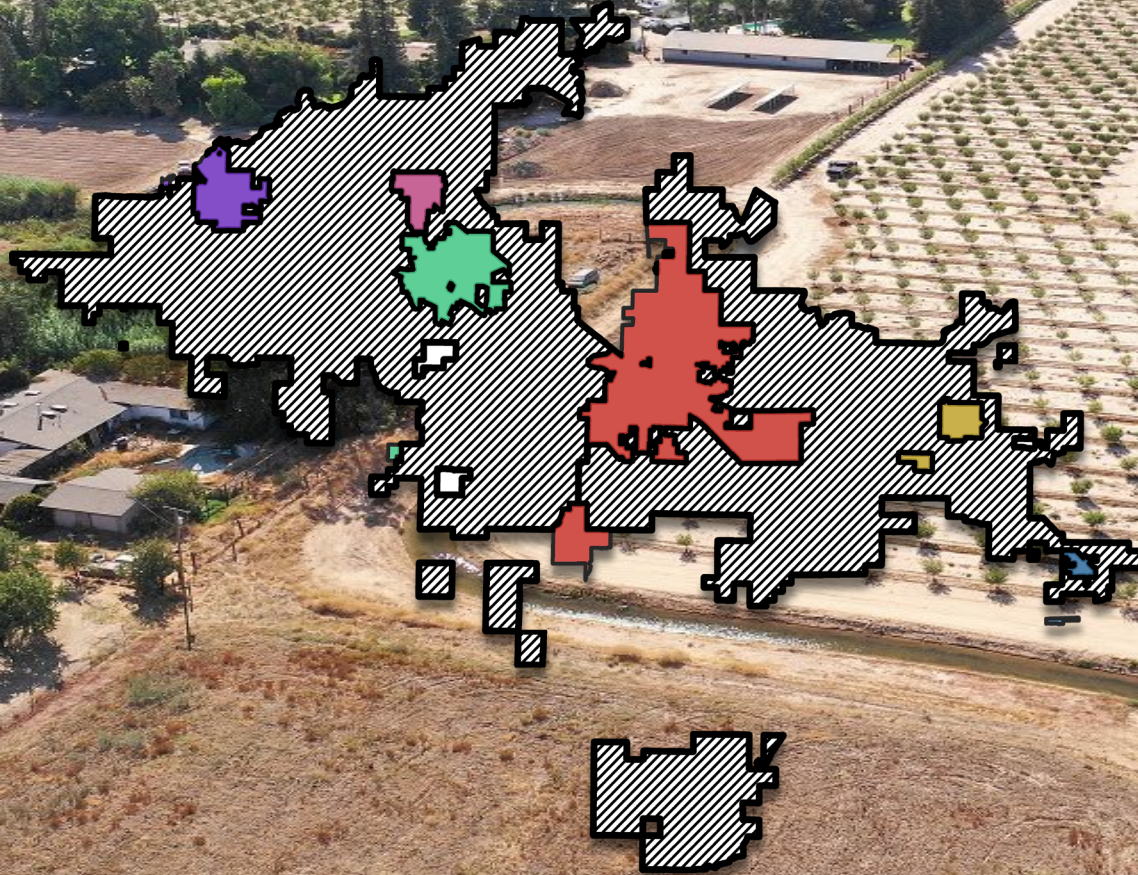


Merced Irrigation-Urban Groundwater Sustainability Agency



Grants Update
February 6, 2023

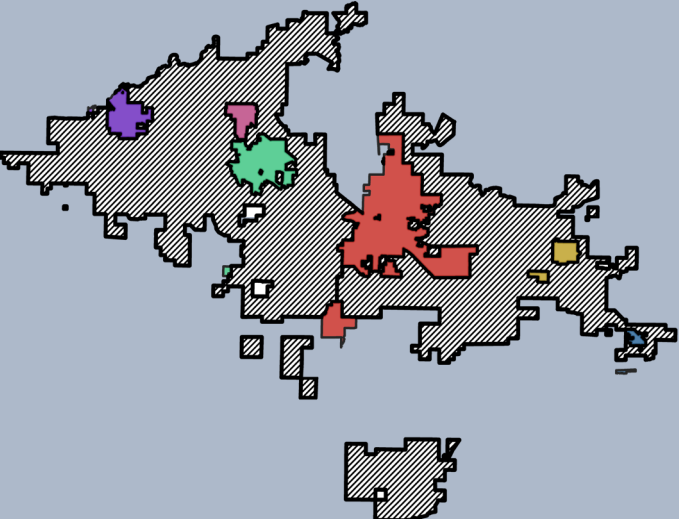
Ongoing:

- SDAC (\$1.9M)
 - El Nido Monitoring Wells (completed)
 - Meadowbrook Intertie Feasibility Study (completed)
 - Planada Recharge Basin Pilot (ongoing)
- Prop 68 Planning
 - Remote Sensing Decision Support Tool
 - Addressing GSP Data Gaps:
 - Data Gaps Plan (completed)
 - Incorporate existing wells
 - New monitoring well
- Prop 68 Implementation
 - El Nido Siphon Replacements (construction completed)
- 2021 Implementation – Round 1
 - Model Updates
 - Monitoring Well Installations
 - Crocker Control Structure Rehabilitation

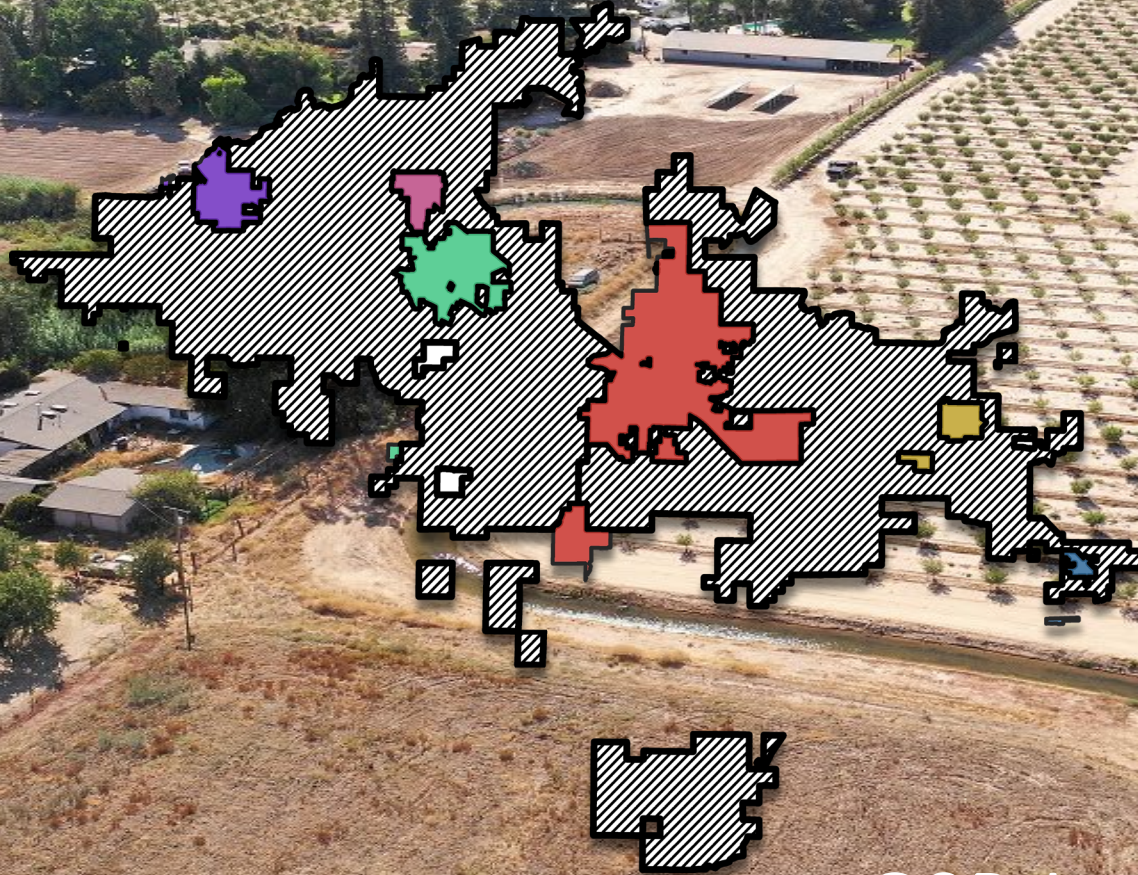
Upcoming:

- 2021 Implementation Round 2 (Draft award announced in August):
 - 400 flow meters and telemetry (~\$5,000,000)
 - Pilot Small-Scale Recharge (\$1,850,000)
 - Reverse Tile Drain
 - Dual Irrigation System
 - 1-2 Acre Basin/Surface Spreading
 - Vadose Zone Infiltration Well (Dry Well)

Questions?



Merced Irrigation-Urban Groundwater Sustainability Agency



GSP Implementation Policies
February 6, 2023

Background

- Merced GSP submitted to DWR in January 2020.
 - GSAs to begin implementation upon submittal.
 - DWR identified deficiencies in January 2022 – *revised GSP submitted by GSAs in July, 2022
- Five MIUGSA-specific Stakeholder Guidance Committee Meetings held between August 2021 and May 2022.

Program Component	Policy Recommendation Based on SGC Feedback
Length of Allocation Period	Maximum allocation period of 3 years.
Borrow-ahead	Should not be allowed at this time.
Carry-over	Some amount of carry-over is acceptable. Limit to be set per allocation period.
Penalties	Penalties should be enforced.
Pooling	Separate parcels owned by a common irrigator can be pooled within specified geographic regions (zones).
Limited Allocation Year	MIUGSA Board should have the power to set allocation limits during exceptionally wet or dry periods.
Trading	Should not be allowed at this time.

Driver(s)

- Basin conditions and regulations are driving the need to adopt and implement policies immediately.
 - Governor's Executive Order N-7-22 (Well Permitting)
 - Well Consistency Determinations for Merced County's approval of well permits
 - Prepare MIUGSA constituents for the future
 - Achieve sustainability within the GSA
 - Drought

DRAFT - General Concepts

- Monitoring and Enforcement
 - Well and Acreage Registration
 - Measurement
 - Flow Meters
 - Evapotranspiration
 - Allocation
 - Board Establishment of Allocation, and Implementation
 - Pooling
 - Carryover
 - Limited Allocation Year
- Accounting and Reporting
 - Tracking evapotranspiration, precipitation, surface water, or other water use
 - Flow meter reading and reporting
 - Determination of official groundwater use amount to count against allocation

Policies Approved To-Date

- Groundwater Allocation
 - 3.3 AF/AC from April 1, 2023-December31, 2025
- Well Registration
 - Well Construction Information
 - Location
 - Area Well Services

Well Registration Schedule		
Public/Private	Well Type	Registration Date
All New Wells		5/01/2022 (or 90 days after built)
Private	Agriculture >10 Acres	04/01/2023
	Agriculture <10 Acres	01/01/2024
	Municipal/Small Water Systems	04/01/2023
	Industrial/Commercial	04/01/2023
	De Minimis Residential	12/31/2024
Public	Agriculture	12/31/2022
	Municipal/Small Water Systems	12/31/2022
Public/Private	Other	12/31/2024

Policies in Development

- Monitoring and Enforcement
 - Measurement
 - Flow Meters
 - Evapotranspiration
 - Allocation
 - Pooling
 - Carryover
 - Limited Allocation Year
- Accounting and Reporting
 - Tracking evapotranspiration, precipitation, surface water, or other water use
 - Flow meter reading and reporting
 - Determination of official groundwater use amount to count against allocation
 - Water budget reconciliation

How Will It Work?

Flow Meters

- MIUGSA currently estimates ~1,500 private agricultural/irrigation wells within its boundaries.
- Approx. 25-30,000 acres do not use surface water, MIUGSA estimates 140 owners within this acreage.
- Schedule based on:
 - Acreage served by well.
 - Allow deferment, if well not used. (Penalties if deferment granted, but well is used)

Well Meter Schedule		
Public/Private	Well Type	Registration Date
All New Wells		5/01/2022 (or 90 days after built)
Private	Agriculture >60 Acres	03/01/2024
	Agriculture >40 Acres	12/31/2024
	Agriculture >20 Acres	12/31/2025
	Agriculture <10 Acres	06/30/2025
	Municipal/Small Water Systems	03/01/2024
	Industrial/Commercial	12/31/2024
	De Minimis Residential	NOT APPLICABLE
Public	Agriculture/Irrigation	12/31/2025
	Municipal/Small Water Systems	03/01/2024
Public/Private	Other	12/31/2024

Flow Meters, ctd.

- Approved list of meter installation types in consideration of:
 - Manufacturer specifications
 - Accuracy (Similar to SBX 7-7)
 - $\pm 5\%$ for new meters
 - $\pm 12\%$ for existing meters, otherwise correct installation or change meter
 - Full pipe
 - Accessibility
- Other:
 - Must totalize groundwater only
 - Separate meter for each farm unit.
- Costs:
 - Installation at grower's expense OR MIUGSA? If MIUGSA, need revenue and subject to prevailing wages, etc.
 - MIUGSA is pursuing grant funding to assist with flow meter installations.

Groundwater Usage

- Groundwater well **with** verified flow meter: MIUGSA will track groundwater usage through flow meter readings, and use ET for Sensitivity and Reasonableness Checks.
- Groundwater wells **without** verified flow meter: MIUGSA will calculate water balance using best available information, including but not limited to:
 - Remote sensing technology from satellite imagery (OpenET)
 - Surface water delivery records from water provider (Merced Irrigation District)
 - Estimated irrigation efficiencies
- Tracked at parcel level.

Groundwater Usage	
Metered	GW Use:
Yes	Directly Measured
No	Calculated*

*Etc (Consumption) x Irrigation Efficiency – Surface Water Applied – Precipitation = Groundwater Used

Groundwater Usage, ctd.

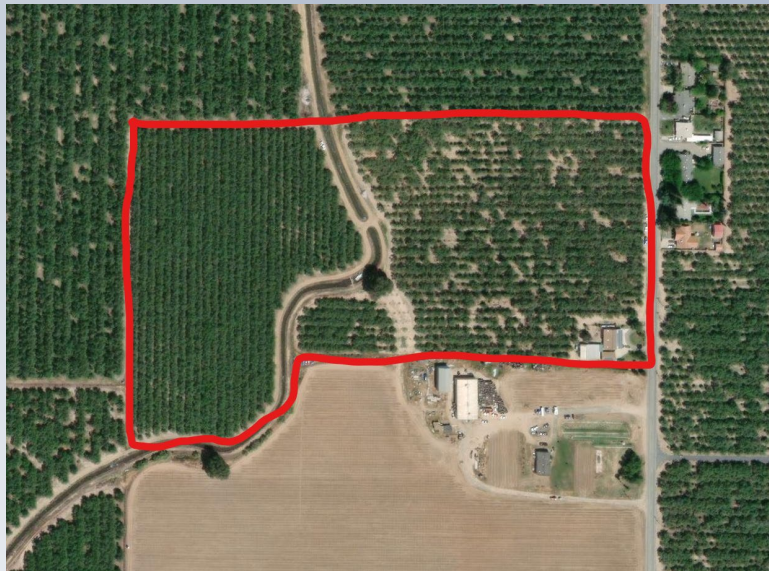
- Flow meter reading and reporting
 - Groundwater extraction tracked on a monthly basis.
 - GSA staff pursuing opportunities to install Advanced Metering Infrastructure (AMI)/Telemetry.
- Groundwater extraction will be tracked at parcel level

Water Budget/Accounting

- Production from groundwater wells with verified flow meter will rely on direct flow meter readings.
- “Supply” in accounting platform to include:
 - Groundwater Allocation
 - Pooled Water
 - Developed Supply
 - Recharge Credit
 - Precipitation

Example 1:

	Example 1
Location	Livingston Cressey Rd & Cressey Way
Gross Acres	19.1
Crop	Almonds
Well(s) Registered?	No



Year	Water Year Type	Surface Water Allocation (AF/AC)	ET		Surface Water Deliveries		Balance (GW Used)	
			AF	AF/AC	AF	AF/AC	AF	AF/AC
2018	Below Normal	No Alloc.	63.70	3.34	0.00	0.00	63.70	3.34
2019	Wet	No Alloc.	59.90	3.14	0.00	0.00	59.90	3.14
2020	Dry	No Alloc.	71.80	3.76	0.00	0.00	71.80	3.76
2021	Critically Dry	2.5	76.40	4.00	0.00	0.00	76.40	4.00
2022 (through June)		2.25	36.90	1.93	0.00	0.00	36.90	1.93

Example 2:

	Example 2
Location	Westside Rd & Washington Blvd
Gross Acres	114.60
Crop	Sweet Potatoes
Well(s) Registered?	Unknown



Year	Water Year Type	Surface Water Allocation (AF/AC)	ET		Surface Water Deliveries		Balance (GW Used)	
			AF	AF/AC	AF	AF/AC	AF	AF/AC
2018	Below Normal	No Alloc.	165.50	1.44	346.05	3.02	-180.55	-1.58
2019	Wet	No Alloc.	197.00	1.72	252.12	2.20	-55.12	-0.48
2020	Dry	No Alloc.	221.60	1.93	399.57	3.49	-177.97	-1.55
2021	Critically Dry	2.5	235.00	2.05	318.82	2.78	-83.82	-0.73
2022 (through June)		2.25	72.00	0.63	0.00	0.00	72.00	0.63

Example 3:

	Example 3
Location	Gurr Rd & Dickinson Ferry Rd
Gross Acres	174.1
Crop	Cotton
Well Present	Yes



Year	Water Year Type	Surface Water Allocation (AF/AC)	ET		Surface Water Deliveries		Balance (GW Used)	
			AF	AF/AC	AF	AF/AC	AF	AF/AC
2018	Below Normal	No Alloc.	275.40	1.58	331.36	1.90	-55.96	-0.32
2019	Wet	No Alloc.	408.30	2.35	349.72	2.01	58.58	0.34
2020	Dry	No Alloc.	410.50	2.36	420.17	2.41	-9.67	-0.06
2021	Critically Dry	2.5	294.80	1.69	295.07	1.69	-0.27	0.00
2022 (through June)		2.25	162.80	0.94	97.16	0.56	65.65	0.38

Example 4:

Example 4	
Location	Walnut Ave & Vine Ave
Gross Acres	55.74
Crop	Sweet Potatoes and Almonds
Well(s) Registered	Unknown



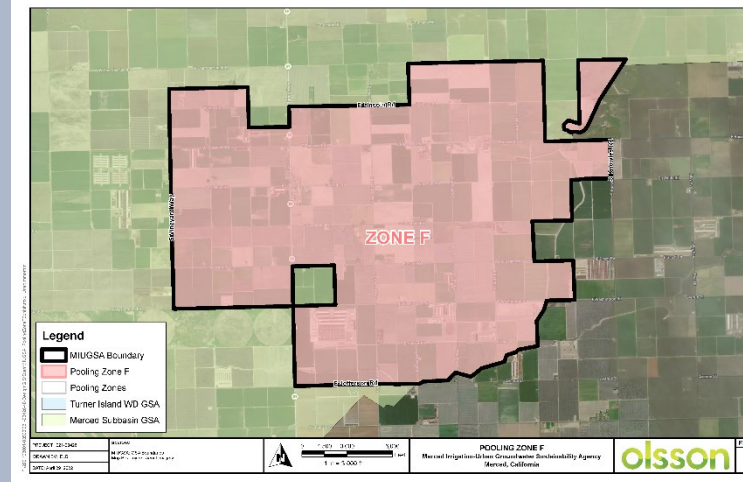
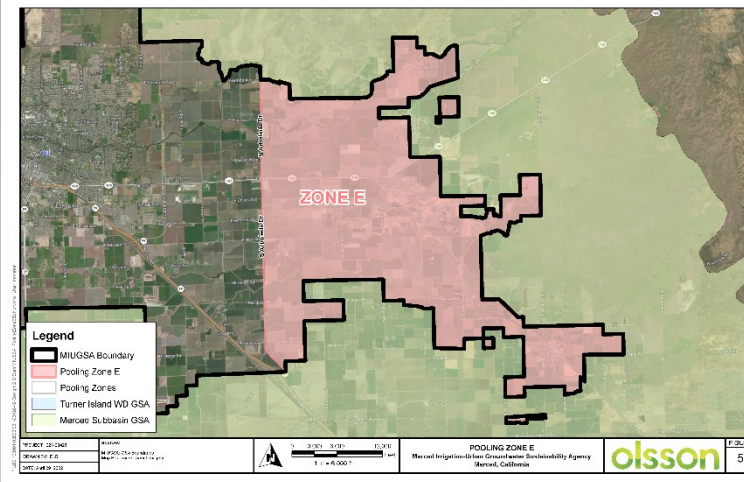
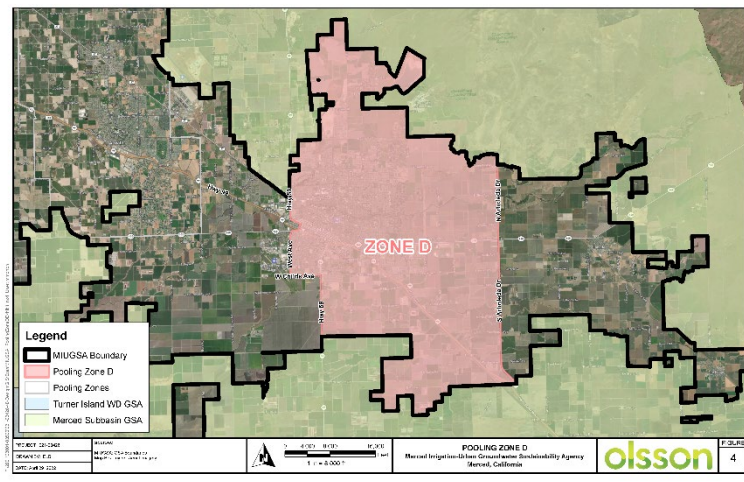
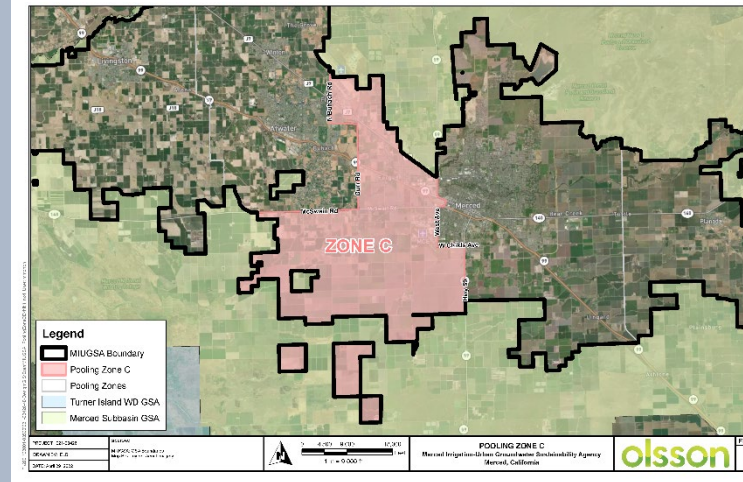
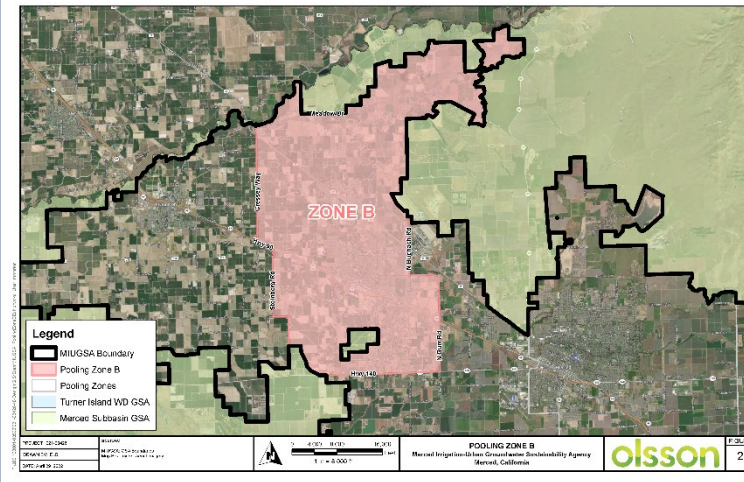
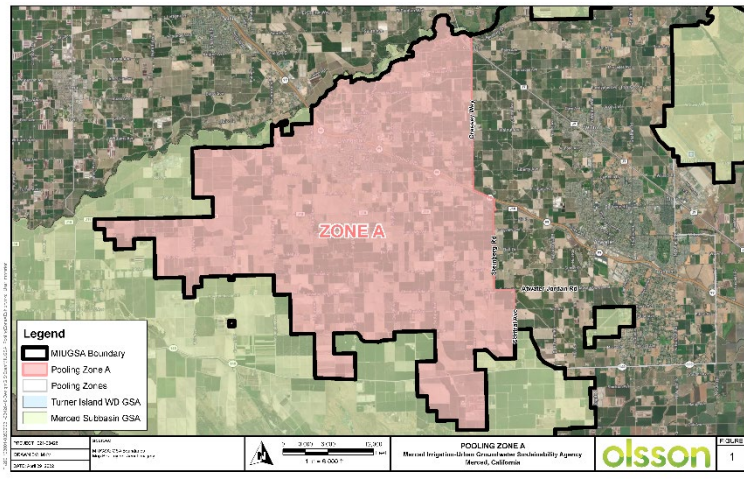
Year	Water Year Type	Surface Water Allocation (AF/AC)	ET		Surface Water Deliveries		Balance (GW Used)	
			AF	AF/AC	AF	AF/AC	AF	AF/AC
2018	Below Normal	No Alloc.	59.80	1.07	0.00	0.00	59.80	1.07
2019	Wet	No Alloc.	113.30	2.03	120.80	2.17	-7.50	-0.13
2020	Dry	No Alloc.	121.20	2.17	126.83	2.28	-5.63	-0.10
2021	Critically Dry	2.5	81.60	1.46	50.21	0.90	31.39	0.56
2022 (through June)		2.25	50.90	0.91	2.11	0.04	48.79	0.88

Pooling

- Landowner and MIUGSA to establish “accounts” representing owned acreage (necessary to understand farm units, tenants, etc.) between accounts.
- Six zones identified (next slide)
- Pooling will be allowed with limitations primarily based on basin characteristics.
- Landowner to request pooling water between zones.

	To Zone:					
	A	B	C	D	E	F
From Zone:	A	--	No	No	No	No
	B	Yes	--	No	No	No
	C	Yes	Yes	--	No	No
	D	Yes	Yes	Yes	--	No
	E	Yes	Yes	Yes	Yes	--
	F	No	No	No	No	No

Pooling Zones



Carryover

- Carryover
 - Allocated groundwater (natural yield)
 - 6% annual loss, updated by Board for each 3-year allocation period.
 - Loss applies annually, starting after allocation period ends.
 - Could be accomplished through using surface water.
 - Developed/imported water
 - 6% annual loss, updated by Board for each 3-year allocation period.
 - Loss applies annually, starts calendar year after credit is applied to account.
 - Could be accomplished through recharge; to be managed through separate policies.

Carryover, ctd.

	Scenario 1			Scenario 2			Scenario 3		
Year	Added (Recharge, Idling)	Carryover %	Carryover Amount	Added (Recharge, Idling)	Carryover %	Carryover Amount	Added (Recharge, Idling)	Carryover %	Carryover Amount
1	100	94	94	300	94	282	0	94	0
2	100	94	182	0	94	265	0	94	0
3	100	94	265	0	94	249	300	94	282
Total	300		265	300		249	300		282

Monitoring and Enforcement

■ Enforcement

- Warnings and Penalty System for:
 - Unauthorized use of groundwater
 - Over-extraction
 - Tampering
 - Interference
 - Not meeting deadlines (i.e. registration and metering)

■ Other

- Water Waste
- Others?

Infraction	Water Code Section (SGMA)	Description
Overextraction	10732(a)(1)	\$500/AF
Rule violation	10732(a)(2)	Up to \$1,000 plus, \$100 for each additional day after 30 day notice.

Monitoring and Enforcement - Penalties

10732. (b) (1) A groundwater sustainability agency may bring an action in the superior court to determine whether a violation occurred and to impose a civil penalty described in subdivision (a).

(2) A groundwater sustainability agency may administratively impose a civil penalty described in subdivision (a) after providing notice and an opportunity for a hearing.

(3) In determining the amount of the penalty, the superior court or the groundwater sustainability agency shall take into consideration all relevant circumstances, including, but not limited to, the nature and persistence of the violation, the extent of the harm caused by the violation, the length of time over which the violation occurs, and any corrective action taken by the violator.

(c) A penalty imposed pursuant to this section shall be paid to the groundwater sustainability agency and shall be expended solely for purposes of this part.

(d) Penalties imposed pursuant to this section are in addition to any civil penalty or criminal fine under any other law.

Next Steps

- Outreach/Messaging
- Present recommendations to MIUGSA Board
- Next SGC Meeting(s)
 - Potential Workshops
- Other potential items/issues to consider?

Questions?

