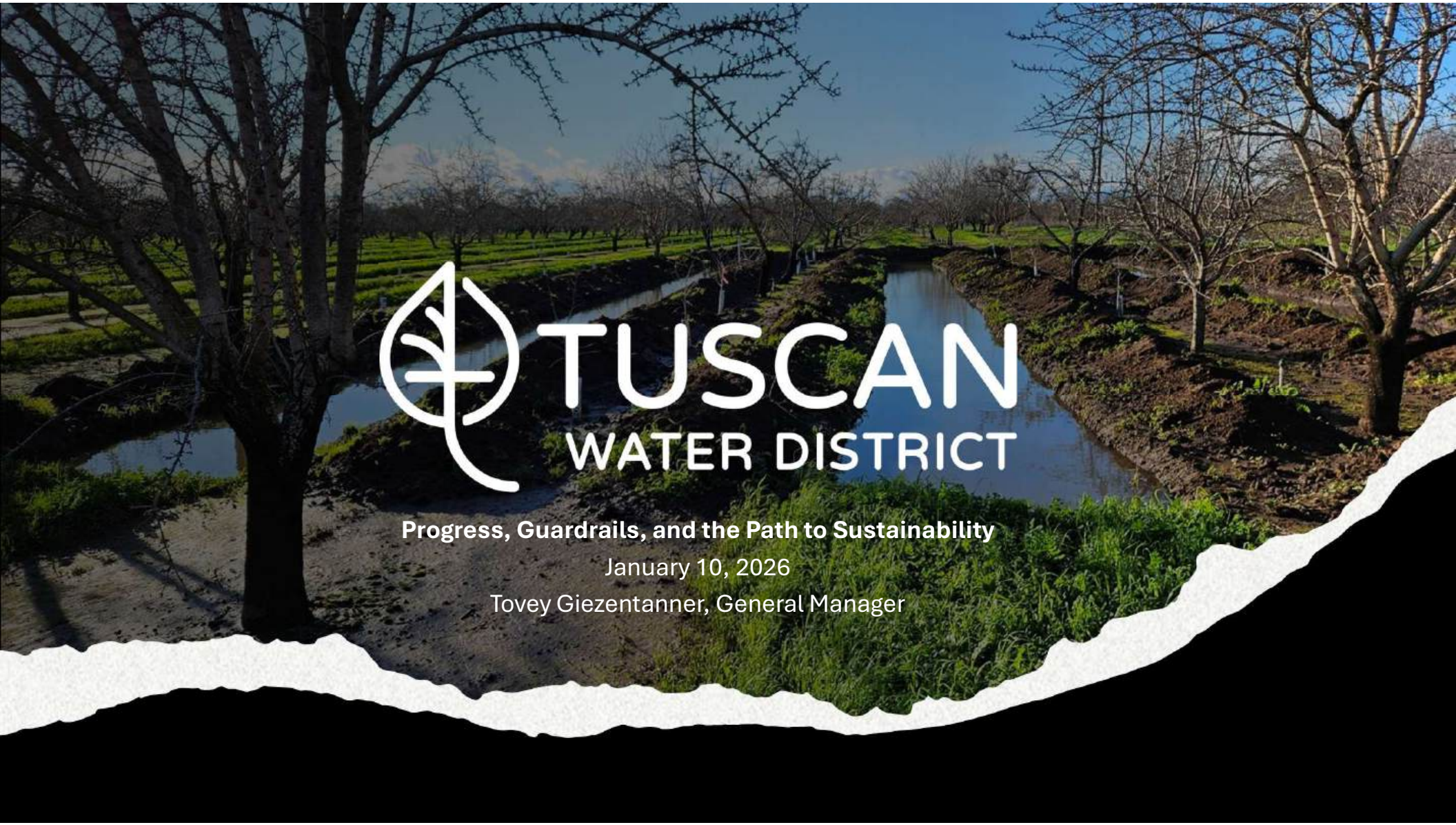


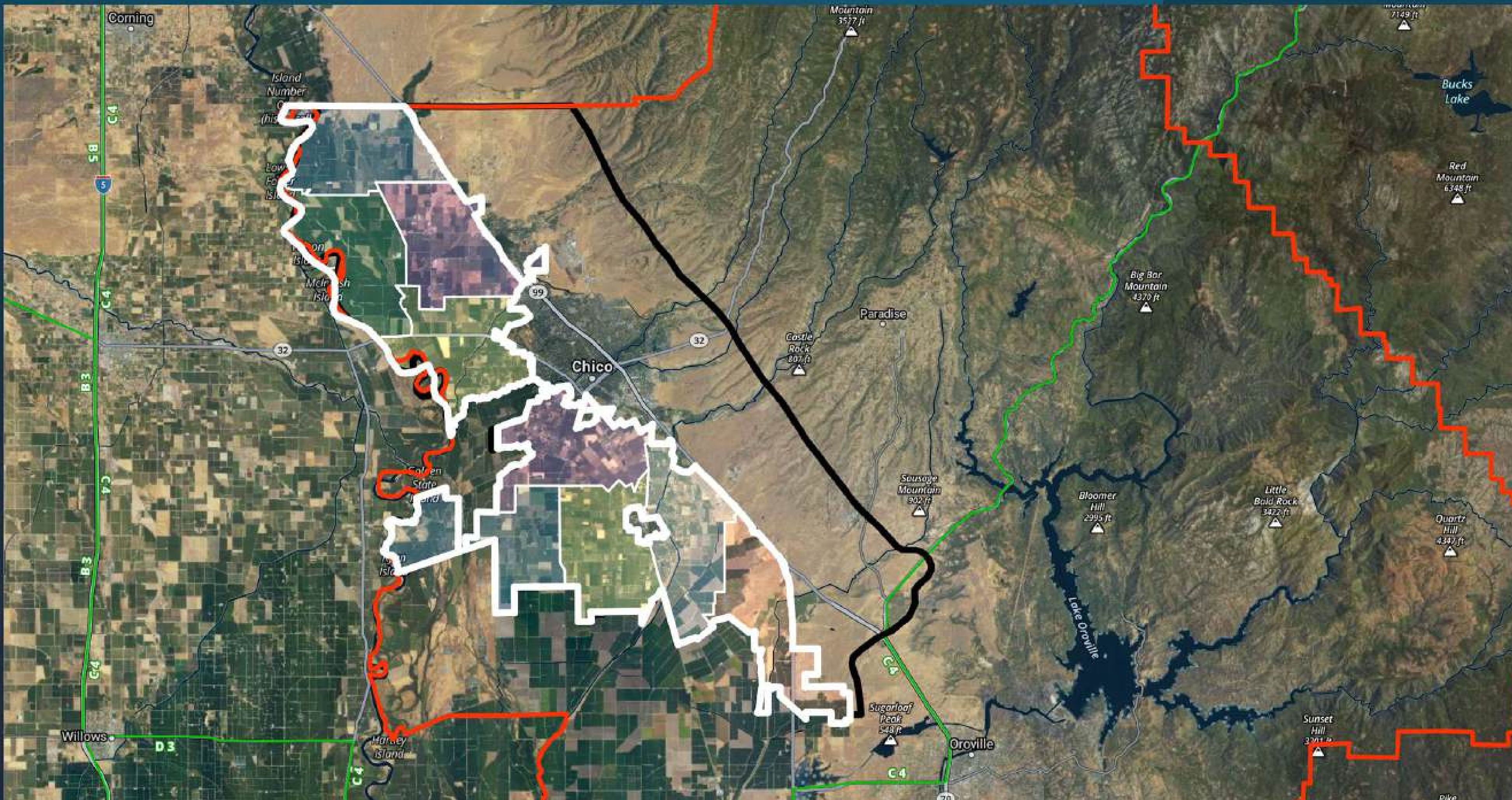
Progress, Guardrails, and the Path to Sustainability

January 10, 2026

Tovey Giezentanner, General Manager

Agenda

01	Progress
02	Guardrails
03	Mission
04	Context: How we see the world
05	Achieving Sustainability



Corning
Mountain
3527 ft
Bucks
Lake
Red
Mountain
6348 ft
Big Bar
Mountain
4370 ft
Paradise
Castle
Rock
807 ft
Chico
99
32
Sausage
Mountain
902 ft
Bloomer
Hill
2995 ft
Little
Bald Rock
3422 ft
Quartz
Hill
4347 ft
Lake Oroville
Sugarloaf
Peak
548 ft
Oroville
Willows
D 3
C 4
B 5
B 3
5
70
Sunset
Hill
Pike

01 Progress:

How we got here

The Mandate

Landowners voted to form the district to help exercise local control of groundwater sustainability in the Vina Subbasin.

Key Milestones

- **Formation Vote:** Confirmed by landowners in December 2023
- **Prop 218 Vote:** Successful passage of the special benefit assessment to fund operations in January 2025
- **Operational Stand-Up:**
    - Secured interim funding to bridge the gap before assessments roll in
    - Staff in place and office space is being established.
- **Takeaway:** We are now a fully functional public agency, and we are operationalizing to do the work voters asked for.

02 Guardrails:

Ensuring Alignment & Accountability

The Framework

TWD was formed with specific “conditions of approval” from LAFCO that act as permanent checks and balances.

Governance Protections:

- **9-Member Board:** A large board ensures broad representation across the district.
- **Electoral Divisions:** We are moving toward divisions to ensure geographic diversity and help protect the voice of all landowners

Operational “Leash”:

- **MOU Requirement (Condition 13):** We must maintain a formal Memorandum of Understanding with the Groundwater Sustainability Agencies (GSAs). We work *for* the basin’s sustainability goals, not against them.
- **Consistency Determination (Condition 18):** TWD cannot build a project without the GSA first certifying that it is consistent with the Groundwater Sustainability Plan (GSP).

02 Guardrails:
What We Cannot Do

Strict Prohibitions (LAFCO Condition 17)

- **No Export**: We are strictly prohibited from exporting groundwater outside the Vina or Butte Subbasins.
- **No Municipal Services**: We cannot become a water purveyor for domestic / municipal use (no housing developments).
- **No Sewer / Stormwater:** We are not a utility district for urban services.

Takeaway

- TWD's powers are "inactive or latent" for activities other than agricultural groundwater sustainability.

03 Mission:
Our North Star

The Core Mandate

- **Protect & Enhance:** Beneficial use of groundwater for all landowners.
- **Represent & Advocate:** Giving landowners a seat at the table with the County and State.
- **Fund & Implement:** The mechanism to actually build projects (surface water, recharge).
- **Defend:** Protecting local groundwater rights through science-based solutions.

04 Context:

How We See the World

The Natural Cycle

Recognize that California oscillates between drought and wet years.

Don’t panic in dry years; Prepare in wet years.

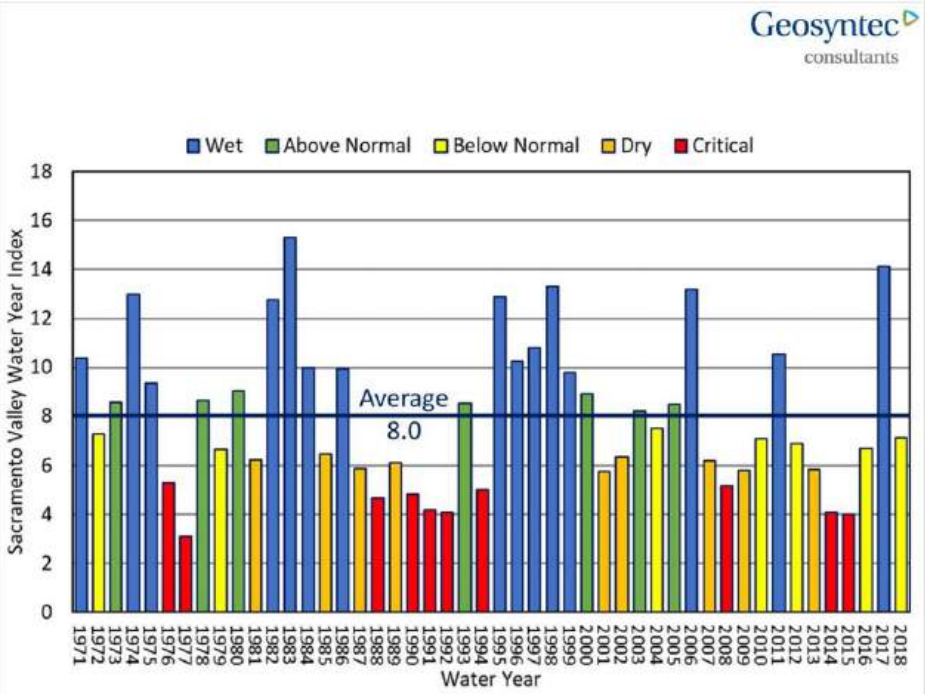


Figure 2-31: 1971 – 2018 Sacramento Valley Water Year Index and Water Year Types

04 Context:

How We See the World

The Regional Reality

According to a 2022 UCLA study published in *Nature Climate Change*, the **American West recently experienced its driest 22-year period in at least 1,200 years.**

Local Resilience (Vina Subbasin)

Despite this historic regional drought, the Vina Subbasin has shown remarkable resilience:

- **Groundwater Levels:** Spring 2025 levels are generally healthy, averaging 18’ above Measurable Objectives, and 68’ on average above Minimum Thresholds.
- **Storage Trends:** Even through dry years, the basin has seen an average storage *increase* of **~8,000 AF/year** over the last decade.
- **Subsidence:** No indications of inelastic subsidence.
- **Trajectory:** We are on track to meet our 2027 interim milestones, providing that local management is working.

05 Achieving Sustainability:

Where We Are Headed

The Three-Pronged Strategy

We are pursuing a portfolio of solutions to ensure we never have to rely solely on pumping restrictions.

Surface Water Importation

- Import surface water to specific agricultural zones that currently rely on groundwater.
- By switching these farms to surface water, we reduce groundwater demand in those areas.

Groundwater Recharge

- Capture excess storm runoff during high-flow events.
- Direct recharge into strategic locations for flood control, aquifer replenishment, and habitat benefits.

Demand Reduction

- Reduce groundwater use with affecting yields or economic viability.
- One concept focuses on extending the fallow period for at least 1-2 years between orchard removal and replanting.
- The other concept explores precision irrigation and schedule management strategies to reduce non-beneficial consumptive use.

Closing

Summary

TWD is the “doing” arm of groundwater management in the Vina Subbasin:

- Funded by landowners
- Restricted by strict guardrails
- Focused on projects that keep agriculture viable in Butte County

Contact

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Questions & Answers

Additional Slides for Context, if needed

Vina Subbasin Gaining and Losing Streams

- Estimates of stream gains / losses were derived from the updated Butte Basin Groundwater Model (BBGM)
- Figure 1, shown to the right, reports how often streams are gaining versus losing
- Table 1 (next slide) tabulates stream gains / losses by month

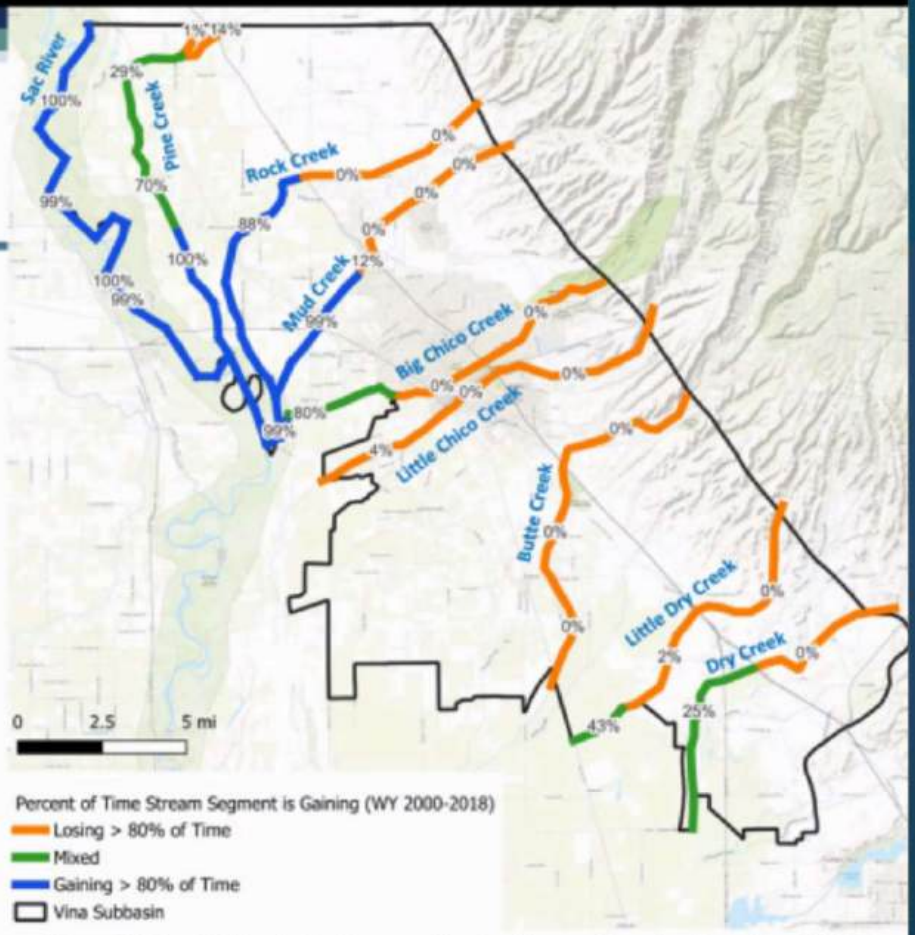


Figure 1. Vina Subbasin Gaining and Losing Stream Reaches based on BBGM, Water Years 2000 to 2018 (based on updated model received May 22, 2025).

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
# of Days in Month	31	30	31	31	28	31	30	31	30	31	31	30	Gain or
Conv: 1 cfs to AF	1.9835	1.9835	1.9835	1.9835	1.9835	1.9835	1.9835	1.9835	1.9835	1.9835	1.9835	1.9835	Loss
Angel Slough	0	0	0	0	0	0	0	0	0	0	0	0	0
Big Chico Creek	(1)	(2)	(5)	(5)	(5)	(5)	(2)	(1)	0	(1)	(1)	(1)	(29)
Butte Creek	(8)	(11)	(18)	(18)	(19)	(22)	(20)	(16)	(12)	(9)	(7)	(6)	(166)
Dry Creek	(1)	(1)	(3)	(2)	(2)	(2)	(1)	0	0	0	0	0	(12)
Little Chico	(1)	(1)	(3)	(2)	(2)	(2)	(2)	(1)	(1)	(1)	(1)	(1)	(18)
Little Dry	(4)	(5)	(8)	(8)	(8)	(7)	(6)	(5)	(4)	(4)	(3)	(3)	(65)
Mud Creek	2	2	2	4	4	6	6	5	4	3	2	2	42
Pine Creek	5	5	6	13	14	19	18	16	11	8	6	5	126
Rock Creek	0	0	0	2	2	4	4	3	2	1	1	0	19
Sacramento River	138	140	129	169	143	189	179	173	145	135	136	127	1,803
Singer Creek	0	0	0	0	0	0	0	0	0	0	0	0	0
NET BALANCE (CFS)	130	127	100	153	127	180	176	174	145	132	133	123	1,700
Angel Slough	0	0	0	0	0	0	0	0	0	0	0	0	0
Big Chico Creek	(61)	(119)	(307)	(307)	(278)	(307)	(119)	(61)	0	(61)	(61)	(60)	(1,743)
Butte Creek	(492)	(655)	(1,107)	(1,107)	(1,055)	(1,353)	(1,190)	(984)	(714)	(553)	(430)	(357)	(9,997)
Dry Creek	(61)	(60)	(184)	(123)	(111)	(123)	(60)	0	0	0	0	0	(722)
Little Chico	(61)	(60)	(184)	(123)	(111)	(123)	(119)	(61)	(60)	(61)	(61)	(60)	(1,085)
Little Dry	(246)	(298)	(492)	(492)	(444)	(430)	(357)	(307)	(238)	(246)	(184)	(179)	(3,913)
Mud Creek	123	119	123	246	222	369	357	307	238	184	123	119	2,531
Pine Creek	307	298	369	799	778	1,168	1,071	984	655	492	369	298	7,587
Rock Creek	0	0	0	123	111	246	238	184	119	61	61	0	1,144
Sacramento River	8,485	8,331	7,932	10,392	7,942	11,621	10,651	10,638	8,628	8,301	8,362	7,557	108,841
Singer Creek	0	0	0	0	0	0	0	0	0	0	0	0	0
NET BALANCE (AF)	7,994	7,557	6,149	9,408	7,053	11,068	10,473	10,699	8,628	8,116	8,178	7,319	102,642

Geosyntec consultants

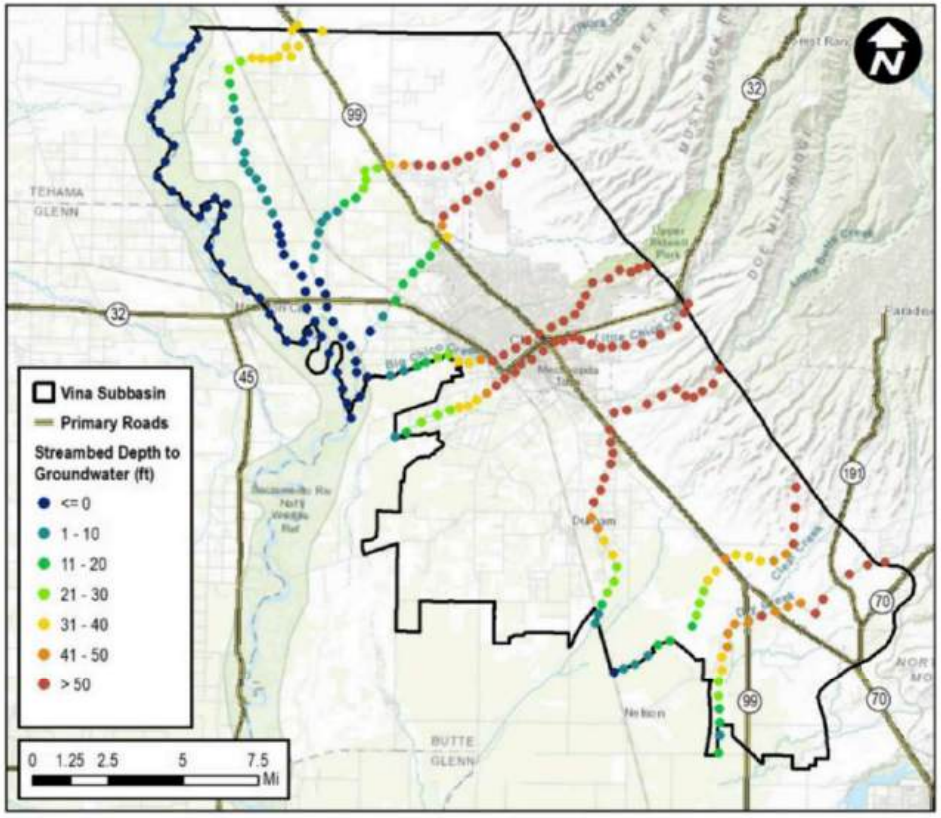
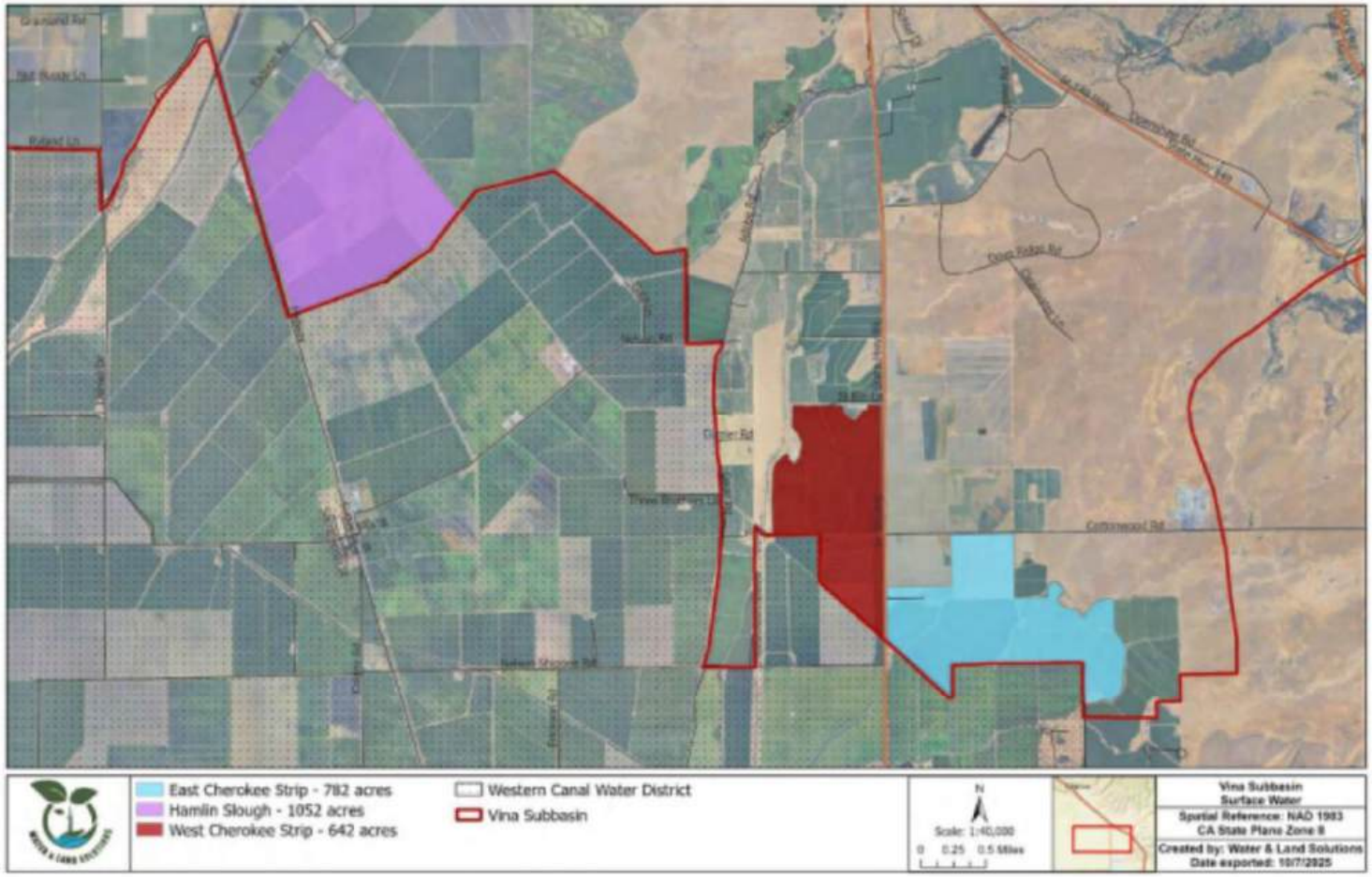
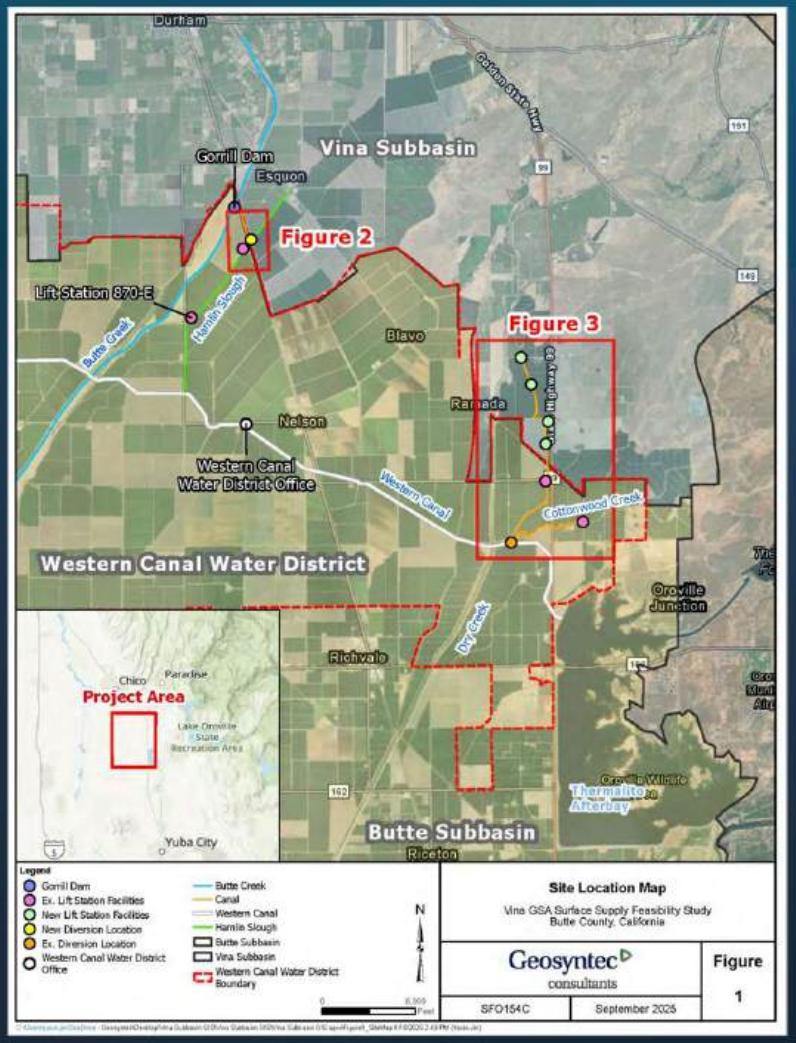


Figure 2-27: Vina Subbasin Average Streambed Spring Depth to Groundwater, 2014 to 2018

Figure 1. Map of proposed properties in Vina Subbasin to receive WCWD water




Durham
Vina Subbasin
Gorrill Dam
Esquon
Figure 2
Lift Station 870-E
Hamlin Slough
Butte Creek
Blavo
Figure 3
Ramada
Nelson
Western Canal
Water District Office
Western Canal
Cottonwood Creek
Western Canal Water District
Oroville
Junction
Dry Creek
Richvale
Project Area
Chico
Paradise
Yuba City
Thermalito
Afterbay
Butte Subbasin
Riceton
Legend
Gorrill Dam
Ex. Lift Station Facilities
New Lift Station Facilities
New Diversion Location
Ex. Diversion Location
Western Canal Water District Office
Butte Creek
Canal
Western Canal
Hamlin Slough
Butte Subbasin
Vina Subbasin
Western Canal Water District Boundary
N
Site Location Map
Vina GSA Surface Supply Feasibility Study
Butte County, California
Geosyntec consultants
Figure
1
SFO154C
September 2025

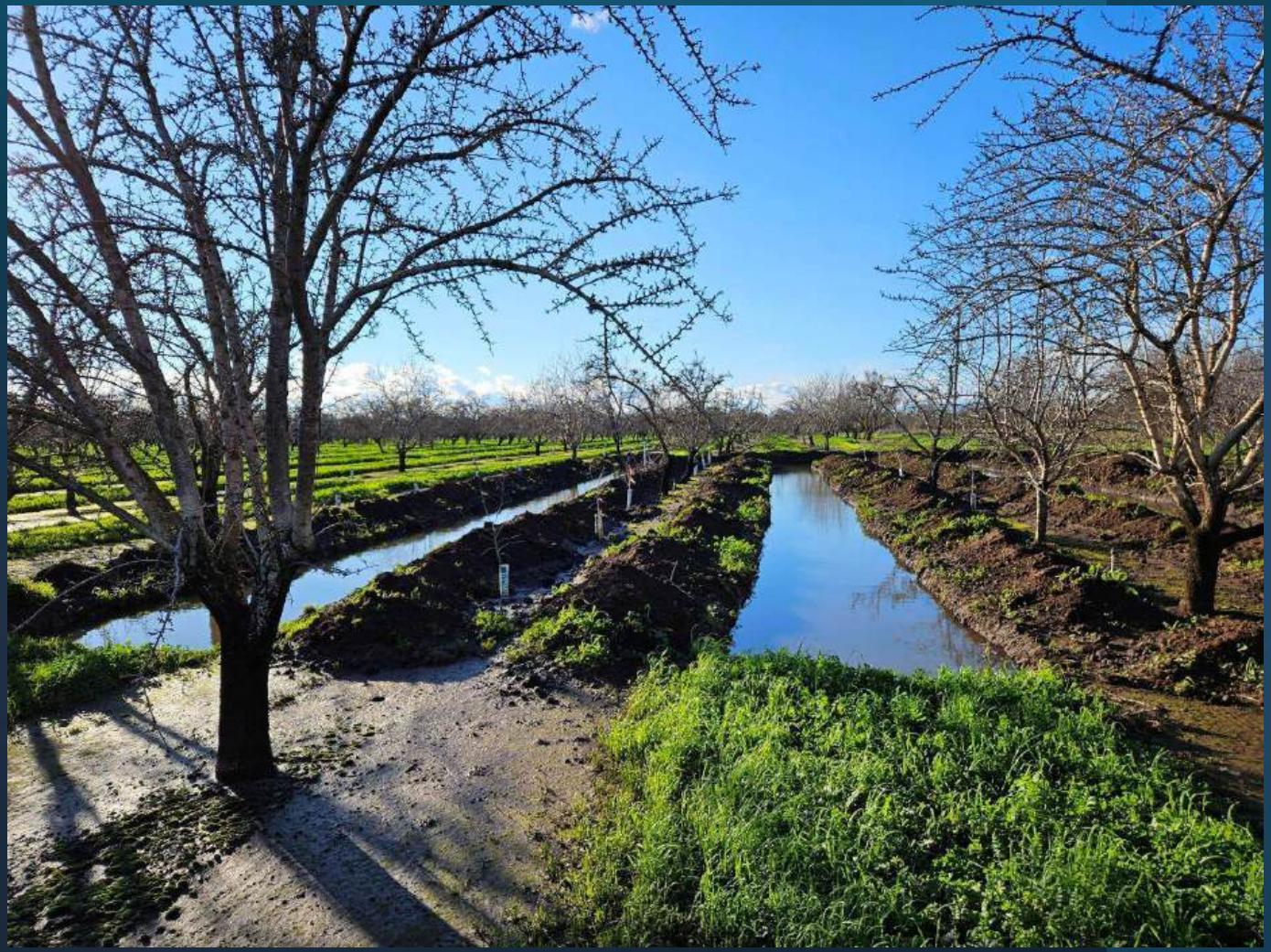

Drain to Rock Creek
Shallower Floodplain
Detention Basin
Controlled Release to RC
Detention Basin
Detention Basin
342 Acres
Water Flow

Photograph 1. The tTEM setup.

Pilot Test Type	Description	Potential Water Source
Reverse Tile Drain System	Construction involves excavating a trench (5 to 12 feet deep) over an agreed-upon length, installing a slotted pipe at the bottom, and backfilling with gravel and excavated material	Onsite irrigation well, Rock Creek, Keefer Slough (during peak winter flow), or gravity fed from the property's stock pond.
Direct Recharge via Surface Impoundment	Construction of a small, pilot-scale surface infiltration basin.	Onsite irrigation well, Rock Creek, Keefer Slough (during peak winter flow), or gravity fed from the property's stock pond.
Flood-Managed Aquifer Recharge (Flood-MAR)	Testing potential use of flood water (from, or in anticipation of, rainfall) for managed aquifer recharge on agricultural lands/working landscapes.	Will be discussed with the Landowner for approval prior to conducting.

Photograph 3. Photograph of CPT rig.

Photograph 2. Example of small drill rig that would be used at site.



Program Benefits and Participant Expectations

Extended Orchard Replacement Benefits

- Free, field-specific ET data and professional input
- Anonymously compare results to peer orchards
- Explore rotational and fallow strategies that may cut costs and water use

Extended Orchard Replacement Participant Expectations

Participating landowners will tell us what they're doing during the replacement period—irrigation method, cover crops, tillage, chipping, pest and nutrient practices, etc.

Optionally, **we'll brainstorm alternative rotational fallow practices** (e.g., summer annuals, cover crops).

Precision Irrigation Benefits

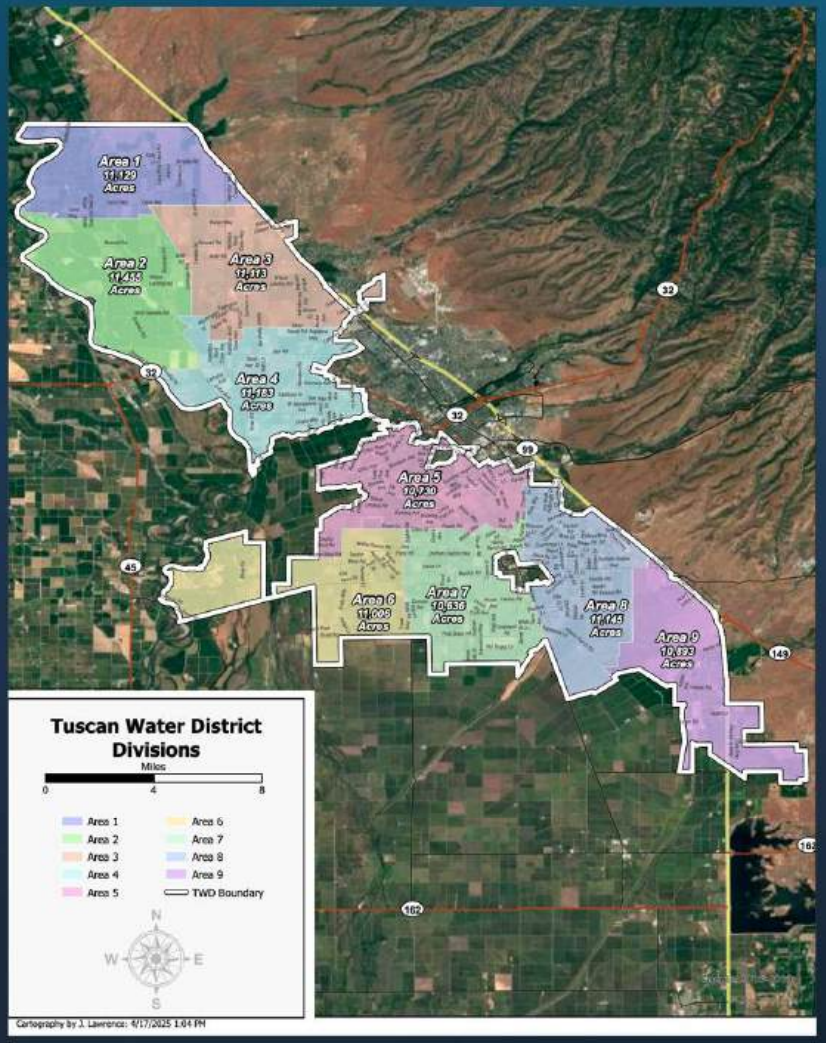
- See ET and canopy data
- Identify "non-beneficial" water losses and adjust scheduling without affecting yield
- Potential power-cost savings with PG&E ag rates

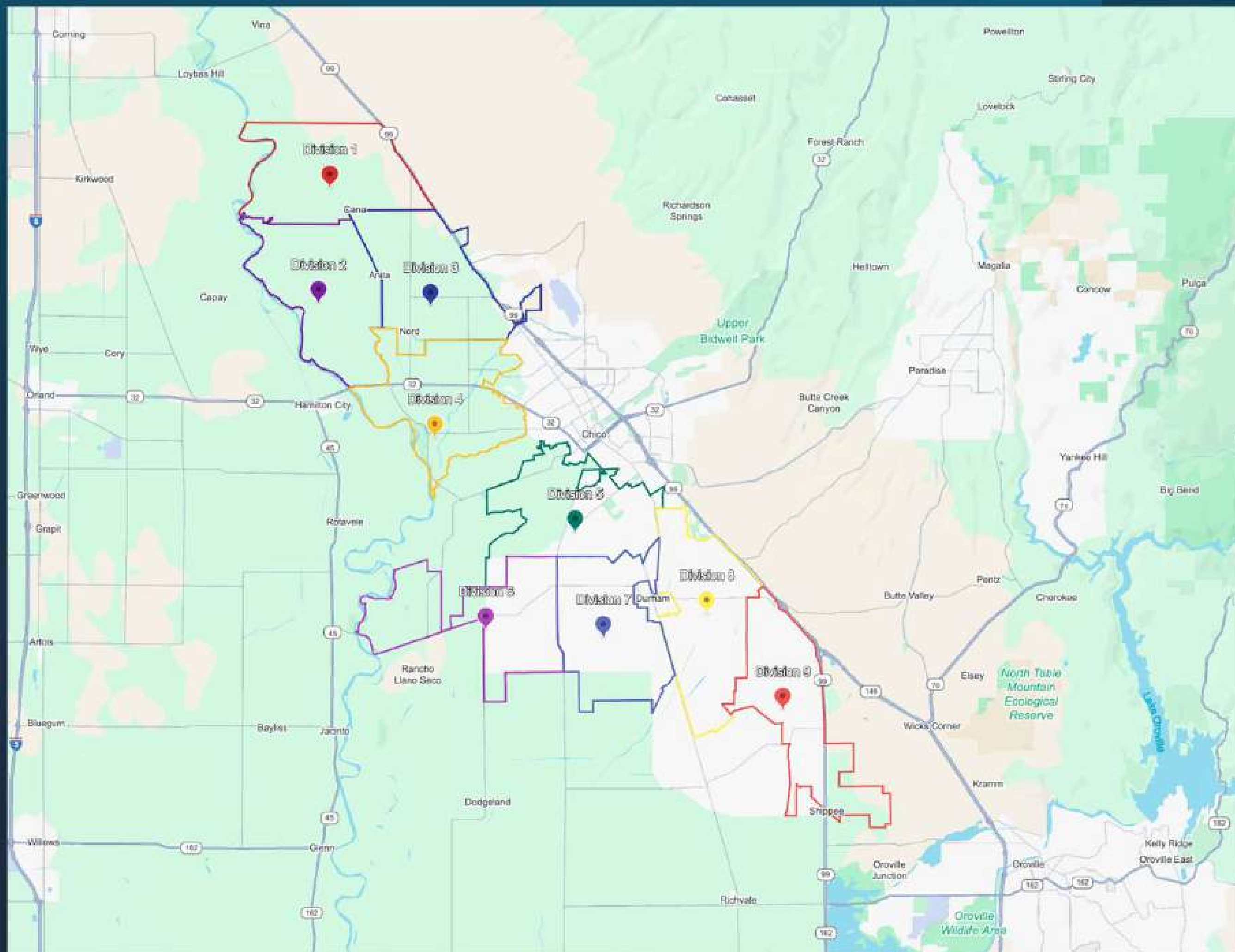
Precision Irrigation Participant Expectations

Participating landowners will share current irrigation setup and historical practices, and provide past yield records for the study blocks (*kept strictly confidential).* **Pairing yield with ET helps maximize the "crop per drop" production approach and increases grower profit margins.**

We're exploring whether changes to irrigation (and possibly fertilization) can reduce non-beneficial ET without affecting yield. Even **small field-level savings can add up to meaningful basin-wide reductions and lower costs.**

This season, we'll help landowners test simple ways to optimize ET without affecting yield. We'll also consider PG&E's ag rates to cut power costs, and provide free guidance plus detailed ET maps of each orchard.


Area 1
11,129
Acres
Area 2
11,448
Acres
Area 3
11,313
Acres
Area 4
11,153
Acres
Area 5
10,940
Acres
Area 6
11,009
Acres
Area 7
10,836
Acres
Area 8
11,145
Acres
Area 9
10,332
Acres
Tuscan Water District
Divisions
Miles
0
4
8
Area 1
Area 2
Area 3
Area 4
Area 5
Area 6
Area 7
Area 8
Area 9
TWD Boundary
N
W
E
S
Cartography by J. Lawrence: 4/17/2025 1:04 PM


Division 1
Division 2
Division 3
Division 4
Division 5
Division 6
Division 7
Division 8
Division 9
Chico
Durham
Nord
Hamilton City
Orland
Corning
Kirkwood
Capay
Upper Bidwell Park
Paradise
Oroville
Richvale
Dodgeland
Rancho Llano Seco
Shippee
North Table Mountain Ecological Reserve
Oroville Wildlife Area
Butte Valley
Forest Ranch
Cohasset
Magalia
Willows
Artois