

The SGMA Data Series

What to Collect, Why it Matters, and How to Use It

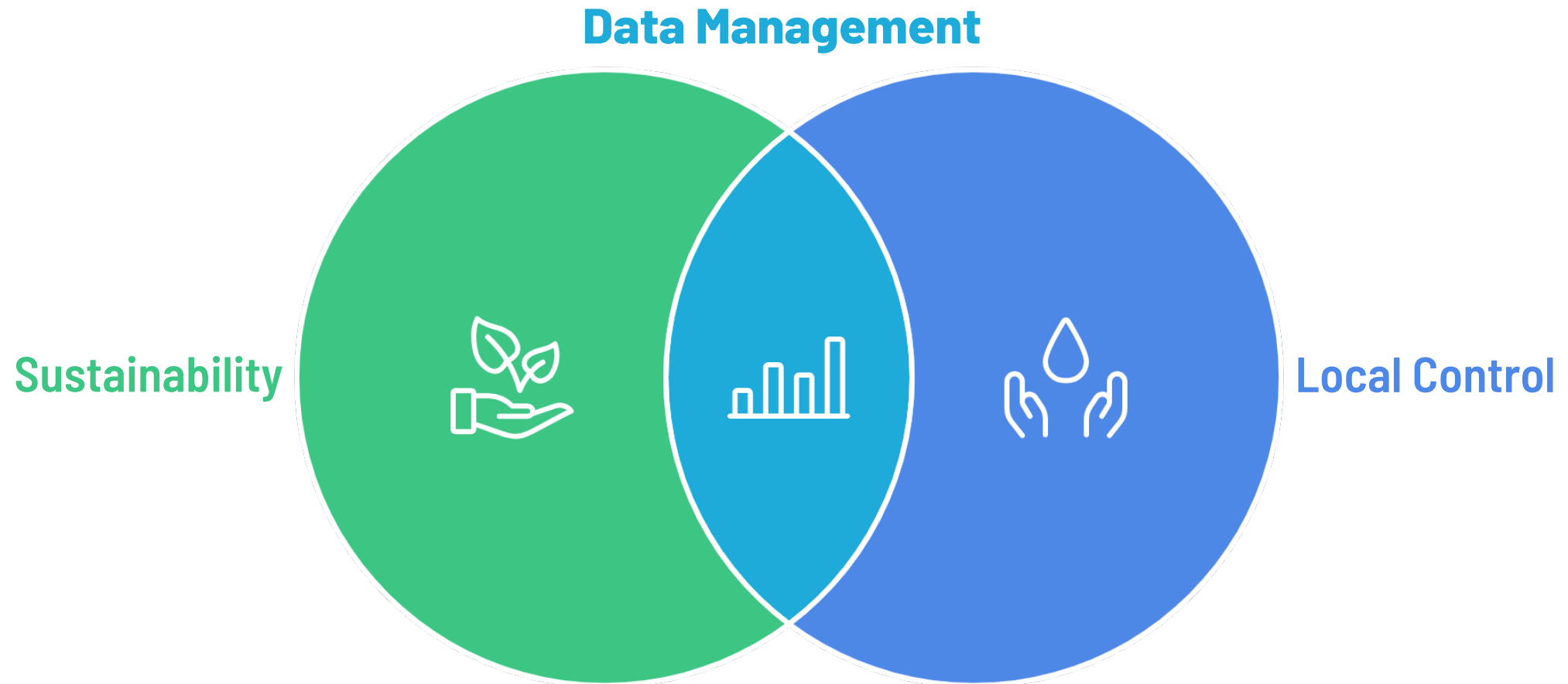
Session 4

Water Accounting

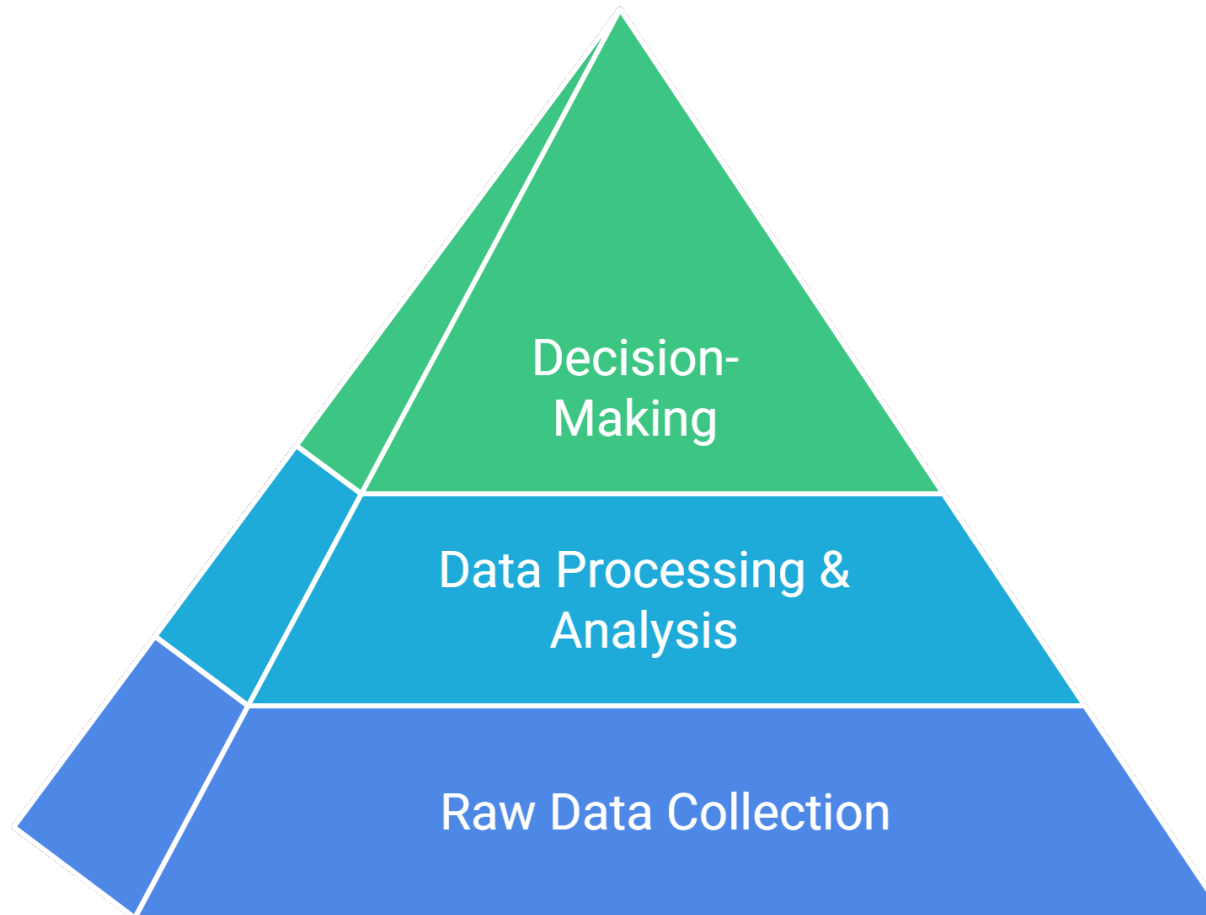
From Policy to Practice

Recap

Data Management Under SGMA



Building Your Data Picture



Manual Collection

Data Entry Issues

Process Inefficiencies

Data Quality
Challenges

Compliance
and Scalability



Hybrid: Digitizing Manual Workflows

Single Point of Entry

Less Staff Time

Data Validation

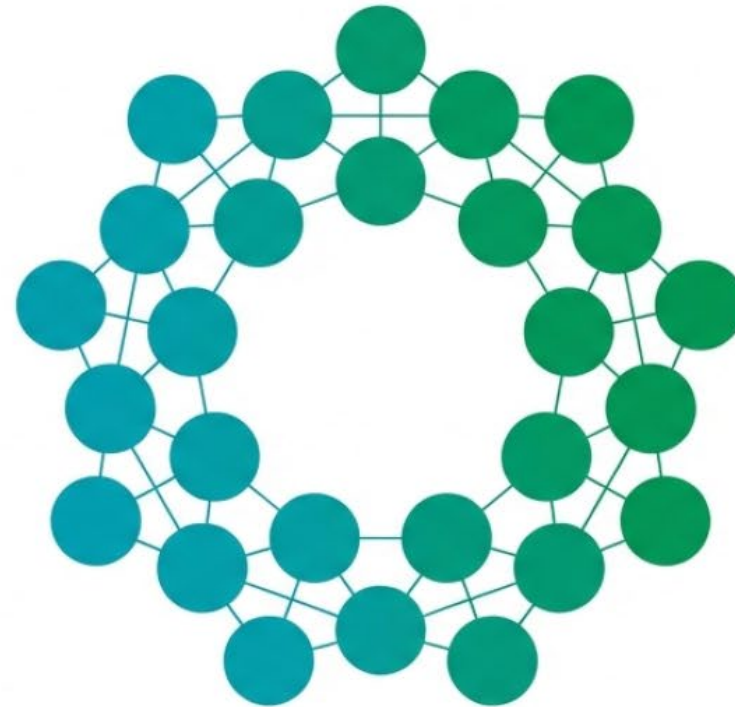
Relational Database

Good Management is About Relationships

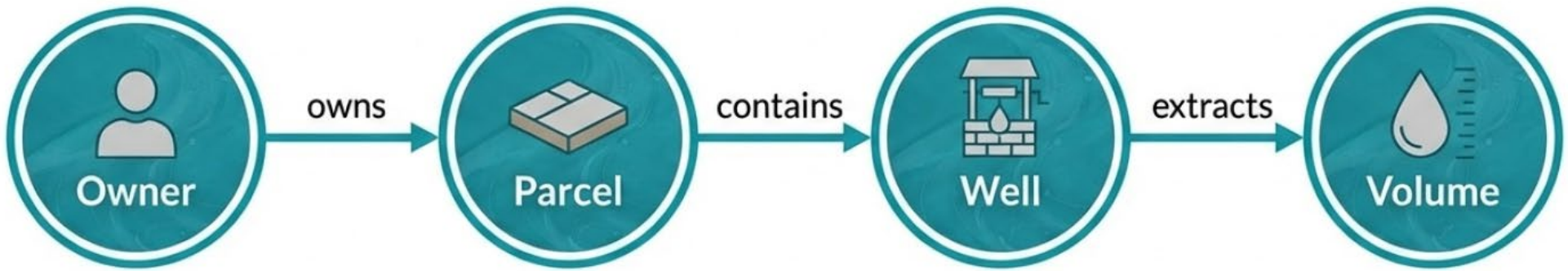
Data in Files



Data in Relationship



SGMA Decisions Depend on Connections



Relational databases enforce links between different datasets.

Data and Policy



Projects and Management Actions

Supply Augmentation	Demand Reduction
On-farm recharge	Fallowing
Stormwater capture	Incentive programs
Water banking	Water efficiency programs
Surface water transfers	Pumping reduction plans

Water Accounting: From Policy to Practice

A Complete Ledger of Water as a Managed Asset

Water accounting is the precise tracking of water in and water out — at the basin, GSA, and individual parcel level. It transforms policy into an active, transactional account where trading and transfers become the next frontier.



The Foundational Units

You cannot account for water without these three units. They are the fundamental building blocks where all water accounting begins. Every downstream process and transaction traces back to a registered well on a registered parcel, tracked in a water account.



The Grower's Water Bank

The Water Accounting Ledger

Groundwater Credits

Carried over from previous careful management.

Native Sustainable Yield (Base Allocation)

The basin's baseline allocation per parcel.



Transitional Allocation

Phased ramp-down credits allowing adjustment over time.

Why Track Water Usage?

What It Means for the GSA



Ability to tell a grower exactly what they've used against their allocation.



A defensible, auditable record for the State.



Proof of sustainable basin management, protecting local control.

What It Means for the Grower



Real-time visibility: "When will I run out of water?"



Data-backed crop planning and following decisions.



Frictionless ability to buy, sell, or trade allocation credits.

Measuring Groundwater

Option 1: Physical Flow Meters



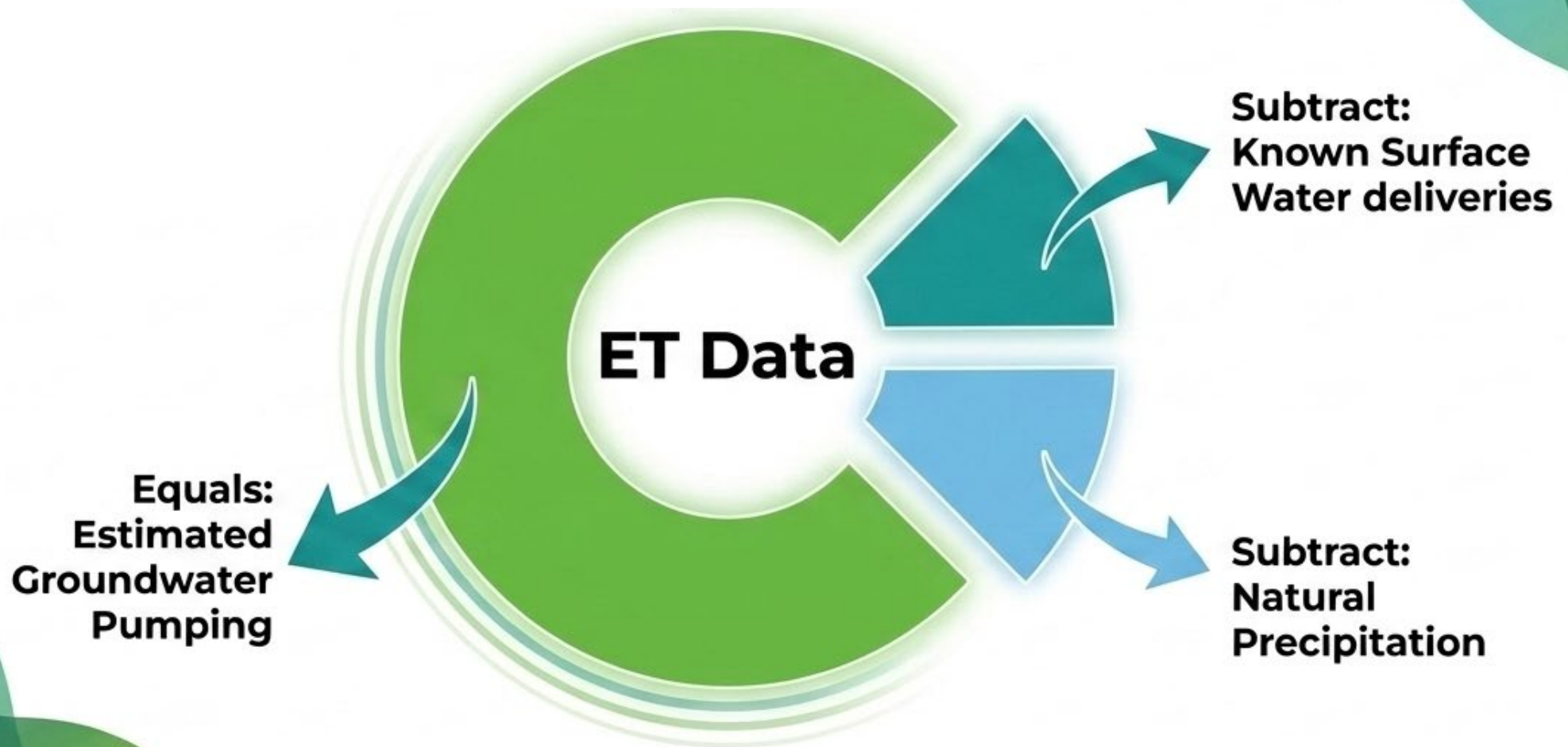
- ✓ Provides exact, direct pumping data.
- ✗ High cost for installation and maintenance on every well.
- ✗ Significant logistical burden and requires universal stakeholder buy-in.
- ✗ High friction for growers.

Option 2: Remote Sensing (ET Data)



- ✓ Affordable, scalable, and lower friction implementation.
- ✓ Provides valuable parcel-level understanding of total water demand.
- ✗ Does not provide exact, direct pumping measurements.
- ✗ Groundwater use must be estimated by "backing out" other sources.

Case Study: Bridging the Reporting Gap for Probationary Basins



Case Study: North Fork Kings GSA

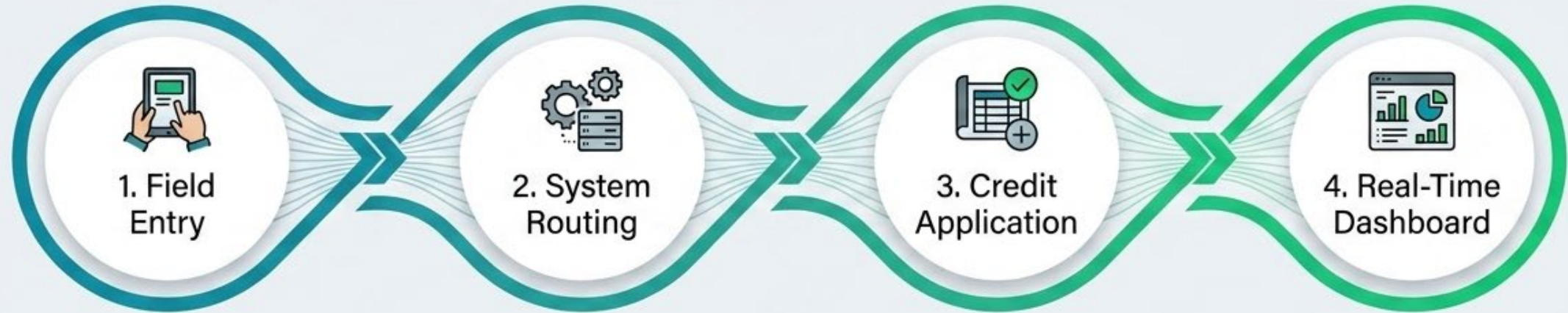
The Context

- Kings subbasin with approved GSP.
- Watermark platform fully deployed (2024) with complete well registration.
- LandIQ ET used for measurement.

The Problem

- Surface water is a major part of the subbasin picture.
- Irrigation district deliveries offset pumping—but they weren't flowing into the accounting system.
- Without surface water data, the accounting numbers were incomplete.

The Ditch Tender Interface in Action



Ditch tender logs a surface water delivery directly into the platform field tool.

Delivery is automatically recorded against the correct parcel and grower account.

Surface water credit is instantly applied to the water account ledger.

Grower sees their updated balance (groundwater used, surface water received, allocation remaining).

One source of truth. No reconciliation, no phone calls, no guessing.

NAVIGATION

- SURFACE WATER**
- DASHBOARD
- DELIVERY APPROVALS
- DISTRICT ACTIVITY
- CONNECTED DISTRICTS**
- EXPORT MANAGER

Connected Districts

Manage irrigation district connections to the GSA.


[+ ADD DISTRICT](#)

DISTRICT NAME	CONTACT	EMAIL	STATUS	CONNECTED DATE	ACTIONS
▼ Consolidated Irrigation District	Maria Gonzalez (559) 555-0101	mgonzalez@consolidatedirrigation.org	ACTIVE	Jan 15, 2026	✎
👁️ DISTRICT OVERVIEW (READ-ONLY)					
<div style="border: 1px solid #ccc; padding: 10px; text-align: center;"> 8 Diversion Points </div>		<div style="border: 1px solid #ccc; padding: 10px; text-align: center;"> 3 Ditch Tenders </div>		<div style="border: 1px solid #ccc; padding: 10px; text-align: center;"> 45 Recent Readings </div>	
<small>ⓘ This is a read-only summary. Diversion points, ditch tenders, and readings are managed by the irrigation district.</small>					
> Alta Irrigation District	Robert Chen (559) 555-0202	rchen@altaid.org	ACTIVE	Jan 22, 2026	✎
> Kings River Water District	Jennifer Walsh (559) 555-0303	jwalsh@kingsriverwd.org	PENDING INVITATION	—	✎ ✉ RESEND
> Peoples Ditch Company	Thomas Yamamoto (559) 555-0404	tyamamoto@peoplesditch.com	INACTIVE	Feb 28, 2026	✎

NAVIGATION


 SURFACE WATER

 DASHBOARD

 DELIVERY APPROVALS

 DISTRICT ACTIVITY

 CONNECTED DISTRICTS

 EXPORT MANAGER

Delivery Approvals

Review ID-approved deliveries and authorize distribution to water accounts.

STATUS:
 WATER YEAR:
 DISTRICT:

DATE	DIVERSION POINT	DISTRICT	FLOW RATE	AF	ID APPROVAL	GSA STATUS	ACTIONS
<input type="checkbox"/> Mar 22, 2026	Reed Ditch Turnout #3	Consolidated Irrigation District	2.5 CFS	4.96 AF	✔ ID APPROVED	⚠ AWAITING GSA	<input type="button" value="✔"/> <input type="button" value="✖"/>

READING DETAILS

DATE	FLOW RATE	METER VALUE	ACRE-FEET	ENTERED BY	PHOTOS
Mar 22, 2026	2.5 CFS	15,234.5	4.96 AF	Carlos Ramirez	 2

NOTES
Clear morning, normal flow

ID APPROVAL

APPROVED BY
Maria Gonzalez

APPROVED ON
Mar 23, 2026 10:30 AM

DISTRICT
Consolidated Irrigation District

DELIVERY DISTRIBUTION PREVIEW

Method: Equal Split · Accounts: 2 · Total: 4.96 AF

PARCEL APN	WATER ACCOUNT	ACCOUNT HOLDER	DELIVERY AF	PERCENTAGE
012-345-006	WA-1001	Smith Ranch	2.48 AF	50.00%
012-345-007	WA-1002	Jones Farm	2.48 AF	50.00%
Total Distribution			4.96 AF	100%

The Real-World Edge Cases That Break Simple Systems



Crop-based Allocations:

Allowances varying by annuals vs. perennials, high-value vs. commodity.



Acreage-based Allocations:

Tied to irrigated acres; requires annual verification.



Split Parcels:

Single APNs straddling multiple allocation zones.



Shared Wells:

One pump serving multiple operators or parcels.



Carryover & Deficits:

Unused allocations or overages rolling across water years.



Mid-Year Changes:

New wells, crop shifts, ownership transfers.

Allocations are never one-size-fits-all.

GSA Administrator View

Configure Allocation

VERSION HISTORY

Configuration Name ⓘ

Allocation Period ⓘ

Native Sustainable Yield

Category

Allocation Factor

Native Groundwater ⓘ

Assessed Acres × Native Groundwater AF

0

Abandoned Surface Water

0

River Seepage

0

Ramp Down Credit

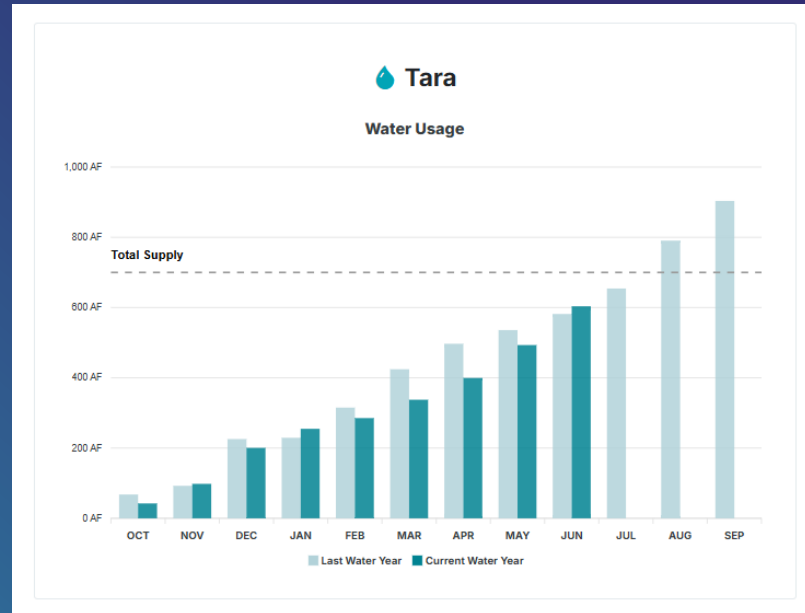
Category

Allocation Factor

Ramp Down Credit


0

End-User View



Design for Where You Are Going

Future Use Cases

-  Water Allocations & Budgets
-  Credits & Trading Markets
-  Fee Assessments & Billing
-  Enforcement Actions

Retrofitting structure later is painful and expensive. Static systems struggle in a dynamic SGMA world.

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Questions?

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