



# California Water Data Consortium

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*Ensuring that data supports water management for the  
benefit of all Californians*

Tara Moran | California Water Data Consortium

*Presentation at California Water & Environmental Modeling Forum*

April 18, 2023

# We support implementation of California's Open and Transparent Water Data Act of 2016

*“The California Natural Resources Agency, the California Environmental Protection Agency, and the members of the Partner Agency Team support the creation of a Water Data Consortium and commit to close coordination between state agencies and the activities of the Consortium.”*

- Wade Crowfoot, Secretary for Natural Resources  
and Jared Blumenfeld, Secretary for Environmental  
Protection

# Board of Directors

Eric Averett Homer LLC

Ashley Boren Sustainable Conservation

Adrian Covert Bay Area Council

Meredith Lee UC Berkeley

Joone Lopez Moulton Niguel Water District

Mitra Rogers Amazon Web Services

David Orth New Current Land and Water

Deven Upadhyay Metropolitan Water District of  
Southern California

# Steering Committee & Working Group Co-Chairs

## State Agency Representatives

**Joy Bonaguro** State of  
California

**Chris McCready** Department  
of Water Resources

**Greg Gearheart** State Water  
Resources Control Board

**David Harris** California  
Natural Resources Agency  
Data Center

**Laurel Larsen** Delta  
Stewardship Council

**Nicholas Martorano**  
California Water Quality  
Monitoring Council

**Mahesh Gautam** Department  
of Water Resources

**Rafa Maestu** State Water  
Resources Control Board

## Non-State Agency Partners

**Deborah Agarwal** Lawrence  
Berkeley National Laboratory

**Mike Antos** Stantec  
Consulting/UC Irvine  
Anthropology

**Drew Atwater** Metropolitan  
Water District/California Data  
Collaborative

**Martha Davis** Retired from  
Inland Empire Utilities Agency

**Eddie Ocampo** Self Help  
Enterprises

# VISION

A RESILIENT & EQUITABLE WATER FUTURE WHERE OPEN & ACCESSIBLE DATA INFORMS ALL WATER MANAGEMENT DECISIONS IN CALIFORNIA

# MISSION

THE CONSORTIUM EMPOWERS CROSS-SECTOR COLLABORATION, PARTNERSHIP WITH THE STATE, AND INNOVATION TO ENSURE THAT STATE AND LOCAL AGENCIES, TRIBES, NONGOVERNMENTAL ORGANIZATIONS, RESEARCHERS, AND THE PUBLIC CAN READILY ACCESS AND USE HIGH-QUALITY DATA NECESSARY TO SUSTAINABLY MANAGE WATER FOR THE BENEFIT OF ALL CALIFORNIANS

# OVERARCHING GOAL

THE CONSORTIUM SUPPORTS IMPLEMENTATION OF THE OPEN & TRANSPARENT WATER DATA ACT BY SERVING AS A CREDIBLE, TRUSTED LEADER & CONVENER IN OPEN WATER DATA ACCESS & USE IN CALIFORNIA

# GOALS

1. ADVANCE COLLABORATIVE SOLUTIONS TO CALIFORNIA'S MOST CRITICAL WATER DATA CHALLENGES
2. ENGAGE A DIVERSITY OF INTERESTED PARTIES IN OUR WORK, EMPHASIZING TRADITIONALLY UNDERREPRESENTED VOICES
3. COMMUNICATE THE VALUE OF OPEN WATER DATA IN CALIFORNIA
4. CONTINUE TO BUILD THE CONSORTIUM'S ORGANIZATIONAL STRUCTURE

## OUR ORIGIN

2016

AB 1755 PASSED!

ACKNOWLEDGES THE TREMENDOUS POTENTIAL OF CALIFORNIA'S WATER DATA TO SUPPORT A RESILIENT AND EQUITABLE WATER FUTURE FOR ALL CALIFORNIANS

2019

THE CWDC FOUNDED TO SUPPORT STATE AGENCY IMPLEMENTATION OF THE OPEN AND TRANSPARENT WATER DATA ACT

## GUIDING PRINCIPLES

BOLD.

URGENT.

COLLABORATIVE.

INCLUSIVE.

OUTCOME-ORIENTED.

## PROJECTS

- GROUNDWATER ACCOUNTING & DATA REPORTING
- LIDAR
- WATER USE REPORTING IN THE DELTA
- URBAN WATER REPORTING
- ...





**Vision** A resilient and equitable water future where open and accessible data informs all water management decisions in California.

**Mission** The Consortium empowers cross-sector collaboration, partnership with the state, and innovation to ensure that state and local agencies, Tribes, nongovernmental organizations, researchers, and the public can readily access and use high-quality data necessary to sustainably manage water for the benefit of all Californians.

*To achieve our **Mission**, we rely on **partnerships** and **guidance from you**...*

Our Work

# Advancing Projects



## Facilitating Data Exchange

- Groundwater Accounting and Data Reporting
- Urban Water Reporting



## Investment in Data

- LiDAR





# Project Vision

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The **Groundwater Accounting Platform** is an accessible open-source water accounting platform that integrates data from a variety of sources and effectively communicates this information to support local, regional, and state water management decisions.

# Project Objectives

- Scaling the Groundwater Accounting Platform
- Co-developing groundwater data reporting formats

# Project Team

- California Water Data Consortium
- Department of Water Resources
- State Water Resources Control Board
- Environmental Defense Fund
- OpenET
- Environmental Science Associates
- Olsson Engineering
- Pilot Partners



California Water  
Data Consortium

Environmental  
Defense Fund



OPENET

olsson



YOLO COUNTY  
FLOOD CONTROL &  
WATER CONSERVATION  
DISTRICT

# Stakeholder Engagement and Public Outreach



ADVISORY/WORKING  
GROUPS



TARGETED  
OUTREACH



PUBLIC MEETINGS

# Project Objectives

- Scaling the Groundwater Accounting Platform
- Co-developing groundwater data reporting formats

# Background

- Developed in 2018 by EDF and Rosedale-Rio Bravo Water Storage District
- Built with direct input from water managers and farmers
- Local- to regional-scale accounting tool that tracks and displays annual water allocations and water use
- Expanding scenario planning capabilities

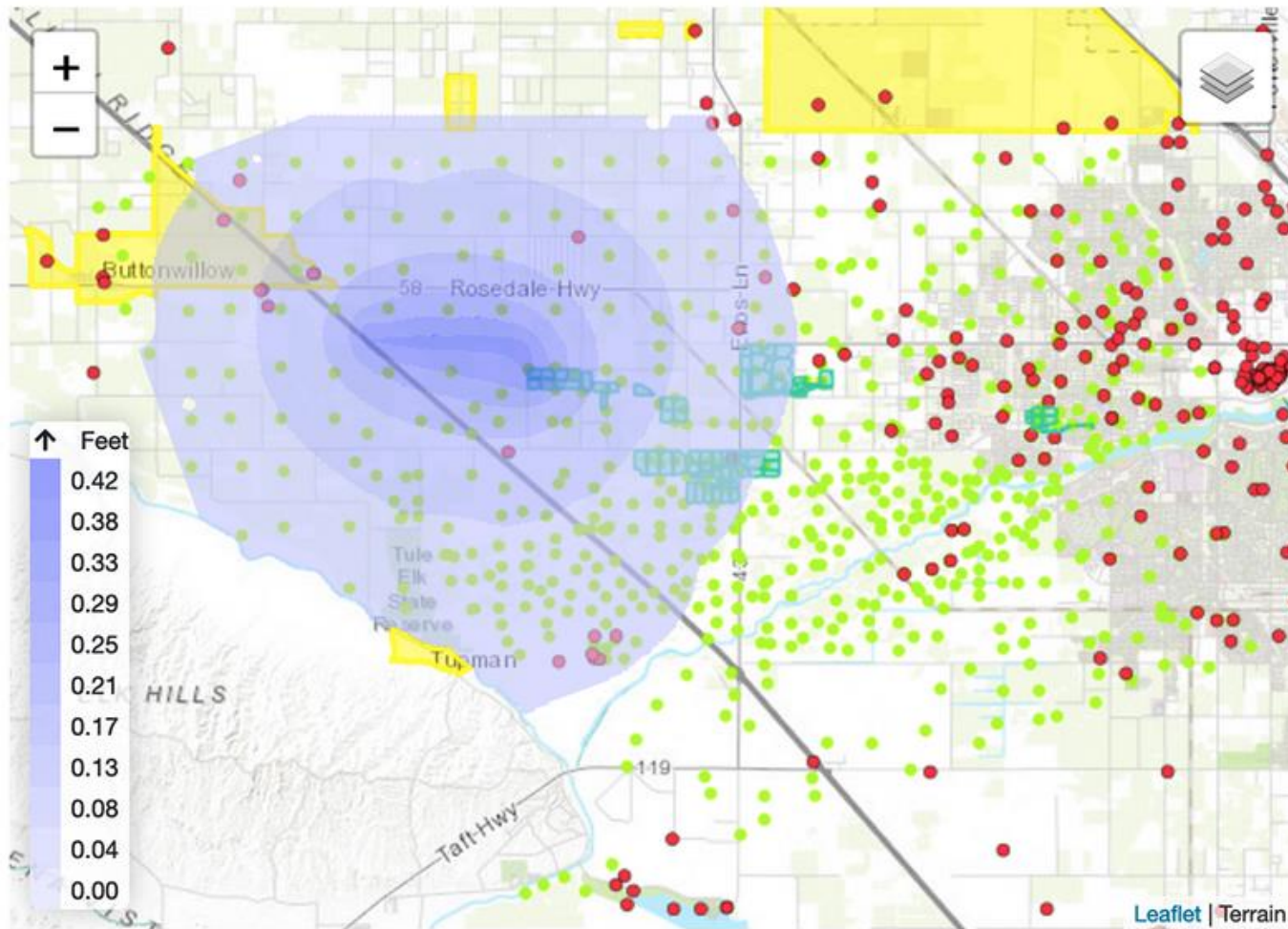


# Platform Expansion and Scaling

- Integration of additional data inputs
- Expansion of accounting functionality
- Integration of open-source scenario planning and visualization features



# Scenario Planning



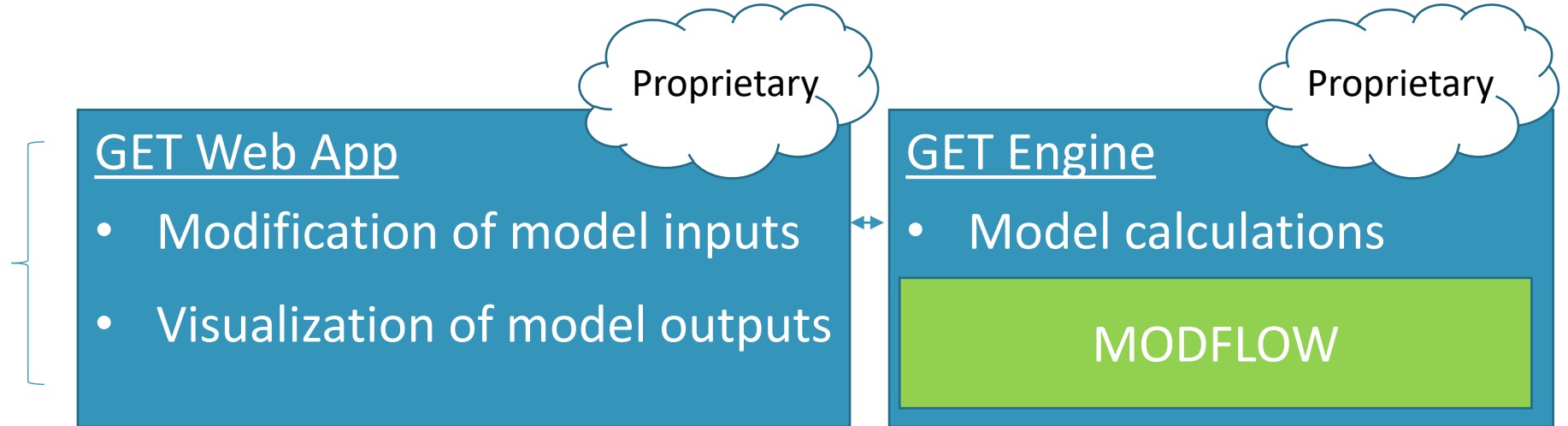
- Disadvantaged communities
- Wells
- Monitored arsenic contamination (>10 µg/L)
- Recharge basins



# Scenario Planning Before

## Existing scenarios

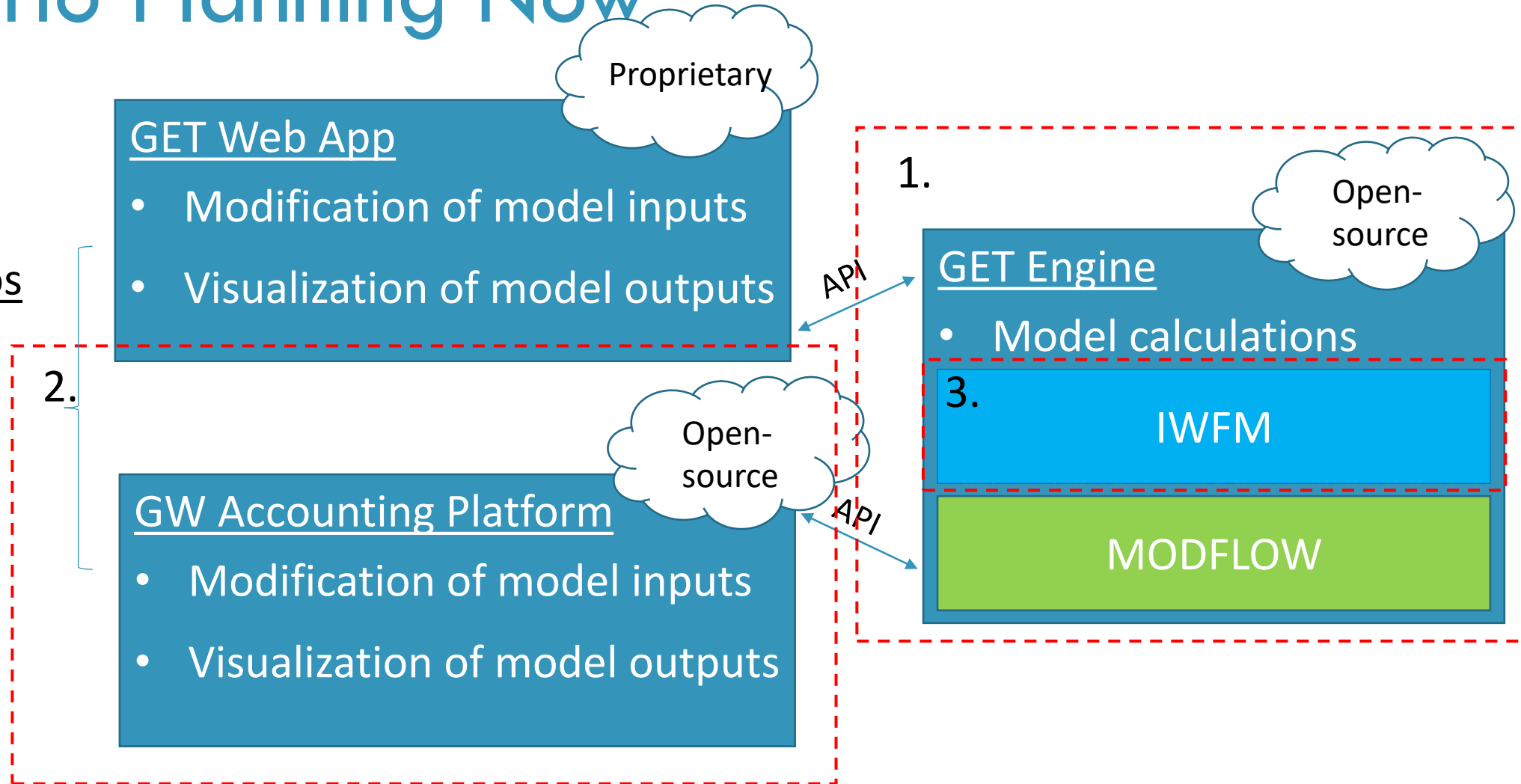
- Recharge
- Add a well
- Transfer pumping locations
- Other



# Scenario Planning Now

## Existing scenarios

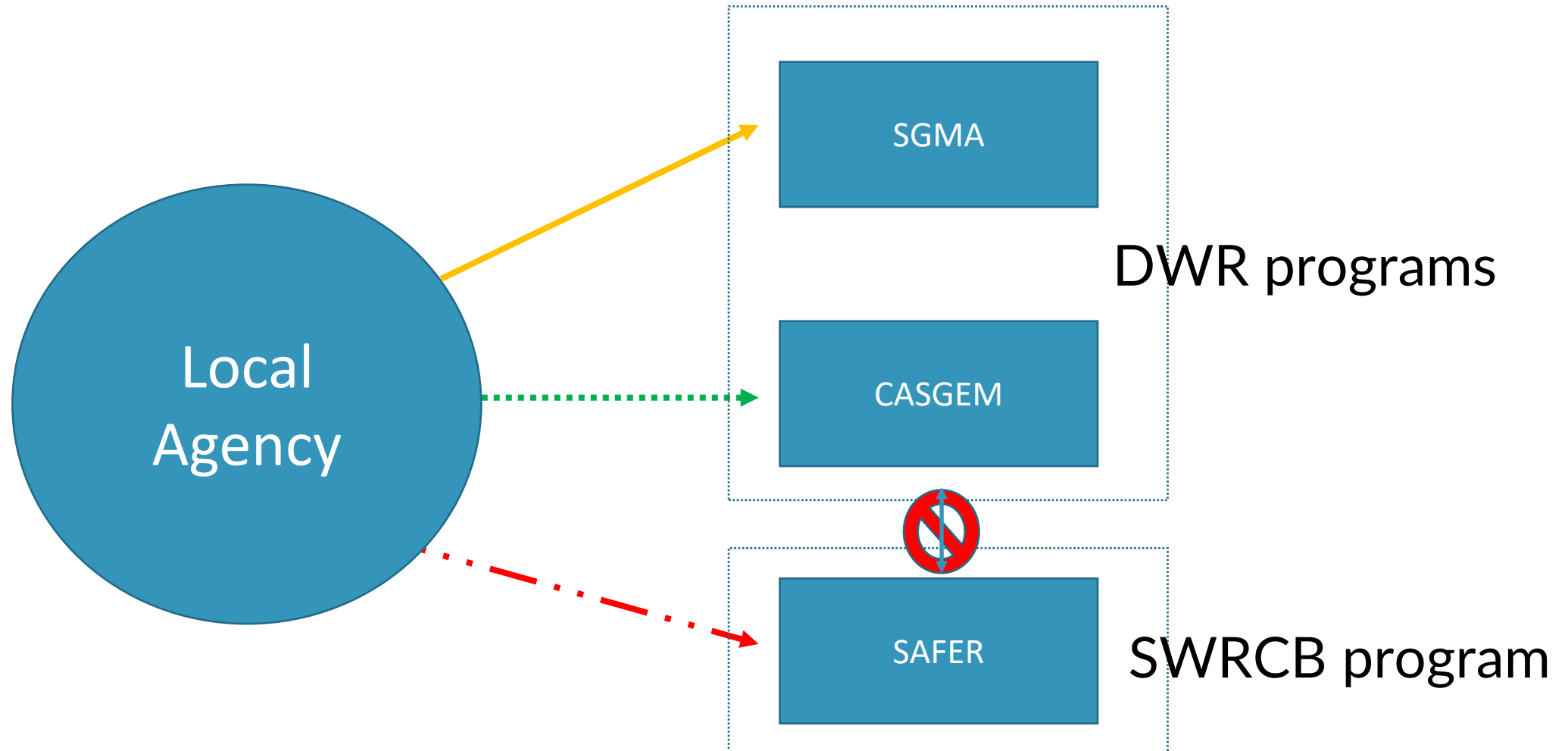
- Recharge
- Add a well
- Other?



# Project Objectives

- Scaling the Groundwater Accounting Platform
- Co-developing groundwater data reporting formats

# Groundwater Elevation Example



# Groundwater Data Reporting Formats

## Goals

- Ease local agencies' reporting burden
- Facilitate data coordination/improve data quality
- Aid in SGMA compliance
- Provide a process template and framework for other data types

# Data Reporting Formats: Next Steps

Data Attribute/Category
Well Identification
Well Characteristics
Groundwater Quality
Land Use Data
Groundwater Pumping/Withdrawals/ Injections
Recycled Water
Climate Data
Place, Purpose, and Period of Use
Groundwater Extraction Rates (Instantaneous)
Irrigation Methods
Surface Water Diversions
Conjunctive Use Strategies



Higher Priority

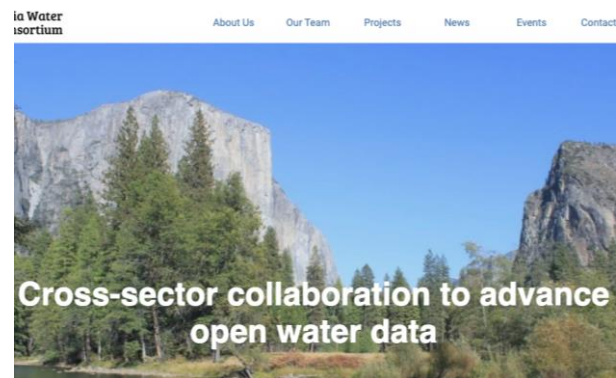
Lower Priority

# Ways to Participate



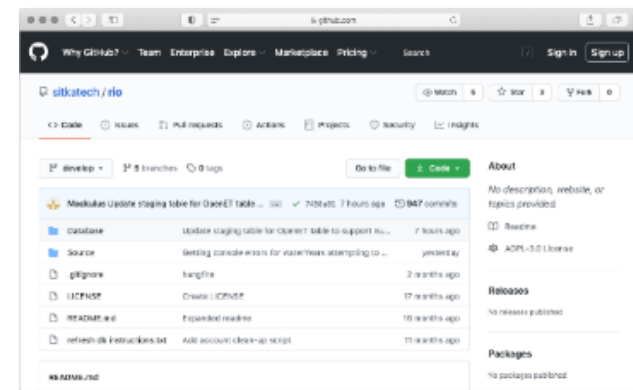
**Participate in a Working Group**

[Contact us!](#)



**Join a Data for Lunch**

[cawaterdata.org/](http://cawaterdata.org/)



**Access our Source Code**

[github.com/sitkatech/rio](https://github.com/sitkatech/rio)



# California Water Data Consortium

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Website: [cawaterdata.org](http://cawaterdata.org)

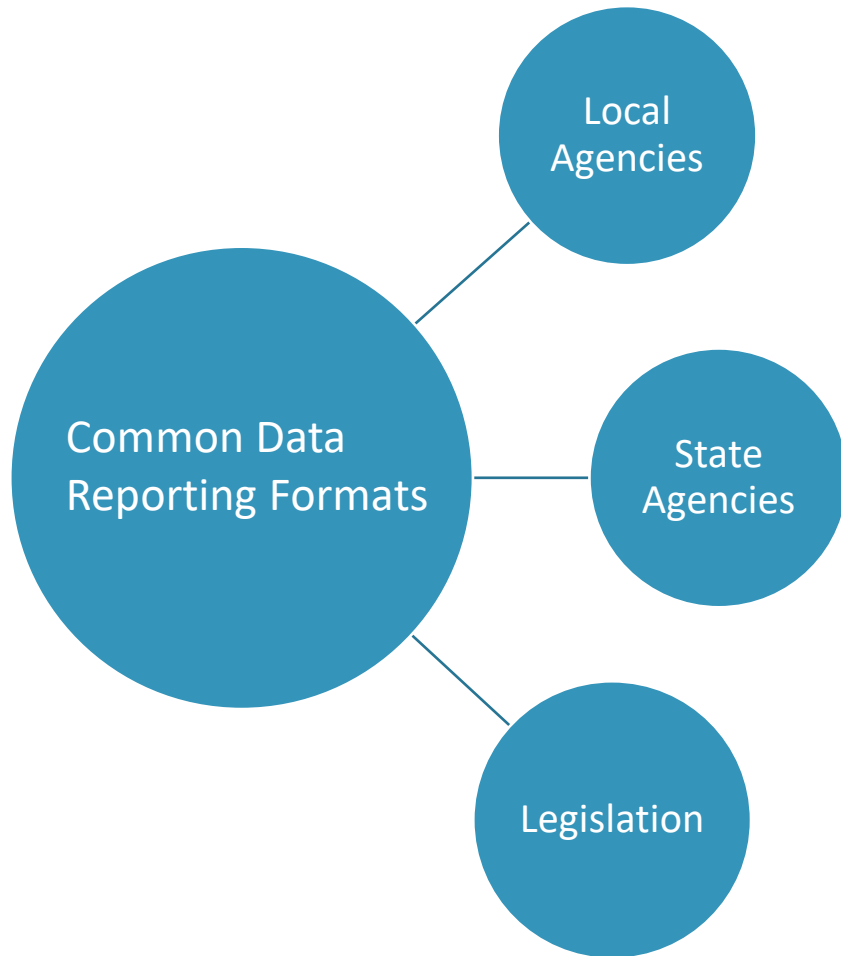
Email: [tmoran@cawaterdata.org](mailto:tmoran@cawaterdata.org)



Image from: CA DWR



# Data Reporting Formats



- What should we be considering implementation and adoption recommendations for local agencies?
- Any other considerations we should keep in mind regarding implementation and adoption at multiple levels?
- Do you know of any existing work being done related to this?



## Manager Dashboard

Create Water Transactions

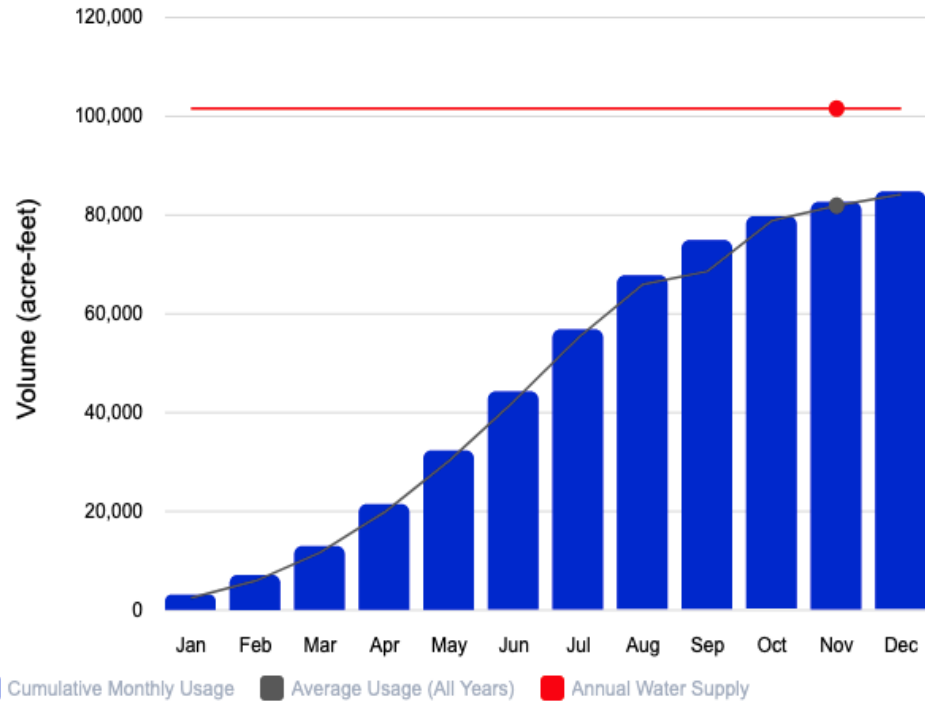
Viewing year 2021 ▾

### District-Wide Statistics

ac-ft ac-ft/ac

<b>Total Supply</b>	<b>101,566.0 ac-ft</b>
Project Water ?	84,827.5 ac-ft
Reconciliation ?	0.0 ac-ft
Native Yield ?	4,241.4 ac-ft
Stored Water ?	150.0 ac-ft
Purchased	0.0 ac-ft
Sold	0.0 ac-ft
<b>Total Usage</b>	<b>84,828.2 ac-ft</b>
<b>Average Annual Usage</b>	<b>84,161.2 ac-ft</b>
<b>Total APN Acreage</b>	<b>28,275.8 ac</b>

### 2021 District Supply and Usage ?



## Account Usage Report

[View All Accounts](#)


Account Name	Account Number	Total Supply (ac...)	Project Water	Reconciliation	Native Yield	Stored Water	Purchased (a
Farmgistics Industries	10707	1,492.73	1,248.56	0.00	62.43	0.00	
Elecrop Farms	10708	573.01	353.82	0.00	17.69	150.00	
Croppine Farms	10709	559.77	468.21	0.00	23.41	0.00	
Farmcelf Industries	10710	525.51	439.55	0.00	21.98	0.00	
Chersoil Farms	10711	129.27	108.13	0.00	5.41	0.00	
Hotfarm Industries	10714	649.44	543.22	0.00	27.16	0.00	
Farmbean Industries	10715	581.34	486.25	0.00	24.31	0.00	
Wheater Farms	10716	697.29	583.24	0.00	29.16	0.00	

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## Trade Activity

[Delete All Trade Activity](#)


Trade	Date	Status	Buyer Account	Seller Account	Quantity (ac-ft)	Unit Price	Total
2021-0013	12/9/2021, 10:43 AM	Awaiting Registration	#Hotplant Farms (10...	#Farminater Industrie...	300	\$250.00	\$
2021-0012	8/5/2021, 7:44 AM	Awaiting Registration	#Croper Farms (1076...	#Agrove Farms (1077...	50	\$350.00	\$
2021-0011	6/22/2021, 11:42 AM	Awaiting Registration	#Crosscrop Farms (1...	#Crojejet Farms (107...	300	\$225.00	\$
2021-0010	4/1/2021, 3:24 PM	Awaiting Registration	#Agrowgrua Farms (1...	#Dairyo Farms (10721)	100	\$250.00	\$
2021-0009	3/10/2021, 1:21 PM	Awaiting Registration	#Farmcell Industries ...	#Crosscrop Farms (1...	170	\$415.00	\$
2021-0008	3/1/2021, 11:33 AM	Awaiting Registration	#Agrass Farms (10717)	#Crojejet Farms (107...	200	\$250.00	\$
2021-0007	2/10/2021, 11:27 AM	Awaiting Registration	#Crojejet Farms (107...	#Farmfruit Industries...	200	\$255.00	\$
2021-0006	2/9/2021, 10:53 AM	Awaiting Registration	#Croper Farms (1076...	#Wheater Farms (107...	100	\$225.00	\$

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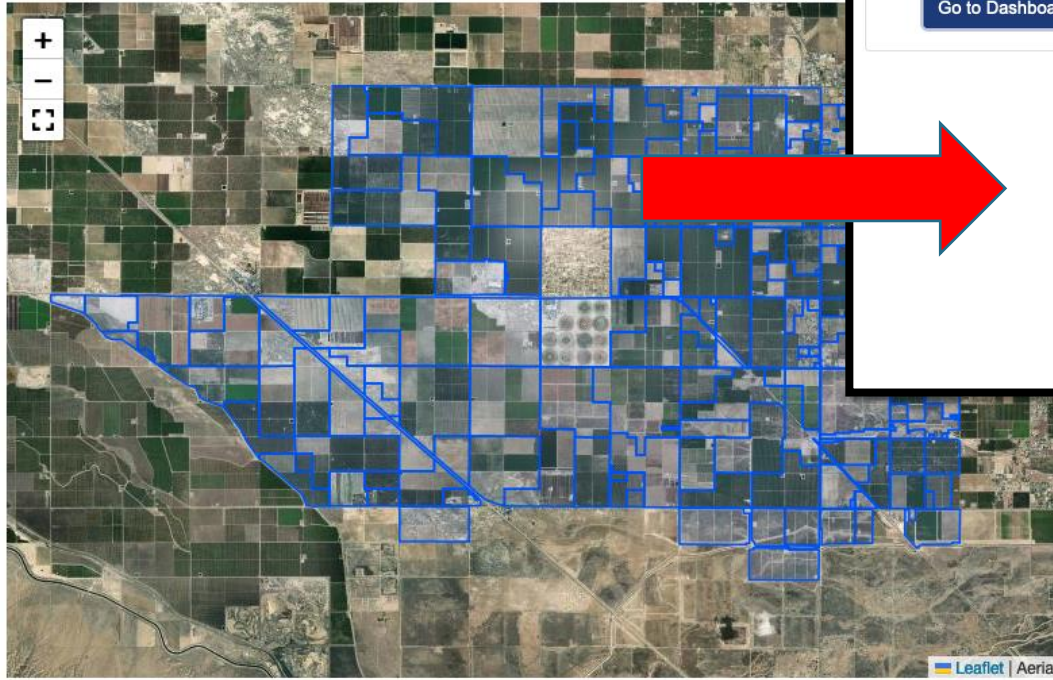
# Parcels

This page shows all Parcels managed in the Water Accounting & Trading Platform. Use the map below to select a Parcel to see more

## Selected Parcel

Select a Parcel from the map or the grid

## Parcel Map



## Selected Parcel

**APN** 555-00-073  
**Area** 406.1 acres  
**Water Account** Agrover Farms

[Go to Dashboard](#)

## Parcel Map

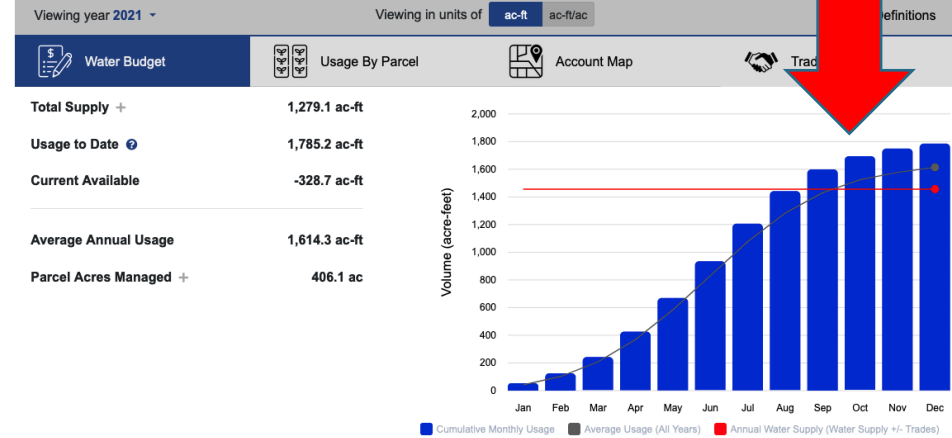


## Parcel List

Viewing year 2021

APN	Area (acres)	Account	Tags	Total Supply	Project Water	Reconciliation	Native Yr
555-00-008	416.2	#10707 (Farmgistics Ind...)		1,310.99	1,248.56	0.00	
555-00-011	117.9	#10708 (Elecrop Farms)		521.51	353.82	0.00	

## Agrover Farms (Account #10736)



## Account Activity

Recent Transactions | All Transaction Details

Effective Date	Transaction Type	Description	Quantity	Balance
12/31/21	Usage	A correction to 12/2021 has been applied to this water account		
	OpenET	Parcel 555-00-073	-0.14 ac-ft	-328.75 ac-ft
12/31/21	Usage	A correction to 12/2021 has been applied to this water account		

# Landowner Dashboard

## Wheater Farms (Account #10716)

Water Budget

Usage By Parcel

Account Map

Trading

Viewing year 2021

### Water Budget Overview

ac-ft ac-ft/ac

**+ Acres Managed** 194.4 ac

Total acres of all your managed parcels

**+ Allocation** 643.8 ac-ft

Your annual allocated water budget

**+ Purchased** -

Water supply you have purchased this year

**+ Sold** 100.0 ac-ft

Water supply you have sold this year

**Total Supply** 543.8 ac-ft

Allocation + Purchased - Sold

**Usage to Date** 165.3 ac-ft

Total usage this year as measured by OpenET

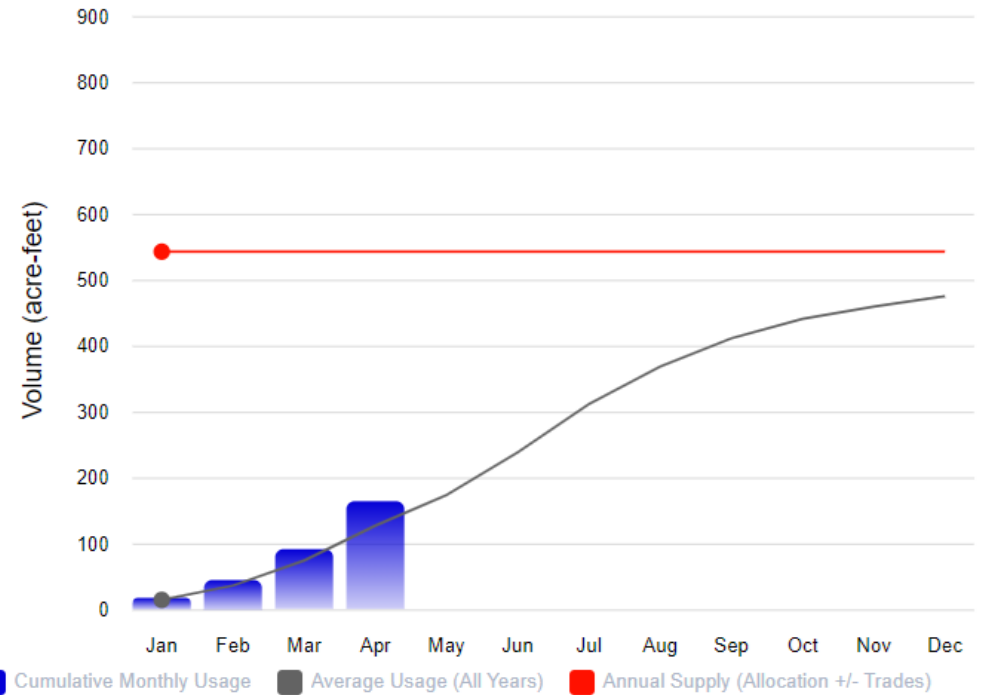
**Current Available** 378.6 ac-ft

Allocation + Purchased - Sold - Usage to Date

**Average Annual Usage** 476.4 ac-ft

Average annual usage from all years of OpenET data

### 2021 Allocation and Usage



# Landowner Dashboard

## Wheater Farms (Account #10716)

Water Budget

Usage By Parcel

Account Map

Trading

Viewing year 2021

### Water Budget Overview

ac-ft ac-ft/ac

**+ Acres Managed** 194.4 ac  
Total acres of all your managed parcels

**+ Allocation** 643.8 ac-ft  
Your annual allocated water budget

**+ Purchased** -  
Water supply you have purchased this year

**+ Sold** 100.0 ac-ft  
Water supply you have sold this year

**Total Supply** 543.8 ac-ft  
Allocation + Purchased - Sold

**Usage to Date** 165.3 ac-ft  
Total usage this year as measured by OpenET

**Current Available** 378.6 ac-ft  
Allocation + Purchased - Sold - Usage to Date

**Average Annual Usage** 476.4 ac-ft  
Average annual usage from all years of OpenET data

### 2021 Allocation and Usage

**- Allocation** 643.8 ac-ft

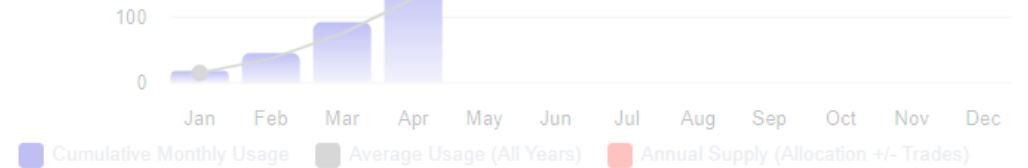
**Project Water** 583.2 ac-ft

**Reconciliation** 0.0 ac-ft

**Native Yield** 29.2 ac-ft

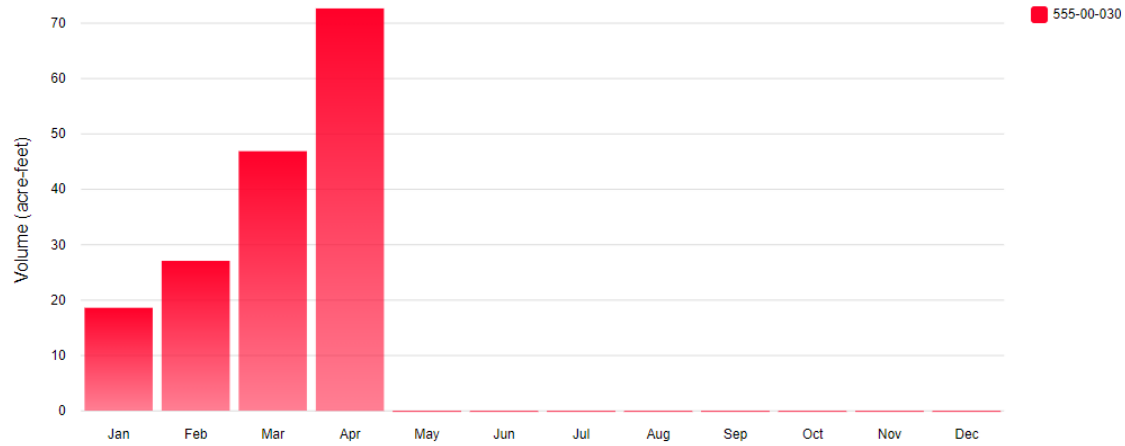
**Stored Water** 0.0 ac-ft

**Precipitation** 31.4 ac-ft



# Wheater Farms (Account #10716)

## 2021 Water Usage by Parcel Visualization



Estimated water usage is based on satellite imagery and may not be accurate at the APN level. Details of water use measurements can be found in the [OpenET FAQ](#).

## 2021 Water Usage by Parcel Tabular

Override OpenET Data

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
555-00-030	18.6	27.1	46.9	72.7	-	-	-	-	-	-	-	-	165.3
<b>Total</b>	18.6	27.1	46.9	72.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	165.3

