COMPONENT 2 DATA EVALUATION

EXTRACTION DEMONSTRATION PROJECTS (WMA/CMA)

27 MAY 2026

GROUNDWATER EXTRACTION REPORTING

Santa Ynez River Valley Ground Basin

GSP Project and Management Action: "*Groundwater Extraction Fees and Well Meters.*"

- Prop 68 Component 2: Well Extraction Measurement Demonstration Projects and Basin Reporting Program
- Groundwater extraction is a primary factor impacting water sustainability in all developed groundwater basins.
  - SGMA requires groundwater extractions for the basin water budget.
  - Santa Ynez River Basin has long history of required reporting of extractions.
    - SYRWCD has received self-reported well extractions since the late 1970's.
    - SGMA implementation funded by groundwater management fees.

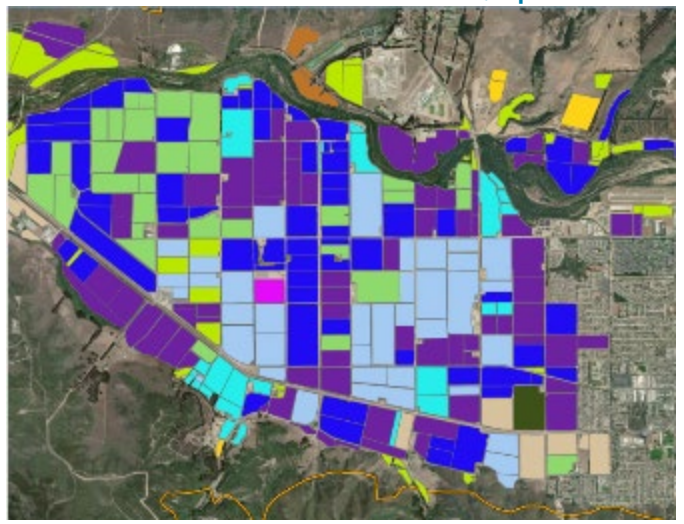
PROP 68 COMPONENT 2

Extraction Measurement Demonstration Projects (CMA)

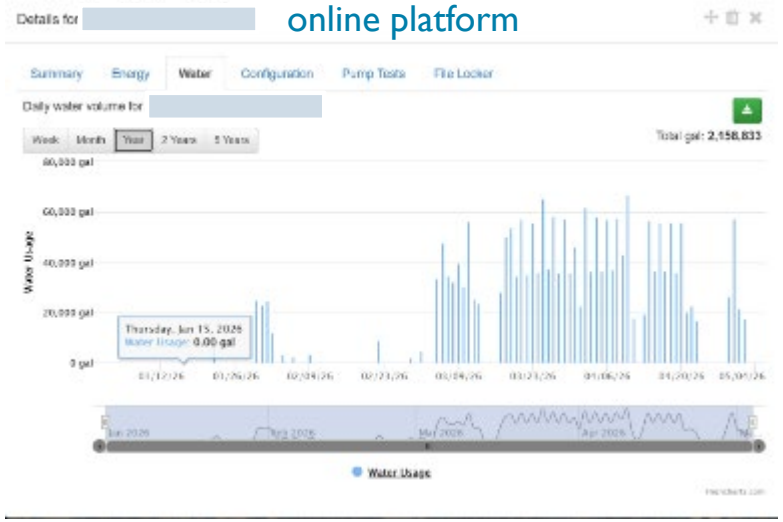
- Test and compare feasibility and reliability of measurement methods.
  - Mechanical Totalizer Meters
  - Electrical Power Consumption
  - Evapotranspiration (ET - water consumption by plants)
    - Measured ET (LandIQ)
    - Remote Sensing (OpenET)
- Method evaluation (accessibility, cost, feasibility, and land use).
- GSAs and well owners can utilize results to inform selection of preferred reporting method(s).

Totalizer Meter

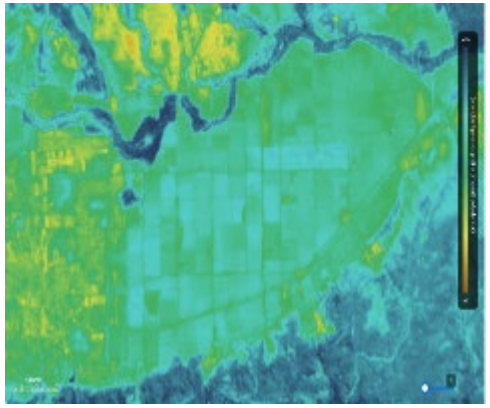
LandIQ spatial data



Electrical Power Consumption online platform

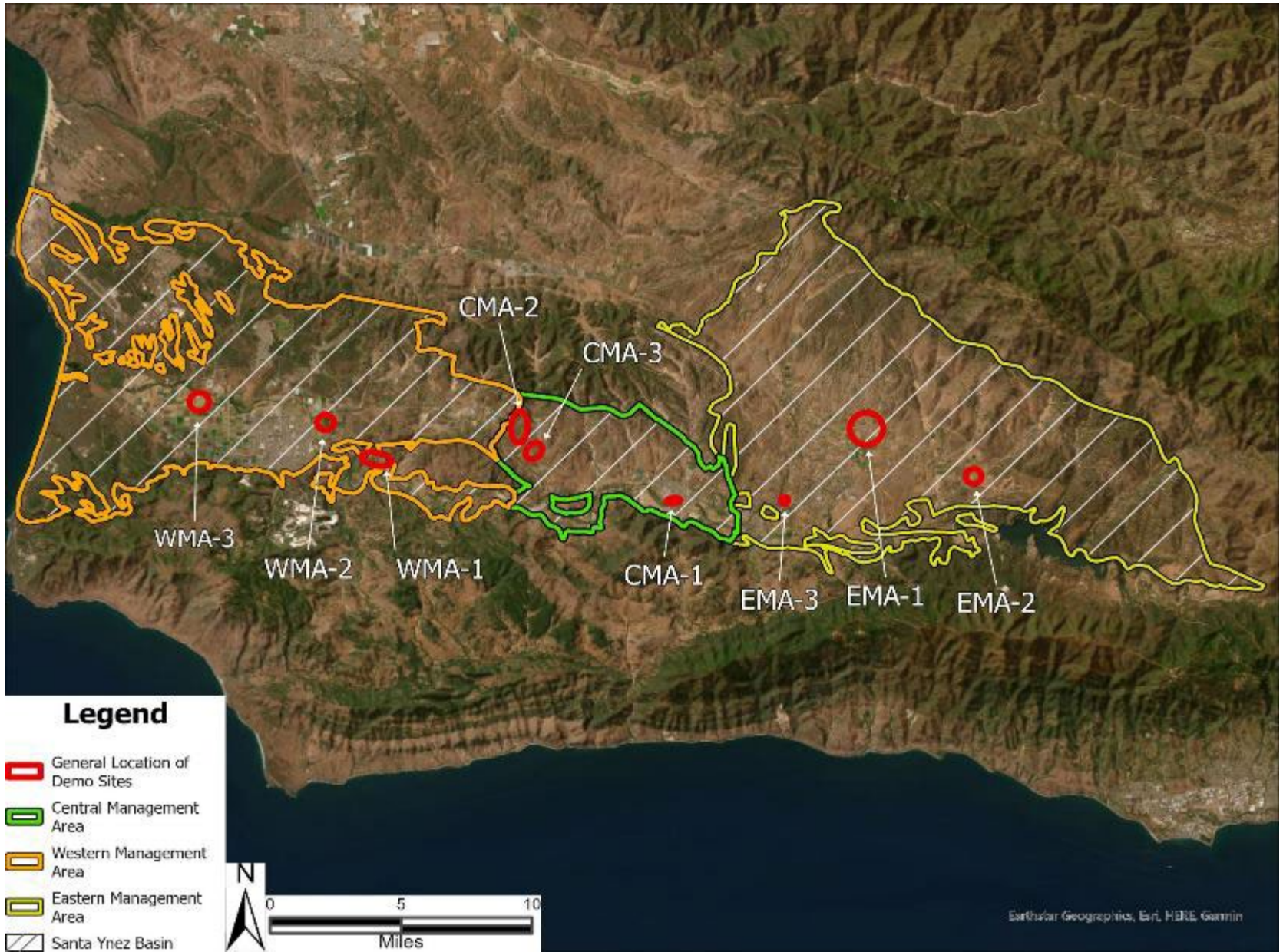


OpenET spatial data



DEMONSTRATION PROJECT SITES

Groundwater extraction measurement methods tested in nine (9) irrigated fields (three fields per GSA).



DATA AVAILABILITY COVERAGE (WMA)

Demo Site #	April 2025	May 2025	June 2025	July 2025	August 2025	September 2025	October 2025	November 2025	December 2025	January 2026	February 2026	March 2026
	Quarter 2 – 2025			Quarter 3 – 2025			Quarter 4 – 2025			Quarter 1 – 2026		
WMA-1 Vineyard (160 ft amsl)	--- EP ETm OET	--- EP ETm OET	--- EP ETm OET	MM EP ETm OET	MM EP ETm OET	MM* EP ETm OET	MM* EP ETm OET	MM EP ETm OET	MM EP ETm OET	MM EP ETm OET	MM EP ETm OET	MM* EP ETm OET
WMA-2 Row Crop (110 ft amsl)	--- --- (ETm) OET	--- --- (ETm) OET	MM --- (ETm) OET	MM EP (ETm) OET	MM EP (ETm) OET	MM EP (ETm) OET	MM EP (ETm) OET	MM EP (ETm) OET	MM EP (ETm) OET	MM EP (ETm) OET	MM EP (ETm) OET	MM EP (ETm) OET
WMA-3 Row Crop (70 ft amsl)	--- EP (ETm) OET	--- EP (ETm) OET	--- EP (ETm) OET	--- EP (ETm) OET	MM EP (ETm) OET	MM EP (ETm) OET	MM EP (ETm) OET	MM EP (ETm) OET	MM EP (ETm) OET	MM EP (ETm) OET	MM EP (ETm) OET	MM EP (ETm) OET

MM = Mechanical Flow Meter; EP = Electrical Power Consumption; ETm = LandIQ ET station; (ETm) LandIQ extrapolated; OET = OpenET
"MM*" indicates that the monthly mechanical flow for the month was not reported by the well owner.

DATA AVAILABILITY COVERAGE (CMA)

Demo Site #	April 2025	May 2025	June 2025	July 2025	August 2025	September 2025	October 2025	November 2025	December 2025	January 2026	February 2026	March 2026
	Quarter 2 – 2025			Quarter 3 – 2025			Quarter 4 – 2025			Quarter 1 – 2026		
CMA-1 Golf Course (310 ft amsl)	--- EP (ETm) OET	MM EP (ETm) OET	MM EP (ETm) OET	MM EP (ETm) OET	MM EP (ETm) OET	MM* EP (ETm) OET	MM EP (ETm) OET	MM EP (ETm) OET	MM EP (ETm) OET	MM EP (ETm) OET	MM EP (ETm) OET	MM EP (ETm) OET
CMA-2 Vineyard (772 ft amsl)	--- EP ETm OET	--- EP ETm OET	MM EP ETm OET	MM EP ETm OET	MM EP ETm OET	MM EP ETm OET	MM* EP ETm OET	MM* EP ETm OET	MM EP ETm OET	MM* EP ETm OET	MM* EP ETm OET	MM EP ETm OET
CMA-3 Vineyard (503 ft amsl)	--- --- (ETm) OET	MM --- (ETm) OET	MM --- (ETm) OET	MM --- (ETm) OET	MM --- (ETm) OET	MM --- (ETm) OET	MM --- (ETm) OET	MM --- (ETm) OET	MM --- (ETm) OET	MM --- (ETm) OET	MM --- (ETm) OET	MM --- (ETm) OET

MM = Mechanical Flow Meter; EP = Electrical Power Consumption; --- = EP estimates not reported (1 to 1 relationship between meter and pump motor did not exist); ETm = LandIQ ET station; (ETm) LandIQ extrapolated; OET = OpenET
"MM*" indicates that the monthly mechanical flow for the month was not reported by the well owner.

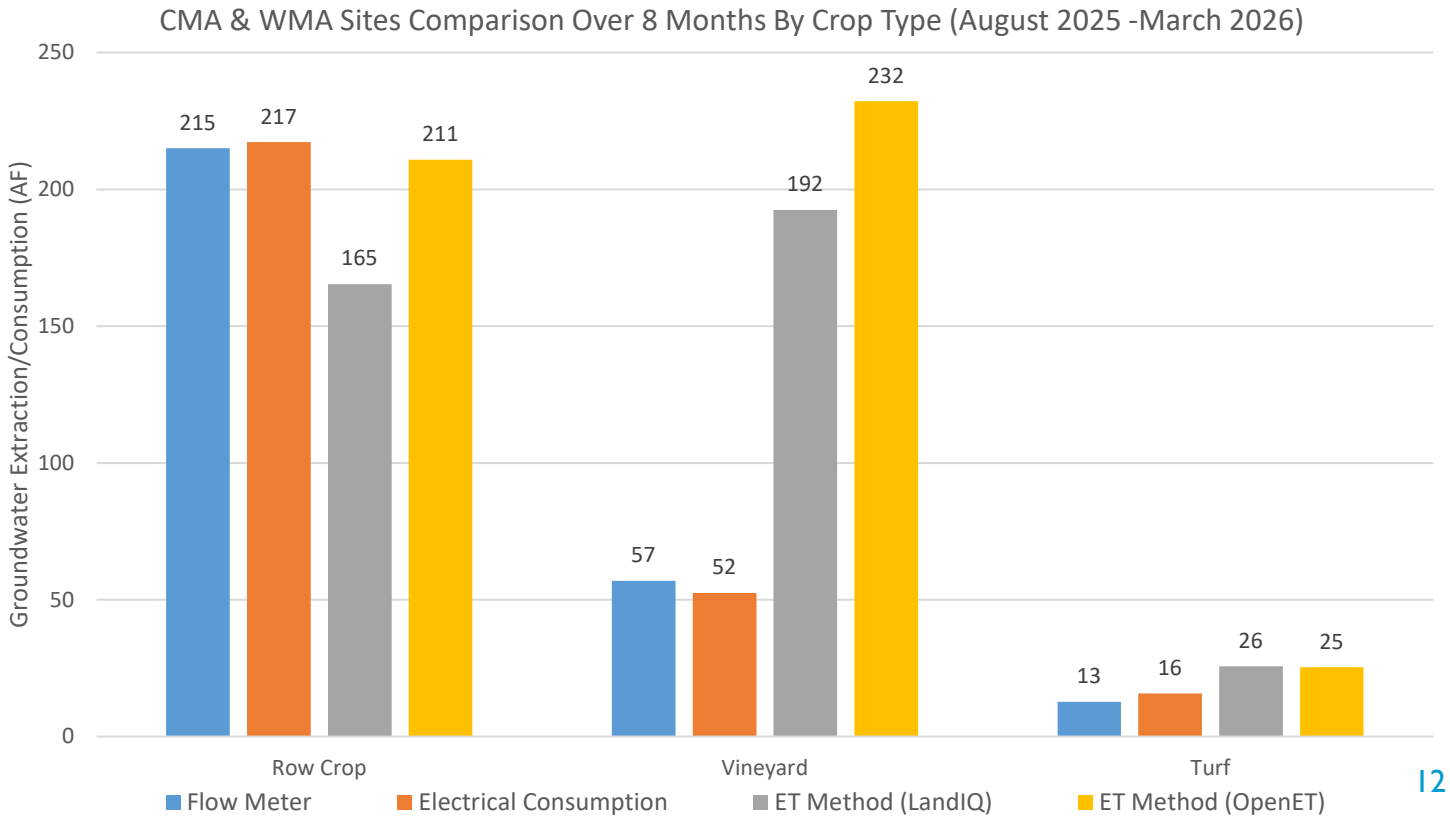
WMA/CMA TOTALS BY CROP TYPE

Monthly Data from All Methods Available for August 2025-March 2026

- Total groundwater extraction from flow meter and power consumption were within 1% to 25%
  - Greatest % difference at CMA-1 (turf) but magnitude only ~3 AF.
  - Range in differences 2-5 AF; average difference of 0.3 AF.
- The ET station measurements (WMA-1 and CMA-2) were on average 19% lower than OpenET (average of 5 AF).
- LandIQ ET estimates for vineyards, row crops and turf were 1% to 27% of OpenET (average difference of 28 AF).

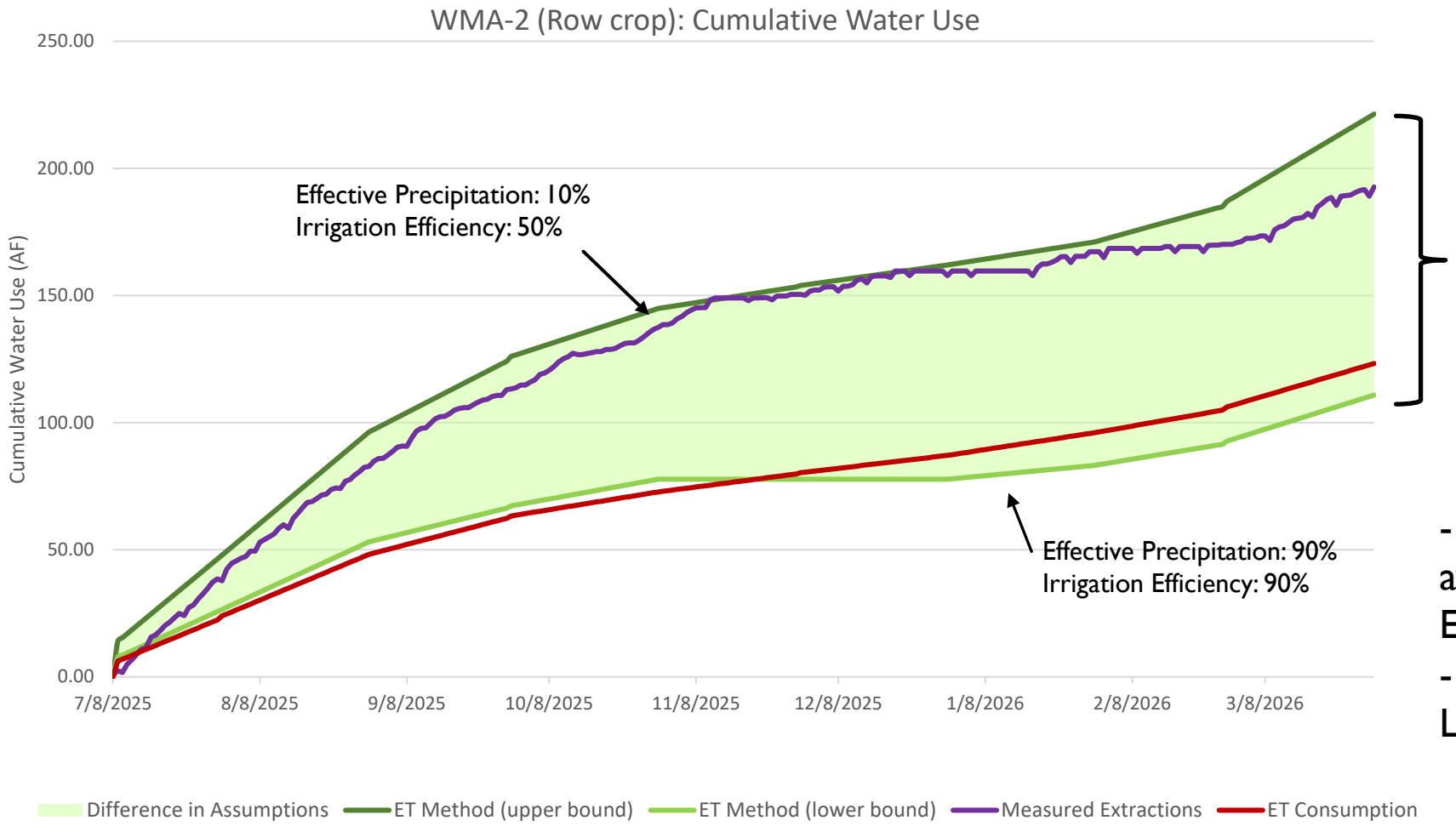
% Differences between Methods

	Row Crop (2 sites)	Vineyard (3 sites)	Turf (1 site)
Flow meter vs Electrical Consumption	1%	8%	25%
LandIQ vs OpenET	27%	21%	1%



EXTRACTIONS ESTIMATED FROM ET

Require Assumed Irrigation Efficiency and Effective Precipitation



Range of possible extraction estimates depending on assumed irrigation efficiency and effective precipitation.

- Monthly extractions are the average of Mechanical Meter and Electric Power Consumption
- Monthly ET is the average of LandIQ and OpenET

EXTRACTION METHOD PROS AND CONS

	Mechanical Flow Meter	Electrical Power Consumption	ET (LandIQ)	ET (OpenET)
Pros	• Direct water use measurement. • High accuracy when properly installed and maintained. • Accepted method by SWRCB.	• Automated and high-frequency data. • Two-year historical data window available. • Accepted by SWRCB on a case-by-case basis.	• Site specific water consumption measurement. • Broad spatial coverage achieved using land use maps and sophisticated modeling. • Accepted by SWRCB on a case-by-case basis. • May help identify unreported wells and irrigated areas.	• Data is free and publicly available. • Provides daily data ranging from individual land parcels to basin wide conditions. • Broad spatial coverage through remote sensing techniques. • Accepted by SWRCB on a case-by-case basis. • May help identify unreported wells and irrigated areas.
Cons	• Requires installation and maintenance; costs borne by landowner. • Readings subject to human error, meter roll-over, etc.. • Interpolation required between meter readings. • Measures water extracted - not water consumed.	• Requires 1:1 relationship between PG&E SMART meter and well pump. • Requires pump test and calibration every two years. • Additional meter and telemetry devices needed for propane and solar powered motors.	• Measurement stations require maintenance and extrapolation relies on proprietary models. • Uncertainty due to need for assumed effective precipitation, irrigation efficiency, and influence of cloud cover, green houses, fallow land, etc. • Sensitive to crop types and irrigation practices.	• Uncertainty due to need for assumed effective precipitation, irrigation efficiency, and influence of cloud cover, green houses, fallow land, etc. • Sensitive to crop types and irrigation practices.

GENERAL EVALUATION

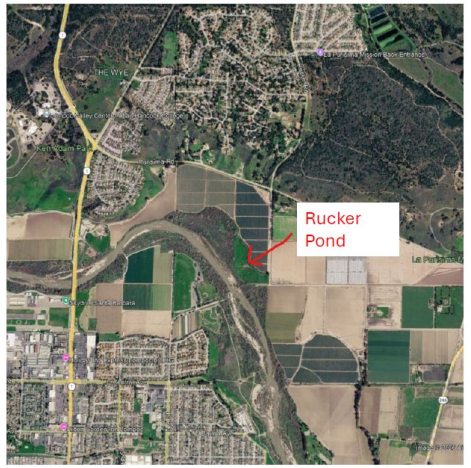
	Mechanical Flow Meter	Electrical Power Consumption	ET (LandIQ)	ET (OpenET)
Accessibility	Well visits to record manual readings unless telemetry device installed.	Access to owner PG&E account.	Site access for stations and periodic servicing.	Accessible from internet.
Cost (2025 dollars)	$680-$830 per well per year.	$650-$700 per well per year.	~$60K per GSA (*one time*). ~$28K per GSA (*annual*). $73 to $217 per well, depending on GSA.	Free data; modest cost for data processing and reporting.
Feasibility	Well appurtenances must accommodate meter per manufacturer specifications.	Requires PG&E SMART meter and 1 to 1 correspondence between meter and electrical pump.	Requires effective precipitation, irrigation efficiency, and crop specific irrigation practices.	Requires effective precipitation, irrigation efficiency, and crop specific irrigation practices.
Land Use	All Uses.	All Uses.	Agriculture, golf courses, parks, cemeteries, etc.	Agriculture, golf courses, parks, cemeteries, etc.

NEXT STEPS FOR COMPONENT 2 (WMA/CMA)

- ☑ Well Extraction Measurement and Reporting Program Development.
  - Data Management System (DMS) for receiving and reporting the extraction data. ✓
  - Demonstration Projects (3 sites per GSA). ✓
- ☐ Technical Memorandum to document the following:
  - DMS research and services. ← In Progress (due July 2026)
  - Demonstration project development. ✓ Draft completed
  - Demonstration project results. ← In Progress
- ☐ Prepare Draft and Final "Implementing Rules and Regulations Document" to address:
  - Well registration.
  - Measurement method criteria.
  - Reporting requirements.

STORMWATER CAPTURE AND WATER USE EFFICIENCY

GSP Project and Management Action "*Increased Stormwater Recharge*"



- Prop 68 Component 6: Stormwater Capture and Infiltration
  - Geotechnical and topographic survey completed.
  - Initiated 30% engineering design plans and specifications.

GSP Project and Management Action "*Water Conservation*"

- Prop 68 Component 7: Water Use Efficiency Strategic Plan
  - Ag demonstration project (3 sites).
  - Water Use Efficiency Strategic Plan.

RECYCLED WATER

GSP Project and Management Action "*Recycled Water Project*"

- Prop 68 Component 8: Recycled Water Feasibility Study

  Analysis of selected alternatives

  - No project.
  - Ag. Irrigation downstream (west) of LRWRP at Lompoc Plains.
  - Upstream (east) of LRWRP
    - Ag. Irrigation at Santa Rita Uplands.
    - Golf course irrigation at La Purisima golf course.
    - Groundwater replenishment at Rucker ponds.
  - Groundwater replenishment at Rucker ponds using MHCSD recycled water.

DATA GAP FILLING

GSP Implementation Project: "*Monitoring Network Gaps*"

- Prop 68 Component 5: Monitoring Improvement and Expansion
  - New Monitoring well (*location identified; awaiting DWR approval of design*).
  - Santa Ynez River Gauge (*permitting completed; construction planned for late summer*).
  - GDE verification (*draft TM submitted in April; returned to consultant for revisions*).
  - Saltwater intrusion monitoring study (*Data analysis and TM in progress*).