6/25/2025

California County Café – Office Hours

– Specializing in Drought Resilience

Welcome and Setting Intention

Office Hours – An opportunity for an informal conversation about the issues and questions that are on your mind.

✓Join the conversation – share your questions, experience and learn from other perspectives and experiences.

✓ Make a connection – use the chat to connect with other participants.

✓ County focused – While all are invited to join, this gathering will focus on supporting county staff.

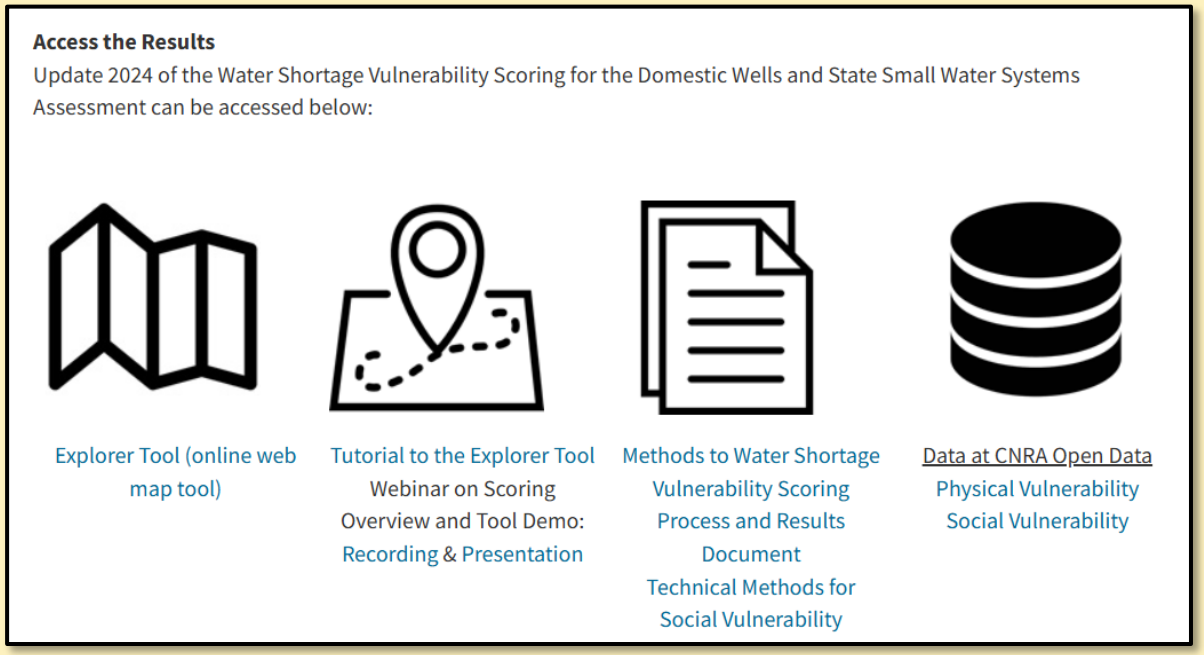
Water Shortage Vulnerability (WSV) Score and Explorer Tool

Evaluation and County Feedback

WSV Score & Tool – An Overview

- The Water Shortage Vulnerability Score & Explorer Tool assesses drought and water shortage risk for domestic wells and state smalls throughout California by combining physical and social vulnerability indicators.

- Resources are publicly available:
  - Recorded Webinars
  - Technical Methods Documentation
  - Open Data Portal



https://water.ca.gov/Programs/Water-Use-And-Efficiency/SB-552/SB-552-Tool

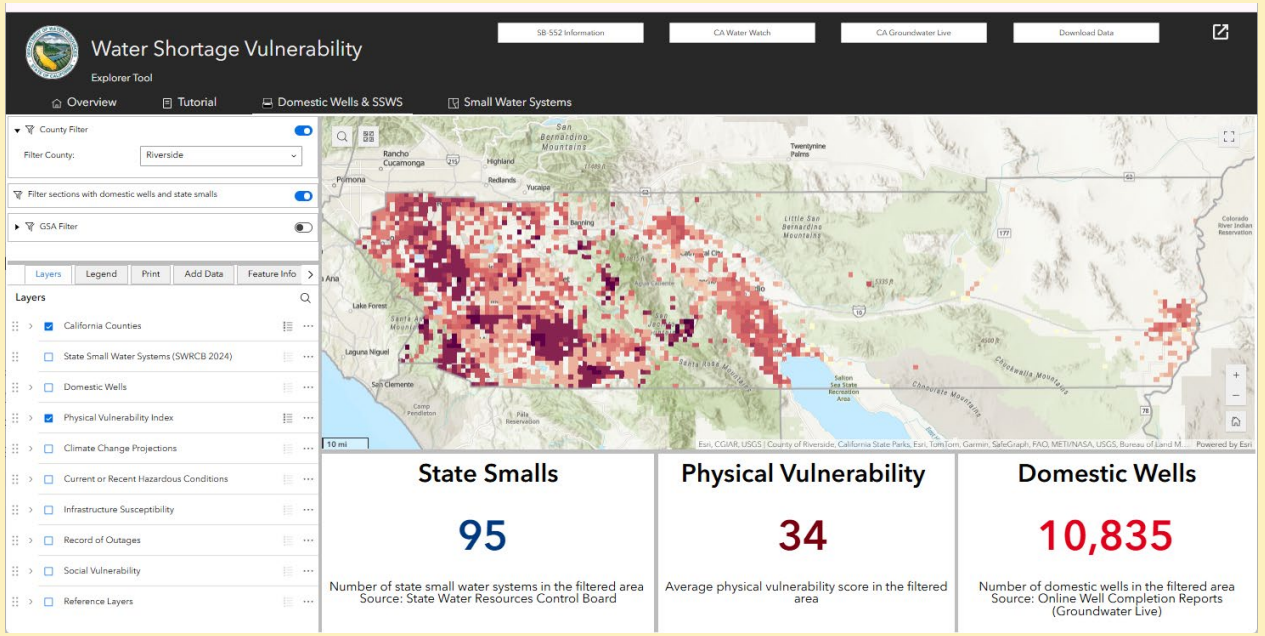
The Score & Tool displays a **snapshot in time** and it is **not predictive**

Purpose

- **Scoring:** Explore water shortage risk and vulnerability across California
- Two sets of scoring are available:
  - Domestic wells & State small water systems
  - Small water systems

- **Tool:** Provide public access to the scoring and underlying indicators

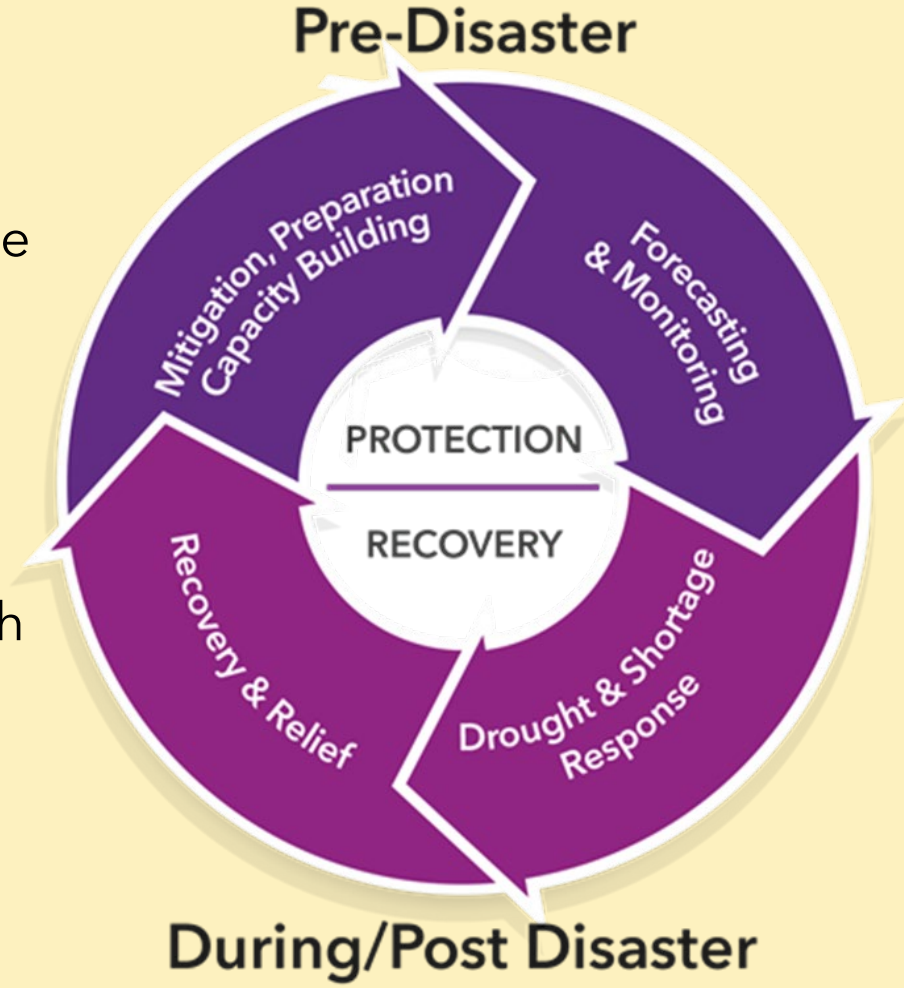
- California Water Code Section 10609.80 requires DWR to regularly update the WSV Score and Tool



https://arcg.is/1HjPu9

Tool History

- Senate Bill 552 requires DWR to regularly update the Water Shortage Vulnerability score
- Intent of the tool is to aide counties in their development of Drought Resilience Plans, also required by SB 552
- Indicators and weightings were decided through discussions with the County Drought Advisory Group (CDAG)



WSV Score & Tool – Your Experience

Poll Question: How effective was the WSV Score & Tool in supporting your Drought Resilience Plan development? [Not Effective… Very Effective]

Discussion: How did you use the WSV Score & Tool?

County Task Force Questions/Comments about WSV Score & Tool

1. **Indicators and Scoring:**
   - **Understanding Physical Vulnerability**
   - **Understanding Social Vulnerability**
2. **Navigating State and Local Data**
3. **User Interface and Accessibility**
4. **Broader Opportunities for Use**

Indicators and Scoring

- Selection and weighting of indicators
- Transparency and consistency in scoring methods

Indicators - Overview

- There are two sets of indicators representing physical and social vulnerabilities
- Total of 27 vulnerability indicators initially developed by the County Drought Advisory Group (CDAG)
- Weighting scheme for scoring was updated with 12-county workgroup in 2023

Physical Vulnerabilities	Social Vulnerabilities
• Infrastructure • Projected Climate Change • Current Conditions & Episodic Events • Observed Shortage	• Socio-Economic Status • Language and Education • Demographics • Housing and Transportation • Racial and Ethnic Makeup

Indicators Scoring Weights

Indicator	Weight
Climate Change (temperature, sea level rise, wildfire)	1-1-1
Current Dry Year	2
Multiple Dry Year	1
Interties	5
Emergency Interties	5
Customers Metered	2
Rate Structure Update	2
Rate Structure Type	2
Source Capacity Violation	5
Bottled / Hauled Water	5

Small Water Systems

Indicator	Weight
Wildfire Risk	2
Water Quality Risk	2
Distribution Outage Record	2
Water Level Status	5
Supplier Size	2
Drought Preparedness Plan	5
Technical Assistance Record	3
Drought Impact Experienced	5

Indicator	GW Only	GW+SW	SW Only
Irrigated Agriculture	2	1	1
Fractured Rock Area	4	2	0
Saltwater Intrusion	2	1	0
Subsidence	1	0.5	0
Overdrafted Basin	1	0.5	0
Chronic Declining Levels	3	1.5	0
Source Monitoring	2	1	0

- Sum-rank method developed by Flanagan et al (2018) to calculate Social Vulnerability
- For Physical Vulnerability, each indicator score was normalized from 0 to 1, then summed to create an overall score for a single square mile section
- Small water systems, , each indicator score was normalized from 0 to 1,and summed for each service area

Domestic Wells & State Small Scoring: Physical Vulnerability Indicators

Category	Indicator	Weight
Projected Climate Change	Temperature Rise, Sea Level Rise, Wildfire Risk	1-1-1
Current Conditions & Episodic Events	Current Dry Year	2
	Multiple Dry Year	2
	Current Wildfire Hazard	3
	Fractured Rock Area	3
	Water Quality Risk	3
	Saltwater Intrusion	3
	Irrigated Agriculture	3
Infrastructure	Dry Well Susceptibility	5
Observed Shortage	Household Water Outage	5
	Basin-Only Indicators	**Weight**
Current Conditions & Episodic Events	Subsidence	2
	Overdrafted Basin	2
	Chronic Declining Levels	3

Social Vulnerability Indicators

Socioeconomic Status	Below 2x Poverty
	Unemployment
	Per Capita Income
Language & Education	No High School Diploma
	Speaks English Less than Well
Demographics	Aged 65 or Older
	Aged 17 or Younger
	Older than Age 5 with a Disability
	Single Parent Households
Housing & Transportation	Mobile Homes
	No Available Vehicle
	Crowded Housing
	Multi-Unit Structures
	Group Quarters
Racial and Ethnic Makeup	Persons of Color

Indicators and Scoring – Feedback

Questions and ideas you have shared during County Task Force meetings about the tool:

- Transparency for indicators weights that are used to develop scores
- Accounting for spring-fed Systems
- Clarity on data used for water quality risk (SWRCB Data)
- Including information about infrastructure age
- Accounting for seasonal and unhoused populations
- Wildfire risk will be updated with new CalFire maps
- Are we able to adjust weights within the Tool?
- Should indicators like climate change or wildfire have a higher weight?
- Other indicators to consider – Flood, Earthquakes, Snowpack
- How can information about resources for short term response, such as water haulers, be incorporated into the tool?

Indicators and Scoring – Your Experience

Poll Question: Did the score you got in your base risk assessment reflect your understanding of drought vulnerability in your region? [Yes, No]

Discussion: What additional indicators would be helpful to include?

State and Local Data

- Data sources and limitations
- Integration of local and state data
- Addressing data gaps and discrepancies
- Long-term maintenance and updates

Information/data sources are used to represent local conditions. What are the data limitations?

Data Source	Used for in scoring or tool
DWR (Groundwater Program)	Well locations and density, subsidence, groundwater level decline, dry well reports, fractured rock area
DWR (Water Use Efficiency Branch)	Surrounding irrigated agriculture
Oregon State University	Precipitation
Academic universities	Climate change projections (temperature, sea level risk, wildfire)
CalFire/US Forest Service	Wildfire risk maps
State Water Board	Water supplier service areas, groundwater aquifer water quality
US Census	Social vulnerability – demographics, socioeconomics, race and ethnicity, access to resources

State and Local Data – Feedback and Questions

- What information/data sources are used to represent local conditions? What are the data limitations?
  - Wildfire: Available datasets (USFS vs. CalFire) and calculating risk
  - Distinguishing between Statewide vs. Local data
  - Domestic Wells, State Small Water Systems, Small Water Systems
- How can additional local data get added?
  - Counties sometimes have more accurate records than the State. To address this, there is a function to add data into the Tool
- What data gaps and discrepancies need to be addressed?
  - Well Completion Reports
  - State Small Water Systems
  - Small Water Systems

  Input:

  Don't understand where WQ data is coming from. How to understand data? Opportunity to coordinate with SWB to make it more helpful

State and Local Data – Your Experience

Poll Question: Did you use any local data to supplement or compare against the tool or score? [Yes, No]

Discussion:

- What additional data sources need to be added or improved?
- Are there ways you would like the tool to better reflect your county's local context (e.g., local data layers, county-specific insights)?
- Long-term maintenance and updates - How should we communicate updates to the broader public?

Interface and Accessibility

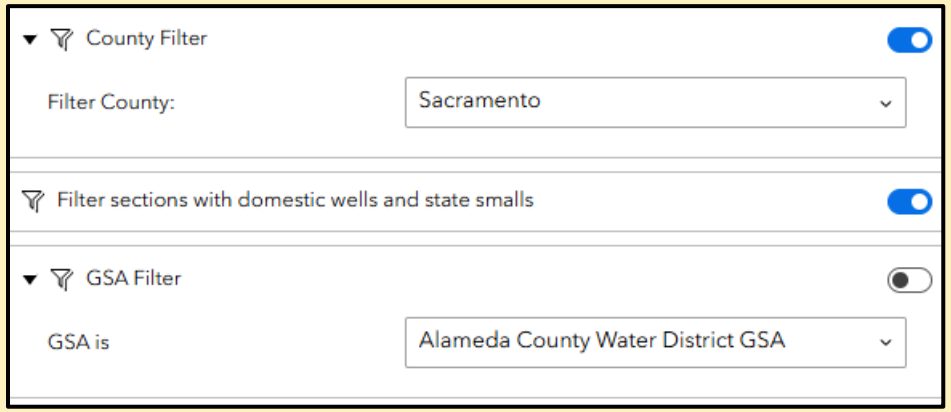
- User-friendliness of the tool
- Accessibility
- Design considerations for broader use
- Colors used in data layers
- Adjustable weights in tool

Interface and Accessibility – An Overview

Domestic Wells and State Smalls

Filter functions to view by:

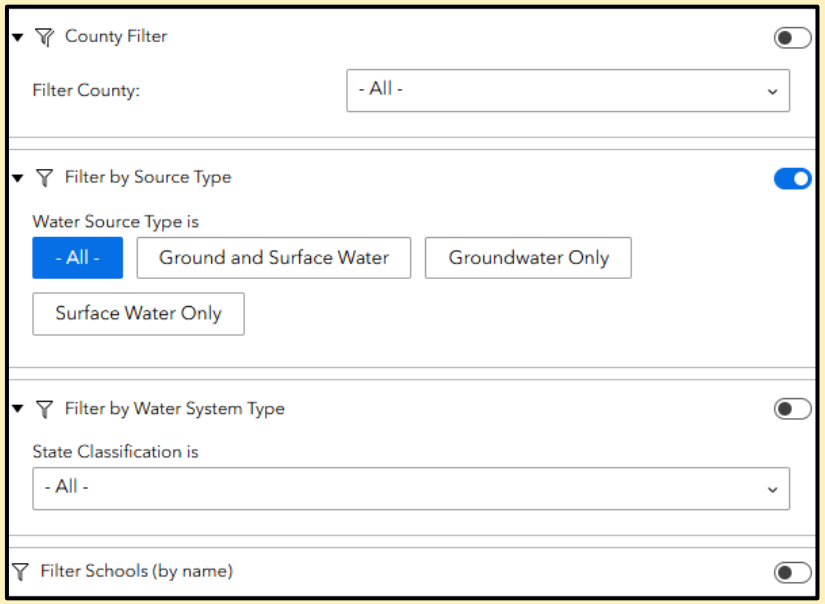
- County boundaries
- GSA boundaries
- PLSS sections containing domestic wells and state smalls



Small Water Systems

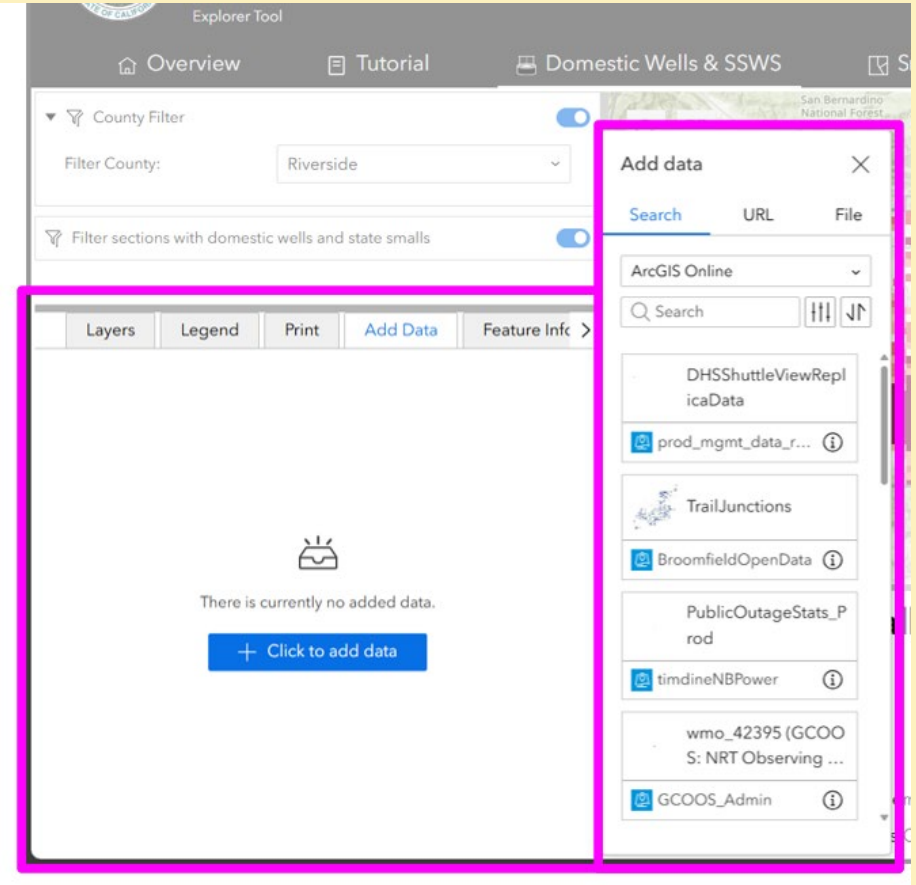
Filter functions to view

- County boundaries
- Small water systems by water source type
- State Classification
- Schools

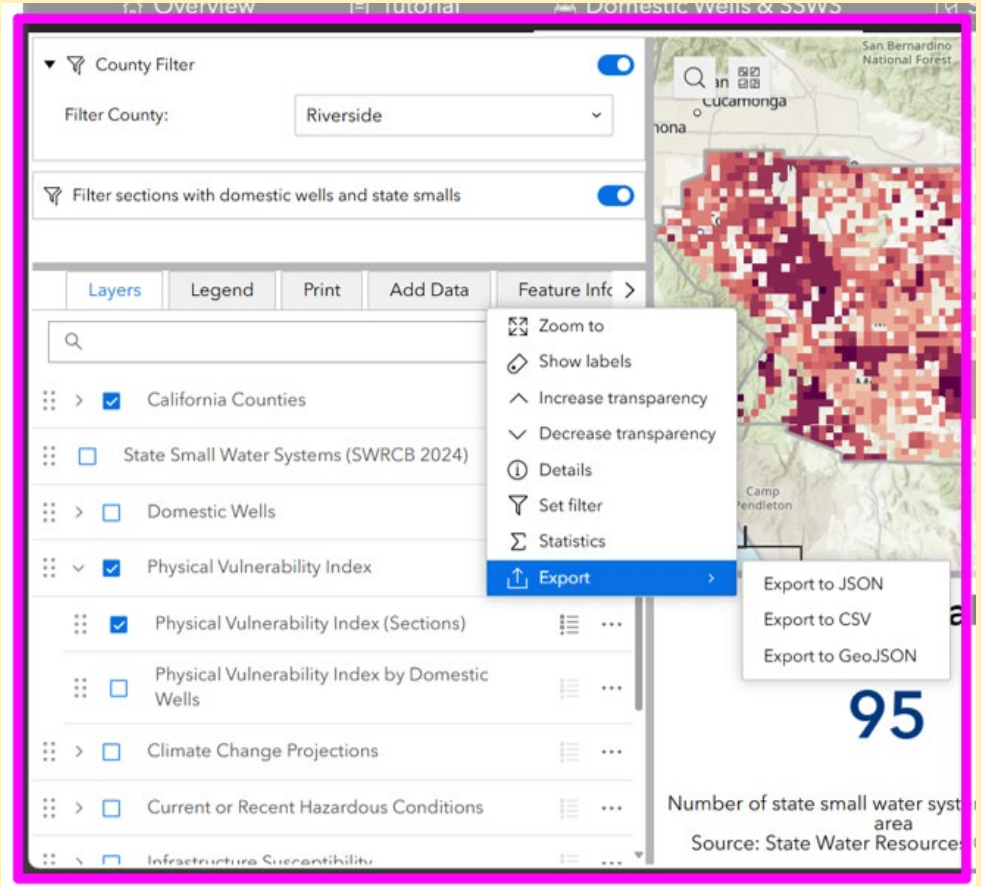


Interface and Accessibility – An Overview

Import Data



Export Data



Interface and Accessibility – Feedback and Questions

- Are the colors readable? Is there enough contrast?
  - Example: Can you change the colors for the Fractured Rock Layer?
- Can weights be adjusted in the Tool?
  - If there's an interest, the DWR team can look into this idea more
- Will the Tool or resources be available in other languages?
  - Suggested languages: Spanish, Vietnamese, Mandarin Chinese

Interface and Accessibility – Your Experience

Poll Question: How would you rate the usability of the online tool? [Difficult to Use… Easy to Use]

Discussion: What features or changes would make the tool more useful for your work?

Broader Opportunities for Use

- Data sharing and collaboration opportunities
- Potential for additional applications across agencies and sectors
- Decision-making support tool

Current/Potential Use and Application of the Tool

Local Planning Efforts

- Local Hazard Mitigation Plan
- Emergency Operations Plan
- Climate Adaptation Plan
- General Plan, Safety Element
- Peninsula Resilience Planning (PREP)
- Integrated Regional Water Management Plan (IRWMP)
- Groundwater Sustainability Plans (GSPs)
- Alignment with Urban Water Management Plan (UWMPs)

State Agencies Programs

- DWR Bulletin 118 Updates
- DWR Regional Office Groundwater Monitoring Networks
- DWR Small Water Systems Conservation Program
- State Water Resources Control Board SAFER Needs Risk Assessment

Other

- Overlaying data in Groundwater Sustainability Agency's GIS database
- Identifying priority communities within a County or groundwater basin

Broader Opportunities for Use

Discussion: Are there other local planning efforts (e.g., General Plan updates, climate adaptation plans) where your county would consider using this tool?

Closing – Thank you!

Next steps – we will follow up with an email to counties for future gatherings, ppt, invitation to share in upcoming gathering.

NO County Café Gathering in July – We will reconvene in August.