

Meeting Summary

Drought Resilience Interagency & Partners (DRIP) Collaborative Drought Indicators & Metrics (DI&M) Workshop #2

On Friday, June 5, 2026, the California Department of Water Resources (DWR) hosted the second in a series of workshops to address [the DRIP Collaborative 2024 recommendation](#) on clearly defining drought indicators & metrics to enable climate-ready decision making across the state. During the workshop, participants were invited to provide input on the process to assess user needs, react to a current list of indicators, and begin identifying potential gaps and opportunities that can inform and advance the initiative.

Deputy Director Paul Gosselin, DWR – Sustainable Water Management Division, welcomed participants and emphasized the importance of addressing this topic, saying that “response mode” is not good enough given the anticipated hotter, drier climate. He encouraged participants to consider ways to protect people, business and the environment. Deputy Director Gosselin stressed his excitement for this work and how we need better communication of drought to all sectors.

Progress to Date

Glen Low, DRIP Collaborative co-facilitator, walked participants through the progress so far from 2026. This included recapping the previous Workshop #1 (on April 1) and the most recent DRIP Collaborative (April 17) comments related to DI&M. He emphasized the terrific [expert presentations](#) that were included in Workshop #1 and also introduced UC Irvine professor Amir AghaKouchak, who did a presentation of the impressive work being done on the UCI Drought Monitoring and Prediction System.

Proposed Process for User Needs

The most frequent comment from past DRIP Collaborative discussions is the need for us to be user centric in our approach to DI&M, across the 10-15 priority audiences. Glen introduced the proposed approach and template for assessing user needs. Alvar Escriva-Bou, DRIP Collaborative member and UC Davis professor, then presented the next phase of his Drought Early Warning Systems (DEWS) for California project, which will be kicking off on June 15. He emphasized the five sectoral advisory groups (science, cities, rural communities, agriculture, and ecosystems) that will be used to shape the DEWS visualization and communication. He concluded by saying his effort is not just about indicators, but really focusing on what do users need to know.

This user needs approach will be complemented by upcoming work to be done by the California Water Data Consortium. Project Manager Hannah Ake walked through the user needs work they will focus on, which includes counties, media, large urban suppliers, state agencies, and environmental managers. This will include a draft memo on counties by September 2026 and the other four audiences to be done next year (completed by August 2027). Hannah emphasized the complementarity of this work with Alvar’s DEWS work. She also invited input into the questions and proposed reach-out to audiences. Multiple Workshop participants who were excited about this work, with NOAA’s Andy Hoell commenting that in the upcoming scaling of the NIDIS SoCal pilot that they were hoping to “connect everything” and explore how all audiences fit together.

Current list of indicators and metrics

The participants discussed the four indicator/metric categories of risk, thresholds, actions, and impacts. Glen walked through several examples of how these four categories are related for specific audiences. Then for each of the four categories, he walked through a current list of indicators that exist specific to California. This was contextualized by the pre-read materials that

were sent out, which summarized the last ~25 years of drought indicator evolution, as referenced by seven peer-reviewed science papers focused on what has specifically happened in California. In total, it was noted that there already exists over 200+ indicators for California and that there was significant interest in now proactively linking risk indicators with their corresponding impacts.

Working Session - Potential Gaps and Opportunities

The participants then split up into two breakout sessions. Both groups tackled the same question: What do you believe are the specific gaps and opportunities that the DRIP Collaborative should focus efforts on?

There were vibrant discussions in both sessions, with many ideas being offered by participants. Along the four categories, here were the key ideas discussed:

Risk (hazard, exposure, vulnerability)

- Groundwater monitoring. Today there is a huge latency issue with lack of groundwater measurement and data
- Predictive. Providing proactive information for rural communities was mentioned, especially as it relates to need for predictive groundwater information
- Vulnerability. Could the DRIP Collaborative help synthesize the weightings used to assess vulnerability?

Threshold

- Triggers. We need more understanding of triggers and what that means for users. People mentioned the simplicity of Purple Air and understanding PM2.5 air quality thresholds

Actions

- Capacity. It was remarked that action was a challenge today given lack of local capacity. For example, we need to better train county public health departments

Impacts

- Financial and economic. Including impacts on household affordability and ability to pay
- Public health. Linking human impacts to thresholds and hazard indicators. Can we get at statistical relationships relating drought to health outcomes (akin to wildfire smoke, air quality impact on human health)
- Water quality. Link drought impacts to water quality
- Secondary impacts. In general, it was remarked that we need to link drought to later impacts (such as water quality, public health) and other cascading hazards, such as heat
- Other groups. Impacts should include mental, spiritual, migrant populations, Tribal, etc.

Overall, on the topic of communication, numerous participants said we need to tap into trusted and existing messengers in communicating. It was mentioned that if most people rely on the media as their main source, we've probably failed as a water community.

White Paper Outline and Next Steps

Glen provided a brief overview of a draft outline for the DI&M white paper, noting that it will continue to evolve based on participant feedback. Participants were also looking forward to discussing DI&M further in the upcoming July 17 DRIP Collaborative in-person meeting and the DI&M Workshop #3 that will be scheduled for August 2026.