Meeting Summary

Drought Resilience Interagency & Partners (DRIP) Collaborative

Spring 2025 Meeting

California Natural Resources Agency, Room 02-221A/B/C
715 P Street, Sacramento
May 16, 2025, 10:00 am - 5:00 pm

The meeting was live streamed and recorded. The recording can be viewed at: https://www.youtube.com/watch?v=tFqosdUhJmg.
Meeting materials (including the presentation) are available online at: https://water.ca.gov/drip.
A list of Drought Resilience Interagency & Partnership (DRIP) Collaborative members (members) is included in Appendix A. The DRIP development team includes:

- Anthony Navasero, CA Department of Water Resources (DWR), Drought Coordinator
- Julie Ekstrom, DWR, Environmental Program Manager in the Water Justice Office
- Zoe Kanavas, DWR
- Kira Haynes, DWR
- Heather Pruitt, DWR
- Jaden Torres, DWR
- Glen Low, Earth Genome
- Orit Kalman

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Meeting Objectives

Objective #1: Provide opportunities for collective learning about efforts to advance drought and water shortage resiliency.

Objective #2: Finalize the DRIP Collaborative 2025 focus areas problem statements.

Objective #3: Identify and advance ideas to address the 2025 focus areas that will be developed into recommendations.

Welcoming Remarks and Setting Intentions

Secretary Wade Crowfoot, California Natural Resources [2:48 – 7:40, slide 3]

Secretary Crowfoot expressed appreciation for the DRIP Collaborative and emphasized the relevance of learning from past droughts to prepare for future ones. He noted that the DRIP Collaborative's work on recommendations to develop tools, relationships, reporting structures, and monitoring systems, will improve our ability to prepare and respond to future water shortages.

Secretary Crowfoot highlighted the 2024 recommendations that have been tracked through the Office of the Secretary, noting the progress made over the past year. He also underscored the importance of the DRIP Collaborative's current priorities, including reducing the impacts of drought on ecosystems. California's rivers, waterways, and aquatic environments were hammered in the last two droughts, and the state must continue to find ways to build resilience in these natural systems wholistically.

He also emphasized the importance of addressing land use planning in the context of drought and highlighted the great progress being made through the Sustainable Groundwater Management Act (SGMA) in the past ten years to enhance the sustainability of our groundwater resources. Secretary Crowfoot also recognized the Department of Conservation for its work on land use repurposing and the funding it's providing to local communities. While California is already making progress, the DRIP collaborative can play a key role in furthering these efforts.

On infrastructure, Secretary Crowfoot reinforced the administration's commitment to the modernization of California's water infrastructure. The state needs to diversify its water supplies and invest in nature-based solutions, but first and foremost, must conserve water. The State Water Project must be built to withstand the extreme weather events we're facing. That means advancing projects like Delta Conveyance and addressing land subsidence.

Informational Updates

Jeanine Jones, California Department of Water Resources [0:20:36 – 0:42:05, slides 11-26]

Jeanine Jones, Interstate Resources Manager for DWR, provided an update on hydrology and current federal budget conditions, the latter being in response to the many questions that DWR has received about the current situation.

Hydrologic Conditions

- **Precipitation & Snowpack**: Average snowpack as of April; above average in the north, slightly below in the south. Precipitation better in the northern part of the state relative to the south.
- **Surface Water**: Reservoirs at 117% of average statewide.
- **Groundwater**: Conditions have improved from this time last year. Currently, levels are reported as 27% below, 39% normal, and 35% above normal- based on 20-year groundwater level trends.
- **Water Project Allocations**: State Water Project – 50% allocation. Central Valley Project - 100% allocation north of Delta and Friant Class 1; South of Delta allocation is 50% for agricultural use and is 75% for municipal and industrial use.
- **Colorado River Outlook:** WY25 inflows to Lake Powell forecasted at 71% of normal; This is concerning considering the reduced runoff from general trend of warming temperatures despite average precipitation in southern parts of the state that heavily rely on Colorado River water deliveries. New operational guidelines for the Colorado River System are expected to be released in draft form by USBR at the end of 2025 and formally released in 2026.

Federal Budget Outlook

- **FY25**: Have seen mass layoff of probationary employees and early retirement buyout across federal agencies. NOAA has cut approximately 20% if its staff.
- **FY26**: Office of Management and Budget (OMB) passback proposes major cuts to NOAA's Oceanic and Atmospheric Research (OAR), threatening programs like NIDIS. National Weather Service funding similar to FY24 but faces operational strain from previous layoffs. DWR is monitoring impacts, especially to the CA/NV River Forecast Center.

Jeanine emphasized concern over declining federal support for climate data, forecasting, and research - and the high likelihood of another continuing resolution for FY26.

Comments provided by DRIP Collaborative members:

- Given the presentation about Federal budget conditions and our need for data for operations, is there a possibility that we are going to have to fund, privately or through our own organizations, weather research?
- While we have had a couple of normal years and it is nice to have a breather between disasters because the state infrastructure is so poor, it is important to recognize that we

had a dry well in the Salinas Valley near green field and there are similar conditions in the San Joaquin Valley. In addition to the discretionary budget cuttings, there is also a $2.5 billion cut to the EPA and a $27 million cut for rural development at USDA which is depleting all the infrastructure funding we have for drinking water beyond preparing for drought resilience.

2024 Recommendations – Follow Up

Julie Ekstrom, California Department of Water Resources [0:42:05 – 0:57:41, Slides 27-30]

As a follow-up to the DRIP Collaborative's interest in monitoring the implementation of the 2024 recommendations, DWR proposed an approach for tracking progress, relying on input from the DRIP Collaborative. While the DRIP Collaborative does not have the authority to implement the recommendations it develops, tracking progress remains valuable. It can inform future DRIP Collaborative discussions and highlight related efforts that members may be able to support or engage with outside of the DRIP Collaborative.

To support this effort, DWR launched a survey to collect information from members on work related to the 2024 recommendations. The initial progress shared at the meeting is based on 10 survey responses. The survey will remain open throughout the year, and members are encouraged to continue providing updates. Below is the progress to date on the six 2024 recommendations:

1. **Drought indicators and metrics**: Alvar Escriva-Bou, University of California Davis shared through the survey about a forthcoming publication on drought indicators for California. The publication will be shared with the DRIP Collaboratives when it comes out. In addition, as presented by Jeanine Jones earlier, there is uncertainty about the next phases given the federal funding challenges.
2. **Rapid inventory of drought-related tools and resources**: No progress to report.
3. **Empowering county drought resilience planning for domestic wells and state small water systems**: The DWR County Drought Planning Assistance Program continues to support counties in setting up task forces and developing their County Drought Resilience Plan (DRP) and host the monthly County Café series to support counties. The County DRPs should be done by June 2026.
4. **Voluntary community based well-monitoring program**: DWR will be sharing progress on this recommendation at the July or October meeting.
5. **Roles and responsibilities for domestic wells**: Andrew Altevogt, SWB, shared about the recent SAFER program efforts to identify the role of the SAFER program in supporting domestic wells and state small water systems. The recommendations for SWB work on domestic wells will be incorporated into the upcoming Fund Expenditure Plan and the draft will be available around the end of June and will

outline proposed strategies for data, using our needs assessment, and best practices for data gathering and outreach. Other sections in the Plan will include an approach to leveraging existing SAFER funds and programs and a series of recommendations SAFER program funding priorities. Once the draft Plan is out, there will be a public review before the Board's adoption of the Plan.

6. **Drought definitions and case studies**: In early planning discussions with the LCI group that's working on the Vulnerable Communities Platform. DWR will report on progress later this year.

Several members reported on sharing the final 2024 DRIP Collaborative recommendations with colleagues:

- Alvar Escriva-Bou, UC Davis: I shared the **Drought Indicators and Metrics** recommendation with NIDIS and other colleagues that I've been working with, and they were excited to see it. Others are working to advance similar projects in Southern California, and it was interesting for them to see that this project is beginning to make an impact.
- Laura Ramos, California Water Institute at Fresno state: I have mentioned the **Communication Program** recommendation and have been asking how we can continue talking about drought even when it's raining. While everyone agrees that this is a great topic, most don't have suggestions on how to develop this recommendation.
- Tim Worley, California Association of Mutual Water Companies: I've been asked to give an update on the DRIP Collaborative to the Small Systems Committee of the California Water Association which is coming up in early June. It may be helpful to have DRIP Collaborative slides to support my presentation.
- Suzanne Pecci, South American Subbasin Domestic Well Advisory Group: I've been sharing the recommendations with my community and local GSAs, but I haven't received much feedback so far. I did share the 2024 Progress Report and received some general comments that it's interesting, but I think more engagement and outreach are needed to get the community more actively involved. I've also asked one of the boards to invite DWR to give a presentation on what the DRIP Collaborative has accomplished, which I hope will help raise awareness and generate more interest.
- Sierra Ryan, Santa Cruz County: I've spoken to a few local representatives about the domestic well and state small water system concerns and the need to clarify **Roles and Responsibilities** during droughts to ensure that people have access to water. There's been a lot of appreciation, and I really want to thank Andrew Altevogt for the State update.

DRIP Collaborative Members Presentations

[0:57:41 – 1:11:32, Slide 31]

Three new members joined the DRIP Collaborative and were invited to share initiatives they are currently working on to improve drought resilience, as well as their perspectives on what drought resilience means

Samantha Arthur (California Natural Resources Agency), Deputy Secretary for Water

Samantha Arthur, CNRA, introduced herself by sharing her background leading the Salton Sea Restoration Program. In her current role as Deputy Secretary , she advises the Secretary on water-related issues and collaborates closely with leadership of all department entities that impact water. Her work primarily focuses on coordination and facilitation of direct programs addressing drought resilience, flood management, and overall water management across the state. Samantha highlighted several initiatives aligned with the drought resilience ongoing at CNRA:

- Colorado River Management: Samantha began by discussing the Colorado River, a water system that has experienced a prolonged drought lasting over 20 years. Climate change has intensified these impacts, and challenges rooted in the original allocation system have led to overuse. Efforts are underway to renegotiate river operations post-2026 - a process led by the Colorado River Board and identified as a priority by the Governor.
- Statewide Salmon Strategy: Released about 18 months ago, the strategy identifies 71 actions for the state and partners to support ecosystem and salmon recovery efforts. A roundtable held last month brought together stakeholders from across sectors, including nonprofits, tribes, and agricultural groups, to collaborate on salmon issues and share progress.
- Water Storage and Drought Resilience: Samantha emphasized the connection between water storage and the DRIP Collaborative's three focus areas for 2025. The administration is prioritizing improvements to water storage systems to enhance drought resilience for both ecosystems and communities. This includes support for the Water Storage Investment Program, administered by the California Water Commission, which facilitates both surface and groundwater storage projects.
- International Collaboration: Samantha also highlighted CNRA's involvement in international initiatives, including the Mediterranean Action Partnership, which brings together regions with Mediterranean climates to share strategies for managing drought and advancing climate resilience.

Samantha concluded her introduction by highlighting that drought resilience encompasses ecosystems, people, and nature and the collective ability of these systems to adapt to and withstand the increasing frequency of drought in California due to climate change.

Natalie Kuffel (Office of Land Use and Climate Innovation), Deputy Director of Land Policy

Natalie Kuffel, LCI, works on issues related to the California Environmental Quality Act (CEQA). Her responsibilities include drafting the initial versions of CEQA guidelines, developing technical advisories to support CEQA implementation, and overseeing the State Clearinghouse, which serves as the central repository for environmental notices and documents statewide.

Natalie also leads the Land Use and Planning Team, which develops state guidance on land use planning. This includes work on the General Plan Guidelines, which is currently undergoing an update. As part of this process, her team is preparing guidance on the optional water element relevant to the Land Use Planning focus area, and incorporating climate, equity, and health considerations into the General Plan framework.

Natalie highlighted the work of the Integrated Climate Adaptation and Resiliency Program, which is currently contributing to California's Fifth Climate Change Assessment. This includes collecting and sharing case studies on drought resilience. These examples will be featured in both the assessment and the Adaptation Clearinghouse, a centralized resource on best practices and case studies in climate adaptation and resilience from across the state.

In her remarks, Natalie also shared her perspective on defining drought resilience, emphasizing the concept of regeneration. She encouraged thinking beyond resilience toward regenerating natural systems, such as the water cycle, to support more stable and sustainable water years in the future. She emphasized the importance of integrating regenerative principles into urban and built environments.

Cyril Barmore (Rural Community Assistance Corporation), Trainer for Water Utilities and Systems

Cyril Barmore, RCAC, joined the organization three years ago as a trainer, working under contract with the SAFER program and supporting implementation of Senate Bill 552 (SB 552). Since joining RCAC, Cyril has facilitated 14 training workshops targeted primarily at small water system operators, managers, and administrators. Interest in these workshops continues to grow as awareness of SB 552 increases and its relevance to small water systems becomes more widely recognized. In addition to training, RCAC provides well assessments and maintenance through its Well Repair and Replacement Program. RCAC also functions as a bank, offering loans and grants to support water infrastructure projects and other community development needs.

Cross-Cutting Themes

Kyle Jones, Community Water Center [1:11:32 – 1:52:29, slides 32-39]

Cross Cutting met in March 2025 and reported their deliverables. These include a process for how to incorporate cross-cutting themes into the group's work and final version of the purpose statements for two themes: Climate Change Adaptation and Nature Based Solutions. It also included the introduction of the third theme: Equity, which includes racial equity, climate justice, the Human Right to Water (HR2W), and Tribal engagement.

The workgroup defined cross-cutting themes as "general themes, providing a consistent lens for the DRIP Collaborative's work to ensure that key topics are thoughtfully considered and incorporated throughout the development process". It was emphasized that each theme is believed to be critical in affecting drought resilience for California but are likely beyond the scope of the Collaborative to solve. It was also mentioned that each theme has likely relevance across all other focus areas, but that their exact importance will show up differently for specific recommendations.

The workgroup proposed to incorporate cross-cutting themes directly into DRIP Collaborative work in a number of ways. This includes prompts for problem statement scoping, references in the recommendation template, as a discussion tool or presentations by subject matter experts, and inclusion in the end-of-year reflection on whether the Collaborative has fully addressed key priorities for the year.

The DRIP Collaborative then discussed the three themes and their corresponding purpose statements. Starting with Climate Change Adaptation, the members discussed some of the critical terms referenced. This included a helpful distinction between climate mitigation versus adaptation. There were also helpful clarifications on the distinctions behind the words "systems" (referring holistically to all systems, including natural systems along with water systems), "readiness" and "conservation". For the Nature Based Solutions theme, the members discussed the need for this theme to also include urban and suburban landscapes (not just rural landscapes). It was also mentioned that rural residential communities must also be addressed. For the Equity theme, a Collaborative member mentioned the need to address inter-generational (future generations) equity as well.

The Collaborative then discussed additional themes that might warrant future conversations. Most notably, the Collaborative felt that Economic Resilience should also be included as a cross-cutting theme; a purpose statement for it will be drafted and brought back to the full group for discussion in the July 2025 meeting. It was also agreed that additional themes are welcome to be discussed further and that a member can raise this in future meetings as needed.

Following the discussion, the following vote and outcome was reached:

<u>DRIP Collaborative Vote</u>

- Adopt the proposed process for incorporating cross-cutting themes into DRIP Collaborative work – Passed unanimously
- Disband the Cross-Cutting Themes Workgroup, with future theme additions handled by the full Collaborative through group discussion – Passed unanimously

Communication Program Recommendation – An Update

Anthony Navasero, California Department of Water Resources [1:52:29 – 2:04:19, slides 40-43]

The 2024 problem statement of the Drought Definition and Narrative focus area identified a need for effective communication strategies and to address challenges related to geographic and meteorological variability, as well as from the diverse water use portfolio, related investments, and community resilience efforts. The recommendation idea is to develop an easily understandable messaging platform to communicate to counties and water suppliers.

At the October 2024 DRIP Collaborative meeting, members provided feedback on the proposed recommendation and suggested that additional research is needed to better understand existing communication platforms, such as California Water Watch and the Save Our Water campaign. They also recommended that this communication program aligns with related 2024 recommendations, including the drought metrics and indicators and roles and responsibilities. So far, the co-leads and Anthony have reviewed both California Water Watch and the Save Our Water campaign, sharing insights and identifying opportunities to inform the recommendation's development. However, further research is needed and members were invited to help identify subject matter experts (SMEs) who could be interviewed to provide additional information to ensure the recommendation offers added value.

Members provided the following SMEs suggestions:

- Deedee Cordell, communication director of Yuba Water Agency
- Listos California – Existing effort related to disaster readiness regionally and statewide (Ready California)
- Sloughhouse Resource Conservation District provide a range of programs including well efficiency testing, seminars on composting for farmers, and extensive outreach.
- Denver Water has a good reputation for communication on water issues.
- The California Department of Public Health develops messaging on a variety of issues (anti-smoking for example)
- California Lottery has great messaging commercials to look into.

- Brock Dolman at the Occidental Arts and Ecology Center has developed catchy phrases for campaigns that are being used in the water space, like "slow it, spread it, sink it," and the one "fuels to flow."
- Consider looking for communications and outreach best practices outside of the water industry

2025 Focus Areas and Recommendations

The DRIP Collaborative identified three focus areas (FA) for recommendations in 2025 including:

FA1 - Reducing ecosystem impacts of drought

FA2 - Land-use planning for drought resilience

FA3 - Water infrastructure and planning

Members first heard from the focus area co-leads, who presented the proposed problem statements, driving concerns, and related subtopics. These problem statements served as the foundation for subsequent discussions to generate ideas for potential recommendations. Members provided feedback and expressed general agreement with the direction; however, no formal vote was taken to approve the problem statements at this stage.

Following the presentations and discussions on the problem statements, members gathered in small focus area breakout groups to share and refine potential recommendation ideas that address the identified problem statements and specific subtopics. The goal of these breakout discussions was to identify potential priority ideas for further discussion and vetting by the full group. In developing recommendations, members were encouraged to consider the following:

- Impact: Does the recommendation idea explicitly address the Problem Statement/sub-topics?
- Relevance: Does the recommendation idea align with the DRIP Collaborative purpose?
- Capacity: Is there sufficient interest from members to develop this recommendation idea?

FA1. Reducing ecosystem impacts of drought

Problem Statement | Redgie Collins, CalTrout [2:07:39 – 2:24:25x:xx, slides 47-51]

California's ecosystems - freshwater, terrestrial, aquatic, and coastal - are increasingly degraded due to unsustainable water use, habitat fragmentation, land conversion, and climate-driven stressors. Reduced snowpack, rising temperatures, altered precipitation patterns, and more frequent and severe wildfires have amplified the strain on ecological

systems, diminishing their capacity to adapt to or recover from drought. Despite these growing threats, water management and land use decisions often fail to adequately account for ecological health, particularly outside of drought emergencies.

Healthy ecosystems are essential to California's drought resilience. They buffer against extreme events, improve water quality and availability, support biodiversity, reduce wildfire severity, and safeguard public health. However, current policies and investments often overlook the long-term ecological functions that underpin resilience for both people and nature.

Subtopics:

- Environmental flow protection
- Habitat restoration
- Integrated planning
- Existing tools and regulations

DRIP Collaborative members comments and questions:

- Metrics and Measurements: It was suggested that a subtopic to address metrics or measurements of environmental conditions be added either as its own subtopic or as part of the existing tools and regulations subtopic
- Integrated Planning subtopic: It is recommended to incorporate environmental flow protections and habitat restoration within the integrated planning subtopic. This subtopic is intentionally broad and can encompass a wide range of interconnected issues.
- Existing tools and regulations subtopic: As proposed, the existing tools and regulations subtopic is limited to regulations and enforcement, but there is a recognized need for more creative solutions to address water and environmental challenges. Existing water rights laws can limit innovation; for example, riparian rights do not permit water storage, even though allowing winter high flows to be stored and released during dry periods could support environmental flow protections. It is important to identify when regulations become barriers and explore alternative approaches to achieve restoration and flow goals. As a next step, staff from the State Water Board's water rights division are willing to engage with the workgroup to share their perspectives.

Recommendations Ideas | Redgie Collins, CalTrout [3:07:52 - 3:20:00, slide 71]

During the breakout discussions, members offered ideas to address the problem statement. These ideas as well as comments provided by the full membership are summarized below:

1. **Prioritize in-stream flow requirements for streams with high ecological function**, including identifying a pilot project to test approaches and build momentum. This recommendation emphasized the need to define and enforce standards for environmental flows, potentially linked to water rights modernization and improved measurement infrastructure.
2. **Create incentives for setting in-stream flows** through landowner cooperative agreements, modeled on approaches used in the Shasta and Scott River regulations. This strategy would encourage voluntary participation while aligning with ecological goals.

   Members' feedback: Workgroup members might want to consider combining this recommendation idea with the in-stream flow requirement recommendation.
3. **Streamline granting and contracting processes** for habitat restoration projects to reduce costs and administrative burdens. Suggestions included adopting "cutting green tape" principles, improving indirect cost recovery, and allocating Proposition funding for planning, monitoring, and O&M.

   Members' feedback: In response to member question, it was clarified that while the intent of this recommendation idea is to complement the "cutting the green tape" initiative, which is focused on permitting, the same principles can be applied to grants-making and how to streamline the overall ability to access grant funds from our state and federal programs. In that sense, this idea ties directly to identifying project implementation barriers and potential approaches to overcome them. Restoration project long-term maintenance requirements and the need for funding flexibility were highlighted as a key barrier experienced by local nonprofits and local agencies.
4. **Develop watershed-scale ecosystem management planning framework**, potentially through updates to the General Plan Guidelines, with incentives for local implementation. Address limited local capacity by aligning ecosystem planning with existing mandated efforts and provide support for implementation. This effort should expand on the California Water Commission (CWC) recommendation to conduct watershed-level planning to reduce drought impacts to ecosystems; members requested inviting CWC members to the next workgroup meeting.

   Members' feedback: Support for the idea of incorporate watershed plans considerations into the general plan guidelines as well as incentives for the implementation.
5. **Elevate Tribal partnerships and Traditional Ecological Knowledge** (TEK), particularly in data collection and project design.

   Members' feedback: Members expressed support for incorporating TEK and fostering partnerships with tribes as a central component of restoration activities. There are existing mechanisms and successful examples, particularly in the fire management

space, where collaboration with tribes has helped reduce barriers and streamline processes and can be adapted. For instance, cultural burns enhance forest health and can improve drought resilience to drought.

6. **Support workforce transition by connecting restoration projects to local job opportunities**, such as employing former agricultural workers in the conversion of farmlands into restoration sites, including roles in native landscaping and site maintenance. This approach builds local capacity for long-term ecosystem health and drought resilience.
7. Incorporate **soil health**, **headwaters protection**, and **groundwater-surface water interactions** as key components of drought-resilient restoration strategies.

Based on the DRIP Collaborative discussion and members' interest in leading the development of recommendations, the following three ideas will be further developed and presented at the July meeting:

1. **Prioritize in-stream flow requirements for streams of high ecological function and pick a pilot project (Recommendation lead: Redgie Collins)**
2. **Create incentives for setting in-stream flows through landowner cooperative agreements (Recommendation lead: Kyle Jones)**
3. **Streamline granting and contracting processes for habitat restoration projects (Recommendation co-leads: Redgie Collins and Samantha Arthur)**

FA2. Land use planning for drought resilience

Problem Statement | Sierra Ryan, Santa Cruz County [2:24:25 – 2:41:04, slides 52-56]

In California, land use planning influences water demand and supply, yet often falls short in integrating water management strategies or accounting for the availability of water resources. This disconnect leads to land use decisions that inadequately address long-term water supply challenges. As population grows, climate change intensifies drought conditions, and implementation of the Sustainable Groundwater Management Act (SGMA) shifts land use to reduce groundwater reliance, the risk and severity of drought increase. The fragmented status quo approach to planning for both land use and water resources places communities and local economies at greater risk of water scarcity and economic strain. Strengthening coordination between land use planners and water managers is essential to building a more drought resilient future in which groundwater use is sustainable, agricultural economies (including small farms) remain viable, housing development meets California's growing population needs, and water considerations are fully incorporated into planning processes.

<u>Subtopics:</u>

- Rural development

- Urban development
- Agriculture economies and land use transitions
- Groundwater recharge and sustainability

DRIP Collaborative Members Comments and Questions

Overall, the proposed problem statement reflects the workgroup discussion. A question was raised regarding the lack of long- term solutions for domestic well owners in fractured rock areas who currently rely on hauled water and how this concern may be addressed within the identified subtopics. Related to this issue, the key challenge around uncertainty of future water supply over the next 20 to 50 years, which complicates land use planning and underscores the broader difficulty of providing reliable guidance in the face of an unpredictable future. Planning for uncertainty is seen as an overarching concept that should be incorporated into the problem statement. Identifying these challenges is probably key, especially for land use planners and developers.

- **Land use transition subtopic**: While improving planning processes and better integrating land and water management is essential, there is also a critical need to invest in large-scale land use transitions. The cost of inaction—especially across hundreds of thousands of acres—can be significant
- **Groundwater recharge and sustainability**: Consider flood risk reduction and other potential benefits that can be achieved with strategic groundwater recharge and siting. Particularly this is in the area of land use planning. Strategic siting of recharge can allow us to stack potential benefits associated with recharge. And thinking of flood risk reduction opportunities and knowing that flood is really the other side of the drought coin.
- **Rural development subtopic**: A concern was raised that the focus on small and often underserved water systems within this subtopic may be too narrowly framed as a rural issue. This issue is present in urban development and environment as well.
- **Urban development subtopic**: There needs to be greater recognition of the critical collaboration required between water utilities and local governments. While land use decisions are made by local governments, the connection to water management is often weak or missing. In complex regions like LA County, which has over 200 different water agencies, coordinating land use planning with water service is especially challenging. This disconnect places a significant burden on water retailers, which directly impacts equity since the costs often fall on customers in affected communities.

Recommendations Ideas | Sierra Ryan, Santa Cruz County [3:20:00 - 3:31:57, slides 72]

1. **Extend support for Multi-Benefit Land Repurposing Program** (MLRP):

The members agreed that the state's support for land use repurposing should be continued, augmented, and even potentially expanded beyond the current regional scope. This type of support will help create regional cohesion for preventing land degradation (impacting ecosystems, soil health, air quality) and supporting small farmers. This type of funding from the state can help promote conversations for regional planning, set foundation for regional networks to develop which is critical for preparing and responding to impacts of drought.

- Assess effectiveness and success
- Fund more/continue, put more funds at one time rather than slow roll-out
- Expand beyond basins

Members' feedback: Members expressed interest in advancing this recommendation by emphasizing the importance of addressing community needs on a more regional scale. This broader approach would help ensure that the benefits of land transitions are realized in a more holistic manner.

2. **Improve alignment between Housing Growth and Water Supply Development**, such as exploring how to align the timelines of the implementation of the Regional Housing Needs Assessment with a region's water supply development.

   Members' feedback: A member inquired about how this recommendation aligns with current LCI efforts to integrate water into the general planning process. It was noted that there are clear connections to ongoing work with the general plan guideline update and the development of optional water element guidance, which emphasizes integration across various planning efforts (Idea #3). Coordination between LCI and DWR is actively supporting this work, and there are also opportunities to incorporate the idea of watershed and bioregional planning to strengthen the overall approach.

3. **Integrate Water into Land Use Planning**
   a. **Assess how different plans interact,** including Urban Water Management Plans, and who is responsible for water supply and shortage, and who has authority and responsibility. Members agreed this is a first necessary step in improving integration across water planning and development.
   b. **Integrate water into the General Plan Guidance**: The Governor's Office of Land Use and Climate Innovations (LCI) will be developing guidance for an optional water element of the general plan this year. Given this upcoming guidance, the members supported the idea to create incentives for local government to do a water element in their future general plan updates, and to incorporate water into the various required elements.
   c. **Watershed/bioregional planning for General Plan**- particularly for water

4. **Transfer of Development Rights** (TDR): Several members expressed interest in learning more about and exploring the applicability of TDR programs, including in other

states, to sustain land use that supports ecological systems or small-scale farming, rather that the status quo that largely incentives development of private property.

5. **Monitoring and Assessment of Agriculture-Residential Water Shortage Risk**: Limit or create new monitoring requirements for new development in rural areas, such as:
    1. When new homes are built on 2 acres properties, the recommendation is that an HOA must be created and groundwater monitoring must be put in place since this creates risk of dewatering watering wells to existing users. Thus, it would be a monitoring network to track the increased impacts.
    2. ADU re-zoning/parcel partitioning and its impacts on water – needs a way to assess and account for this in water demands and supply needs.
    3. Create incentives for keeping open space for habitat in private property (rather than development)

    Members' feedback: Many of these areas are seeing increased subdivision activity, often with zoning overlays that allow for higher housing density, in some cases u to three or four units per acre, that are using individual wells and septic tanks. This raises significant concerns about impacts on both water quantity and quality for existing nearby residents. The proposed solution involves requiring developments to implement a community-level monitoring system, potentially managed through a homeowner's association, including at least one monitoring well that publicly reports data. Additionally, it would include monitoring surrounding private wells to create a localized network for data collection. This approach aims to generate consistent, transparent data to better understand and manage cumulative water resource impacts in rural areas.
6. **Managed Aquifer Recharge:** Past discussions have indicated the membership's interest in contributing a recommendation to support managed aquifer recharge, but this breakout group did not spend time discussing this. Instead it pointed to the Infrastructure Workgroup as hosting those discussions.

Based on the DRIP Collaborative discussion and members' interest in leading the development of recommendations, the following three ideas will be further developed and presented at the July meeting:

1. **Extend support for Multi-Benefit Land Repurposing Program (MLRP) (Recommendation lead: Anna Schiller)**
2. **Housing-Water Supply Nexus: Planning for housing needs and water supply (Recommendation co-leads: Sierra Ryan/ Natalie Kuffel)**
3. **Assess how plans interact and offer recommendations (GSP, UWMPs, Drought Plans, General Plans) (Recommendation co-leads: Sierra Ryan/ Natalie Kuffel)**

FA3. Water infrastructure and planning

Problem Statement | Emily Rooney, Agricultural Council of California, and John Andrew, California Department of Water Resources [02:41:04 - 03:00:15, slides 57-61]

The Governor's 2022 Water Supply Strategy (also known as the "Hotter, Drier" strategy) outlined overarching goals and large-scale actions to address future shortages in the long-term. While the implementation of this strategy supports "backbone" infrastructure and water supply resiliency, many of these longstanding concepts and projects may not fully address future challenges, therefore, potentially falling short of meeting the comprehensive needs for our state. More recent and emerging demands include sustainable groundwater, environmental protection, a growing population, and changes in agriculture.

At the same time, multiple coordinated, smaller scale, and shorter-term (1-5 years) efforts are equally critical to prepare for the next drought. This is particularly true in how we address drought resilience at regional and local levels where there can be a lack of "baseline" water infrastructure to support community-level drought resiliency and specifically the Human Right to Water.

Both backbone and baseline water infrastructure are thus needed and should be simultaneously planned for improvement and scaled to address future drought expectations. While backbone infrastructure has the "Hotter, Drier" strategy, for baseline infrastructure, there may still be gaps in planning and strategy for future needs. Near-term, small-scale actions could be identified, for instance, by utilizing existing information at the State and federal level (e.g., applications for grant and loan programs, formal needs surveys) and especially planning developed at the local level itself (e.g., water supply master plans, capital improvement plans). A review of this available information could lead to a formal strategy, complementary to "Hotter, Drier," that prioritizes and expedites shorter-term, local projects to be better prepared for the next drought.

Subtopics:

- New water sources
- Identify vulnerability of users
- Improve system flexibility
- Identify local gaps

DRIP Collaborative Members Comments and Questions

This is a strong and well-crafted problem statement. Members discussed the importance of considering and explicitly addressing the connection between built infrastructure and natural infrastructure, recognizing that in practice, there is a spectrum ranging from

traditional gray infrastructure to green and nature-based solutions. Expanding the conversation to include this full continuum allows for a more realistic and integrated approach to planning and implementation. This aligns well with the cross-cutting theme process that was discussed earlier in the meeting. When addressing drought and the interconnection between built and natural infrastructure, it is essential to bring together diverse groups to bridge these elements and collaboratively identify critical watershed areas. As seen in the salmon recovery strategy, the most successful projects often integrate both infrastructure types, leveraging the strengths of each.

- **New water sources subtopic**: It would be beneficial to have one joint meeting with the land-use planning group when considering recommendations related to the issue of new water supplies, e.g., increasing recycled water production and use and desalination of sea and saline groundwater sources. When planning for future infrastructure, we need an intentional process.
- **Identifying vulnerability of users subtopic**: There is an opportunity to harness existing tools and data, such as the DWR's vulnerability tool and the Water Board's SAFER drinking water needs assessment, to inform and strengthen this work. These resources can help identify specific needs and support the development of targeted, actionable recommendations.
- **Improve system flexibility subtopic**: It was suggested that highlighting individual project types or case studies that demonstrate the connection between built and natural infrastructure would be valuable. Showcasing successful examples, especially those involving partnerships among NGOs, water users, and rural communities, can provide insight, promote creativity, and illustrate how integrated approaches can effectively address drought and watershed health. In response, another member suggested that this does not need to be its own subtopic but rather fit under the improved system flexibility subtopic as long as it is integrated. When defining "system" in this context it is important to note we are talking about a "water system" but this is an opportunity to consider the regulatory system as well. Another addition to this subtopic is the storage component.
- **Cross cutting consideration**: The interplay between water sources, access, cost and affordability, and quality represents a complex, cross-cutting issue. These elements are deeply interconnected and addressing one often impacts the others.

Recommendations Ideas | Emily Rooney, Agricultural Council of California, and John Andrew, California Department of Water Resources [3:31:57 – 3:43:12, slides 73]

1. **Support regional/local planning costs**, support long-term planning efforts that are targeted for smaller-scale projects including flexible funding beyond bond funding for underserved communities and consider other priorities beyond current requirements (e.g., beyond DAC to support other smaller, but solvent organizations).

2. **Develop green infrastructure investment plan** with the intention of growing more fish and more flows under ESA flow requirement by analyzing system integration and benefits to identify opportunities to remove non-beneficial water supply infrastructure, like dams, that would benefit species and therefore address and ease regulations on water supply (an example is Battle Creek).
3. **Identify partnership opportunities in the San Joaquin Valley** by identifying partnerships between entities that have resources (e.g., water rights, storage and conveyance facilities, with those who do not have resources to back up their smaller water systems in times of drought and water shortages.
4. **Develop next steps for vulnerable communities from existing data** from programs such as the Water Board's California drinking water needs assessment (SAFER program) and tools such as the Department's vulnerability.

   Members' feedback: A member emphasized the importance of identifying vulnerabilities as a first step in the process when planning infrastructure solutions acknowledging that large utilities usually have more capacity to plan and invest than the smaller utilities. It was also clarified that when the term "vulnerable communities" is broader than disadvantaged communities. When discussing vulnerable rural communities, it's important to consider the aging population and the unique challenges they face. Many residents are aging in place in homes built decades ago, often from the 1970s and 1980s, and are now managing increasing demands with limited physical capacity and financial resources.
5. **Improve systems and regulatory flexibility** to improve infrastructure response to "weather whiplash" and extremes through, as an example, the increased use of existing water infrastructure for more uses such as temporary water storage in existing detention basins for recharge. Additionally provide regulatory flexibility to implement smaller water infrastructure projects that are less challenging and would provide greater system flexibility.

   Members' feedback: While this recommendation idea was originally focused on improve infrastructure systems for increased flexibility, members discussed the importance of considering regulatory process barriers to limit basic things.
6. **Support regional/local water infrastructure long-term planning** efforts that are targeted for smaller-scale projects including flexible funding beyond bond funding for underserved communities while considering other priorities beyond current requirements (e.g., beyond DAC to support other smaller but financially solvent organizations or for aging and fixed income communities).
7. **Groundwater recharge and nature-based solutions be included as new water source** to consider more green or natural infrastructure while focusing on the need

to provide water infrastructure (e.g., conveyance, distribution, and recharge facilities) for groundwater recharge

8. **Improve special districts and planning districts coordination** for greater interaction to improve and cultivate planning efforts for water infrastructure projects implementation.

Based on the DRIP Collaborative discussion and members' interest in leading the development of recommendations, the following three ideas will be further developed and presented at the July meeting:

1. **Identifying planning gaps and solutions for vulnerable communities and explore more funding solutions (Recommendation co-leads: Kyle Jones / Carolina Hernandez)**
2. **Improve systems and regulatory flexibility (Recommendation co-leads: Laura Ramos / Katie Ruby)**
3. **GW recharge and NBS be included as new water sources (Recommendation co-leads: Kyle Jones / Emily Rooney)**

Next Steps & Closing Remarks

Orit Kalman, Facilitator [3:43:12 – 4:13:10, slides 75-78]

The recommendation process remains the same as last year with some updates to the Recommendation Template based on members' input. The template will be updated with a section on the cross-cutting themes per members discussion and vote. Each recommendation will be developed by a new recommendation lead and with the support of the related focus area workgroup. Prior to the July DRIP Collaborative meeting, leads and DWR point of contact will invite SMEs to inform the workgroup discussions in June and to advance recommendation development. At the July meeting, members will hear from the leads about progress made on the recommendations and provide additional input.

DRIP Collaborative members reflected on progress made during the meeting to identify potential recommendations to address the three focus areas. Members expressed appreciation for the expertise, collaborative spirit, and commitment. Anthony Navasero , DWR,closed the meeting by expressing gratitude to all members for their participation, expertise, and commitment.

Appendix A. Meeting Participation

Drought Resilience Interagency Partnership & Collaborative Members

Present

- Alvar Escriva Bou, University of California, Davis
- Andrew Altevogt, State Water Resources Control Board – Alternate for Joaquin Esquivel
- Anna Schiller, Environmental Defense Fund
- Brent Hastey, Plumas Lake Self Storage
- Carolina Hernandez, Los Angeles County Public Works
- Catherine Freeman, California State Association of Counties
- Cyril Barmore, Rural Community Assistance Corporation
- Emily Rooney, Agricultural Council of California
- Jason Colombini, Jay Colombini Ranch, Inc.
- John Andrew (Chair), California Department of Water Resources – Alternate for Karla Nemeth
- Katie Ruby, California Urban Water Agencies
- Katy Landau, California Environmental Protection Agency – Alternate for Anna Naimark
- Kyle Jones, Community Water Center
- Laura Ramos, California Water Institute at Fresno State
- Natalie Kuffel, Governor's Office of Land Use and Climate Innovation
- Redgie Collins, CalTrout
- Rose Nguyen, Governor's Office of Emergency Services
- Samantha Arthur, California Natural Resources Agency
- Sierra Ryan, Santa Cruz County
- Suzanne Pecci, Domestic Well Planning Group South American Subbasin
- Tami McVay, Self Help Enterprises
- Tim Worley (member) & Karina Cervantez (alternate), CalMutuals
- Virginia Jameson, California Department of Food and Agriculture

Absent

- Emiko Burchill, California Department of Fish and Wildlife
- Joshua Cahill, Yurok Tribe
- Matessa Martin, Buena Vista Rancheria of Me-Wuk Indians