California Water Plan Update 2023

Virtual Public Workshop Workbook

March 29, 2023

Name: _____

Organization: _____

Agenda

Virtual Public Workshop

1:00 – 4:00 pm, March 29, 2023

Zoom Registration Link - https://kearnswest.zoom.us/meeting/register/tZEqd--orDIoEtfgZNZ1wztYCYfZzB1jElK4

Meeting Objectives:

- Review revised Update 2023 production schedule
- Introduce participants to the updated content of Update 2023
- Receive feedback on Working Draft and Recommendations
- Review next steps

Time	Topic	Presenter
5 min	**Welcome**	Kamyar Guivetchi, DWR
5 min	**Introductions** **Meeting Objectives & Agenda Review**	Karis Johnston, Kearns and West
20 min.	**Since Our Last Workshop…** • Revised Update 2023 Schedule • Recap of prior feedback • Changes and new content	Paul Massera, DWR
5 min.	**Workbook Overview**	Kamyar Guivetchi, DWR
90 min.	**Chapters Summary Updates & Feedback** **Chapters 4**: Focus on Supporting Watershed Resilience **Chapter 5**: Understanding and Addressing Equity in the Management of California's Water Resources **Chapter 6**: Strengths and Resources of California Native American Tribes • Questions for clarification • Response to Questions • Comments & Discussion	Lew Moeller, DWR Amanda Ford, Kearns and West Emily Alejandrino, DWR
10 min.	**Break**	All

30 min.	**Presentation and Feedback Discussion on Chapter 7: Recommendations** • Questions for clarification • Response to Questions • Comments and Discussion	Paul Massera, DWR
10 min.	**Next Steps** • Where to send in feedback • Upcoming Opportunities for Engagement	Lew Moeller, DWR
5 min.	**Adjourn**	Karis Johnston, Kearns and West

Reviewers Guide

Comments received on this workbook will inform the further development of the administrative draft of California Water Plan Update 2023.

All content, including the Equity Roadmap in Chapter 5, is being developed with climate and water leaders and advocates.

What to Review

The workbook contains **summaries** of the working draft's seven chapters to offer reviewers a strong sense of the plan's organization and structure, themes and topics, and to a limited extent its supporting information and data. The Water Plan team is particularly interested in comments related to the plan's recommendations and actions, and we invite comment on all aspects presented in the workbook summaries. Guidance for what to focus on during your review is as follows:

- **Completeness of information:** Do you see your water resource concerns or interests represented in the chapter summaries? Is there anything essential missing from the summaries?
- **Organization of information:** Are the chapters sequenced in a way that makes sense to you? Do their titles reflect the summarized content? While the summaries do not necessarily reflect the flow of information in the chapters, do you feel the summaries indicate an effective presentation of the information?
- **Factual accuracy**. To the best of your knowledge, is anything in the summarized content incorrect?
- **Clarity/Comprehensibility**. Do you see any significant conceptual or informational gaps, based on the summarized content?

At this time, please do not focus on:

- Grammar, punctuation, spelling, capitalization, or stylistic consistency (unless any of these relates to clarity or factual accuracy).
- Margins, fonts, layout, spacing, etc. The workbook layout does not reflect the layout of the plan itself.
- Clutter/wordiness/efficiency of text.
- Tone/voice consistency.

Submit your responses to the questions in the workbook, plus any additional feedback, to Francisco Guzman at cwpcom@water.ca.gov by **April 12, 2023**.

Where we are now	**Context and Vision for a Resilient and Equitable Water Future**	• Establishes the setting and context for Update 2023. • Describes vision for California's water resources. • Introduces three themes of Update 2023. • Provides document navigation guidance.
	Current and Future Challenges and Considerations	• Provides current and future water conditions and challenges organized by statewide, water sector, and regional conditions and challenges.
	State Resilience and Equity Initiatives	Describes State initiatives to improve climate resilience and advance equity.
Where we want to be	**Focus on Supporting Watershed Resilience**	• Describes need for, and the value of, resilience planning at the watershed scale. • Introduces a Watershed Resilience Program designed to accelerate resilience assessments and identify solutions throughout California's watersheds.
	Understanding and Creating Equity in the Management of California's Water Resources	• Acknowledges the extent of historic and present inequities in water management. • Defines vulnerable populations. • Defines systemic challenges around environmental justice, affordability, and outreach and engagement. • Provides a roadmap to overcome inequities.
	Strengths and Resources of California Native American Tribes	• Tribal members and their representatives provide their viewpoint on water management challenges they face and their vision of how to overcome those challenges. • Tribal viewpoints on challenges include Tribal water rights, watershed management, climate change, equity, mapping, and funding opportunities. • Recommendations from Tribal Water Summit 2023 will be summarized.
How we will get there	**Recommendations and Actions**	• Outlines the desired outcomes as well as recommendations, and implementation actions to accomplish these outcomes. • Recommends a supporting document to further detail specific actions to accomplish these recommendations.

Chapter 1. Context and Vision for a Resilient and Equitable Water Future

This chapter provides an overview of the California Water Plan, and the context, vision, themes, and chapters of California Water Plan Update 2023 (Update 2023).

The California Water Plan (Water Plan), updated every five years, is the State's strategic plan for sustainably and equitably managing and developing water resources. Required by Water Code Section 10005(a), it presents the status and trends of California's water-dependent natural resources; water supplies; and agricultural, urban, and environmental water demands for a range of plausible future scenarios.

Update 2023 promotes climate resilience across regions, water sectors, and infrastructure with a statewide vision, clear goals, a watershed planning framework and toolkit, regional and inter-regional infrastructure modernization strategies, and a progress-tracking dashboard of indicators. Update 2023 also includes updated resource management strategies, regional planning and performance tracking tools, water balances, future scenarios, and other technical and policy-related activities related to water resilience and sustainability.

California's watersheds are being adversely affected by climate change, which recently has led to record-setting droughts, wildfires, heat waves, and flooding in California. All water sectors are vulnerable, and the effects and their resulting impacts are interrelated. Additionally, most, if not all, of the anticipated climate change impacts are on a trajectory to disproportionately affect vulnerable and disadvantaged communities in California. All these effects require a fundamental shift in approaches to redesigning, modernizing, and reoperating the state's water resource systems to strengthen resilience.

Mitigation alone is not sufficient and needs to be coupled with aggressive climate adaptation (mitigating climate change impacts). Update 2023 lays out a vision for a resilient and equitable water future; discusses the water, climate, and system challenges to that future, as well as initiatives already underway; and provides a roadmap to resilient watersheds and the inter-watershed natural and built water infrastructure that connects them. Significant changes in our approach to water resource planning are necessary to safeguard our food and water supply, protect

vulnerable populations from flooding and extreme heat, prepare for sea level rise, and protect critical infrastructure.

Update 2023 is intended to advance the implementation of the Newsom Administration's *Water Resilience Portfolio* (Portfolio) and *Water Supply Strategy: Adapting to a Hotter, Drier Future* (Strategy). The three themes of Update 2023 – Addressing Climate Urgency, Strengthening Watershed Resilience, and Achieving Equity – intentionally echo those of the Portfolio and the Strategy and are focused on ensuring a future with an equitable and resilient water supply. All Californians benefit from a future where water resources are resilient to climate change and managed in a manner that achieves shared values and benefits with deep connections to their watershed.

California's water systems were designed and have been operated for a winter snowpack and spring snowmelt from the Sierra Nevada that has contributed one-third of the state's water supply. With increased temperatures and more precipitation falling as rain instead of snow, there is higher risk of early runoff and flash floods and less water being available during the arid summer months. Update 2023 focuses on bolstering the adaptability and resilience of California's water resources in the face of current and future climate uncertainty and highlighting innovative, successful responses occurring around the state.

To meet the challenges, the State needs to partner with local resource managers to better understand climate vulnerability and risk at the watershed scale and to implement appropriate adaptation solutions. A watershed resilience program has been developed in collaboration with State agencies and water practitioners.

Many Californian communities have not benefited from State and local efforts to ensure safe, reliable, and affordable water supplies. These communities suffer disproportionately from such risks as floods, environmental pollution, and contaminated or insufficient water supplies. In 2020, amid the COVID-19 pandemic and the heightened exposure of long-standing systemic racial bias, the spotlight on social justice has accelerated overdue equity assessments in many sectors, including the water community. Update 2023 acknowledges the disadvantages many Californians experience based on race, gender, or income level and delivers a roadmap to develop equitable and sustainable water management plans.

Commitment, collaboration, and investment are required to ensure equity in decision-making, funding, access to reliable and safe water and sanitation, and

project benefits and impacts allocation. Based on feedback provided by Water Plan workshops, State-hosted outreach events, and focus group sessions with climate and water leaders and advocates, Update 2023 addresses the following questions:

- What economic, social, and environmental barriers exist that prevent equitable outcomes within California's water systems?
- Do all Californians have access to safe, clean, and affordable drinking water?
- Are communities resilient in the face of floods, drought, and other climate risks?
- What are the challenges to achieving resilient and equitable water management systems?
- What are the solutions for creating more resilient and equitable water management systems?

In addition to this introductory chapter, Update 2023 includes the following chapters:

- Chapter 2. Current and Future Challenges and Considerations.
- Chapter 3. State Resilience and Equity Initiatives.
- Chapter 4. Focus on Supporting Watershed Resilience.
- Chapter 5. Understanding and Addressing Water Equity in the Management of California's Water Resources.
- Chapter 6. Strengths and Resources of California's Native American Tribes.
- Chapter 7. Recommendations and Actions.

Discussion Questions:

1. What are the strengths of this chapter?

2. What gaps or red flags do you see in this chapter?

3. What would you change in this chapter?

Chapter 2. Current and Future Challenges and Considerations

This chapter provides insight into current and future water conditions and challenges broadly organized by sections on statewide conditions and challenges, water sector conditions, and regional conditions.

Statewide Conditions and Challenges

Statewide conditions and challenges are organized by climate change, systemic challenges, challenges related to inequalities in water management, challenges for California Native American Tribes, and inter-watershed infrastructure challenges.

Climate Change

Climate change is causing unprecedented stress to natural and human systems with increased wildfires, extreme heat events, rising sea levels, and highly variable precipitation and runoff patterns, which are resulting in more floods, droughts, and social and economic uncertainty. California is experiencing higher temperatures, less snowpack, more evaporation, and greater consumption of water by vegetation, soil, and the atmosphere, thus leaving less water for runoff even with the same amount of precipitation. Drought conditions in California are increasing in intensity and duration, punctuated with more intense atmospheric river-driven storms and higher flood flows.

Systemic Challenges

There are significant systemic challenges in water management, including fragmented water initiatives and governance, inconsistent and conflicting regulations, insufficient capacity for data-driven decision-making, barriers to public participation, inequitable representation in governing bodies, and inadequate performance tracking of public investments, among others. These systemic and institutional challenges increase risks to public safety, vulnerable ecosystems, and the state's economy by impeding the implementation of programs and projects intended to reverse and recover from legacy impacts and aggressively adapt to climate change vulnerabilities affecting all water sectors. This section presents the challenges of people most affected by climate change and who experience the adverse consequences of historical redlining and environmental racism (Frontline Communities).

Environmental Racism

Frontline communities, including communities of color and historically marginalized groups, continue to experience disproportionate environmental burdens. As of 2022, xx% of Californians live in a community affected by environmental injustices, such as air pollution, contaminated or affordable drinking water, discriminatory policies, exposure to toxins, and barriers to public participation and representative governance. These communities increasingly face water-related inequities, including abridgement of the fundamental right of access to safe, sufficient, and affordable water; wells that regularly fail during drought; failing water infrastructure (e.g., failing fresh and sanitary water treatment and conveyance systems); lack of preparedness and resources that ensure resilience to floods and drought, and lack of access to sufficient resources to overcome inequities. The long-term adverse impacts of historic redlining (e.g., low property values, lack of community development, lack of infrastructure investment) have increased the risks to vulnerable populations. Specifically, they have left many communities at greater risk of flooding, created urban deserts, and isolated poor rural communities.

Affordability

Many Californians cannot afford clean, safe, affordable drinking water. Recent estimates report 1 in 10 California households are behind on their water payments. In 2022, the State Water Resources Control Board conducted a Drinking Water Affordability Assessment and found that 39 percent of disadvantaged water systems exceed the affordability threshold.

Furthermore, public water agencies have been unable to assist low-income customers with their water bills with the passage of Proposition 218 (1996), which requires water rates to be aligned with the cost of service. To develop an assistance program, public agencies would have to use non-rate revenue (e.g., property taxes) or seek approval of new taxes by two-thirds of local voters. This institutional barrier prevents public water agencies from directly creating water rate assistance programs for their low-income customers.

Outreach and Engagement

Building authentic and meaningful relationships with communities is critical to advance water management planning and actions. There are many instances, however, where outreach and engagement efforts to frontline communities fall short.

Communities and non-governmental organizations have reported that many State outreach efforts are not effective with regard to diverse populations. For example:

- Public meetings are scheduled with little notice.
- Inconvenient meeting times are offered for working members of the public.
- Public meetings do not provide multiple options for participation (e.g., in-person or virtual).
- In-person meetings are held at locations not serviced by public transportation or are not accessible to physically disabled participants.
- No, or limited, language services support is provided.
- Presentations employ technical rather than plain language and are difficult to understand.
- Childcare is not provided.

Representation and Participation

In California, water management decisions are largely made at the local level through statutorily created "water special districts." These districts are responsible for water delivery, waste disposal (sanitation), flood control, and water conservation. With over 2,300 water entities in California, there is great variation in services delivered, governance structures, and financing mechanisms that affect their level of influence on a community. Elections for positions on these boards, especially for smaller districts, go uncontested for significant periods of time. Uncontested positions limit the level of public discourse expected within a democratic system. Given the different approaches used by various water special districts, it may be difficult for the public to understand and participate in the services provided.

The drinking water needs of domestic well owners and small community water systems have historically not been prioritized, in part because members of these communities are often excluded from decision-making roles or other forms of participation based on land tenure, well permitting, property size, race, language, economic status, or other factors.

Challenges faced by California Native American Tribes

The legacy of political actions, such as colonization, relocation, and termination toward California Native American Tribes has perpetuated a practice of leaving Tribes out of the discussion in developing State legislation and mandates. For purposes of the Water Plan, California Native American Tribe (Tribes) signifies all Indigenous Communities of California, including those federally non-recognized and

federally recognized, and those with allotment lands, regardless of whether they own those lands. Historically, California's water planning processes and associated funding programs have not included Tribes. The exclusion of Tribes in State policies, plans, and investments has limited their ability to access and manage water in accord with their indigenous and aboriginal rights and tribal ecological knowledge. As a result, it has prevented Tribes from continuing their cultural, religious, and sustainability practices.

The impact of a changing climate on Tribes introduces special concerns often not discussed or considered on a broad scale when policy-makers and the scientific community are thinking about climate change adaptation planning. Tribal resources are significantly threatened by climate change impacts. Threats to species, lands, and waters from climate change not only have an ecological impact, but also a cultural impact on many California Native American Tribes.

Issues have been documented between California Native American Tribes and groundwater sustainability agencies that demonstrate limited meaningful engagement, such as:

- Offering only one community or Tribal seat on a groundwater sustainability agency board when there are many Tribes and diverse populations in the region.
- Requesting community or Tribal 'buy off' on a grant-funded project when they have not been involved in planning efforts.
- Exclusion of Tribal projects in regional funding grant allotments.

Inter-watershed infrastructure - Built and Natural

Inter-watershed infrastructure refers to built and natural infrastructure that benefits more than one watershed (or has statewide significance) with the aim of enhancing water supply, improving water quantity, restoring ecosystems, reducing flood risk, improving groundwater aquifers, and/or enhancing adaption to climate change. Built inter-watershed infrastructure includes major State, federal, and local water projects that help manage or move water from one watershed to another, allowing for more flexibility in the use of water. Examples of these built inter-watershed infrastructure systems include the State Water Project, federal Central Valley Project, Hetch Hetchy Regional Water System, and Owens Valley Aqueduct and Mono Basin Project. Much of California's built inter-watershed infrastructure was not designed with climate change in mind and must be modernized to adapt to climate change and continue providing similar levels of service.

Natural infrastructure includes the conservation, preservation, or sustainable management of any form of aquatic or terrestrial, vegetated open space. It includes systems and practices that use or mimic natural processes to provide clean water, conserve ecosystem values and functions, and provide a wide array of benefits to people and wildlife. Examples of inter-watershed natural infrastructure include source watersheds, forests, rivers, floodplains, and aquifers that benefit multiple watersheds. The resilience of built inter-watershed infrastructure is intrinsically linked to the resilience of their associated natural infrastructure systems. The interconnection between natural systems and built infrastructure is underappreciated, often leading to lack of investment in natural infrastructure.

Water Sector Conditions

This section describes current and future conditions for water supply, water quality, flood management, natural ecosystems, forest and wildfire management, and land use sectors. Text describing current and future conditions for "Forest and Wildfire Management" is included below as an example of this section's content.

Water Supplies and Uses

Water Quality

Flood Management

Natural Ecosystems

Land Use

Forest and Wildfire Management

Current Conditions

There is increasing concern about the sustainability of forest and rangelands, as the frequency and severity of mega-disturbances from fire and pests increases, human population demands more from and increases impacts on natural systems, with increasing climate change impacts.

California's 33 million acres of forestland capture and clean our water supply, provide habitat for countless wildlife, cool our cities, support local economies, and serve as spiritual and cultural centers for Indigenous and local communities across the state. The management of these lands also greatly influences the quantity and quality of water, along with timing and distribution of water for downstream uses. Fire-prone

forests heighten the risk of damage to water infrastructure, as fires can lead to flooding, siltation, and landslides.

Nearly one in four Californians live in a high fire-risk zone. Over the last five years, California has faced the deadliest and most destructive wildfires in the state's history. Most of these wildfires were concentrated in the upper watersheds of the Sierra Nevada and Southern Cascade ranges, which on average provides about 60 percent of California's water supplies, exacerbating drought conditions, and creating a reinforcing cycle of climate catastrophes. In the last two years, more than 17,000 wildfires have consumed nearly 7 million acres of California — an area the size of the state of Massachusetts. These fires decimated mountain communities, including Paradise, Grizzly Flats, Greenville, and Berry Creek, and forced well over a quarter of a million people to evacuate. In 2017, wildfire also leapt rural and forest boundaries and inflicted catastrophic damage on the city of Santa Rosa and surrounding communities. In 2020, more than 4 million acres burned across the state, double the previous record. This was followed in 2021 by the million-acre Dixie fire, which was unprecedented with flames larger than 20-story buildings, burning 3 miles ahead of the main fire. This wildfire, in a historical first, burned up and over the granite crest of the Sierra Nevada range.

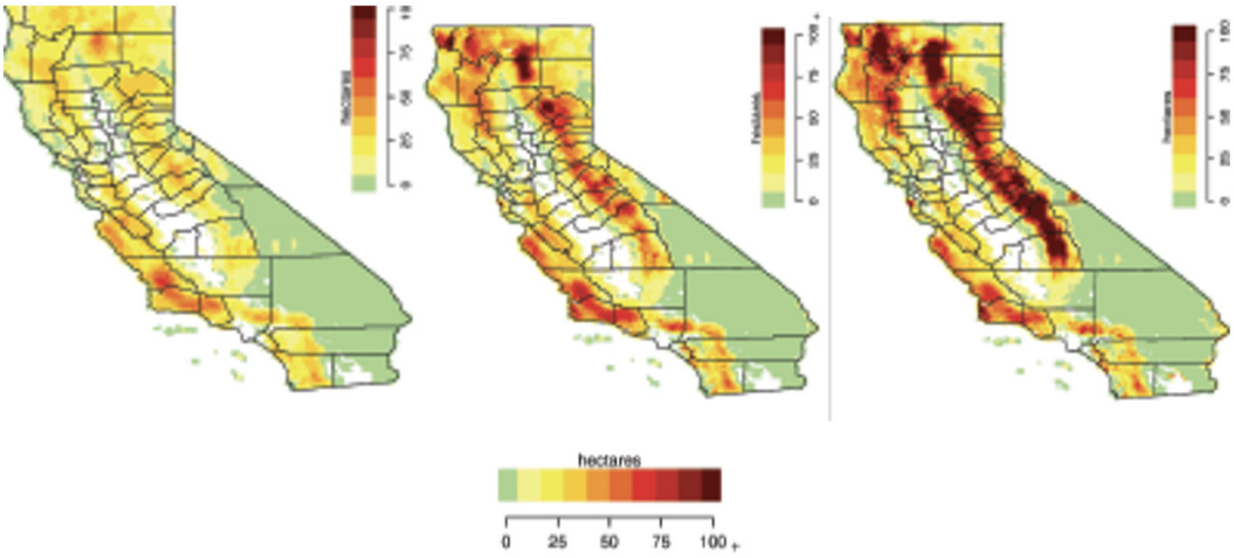
The increasing frequency and severity of wildfires can affect public health over a large area beyond the active fire area. At the local level, fires can damage water supply sources for years to come, worsen water quality, and damage water supply infrastructure. Fire, like water, is an integral part of California's natural ecology. Many ecosystems have adapted to frequent fires that burn at low temperatures and help germinate seeds and return nutrients to the soil. For millennia, California Native American Tribes actively managed California's wildlands with cultural fire. A legacy of fire suppression by State and federal governments has removed the natural role of fire from California's landscape, leaving overly dense forests of thin trees vulnerable to drought, wildfire, and infestation. This changed the structure of forest ecosystems and caused significant buildup of fuel, much of which must be removed before natural fire regimes can be restored to improve forest health.

Future Conditions

The year 2020 saw the largest acreage of land burned on an annual basis in California history, exacerbating a trend of intensifying "mega-fires" fueled by hotter and drier conditions. Since the 1970s, summer temperatures have increased by approximately 2.5°F, which, coupled with extended drought conditions, have greatly increased fuel aridity. By the end of this century, California's wildfires are expected to burn 77

percent more acreage – roughly the size of the state of Delaware every year (CNRA 2018). Climates in some regions are changing relatively quickly, and it is likely that many forest species will not be able to persist where they are now. Climate change will influence forest ecosystems through changes in the timing of seasonal and natural patterns, respiration, snow storage, and atmospheric moisture demand (Anderegg et al. 2015; Mankin and Diffenbaugh 2015; Williams et al. 2013; Torne et al. 2015; Wolkovich et al. 2012). Droughts co-occurring with and worsened by increasingly high temperatures are of particular importance in California's forests (Diffenbaugh et al. 2015; Williams, Schwartz, et al. 2015). Land use and development patterns also play an important role in future fire activity (Mann et al. 2014).

Figure 2-12 Projected Average Annual Area Burned by Wildfire under 1961–1990, 2035–2064, and 2070–2099 Global Climate Model Scenarios



Source: Westerling 2018
Figure 2-10 Note: Average annual area in hectares burned using four global climate models and 30-year periods for RCP 8.5, mid-range population growth. (a) 1961–1990; (b) 2035–2064; (c) 2070–2099.

Challenges for California's Regions and Watersheds

This section summarizes water management assets and challenges within each of California's 10 hydrologic regions (North Coast, San Francisco Bay, Central Coast, South Coast, Sacramento River, San Joaquin River, Tulare Lake, North Lahontan, South Lahontan, and Colorado River). The section also includes a summary of conditions for two overlay areas for the western slope of the Sierra Nevada and the Sacramento-San Joaquin Delta. The regional summaries present key current and future water management challenges. Climate change impacts manifest regionally, affecting each watershed differently. Unique watershed characteristics of hydrology,

topography, land use, and groundwater are factors when characterizing a region's climate vulnerabilities.

An example of the content included for each region and overlay area is shown for the Sacramento River Hydrologic Region (Figures 2-1 and 2-2) below.

Discussion Questions:

1. What are the strengths of this chapter?

2. What gaps or red flags do you see in this chapter?

3. What would you change in this chapter?

Figure 2-1 Sacramento River Hydrologic Region – Current Conditions

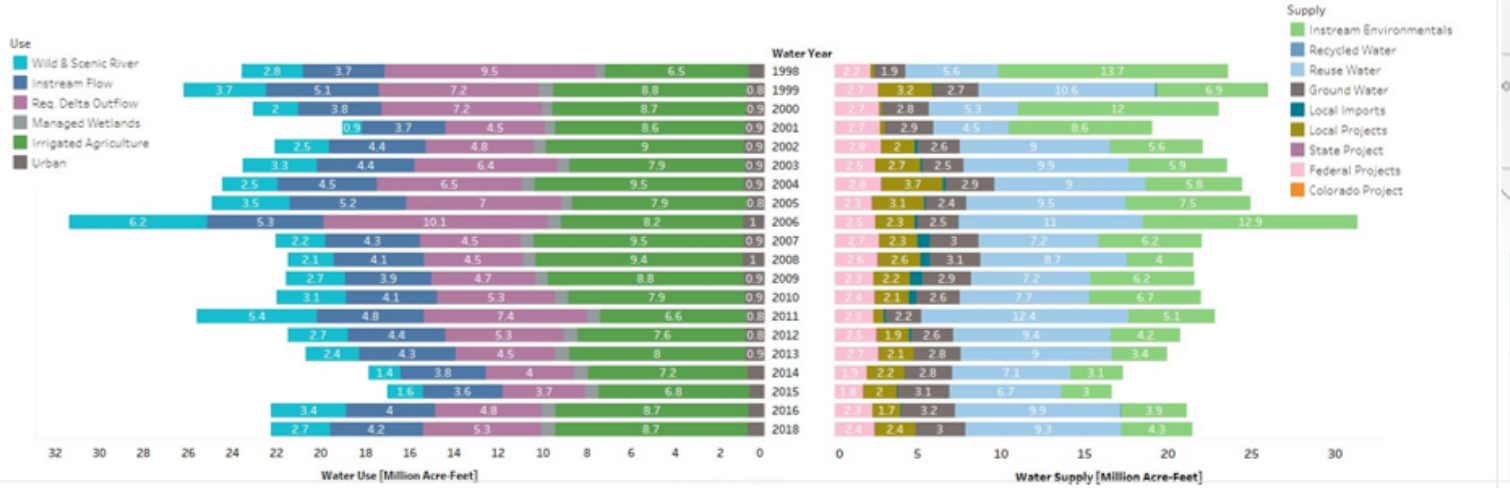
Hydrologic Region Description

The Sacramento River hydrologic region includes the entire drainage of the state's largest river, from Modoc County, where the Sacramento River flows into San Francisco Bay. The region covers approximately 27,200 square miles. In 2017, its population was estimated at nearly 3.2 million. Climates in the region range from high desert with annual precipitation of 10 to 20 inches to the valley, where precipitation varies from about 15 inches in Redding to 18 inches in Sacramento. The region supports nearly 2 million acres of irrigated farmland. Groundwater supplies about a third of the water used in the region.

Hydrologic Region Map

To be modified to watersheds (Armin)

Historical Water Balances



Critical Water Resource Challenges and Considerations

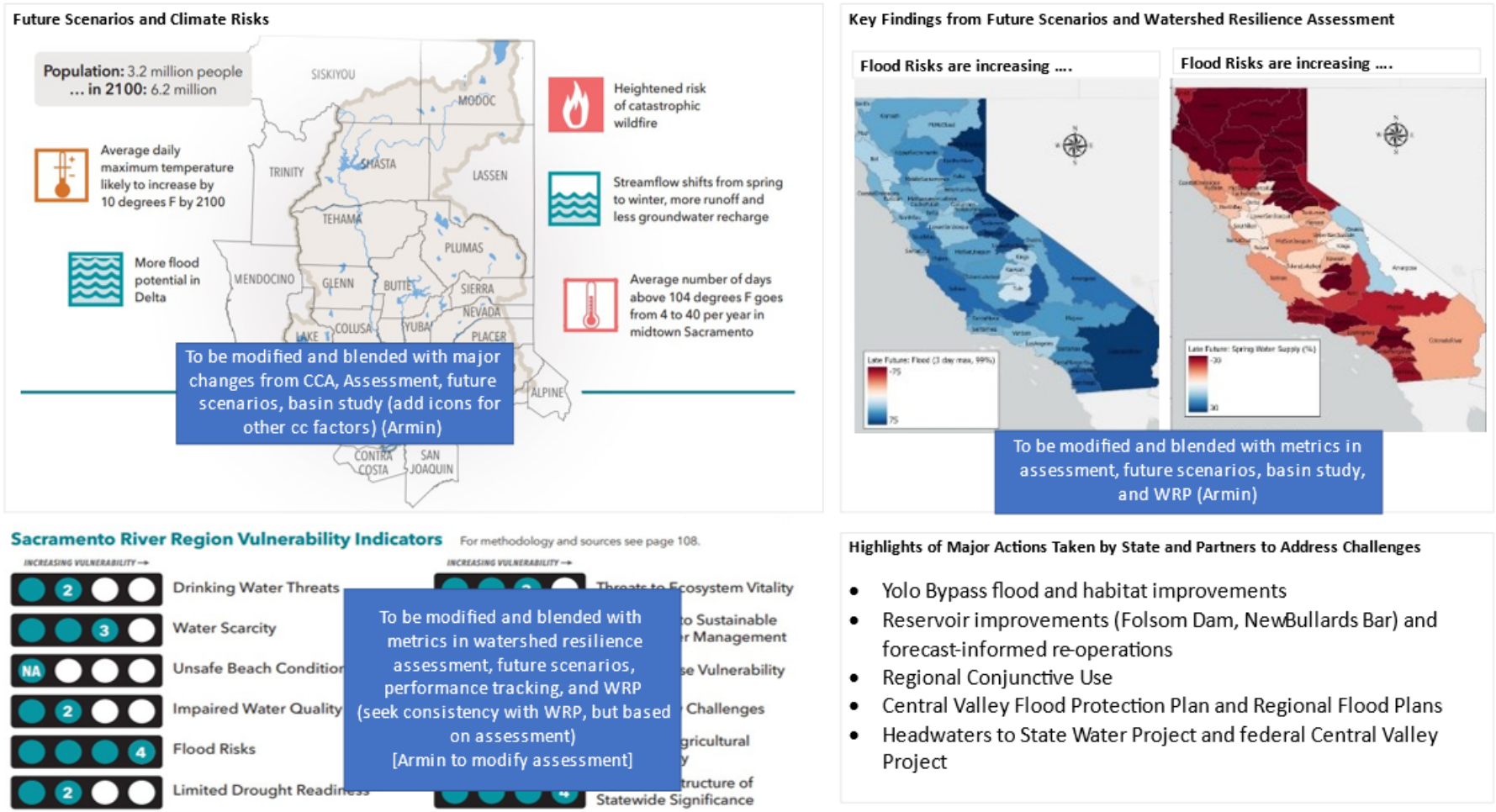
Water Supply…

- Maintaining water resources for all uses with reduced snowpack and earlier snowmelt
- Sustainable groundwater management (declining groundwater levels)
- Restoring anadromous fish species
- Managing flood risk for greater Sacramento, Yuba City, Marysville urban areas
- Water quality, including increasing temperature and sediment management
- Managing catastrophic wildfire risks

Equity and Tribal Challenges and Considerations

- Equity Indicators
  - Drinking Water Contaminants Percentile: 37%
  - Impaired Water Bodies Percentile: 37%
  - Population Characteristics Percentile: 44%
- Tribal
  - Channelization and levees impact archaeological sites and traditional activities along the Sacramento River corridor.
  - Easements for water infrastructure and agricultural land along Sacramento River corridor limits access for traditional Tribal activities.
  - Pesticides, herbicides, and other chemicals support invasive plant species and threaten native plant ecology, restricting Tribal access to native plants

Figure 2-2 Sacramento River Hydrologic Region – Future conditions



Chapter 3. State Resilience and Equity Initiatives

This chapter describes current State agency initiatives to improve climate resilience and advance equity.

State Activities to Advance Resilience

This section begins with an overview of the *Water Resilience Portfolio* (Portfolio) and *Water Supply Strategy* (Strategy) and discusses the importance of implementing both.

State Climate Resilience Strategies

Implementation of the Strategy and the Portfolio is ongoing through the activities of multiple State agencies and departments. The following table highlights major strategies currently underway across State government to address climate change. A table of State agency climate resilience-related programs are included in an appendix. The strategies and programs represent the actions by multiple State departments and agencies with similar/aligned objectives toward achieving resilience through their respective organizational mission, whether it be soil health, critical upper-watershed water source protection from fire risk, coastal protection from sea level rise, energy security, and so forth. Many of these efforts are in direct response to the policy directives in the Portfolio and the Strategy, while others are ongoing efforts at the core of each agency or department's mission. All are reflective of this Administration's commitment to responding to climate change, with mitigation actions and adaptation strategies, to secure a resilient and equitable future for Californians.

State Activities to Improve Inter-Watershed Infrastructure

State government has traditionally taken a leading role in investing in inter-watershed built infrastructure and natural infrastructure projects of statewide significance. The need for State leadership is even more pressing with the ongoing threat of climate change. Examples of State initiatives and projects include:

- State Water Project.
- Central Valley Flood Protection Plan.
- Dam Safety.
- Colorado River Water Allocation.

- Forecast-informed Reservoir Operations.
- Voluntary Agreements.
- Delta Conveyance Project.
- California Aqueduct Subsidence Program.
- Klamath Dam Removal.
- California EcoRestore.
- Yolo Bypass Salmonid Habitat Restoration Program.
- San Joaquin River Restoration Program.
- Salton Sea Restoration.

State Agency Strategy	Description	Lead Agency(ies)
California Climate Adaptation Strategy	Outlines the State's key climate resilience priorities, includes specific and measurable actions, and serves as a framework for collective efforts across sectors and regions in California.	CNRA, OPR
30x30 Strategic Pathways	As part of an executive order, California committed to the goal of conserving 30 percent of our lands and coastal waters by 2030. This document sets California on the path to successfully implement our 30x30 conservation goal. This strategy describes the key objectives and core commitments, establishes a current baseline of conserved areas, outlines strategic actions necessary and introduces a suite of applications to identify conservation opportunities.	CNRA
Natural and Working Lands Climate Strategy	Helps implement the Governor's executive order and expand climate action in this sector, which has been called for in *California's Climate Change Scoping Plan* and California's recently updated *Climate Adaptation Strategy*. This strategy also identifies priorities for areas of near-term State focus to increase climate action on California's natural and working lands.	CNRA
Cutting Green Tape Initiative	Focused on improving interagency coordination, partnerships, and agency processes and policies to allow ecological restoration and stewardship to occur more quickly, simply, and cost-effectively.	CNRA
AB 32 Climate Change Scoping Plan	Actionable blueprint for aligning action to achieve California's climate goals. The State is currently implementing strategies in the 2017 Scoping Plan Update to further reduce its GHG emissions by 40% below 1990 levels by 2030.	California Air Resources Board
California Wildfire and Forest Resilience Action Plan	Accelerates efforts to restore the health and resilience of California forests, grasslands, and natural places; improve the fire safety of our communities; and sustain the economic vitality of rural forested areas. Action plan serves as a roadmap for implementing the Agreement for Shared Stewardship of California's Forest and Rangelands with the United States Forest Service, and	Governor's Forest Management Task Force

State Agency Strategy	Description	Lead Agency(ies)
	for aligning the State's efforts with federal, local, tribal, regional, and private organizations.	
Integrated Energy Policy Report	This report assesses a variety of energy trends and issues to inform decision-making related to creating an energy system that is clean, modern, and safe, while increasing the system's resiliency to climate change and improving the equity of how clean energy benefits are realized.	California Energy Commission
Ocean Protection Council's Strategic Plan to Protect California's Coast and Ocean 2020–2025	Provides a roadmap for protecting and adapting coastal and ocean ecosystem resources in the face of sea level rise, ocean acidification and hypoxia, ocean warming, and other climate-driven stressors. This strategic plan also prioritizes understanding the role of California's network of marine protected areas in providing ecosystem resilience to climate change and ensuring fisheries and fishing communities can adapt and thrive in changing ocean conditions.	OPC
California Sea-Level Rise Guidance	The Guidance is used by California's coastal zone management agencies to support planning and permitting activities. The 2018 update incorporated advances in ice loss science and projections of sea level rise and includes guidance to address the needs of State agencies and local governments.	OPC, OPR
State Agency Sea-Level Rise Action Plan	A roadmap toward coastal resiliency for California.	OPC
California Forest Carbon Plan	This plan lays out recommended actions to achieve healthy and resilient forests based on what is known today about California forests and how climate change will evolve in the state.	CNRA, Cal FIRE, CAL EPA
State Wildlife Action Plan	This plan examines the health of wildlife and prescribes actions to conserve wildlife and vital habitat. In the latest update, the California Department of	CDFW

State Agency Strategy	Description	Lead Agency(ies)
	Fish and Wildlife incorporated climate change impacts and adaptation, including dozens of strategies and targets for California's ecoregions.	
Central Valley Flood Protection Plan	Strategic blueprint for Central Valley flood-risk management, guiding State policies, investments, and partnerships.	DWR
Delta Adapts: Creating a Climate Resilient Future	How the Delta Stewardship Council works with partners to undertake a regional vulnerability assessment and develop a regional climate adaptation plan.	DSC

State Efforts to Advance Equity

Executive Orders

Governor Executive Order N-16-22 – September 2022

Directs State agencies and departments to update strategic plans to advance equity and to respond to identified disparities with changes to the organization's mission, vision, goals, data tools, policies, programs, operations, community engagement, Tribal consultation policies and practices, and other components as necessary to serve all Californians. This executive order also establishes the state's first Racial Equity Commission.

Executive Orders on Drought (April, May, June, and October 2021, and April 2022)

Combats drought and increases the abilities of State agencies and counties to enact drought response actions.

Executive Order N-42-20

Prohibits water systems from discontinuing residential water service and water service to small businesses for lack of payment.

Executive Order N-82-20

Protects and restores the state's biodiversity, while ensuring equitable outdoor access and recreation for all Californians.

State Water-Related Legislative Actions

In the past decade, California has adopted many legislative actions that promote access to clean, safe, affordable water all Californians.

- 2013.
  - Assembly Bill 685: Human Right to Water.
- 2014.
  - Assembly Bill 1739: Sustainable Groundwater Management Act.
- 2015.
  - Senate Bill 88: State can consolidate water systems.
  - Assembly Bill 401: State studies water affordability.
- 2016.
  - Senate Bill 552: State can appoint administrators to failing water systems.

    - Senate Bill 1263: New, unsustainable water systems are limited.
- 2017.
    - Assembly Bill 1668: County Drought Advisory Group.
- 2018.
    - Senate Bill 998: Limits water shutoffs.
- 2019.
    - Senate Bill 200: $1.3 billion in funding over 10 years for water solutions in underserved communities.
- 2021
    - Assembly Bill 1384: Requires the State's Safeguarding California Plan to prioritize equity and ensure that climate change adaption efforts prioritize protecting vulnerable communities.
    - Assembly Bill 923: Requires the development of government-to-government consultation training and encourages State agencies to seek meaningful input from Tribes on policies, programs, and projects that may affect tribes.
- 2022.
    - Assembly Bill 2108: Pays underserved communities for participating in water governance meetings.
    - Assembly Bill 2877: Tribal Water Infrastructure Bill.

State Agency Actions

Since *California Water Plan Update 2018,* many State agencies have taken action to embed racial equity and environmental justice principles, policies, and best practices into their work. This deepening commitment to equity is an acknowledgement that current institutional government systems and programs may not be benefiting all Californians. The following examples offer a growing dedication to increasing State capacity and improving institutional culture to better respond to the needs of all Californians.

- 2019.
    - California Coastal Commission's Environmental Justice Policy.
    - Department of Water Resources' Human Right to Water Policy.
- 2020.
    - Strategic Growth Council's Technical Assistance Guidance for State Agencies.

- 2021.
  - State Water Resources Control Board's Racial Equity Resolution.
  - California Water and Wastewater Arrearage Payment Program.
  - Central Valley Flood Protection Board Resolution No. 2021-15 declaring commitment to diversity, equity, and inclusion.
  - Drinking Water Well Principles and Strategies.
- 2022.
  - Strategic Growth Council's Racial Equity Hub.
  - California Department of Water Resources Racial Equity Action Plan.
  - State Water Resources Control Board's Racial Equity Action Plan.

State Efforts to Engage California Native American Tribes

The Governor's Office of Tribal Affairs, originally established as the Governor's Office of the Tribal Advisor by Executive Order (EO) B-10-11 and codified through Assembly Bill (AB) 880, is part of Governor Newsom's Administration. In 2019, Governor Newsom issued EO N-15-19, which acknowledges and apologizes on behalf of the State for the historical "violence, exploitation, dispossession, and the attempted destruction of tribal communities," which dislocated California Native Americans from their ancestral land and sacred practices. This EO also establishes the California Truth and Healing Council. EO N-15-19 reaffirms principles of government-to-government engagement by establishing that every State agency and department under executive control should encourage communication and consultation with California Native American Tribes.

On September 25, 2020, Governor Newsom released a Statement of Administration Policy on Native American Ancestral Lands to encourage State entities to seek opportunities to support Tribes' co-management of and access to natural lands within a California Tribe's ancestral land and under the ownership or control of the State of California. The statement also encourages those entities to work cooperatively with California Tribes interested in acquiring natural lands in excess of State needs. One of many examples of State efforts to engage Tribes is the Disadvantaged Communities and Tribal Involvement Grant Program, which encourages greater engagement of underrepresented communities and Tribes, conducts needs assessments, and funds projects benefiting these communities.

Discussion Questions:

1. What are the strengths of this chapter?

2. What gaps or red flags do you see in this chapter?

3. What would you change in this chapter?

Chapter 4. Focus on Supporting Watershed Resilience

This chapter introduces the Watershed Resilience Initiative to enhance understanding of climate risks and vulnerabilities and identify adaptations strategies. It describes the resources to be provided by the State and suggests a locally based resiliency approach for watershed networks. The following section describes the need for, and the value of, resilience planning at the watershed scale and introduces a program designed to accelerate resilience assessments and solutions throughout California's watersheds.

Statewide Vision for Watershed Resilience

The State's vision for watershed resilience throughout California involves the development of cross-sector, cross-jurisdictional watershed networks for climate resilience planning and project implementation and provision of them with targeted State support. Watershed networks provide all water-related sectors a seat at the table for collaborating on understanding climate vulnerabilities and system function, formulating multi-benefit adaptation strategies, and tracking watershed outcomes for transparency and accountability. From the beginning, watershed networks would be locally led, State supported, and centered in equity so that underrepresented voices can engage as equals in a watershed-wide conversation. State agency alignment with support for and participation in watershed networks is critical for their success. Investment in these networks throughout California would serve to reinvest in the social infrastructure of relationships and trust needed to effectively adapt to climate change throughout a watershed.

An approach focused on watershed resilience incorporates many of the fundamental principles of adaptive management and integrated water management. These principles encourage robust, iterative planning in the face of uncertainty and recognize that water supports, and is managed, for many interdependent resources. Eight key watershed resilience principles are:

1. **Promote Multi-Sectoral, Multi-Benefit Resilience Strategies:** Seek resilience solutions that provide multiple benefits to multiple water-related sectors.
2. **Integrate and Prioritize Equity and Social Justice:** Ensure that equity is an integral part of the planning and implementation process.

3. **Focus on Watersheds and Interdependencies of Water Resource Systems:** Watersheds are an appropriate scale for adopting a systems-focused approach and organizing multi-sector resilience planning.
4. **Build and Strengthen Watershed Networks:** Promote collaboration, relationships, and trust to ensure diversity among watershed participants.
5. **Apply Best Available Science and Promote Best Practices, Approaches, and Tools for Climate Resilience Planning:** Apply best available science and provide recognized and defensible approaches to inform planning.
6. **Build a Robust Understanding of Climate Risks and Embrace Uncertainty:** Ensure that system risk resulting from climate change is understood and a range of plausible future conditions and uncertainty are considered.
7. **Promote Outcomes-Based Management:** Manage watersheds for outcomes with performance indicators and metrics to assess climate risk and track the effectiveness of adaptations.
8. **Move the Needle:** Focus on implementing on-the-ground, measurable resilience actions.

The principles of the watershed resilience approach support Administration policies and priorities, including the Governor's *Water Supply Strategy* and *Water Resilience Portfolio,* focusing on climate urgency, building regional resilience through multi-benefit, and integrated resource management, with a strong focus on equity.

Watershed Networks

Watershed networks are at the core of the Watershed Resilience Program and the key to successful climate resilience planning. The Watershed Resilience Program intends to build on best practices for convening and facilitating collaborative groups to jointly accomplish large planning and implementation efforts. Watershed networks are not intended to replace existing collaborative groups within a given watershed or region. Instead, the networks are intended to build on existing relationships that have been forged over years of working together and strengthen multi-sector solutions across watersheds. In this way, they function as a "network of networks" comprised of existing regional groups and others as needed, as well as interested participants. The State intends to affirm and build on existing regional efforts by integrated regional water management (IRWM) groups, groundwater sustainability agencies (GSAs), regional flood groups, and other regional and Tribal planning efforts and programs by expanding and integrating those efforts with targeted State support. This approach recognizes that climate change solutions are best implemented at the

watershed scale, taking advantage of existing collaboratives and the integration of natural and built systems.

Every watershed is unique with its own challenges, actors, assets, and goals. Each watershed network will have a unique composition specific to its region, likely comprised of representatives from existing IRWM groups, GSAs, regional flood management groups, Regional Forest and Fire Capacity Program groups, and Tribal representatives.

Equity and inclusion are critical for watershed networks. Convening networks will require broad and inclusive representation, with enhanced support for underserved and underrepresented communities and Tribes to facilitate their participation, promote capacity building, and assure equitable benefits and impacts. Tribes should play key roles in watershed networks, utilizing Traditional or Tribal Ecological Knowledge (TEK) to adapt to climate impacts. Beginning with equity in mind when forming watershed networks provides underserved communities a genuine seat at the table, ensuring them the opportunity to offer input and shape actions. In frontline communities, addressing existing inequities, such as societal or institutional barriers, is necessary to ensure sufficient adaptation and community resilience.

Watershed networks need to promote coordination across all water-related sectors, including water supply, flood, ecosystem, water quality, groundwater sustainability, forest management, fire management, and land use management. It is recommended that long-term funding be made available to support collaboration, planning, and implementation of adaptation strategies. Watershed networks will collectively characterize climate-related risks, formulate adaptation opportunities, and track outcomes in their watersheds. Watershed networks can learn from each other and together understand the extent of climate risks to all water sectors and identify adaptation opportunities within and among watersheds as well as statewide.

Figure 4-1 Networks Are an Integral Part of Supporting Watershed Resilience

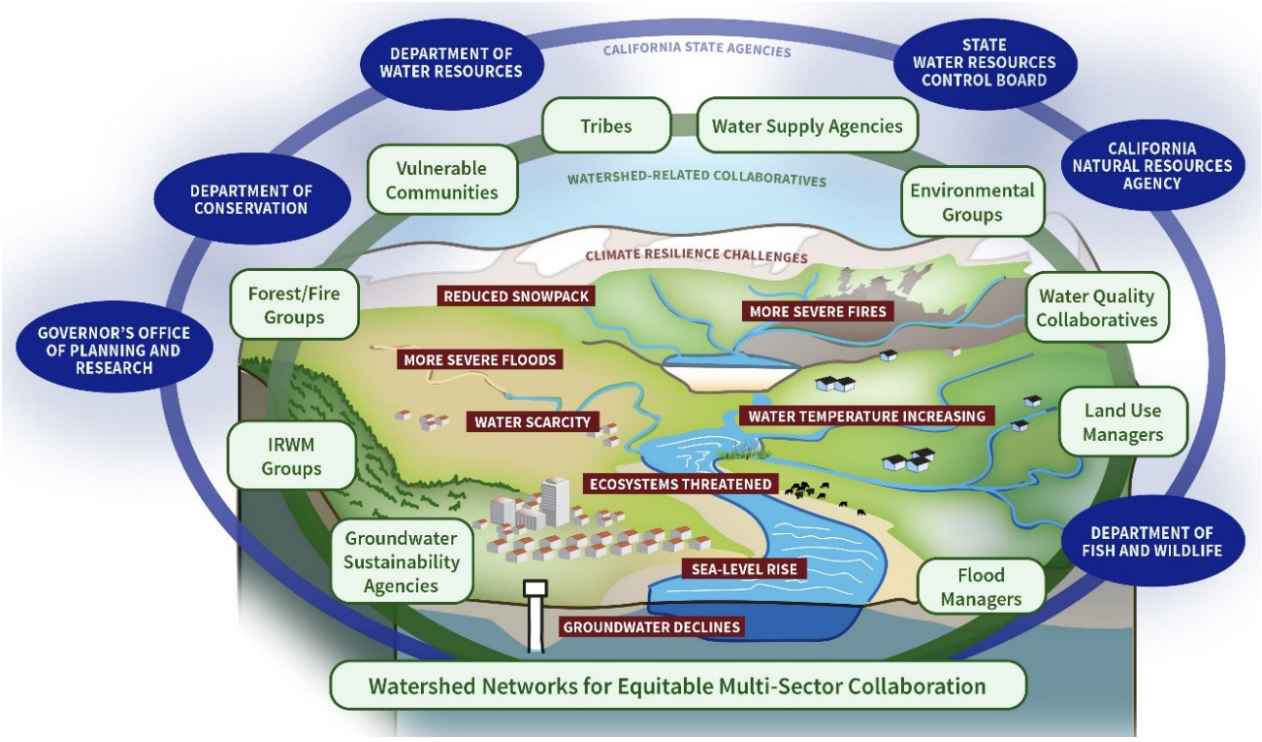


Figure 4-1 Note: Several case studies will be included in Chapter 4, including Russian River watershed, Merced River watershed, Ventura River watershed, American River watershed, Santa Ana River watershed, and San Diego watershed. The Russian River case study below is presented as an example of the case study content.

Case Study Highlight: Sonoma Water Climate Adaptation Plan

Watershed Name: Russian River

Partners Involved**:** Sonoma Water, County of Sonoma, Santa Rosa Water, Valley of the Moon Water District, City of Petaluma, City of Sonoma, North Marin Water District, and Marin Water

Key Aspects of Framework Included: All steps of framework

Summary of Planning Effort: Sonoma Water and partners developed a comprehensive climate adaptation plan (CAP) that seeks to improve resilience across the integrated water, flood, and sanitation management sectors in Sonoma, Marin, and Mendocino counties. The CAP, completed in late 2021, includes an assessment of climate risks to water supply, sanitation, and flood management infrastructure and operations, and serves as a guide for achieving climate resilience across Sonoma Water's systems.

The CAP utilized a science-based approach to regional climate change, including evaluation of historical climate trends and a range of future climate projections to develop scenarios of climate threats in the region. Climate threats to Sonoma Water's water systems were comprehensively assessed. Climate change downscaling for the region was conducted, followed by the water supply and flood modeling on the Russian River and Santa Rosa Creek. Major facilities were visited and studied to assess vulnerabilities to future climate change. Vulnerability and risk assessments were conducted for all major components of the systems.

A wide range of adaptation concepts and strategies to improve resilience were identified through a series of interactive workshops. About 80 adaptation concepts were evaluated, with over a dozen criteria addressing economic, environmental, and social elements. Several common, integrated concepts were identified, and some are in the process of being implemented. A regional water supply resilience study will follow the CAP to investigate risks beyond climate change and identify integrated regional solutions to water supply sector challenges.

Discussion Questions:

1. What are the strengths of this chapter?

2. What gaps or red flags do you see in this chapter?

3. What would you change in this chapter?

Chapter 5. Understanding and Addressing Equity in the Management of California's Water Resources

This chapter acknowledges the extent of historic and present inequities across the water sector, shares data, and provides a roadmap to overcome inequities.

Understanding Vulnerable Populations

Over three million Californians are exposed to poor water quality, unsustainable water sources, unaffordable water rates, increased impacts of climate change, and barriers to understanding how their water system works. Since California water is managed through a complex governance system that allocates water, assesses rates, and mitigates risks, understanding governance gaps and challenges and identifying opportunities for creating equitable outcomes for California's most vulnerable residents are crucial to ensuring equitable water management and community resilience.

Defining Vulnerability

While the State has developed various definitions for Californians experiencing social vulnerability, the California Water Plan Update 2023 will prioritize creating solutions and removing barriers for frontline communities. Frontline communities experience the negative impacts of inequities in water management and are the most vulnerable to future negative changes. Residents of these communities are more exposed to existing and future water sector vulnerabilities (e.g., water shortages, water quality, affordability) that will worsen water management challenges. To adapt to such change and mitigate negative outcomes for all Californians vulnerable to water challenges, addressing current inequities in these frontline communities will be crucial to sustainable management efforts.

Measuring and Adapting to Vulnerabilities

Assessing the inequitable impacts of California water management is inextricably linked to understanding the vulnerabilities of frontline communities. Vulnerability describes the degree to which a system (i.e., natural or built) is susceptible to adverse

change or harm and can be measured according to these four components: exposure, sensitivity, risk, and adaptive capacity.

Adaptation to existing and future water sector risks is centered on building resilient water systems. Resilience is defined as the ability of the water system to cope with change while maintaining its intended function or previous capacity. In frontline communities, addressing existing inequities, such as societal and institutional barriers, is necessary to ensure sufficient adaptation and community resilience. The inclusion of all participants and perspectives in water sector planning and management creates benefits for all Californians, especially those who are most vulnerable to climate and systemic challenges.

Systemic Solutions

The challenges of systemic inequities are deeply embedded in California's water governance structures, policies, laws, practices, and beliefs and often prevent the achievement of equitable outcomes. These systemic challenges exist within and beyond the water management sector and cannot be resolved in isolation. Such challenges as racial discrimination and public health impacts resulting from environmental policies that exclude vulnerable communities are a shared responsibility that require collective commitment to resolve. Community-driven solutions should be considered in water governance and policies. Staff and policy-makers should acknowledge that the expertise of community members is essential to all government planning, design, and implementation decisions.

Roadmap to Advance Equity in Water Management

This chapter will conclude with a roadmap that provides recommendations to assist State agencies in advancing equity in water management. The State acknowledges that water system management is improved by including groups most affected by project outcomes and decisions. It is committed to ensuring equity in its programs and services through inclusive outreach and engagement. The roadmap presented in this chapter was created with the input received to date of frontline community leaders and advocates. Engagement with community leaders and advocates is ongoing.

Climate and Water Plans and Policies

- Develop adaptation plans and funding for frontline communities.
- Repurpose lands for conservation and sustainability.

Governance and Representation

- Form a public advisory group to guide the development of future specific actions that will assist with equitable outcomes for all Californians.
- Improve representation of members of vulnerable communities on decision-making bodies, including local, regional, and State water boards, planning commissions, etc.
- Coordinate and streamline water governance systems.

Affordability and Investment

- Assure equitable investment in vulnerable communities.
- Simplify access and remove barriers to existing funding mechanisms.
- Create a water-rate assistance program for low-income residents.

Public Participation

- Improve engagement with vulnerable communities to ensure participation in planning and decision-making for projects that effect access to safe and clean water.
- Hire or train staff that are knowledgeable in outreach and engagement best practices.
- Conduct public meetings in plain language, avoiding the use of technical terms.
- Ensure language and physical accessibility are prioritized in all outreach and engagement strategies.
- Engage with California Native American Tribes early and often.

Discussion Questions:

1. What are the strengths of this chapter?

2. What gaps or red flags do you see in this chapter?

3. What would you change in this chapter?

4. The CWP Team is still considering use of the term “frontline community.” Do you have any thoughts or recommendations on this term?

Chapter 6. Strengths and Resources of California Native American Tribes

Statement about this Chapter

The State is committed to ensuring that Tribal perspectives on land, water, and culture are heard, respected, and utilized to help shape policies, plans, and projects. Tribal perspectives, recommendations, and stories have been included in past updates of the Water Plan; however, this is the first Water Plan update that includes a chapter focused entirely on Tribes. To gather Tribal viewpoints, the Water Plan team worked with members of the Update 2023's Tribal Advisory Committee in preparation of this chapter. Tribal members and their representatives contributed their time and expertise to describe water management challenges they face within their watersheds, groundwater basins, and ancestral homelands. They also provided their vision and presented opportunities for how to overcome these challenges. This chapter is based on the experience of California Native American Tribes from a Tribal point of view and in a Tribal voice.

Introduction

The chapter aims to amplify all California Native American Tribes' voices and increase the quality of their participation in the preparation of this and future Water Plan updates. The term California Native American Tribes signifies all indigenous communities of California, including those that are federally non-recognized and federally recognized, and those with allotment lands, regardless of whether they own those lands. It ensures the description and inclusion, protection, and advancement of Tribal water and culturally related needs, rights, and sustainability.

The chapter recognizes that California Native American Tribes, over 500,000 strong, reside throughout the state with deep indigenous connections to water and water-related resources. This chapter respects, values, and acknowledges California's Tribal diversity. At the same time, the chapter intentionally incorporates the experience of all indigenous people of California and addresses them in an equitable manner. It serves as a foundation for California Native American Tribes to collaboratively promote their water concerns, needs, and opportunities for the future as one people, in partnership with the State of California.

Tribal History

To understand Tribal views on water resource management, it is important to understand that prior to European settlement, the lands of California were populated by Native Americans for more than 19,000 years and included 500 Tribes that spoke about 300 dialects of more than 100 languages. The legacy of political actions, such as colonization, relocation, and termination toward California Native American Tribes (Tribes) has perpetuated a practice of leaving Tribes out of the discussion in developing State legislation. The exclusion of Tribes in State policies and plans has limited their ability to control and access water in accordance with their indigenous and aboriginal rights. As a result, it has prevented Tribes from continuing their cultural, religious and sustainability practices. Despite historical trauma, Tribes have survived and continue to be resilient in an ever-changing political and environmental landscape.

Tribal Sovereignty

Tribal sovereignty refers to the right of American Indians and Alaska Natives to govern themselves. The U.S. Constitution recognizes Indian Tribes as distinct governments; they have, with a few exceptions, the same powers as federal and state governments to regulate their internal affairs (National Congress of State Legislatures 2023). Historically, California's water planning processes have not included California Native American Tribes. This has limited the ability of Tribes to control and access water, which has constrained their cultural, religious, and sustainability practices and ultimately has limited their sovereignty. For that reason, Tribes must be offered the opportunity to genuinely participate in statewide and regional water planning, to voice their concerns and have them heard and respected, and to shape water policy.

Tribal Water Rights

Tribes have never ceded their inherent rights to water, and within the Tribal community there is a holistic view of water. Water plays an important role in Tribal lifeways, including subsistence and cultural practices. Water keeps traditions alive and holds knowledge from the past to be passed down to future generations. Water is life. It is strongly encouraged that the State and regions conduct early and continued Tribal engagement around any water-rights-related planning that may affect Tribes, such as the preparation and updating of groundwater sustainability plans by groundwater sustainability agencies.

Tribal Efforts to Improve Watershed Health

Two major watershed management activities Tribes are engaged in is meadow restoration and cultural burning. Both have been engaged on federal, State, county, parks, forest, and Tribal lands for the past two to three decades. This section features Ron Goode, Chairman of the North Fork Mono Tribe, who has provided trainings on cultural burning and its benefits to meadow restoration and shares his experiences of that practice. Much can be learned from past tribal knowledge and practices to improve watershed health. The State should learn and make available these past Tribal practices so that watershed managers can become aware and utilize them as part of their best practices. In addition, the State should explore opportunities for Tribes to manage or co-manage projects that improve watershed health and provide multiple benefits, such as storing water in meadows, providing important habitat, and creating a healthy and resilient landscape.

Climate Change Impacts on Tribes

Tribes, with close connections to the land, continue to observe and be affected by climate change – warmer temperatures, more rain, less snow, and changes in runoff. Concerns about fluctuations in rainfall quantity affect all Tribal people, especially those living in the desert regions with already depleted or stressed water sources resulting from ongoing severe drought conditions. In addition, extreme weather – in the form of droughts and floods – prevents water ceremonies from occurring due to low water levels and prevents access to areas of cultural significance due to inundation, respectively.

Changes in ecosystems resulting from warmer temperatures are already affecting Tribal people who still rely on food that is hunted or foraged as a primary means of subsistence. Pine nuts, which are foraged by many Tribal people, are already seeing a decline caused by climate change. Traditional plants used for basketry or medicinal purposes have a shorter window for harvesting or no longer bloom in the arid conditions. Warmer water temperatures threaten salmon runs fished for subsistence, which is also a cultural practice linked to physical and mental health among Tribal members.

The impact of a changing climate on Tribes introduces special concerns not often discussed or considered on a broad scale when policy-makers and the scientific community plan for climate change adaptation. Tribal communities have a close and intimate relationship to the cycles of nature, having studied and adapted over millennia to the specific regions Tribes call home. TEK kept Tribal communities in

California thriving through past extreme conditions. Today, Tribes are utilizing and blending TEK, science, and management techniques to mitigate and adapt to climate impacts (National Park Service 2021). The blending of knowledge is important and can assist California in its journey to combat the effects of climate change.

Equity and Tribes

Advancing climate resilience depends on strong partnerships and knowledge-sharing among not only agencies and academics, but within communities regardless of economic or social status. As climate change affects everyone, access to water also affects everyone. How do Tribes perceive equity? This section provides opinions shared during a Tribal Advisory Committee meeting on equity.

Funding Challenges and Opportunities for Tribes

State grant funding has allowed Tribes to construct projects that provide safe drinking water, restore floodplains, and improve fish habitat. Yet, these funding opportunities have historically not been accessible to Tribes. In recent years, the State has made progress to include Tribes in State grant funding opportunities. Even with these grant opportunities, however, challenges and barriers remain that keep Tribes from accessing State grants.

- Insufficient funding to hire an employee who can apply for grants.
- Insufficient Tribal staff to track numerous grant opportunities.
- Limited staff to assist with grant applications and subsequent project implementation.
- Funding agreements that have as a condition limited waivers of Tribal sovereignty.

These challenges make it difficult for Tribes to secure State grant funding and implement projects. Thus, State agencies must initiate ongoing engagement with Tribes to help them overcome these funding challenges. They must commitment to open, inclusive, and regular communication with Tribal governments and communities to recognize and understand their needs and interests. Creating a channel for Tribal governments to provide input on how best they can access State funding and receive technical assistance will support their efforts to implement water management projects that benefit their watersheds for future generations.

Strategies and Recommendations

The strategies and recommendations will be a work product of the 2023 California Tribal Water Summit, previous California Water Plan updates, and previous Tribal Water Summits. Past strategies and recommendations are a reminder of the work that has been accomplished and what needs to be done to ensure that Tribes are at the table in the development of regulations, rules, policies, programs, projects, plans, property decisions, and activities that may affect their communities.

Discussion Questions:

1. What are the strengths of this chapter?

2. What gaps or red flags do you see in this chapter?

3. What would you change in this chapter?

Chapter 7. Recommendations and Actions

This chapter is a collection of the State's priority recommendations and actions for advancing the three themes and strategies of Update 2023. It reflects the priorities of the Newsom Administration, alignment among State agencies, and input from California's diverse communities of place and interest. The chapter describes:

- A framework for priority actions within the scope and scale of Update 2023.
- Enabling conditions for implementation and accountability of outcomes.
- Synergies among the recommendations that cumulatively accomplish several intended outcomes.

Intended outcomes from implementing the recommendations and actions described in this chapter include:

- Future vulnerabilities from climate change will be better understood and play a greater role in driving water management actions.
- Watersheds are more resilient to effects of climate change and other stressors.
- All Californians experience greater equity in the distribution of costs, impacts, and benefits.
- Implementation of the Administration's water and related natural resource priorities, as described in Chapter 3 (e.g., WRP, WSS, 30x30).

Organization

This chapter is organized by *objectives, recommendations,* and *implementation actions*.

Objectives: The State's priority actions are organized around five objectives:

- Support Watershed Resilience Planning and Implementation.
- Improve the Resilience of Inter-Watershed, Natural, and Built Water Infrastructure.
- Advance Equitable Access to Planning, Decisions, and Allocation of Benefits and Impacts.
- Invest in California Native American Tribal Activities that Support Cultural and Tribal Connections with Natural Resources.

- Provide Regulatory Assistance and Stable Funding for Water Resource Planning and Implementation.

Recommendations: Sixteen recommendations were garnered from preceding chapters and sorted under the five objectives.

Implementation Actions: Each recommendation includes actions needed to implement the recommendation. A supporting document will provide details about the implementation actions.

Objectives, Recommendations, and Implementation Actions

Support Watershed Resilience Planning and Implementation

Recommendation 1: Improve Resiliency of Watersheds.

Action 1.1 – Establish Watershed Resilience Program.

Action 1.2 – Align State Agencies to Incentivize Watershed Resilience.

Recommendation 2: Expand and Improve Monitoring, Reporting, and Decision-Support Tools.

Action 2.1 – Establish an Integrated Water Resilience Hub.

Action 2.2 – Support Expanded Hydrological Forecasting for the State and Regions.

Action 2.3 – Expand Application of Robust Analytical Approaches.

Recommendation 3: Support Long-Term Sustainability for Critically Challenged Regions.

Action 3.1 – Identify Regions Critically Challenged by Climate Impacts.

Action 3.2 – Prioritize Actions in Known Unsustainable Regions.

Improve Resiliency of Natural and Built Inter-Watershed Infrastructure

Recommendation 4: Improve Resiliency of State, Federal, and Regional Water Projects.

Recommendation 5: Improve Resiliency of Inter-Watershed Natural Infrastructure.

Action 5.1 – Expand Protection, Restoration, and Resilience of Forests and Headwaters.

Action 5.2 – Invest in Source Watersheds as Backbone Infrastructure.

Action 5.3 – Recognize Aquifers as Natural Infrastructure having Ecosystem Services to Accelerate Replenishment/Remediation Actions.

Action 5.4 – [Placeholder for Major State Restoration Activities.]

Recommendation 6: Increase Water Use Efficiency and Reduce Demands.

Recommendation 7: Advance State Role in Water-Energy Resilience.

Advance Equitable Access to Planning, Decisions, and Allocation of Benefits and Impacts

(Actions under development)

Recommendation 8: Improve Engagement with Vulnerable Communities.

Recommendation 9: Increase State Investment in Vulnerable Communities.

Recommendation 10: Ensure Representation of Vulnerable Communities in Water Planning and Management.

Invest in California Native American Tribal Activities that Support Cultural and Tribal Connections with Natural Resources.

(Actions under development)

Recommendation 11: Recognize Tribal Sovereignty in Water Planning and Management.

Recommendation 12: Collaborate with California Native American Tribes Early and Often.

Recommendation 13: Incorporate Traditional Ecological Knowledge in Water Resource Management.

Recommendation 14: Strengthen Partnerships with California Native American Tribes for Co-Managing Water-related Resources.

Provide Regulatory Assistance and Stable Funding for Water Resource Planning and Implementation

(Actions under development)

Recommendation 15: Develop Regulatory Pathways and Provide State Assistance to Accelerate Implementation

Recommendation 16: Provide Sustainable Funding for Watershed Resilience Programs

Discussion Questions:

1. Are the intended outcomes and objectives clear and reflect the State's priorities?

2. Are there any objectives that are missing, or need to be expanded?

3. What would you add or change?