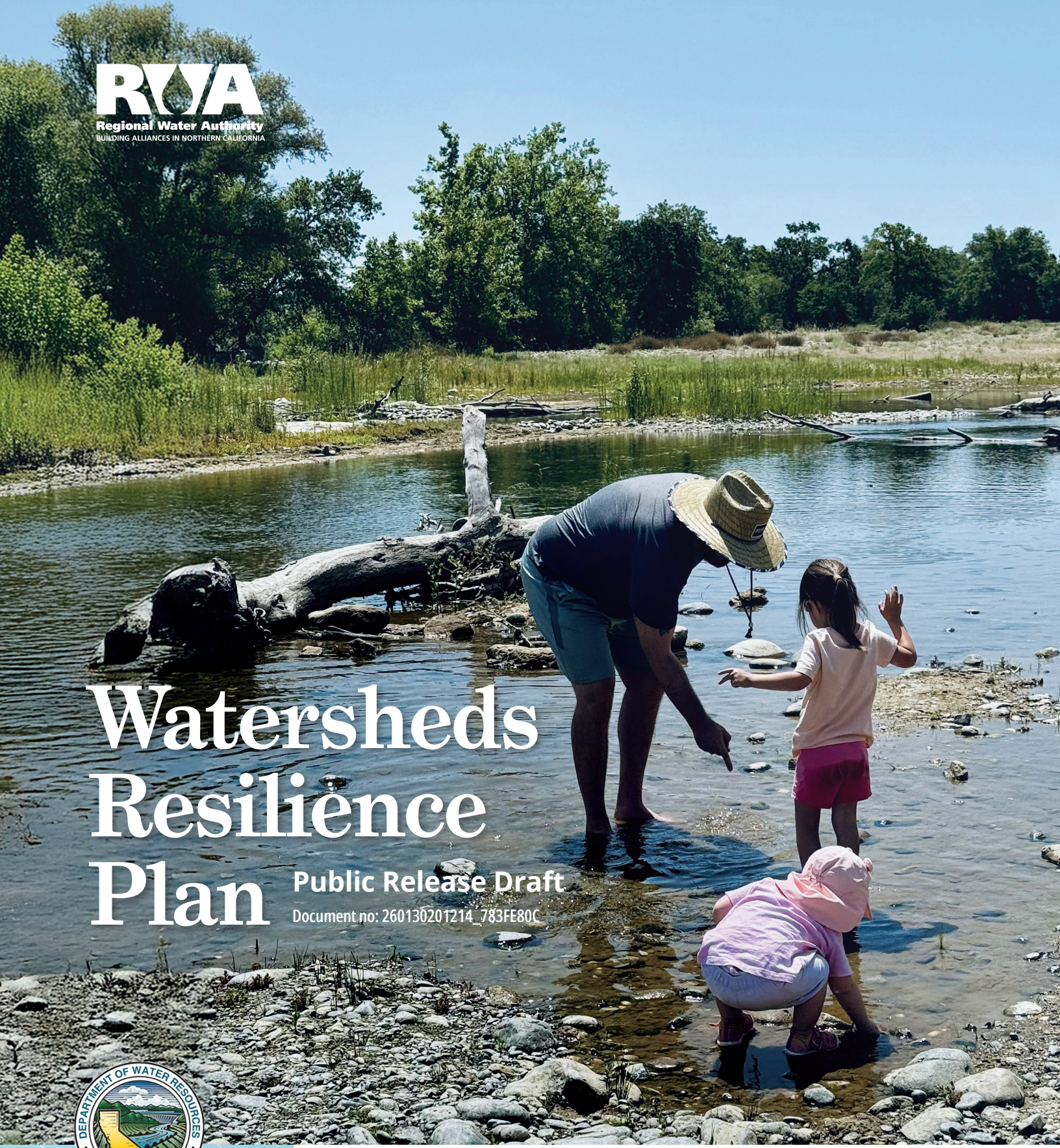

RWA
Regional Water Authority
BUILDING ALLIANCES IN NORTHERN CALIFORNIA

# Watersheds Resilience Plan

## Public Release Draft

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Prepared by Jacobs with Support from Valley Vision and Khadam Consulting

Jacobs
valley vision
Community Inspired Solutions
Khadam CONSULTING

# Acknowledgements

The RWA Watersheds Resilience Pilot Project is the result of a broad regional effort supported by many organizations and individuals who contributed their insight, time, and commitment throughout the planning process. This initiative reflects collaboration across water agencies, Tribal partners, community organizations, technical experts, and watershed residents—these valued collaborators helped shape a shared understanding of climate vulnerabilities and opportunities for long-term resilience.

We recognize the California Department of Water Resources (DWR) for funding and supporting this pilot under the Watershed Resilience Program. Their investment allowed the project team to integrate climate science, vulnerability assessment, and watershed-scale collaboration across the American, Bear, and Cosumnes River watersheds.

We acknowledge the RWA and its members for its leadership and coordination in carrying this Pilot forward. RWA played a central convening role, bringing together Advisory Committee members, Watershed Network participants, and project partners to examine climate vulnerabilities, shape adaptation strategies, and refine the overall planning direction. RWA ensured that a wide range of local, regional, and community viewpoints were reflected in the planning process, through facilitation of discussions, follow-through on action items, and commitment to transparent decision-making,.

## Watershed Network, Tribal Partners, and Community Contributors

We thank the Watershed Network members who contributed perspectives across sectors including groundwater, forest health, flood management, community resilience, and ecosystem stewardship. Their involvement supported the development of a truly collaborative watershed vision. We also acknowledge the Tribal partners who participated in meetings and consultations, sharing insights, stewardship practices, and community priorities. Their involvement remains essential as the region continues to advance watershed resilience. We also extend our appreciation to the many community-based organizations, technical experts, and local residents who participated in workshops, reviewed materials, provided comments, and contributed local knowledge throughout the pilot process.

## Advisory Committee

The Advisory Committee played an essential role by offering detailed expertise, practical experience, and regional insight that strengthened the technical analysis and enhanced the relevance of the adaptation strategies. We express our sincere thanks to each of the following members for their participation throughout the Pilot's development:

- Alice Towey, East Bay Municipal Utility District
- Ashlee Casey, Water Forum
- Austin Miller, Sacramento County / Sacramento County Department of Water Resources
- Brett Ewart, City of Sacramento
- Brian Sanders, City of Sacramento
- Chris Brown, Sacramento Climate Coalition / Environmental Council of Sacramento (ECOS)
- Clyde Macdonald, Save the American River Association
- Ethan Livingston, Sacramento County
- Gary Bardini, Sacramento Area Flood Control Agency
- Greg Jones, Nevada Irrigation District
- Laura Rodarte, Placer County Water Agency (PCWA)
- Michael Saunders, Georgetown Divide Public Utility District
- Rebecca Guo, El Dorado Water Agency
- Sean Bigley, City of Roseville
- Ted Rauh, ECOS
- Tony Firenzi, PCWA

Their thoughtful guidance strengthened the Pilot's technical rigor, shaped refinements to vulnerability assessment methods, and helped align proposed strategies with real implementation needs in the region.

## Project Team

Lastly, we would like to thank the project team members from RWA, Jacobs, Valley Vision, and Khadam Consulting who supported development, facilitation, engagement, modeling, and plan integration. Their work provided the science-based foundation and collaborative framework needed to advance a comprehensive watershed resilience plan.

# Tribal Land Acknowledgement

The Regional Water Authority (RWA) Watersheds Resilience Pilot study area encompasses the American, Bear, and Cosumnes River watersheds, as well as the eastside tributaries of the Feather and Sacramento Rivers between the Bear River mouth and Mokelumne River mouth, and the City of West Sacramento.

We acknowledge and honor the original stewards of this region: the Indigenous peoples who have lived in and cared for these lands and waterways for centuries. This study area includes the ancestral homelands of the Me-wuk, Nisenan, Miwok, Maidu, Paiute, Pit River, Washoe, and Yokut peoples. For generations, these Tribal Nations and communities have passed down cultural traditions, ecological knowledge, and land management practices that continue to shape the health of the region today.

The history of this region bears the impacts of displacement, violence, and systemic injustices that have profoundly disrupted Indigenous peoples and their ways of life. These injustices have led to the mismanagement and over-extraction of natural lands and resources, causing ecological degradation that threatens the resilience and wellbeing of all communities. We are called to return to traditional knowledge and stewardship practices to honor Indigenous leadership, uphold equity, and restore ecological balance essential to the wellbeing of us all.

We honor the presence and leadership of Tribal communities and recognize our responsibility to work in partnership with Tribal communities toward a more sustainable and equitable future. Efforts like the Watershed Resilience Pilot are a step forward in addressing these legacies, centering Indigenous knowledge, and advancing collaborative stewardship that supports the wellbeing of the natural environment and all who depend on it.

# Executive Summary

## Call to Action

The American, Bear, and Cosumnes watersheds are entering a period of profound change. Declining snowpack, more intense storms, longer droughts, increasing wildfire risk, and rising temperatures are already reshaping how water moves through the watershed and how communities, ecosystems, and infrastructure experience risk.

These watersheds support more than 2 million residents, regional economies, critical infrastructure, and some of California's most valued river ecosystems. They also play a vital role in maintaining flows to the Sacramento-San Joaquin Delta that affect water supply reliability across much of the State. Therefore, the stakes are both regional and Statewide.

Without coordinated action, climate pressures will increase strain on water supplies; intensify flood risks; threaten cold-water habitat for salmon and other native species; and widen disparities for communities that already face the greatest climate vulnerabilities. Delaying action will only increase the cost and difficulty of responding to these challenges.

The strategies identified in this plan provide a pathway forward. Many can begin immediately, while others will require sustained collaboration, new partnerships, and significant investment over time. Strengthening forest health in headwaters; protecting communities from floods and wildfire; improving water management systems; and expanding monitoring and forecasting capabilities are all essential steps toward building long-term resilience.

The region has the knowledge, partnerships, and technical foundation needed to move from analysis to action. The challenge ahead is not only understanding the risks, but mobilizing the commitment and resources required to address them. Acting now will help ensure that these watersheds continue to provide reliable water, healthy ecosystems, and safe communities for generations to come.

**Mid-Century**
**Median Projected Conditions**

- ↓ **Snowpack**
  60% less volume
- ↑ **Snowpack Melting**
  2-4 weeks earlier
- ↑ **Rainfall vs Snow**
  20-40% more rainfall
- ↓ **Lower American River**
  9% less flows
- ↑ **Groundwater Reliance**
  11% increase
- ↑ **Extreme Heat Days**
  20 more per year (>100°F)
- ↑ **Wildfires**
  17% more frequent
- ↑ **River Temperature**
  3-5°F higher in summer
- ↑ **Extreme Precipitation**
  15% more intense
- ↑ **Flood Risk**
  19% higher
  100-year peak flows

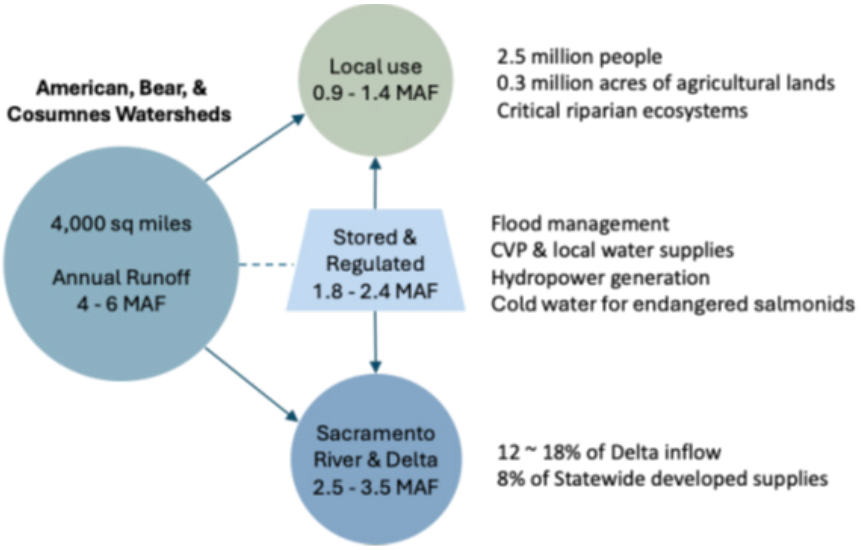
# Overview

The American, Bear, and Cosumnes River watersheds supply drinking water to more than 2 million people; support agriculture and local businesses; generate hydropower; sustain fish and wildlife; and provide valued recreational opportunities. Together, they account for approximately 8% of California's developed water use and are critical in supporting flows to Delta (8 to 12% of total inflows).

These watersheds face increasing pressure from climate change. Longer droughts, reduced snowpack, more intense wildfires, heavier storms, and greater flood risk are altering how water moves through the system. Snowpack is melting earlier, and more precipitation is falling as rain rather than snow, making it more difficult to balance water supply, flood protection, ecosystem health, and community needs. These changes also place increasing pressure on cold-water habitat and reservoir cold-water pools that support salmon and other native fish species in the Lower American River.

These climate change impacts are not experienced equally. Lower-income communities, Tribal communities, and outdoor workers often face greater exposure to extreme heat, flooding, wildfire smoke, and economic disruption: this makes equity considerations central to watershed resilience planning.

In 2024, the DWR launched the Watershed Resilience Pilot Program, selecting the Sacramento region as one of five pilot areas Statewide. The program takes a watershed-scale approach—examining water, land, forests, ecosystems, and communities together—to develop a science-based plan for long-term resilience.




RWA is leading the effort in partnership with local agencies, Tribal governments, State and Federal partners, and community members. We developed the resulting plan—called the RWA Watersheds Resilience Plan (RWA WRP)—to achieve the following:

- Identify key climate risks across the watersheds.
- Assess vulnerability across major systems, including water supply, groundwater, flood management, ecosystems, water quality, recreation, hydropower, agriculture, and urban water use.
- Identify 19 adaptation strategies supported by 132 actions.
- Establish a roadmap for implementation and investment.

The plan integrates climate modeling and hydrologic analysis with stakeholder and community input, embedding equity throughout, to create a coordinated, science-based roadmap for long-term watershed resilience.

## The Watershed Planning Area

In the RWA WRP, we examine the full, interconnected water system that supports the Sacramento region—from Sierra headwaters to valley communities—recognizing how surface water, groundwater, and ecological systems function together across the entire American, Bear, and Cosumnes River watersheds; their key tributaries; and the City of West Sacramento.

The planning area includes critical water infrastructure such as Folsom Reservoir, extensive groundwater basins, and ecologically significant river corridors (Figure ES-1). It is home to diverse communities, ecosystems, and land uses that are increasingly affected by climate-driven changes.

We developed boundaries in coordination with DWR and regional partners. These boundaries build on prior State and Federal studies but expand where necessary to capture hydrologic connections and climate risk across the system. Several examples of areas we included along with the American River watershed are as follows:

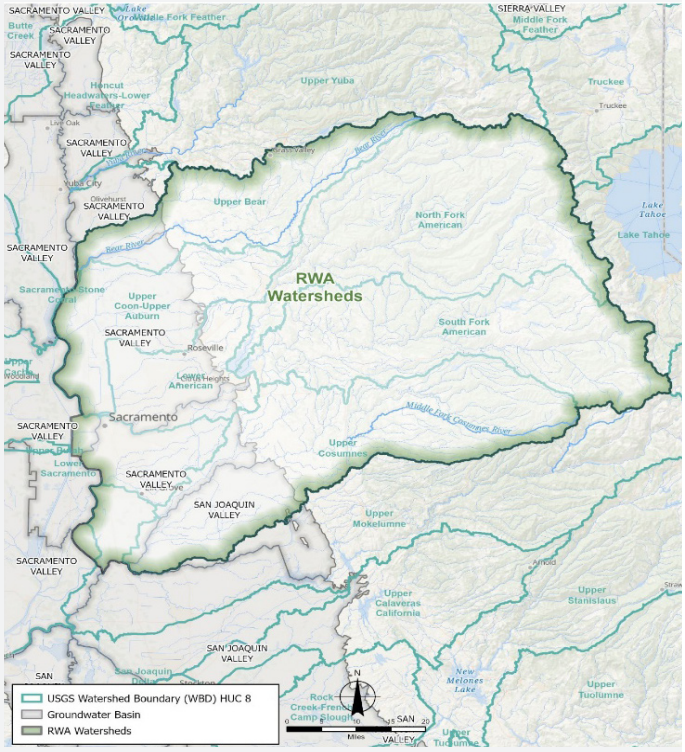
The Cosumnes River watershed is included, because it supplies El Dorado and Sacramento County counties and is hydrologically connected to groundwater basins that interact with the American River.

The north slope of the Bear River and the south slope of the Cosumnes River are included to capture complete inflows across watershed divides.

The City of West Sacramento is included, because floodwaters from the American River and tributaries ultimately move toward the Sacramento River, influencing regional flood management.

Earlier studies used boundaries tailored to specific programs or objectives. This plan adjusts those lines to reflect watershed-scale hydrology, groundwater connectivity, flood pathways, and climate exposure.

**Figure ES1.** RWA Watersheds Map



# Community Engagement, Tribal Partnership, and Vision

In the RWA WRP, we build upon decades of regional collaboration among water agencies, environmental organizations, local governments, and community organizations. Organizations such as the Sacramento Water Forum (which includes water suppliers, environmental organizations, public agencies, and business leaders) established a model for balancing water supply reliability with river protection.

The RWA WRP expands that foundation. Beginning in 2024, the project team formed a Watershed Network to support development of the RWA WRP. The Watershed Network invites participation from water agencies, cities and counties, conservation groups, Tribal Nations, community advocates, and historically under-represented communities. To reduce barriers to participation, the project provided stipends to select community participants and offered multiple ways to engage, including virtual meetings, surveys, webinars, and one-on-one conversations.

Watershed Network meetings became the primary forum for reviewing climate risks, discussing vulnerabilities, and shaping adaptation strategies. In-person events complemented virtual sessions to build relationships and trust. Through the Watershed Network, we also developed a shared vision and guiding goals as a formal foundation for the plan.

**Watershed Vision (Adopted Through the Watershed Network)**

*"Sustainably manage the American, Bear, and Cosumnes River watersheds using a science-based, collaborative, and inclusive approach that incorporates traditional knowledge and balances ecological and economic needs to sustain the long-term resilience of our local communities and ecosystems."*

From this vision, the Watershed Network identified guiding goals:

- Prioritize equity and meaningful participation from Tribal Nations and frontline communities.
- Use science to assess risks from drought, wildfire, flooding, and extreme heat.
- Develop multi-benefit adaptation strategies that strengthen water reliability, ecosystem health, public safety, and local economies.
- Integrate traditional ecological knowledge with technical analysis.
- Establish performance measures to track progress over time.

Also, an Advisory Committee of technical experts provided additional input, reviewing and providing feedback on climate modeling, vulnerability findings, and adaptation concepts. A public website linked from the RWA home page (rwah2o.org) houses materials and allows ongoing input.

We placed an emphasis on Tribal considerations throughout the development of the RWA WRP, recognizing that Indigenous peoples have stewarded these watersheds for thousands of years. Tribal Nations bring traditional ecological knowledge grounded in long-term relationships with land and water. Engagement followed State guidance calling for early, ongoing, and meaningful consultation. Tribal representatives emphasized system-wide stewardship, restoration of native species, protection of cultural resources, and water management approaches that support long-term ecological balance. The RWA WRP also acknowledges challenges, including limited capacity and historical misuse of cultural knowledge. We have ensured that continued dialogue and transparency remain central commitments in development and planning.

## State of the Watershed and Historical Hazards

Effective resilience planning begins with a clear understanding of existing conditions, historical hazards, and the climate trends already reshaping the watershed. In the RWA WRP, we have drawn upon more than 70 existing studies and models addressing the American, Bear, and Cosumnes Rivers and surrounding communities. This review confirmed a strong technical foundation, particularly in the American River Basin, while identifying gaps in geographic representation and analytical depth in parts of the Cosumnes watershed, West Sacramento, and sections of the Bear River. Wildfire impacts, ecosystem health, water quality, and equity have received less consistent analysis in prior efforts, highlighting areas where additional refinement is needed.

To strengthen this foundation, we conducted a Geographic Information System (GIS)-based community sensitivity analysis, informed by the State's Vulnerable Communities Platform. This analysis identifies where climate hazards overlap with socially vulnerable populations, grounding equity considerations in data.

Understanding historical climate hazards is foundational to assessing current vulnerabilities and informing future resilience strategies. Over the past two decades, the RWA Watersheds have experienced a series of extreme weather events, including major flood events, prolonged droughts, record heat waves, and large wildfires such as the Caldor and Mosquito Fires in the Sierra Nevada, which have tested the limits of infrastructure, ecosystems, and community preparedness. These events offer critical insight into the watersheds' sensitivities to climate stressors and the adaptive capacity of their systems.

Long-term data reinforce this pattern. Temperatures have increased by approximately 2.7 degrees Fahrenheit since the mid-1900s, snowpack is declining, and runoff is occurring earlier in the year. Key observed and modeled shifts include the following:

- Earlier peak runoff, reducing alignment between supply and peak summer demand
- Increased intensity of winter storms, raising flood risk even in years with average annual precipitation
- Greater frequency of extreme heat days, increasing water demand, and ecosystem stress
- Rising river temperatures, intensifying pressure on cold-water fisheries

To better understand system dynamics, we developed a 100-year water budget (1922 to 2021), tracking how water enters and moves through surface water, land, and groundwater systems. The analysis confirms that year-to-year precipitation variability drives water availability and system stress across the watershed. Drought increases reliance on groundwater; aquifers recover during wet periods but decline during prolonged dry years; and reservoir operations, particularly at Folsom Lake, strongly influence downstream flow timing and availability.

Looking ahead, our modeling further shows that under hotter-drier futures, late-season reservoir storage becomes less reliable, while warmer-wetter futures increase unmanaged spill frequency during extreme winter events. Many flood control, stormwater, and drainage systems were designed for historical precipitation patterns and may be stressed by more intense short-duration storms. These changing conditions increase pressure on levees, storm drains, creeks, and urban drainage networks.

Climate impacts are not evenly distributed. Lower-income neighborhoods, communities of color, Tribal communities, and outdoor workers face greater exposure to extreme heat, wildfire smoke, and economic disruption. Nearly 37% of Capital Region residents live in households struggling to meet basic needs, limiting their ability to absorb and recover from climate-related disruptions. We recognize that identifying where exposure and adaptive capacity vary is central to designing effective resilience strategies. Increasing climate risk is also influencing economic resilience, including rising insurance costs and reduced insurance availability in some areas affected by wildfire and flooding. Investments that reduce climate risk, such as improved flood protection, watershed restoration, and fire-resilient landscapes, can also help stabilize insurance availability and long-term economic resilience.

These findings establish a clear starting point: the watershed is already experiencing more extreme conditions; its systems are tightly interconnected; and climate change is increasing stress across water supply, ecosystems, infrastructure, and communities.

# Climate Vulnerability Assessment

Building on the baseline conditions, the RWA WRP evaluates climate vulnerability across nine interconnected systems: surface water, groundwater, water quality, flood management, ecosystems, agriculture and urban water use, community and equity, recreation, and hydropower. Our objective is to identify where risk is greatest—and why—so that strategies address the most consequential pressures on the watershed.

## Step One:

Our assessment begins with a qualitative review that integrates data, technical expertise, and stakeholder input. Vulnerability is based on three core factors:

1. **Sensitivity – how strongly a system is affected by climate stressors such as drought, wildfire, flooding, and heat**
2. **Adaptive capacity – the flexibility, redundancy, or institutional capacity available to respond and recover**
3. **Scale of impact – whether disruptions remain localized or cascade across multiple sectors**

We identified key takeaways from this assessment as follows:

- **The highest risks are driven by climate forces.** The most significant vulnerabilities occur where major climate pressures—such as snowpack loss, wildfire, extreme precipitation, and heat—intersect with stressed ecosystems; where infrastructure has limited flexibility or was built for past climate conditions; and where communities have limited resources to respond.
- **Foundational systems are at highest risk.** Natural snowpack, Folsom Reservoir, upper watershed forest systems, Lower American River aquatic ecosystems, and major levee systems in the Lower American and Cosumnes Rivers consistently rank at the highest levels of vulnerability. These systems are critical because disruption would affect multiple sectors at once: water supply, flood management, ecosystems, recreation, and communities.
- **Forest health and ecosystem stress have far-reaching impacts.** Upper watershed forests in the American, Bear, and Cosumnes basins show very high vulnerability due to compounding drought, wildfire, heat, and pests. These risks extend beyond habitat loss: they influence erosion, sediment transport, water quality, reservoir operations, and long-term watershed function both within the watershed and downstream.
- **Flood systems represent widespread, high-consequence vulnerability.** Levee systems, floodplains, and drainage networks in the Lower American and Lower Cosumnes areas face high exposure to extreme storms and atmospheric rivers. Because these systems protect entire communities and transportation corridors, their vulnerability has watershed-wide implications.
- **Surface water reliability depends heavily on snowpack and key storage facilities.** Natural snowpack functions as the watershed's largest reservoir and ranks among the most significant vulnerabilities. Folsom Reservoir stands out because changes in runoff timing and operational constraints limit flexibility during both drought and flood conditions.
- **Groundwater risks operate at both regional and local scales.** Groundwater basins face long-term sustainability pressures under prolonged drought. At the same time, small water systems and private wells—particularly in the upper watershed and Cosumnes areas—show very high vulnerability due to the inherent unreliability of fractured rock aquifers, which are further stressed by changing hydrologic patterns. These systems often lack limited redundancy and financial capacity to adapt, highlighting localized risks that raise important equity considerations.
- **Community vulnerability is concentrated but significant.** Neighborhoods located in floodplains, Delta-edge communities, foothill towns, and upper watershed rural areas face overlapping hazards and limited adaptive capacity. They represent concentrated risk to populations with fewer resources.
- **Lower vulnerability does not mean low importance.** Some large infrastructure systems show lower vulnerability scores because they have stronger adaptive capacity and operational flexibility. These findings reflect system strength—not absence of exposure—and reflect that institutional strength, operational flexibility, and system design play a meaningful role in moderating climate impacts.

## Step Two:

In our analysis, a second level of quantitative assessment models future climate conditions—including a warmer-wetter future, characterized by higher temperatures and heavier winter precipitation, and a hotter-drier future, marked by higher temperatures, declining snowpack, and more frequent drought—to understand how the watershed may function in coming decades.

Several consistent patterns emerge:

- **The biggest challenge is timing.** A shift to early runoff creates a growing mismatch between when water is available and when it is needed. This has impacts to all sectors including water supply, hydropower, ecosystems, recreation, and agriculture.Late-season declines affect multiple systems at once. Reduced flows from May through September lower water supply reliability, reduce river flows, decrease hydropower production, affect recreation, and stress fish and wildlife. These impacts occur simultaneously, increasing tradeoffs among competing needs.
- **Groundwater becomes more important—and more vulnerable. A**s surface water becomes less reliable during dry months, reliance on groundwater increases. Without expanded recharge and careful management, this raises the risk of declining groundwater levels and impacts to wells, particularly during prolonged drought.
- **Flood risk grows even as supply reliability declines.** More intense storms produce higher peak flows and larger flood extents. In some areas, levee systems become more sensitive to failure under extreme events. This means the region faces greater flood pressure even as overall water supply reliability decreases.
- **Warming intensifies ecosystem and water quality stress.** Higher air and water temperatures increase pressure on cold-water fish, reduce dissolved oxygen, increase risk of algae blooms, and heighten wildfire risk. Changes in snowmelt timing and sediment movement further affect river and reservoir conditions.
- **Recreation and hydropower become less predictable.** Climate-driven shifts reduce the reliability of reservoir access, river recreation quality, snow-based recreation, and summer hydropower production.
- **Agricultural and urban users face growing supply-demand gaps.** Rising temperatures increase evapotranspiration (water lost from soil and plants), raising water needs just as late-season surface supplies decline. Under hotter, drier late-century conditions, projected shortages increase significantly, especially in foothill- and groundwater-constrained areas. These trends may also influence long-term agricultural viability and crop choices across the region. As water availability becomes more variable, some crop types that require reliable, long-season irrigation may become more difficult to sustain without changes in water management practices.
- **Upper watershed changes ripple downstream.** Snowpack loss, earlier melt, and increased wildfire risk are most pronounced in upper watershed areas. These changes affect flows, temperatures, sediment, and habitat conditions throughout the river system.
- **Hotter-drier futures pose the greatest overall risk.** While warmer-wetter conditions increase flood challenges, hotter-drier scenarios consistently produce the most severe impacts across water supply reliability, groundwater stress, ecosystem health, and shortage levels.
- **Effects of Sea Level Rise and Delta Salinity Pressures Cascade Upstream.** Sea level rise increases Delta salinity intrusion, placing greater demand on Folsom Reservoir releases to maintain Delta water quality standards. This, in turn, intensifies trade-offs among regional water supply reliability, temperature management, and ecosystem needs in the Lower American River.

Our assessment confirms that climate risks are interconnected, cumulative, and system-wide. Addressing them requires coordinated, watershed-scale strategies that improve seasonal flexibility; strengthen natural and built systems; expand groundwater and storage capacity; and reduce disproportionate impacts on vulnerable communities.

# Adaptation Strategy Development

To address the vulnerabilities identified across the watershed, we have established a structured decision-making framework in the RWA WRP for identifying, evaluating, and advancing adaptation strategies, actions, and projects.

The strategies and actions are grounded in vulnerability assessment and directly respond to the highest-ranked climate risks. They are aligned with existing watershed and regional plans and refined through input from the Watershed Network and Advisory Committee.

The framework is organized into three tiers:

1. **Strategies define long-term regional responses to the highest-ranked vulnerabilities.**
2. **Actions describe the coordinated steps required to advance each strategy.**
3. **Projects are the on-the-ground initiatives that implement actions and deliver measurable resilience outcomes.**

Actions span multiple implementation types, including infrastructure investment, forest management, operational improvements, groundwater recharge, environmental restoration, policy reform, data development, and interagency coordination.

We have identified **19 adaptation strategies supported by 132 actions,** each directly tied to documented climate vulnerabilities. The strategies include the following:

## Water Supply Reliability

- Secure surface water supply entitlements.
- Continue and expand demand management.
- Implement sustainable groundwater management.
- Increase water reuse.
- Secure drinking water infrastructure.
- Manage stormwater as a resource.
- Improve drought preparedness and response.

## Ecosystem and Watershed Health

- Implement sustainable forest management.
- Implement multi-benefit watershed protection and restoration projects.
- Enhance environmental flows and aquatic habitat resilience.
- Prevent contamination of surface water and groundwater resources.

## Flood and Fire Risk Reduction

- Reduce the risk of flooding in communities.
- Promote fire-adapted communities.

## Community and Equity Resilience

- Support access to clean and affordable water for all residents.
- Increase community capacity for sustainable management and resilience to major disasters.
- Preserve and enhance access to open space, and support sustainable recreation.

## Operations, Governance, and Data

- Preserve and optimize reservoir and river system operations.
- Develop data and tools for improved watershed understanding, knowledge sharing, and transparency.
- Enhance and streamline policies, regulations, and funding for resilient watershed management.

Collectively, these strategies respond directly to the watershed's highest-ranked vulnerabilities by improving seasonal flexibility; strengthening groundwater and forest systems; reducing flood and wildfire risk; protecting water quality; and aligning governance and funding with long-term resilience goals.

# Implementation Plan

In the implementation plan, we establish a structured and flexible pathway for advancing adaptation strategies while funding, readiness, and partnerships align. The plan connects the vulnerability assessment (identifying where risks are greatest) with the adaptation strategies that define the regional response. The implementation framework translates those strategies into coordinated, fundable projects tailored to watershed conditions. Delivering these strategies will require sustained regional collaboration and significant investment across multiple agencies and funding programs.

The plan is organized around five integrated elements that work together to move projects from concept to delivery.

**Project Evaluation Framework:** The framework (Figure ES-2) establishes how projects advance from concept to implementation. Rather than ranking projects competitively, it provides a consistent structure to confirm alignment with watershed priorities. We have evaluated projects based on the following:

- Alignment with adopted adaptation strategies
- Contribution to climate risk reduction and resilience
- Readiness and feasibility
- Funding alignment
- Community and institutional support

We have grouped projects into priority tiers to guide sequencing and investment while preserving flexibility as conditions evolve. The framework strengthens projects by identifying gaps in design, coordination, or readiness before implementation, as follows:

**Equity Lens:** An equity-focused lens shapes where and how projects are delivered. Within the evaluation framework, equity directs attention toward communities facing the greatest combined climate exposure and social vulnerability, guiding targeted investment where resilience gains are most consequential.

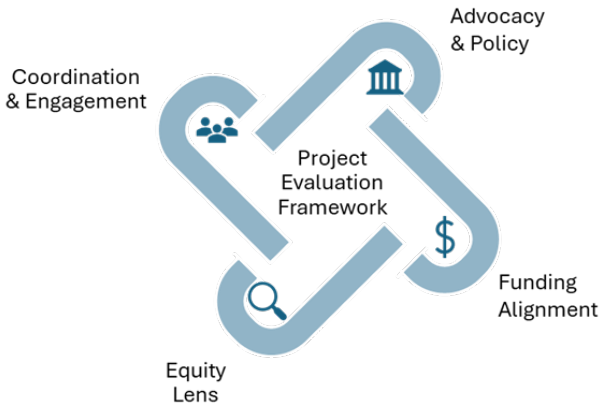
**Funding Alignment:** Because funding opportunities are competitive and episodic, we have structured and evaluated projects to align with evolving State and Federal climate and equity priorities. This improves competitiveness and allows investments to advance across multiple funding cycles.

**Engagement and Coordination:** Engagement and coordination confirm that projects are feasible in a region managed by many agencies and jurisdictions. This process clarifies roles, resolves overlaps, aligns timelines, and confirms regulatory and operational responsibilities before projects advance.

**Advocacy and Policy Alignment:** Advocacy and policy alignment elevate watershed resilience priorities in State and Federal planning and funding discussions.

As an integrated system, these elements function as both a strategic roadmap and an investment guide—keeping regional priorities, project development, funding alignment, and implementation aligned over time.

### Figure ES2. Project Evaluation Framework




# Performance Tracking

Performance tracking is a core component of the RWA WRP; we have designed tracking to support implementation, learning, and adaptive decision-making over time. It is not a compliance or audit function. Instead, it provides timely, actionable information to help regional leaders understand progress, identify gaps, and adjust strategies as climate conditions, funding opportunities, and watershed priorities evolve.

Given uncertainty in future climate conditions, the plan follows an adaptive management approach. We have used performance information to guide sequencing, coordination, and investment across the watershed.

Performance tracking centers on three questions:

1. **Are projects and actions being implemented as planned?**
2. **Are those efforts improving watershed resilience over time?**
3. **Are investments being delivered in an equitable and coordinated manner?**

To answer these questions, the plan relies primarily on existing data sources, project reporting, and publicly available datasets. We designed indicators to provide both watershed-specific insight and alignment with broader State resilience metrics.

The framework tracks four categories of indicators:

- Implementation & Delivery – Progress in initiating, advancing, and completing projects; coordination milestones; and alignment with adopted adaptation actions
- Outcome & Resilience – Improvements in drought, flood, wildfire, and heat preparedness; operational flexibility; ecological condition; and reduced exposure of critical systems
- Equity & Community Outcomes – Distribution of projects relative to areas of higher social vulnerability and access to resilience benefits for communities with limited adaptive capacity
- Portfolio & Programmatic Balance – Distribution of investments across hazards, sectors, and geographies; and integration with existing regional and State programs

Because resilience benefits often emerge gradually—and may be most visible during future extreme events—the framework recognizes that not all outcomes will be immediate or attributable to a single action.

The RWA synthesizes performance information, while individual agencies remain responsible for project implementation and compliance. Periodic review supports continuous improvement, reinforcing that watershed resilience is an ongoing process of implementation, evaluation, and adjustment.

# Recommendations and Next Steps

In the RWA WRP, we have provided a coordinated framework for how the region transitions from analysis to sustained implementation. The focus is on maintaining alignment, advancing priority projects, securing funding, and institutionalizing watershed-scale coordination as climate conditions evolve. The objective is to translate watershed-scale strategies into coordinated action across the American, Bear, and Cosumnes rivers.

## Local Actions

The following principles guide continued implementation:

- Sustain Regional Coordination: Through the Watershed Network, we will continue collaboration that anchors implementation. Ongoing engagement among agencies, Tribal Nations, community organizations, utilities, and land managers supports cross-jurisdictional alignment and delivery of multi-benefit projects.
- **Advance Priority Projects:** Our Project Evaluation Framework will guide screening, refinement, and phased sequencing of projects based on readiness, impact, and funding alignment. This structure allows projects to mature and advance as opportunities arise.
- Strengthen Policy and Advocacy Alignment: We will center shared regional priorities on vulnerability reduction, and climate resilience will guide coordinated advocacy in State and Federal planning and funding discussions.
- Align and Pursue Funding: We will position projects to align with evolving State and Federal resilience and equity programs, including Proposition 4 and related initiatives. Maintaining readiness and unified regional messaging improves competitiveness across funding cycles.
- **Embed Adaptive Management:** Performance tracking, stakeholder input, and updated technical analysis will inform our periodic refinement of strategies and investment priorities while maintaining alignment with core resilience goals.

## State-Level Actions

The Advisory Committee recommends the following actions for DWR:

- Establish a long-term Watershed Resilience Program to support both planning and project implementation.
- Provide significant cost-share funding for high-impact resilience projects.
- Continue advancing the Watershed Resilience Pilot efforts to test implementation and performance tracking.
- Support implementation of projects identified in related plans, including County Drought Resilience Plans and watershed resilience strategies.

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