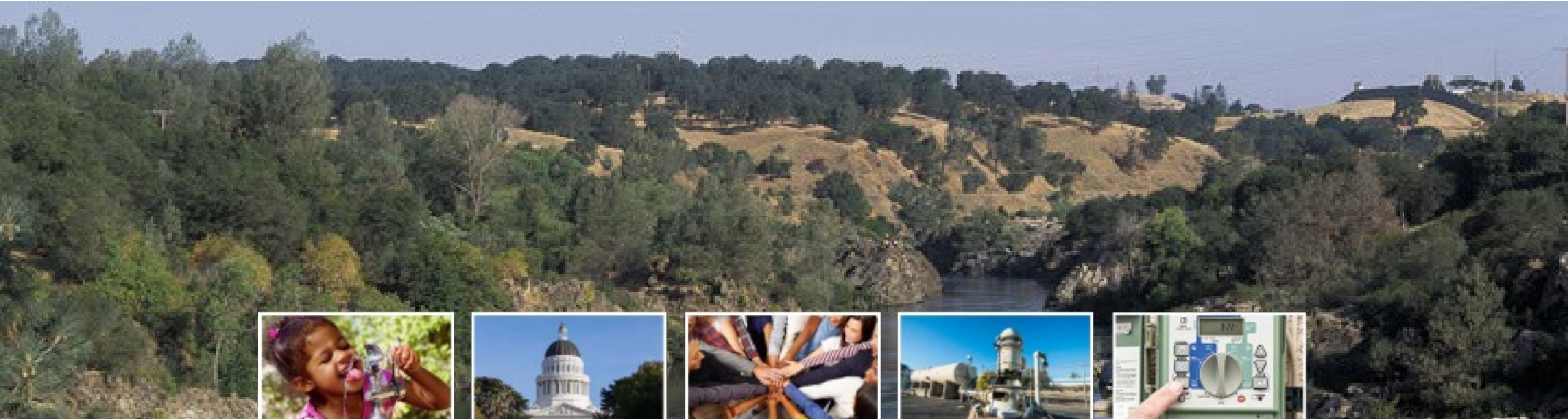


Watershed Resilience Pilot Project Update



Jacobs


valley vision
Community Inspired Solutions


Khadam
CONSULTING

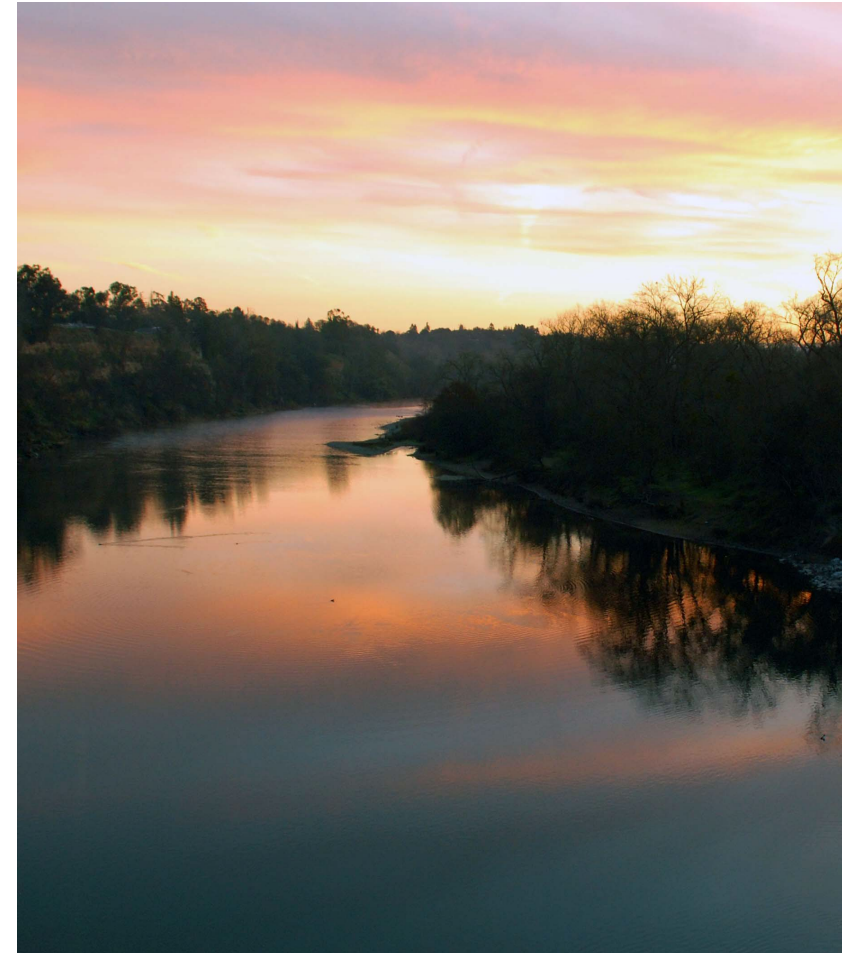


RWA
Regional Water Authority
BUILDING ALLIANCES IN
NORTHERN CALIFORNIA

Why?

❖ This Region has received over \$180 Million in grant funding to fund resilience. This has allowed the region to:

- Built over 30,000 AF of recharge and recovery capacity
- Improve the supply resilience of members
- Lowered ratepayer costs
- Protect water entitlements and rights
- Contribute to the Healthy Rivers and Landscapes program that has been a pathway to implement many of the region's goals, including the Flow Management Standard, and many other Water Forum outcomes.
- Improve Groundwater Management and Conjunctive Use



Why?

The Pilot is the next-generation IRWM tool.

- Past IRWM efforts required about \$500,000 to complete
- It will create a funnel of capital-ready projects tied to Prop 4 and DWR funding priorities, positioning the region to compete successfully for state investment.

The Pilot advances state priorities.

- Originates from the California Water Plan and builds on IRWM concepts.
- The Sacramento region was selected as one of five pilots statewide

The Pilot is about funding.

- DWR has stated that Prop 4 will direct \$100 million to watershed resilience, with regions “far along in planning” given a competitive advantage.
- The Pilot is how RWA positions the region with a funnel of capital-ready projects so that we are prepared when funding from Prop 4 or other sources becomes available.

The Pilot strengthens RWA’s role as a statewide leader.

- DWR intends to use lessons from the five pilots to shape watershed planning across California.
- By succeeding here, RWA demonstrates that large, collaborative watersheds can deliver high-value returns for the state’s investment



Pilot Roadmap

01

Delineate the Watershed Boundary

Map the watershed area for focused planning and management.



02

Develop a Collaborative Watershed Network

Identify and Evaluate Current Regional Networks. Review existing partnerships and collaborations relevant to the watershed.



03

Formulate a Watershed Resilience Vision

Create a shared long-term goal for the watershed's health and sustainability.



05

Develop Adaptation Plan

Design actionable steps to reduce risks and improve resilience.



04

Conduct comprehensive multi-hazard vulnerability and risk assessment

Perform a Gap Analysis; Analyze how climate change and environmental factors impact the watershed.; Assess Vulnerabilities and Risks.



06

Develop Implementation Plan

Outline how to effectively carry out adaptation measures.



07

Establish monitoring and evaluation system

Set up metrics and monitoring to measure progress and outcomes.

08

Release Watershed Resilience Plan

Compile all assessments and strategies into a comprehensive plan.



Progress to Date – Planning Activities



- Watershed boundary
- Gap Analysis
- Review of Historical Hazards
- Water Budget Assessment

- Hazards & exposure assessment

- Initial qualitative assessment completed.
- Advisory Committee feedback received & incorporated.
- Key drivers of vulnerability to guide adaptation strategies.
- Solicit Watershed Network feedback (9/18).

Quantitative Analysis

- System changes under future climate (magnitude of vulnerabilities).
- Evaluate performance of adaptations.

Vulnerability Assessment

- Revising Ratings for Adaptive Capacity:

Score	Sensitivity Rating
1	Low Sensitivity
2	Moderate-Low Sensitivity
3	Moderate Sensitivity
4	Moderate-High Sensitivity
5	High Sensitivity

Score	Adaptive Capacity Rating
1	High Capacity
2	Moderate-High Capacity
3	Moderate Capacity
4	Moderate-Low Capacity
5	Low Capacity

- Scale/Scope of the Effects:

Score	Scale of Effects
1	Localized
2	Subregion (part of Planning Area)
3	Planning Area-wide
4	Multiple Planning Areas
5	Statewide or Systemwide

Vulnerability Assessment

Planning Area	System	System	System Component (Asset)	Sensitivity Rating	Adaptive Capacity Rating	Vulnerability Rating	Scale of Effect	Composite Score
Upper American River	Ecosystem	ES	Forest Health and Ecosystem Services	5	3	5.0	5.0	5.0
Upper American River	Surface Water Supply	SW	Natural Reservoirs - Snowpack	5	4	5.0	5.0	5.0
Upper American River	Agriculture	AG	El Dorado County	3	4	4.0	4.0	4.0
Upper American River	Community & Equity	CE	Upper Watershed Rural Communities (Foresthill, Quintette)	5	4	5.0	2.0	4.0
Upper American River	Surface Water Supply	SW	Conveyance Systems (e.g. Canals and other conduits)	5	3	5.0	2.0	4.0
Upper American River	Community & Equity	CE	Foothill Towns along Highway Corridors (Placerville, Auburn,	4	3	4.0	3.0	3.7
Upper American River	Groundwater Supply	GW	Built System - Small Water Systems	4	4	5.0	1.0	3.7
Upper American River	Hydropower	HP	SMUD (Upper American River Project)	3	3	3.0	5.0	3.7
Upper American River	Hydropower	HP	PCWA (Middle Fork Project)	3	3	3.0	5.0	3.7
Upper American River	Hydropower	HP	EID (Project 184)	3	3	3.0	5.0	3.7
Upper American River	Recreation	RC	Tourism - Impacts to businesses, quantity of visitors	5	2	3.0	5.0	3.7
Upper American River	Recreation	RC	Recreational Uses - access/use of forested recreation zones, camping/hiking activities, access to water activities	5	2	3.0	5.0	3.7
Upper American River	Agriculture	AG	Placer County (Foothills)	3	4	3.0	4.0	3.3
Upper American River	Hydropower	HP	Georgetown Divide PUD (Stumpy Meadows Reservoir)	3	4	4.0	2.0	3.3
Upper American River	Hydropower	HP	Foresthill PUD (Sugar Pine Reservoir)	3	4	4.0	2.0	3.3
Upper American River	Surface Water Supply	SW	Built Reservoirs	3	3	3.0	4.0	3.3

Drivers for Vulnerabilities

Drivers of vulnerability explain what factors are most responsible for creating high vulnerabilities and where adaptation must concentrate.

Upper Watersheds (American, Bear, and Cosumnes)

- **Forest health** – Increasing frequency and intensity of wildfires are degrading watershed resilience and reducing critical ecosystem services.
- **Snowpack loss** – Declining natural water storage with local and statewide impacts; fractured rock aquifers offer little reliable backup for local communities.
- **Community & economic resilience** – Increasing stress on rural and resource-dependent communities.
- **Infrastructure exposure challenges** - Aging and vulnerable infrastructure exposed to intensifying climate hazards



Drivers for Vulnerabilities

Lower American River

- **Forest health** – Affects water quality, air quality, runoff regulation
- **Snowpack loss** – Affects water supply, runoff timing and flood risks, cold water availability
- **Folsom Reservoir constraints** – Limited storage capacity and complex operational/regulatory trade-offs (supply, flood, temperature, Delta, CVP).
- **Flood management challenges** – Few levee setback options; performance uncertainty under more extreme events.
- **Ecosystem stress** – Degraded habitat; threatened and endangered species are highly vulnerable to droughts and rising temperatures.



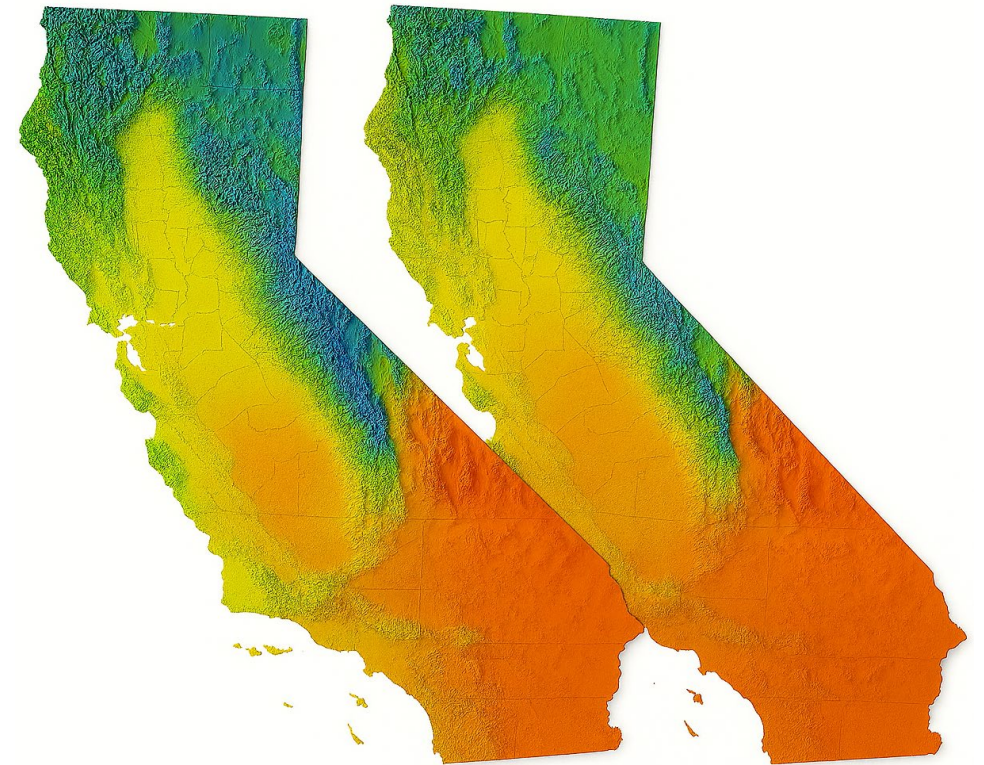
Lower Cosumnes watershed

- **Minimal flood protection** – Increasing stress on farms and small communities due to increasing frequency of extreme precipitation.
- **Floodplain management challenges** – Increasing intensity of extreme events with no regulation facilities exasperate the dual stress of recurrent flooding and droughts.
- **Limited resources for groundwater management** – Inadequate recharge infrastructure and financial constraints reduce capacity to sustain groundwater and respond to worsening droughts.

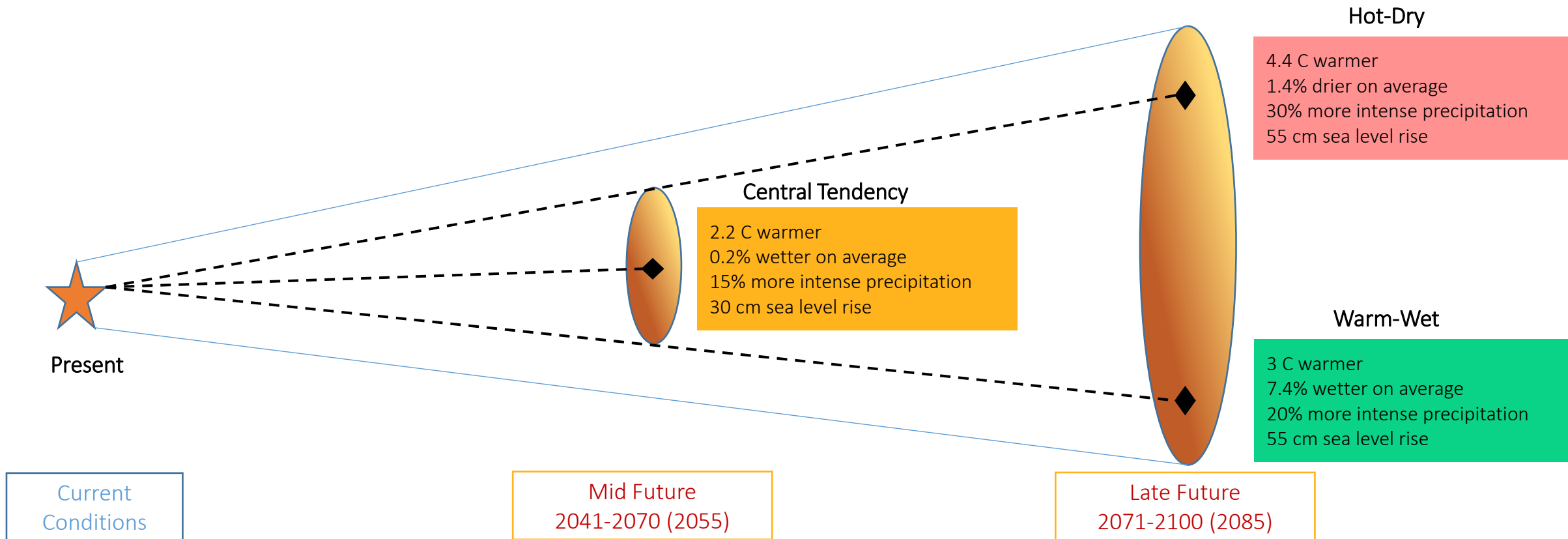


Climate Change Scenarios

- Three future climate change scenarios
- Scenarios based on downscaled climate model projections from CMIP6
- Used to inform the California Fifth Climate Change Assessment.



Future Climate Scenarios for Vulnerability Assessment



ARWRP Technical Approach Workflow

