Pajaro River Watershed Resilience Program

Network Workshop #3

Initial Adaptation Strategies

August 19, 2025 / 1:00 – 4:00 pm

Welcome from Kanyon Sayers-Roods

Indian Canyon Mutsun Band of Costonoan Ohlone

Introduce yourself to your table!

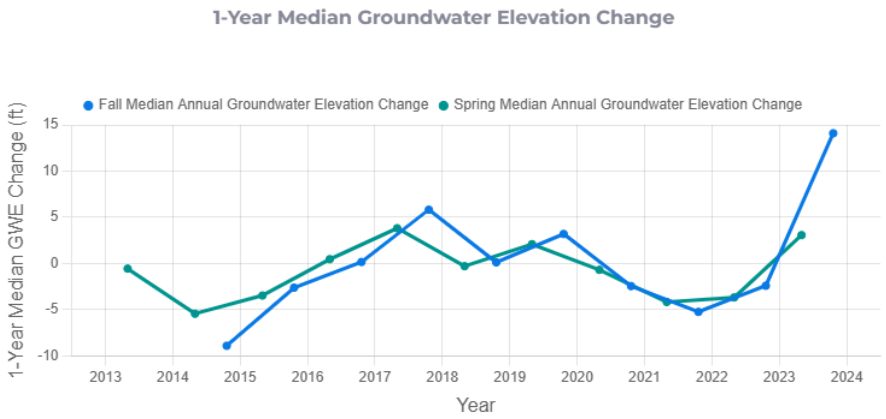
Welcome to Workshop 3:
Identifying Climate Adaptation Strategies in the Pajaro River Watershed

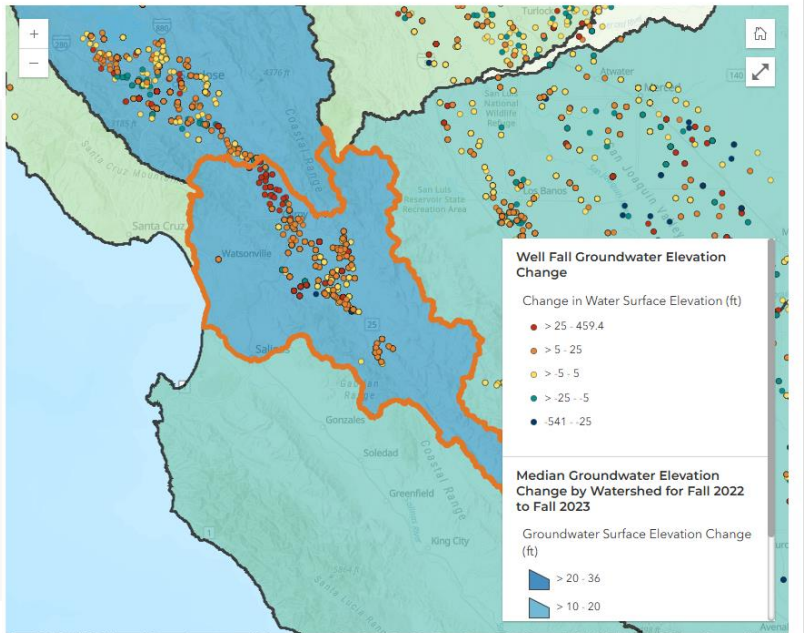
This program is funded in full or in part from the Budget Acts of 2022 and through an agreement with the State Department of Water Resources (DWR).

Watershed Hub -https://cawatershedhub.org/

Provide feedback to DWR's draft performance tracking tool that provides a snapshot of projects, conditions and trends for watersheds throughout California.

Scan for Hub website





Workshop Speakers

Brian Lockwood,
PV Water

Kanyon Sayers-Roods,
Costanoan Ohlone

Jordi Vasquez,
Department of Water Resources

Ellen Cross,
Network Strategy

Kiernan Brtalik,
Project Manager

Adam Witt,
Hydrologic & Ecological Sciences Lead

Reema Shakra,
Principal in Charge

Poster Session Facilitators

Poster Session Facilitators

Reema Shakra
Ecosystems

Marcus Mendiola
Cultural Resources

Bridget Childs
Water Supply

Cameron Tana
Groundwater

Rusty Barker
Flood Management

Adam Witt
Water Quality

Jeff Micko
Recreation

Workshop Agenda

WELCOME

- Workshop opening and introductions
- Agenda and Goals for the Day
- Resilience Planning Schedule Update

WATERSHED-WIDE CLIMATE HAZARD PROJECTIONS

- What does the future of the watershed look like with climate change?

CLIMATE VULNERABILITY ASSESSMENT FINDINGS

- What are the water resource systems most vulnerable to climate change by watershed area?
- How did we establish these priorities?

MOVING TOWARDS ADAPTATION

- How will we organize proposed adaptation solutions?
- How do we leverage existing projects and fill gaps to prioritize the right adaptation strategies?
- How do we prioritize the most important adaptation solutions?

NETWORKING BREAK + HISTORICAL TIMELINE, CLIMATE PROJECTIONS & EXISTING ADAPTATION STRATEGIES MAP

ADAPTATION STRATEGIES ACROSS HAZARDS & SYSTEMS

- Activity #1: Poster Session
- Activity #2: Discussion Session

CLOSING

Goals for the Day

1. Share key findings from the **Climate Qualitative Vulnerability Assessment**, including:
    1. *Climate hazard projections*
    2. *Key vulnerabilities and priority risks*
2. Understand what **climate adaptation strategies** are and how we will **craft a prioritized list for implementation**
3. **Explore adaptation strategies** and **opportunities** for multi-benefit approaches to achieve PRWRP Vision, Mission, & Goals
4. Identify **parallel resilience programs** in the watershed or region can we leverage for adaptation strategy **implementation**

Schedule Update

Winter 2024/25 → Spring 2025 → Summer/Fall 2025 → Fall/Winter 2025 → Spring 2026

Set the Stage	Explore Climate Hazards	Assess Vulnerabilities & Risks	Develop Adaptation Strategies	Implement & Monitor
	Workshop #1 Visioning (In Person) March 10, 2025	**Workshop #2 Prioritizing Vulnerabilities (Virtual)** **June 10, 2025**	**Workshop #3 Initial Adaptation Strategies (In-Person)** **August 19, 2025**	**Workshop #4** Prioritizing Adaptation Strategies (TBD) Oct/Nov 2025	**Workshop #5** Public Release of WRP (Virtual) February 2026

Watershed-Wide Climate Hazard Projections

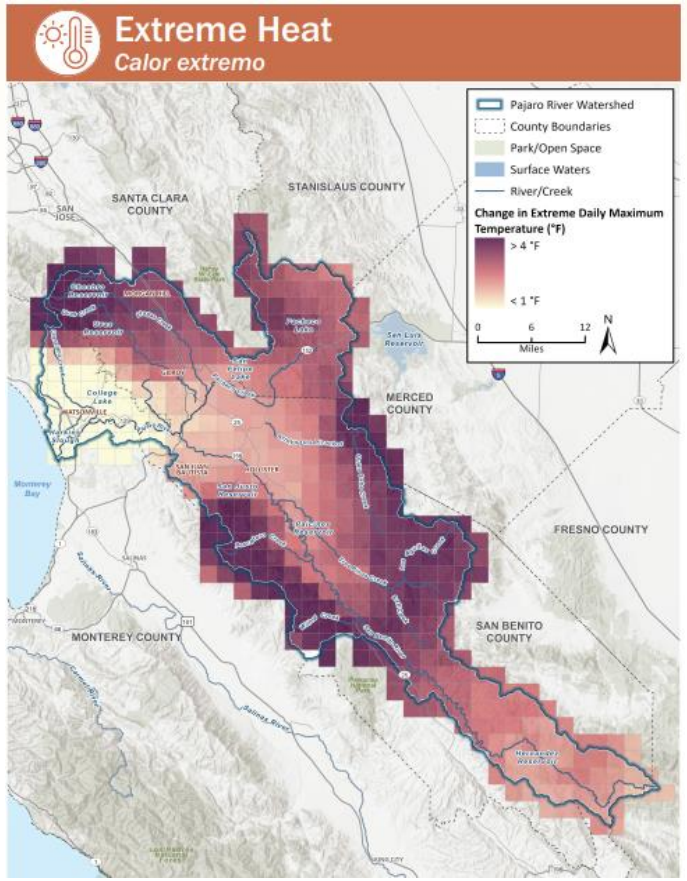
Climate Hazard Overview

- Global Warming Level Scenarios using 129 Global Climate Model simulations:
  - 1.0°C ≈ 2010* (Baseline)
  - 1.5°C ≈ 2030*
  - 2.0°C ≈ 2050*
  - 3.0°C ≈ 2075*
- Climate Hazards mapped for 3.0°C, showing change from baseline
  - Online Map Viewer

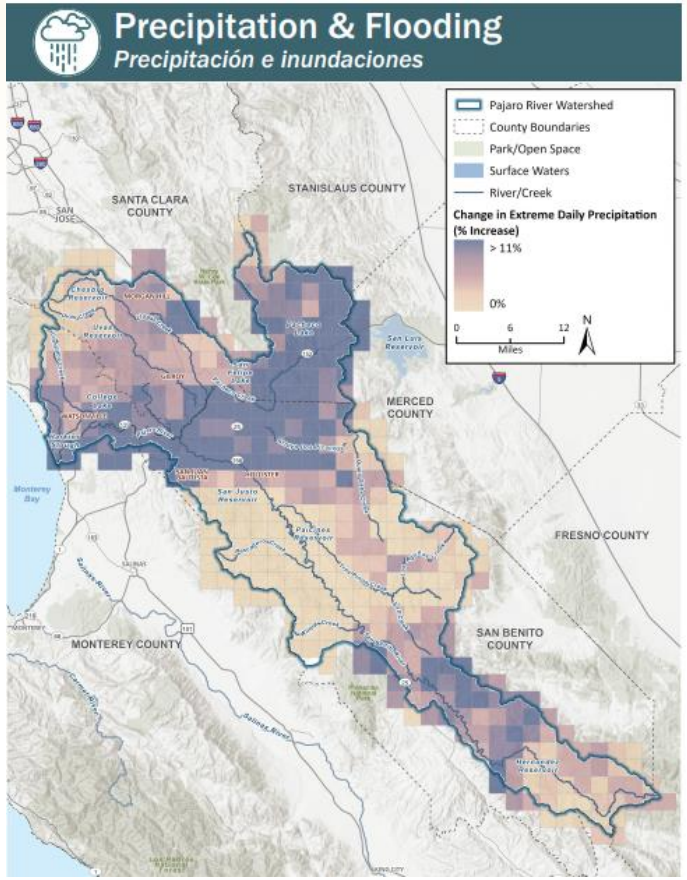
*These years represent the best estimate that the Global Warming Level will be reached, and Global Climate Model outputs are generally centered on these dates. Climate projections feature inherent uncertainty, so the timing and nature of extreme weather events are variable in simulations.

Climate Hazard Maps – CMIP6

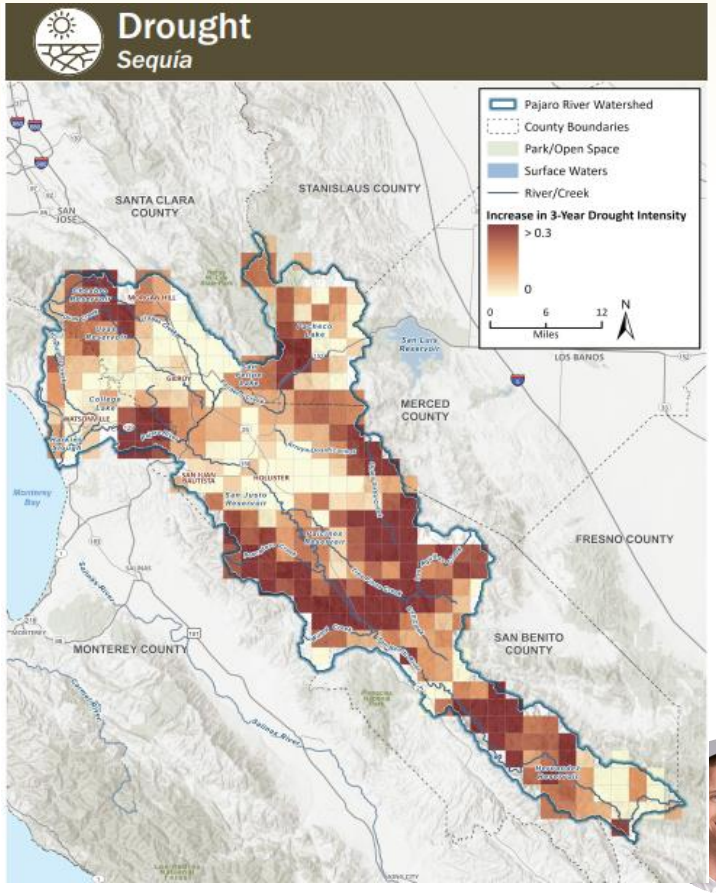
Extreme Heat
Across the watershed, especially upper



Extreme Precipitation
Lower and Upper Pajaro, intensity varies

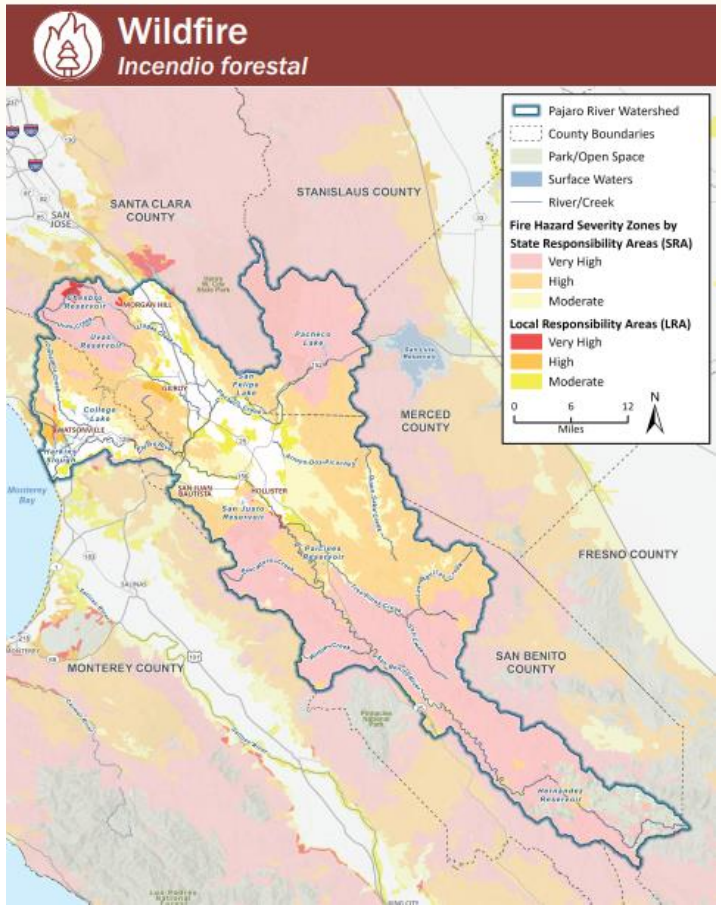


Drought
Increase across watershed, no clear spatial signal

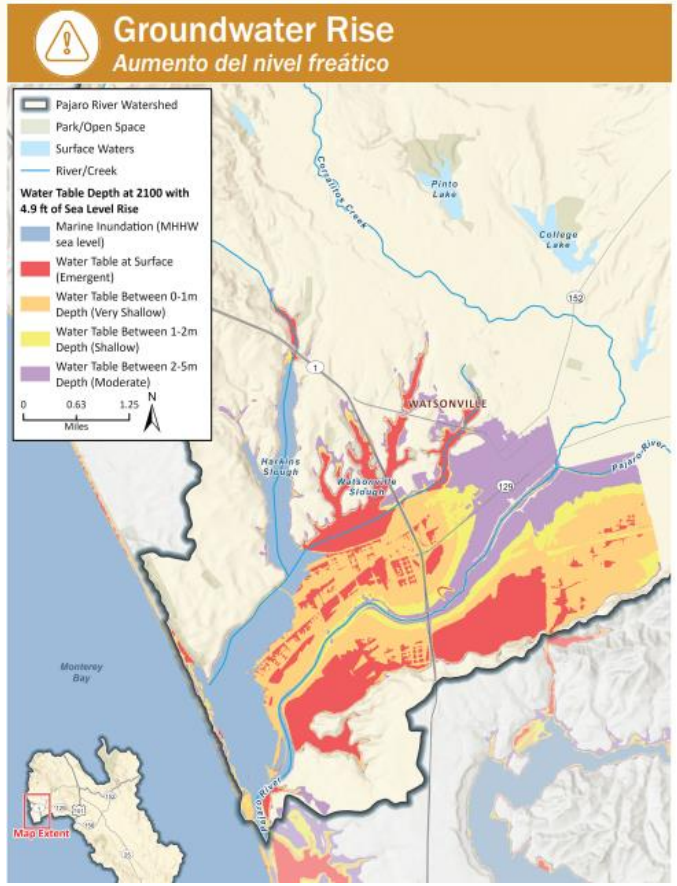


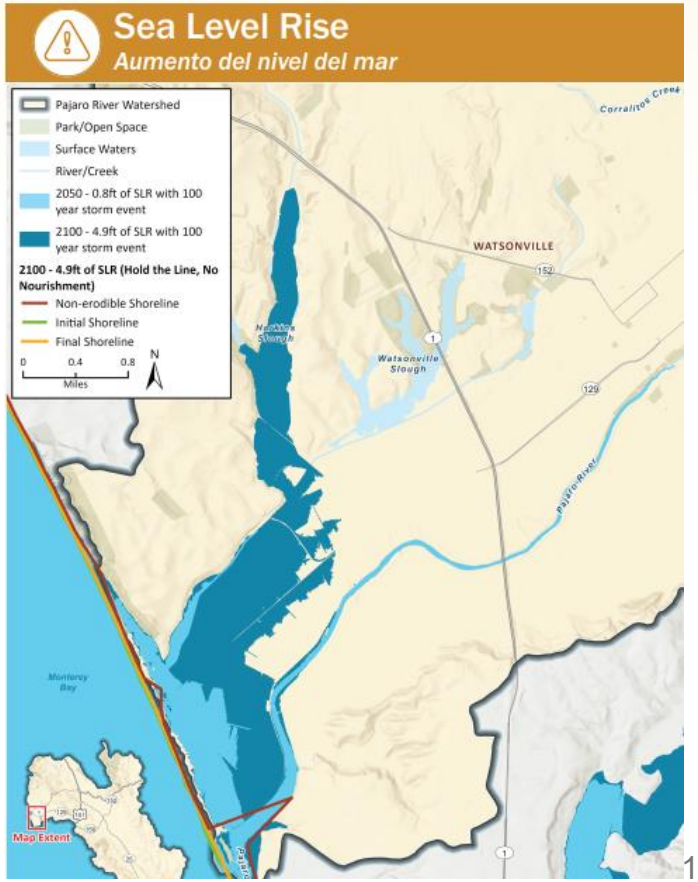
Climate Hazard Maps – CAL FIRE and CoSMoS

Wildfire
Widespread and near urban interface areas



Sea Level Rise, Storm Surge, Groundwater Rise, Shoreline Position
Lower Watershed

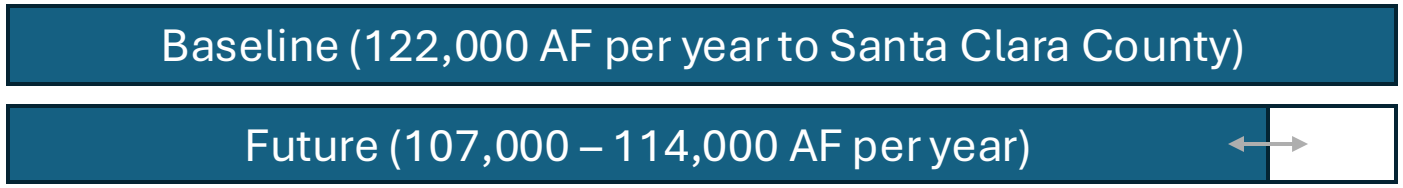




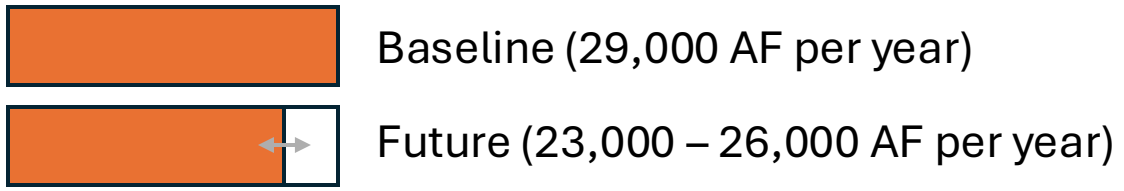
Future Reductions of Imported Water

- **The Pajaro River Watershed is reliant on imported water**
- Recent DWR climate change analyses for mid-century project annual average **imported water delivery will reduce 6-20%**
- This is a **loss of 2-3.5% of the watershed's** annual water use

Valley Water Annual Average CVP Deliveries
(includes areas in Santa Clara County outside of Pajaro River Watershed)



SBCWD Annual Average CVP Deliveries



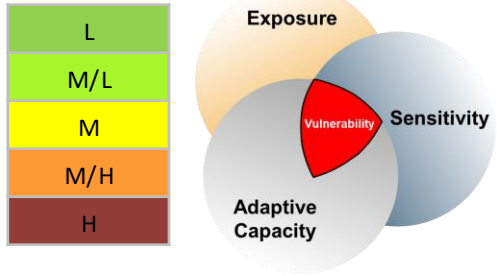
***Source**: CA DWR 2023 Delivery Capability Report, 2043 Climate Scenarios: Large reductions = 95% level of concern, Small reductions = 50% level of concern.*

Qualitative Climate Vulnerability Assessment Summary Findings

Process to Identify Vulnerable Resources

All water resource system assets and features

Qualitative Rating



Network Workshop #1
"Visioning"
(March 2025)

Network Workshop #2
"Prioritizing Vulnerabilities"
(June 10 2025)

Network Survey
"Prioritizing Vulnerabilities"
(July 2025)

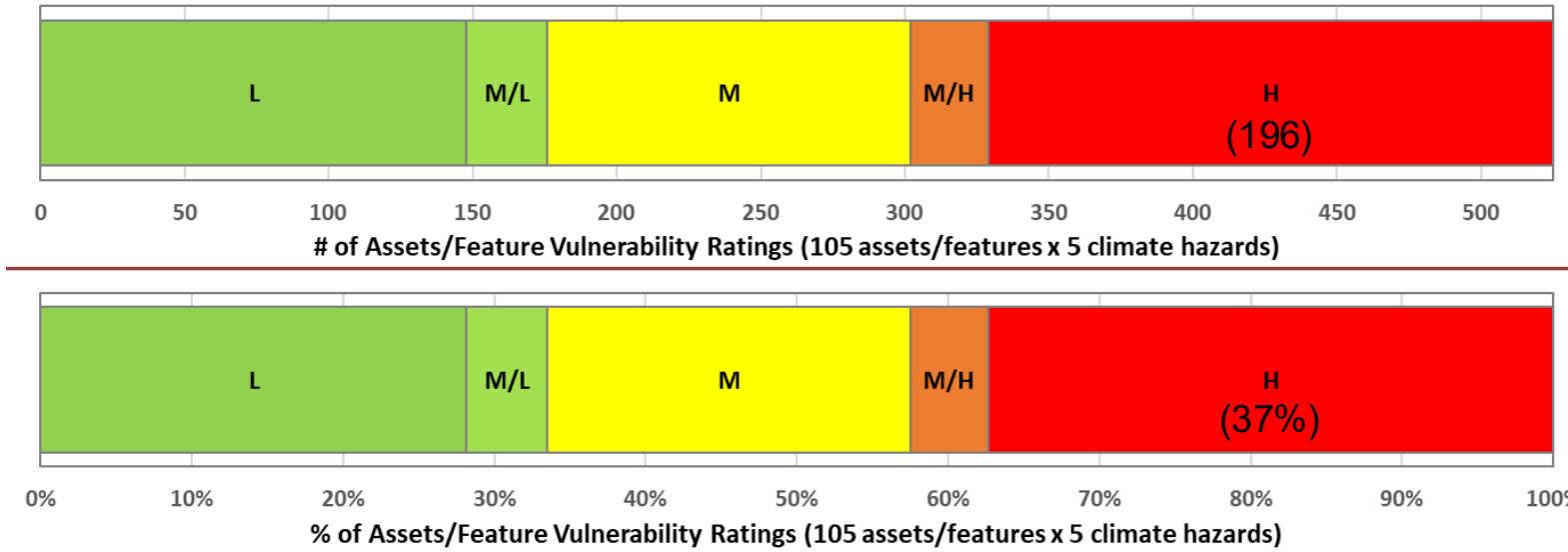
Asset Manager Interviews
(July 2025)

Most vulnerable
water resource system assets/features and climate hazards

Reviewing today

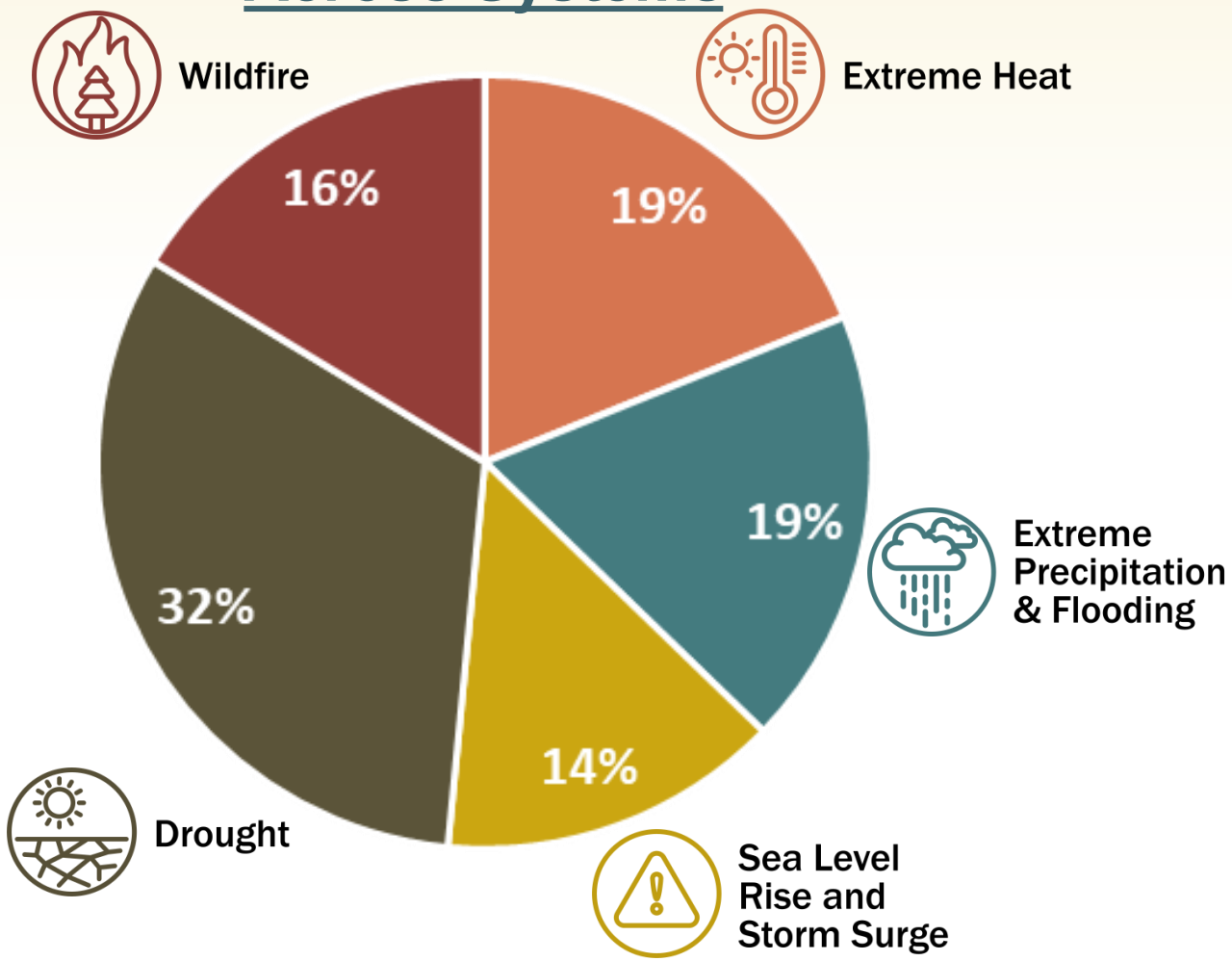
Qualitative Vulnerability Results

- Analyzed **105 assets/features** in the Pajaro River Watershed
- Completed **1,575 total ratings:**
  3 ratings per asset/feature per each climate hazard for
  ✓ Exposure ✓ Sensitivity ✓ Adaptive Capacity
- **525 total qualitative vulnerability ratings**
- **High Vulnerability (H): 196 assets/features** (37%)



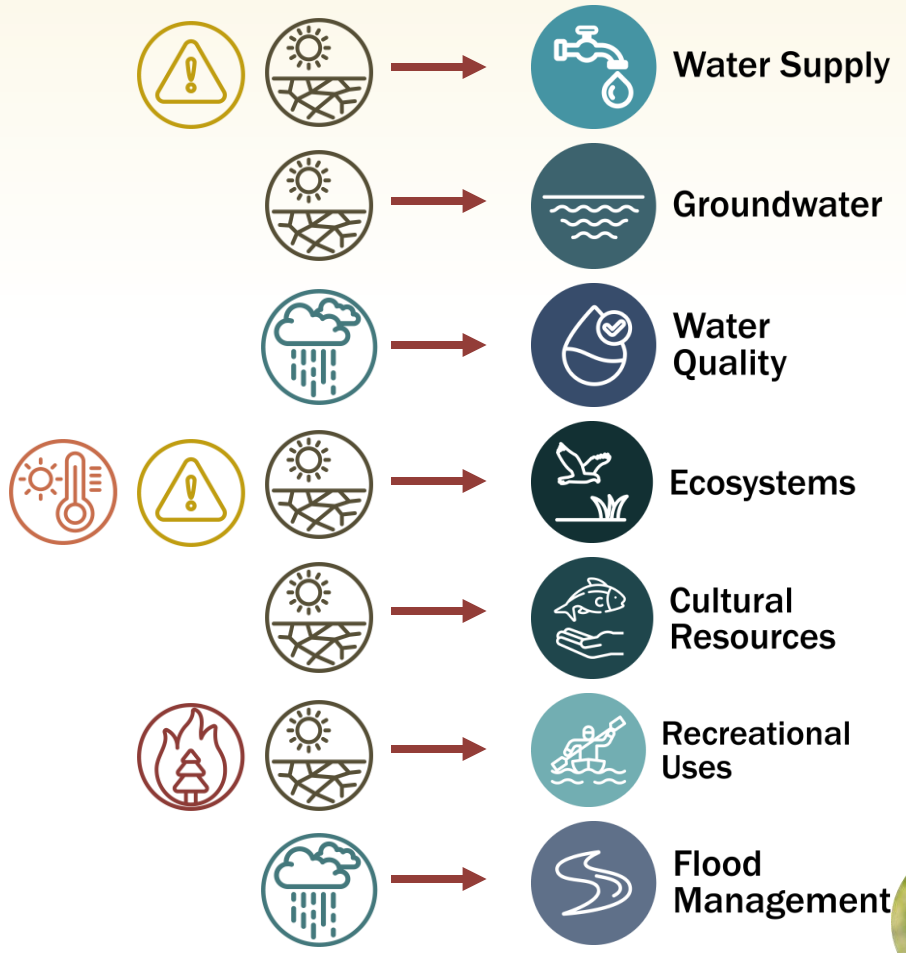
High Vulnerability Results

Percent of Assets Vulnerable Across Systems



Hazard Driving High Vulnerability

by Water Resource System



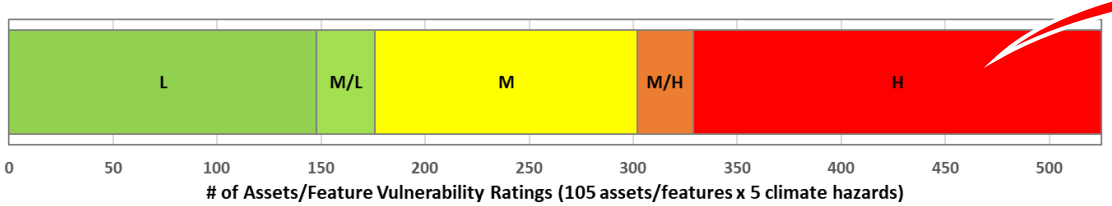
Key Vulnerabilities and Priority Risks

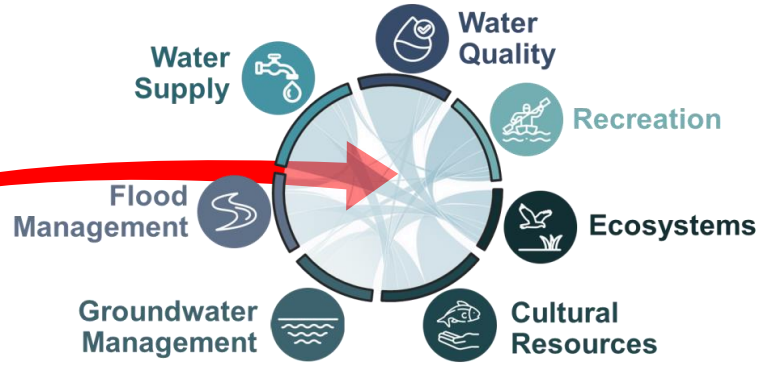
DWR Watershed Resilience Toolkit guidance:

- Based on qualitative vulnerability assessment findings, **identify key vulnerabilities and priority risks**
- These should be based on the **level of vulnerability** and **risk and impacts to *multiple* resources**

Our approach:

- Identify 3-7 key vulnerabilities and priority risks per water resource system that are:
  - **High Vulnerability**
  - Influence multiple water resource systems





Multi-System Impacts

(i.e., why this matters)

Reduced water supply to agriculture areas

Crop failures, agricultural losses, food insecurity, increased costs

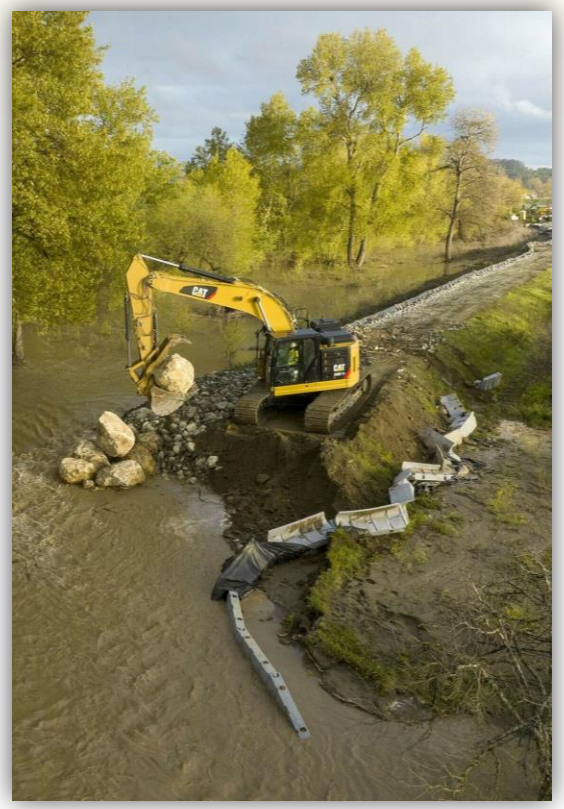
Lost income and health impacts to priority populations.

Economic instability for farmworker families and local economies

Key Takeaways

Climate hazards are ***intensifying and uncertain***

Climate impacts will be ***more widespread and costly***



Water vulnerabilities are connected across the watershed

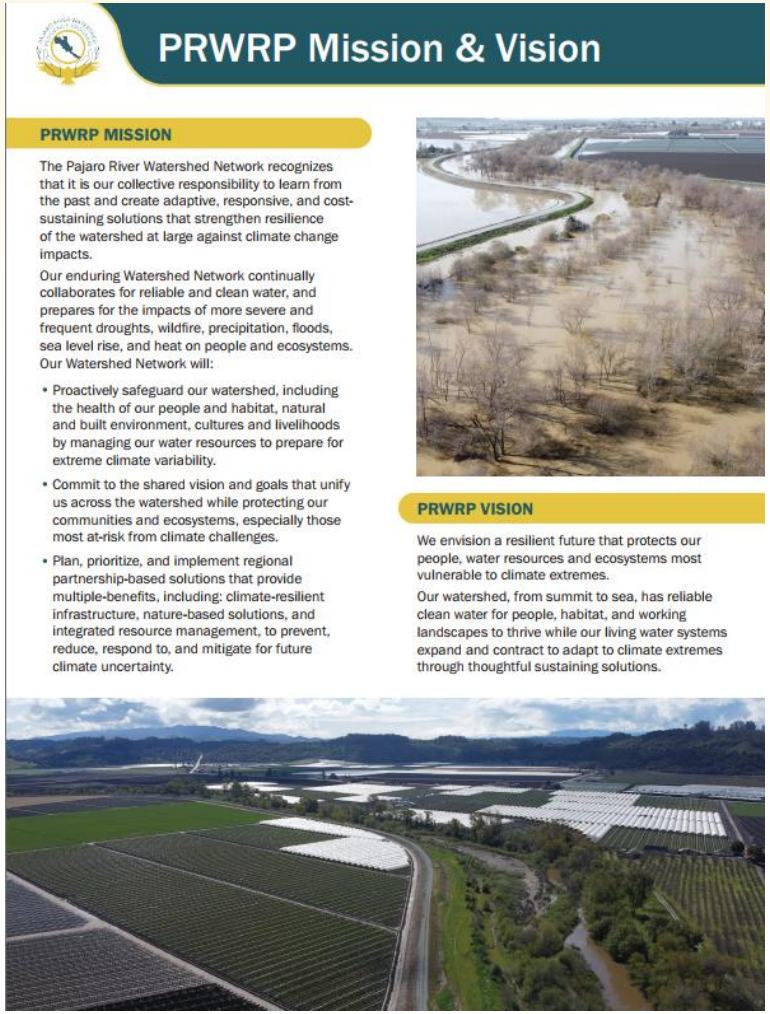
Solutions require Network collaboration

Moving Towards Adaptation

PRWRP VISION STATEMENT

We envision a resilient future that protects our people, water resources and ecosystems **most vulnerable** to climate extremes.

Our watershed, from summit to sea, has reliable clean water for people, habitat, and working landscapes to thrive while our living water systems expand and contract to **adapt to climate extremes** through thoughtful sustaining solutions.



PRWRP Mission & Vision

PRWRP MISSION

The Pajaro River Watershed Network recognizes that it is our collective responsibility to learn from the past and create adaptive, responsive, and cost-sustaining solutions that strengthen resilience of the watershed at large against climate change impacts.

Our enduring Watershed Network continually collaborates for reliable and clean water, and prepares for the impacts of more severe and frequent droughts, wildfire, precipitation, floods, sea level rise, and heat on people and ecosystems. Our Watershed Network will:

- Proactively safeguard our watershed, including the health of our people and habitat, natural and built environment, cultures and livelihoods by managing our water resources to prepare for extreme climate variability.
- Commit to the shared vision and goals that unify us across the watershed while protecting our communities and ecosystems, especially those most at-risk from climate challenges.
- Plan, prioritize, and implement regional partnership-based solutions that provide multiple-benefits, including: climate-resilient infrastructure, nature-based solutions, and integrated resource management, to prevent, reduce, respond to, and mitigate for future climate uncertainty.

PRWRP VISION

We envision a resilient future that protects our people, water resources and ecosystems most vulnerable to climate extremes.

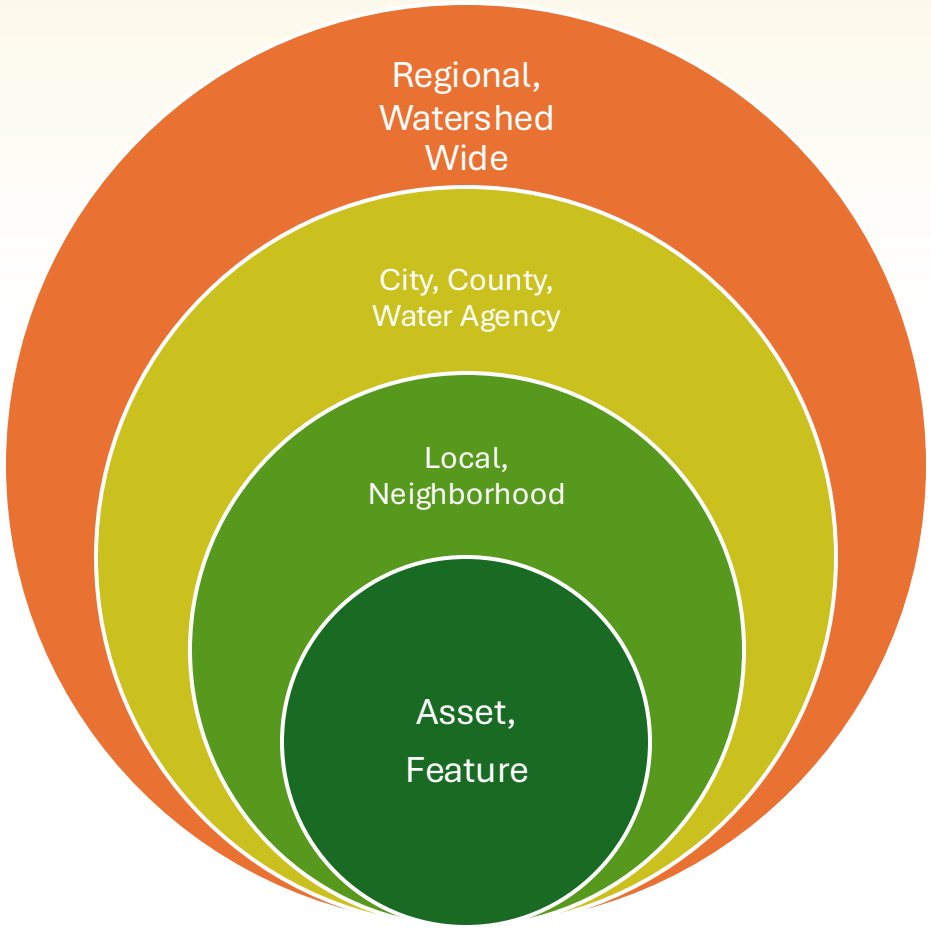
Our watershed, from summit to sea, has reliable clean water for people, habitat, and working landscapes to thrive while our living water systems expand and contract to adapt to climate extremes through thoughtful sustaining solutions.

Crafting Prioritized Climate Adaptation Strategies

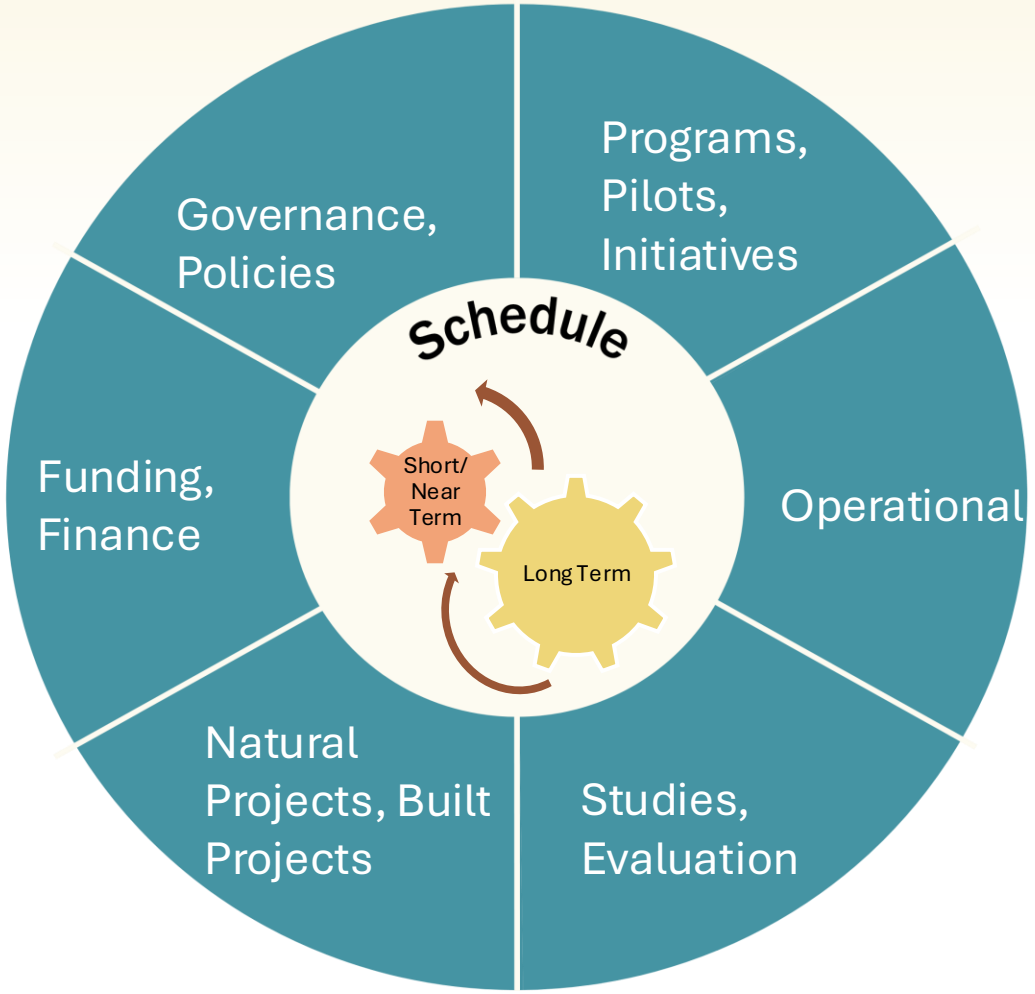
Climate Adaptation Strategy Framework

Scale | Type | Schedule

Scale



Type



Drought | Sea Level Rise and Storm Surge | Water Supply | Groundwater | Water Quality

Accelerated Drought Response Project (ADRoP)

Project Scale: Regional/ Agency

Project Type : Built Project

Schedule: Near term

Extreme Precipitation & Flooding

Sea Level Rise and Storm Surge

Drought

Water Supply

Water Quality

Ecosystems

Groundwater

Flood Management

Pajaro Regional Flood Risk Management Project

Project Scale: Regional/ Agency

Project Type : Natural and Built Project

Schedule: Near term

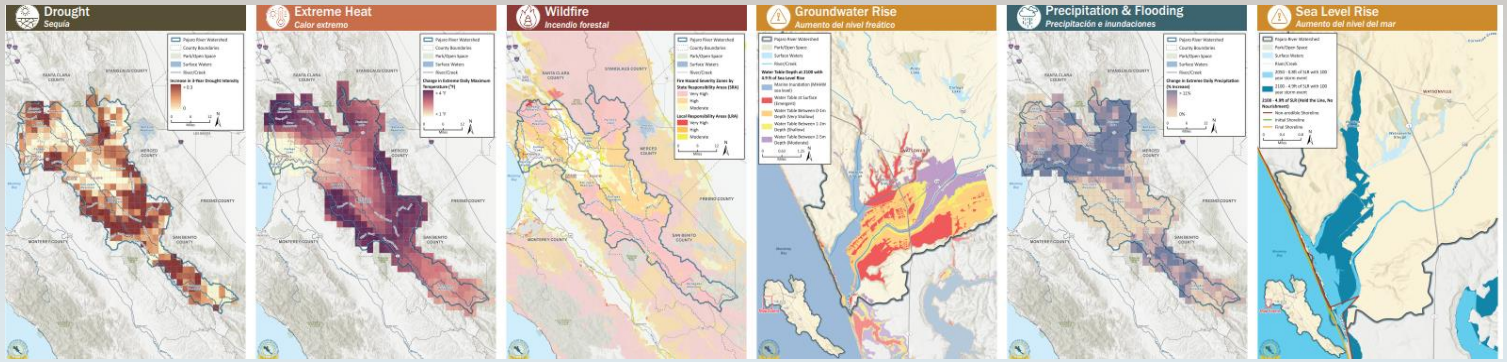
Proposed Screening Criteria

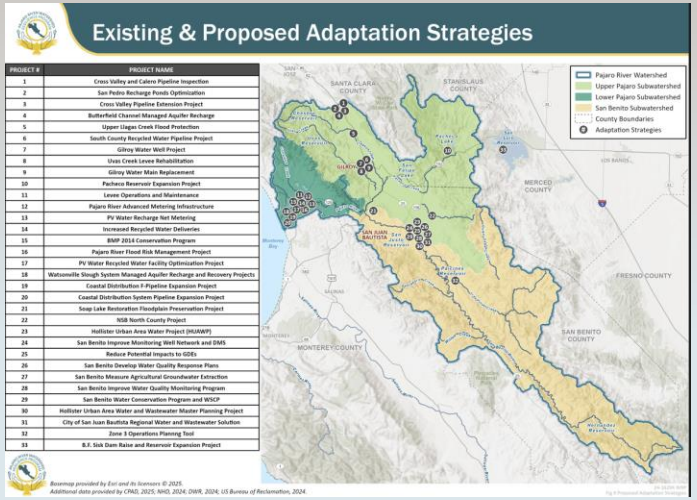
- Achieve PRWRP Mission, Vision, and Goals
- Reduce risk to communities
- Improve performance of water resource system infrastructure
- Achieve equitable outcomes
- Technical Feasibility
- Address acute or chronic issues

Proposed Prioritization Criteria

- Cost
- Funding Availability
- Regulatory / Permitting Complexity
- Political / Policy Feasibility
- Committed Leadership
- Achieves Multiple Benefits
- Adaptable to Climate Uncertainty

NETWORKING BREAK





Adaptation Strategies Across Hazards & Systems

Vulnerability Themes Across Hazards and Systems

Priority Risks: Water Supply
Riesgos Prioritarios: Aspectos de la Gestión del Agua

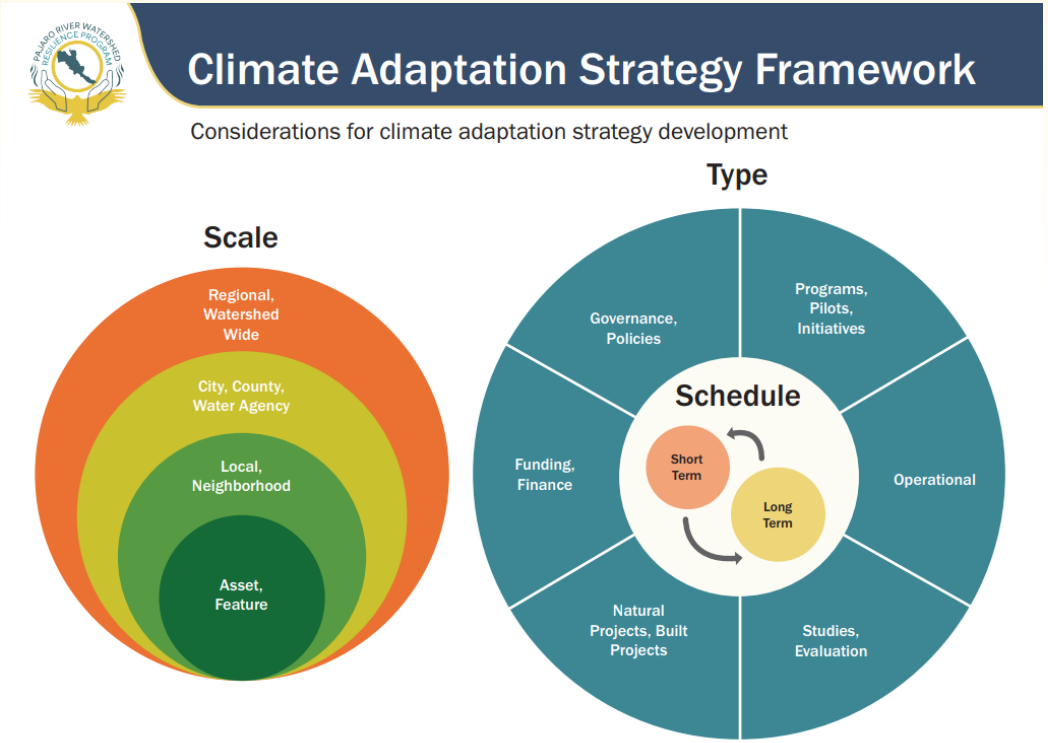
Watershed Planning Area Área Del Plan De Cuenca Hidrográfica	Key vulnerabilities and priority risks Vulnerabilidades y riesgos prioritarios	Example Adaptation Strategies/Projects Ejemplos de estrategias/proyectos de adaptación	Other Adaptation Solutions? Otras soluciones de adaptación
	Drought and **sea level rise** impacts to Delta salinity reduce local and imported water supply availability, increasing reliability on **groundwater** supply and threatening sustainable **groundwater** level and **water quality.** – Los impactos de la **sequía** y el **aumento del nivel del mar** en la salinidad del Delta reducen la disponibilidad de agua local e importada, aumentando la dependencia del suministro de **agua subterránea** y amenazando la sostenibilidad de los niveles y la calidad del **agua subterránea.**	**Accelerated Drought Response Project** → *County/ Agency, Built Project, Near Term* **Pacheco Reservoir Expansion Project** → *Regional/ Watershed, Built Project, Long Term*	

Activity #1: Poster Session – Adaptation Strategies Across Hazards & Systems

Visit each Water Resource System Poster (~10 mins each)

- *Facilitator Reviews:*
  - Key vulnerabilities and priority risks
  - Example adaptation strategies/projects
- *Network provides input on strategies*
  - Focus on at least 2 strategies per strategy type

Remember: Bring Adaptation Strategy Framework and Selection Criteria Handout



Activity #2: Discussion Session – Adaptation Strategies Across Hazards & Systems

- *What were some of the big strategies that came out of you poster session?*
- *What improvements would you make to the Framework and Prioritization Criteria?*
- *What are some gaps in adaptation strategies and how can we fill those gaps?*

Climate Adaptation Strategy Selection Criteria

Considerations for screening and prioritizing climate adaptation strategies

Screening Criteria

- Achieve PRWRP Mission, Vision, And Goals
- Reduce Risk to Communities
- Improve Performance of Water Resource System Infrastructure
- Achieve Equitable Outcomes
- Technical Feasibility
- Address Acute or Chronic Issues

Prioritization Criteria

- Cost
- Funding Availability
- Regulatory / Permitting Complexity
- Political / Policy Feasibility
- Committed Leadership
- Achieves Multiple Benefits
- Adaptable to Climate Uncertainty

Summary Of Workshop #2 “Prioritizing Vulnerabilities”

March 10, 2025

Workshop #2 Lessons Learned

- **Platform/Tech Issues:** Technical difficulties using Microsoft Teams
- **Format and Tools:** The spreadsheet format got mixed feedback. It was difficult to navigate for some users
- **Pacing and Structure:** Some felt the breakout sessions were too rushed, with too many questions and categories to respond to
- **Content and Understanding:** Participants appreciated the group discussions but wanted deeper, more accessible explanations of key topics

✓Use Zoom, not Teams
✓Add a break if possible
✓Make information accessible to non-technical people
✓More time to process
✓In person is preferred
✓Strengthen bilingual materials

Upcoming Activities

- Complete Exit Survey – thank you!
- September 27, 2025, Community Event – See Handouts!
- Complete "Strategizing for Adaptation"
  - *September 2025*
- **Workshop #4: Prioritizing Adaptation Strategies**
  - *October or November 2025*
- Check out the PRWRP website and **join** the Network: www.pvwater.org/PRWRP

Exit Survey

English

Español

Thank you!!!