



San Joaquin Valley Conveyance Study

Multi-Sector Conveyance for a Resilient San Joaquin Valley

Challenge

While all corners of the state are facing increasing climate risks, San Joaquin Valley communities, ecosystems, and economy are uniquely vulnerable to climate-driven drought and flood impacts. A myriad of risks contribute to substantial vulnerabilities in the San Joaquin Valley, notably:

- Constrained and inadequate flood infrastructure
- Significantly overdrafted and subsiding aquifers
- Drying or contaminated domestic wells in frontline communities
- Water shortages for agriculture
- Degraded aquatic/terrestrial ecosystems and declining species
- Diminished water conveyance capacity

At the same time, water conveyance infrastructure in the San Joaquin Valley and statewide is aging, degraded by subsidence, and in need of repair.

These chronic challenges are intensifying with climate change, which is driving weather whiplash and altering surface runoff patterns. In just the last decade, water and flood managers have experienced both extreme droughts and floods. All sectors – flood, water supply, ecosystem – are vulnerable to climate change and their vulnerabilities are interconnected. The increasing climate risk will be intractable, if addressed narrowly by individual sectors.



Multi-Sector Solutions and Partnerships

Adapting to climate change and intensifying extreme events requires innovative levels of integrated project and infrastructure planning, implementation, and operation, especially in vulnerable landscapes like the San Joaquin Valley. Accomplishing this will require multi-sector co-management to help reduce flood risk and replenish depleted aquifers in the region.

The San Joaquin River Basin Watershed Studies demonstrate that taking a headwater to groundwater approach at the watershed scale can significantly reduce vulnerabilities for communities and ecosystems, simultaneously reducing flood risk, replenishing aquifers, restoring domestic wells, and enhancing the environment.

Conveyance Study Overview

The Department of Water Resources (DWR) is conducting a San Joaquin Valley Conveyance Study to better understand these vulnerabilities and how a modernized water conveyance system can be designed and operated to reduce vulnerability and risk. Water Resilience Portfolio Action 19.3 directs DWR to conduct a feasibility analysis for improved and expanded capacity of federal, state, and local conveyance facilities to enhance water transfers and water markets, incorporating climate change projections of hydrologic conditions. The Conveyance Study is evaluating San Joaquin Conveyance with:

- Existing, restored, and improved San Joaquin Valley conveyance opportunities
- Current and projected hydrologic conditions under climate change
- Existing and proposed Delta Conveyance infrastructure

The San Joaquin Valley Conveyance Study builds on the California Water Commission’s initiative describing the State’s role in financing water conveyance projects (White Paper, June 2021) and shares the following:

- **Definition of conveyance infrastructure:**
Includes both natural and built infrastructure as an interdependent system of rivers, streams, floodplains, aquifers, aqueducts, canals, pipelines, irrigation ditches, etc., including larger state, federal, and regional facilities.
- **Purpose statement for modernizing water conveyance:** “Adapting to climate change will require improved and new conveyance designed for different purposes than historic infrastructure: Climate-resilient conveyance will be designed to weather the changes California is already experiencing while supporting the long-term viability of California’s communities, ecosystems, and economy.”
- **Intended outcomes and public benefits from a multi-sector conveyance system:**
 - » Restore and enhance ecosystem function
 - » Upgrade existing systems, including projects to improve State Water Project or Central Valley Project infrastructure
 - » Support the human right to water
 - » Promote local and regional reliance
 - » Advance an integrated approach to water management
 - » Support sustainable groundwater management

The San Joaquin Valley Conveyance Study is sharing data and findings from the San Joaquin River Basin Watershed Studies by using similar climate change scenarios and hydrologies, and by incorporating watershed study results about water available for recharge, Flood-MAR opportunities, and conveyance system improvements for the San Joaquin River Basin area. The study is also reviewing numerous past and ongoing studies and compiling their findings and recommendations.

Study Objectives - What We Will Learn

- Climate vulnerability of federal, state, and local conveyance systems
- Improvements needed for a climate-resilient conveyance system
- Opportunities to convey flood waters for groundwater recharge with existing, restored, and improved conveyance infrastructure
- Opportunities to improve drinking water supplies for vulnerable communities
- Performance of existing, restored, and improved conveyance in the San Joaquin Basin and the Tulare Lake Basin, with existing and new Delta Conveyance

For more information, contact:
Sean Sou, Project Manager
Sean.Sou@water.ca.gov
916-873-4633

Study Work Plan

DWR expects to complete the following tasks by July 2024.

Task	Completion
Review previous studies	Completed
Assess water imbalance in the San Joaquin Valley	Completed
Quantify available flood waters and evaluate climate vulnerability	December 2023
Assess available capacity to convey flood waters for recharge	January 2024
Identify improvements needed to the conveyance system	February 2024
Estimate costs for improvements to conveyance infrastructure	May 2024