

CALIFORNIA DEPARTMENT OF WATER RESOURCES

San Joaquin Valley Conveyance Study

Supporting a More Climate Resilient Future

August 16, 2023

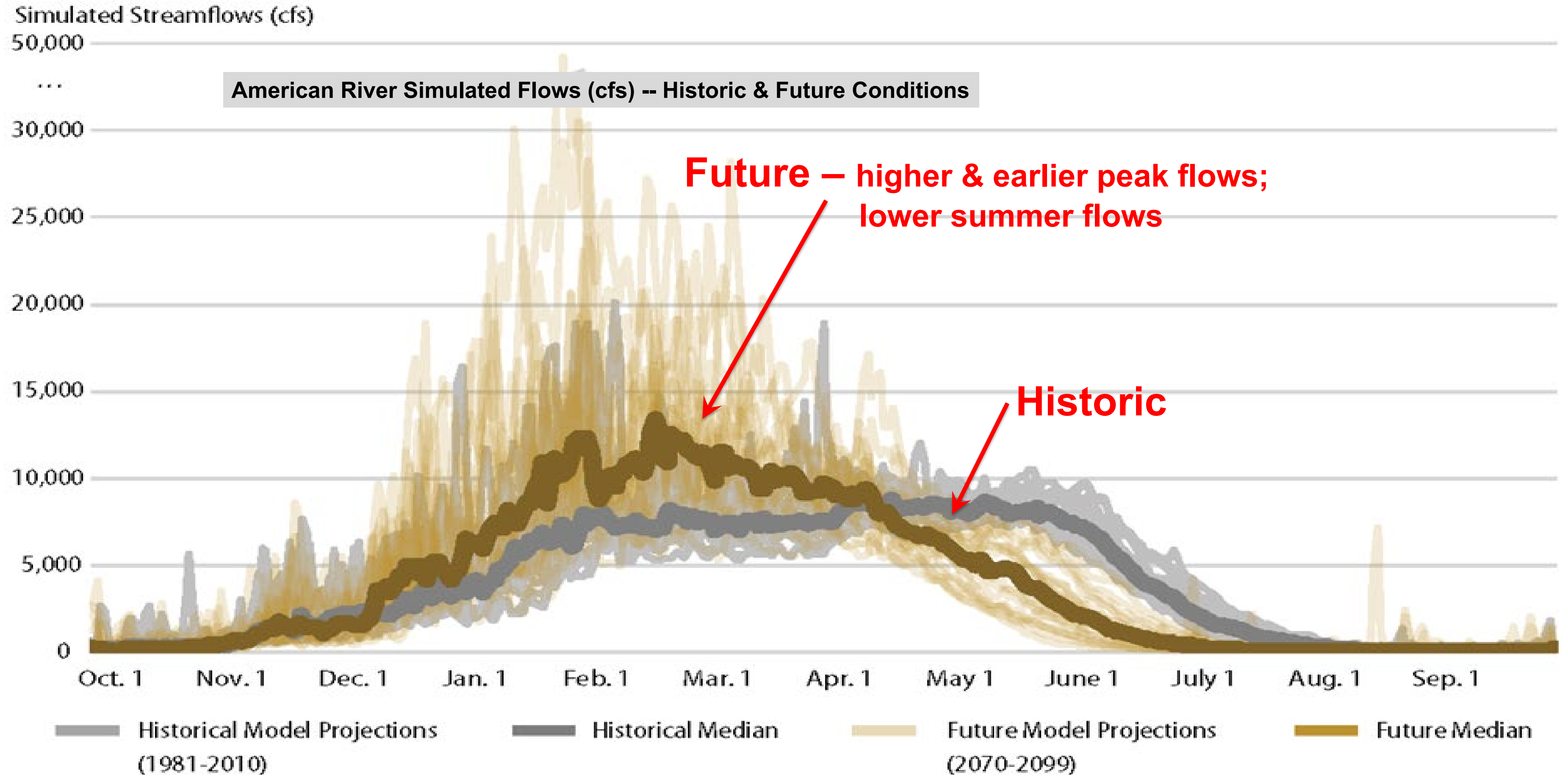


Risks to the San Joaquin Valley

- Drying up of wells for vulnerable communities
- Increasing flood risks
- Shortage of water for agriculture
- Potential repurposing of agricultural land
- Reduction of water in streams and lakes
- Degradation of aquifer health
- Loss of riparian vegetation and wildlife habitat
- Loss of conveyance capacity due to subsidence
- Increased vulnerability for all sectors from climate change



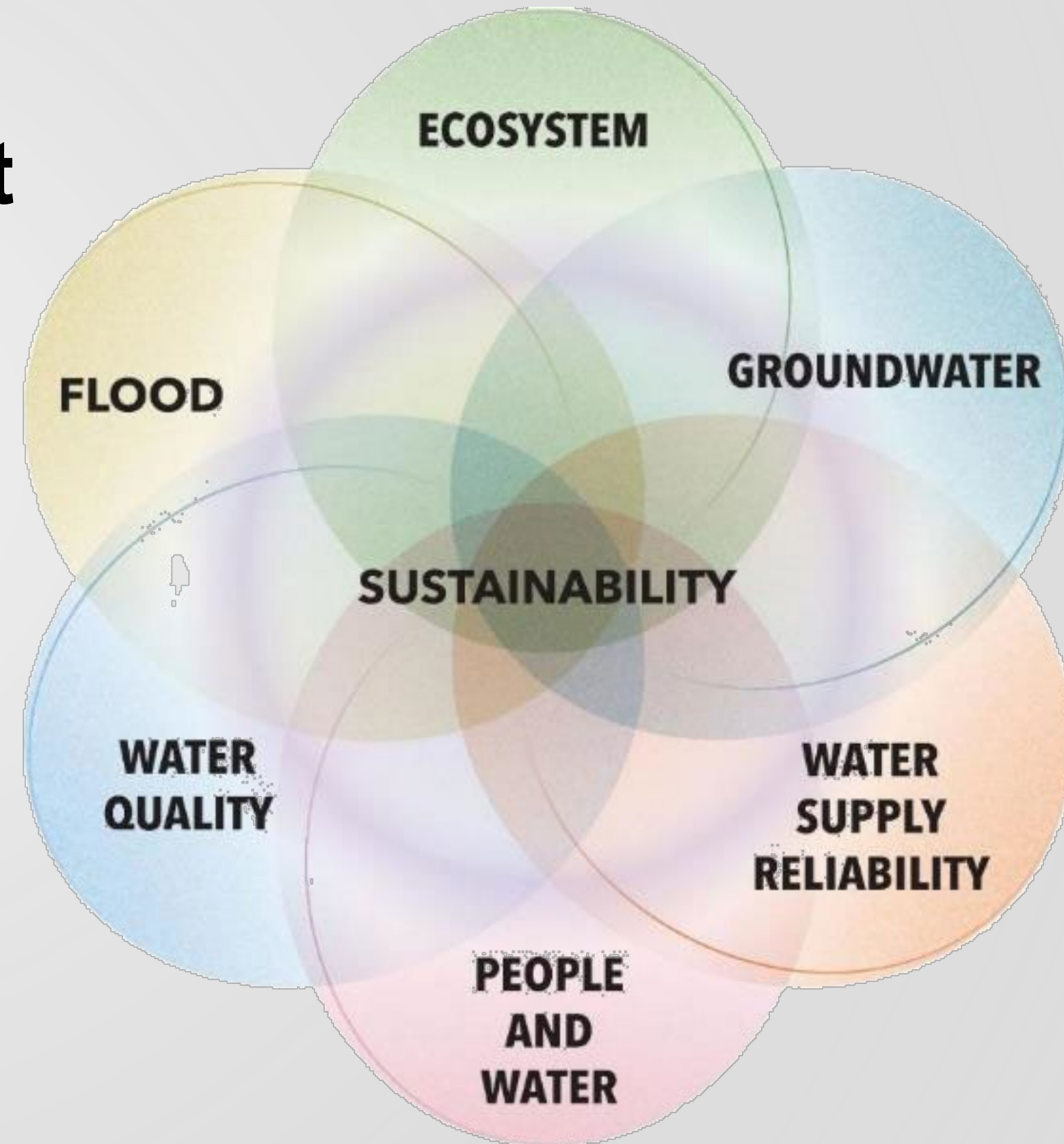
Effects of Climate Change Necessitate Wholesale System Changes



Adapting to Climate Change Requires:

Integrated Watershed Management

- Multi-Sector Conveyance
- Multi-Benefit Conveyance
- Multi-Fund Investments



2020 Water Resilience Portfolio

Modernize inter-regional conveyance to help regions capture, store, and move water

19.3 Conduct a feasibility analysis for improved and expanded capacity of federal, state, and local conveyance facilities to enhance water transfers and water markets. The analysis must incorporate climate change projections of hydrologic conditions.

19.4 Assess a state role in financing conveyance projects that could help meet needs in a changing climate.



Conveyance Study Builds Upon

- Conveyance infrastructure: natural and built infrastructure
- State should invest in public benefits of climate-resilient conveyance projects
- Climate resilient conveyance:
 - Restore ecosystem function
 - Upgrade existing systems
 - Support the human right to water
 - Promote local and regional reliance
 - Advance an integrated approach to water management
 - Support sustainable groundwater management



California
WATER COMMISSION

**A State Role in Financing Conveyance
to Meet Climate Change Needs:
Findings and Conclusions**

June 2021



Review of Previous Studies

- Public Policy Institute of California - Replenishing Groundwater in the San Joaquin Valley
- Delta-Mendota Canal/California Aqueduct Intertie (Intertie)
- Cross Valley Canal Studies, 1972
- Report on the San Joaquin Valley Conveyance, 1990
- Groundwater Availability of the Central Valley Aquifer, California (USGS, 2009)
- Reclamation's Water Supply and Yield Study, 2008
- Trans Valley Canal Upper San Joaquin Storage Investigation
- Friant Water Users Authority and Metropolitan Water District of Southern California Partnership
- Multi-Benefit Reservoir Analysis – DWR, Kings River, and MWD Water
- East Side Division Report, Initial Phase, December 1965
- Mid-Valley Canal
- Water Available for Replenishment (WAFR) – DWR
- System Reoperation Study – DWR
- DMC Recirculation – Reclamation
- San Joaquin River Restoration
- California Water Commission, A State Role in Financing Conveyance to Meet Climate Change Need

Ongoing Efforts

- Regional Groundwater Sustainability Plans (GSPs)
- Central Valley Flood Protection Plan (CVFPP)
- San Joaquin Valley Blueprint
- Delta Conveyance Project
- Friant-Kern Canal Capacity Restoration
- Delta-Mendota Canal Subsidence Correction Project
- California Aqueduct Subsidence Study
- San Joaquin Valley Watershed Studies (Calaveras, Stanislaus, Tuolumne, Merced, and Upper San Joaquin) – DWR
- SWP – Delivery Capability Report



Water Imbalance in San Joaquin Valley

Estimates of Groundwater Overdraft

- Groundwater Sustainability Plans = 1.3 MAF/yr
- Groundwater Model (C2VSimFG) = 1.1 MAF/yr

Issues Resulting from Groundwater Overdraft

- Drying up of wells for vulnerable communities
- Shortage of water for agriculture
- Potential repurposing of agricultural land
- Reduction of water in streams and lakes
- Degradation of aquifer health
- Loss of riparian vegetation and wildlife habitat
- Loss of conveyance capacity due to subsidence



Loss of Conveyance Capacity from Subsidence

- California Aqueduct (reduced ~ 25%)
- Delta-Mendota Canal (reduced ~30%)
- Friant Kern and Madera Canals (reduced ~50%)

Impact:

Loss of ability to convey flood flows, especially from climate change



Consistent Climate Change Analytic Standards

- San Joaquin Valley Conveyance Study
- San Joaquin River Basin Watershed Studies
- SWP Delivery Capability Report
- California Water Plan
- Central Valley Flood Protection Plan
- California Aqueduct Subsidence Program



Work Plan & Next Steps

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



Questions

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