

Water Partnerships between Cities and Farms in Southern California and the San Joaquin Valley

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Cities and farms need reliable, affordable water supplies to safeguard people and economies

- San Joaquin Valley must manage groundwater for long-term sustainability. Expanding water supplies can reduce need to fallow irrigated farmland.
- Urban SoCal water demand has dropped, but climate change complicates water planning and brings more intense droughts.



Lake Oroville, the main reservoir feeding the State Water Project, during the 2012-16 drought. Photo: DWR

Moving from competition to cooperation can build resilience

- Cities and farms can take advantage of shared infrastructure to address both regions' water challenges
- Co-investments and water sharing agreements would increase average supplies in the valley and boost SoCal supplies during droughts

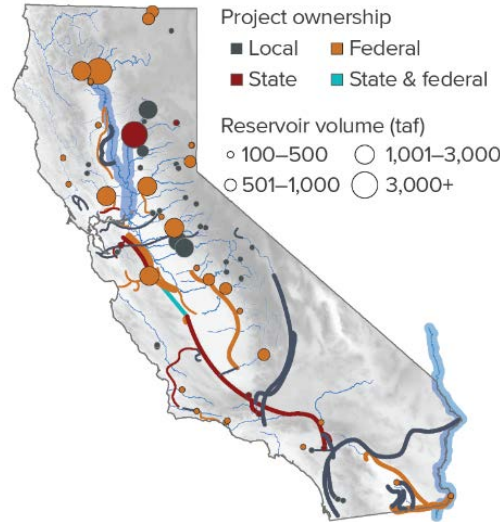


The State Water Project connects the San Joaquin Valley and Southern California. Photo: DWR

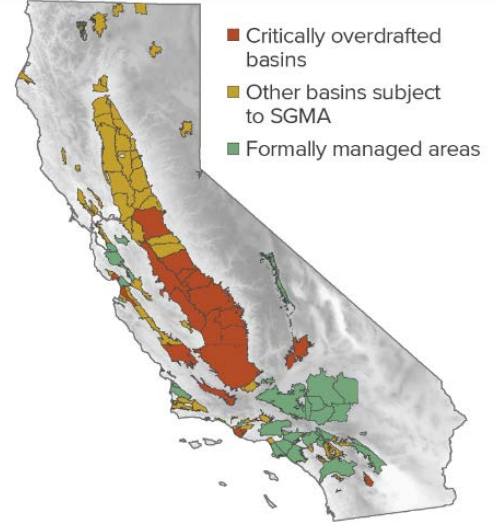
Existing partnerships use the water grid to manage droughts, scarcity, infrastructure costs

- Underground storage in southern SJ Valley
- Long-term transfers of dry-year water from Yuba River
- Various Colorado River trading and storage partnerships

Main above-ground storage and conveyance



Main groundwater basins



Window of opportunity for partnerships between Southern California and San Joaquin Valley

- Two major shifts:
 - Agriculture: SGMA heightens interest in expanding supplies, underground storage
 - Urban areas: Demand reductions reduce supply pressures during normal/wet years. Droughts now major concern
- State Water Project infrastructure facilitates partnerships

The SWP is the key link between coastal cities and San Joaquin Valley farms

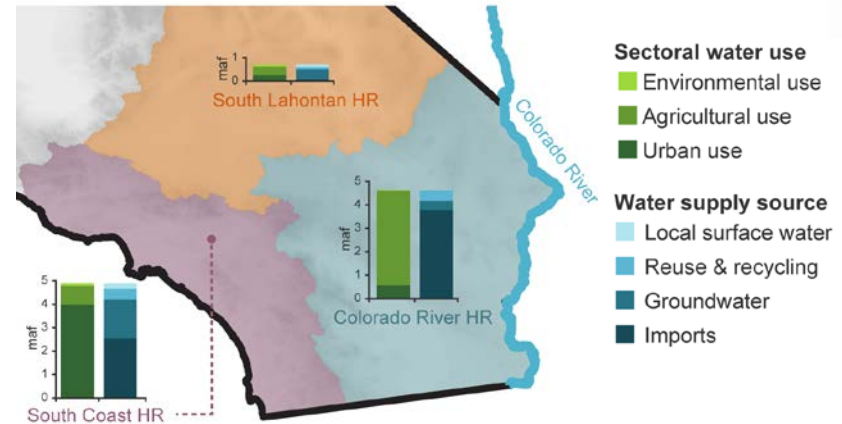


Note: Delta exports and imports are annual averages for the 1988-2017 period

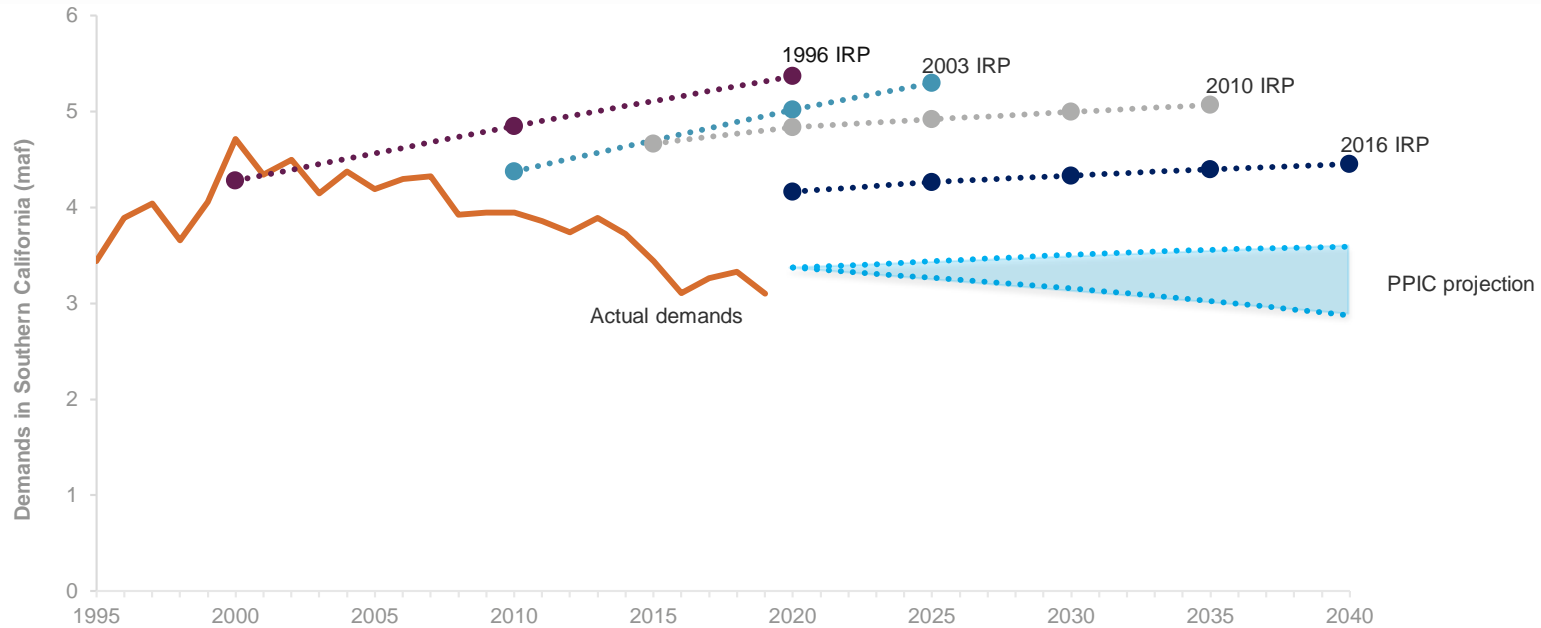
SoCal's willingness to participate is key to success

- Very sophisticated, diverse water portfolio, but also differences in challenges and needs at local level
- We analyzed in detail:
 - Water portfolio options and costs
 - Evolution of demands
 - Expected management challenges

Water source and sectoral water use by hydrologic region in Southern California



Regional water demands and demand projections have been falling



SoCal's focus will continue to be on diversifying supplies, reducing demands to manage droughts

- Supplies will be increasingly diverse:
 - For imports, focus is on safeguarding existing supplies
 - Water recycling will be a major source
 - Stormwater capture on rise, but climate change could lower potential
 - Seawater desalination will remain limited, given high cost
 - Brackish desalination has some expansion potential
- Trading (now 15% of supplies) and banking increase resilience
- Water conservation remains an essential management tool

What types of partnerships are possible?

- **Co-investments**

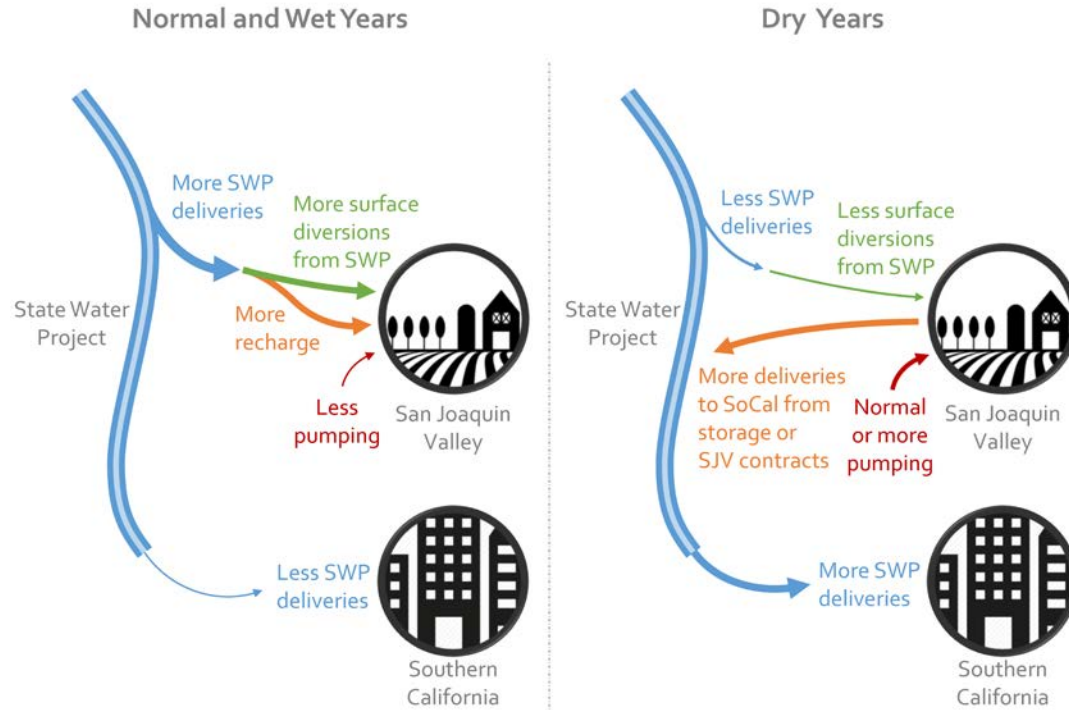
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- SoCal agencies expand investments in water storage, conveyance in SJV

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- **Unbalanced exchanges**
 - Farmers get a more water in normal/wet years in return for supplying some water during droughts

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Unbalanced exchanges can increase long-term supplies in the San Joaquin Valley and drought supplies in Southern California



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- **Mixed strategies**
 - Co-investments + unbalanced exchanges

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- **Opportunities related to future urban growth**
 - SoCal invests in long-term supplies, with near-term transfers to ag

Partnerships face obstacles beyond costs, water availability

- Trading rules
 - SWP rules limit trading, exchanges (but improvements underway)
 - Place-of-use restrictions
 - Legal assurances about honoring water exchanges
- Water availability and infrastructure
 - Surface water infrastructure constraints limit recharge in wet years
 - Low dry-year deliveries might limit ability to send extra water to SoCal
- Other constraints, such as financing capacity or high transaction costs

Despite challenges, water partnerships hold promise

- Local leadership is critical to scale up opportunities
- The state can help by assessing regional infrastructure; improving trading and recharge flexibility; and facilitating funding arrangements
- Multi-benefit partnerships align with Water Resilience Portfolio, and could be applied in other regions and sectors



The State Water Project connects the San Joaquin Valley and Southern California. Photo: DWR

Thanks so much!

These slides were created to accompany a presentation. They do not include full documentation of sources, data samples, methods, and interpretations. To avoid misinterpretations, please contact:

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Thank you for your interest in this work.