

the STATE WATER PROJECT

and

SUBSIDENCE



The **San Luis Canal** and **California Aqueduct** (CA aqueduct system) are the backbone of California's water delivery system, moving water throughout two-thirds of the state. These facilities are key components of the State Water Project (SWP), which is managed by the Department of Water Resources (DWR), and of the federal Central Valley Project (CVP). Water supplies conveyed through the subsidized portions of the CA aqueduct system serve over 1.5 million acres of farmland and approximately 24 million people, support an economy worth over \$2 trillion, and provide critical hydropower, recreational, and environmental benefits.

Land subsidence, primarily caused by groundwater pumping, has lowered sections of this system, reducing its capacity and flexibility. This limits California's ability to move and store water in wet years, undermines drought resilience, and increases the risk of structural failure.

TIMELINE

1920s-1940s
Before construction of the SWP and CVP, groundwater extraction leads to 20-30 feet of subsidence in parts of the Central Valley.

1940 **CALIFORNIA AQUEDUCT SUBSIDENCE PROGRAM LINK**
First deliveries of CVP.

1962
First deliveries of SWP.

1960s-1980
Due to SWP and CVP deliveries, subsidence slows to one inch/year but does not stop.

1980s-1990s
Rate of subsidence begins to increase due to increased water demand and regulatory changes.

2006
CA Aqueduct system begins to lose flow capacity.

2013-2016
Extreme drought causes subsidence of up to 3 feet.

2017-2025
DWR monitors and addresses critically subsided areas, partnering with Groundwater Sustainability Agencies. Despite operational adjustments, delivery losses begin.

2026-Future
If no action is taken, up to 87% loss in delivery capability by 2043 projected with continued subsidence. DWR is implementing major infrastructure repairs to avoid this outcome.

IMPACT ON WATER DELIVERIES

The SWP's delivery capability could drop by up to 87% within 20 years—the yearly water use of 14 million people—and cause complete loss of water deliveries in some areas, leading to extreme shortages and forcing transitions to much more expensive water supplies.

Structural repairs are required to maintain water deliveries and avoid these impacts.

ECONOMIC IMPACT

Subsidence threatens California across sectors. Reduced surface water deliveries limit farmers' abilities to make long-term crop investments and increase reliance on already stressed groundwater. Constraints on SWP pumping also raise electricity and water costs, as links between power and water infrastructure typically allow operations to be shifted to periods of low-cost renewable power. Disadvantaged communities in the Central Valley and Southern California lack resources to absorb costs or find alternative supplies.



SOLUTIONS

DWR is carrying out major projects to keep water moving through the CA aqueduct system while planning long-term fixes for subsidence.

Short-term: DWR and U.S. Bureau of Reclamation (Reclamation) plan to invest \$72 million in 5 interim projects, including liner raises along 47 miles of the most subsided canal segments. DWR is working with local Groundwater Sustainability Agencies and Reclamation to expand monitoring and provide real-time data to ensure sustainable conditions.

Long-term: Addressing past and projected subsidence is estimated to cost about \$3.87 billion (\$2.25 billion for San Luis Canal facilities and \$1.62 billion for California Aqueduct facilities). This includes construction and project implementation costs and will restore the system's original capacity and flexibility. Value-engineering efforts are continuing to explore further efficiencies and potential alternative solutions. New groundwater laws passed in 2014 will ensure that these problems never occur again.

FUNDING OPPORTUNITIES

Affordability is one of the key challenges confronting the SWP and people that depend on it. Public investment is needed to ensure that the backbone of California's critical water infrastructure can continue to serve the state's people, farms, and businesses. DWR is pursuing a diversified approach to fund corrective actions.

- **CA General Fund:** The state has already invested \$200 million to monitor, model, and design repairs to California water conveyance infrastructure, including the SWP, damaged by subsidence.
- **CA Proposition 4:** Passed in 2024 by voters, this bond could provide resources for repairs to existing infrastructure for damage caused by subsidence.
- **Congress and federal funds:** DWR is working with Reclamation to request \$900 million from Congress to cover the federal government's share of aqueduct system repairs. In March 2026, the U.S. Department of the Interior announced that \$50 million would be directed to subsidence-related impacts on the San Luis Canal, funded by the One Big Beautiful Bill Act.



Above: Installing a groundwater monitoring well at California Aqueduct Check Structure 24 in Lost Hills. This well monitors groundwater levels, documents the depth of groundwater extraction, and aids in understanding land subsidence impacts on infrastructure.

BELOW:
**LINK TO THE
COMPLETE
REPORT**

