



**State Water Project Briefing: Subsidence and the State Water Project**

**Introduction**

Central to the 700-mile-long State Water Project (SWP) system is the California Aqueduct (Aqueduct), a portion of which is a 220-mile-long canal running along the west side of the San Joaquin Valley from the San Luis Reservoir to Edmonston Pumping Plant south of Bakersfield. Subsidence due to groundwater overdraft in the San Joaquin Valley has reduced delivery capacity and operational flexibility of the Aqueduct, with adverse impacts extending throughout the SWP. Subsidence has damaged numerous structures including the canal liner, embankments, bridges, turnouts, utility crossings, recorder stations and check structures. By making interim repairs and modifying Aqueduct operations, DWR has managed to make deliveries; however, these measures are becoming less effective given the recent increase in the ongoing rate of subsidence.

The California Aqueduct Subsidence Program (CASP) addresses this problem through a mix of both short-term tactical measures and long-term strategic planning actions. The problem identification phase of the program is complete and is documented in two reports: the 2017 California Aqueduct Subsidence Study and the 2019 California Aqueduct Subsidence Study Supplemental Report. Among several significant findings were the dramatic increase in subsidence rates during the 2013-2016 drought and potentially catastrophic consequences to SWP operations should these drought conditions reoccur. In addition, these two studies find that Aqueduct subsidence poses adverse impacts to agricultural land use, Delta Conveyance planning, energy use, water supply, and the aging infrastructure of the canal and related facilities. As a result of these adverse impacts there are increasing demands for local, state, and federal funding of water supply and flood projects in the Central Valley. The CASP is engaged in actions to maintain requested deliveries to water users while addressing the longer-term impacts of subsidence on the Aqueduct.

The objectives of CASP are split into two general categories, rehabilitation and recovery. The Rehabilitation Project deliverables include actual and necessary construction work required to deliver allocated water in the near-term. Over the next three years, the Recovery Project is developing a plan, including an alternatives study and related documents, necessary to implement the alternative determined to best remediate the consequences of long-term subsidence. In an effort to ensure acceptance and commitment to the plan, outreach and collaboration with multiple stakeholders, including Groundwater Sustainability Agencies, is a key element of the planning process.

Agenda Item: 10

Meeting Date: November 18, 2020

Page 2

### **Background**

The California State Water Project (SWP), consisting of 36 water storage facilities and 700 miles of rivers, pipelines and canals, supplies water to 27 million people and irrigates 750,000 acres of farmland. The system includes 21 pumping plants, powered by a system of power-generation and power-recovery plants. The Department of Water Resources (DWR) also operates the world's tallest water lift – the Edmonston Pumping Plant – which pumps water more than 1,900 feet up and over the Tehachapi Mountains into Southern California.

Goal Two of the Commission's Strategic Plan directs the Commission to remain apprised of the operations and construction activities of the State Water Project, focusing on how the SWP adapts and responds to hydrological extremes expected with climate change, restores critical ecosystems, and addresses aging infrastructure. As required by Water Code section 165, the Commission conducts an annual review on the progress of the construction and operation of the SWP and reports its findings and recommendations to the Department and the Legislature. This presentation will inform the Commission of SWP construction activities over the past year, in preparation for the Commission's 2020 annual review.

### **Meeting Overview**

At the November meeting, CASP Manager Dan Whisman will address the impacts of subsidence on conveyance, the results of two DWR studies, and key considerations and current work on subsidence.

This is an informational item.

### **Contact**

Laura Jensen  
Assistant Executive Officer  
California Water Commission  
(916) 712-7051