



## State Water Project Briefings: Aging Infrastructure and Climate Change

### Introduction

The first State Water Project briefings of 2021 will introduce this year's theme: creating a resilient State Water Project (SWP) by addressing climate change and aging infrastructure to provide multiple benefits for Californians. The Commission will receive three briefings: an overview of the SWP, a review of the Climate Change Vulnerability Assessment, and an update on the Department of Water Resources' (DWR) efforts to address issues related to aging infrastructure.

### SWP Overview

Planned, constructed, and operated by DWR, the SWP is the nation's largest state-built, multi-purpose, user-financed water project. Key activities occurring over the next year focus on implementing the SWP strategic plan; workforce initiatives; and water supply contract extension, financial management, and water management tools.

- **State Water Project Strategic Plan 2019.** This document details the core values, vision, and goals for securing the functions of the SWP the next several years. The SWP Strategic Plan is directly related to the 2018 DWR Strategic Plan, and provides details and specificity to ensure reliable delivery of affordable and good quality water for municipal, industrial, agriculture, and recreational uses, and for protecting and enhancing fish and wildlife. The SWP Strategic Plan addresses Core Values of Safety; Workforce and Resources; Compliance; Flexibility, Reliability, and Resilience; Financial Management; and Prestige, and guides the activities occurring in 2021.
- **Key Workforce Initiatives.** The State Water Project is currently undertaking a suite of activities to improve the effectiveness of the organization. These activities are focused on better aligning the SWP organization to meet its current needs as well as ensuring sustainability of its workforce.
- **Contract Extension, Financial Management, and Water Management Tools.** The current long-term water supply contracts start to expire in 2035. The Contract Extension effort will extend these contracts to 2085. Additional terms in the contracts are intended to increase the transparency of SWP activities, increase the reliability and flexibility for water through SWP facilities, and refine financial and water management reporting. A condition of the new contract terms includes the addition of a Chief

Financial Manager. In anticipation of the implementation of the new contract terms, the Chief Financial Manager was hired last year and is currently leading several financial management improvement efforts.

#### Climate Change Vulnerability Assessment

DWR performs a wide range of activities to support climate change analysis and adaptation planning by local and regional water managers. DWR is also leading by example in developing its own comprehensive Climate Action Plan to guide how DWR is and will continue to address climate change for programs, projects, and activities over which it has authority.

DWR's Climate Action Plan is divided into three phases:

- **Phase I** is DWR's [Greenhouse Gas Emissions Reduction Plan](#) (GGERP), which covers how DWR will help mitigate the future impacts of climate change by reducing the greenhouse gas (GHG) emissions from its activities. Phase I was completed in June 2012; since then, DWR has reduced annual GHG emissions by more than one million metric tons below 1990 levels and achieved its 2020 emissions reduction target five years ahead of schedule.
- **Phase II** is DWR's framework and guidance for consistent incorporation and alignment of analysis for climate change impacts in its project and program planning activities. In 2018, DWR released its [Climate Change Analysis Guidance](#) to guide decision making and provide assistance to DWR managers as they incorporate climate change analyses into their planning for DWR activities, including strategic planning, investment decisions, risk assessments, and infrastructure development. This phase ensures that all DWR planning activities meet standards for quality, scientific rigor, and consistency.
- **Phase III** is DWR's [Climate Change Vulnerability Assessment and Adaptation Plan](#) (VA/AP). This phase of the Climate Action Plan evaluates, describes, and where possible, quantifies the vulnerabilities of DWR's assets and business activities to projected changes in temperature, wildfire, sea level rise, long-term and persistent hydrologic changes (including precipitation, snowpack runoff, and flooding), and habitat and ecosystem services degradation. The Vulnerability Assessment served as a foundation for the development of an Adaptation Plan to help prioritize DWR resiliency efforts such as infrastructure improvements, enhanced maintenance and operation procedures, revised health and safety procedures, and improved habitat management.

#### Aging Infrastructure

Primarily constructed in the 1960s and 1970s, a large part of the SWP infrastructure has been in service for more than 60 years. As with all aging infrastructure, refurbishment, replacement,

maintenance, and modifications are needed to secure reliable operation of the system and to ensure public and infrastructure safety. There is a continued reliance on the SWP infrastructure to provide water supply, clean energy, and flood protection to California's increasing population and changing climate.

- **Description of Aging Infrastructure Issues.** SWP is comprised of civil, mechanical, and electrical infrastructure each with a unique set of challenges which are amplified by their age, obsolescence, additional demand, regulatory requirements, and additional skilled workforce required to maintain reliability and resiliency of the overall SWP. While DWR has continued to perform maintenance of SWP facilities since inception, it is recognized that improved maintenance practices, additional skilled technical resources, and improved project delivery processes are required to secure SWP facilities for the future generation.
- **Risks Associated with Aging Infrastructure.** It is expected that as infrastructure ages the risk of failures and incidents will increase, which will negatively impact reliable operation of the SWP. Timely and efficient delivery of capital improvement projects in addition to improvements to maintenance practices are required to ensure the risk associated with aging infrastructure is mitigated. If DWR does not proactively address the challenges of the SWP aging infrastructure, there is a higher risk for events resulting in interrupting water deliveries, threatening public safety, and damaging private and state property.
- **Steps to Address the Aging Infrastructure Risk.** To address the challenges of aging SWP infrastructure, DWR has developed an Asset Management Program, Dam Safety Program, and maintenance management strategies. In order to execute these new programs, policies, and strategies, DWR resources allocated for aging infrastructure will be increased. Based on the SWP risk framework, capital improvement projects are being identified and initiated across the SWP.

### **Background**

The California State Water Project, 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. 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.

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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 series of briefings will inform the Commission of SWP activities in preparation for the Commission's 2021 annual review.

### **Meeting Overview**

At the March meeting, Director Karla Nemeth will offer opening remarks. Ted Craddock, DWR's State Water Project Deputy Director, will provide an overview of key activities occurring within the SWP over the next year. John Andrew, DWR's Assistant Deputy Director for Climate Change, will brief the Commission on the Climate Change Vulnerability Assessment. Behzad Soltanzadeh, Assistant Division Chief within DWR's Division of Operations and Maintenance, will brief the Commission on the issue of SWP's aging infrastructure.

After DWR's presentations, a panel of stakeholders will share their experiences and to reflect on DWR's presentations about the SWP.

- Valerie Pryor, General Manager for the Alameda County Flood Control and Water Conservation District, Zone 7;
- Kathy Cortner, General Manager for the Mojave Water Agency; and
- Stephen N. Arakawa, Manager of Bay Delta Initiatives for the Metropolitan Water District of Southern California.

This is an informational item.

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