SITES RESERVOIR

Is there enough water for Sites Reservoir?

The Sites Project Authority conducted the most extensive water availability analysis in California history to answer one question: Is there enough water available to store in Sites Reservoir while still fulfilling all existing senior water rights and meeting environmental resource needs? The answer is yes. Analyses of a wide range of possible scenarios all showed that there is enough unappropriated water in the Sacramento River and Delta system to store in Sites Reservoir.

Background

Pursuant to Water Code Section 1260(k), those that apply for a new water right must demonstrate that there is a "reasonable likelihood that unappropriated water is available for the proposed appropriation," or said more simply, that there is enough water to supply the new right above and beyond what is needed for existing senior water users and to meet environmental requirements.

Our Approach

Our team of experts looked at six water supply scenarios to determine how much water would be available to store in Sites Reservoir under a variety of conditions. These scenarios ranged from historical conditions to climate change projections as far out as 2070. In addition to the scenarios developed by the Authority's team, a specific unimpaired flow scenario requested by the State Water Resources Control Board (SWRCB) was also run and is described below.

The combined analyses constitute the most extensive water availability analysis ever conducted in California history.

Our Results

Although the exact amount of available water will vary year to year, the scenarios analyzed show that an annual average of at least 658,000 acre-feet of water would be available for Sites, and that there are years where the full capacity of Sites Reservoir, 1.5 million acre-feet, would be available for diversion and storage in Sites Reservoir. From this available supply, the Project's CalSim modeling results show Sites diverting about 300,000 acre-feet of water on an annual average.

This year's storms, which would have provided roughly 700,000 acre-feet of water to Sites, affirm that there are years when water is abundant and could add substantially to Sites Reservoir.

The results are considered conservative estimates because three of the analyses assume that all senior water right holders are using the maximum amount of water allowed by their right each year.

Approach	Result Summary	Annual Average Available (AFY)	Max Water Available (AF)
Historical	Water available in all year types* and 18 of 22 years	749,000	3,878,000
CalSim II			
Historical hydrology	Water available in all year types and 74 of 82 years	1,448,000	5,249,000
Climate change – 2035 Central Tendency	Water available in all year types and 73 of 82 years	1,518,000	5,330,000
Climate change – 2070 Central Tendency	Water available in all year types and 70 of 82 years	1,455,000	5,176,000
Unimpaired Flow – Based on Reclamation's Alternative 4 in its 2019 Reconsultation EIS	Water available in all year types and 73 of 82 years	658,000	4,046,000
Face Value	Water available mainly in wet and above normal years and 55 of 93 years	1,118,000	8,681,000

*Based on the Sacramento Valley Water Year Index (40-30-30 Index)

The Authority's analyses demonstrate that there is ample water for the Project AND that the Project is not taking all of the water available in the Sacramento River system. There remains unappropriated water available for other new water right applications that may be filled after Sites Reservoir.

The water availability analysis clearly demonstrates there is ample water for Sites, the environment, and senior water right holders under a wide range of water supply scenarios for both current and future uses.

State Water Resources Control Board Required Analysis

In addition to the analysis conducted by the Authority, the SWCRB requested the Authority complete an analysis of water availability using a tool the SWCRB developed. This tool evaluates the entire Delta watershed and assumes implementation of a 55% unimpaired flow requirement in the Sacramento Valley and Delta – meaning, the first 55% of water is allocated to the environment with the remaining 45% allocated to water right holders. This analysis also assumed that every water right holder would utilize their entire right every year, including the assumption that reservoirs are empty and need to fill each year – an extremely conservative (and unlikely) approach.

Under this analysis, 141,000 acre-feet of water was available for the Project on an average annual basis. The exceptionally conservative approach to this analysis, expectedly, results in less water available for the Project compared to the other analyses. But the exceptionally conservative approach, while important for a theoretical worst-case bookend, does not reflect how our water system actually operates. The Authority believes that its analyses presented above, represent conservative but also more realistic approaches to analyzing water availability.