

Reducing Flood Risk, Enhancing Safety at New Bullards Bar Dam

Introduction

Yuba Water Agency is implementing a critical public safety initiative, which will significantly reduce flood risk and improve climate change resilience for Yuba County, and nearby communities. By 2025, Yuba Water expects to fully implement three major programs/projects: Forecast-Informed Reservoir Operations for the Yuba-Feather system, an update to the U.S. Army Corps of Engineers' water control manual for New Bullards Bar Dam and Reservoir, and completion of a new \$160 million* secondary spillway at New Bullards Bar.

With the new spillway gates at a much lower elevation in the reservoir and new operational procedures in place, Yuba Water will be able to release more water in advance of large, threatening storm events, when there is enough downstream channel capacity to handle the flows.

The trio of a secondary spillway, Forecast-Informed Reservoir Operations and a new water control manual, reduces the region's flood risk, enhances dam safety and has the potential to improve water supply.

The new spillway provides enhanced dam safety with a redundant release option that could independently manage the 1997 storm of record

Yuba Water is partnering with Scripps Institution of Oceanography and others on vital atmospheric river research in the Yuba and Feather River watersheds, to improve forecasting. Atmospheric river storms cause the majority of floods in Northern California.



Conceptual rendering of the planned secondary spillway

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A Secondary Spillway at New Bullards Bar

Yuba Water is in the design phase of the secondary spillway, which will have gates set 31.5 feet lower than the existing spillway. The secondary spillway, by itself, will have the ability to release 45,000 cubic feet per second (cfs). The current capacity is just 19,000 cfs when the reservoir is at the current maximum allowed water level during the storm season. Construction is planned for 2023, with completion in 2024.

Implementing Forecast-Informed Operations

To maximize the benefit of the secondary spillway, Yuba Water Agency is working with **U.C. San Diego, Scripps Institution of Oceanography, Center for Western Weather and Water Extremes**, in partnership with the **California Department of Water Resources**, which owns and operates Oroville Dam and Reservoir, to assess the potential of Forecast-Informed Reservoir Operations on the Yuba and Feather rivers. From this research, Yuba Water plans to work with the **U.S. Army Corps of Engineers** to develop new operational procedures for managing flood flows.

Implementing Forecast-Informed Reservoir Operations for both New Bullards Bar and Oroville reservoirs will allow for the coordinated, early releases of stored water in advance of epic storms, creating additional reservoir capacity to manage flows from incoming storms. Additionally, there is potential to improve water supply storage and management at Bullards and increase carbon-free hydropower generation, both critical assets in light of the impacts of climate change.

“...the New Bullards Bar project is a rare example of a local water agency undertaking costly dam modifications in response to changing hydrology.”

Matt Weiser, Water Deeply

July 10, 2018

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New Bullards Bar Dam's current spillway releasing water

*Yuba Water is currently assessing the operational capabilities of the planned spillway. Accordingly, the estimated costs may change during the design and construction phases of the project.



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