



Legislation Text

File #: 2020-1279, **Version:** 1

To: Board of Directors, Sonoma County Water Agency
Department or Agency Name(s): Sonoma County Water Agency
Staff Name and Phone Number: 707-484-7754
Vote Requirement: Informational Only
Supervisory District(s): All

Title:

Presentation of Final Viability Assessment for Lake Mendocino Forecast Informed Reservoir Operations Demonstration Project - Informational Item

Recommended Action:

Informational Only - No Recommended Actions

Executive Summary:

This agenda item consists of a presentation summarizing the Final Viability Assessment (FVA) for the Lake Mendocino Forecast Informed Reservoir Operations (FIRO) Demonstration Project. The FVA presents the results of a comprehensive analysis, conducted by a multi-agency team of experts, that evaluates whether a new and innovative reservoir management strategy known as FIRO can improve operations of Lake Mendocino. The overall conclusion of the FVA is that FIRO can provide significant improvements over existing operations for flood risk management, water supply and environment conditions by leveraging current forecast skill utilizing modern technology, numerical modeling and scientific understanding of meteorology and hydrology. This project is an example of a climate adaptation program that can provide improved reservoir operations to better respond to increased variability of precipitation (i.e., increased floods and droughts) that are projected to occur in the Russian River Watershed due to climate change. The Lake Mendocino FIRO Demonstration Project was conducted by a multi-agency partnership comprised of local, state and federal agencies and led by Sonoma Water and the Scripps Center for Western Weather and Water Extremes (CW3E). This team has worked together for over 6 years to demonstrate the viability of FIRO at Lake Mendocino. The insights and technical advances achieved by this innovative demonstration project has also led to the evaluation of FIRO viability at other reservoirs in California and Washington.

Discussion:

The multi-agency Steering Committee (co-led by Sonoma Water and the CW3E) for the Lake Mendocino FIRO Demonstration Project has worked together for over 6 years to evaluate whether current forecast skill based on modern observational networks (e.g., radars, ground-based observations, and satellites), numerical models, and improved scientific understanding of weather and hydrology can be leveraged to better water management outcomes relative to existing operations. Lake Mendocino (formed by Coyote Valley Dam) is operated by the U.S. Army Corps of Engineers (USACE) for flood risk management and Sonoma Water for water supply. These water management missions can often be at odds with each other, especially under the highly variable hydrologic conditions of the Russian River Watershed. Climate forecast models indicate that hydrologic variability will increase due to climate change processes. The Demonstration Project examines

whether a new strategy known as FIRO utilizing the aforementioned scientific advances can better balance flood risk management and water supply requirements. This project is one of Sonoma Water's climate adaptation programs intended to improve the resiliency of its operations to counteract the impacts of climate change. In addition to Sonoma Water and CW3E, the Steering Committee is comprised of representatives from the USACE, the National Oceanographic Atmospheric Administration (NOAA) - National Weather Service, National Marine Fisheries Service, and Office of Atmospheric Research, the California Department of Water Resources, and the U.S. Bureau of Reclamation.

The FVA presents the significant work conducted by this multi-agency partnership since 2014 and documents the potential to utilize FIRO strategies to improve water supply reliability, environmental flow conditions for the Russian River and flood risk management of the facility by comparing FIRO alternative strategies relative to current operations using 16 objective metrics. The FVA also provides recommendations for future actions including: (1) updating the Water Control Manual for Lake Mendocino by the USACE to allow the utilization of FIRO in permanent operations; (2) continued investment in research and modeling tool development which will result in additional improvements to forecast skill of atmospheric rivers, thus further enhancing the benefits of FIRO; and (3) development of a process that allows for future scientific and technological advances to be more seamlessly incorporated into the Water Control Manual. This innovative project has yielded several insights and new tools regarding reservoir operations which have led to programs that are evaluating the viability of FIRO at other facilities in California (Prado Reservoir, New Bullards Bar Reservoir, and Lake Oroville) and Washington (Howard Hanson Dam).

Prior Board Actions:

None

FISCAL SUMMARY

Expenditures	FY 20-21 Adopted	FY21-22 Projected	FY 22-23 Projected
Budgeted Expenses			
Additional Appropriation Requested			
Total Expenditures			
Funding Sources			
General Fund/WA GF			
State/Federal			
Fees/Other			
Use of Fund Balance			
Contingencies			
Total Sources			

Narrative Explanation of Fiscal Impacts:

There are no fiscal impacts.

Staffing Impacts:

Position Title (Payroll Classification)	Monthly Salary Range (A-I Step)	Additions (Number)	Deletions (Number)

Narrative Explanation of Staffing Impacts (If Required):

None

Attachments:

None

Related Items “On File” with the Clerk of the Board:

None