



Santa Clara Valley Water District

File No.: 21-0037

Agenda Date: 1/12/2021

Item No.: *2.5.

BOARD AGENDA MEMORANDUM

SUBJECT:

Pacheco Reservoir Expansion Project Preliminary Alternatives Analysis, Pursuant to the Water Storage Exploratory Committee's Recommendation Resulting from the December 28, 2020 Meeting.

RECOMMENDATION:

Consider the Water Storage Exploratory Committee's recommendation resulting from the December 28, 2020 meeting to:

- A. Receive and discuss information regarding status of the Pacheco Reservoir Expansion Project Preliminary Alternatives Analysis; and
- B. Discuss and approve recommendation that an audit be performed by the Board Audit Committee to determine the timeline associated with cost increases for the project.

SUMMARY:

In accordance with the revised Capital Improvement Program (CIP) Project Delivery Process (Attachment 1) presented at the November 11, 2020 CIP Committee Meeting, the Pacheco Reservoir Expansion Project (PREP) Preliminary Alternatives Analysis is presented for Board discussion and input.

Background

The PREP has been included as an alternative within the San Luis Reservoir Low Point Improvement Project (SLLPIP) led by the United States Bureau of Reclamation (USBR). The SLLPIP Draft Feasibility Report released on April 8, 2019, determined that the PREP alternative provided the highest National Economic Development (NED) score within the SLLPIP. This determination established a nexus for potential partial federal funding opportunity for the PREP through the Federal Water Infrastructure Improvements for the Nation (WIIN) Act.

San Luis Reservoir Low Point Improvement Project

In order to attain eligibility for federal funding through the WIIN Act, the Secretary of the United States Department of the Interior must assess and determine the project is technically, environmentally, economically, and financially feasible and possesses sufficient Federal benefit to justify the award of Federal funding. The Valley Water PREP team and USBR completed the SLLPIP Final Feasibility Report and Environmental Impact Statement/Environmental Impact Report for an assessment of

federal funding eligibility through the WIIN Act by the Department of the Interior and Federal Office of Management and Budget. On December 22, 2020, USBR informed Valley Water that the project was not included in the list of selected projects transmitted to Congress on December 3, 2020 for a WIIN Act funding decision. However, USBR encouraged Valley Water to continue to pursue federal finding of feasibility for potential WIIN Act extension or other federal funding mechanisms.

Pacheco Reservoir Expansion Project

The PREP team continues various activities to progress project planning, preliminary design, environmental documentation, and permitting. Substantial progress has been made on environmental investigations with several draft summary reports in review by the team. Interagency coordination efforts continue with productive virtual meetings with environmental agencies to discuss fish, wildlife, and habitat related topics. These efforts are culminating into preparing the PREP specific Draft Environmental Impact Report (EIR) on track for public release in 2021.

Components of the Draft EIR being prepared include the project description and the preliminary project alternatives for environmental impact analysis. Plans for a public scoping meeting are underway which will include a presentation of the preliminary project alternatives and other project features.

Staff recently presented an update on the construction cost estimate for the Pacheco Reservoir Expansion Project (PREP) to the Water Storage Exploratory Committee. This update presented information regarding increases in project costs and schedule identified in the recently completed Feasibility Level Design Assessment performed for the SLLPIP effort. The prior project costs and schedule were based upon the information in the 2017 Water Storage Investment Program (WISIP) application estimates and the actual consultant agreement costs for the Project Management, Planning, Design, Environmental Documentation and Permitting consultant services.

The Feasibility Level Design Assessment included incorporation of geotechnical data, evaluation of construction sequencing, and estimated production rates for various elements of the proposed project. Major changes to the spillway and inlet/outlet works configuration, as well as updated design elements related to the earthfill dam, have contributed to revising the construction sequencing and extending the schedule estimate. The construction schedule for the earthfill dam has been estimated to be over seven years while the schedule in the 2017 funding application estimated five years.

The Feasibility Level Cost Estimate presented significant increases in construction costs primarily due to the following factors.

1. Findings of the initial geotechnical field investigations have resulted in:
 - a. Tripling the amount of excavation needed to reach the dam foundation and resulting cost increases for both foundation excavation and dam fill materials,
 - b. Substantial excavation and landslide stabilization costs for the spillway, and
 - c. A more complex inlet/outlet works configuration including a tunnel and shaft with adits.
2. Increased unit prices and quantities for the following items:
 - a. Dam filter/drain material unit price and quantity,
 - b. Embankment/shell material unit price and quantity, and
 - c. Conveyance pipe (steel) unit price.

3. Other drivers:
 - a. Highway 152 access improvements,
 - b. Onsite access roads, and
 - c. Mitigation land acquisition costs.
4. Contingencies and schedule:
 - a. Increase in design contingency from 10% to 25%, and
 - b. Construction schedule extended from five to eight years.

The cost increases result in a construction cost increase of approximately \$1 Billion. With inflation considered, the CIP cost for the project increased from \$1.3 Billion to \$2.5 Billion. The Water Storage Exploratory Committee recommends an audit be performed by the Board Audit Committee to determine the timeline associated with cost increases for the project.

The PREP team has begun developing variations to the project that could result in significant construction cost savings and reduction of the construction schedule. The variations include analysis of an alternate dam site upstream and assessing feasibility, cost, and construction of a hardfill dam structure in place of the proposed earthfill.

The variations have been applied to five different preliminary design alternatives as follows and are also outlined in the attached PowerPoint Presentation (Attachment 2):

Alternative 1 - Downstream Site, Earthfill Dam

The baseline concept presented in the WSIP application, 140 thousand acre-feet (TAF) expanded reservoir, including design updates from the feasibility level design assessment including the construction cost estimate increases.

Alternative 2 - Downstream Site, Hardfill Dam

In this alternative a hardfill dam type variation is applied to the baseline concept reducing the estimated project cost by integrating the spillway and inlet/outlet works into the dam structure.

Alternative 3 - Upstream Site, Earthfill Dam

This alternative utilizes the upstream site for the dam location, which has more favorable geotechnical conditions and topography that allow for reductions in the project cost when compared to the baseline concept.

Alternative 4 - Upstream Site, Hardfill Dam

This alternative utilizes a hardfill dam type at the upstream site. Significant cost savings are estimated when both variations are applied to the baseline concept.

Alternative 5 - Upstream Site, Earthfill Dam, 96 TAF Reservoir Capacity

For comparison purposes, a smaller reservoir at the upstream site with the earthfill dam type is being assessed. Although the estimated cost is significantly reduced, the 31% reduction in reservoir storage volume reduces the project benefits.

FINANCIAL IMPACT:

There is no financial impact associated with this item.

CEQA:

The recommended action does not constitute a project under CEQA because it does not have the potential for resulting in direct or reasonably foreseeable indirect physical change in the environment.

ATTACHMENTS:

Attachment 1: Revised CIP Delivery Process

Attachment 2: PowerPoint

UNCLASSIFIED MANAGER:

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