SWEETWATER AUTHORITY

Engineering and Operations Committee
February 5, 2025

Consideration to Authorize the General Manager to Execute a Contract with WSP USA, Inc. to Complete an Update to the Seismic Evaluation of Sweetwater Dam Outlet Tower and Conduit Study

RECOMMENDATION

Staff recommends that the Governing Board authorize the General Manager to execute a contract with WSP USA, Inc. for an update to the seismic evaluation of Sweetwater Dam Outlet Tower and Conduit for a not-to-exceed amount of $286,378.

OVERVIEW

The original freestanding outlet tower at Sweetwater Reservoir was constructed in 1888, and was constructed out of the same masonry as the dam. It is located inside the reservoir, about 40 feet from the base of the Sweetwater Dam, and is adjacent to the lower portion of the right abutment slope. The tower is about 100 feet high, from its foundation base to the top of its circular operating platform.

The study was initiated as part of the Authority's Strategic Plan Detailed Work Plan this fiscal year. Tower failure could cause an interruption in water deliveries from Sweetwater Reservoir to the Perdue treatment plant and to Authority customers. If water could not be used from Sweetwater Reservoir, it could cost millions of dollars to purchase untreated water from the San Diego County Water Authority until the tower is replaced, or a temporary floating pump station could be constructed on the reservoir.

The objective of the Study is for the selected consultant to review the 2003 report from GEI Consultants, Inc., titled "Seismic Evaluation of Sweetwater Dam Outlet Tower and Conduit." After reviewing the report, the Consultant is tasked with detailing a comprehensive update to the original 2003 report, and completing a conceptual level design and budgetary cost for strengthening the tower to withstand an earthquake with a return period of approximately 144 years. The updated Study will evaluate the need to update the deterministic and probabilistic analysis using the latest available ground motion models and National Hazard Maps. The updated Study will also evaluate the assumptions used in the 2003 report for materials, boundary conditions, and load combinations, and will update them as necessary. The next steps after the Study is completed would be to evaluate the potential rehabilitation cost versus the return period of the earthquake that could cause outlet tower failure, and determine if strengthening the outlet tower is warranted based on acceptable risk. The potential for outlet tower failure is not a dam safety issue because the outlet tower is not used as a mechanism for potential emergency drawdowns of the reservoir and would not cause failure of Sweetwater Dam itself; therefore, this study is not under the jurisdiction of the Division of Safety of Dams (DSOD).

The standards governing the analysis will be the US Army Corps of Engineers Manual EM 1110-2-6053 titled "Earthquake Design and Evaluation of Concrete hydraulic Structures." Other standards and guidelines that will be used when needed are from the governing agencies of the Federal Energy Regulatory Commission and US Bureau of Reclamation, and design codes from the American Concrete Institute and the American Society of Civil Engineers. The selected consultant will also be able to use the information from the recently completed draft analysis titled "Stability Analyses of Sweetwater Dam Under Static and Seismic Loading Conditions," that is part of the Comprehensive Analysis for Sweetwater Dam that was

requested by DSOD. The earthquake faults that will be considered in this study are: La Nacion, Rose Canyon, Agua Blanca-Coronado, San Miguel-Vallecitos, San Diego Trough and Elsinore.

To select a consultant to prepare an update to the Seismic Evaluation of Sweetwater Dam Outlet Tower and Conduit, staff publicly advertised a Request for Proposals (RFP) on December 12, 2024. The RFP was publicly advertised on PlanetBids and the Authority's website. The advertised RFP is included as Attachment 1. The RFP included a statement encouraging participation by local, small and/or disadvantaged businesses.

Proposals in response to the RFP were due on January 16, 2025, and two proposals were received from the following consultants:

- WSP USA, Inc. (WSP)
- KPFF Consulting Engineers (KPFF)

Staff reviewed the proposals according to the evaluation criteria listed in the RFP. Based on the professional nature of the requested work and the proposed contract for professional services, a qualifications-based selection process was used, which included the following evaluation criteria:

Category	Maximum Points	Average Score for WSP	Average Score for KPFF
Approach to complete the report	60	58	55
Completeness of proposal in addressing requested information	10	10	10
Relevant qualifications and experience of the Respondent's personnel assigned	30	30	27

Upon review of the proposals submitted, WSP was ranked the highest by staff based on the criteria above. The proposal from WSP shows a better approach and they had more specific experience for the type of work being considered. Both proposals and costs are included as Attachments 2 and 3. Staff recommends selecting the consultant that was ranked the highest by staff.

FISCAL IMPACT

The FY 2024-25 Budget Operating Expense line item 10-40-400-5650 – General Engineering Consulting Services includes funding for the proposed project.

Update to the Seismic Evaluation of Sweetwater Dam Outlet Tower and Conduit	
Total project budget	$ 300,000
WSP's proposed project cost[1)]	$286,378
Project balance:	$13,622

1) *The RFP for this professional service was based on qualifications and not lowest bid; however, for informational purposes, the cost proposal from KPFF was $335,129 for Option 2. Option 1 of KPFF's proposal has a higher cost of $362,389; it's a higher cost than Option 2 because it does not include reusing available data.*

OPTIONS

1. Authorize the General Manager to execute a contract with WSP USA, Inc. for an update to the seismic evaluation of Sweetwater Dam Outlet Tower and Conduit for a not-to-exceed amount of $286,378.

2. Authorize the General Manager to execute a contract with KPFF Consulting Engineers for an update to the seismic evaluation of Sweetwater Dam Outlet Tower and Conduit for a not-to-exceed amount of $335,129.

3. Other direction as determined by the Governing Board.

Staff Contact:
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SUPPORTING INFORMATION

Attachments
1. RFP for an Update to the Seismic Evaluation of Sweetwater Dam Outlet Tower and Conduit
2. Proposal and Cost from WSP USA, Inc.
3. Proposal and Cost from KPFF Consulting Engineers
4. Staff Presentation

Strategic Plan

Strategic Plan Goal 2: System and Water Supply Reliability (SR) – Achieve an uninterrupted, long-term water supply through investment, maintenance, innovation and developing local water resources.

- Objective SR5: Maintain Sweetwater Authority Dams in compliance with requirements of Division of Safety of Dams (DSOD) and other necessary improvements to ensure the maximum operational efficiency per regular dam surveillance inspections.

Task 4: Update Seismic Stability Analysis for Sweetwater Reservoir's Outlet Tower

Past Board Actions

June 12, 2024	The Board adopted Resolution 24-08, adopting the Fiscal year 2024-25 Budget
	The Board approved the FY 2024-25 Strategic Plan Detailed Work Plan