



Santa Clara Valley Water District

File No.: 18-1121

Agenda Date: 4/9/2019

Item No.: 5.1.

BOARD AGENDA MEMORANDUM

SUBJECT:

Agreement with GEI Consultants, Inc., for Engineering Services for the Lenihan and Stevens Creek Dams Safety Evaluations and Budget Adjustment for Supplemental Tasks for the Dam Seismic Stability Evaluations Project, Project No. 91084019 (Los Gatos, Cupertino) (District 7).

RECOMMENDATION:

- A. Approve a budget adjustment transferring an amount not-to-exceed \$1,700,000 from the Almaden Dam Improvements Project (Project No. 91854001) to the Dam Seismic Stability Evaluations Project (Project No. 91084019) to fund the Lenihan and Stevens Creek Dams Safety Evaluations; and
- B. Approve the Agreement with GEI Consultants, Inc., for engineering services for the Lenihan and Stevens Creek Dams Safety Evaluations for a not-to-exceed fee of \$2,453,283.

SUMMARY:

In April 2017, the Governor of California ordered detailed evaluations of large spillway structures at all high-hazard dams, including at Lenihan and Stevens Creek dams. The District's consultant will be performing comprehensive spillway and dam safety evaluations of these two dams to provide engineering studies that support District decisions to resolve potential spillway risks.

The Lenihan and Stevens Creek Dams Safety Evaluations (Project) will include preliminary data collection, comprehensive spillway condition assessments in accordance with Division of Safety of Dams (DSOD) requirements, updated Probable Maximum Flood studies to address adequacy of the spillway and freeboard capacity, spillway hydraulics computer fluid dynamics, Potential Failure Mode Analysis, dam outlet inspections, and Supporting Technical Information Document for the two dams included in this Project. An Independent Dam Safety Review (IDSR) will help identify other critical needs and deficiencies relevant to the two dams. Supplemental engineering services as a follow-up to the recommendations in the IDSR report may also be performed.

Comprehensive spillway condition assessments of four other District dams have been performed by consultants, and all four assessments concluded that those spillways need to be replaced. Based on lessons learned from previous spillway studies, the recommended Agreement for this Project includes scope described as supplemental engineering services for the Consultant to prepare a planning study and conceptual alternatives report in the event a comprehensive spillway evaluation and possibly a resulting capital project is required for each dam. The supplemental engineering

services, if required, include:

1. Geotechnical/geologic field investigation to develop feasible spillway improvement alternatives;
2. Spillway hydraulics computer fluid dynamics;
3. Phase 2 Spillway Assessment;
4. Phase 3 Spillway Assessment;
5. Dam outlet inspections; and
6. Permitting Coordination and Surveying.

Project Background

Lenihan Dam

Lenihan Dam (formerly called Lexington Dam) was constructed as a rolled earthfill structure in 1952. It is located on the east side of State Highway 17 in Santa Clara County, about 0.5 miles south of the Town of Los Gatos. Because of its proximity to highly developed areas, economic loss or loss of life could be excessive in the event of catastrophic failure. As a result, the dam is classified by the state of California as a “large” dam with a “high” hazard potential.

The 195-foot-tall dam, impounds water in Lexington Reservoir for the purpose of groundwater recharge. The dam has a maximum capacity of 19,044 acre-feet at the nominal spillway elevation of 653 feet. The water released from the dam is generally conveyed through the District’s Vasona Dam and Reservoir, located about 2 miles north of Los Gatos Creek, to recharge ponds located on the west side of the Santa Clara Valley.

In December 2012, the District’s consultant, Terra/GeoPentech, completed an updated seismic stability evaluation of Lenihan Dam. The engineering analyses indicated that Lenihan Dam would perform well when subjected to the evaluation ground motions that represent the Maximum Credible Earthquake (MCE).

The Lenihan Dam spillway consists of an ungated concrete ogee weir located in the left abutment. The spillway crest has a length of about 150 feet, and a spill length of about 925 feet. In 1996, the Lexington Dam Freeboard Restoration project was completed. This project raised the crest of the dam, raised spillway chute walls, and repaired damaged spillway panels.

Stevens Creek Dam

Stevens Creek Dam was constructed as a rolled earthfill structure in 1935 above the cities of

Mountain View, Sunnyvale, and Cupertino. Because of its proximity to highly developed areas, economic loss or loss of life could be excessive in the event of catastrophic failure. As a result, the dam is classified by the state of California as a “large” dam with a “high” hazard potential.

The 120-foot tall dam impounds Stevens Creek Reservoir and has a maximum capacity of 3,138 acre-feet at the nominal spillway elevation of 538 feet. In 1986, there were major modifications made to the dam to address seismic stability and spillway inadequacy issues.

In January 2013, the District’s consultant, Terra/GeoPentech, completed an updated seismic stability evaluation of Stevens Creek Dam. The engineering analyses indicated that Stevens Creek Dam would perform adequately when subjected to the evaluation ground motions that represent the MCE.

The Stevens Creek Dam spillway consists of a concrete side channel weir located in the right abutment. The spillway crest has a length of about 172 feet.

Consultant Selection Process

On April 19, 2018, staff published a Request for Proposals (RFP) for Lenihan and Stevens Creek Dams Safety Evaluations support services on the District’s Contract Administration System internet portal. The RFP was distributed to 122 firms on the District’s self-registered list for GE11 - Geotechnical Engineering.

During the five-week advertisement period, staff issued two addenda to clarify details in the RFP and to respond to questions received from interested consultants. Six proposals were received by the proposal submittal deadline of May 24, 2018.

A Consultant Review Board (CRB), consisting of three subject matter experts from the District and one external subject matter expert, evaluated the written proposals and conducted oral interviews on June 22, 2018. Based on the combined (written and oral) rating scores, the CRB recommended that staff undertake contract negotiations with GEI Consultants, Inc., the highest ranked firm.

On June 28, 2018, agreement negotiations were initiated with GEI Consultants, Inc.

Consultant Agreement and Scope of Services

The recommended Agreement with GEI Consultants, Inc. includes the required tasks and budget to perform Lenihan and Stevens Creek Dams Safety Evaluations. Table 1 provides a list of the tasks included in the scope of services and the associated not-to-exceed fees.

TABLE 1 - COST BREAKDOWN		
Task	Description	Not-to-Exceed Fees
1	Project Management	\$288,042

2	Planning Services	\$878,252
3	Supplemental Services	\$1,286,989
Total Not-to-Exceed Fees		\$2,453,283

If the conclusions reached by the Consultant, as documented in their deliverables, indicate the conditions at one or both of the dams will require a comprehensive spillway evaluation, a Planning Study and Feasible Alternatives report will be prepared to develop the Staff Recommended Alternative. Table 2 provides a list of the sub-tasks included in the supplemental services and the associated not-to-exceed fees.

TABLE 2 - SUPPLEMENTAL SERVICES BREAKDOWN

Subtask	Description	Not-to-Exceed Fees
1	Problem Definition & Project	\$105,436
2	Feasible Alternatives	\$256,297
3	Staff-Recommended Altern	\$181,757
4	Planning Study Report	\$ 87,280
5	Planning-to-Design Phase	\$ 40,616
6	Other TMs, Alternatives, and	\$ 600,549
7	Additional Services	\$ 15,054
Total Not-to-Exceed Fees		\$1,286,989

Based on the Planning Study Report Phase findings, some other services that are budgeted for in subtask 6 include, Additional Geotechnical Investigations, 2D Advanced Spillway Modeling, Phase 2 Spillway Assessment, Phase 3 Spillway Assessment, Additional Recommended Studies, UAV and Bathymetric Survey, Permitting Coordination, Other TMs, and Lenihan Outlet Analysis.

FINANCIAL IMPACT:

A budget adjustment is recommended in order to fund these and other supplemental services. The budget adjustment will increase the total cost of the Dam Seismic Stability Evaluations Project by \$1,700,000, and has been incorporated into the Draft Five-Year 2020-24 Capital Improvement Program. The budget adjustment is required to encumber this agreement in Fiscal Year 2019. The not-to-exceed fee for this agreement is \$2,453,283 for a term of three years.

Funds are being moved from the Almaden Dam Improvements Project (ADIP) reserves this fiscal year. There are adequate funds within the Board-approved FY2019 ADIP project reserves and there will be no impact to the FY2019 or FY2020 project funding. Construction for ADIP is currently scheduled to begin in FY2030. Funds will be budgeted as needed for ADIP in alignment with the

FY2020-24 CIP.

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: Agreement

UNCLASSIFIED MANAGER:

Christopher Hakes, 408-630-3796