Legislation Details (With Board Report)

File #:	WRAG 20-151	**Name:**	AECOM PSA
Type:	WR General Agenda	**Status:**	Agenda Ready
File created:	3/26/2020	**In control:**	Water Resources Agency Board of Directors
On agenda:	4/3/2020	**Final action:**	
Title:	Support approval of an Agreement for Professional Services with AECOM Technical Services, Inc. for engineering services for Nacimiento Dam and San Antonio Dam; and authorize the General Manager to execute the Agreement.		
Sponsors:			
Indexes:			
Code sections:			
Attachments:	1. Board Report, 2. Tables 1 and 2		

Date	Ver.	Action By	Action	Result
4/3/2020	1	Water Resources Agency Board of Directors		

Support approval of an Agreement for Professional Services with AECOM Technical Services, Inc. for engineering services for Nacimiento Dam and San Antonio Dam; and authorize the General Manager to execute the Agreement.

RECOMMENDATION:

It is recommended that the Monterey County Water Resources Agency Finance Committee:

Support approval of an Agreement for Professional Services with AECOM Technical Services, Inc. for engineering services for Nacimiento Dam and San Antonio Dam; and Authorize the General Manager to execute the Agreement.

SUMMARY/DISCUSSION:

The Federal Energy Regulatory Commission (FERC) and California Department of Water Resources, Division of Safety of Dams (DSOD) regulate matters regarding dam safety for Nacimiento Dam. Prudent practice and FERC and DSOD require seismic stability analysis of dams within their jurisdiction. The latest seismic stability analysis of Nacimiento Dam was performed in 2005. The best estimate of seismically induced vertical deformation is about 10 feet (GEI, 2005), considerably less than the 25 feet of normal operating freeboard at full reservoir elevation of 800 feet. The 2005 seismic stability analysis had to rely on certain assumed embankment and foundation soil properties and assumed water surface location within the dam embankment because complete information is not available from original construction records (from the mid-1950's), there are no means for determining the water surface location within the dam embankment, and no samples from the embankment or foundation have been collected since construction. Soil property assumptions made in the 2005 analysis are considered conservative, but the estimated performance of the dam embankment during a major earthquake is not fully known due to the assumptions described. Drilling into the embankment and into the streambed sands and gravels under the embankment and soil sample collection is needed to provide reliable soil property information and water surface location within the embankment for use in an updated seismic stability and deformation analysis of the dam embankment and underlying streambed sands and gravels. FERC first requested a plan from the Agency to address the

assumptions above in 2005, and repeatedly since then. DSOD was not in agreement with this need until 2017. In October 2018, the Board of Directors authorized the General Manager to amend up to two consultant contracts for dam safety requirements at Nacimiento and San Antonio Dams. Under that authorization, a contract with the engineering firm AECOM Technical Services, Inc. was amended to prepare a Geotechnical Drilling and Piezometer Installation Plan (Plan) for Nacimiento Dam to collect the needed soils information and for installation of piezometers (monitoring wells) in the dam to collect water surface location within the embankment for use in an updated seismic stability analysis. The Plan has been submitted to the FERC and DSOD for their approval. Data collected from the piezometers will be used in the updated seismic analysis, and will also be monitored long term, providing previously unavailable information regarding dam behavior and general health.

Drilling, sample collection, piezometer installation, soil sample laboratory testing, and updated seismic stability analysis and reporting is estimated to cost approximately $883,000. An additional amount of $100,000 is recommended to be available for the contingency of encountering unknown subsurface conditions during drilling and sampling that may cause the need for additional equipment mobilization and use. Final costs are not available as of Finance Committee meeting mailout deadline but will be presented verbally at the April 3, 2020 Finance Committee meeting. An estimate of costs and desired project schedule are shown in Table 1. The Draft budget for FY 2020-21 includes $360,000 for this work. The estimated cost received requires approximately $844,690 budgeted from FY 2020-21. Staff will examine and verbally present budget options for this work at the April 3, 2020 Finance Committee meeting.

AECOM Technical Services, Inc. staff are well qualified to perform this work, having performed similar work at other dams under FERC and DSOD jurisdictions. AECOM technical staff and the drilling contractor must be approved by FERC and DSOD before field work may proceed. The drilling contractor will work as a subcontractor to AECOM.

The San Antonio Dam low level outlet intake structure trash racks were originally constructed in the 1960's of coated mild steel. The trash racks, and particularly their steel anchors, are severely corroded and need replacement to maintain strength and function. The proposed Agreement for Professional Services with AECOM Technical Services, Inc. includes design of new San Antonio Dam trash racks. The trash rack design must be approved by DSOD before beginning construction. A summary of design services, cost and schedule are shown in Table 2. The schedule includes an estimated time allowance for DSOD review. The cost below is for design services and engineering services during construction only, and do not include construction costs.

OTHER AGENCY INVOLVEMENT:
FERC and DSOD must approve the Nacimiento Dam Geotechnical Drilling and Piezometer Installation Plan before beginning field work. DSOD must approve the new trash rack design for the San Antonio Dam low level conduit intake structure before beginning construction.

Prepared by: Chris Moss, Senior Water Resources Engineer (831) 755-4860

Attachments:
1. Tables 1 and 2