County of Monterey

Board of Supervisors
Chambers
168 W. Alisal St., 1st Floor
Salinas, CA 93901

Legislation Details (With Board Report)

File #:	WRAG 19-076	**Name:**	AECOM Amendment No. 7
Type:	WR General Agenda	**Status:**	Agenda Ready
File created:	6/10/2019	**In control:**	Water Resources Agency
On agenda:	6/17/2019	**Final action:**	

Title: a. Consider approving Amendment No. 7 to the Professional Services Agreement with AECOM Technical Services, Inc., in the amount of $381,990 for services as follows:
1. $53,310 to provide annual safety surveillance and performance evaluation of San Antonio Dam for FY 2019-20;
2. $66,100 to provide San Antonio Dam low-level conduit access hatch design services;
3. $143,280 to provide Nacimiento Dam spillway plunge pool erosion evaluation and recommend improvements;
4. $119,300 to provide Nacimiento Dam flow control energy dissipating low-level outlet design services; and
b. Authorize the Interim General manager to Execute the Amendment.

Sponsors:

Indexes:

Code sections:

Attachments: 1. Board Report, 2. Amendment No. 7 with Exhibits, 3. Amendment No. 6, 4. Amendment No. 5, 5. Amendment No. 4, 6. Amendment No. 3, 7. Amendment No. 2, 8. Amendment No. 1, 9. Professional Services Agreement, 10. Board Order

Date	Ver.	Action By	Action	Result
6/17/2019	1	Water Resources Agency Board of Directors		

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b. Authorize the Interim General manager to Execute the Amendment.

RECOMMENDATION:
It is recommended that the Monterey County Water Resources Agency Board of Directors:

a. Approve Amendment No. 7 to the Professional Services Agreement with AECOM Technical Services, Inc., in the amount of $381,990 for services as follows:

1. $53,310 to provide annual safety surveillance and performance evaluation of San Antonio Dam for FY 2019-20;
2. $66,100 to provide San Antonio Dam low-level conduit access hatch design services;
3. $143,280 to provide Nacimiento Dam spillway plunge pool erosion evaluation and recommend

improvements;

4. $119,300 to provide Nacimiento Dam flow control energy dissipating low-level outlet design services; and

b. Authorize the Interim General Manager to Execute the Amendment.

SUMMARY/DISCUSSION:

San Antonio Dam Surveillance and Performance Evaluation

California Water Code Regulations require dam owners that are under the jurisdiction of the California Department of Water Resources Division of Safety of Dams (DSOD), to collect and evaluate dam instrumentation data, and to perform periodic dam inspections to ensure public safety.

Instrumentation data collected from 85 piezometers, 10 observation wells, 34 drains and 21 survey monuments allow the monitoring of seepage flows, embankment movement, and the dam stability of San Antonio Dam. Consulting engineers with expertise in dams provide critical knowledge in the evaluation of instrumentation monitoring data, in conducting dam safety inspections, and evaluation of dam stability.

In 2015, the Agency sent out a Request for Proposals (RFP) to qualified engineering firms for dam safety surveillance and performance evaluation services. AECOM Technical Services, Inc., (AECOM) was selected to perform the work. The Professional Services Agreement with AECOM is renewable on an annual basis for a contract term of five-years. Amendment No. 7 will cover year 5 of 5 and provide continued review of dam safety surveillance and performance evaluation of San Antonio Dam for the period of July 1, 2019 to June 30, 2020. The resulting annual report will be submitted to DSOD for review. The cost of this work is for a not to exceed amount of $53,310 as described in Exhibit N.

San Antonio Dam Low-Level Conduit Access Hatch Design

Improved access into the San Antonio Dam 84-inch low level conduit is needed to more safely perform maintenance work inside the pipe. Existing access to the center portion of the 1,100-foot-long steel conduit consists of two 24-inch diameter manways. One manway is located on top of the conduit, approximately 12 feet above the floor; the second manway is located approximately 8 feet above the floor. Both manways are very difficult for personnel ingress/egress and any rescue operations. Another path for conduit entry exists through the valve at the downstream end of the pipe, but this also has restrictions. A larger, more accessible hatch is needed to improve worker access and facilitate rescue operations, if needed, during protective coating maintenance work inside the conduit. DSOD review and approval will be required for the new hatch design. AECOM will provide design drawings and specifications suitable for construction, and engineering services during construction. The cost of this work is for a not to exceed amount of $66,100 as described in Exhibit P.

Nacimiento Dam Spillway Plunge Pool Erosion Evaluation

The Nacimiento Dam spillway plunge pool has experienced substantial erosion from spillway releases over time, most recently in 2011 and 2017. Left plunge pool bank erosion is considered severe and is exposed to additional erosion at flows above approximately 3,000 cfs (as estimated by MCWRA staff). Continued left bank erosion will encroach upon the left spillway toe. Right bank plunge pool erosion is also considered severe, although riprap protection installed in 2017 is estimated (by MCWRA staff) to provide erosion protection up to approximately 6,000 cfs. Spillway release above that value are estimated to cause additional right bank erosion in the general direction of the dam embankment, presently located approximately 300 feet from the eroded right plunge pool bank. Flows referenced above are a small fraction of the 101,000 cfs spillway flow capacity.

The Scope of Work for Task 5 in Exhibit Q Amendment No. 7 replaces Task 5 in Exhibit K Amendment No. 6. Exhibit Q of this Amendment No. 7 modifies the work to adequately identify a preferred spillway plunge pool

erosion control alternative, for subsequent MCWRA pursuit of engineering design and permitting, with a level of detail acceptable for Federal Energy regulatory Commission (FERC) and California Department of Water Resources, Division of Safety of Dams (DSOD) acceptance, and addresses recommendation R-1 from the Nacimiento Dam 2019 7th FERC Part 12D report regarding the suitability of the dam for continued safe and reliable operation which states "…Advanced hydraulic modeling is recommended to develop alternatives to stabilize the spillway plunge pool area and contain releases in a non-erosive manner."

AECOM will perform plunge pool area topographic and bathymetric mapping, hydraulic modeling, analysis of alternative erosion control measures and recommend a preferred alternative. The resulting report will serve as the basis for further design and permitting of a selected erosion control alternative. DSOD and FERC will be kept informed regarding this evaluation; formal DSOD and FERC approvals will be required at subsequent project stages. The cost of this work is for a not to exceed amount of $177,400 (consisting of $34,120 carried over from Exhibit L Amendment No. 6 plus $143,280) as described in Exhibit R.

Nacimiento Dam Flow Control Energy Dissipating Low-Level Outlet Design
The Nacimiento Dam low-level outlet works consists of a reservoir intake structure, with three valves, converging into a 53-inch diameter conduit approximately 1,160 feet long. The conduit has six 24-inch outlets discharging into a concrete outlet basin structure. Each outlet is equipped with a 24-inch valve and 90º discharge elbow.

Regulatory minimum reservoir release requirements increased in 2010 from 25 cfs to 60 cfs. However, the existing valves were not designed for regulating flows in this range and have experienced vibration and cavitation damage at these low flows. The hydroelectric plant, located at the end of the low-level outlet conduit, is sized to handle minimum flows of approximately 25 cfs, so meeting the current 60 cfs minimum flow requires use of the 24-inch outlets to discharge the additional 35 cfs, causing further cavitation damage to the outlet valves and elbows. For these reasons, a new low flow control energy dissipating outlet is needed to release low flows meeting regulatory minimum flow requirements without consequent damage. In addition, relocation of the point of discharge to downstream of the outlet basin structure and hydroelectric plant is needed to allow dewatering of the outlet basin and powerplant tailrace for maintenance purposes while still meeting minimum flow release requirements. The scope of work includes assessing alternative solutions and developing a design to address these needs. AECOM will provide design drawings and specifications suitable for construction, and engineering services during construction. FERC and DSOD review and approval of the final design will be required. The cost of this work is for a not to exceed amount of $119,300, as described in Exhibit T.

FINANCING:
$160,000 payable from FY 2018-19 MCWRA Fund 116 - Dam Operations and Maintenance
$221,990 payable from FY 2019-20 MCWRA Fund 116 - Dam Operations and Maintenance

OTHER AGENCY INVOLVEMENT:
The San Antonio Dam Annual Performance Evaluation Report will be submitted to DSOD for review and acceptance. DSOD review and approval of the San Antonio Dam low-level conduit hatch design is required. DSOD and FERC approval of the Nacimiento Dam flow control energy dissipating low-level outlet design is required. DSOD and FERC will be kept informed of the Nacimiento Dam spillway plunge pool erosion evaluation; formal DSOD and FERC approvals will be required at subsequent project stages.

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

Approved by: Shauna Lorance, Interim General Manager, (831) 755-4860

Attachments:
1. Amendment No. 7 to the Professional Services Agreement
2. Amendment No. 6 to the Professional Services Agreement
3. Professional Services Agreement
4. Board Order