



Agenda Item No. (3)

To: Building and Operating Committee/Committee of the Whole
Meeting of February 27, 2020

From: John R. Eberle, Deputy District Engineer
Ewa Z. Bauer-Furbush, District Engineer
Steven W. Miller, Deputy General Manager, Bridge Division
Denis J. Mulligan, General Manager

Subject: **AUTHORIZE EXECUTION OF PROFESSIONAL SERVICES
AGREEMENT NO. 2019-B-056, GOLDEN GATE BRIDGE STRONG
MOTION INSTRUMENTATION PROGRAM, WITH THE STATE OF
CALIFORNIA, DIVISION OF MINES AND GEOLOGY, WITH A
REVISED AMOUNT**

Recommendation

The Building and Operating Committee recommends that the Board of Directors authorize execution of Professional Services Agreement (PSA) No. 2019-B-056, *Golden Gate Bridge Strong Motion Instrumentation Program*, with the State of California, Division of Mines and Geology, with a revised not to exceed total amount of \$391,872 as presented in the staff report, with the understanding that sufficient funds are budgeted in the FY 19/20 Bridge Division Operating Budget to finance this PSA cost.

This matter will be presented to the Board of Directors at its February 28, 2020, meeting for appropriate action.

Summary

On October 25, 2019, by Resolution No. 2019-074, the Board of Directors, (Board) authorized execution of Professional Services Agreement (PSA) No. 2019-B-056, *Golden Gate Bridge Strong Motion Instrumentation Program*, with the State of California, Division of Mines and Geology (SMIP), in an amount not to exceed \$357,421, and authorized a contingency in the amount of \$35,742, 10% of the Agreement amount.

The scope of work under PSA No. 2019-B-056 includes a replacement of the existing outdated bridge seismic instrumentation equipment with new instrumentation equipment and maintenance and servicing of the instrumentation equipment by SMIP for the next three years.

The previously authorized PSA No. 2019-B-056 was based on SMIP's cost proposal of \$282,278 for the replacement of the seismic instrumentation equipment and \$75,143 for three years of

maintenance services consisting of monitoring, testing and minor repairs of the instrumentation system.

Subsequent to the October 2019 Board authorization, SMIP informed staff about an error in their cost proposal. The cost proposal did not include the State of California Department of Conservation overhead and administrative costs associated with the specified services. Staff discussed the issue with the SMIP Project Manager and his supervisor. The SMIP representatives explained reasons for the overhead and administrative charges and their corresponding rates that were established under the State of California accounting rules, and the allocation of these rates to the cost of the services under PSA No. 2019-B-056. The inclusion of the SMIP overhead and administrative costs results in a \$34,451 increase to the cost of replacement of the instrumentation system resulting in the total cost of the replacement of \$316,729. SMIP agreed that the cost of the instrumentation system maintenance would remain unchanged.

Staff recommends that the Building and Operating Committee and Board authorize the execution of PSA No. 2019-B-056 with SMIP with the revised \$316,729 cost of the replacement of the seismic instrumentation system and the unchanged \$75,143 cost of the instrumentation system maintenance for three years, for the revised total not-to-exceed cost of SMIP services under the PSA of \$391,872, and with the unchanged PSA contingency of \$35,742.

Fiscal Impact

Sufficient funds are available in the FY 19/20 Bridge Division Operating Budget to finance the \$316,729 cost associated with the replacement of the bridge seismic instrumentation equipment, the \$12,523 six month cost of 2020 annual instrumentation system maintenance by SMIP, and the PSA contingency of \$35,742. The maintenance cost for the remaining two and a half years will be budgeted in the future FY Bridge Division Operating Budgets.

Background

The State of California, Division of Mines and Geology, Strong Motion Instrumentation Program (SMIP), manages a network of seismic instrumentation systems on all toll bridges in the Bay Area and throughout the State. SMIP personnel have specialized training and equipment to operate and maintain this network and to interpret earthquake data. SMIP is the only entity in the State that can provide these services.

As previously authorized by the Board of Directors (Board), with SMIP assistance, the Golden Gate Bridge, Highway and Transportation District (District) procured and installed a seismic instrumentation system on the Golden Gate Bridge. The system consists of 125 sensors and 4 recording stations, and is connected to the Sacramento office of SMIP by a telephone line for data transmittal and monitoring purposes. The purpose of the system is to record and transmit information regarding the intensity of motions imposed on the Bridge structures by earthquakes. The information provided by the instrumentation system is used to determine the required level of post-earthquake inspections and to perform structural analysis to determine required repair measures.

The instrumentation is nearly 25 years old and is in need of updating. Currently, data from the system travels over telephone lines to Sacramento where it is processed by SMIP personnel and is then sent back to the District. This process can take between several hours to several days to complete. SMIP has developed new equipment that can transmit information almost real-time and has been installing it on other bridges throughout the State. The new equipment includes new multiple channel recorders, internal high-speed modem, and Global Positioning System timing and equipment with larger memory cards. The new system will be connected to Sacramento by Ethernet instead of a telephone line for faster transmission of data. Staff recommends replacing the District's outdated seismic instrumentation with the new instrumentation equipment to enable faster transmission of seismic motion information for quicker determination of where to focus structural inspections after a seismic event. In addition to providing updated seismic instrumentation equipment, SMIP would provide maintenance and servicing of the system for the next three years.

The scope of services to be provided by SMIP under PSA No. 2019-B-056 includes the following:

1. Purchase of new equipment and supplies.
2. Installation of the new equipment.
3. Testing of the new equipment to ensure it is functioning properly.
4. Monthly electronic monitoring of the system to ensure that all components are operational.
5. Semi-annual testing of the system to ensure that the instrumentation components are operational and functioning accurately.
6. Annual physical inspection of the recording system to ensure its reliability.
7. Troubleshooting and repair of the system as necessary to ensure reliability, including replacement of minor electronic parts.

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