



Agenda Item No. (3)

To: Building and Operating Committee/Committee of the Whole  
Meeting of August 25, 2022

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

Subject: **APPROVE ACTIONS RELATIVE TO EXECUTION OF PROFESSIONAL SERVICES AGREEMENT NO. 2022-B-061, GOLDEN GATE BRIDGE STRONG MOTION INSTRUMENTATION PROGRAM, WITH THE STATE OF CALIFORNIA, DIVISION OF MINES AND GEOLOGY**

### **Recommendation**

The Building and Operating Committee recommends that the Board of Directors approve the following actions relative to Professional Services Agreement (PSA) No. 2022-B-061, *Golden Gate Bridge Strong Motion Instrumentation Program*:

1. Authorize execution of PSA No. 2022-B-061, *Golden Gate Bridge Strong Motion Instrumentation Program*, with the State of California, Division of Mines and Geology, in an amount not to exceed \$125,248.00 to perform for three years monitoring, testing, inspections and repairs of the Golden Gate Bridge seismic instrumentation system; and,
2. Establish a 10% contingency for PSA No. 2022-B-061, in the amount of \$12,525;

with the understanding that sufficient funds are available in FY 22/23 Bridge Division Operating Budget and that sufficient funds will be budgeted in the FY 23/24 and FY 24/25 Bridge Division Operating Budget for these services.

This matter will be presented to the Board of Directors at the August 26, 2022, meeting for appropriate actions.

### **Summary**

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, including the system on the Golden Gate Bridge. SMIP personnel have specialized training and equipment to install, operate and maintain these instrumentation systems.

The purpose of the instrumentation system is to record information regarding the intensity of motions imposed on the Bridge structures by earthquakes. SMIP gathers this information to analyze the effects of earthquakes on bridge structures. As a part of installing the monitoring systems on bridges, SMIP performs monthly electronic monitoring of the systems to ensure that all components are operational, and transmits any readings the sensors may detect after an earthquake. The Golden Gate Bridge, Highway and Transportation District (District) uses the information provided by the instrumentation system to assist with determining the required level of post-earthquake inspections and to perform structural analysis to determine required repair measures.

The Golden Gate Bridge seismic instrumentation system consists of 125 sensors located on the different structures of the Bridge and four recording stations located on the North Anchorage Housing, the North Tower, the South Tower and Pylon S1. The system is connected to the Sacramento office of SMIP for data transmittal and monitoring purposes.

In February 2020, the Board, by Resolution No. 2019-074, authorized 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 to update the Golden Gate Bridge recording station instrumentation system. In addition to purchasing, installing and testing the new equipment, the Agreement included performing field inspections of the system and troubleshooting and repairing it as necessary. The new equipment includes new multiple channel recorders, internal high-speed modem, GPS timing and recording equipment with larger memory cards. The new system is connected to Sacramento by Ethernet for faster, near-real-time transmission of data.

The field maintenance and service agreement for the system expired on June 30, 2022. Staff recommends that the District enter into a new three-year agreement with SMIP to continue performing field maintenance and service of the instrumentation system. The scope of services to be provided by SMIP will include the following:

1. Semi-annual testing of the system to ensure that the instrumentation components are operational and functioning accurately.
2. Annual physical inspection of the recording system to ensure the reliability of the system.
3. Troubleshooting and repair of the system as necessary to ensure reliability, including replacement of minor electronic parts.
4. Quarterly reports of seismic events and maintenance, including presentation of all earthquake records over 2%g in amplitude, and a summary of the results of the above maintenance activities.
5. Periodic testing performed offsite by remote electronic control using SMIP-provided communication units.

SMIP provided a cost estimate in the not-to-exceed amount of \$125,248 for three years of

performing such services. The District reviewed and discussed the cost estimate with SMIP and determined that the costs are fair and reasonable for the work being performed.

Staff recommends that the Building and Operating Committee recommend that the Board authorize execution of PSA No. 2022-B-061, *Golden Gate Bridge Strong Motion Instrumentation Program*, with SMIP in the not-to-exceed amount of \$125,248 for the work scope and duration presented in this staff report. Staff also recommends that a contract contingency in the amount of \$12,525 be established for any additional or changed scope of services that may develop while work progresses.

**Fiscal Impact**

The FY 22/23 Bridge Division Operating Budget includes sufficient funds to pay for the first year of SMIP services, in the amount of \$44,566. The subsequent two years' maintenance costs will be budgeted accordingly in the future year's Bridge Division Operating Budgets.

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