

STAFF SUMMARY

VII A.1
12/14/22

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: December 14, 2022
SUBJECT: Metropolitan Water Tunnel Program
Geotechnical Support Services
GEI-McMillen Jacobs JV
Contract 7557



COMMITTEE: Water Policy and Oversight

 INFORMATION

 X VOTE



Michele S. Gillen

Director of Administration



Kathleen M. Murtagh, P.E.

Director, Tunnel Redundancy

Vivian Chan, Manager, Geotechnical and Tunneling
Preparer/Title

RECOMMENDATION:

To approve the recommendation of the Consultant Selection Committee to award Contract 7557, Metropolitan Water Tunnel Program Geotechnical Support Services to GEI-McMillen Jacobs JV and to authorize the Executive Director, on behalf of the Authority, to execute said Contract in an amount not to exceed \$12,789,889.49 for a contract term of 36 months from the Notice to Proceed.

DISCUSSION:

In February 2017, the Board approved the preferred alternative of construction of northern and southern deep rock tunnels from the Hultman Aqueduct and MetroWest Water Supply Tunnel to the Weston Aqueduct Supply Main No. 3 (WASM 3) and to the Southern Spine water mains. These two tunnels and the related work of the Metropolitan Water Tunnel Program (the Program) will provide the needed redundancy for the Metropolitan Tunnel System (which consists of the City Tunnel, the City Tunnel Extension, and the Dorchester Tunnel). The Board also directed staff to proceed with preliminary design, geotechnical investigations, and Massachusetts Environmental Policy Act (MEPA) review of the project.

On May 27, 2020, the Board approved the award of Contract 7159, Metropolitan Tunnel Redundancy Program Preliminary Design, Geotechnical Investigation and Environmental Impact Report (the Preliminary Design Contract). The Preliminary Design Contract includes sufficient deep rock borings to support the Environmental Impact Report process and preliminary design, but is not sufficient for final design of the Program. In October 2022, the Draft Environmental Impact Report for the Program was submitted to MEPA and included a preferred tunnel alternative.

The Program consists of about 14.5 miles of tunnels that will be constructed in bedrock about 250 to 500 feet below ground. Subsurface investigation on ground conditions is crucial for the design and construction of the Program. The geology in the Program area is also very complex with many

fault zones and a large variety of different rock types and geologic formation. Obtaining sufficient geotechnical and geologic data along the proposed tunnel alignments to properly characterize the ground conditions and select an efficient tunnel alignment is essential for managing Program cost and schedule.

Given the depth of the proposed tunnels, deep rock test borings along the tunnel alignments and at shaft sites take substantial effort and time to complete. The densely developed urban and residential areas along the tunnel routes also pose restrictions for field investigation and constraints on schedule. As part of the Program planning, geotechnical investigation has been identified as being on the critical path for the overall Program schedule. To avoid potential Program delay, this Geotechnical Support Services contract was developed to assist in collecting the necessary geotechnical and geological data concurrent with the preliminary design and early final design to expedite the data collection process.

The Geotechnical Support Services contract includes a multi-phase geotechnical subsurface investigation program with test borings, geophysical testing, in-situ testing, and laboratory testing and associated reporting. The data collected will be provided to and incorporated by the final design engineer to prepare construction contract documents, including geotechnical data reports and geotechnical baseline reports.

Procurement Process

On August 24, 2022, MWRA issued a one-step Request for Qualifications Statements/Proposals (RFQ/P) that was publicly advertised in the Central Register, the Boston Herald, Banner Publications, El Mundo and on the MWRA Supplier Portal. In addition, notice of the RFQ/P was sent to 64 engineering firms, many of which had expressed interest in the Metropolitan Water Tunnel Program. A total of 31 firms requested copies of the RFQ/P.

A pre-proposal meeting was held on August 30, 2022 with 28 non-MWRA attendees from 13 different companies.

On October 14, 2022, MWRA received four proposals. The following is a summary of the costs and level of effort for each proposer, as well as the staff estimate:

Proposer	Proposed Cost	Proposed Level of Effort (total hours)
AECOM	\$12,550,817	36,023
Langan	\$12,757,839	31,034
GEI-McMillen Jacobs JV	\$12,789,889	32,050
Mott MacDonald	\$15,780,414	41,181
<i>Staff Estimate</i>	<i>\$13,400,360</i>	<i>37,759</i>

The Selection Committee met to review the proposals and to determine which proposers would be selected for an interview. The Selection Committee evaluated and scored the proposals based on the following evaluation criteria included in the RFQ/P: Cost (20 points), Qualifications and Key Personnel (20 points), Capacity/Organization and Management Approach (20 points), Technical Approach (20 points), Experience/Past Performance on similar Projects (17 points) and MBE/WBE Participation (3 points) for a total maximum score of 100 points. The pre-interview rank and points were as follows:

Proposer	Total Preliminary Score
AECOM	431
GEI-McMillen Jacobs JV	415
Mott MacDonald	351
Langan	273

Based on preliminary scoring and discussion, and upon receipt of further clarifications from all proposers, the top two teams, AECOM and GEI-McMillen Jacobs JV (GEI-McMillen), were selected for interviews.

Interviews were held on November 18, 2022 and November 28, 2022. The Selection Committee sent interview presentation topics and questions seeking additional information to each of the two team to focus the discussion. After completion of the interviews, the Selection Committee reconvened to discuss and rank the proposals based on the interviews and additional information received. All of the scores from the Selection Committee members were totaled to determine the first-ranked team. The following is a summary of scores and rankings for each team:

Proposer	Total Final Score	Order of Preference Points	Ranking
GEI-McMillen Jacobs JV	440	5	1
AECOM	423	10	2
Mott MacDonald	336	15	3
Langan	272	20	4

The Selection Committee unanimously voted to recommend award of the contract to the first ranked firm, GEI-McMillen.

The GEI-McMillen team includes GEI, McMillen Jacobs, Tetra Tech, Hager-Richter, New England Boring Contractors and 7NT (drilling contractor) with experienced and well qualified personnel. The Selection Committee members agreed that the inclusion of two well-qualified drilling companies with multiple drilling crews provides the capacity that will be critical to execute the project expeditiously in order to meet the overall Program needs. With GEI being a geotechnical specialty consultant headquartered in Metro Boston and McMillen Jacobs' local presence, the GEI-McMillen team provides large bench and resources locally on geotechnical engineering and tunneling to support the Program.

AECOM's team provides well-qualified personnel, extensive relevant experience in conducting large geotechnical subsurface investigation programs for rock tunnels, and very competitive costs that are below staff estimates. However, GEI-McMillen has a stronger technical approach that is well thought out and aligns with the Project goals. GEI-McMillen proposed an early hands-on workshop with field personnel to review description and actual rock core samples from the Program to improve quality, consistency and efficiency in logging. Although AECOM provided qualified staff to conduct the subsurface investigations, its approach differed from GEI-McMillen, which also leveraged its field staff to provide more value by conducting a larger part of the logging in the field, thereby expediting the logging process and reducing a potential choke point and potential schedule delay common in the data collection process. The GEI-McMillen team also showed flexibility in its approach and ability to adopt and accommodate inevitable changes that are the nature of field work and the current environment.

Mott MacDonald proposed a significantly higher cost (18 percent higher than the staff estimate and 23 to 26 percent higher than other three proposals). The technical approach does not align well with the project goals and the overall Program schedule. The key personnel proposed, while qualified and experienced, is less local, which is a disadvantage particularly for a contract focused on field investigation programs. The Selection Committee was also concerned about the team's capacity with only one drilling contractor identified, who will continue to be under the Preliminary Design Contract until January 2024.

Langan proposed key personnel that are less qualified and do not have as much relevant experience on executing deep rock exploration and tunnel projects as compared to the other proposals. The technical approach demonstrated misunderstanding on the uniqueness of subsurface investigation for rock tunnel programs. The level of capacity for local staff resources was also a concern.

BUDGET/FISCAL IMPACT:

The FY23 CIP includes a budget of \$13,500,000 for Contract 7557. The recommended contract award amount is \$12,789,889.49.

MBE/WBE PARTICIPATION:

The MBE and WBE participation requirements for this contract were established at 0%. GEI-McMillen Jacobs JV has committed to 14% MBE and 0% WBE participation.