

ALAMEDA-CONTRA COSTA TRANSIT DISTRICT



STAFF REPORT

MEETING DATE: 11/9/2022

Staff Report No. 22-461a

TO: AC Transit Board of Directors
FROM: Michael A. Hursh, General Manager/Chief Executive Officer
SUBJECT: Contract Award for Hydrogen Fueling Equipment (D4)

ACTION ITEM

AGENDA PLANNING REQUEST: ☐

RECOMMENDED ACTION(S):

Consider approving the award of a contract to Messer North America, Inc. to engineer, provide, and install hydrogen fueling equipment for the Oakland Division 4 Hydrogen Upgrade Project.

Staff Contact:
Ramakrishna Pochiraju, Executive Director of Planning & Engineering

STRATEGIC IMPORTANCE:

Goal - Environmental Improvement
Initiative - Infrastructure Modernization

Authorizing this contract will support the continued implementation of AC Transit's Board approved Zero Emission Bus (ZEB) Transition Plan by increasing the capacities and throughputs of the hydrogen fueling infrastructure at the Oakland (D4) Division while utilizing currently available grant funds.

BUDGETARY/FISCAL IMPACT:

The hydrogen system equipment upgrade contract cost is \$7,678,570.00 which will be entirely funded by the California Energy Commission (CEC) Zero Emission Transit Fleet Infrastructure Deployment Grant and a Bay Area Air Quality Management District (BAAQMD) Carl Moyer Program grant.

BACKGROUND/RATIONALE:

On November 12, 2020, the Board authorized the application and funding agreement with the California Energy Commission (CEC) for the very competitive Zero Emission Transit Fleet Infrastructure Deployment grant. In order to make AC Transit's application as robust as possible, the District included Messer North America, Inc. as a technology partner to both maximize our technical/experience scoring and to provide firm cost values for the portion of the project that is most price volatile. As a result, the District received a competitive grant award based on the strength of that presentation.

After the grant award, but before the grant contract execution, CEC and AC Transit conducted a fair and

reasonable analysis of the Messer costs to ensure the proposed pricing was fair to all parties. This fair and reasonable determination was accomplished through a “price analysis” process comparing the Messer proposal to the costs in the grant proposals from two other very similar hydrogen infrastructure projects. The Messer cost was determined to be fair and reasonable by both the CEC and AC Transit.

On June 22, 2022, the Board approved the current version of the AC Transit Zero-Emission Bus Transition Plan. The Transition Plan provided for a near term increase in Fuel Cell Electric Bus (FCEB) capacity at the Oakland (D4) Division to a minimum of 75 buses, but ultimately up to 150 buses per daily fueling window. To achieve that level of capacity, upgrades to the existing hydrogen station infrastructure must be made and capacities expanded with the following upgrades:

1. The quantity of liquid hydrogen (LH2) storage needs to be increased to 25,000 gallons with a larger LH2 storage tank. This will provide for the increased throughput and minimize the number of hydrogen deliveries AC Transit needs to take in normal operation. Our current liquid hydrogen tank is leased monthly from the fuel supplier. This project will capitalize the purchase of a 25,000 gallon liquid hydrogen storage tank to be AC Transit owned. This will provide the District with improved flexibility when sourcing our hydrogen fuel supply;
2. The current vaporize-compress-store process needs to be upgraded to a liquid cryogenic pumping model utilizing pressure build vaporizers and two (2) dual cylinder cryogenic liquid pumps. The current IC-50 compressor will be decommissioned and removed;
3. The fuel island needs to be expanded in size to accommodate two (2) additional dispensers (a total of four (4) fueling positions) and;
4. The programable logic controller (PLC) needs to be modernized to better interface with the AC Transit IT infrastructure and to provide capabilities for simultaneous fueling at all four (4) dispensers.

This project will accomplish these goals by upgrading the existing gaseous compression system with dual two-cylinder high-capacity liquid hydrogen pumps, high pressure vaporizers, and two additional dispensers in the fueling island. These upgrades along with the expansion of the onsite liquid storage will result in enhanced supply reliability and pump operation optimization allowing continuous back to back bus fueling.

Messer’s scope of work will include the design and engineering for the hydrogen portion of the project, preparation and approval of the Hydrogen Safety Plan and HazOps Analysis, as well as the provision - installation - commissioning of the hydrogen equipment.

Messer Cost Summary

Hydrogen System Design / Engineering / HazOps Analysis Costs	\$ 649,557
Hydrogen Equipment Costs	\$ 5,072,024
Hydrogen Equipment Installation	\$ 1,069,001
Miscellaneous Costs and ODCs	\$ 106,146

Messer Base Contract	<u>\$ 6,896,728</u>
Allowance for Hydrogen Safety Plan / H2 Safety Panel	\$ 25,000
Allowance for CA Sales Tax	\$ 481,842
Allowance for Freight and Shipping	\$ 275,000

Total Contract Value

\$ 7,678,570

To implement this upgrade, the District will also need to construct some additional infrastructure to support the fuel island expansion for the additional hydrogen dispensers and the upgraded station equipment. Design and engineering for this construction portion of the project will be completed by one of the District's on-call A&E consultants.

This construction work is separate from the Messer's scope of work and will be the subject a separate Invitation for Bid (IFB) open to all bidders and the award recommendation will be to the lowest responsive and responsible bidder.

Staff highly recommends expediting capital projects while state and local funding programs are available for ZEB infrastructure. This will help reduce the overall cost of the ZEB Transition Plan.

ADVANTAGES/DISADVANTAGES:

There are several advantages to upgrading the hydrogen facilities at the Oakland (D4) facility:

1. District will be enhancing the hydrogen fueling operation by upgrading the two (2) existing dispensers and installing two (2) additional dispensers in the fuel island so that all Fuel Cell Electric Buses will have the same service routine as the existing diesel buses.
2. Installation of dual two-cylinder high pressure hydrogen pumps provides the throughput for continuous fueling and will provide back-up and redundancy during periods of scheduled maintenance or other equipment down time.
3. Districts refueling capacity for hydrogen buses at Oakland will increase from 12 to 75-150 buses within the current 10-hour fueling window.

Staff has not identified any disadvantages to this contract to upgrade the Oakland D4 division infrastructure to support the ZEB Transition Plan.

ALTERNATIVES ANALYSIS:

The only alternative to approving this contract would be to delay this hydrogen infrastructure project until a later date when other funding could be engaged. Staff does not recommend a delay the project as it will result in a significant cost increase and would delay the operational impact of these improvements.

Staff could consider not utilizing these currently available grant funds and cancel this project. This is not recommended because the existing hydrogen fueling capacity is insufficient to support the larger fuel cell bus fleet planned for the future. This would prevent the District from attaining the milestones in the ZEB Transition Plan.

PRIOR RELEVANT BOARD ACTION/POLICIES:

SR 20-437 Application for CEC Zero-Emission Transit Fleet Infrastructure Grant

SR 21-215 Application for funding agreements with the Bay Area Air Quality Management District

SR 22-319 AC Transit ZEB Transition Plan

SR 22-461 - The release of Invitations to Bid and/or Request for Proposal to upgrade the hydrogen fueling infrastructure at the Oakland (D4) Division.

BP 465 - Procurement Policy

ATTACHMENTS:

None

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