

**VICTOR VALLEY TRANSIT AUTHORITY
REGULAR MEETING OF
THE BOARD OF DIRECTORS**

TUESDAY, FEBRUARY 18, 9:30 A.M.



Barstow City Council Chambers
220 East Mountain View Street
Barstow, CA 92311

SUPPLEMENTAL AGENDA

ACTION ITEMS

- Item #6:*** **Release of RFP 2020-10 Design Build Hydrogen Fueling Stations.**
Recommendation: Approve Release of RFP 2020-10 Design Build Hydrogen Fuel Stations.
Presented by: Dustin Strandberg, Senior Fleet Analyst.

VICTOR VALLEY TRANSIT AUTHORITY

AGENDA MATTER

Release of RFP 2020-10 Design Build Hydrogen Fueling Stations.

SUMMARY STATEMENT

In 2016, the California Air Resources Board mandated that all Transit Agencies in the State of California be 100% Zero Emission by 2040. A plan to go with zero emission buses was approved by the VVTA Board of Directors.

Accordingly VVTA developed a plan starting with Battery Electric buses (BEB's). The range for BEBs in VVTA's operating environment is limited to 150 miles before requiring a 5 to 7-hour battery charge. This translates into only 15 of VVTA's 57 routes which can be operated using BEBs. Fortunately, Hydrogen Fuel Cell Electric Buses (FCEB's) have a range of approximately 300 miles. For this reason, VVTA will need to include FCEB's and Hydrogen fueling stations as part of its mission to convert to 100% zero emission buses.

An opportunity by the California Energy Commission and the Federal Transit Administration has opened the pathway forward with grant opportunities to build hydrogen fueling infrastructure. In order to qualify for the CEC grants, the agency (VVTA) must have proposed locations and completed draft plans for the construction of their proposed hydrogen fueling station(s).

VVTA staff has already identified the Barstow fueling site and is in talks with the City of Victorville to use the D Street Transportation Center.

RECOMMENDED ACTION

Approve Release of RFP 2020-10 Design Build Hydrogen Fuel Stations.

| PRESENTED BY | FISCAL IMPACT | MEETING DATE | ITEM NUMBER |
|--|----------------------|---------------------|--------------------|
| Dustin Strandberg, Senior Fleet Analyst. | N/A | February 18, 2020 | 6 |

VICTOR VALLEY TRANSIT AUTHORITY

AGENDA MATTER

Release of RFP 2020-10 Design Build Hydrogen Fueling Stations.

SUMMARY STATEMENT

In order to proceed, VVTA needs to secure a firm to develop the construction plans. For this reason, VVTA wishes to release an RFP to qualified and responsible firms for the design build of these 2 fueling stations. Both of these fueling stations will be used for VVTA buses but will also be available to the general public to fuel passenger cars and commercial trucks.

The funds for the construction of these Hydrogen Fuel Stations are subject to grants that may become available to VVTA.

In any event, VVTA will be required to build these two hydrogen fueling stations in order to meet the requirements of the California Air Resources Board (CARB) Innovative Clean Transit regulation (ICT).

Scope of Work

The purpose of this project is to provide a design build, turnkey Hydrogen fueling solution for Victor Valley Transit Authority. The project will consist of two stations, one located in Victorville and one located in Barstow CA. Each station will be equipped with 350 BAR (H35) and 700 BAR (H70) dispensers for light duty and heavy-duty applications with the ability to fuel 500+ kg per day and be accessible for both public and private use. Liquid hydrogen will be delivered on an as needed basis, hydrogen production will not be utilized for this project.

General:

The proposer shall be responsible for planning, design, permitting, equipment, construction, commissioning, and closeout of project.

Planning:

Proposer shall be responsible for planning to include at a minimum:

- Site evaluation
- Tentative drawings for hydrogen equipment placement
- Project schedule (to be updated at least bi-monthly)
- Provide construction supervision for installation of equipment
- Provide and discuss change order process

Design:

Proposer shall be responsible for the design of each station which will include at minimum:

- Civil drawings
- Electrical drawings
- Mechanical drawings
- Equipment layout to identify permitting criteria for area classification and separation distances
- Provide 90% drawing set to customer for review prior to permit submission

Equipment:

700 Bar Fueling Station Equipment

- Cryogenic Liquid Hydrogen Storage Tank
 - 18,000 Gallon capacity
- Cryogenic Liquid Hydrogen Pumps and/or gaseous hydrogen compression equipment
 - 500+ kg/day capacity for compression

- 450 BAR & 900 BAR gaseous hydrogen storage cylinders
 - To allow for multi-stage filling to minimize demand on 700 BAR compression
- Hydrogen distribution valving & manifold assembly
- Hydrogen controls & monitoring equipment
- Hydrogen chilling equipment
- 700 BAR gaseous hydrogen dispenser w/ point-of-sale (POS) system
- All relevant safety equipment, including but not limited to:
 - Flame & gas detection devices
 - Emergency stop buttons & system
 - In-process leak detection

350 Bar Fueling Station Additional Equipment

- All above 700 BAR equipment needed
- Additional 450 BAR gaseous hydrogen storage cylinders
 - To allow for faster, and back-to-back fills of 350 BAR systems
- Additional Hydrogen controls & monitoring equipment
- 350 BAR gaseous hydrogen dispenser w/ POS system
- All relevant safety equipment, including but not limited to:
 - Flame & gas detection devices
 - Emergency stop buttons & system
 - In-process leak detection

Construction:

The proposer shall be responsible for construction to include at a minimum:

- **Outdoor Civil**
 - Excavation, forms, foundations, trenches, fencing, bollard
- **Outdoor Electrical**
 - Grounding of all equipment and grounding grid, lighting protection (if existing), provide and install emergency stops per NFPA/local code
 - Provide Class 1 Division 2 lighting at the pad
- **Outdoor Mechanical**
 - Equipment installation (crane, rigging, anchoring), hydrogen tubing interconnection between all pieces of equipment and dispensers, roof penetration, roof supports for piping (Plug Power does not affix on TPO membrane roof seams), vent stack installation
- **Indoor Electrical**
 - Mount control panels, pull electrical supply to control panels from source within 100', erect cable supports, tie in dispensers, terminate instrumentation, provide and install emergency stops
- **Indoor Mechanical**

- Place, anchor and install dispensers with their crash protection, route instrument air from equipment pad, install dewatering line to drain within 100'
- Indoor Communication
 - Run Ethernet cat 5 cable for maintenance area
- Provide site specific safety training for on-site personnel and contractors
- Provide construction supervision for installation of the equipment within the scope
- Hold recurring conference calls to inform all parties about construction activities and update project schedule

Commissioning:

The proposer shall be responsible for commissioning to include at a minimum:

- Electrical
 - Perform electrical termination for all instrumentation. Function test all safeties and controls, etc.
- Mechanical Pressure testing
- Assign single point of contact (site transition manager)
- OEM certification for forklifts
- Set up maintenance areas
- Provide adequate training on hydrogen refueling and fuel cell operation
- Provide operator manual

Closeout:

The Proposer shall be responsible for closeout to include at a minimum:

- Provide as-built drawings at job completion
- Remove all shipping materials
- Remove construction materials