



# **Omnitrans**

Alternative and Renewable Fuel and Vehicle Technology Program

## **FINAL PROJECT REPORT**

CNG FUEL INFRASTRUCTURE AT EAST VALLEY MAINTENANCE FACILITY

1700 W. Fifth Street  
San Bernardino, CA 92411

**Prepared for the Mobile Source Air Pollution Review Committee (MSRC) under the AB 2766  
Discretionary Fund Work Program.**

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### **Acknowledgements**

This report was submitted in fulfillment of MS-16117 and the East Valley CNG Fuel Infrastructure installation by Omnitrans under the partial sponsorship of the Mobile Source Air Pollution Reduction Review Committee (MSRC). Work was completed as of September 25, 2017.

*The statement and conclusions in this report are those of the contractor and not necessarily those of the Mobile Source Air Pollution Review Committee (MSRC) or the South Coast Air Quality Management District (SCAQMD). The mention of commercial products, their sources or their uses in connection with material reported is not to be construed as either an actual or implied endorsement of such products.*

**Background:** The East Valley Maintenance Facility is located at 1700 West 5th Street, San Bernardino CA 92411. The facility originally had two (2) 30,000 gallon LNG tanks providing onsite storage for approximately five (5) days of fuel usage. The facility converted odorless LNG into LCNG and dispensed approximately 5,400 gallons per day for the fleet of 76 40-foot and 14 60-foot buses. The Facility operates service and fueling island with three (3) lanes capable of fueling articulated buses. Typical duration for servicing the buses is 8 minutes.

**Historical Fuel Consumption:** The Average fuel consumed per bus is approximately 45.9 gallons per day. The Omnitrans East Valley fleet consumes approximately 162,494 gallons of fuel per month or 1.7 million gallons per year. The fleet consumes an average of 18,250 gallons per bus per year which is well above the industry averages (10,000 gallons per year) for fuel consumed per bus per year.

### **Project Description & Work Performed**

Omnitrans issued a task order to contracted Architectural & Engineering firm to develop the necessary performance specifications and construction design “Bridging” documents for a “Design Build, & Maintain” project to provide CNG fast-fill fueling to meet all current Omnitrans fleet fueling requirements.

Awarded Contractor was responsible to submit final design, calculations, one hundred percent (100%) construction drawings, equipment specifications and construction details to all local authorities having jurisdiction for permit plan review approval.

Project requirements included that Contractor provided all equipment, materials, components and labor/construction to build the complete CNG fueling system as required by the RFP. Scope of work included passing performance testing for all CNG dispensing systems and passing all jurisdictional inspections and tests. Construction included all equipment, electrical systems, skids, sound attenuation systems, piping, plumbing, demolition, detection and emergency systems, paving, drainage, and other systems needed to make the entire system turnkey and fully operational. Contractor was responsible to maintain CNG fueling station for base contract period of one (1) year with three (3) optional 1-year extensions based upon performance.

The project required contractor to coordinate and make connections for natural gas, electrical power and communications (telephone, etc.) that are used in the operation of the facilities and production and dispensing of CNG at the point of connection provided by the respective utilities. Contractor coordinated and provided all necessary electric utility upgrades and electrical distribution gear.

The application for additional electrical power from Southern California Edison (SCE) required was the responsibility of the Contractor including applications to the SCE. The Contractor was responsible for installing all infrastructure required by but not provided by SCE. All construction related activities for connecting to equipment and panels was the responsibility of the contractor.

Contractor also coordinated and made connections for natural gas from Southern California Gas Company (SCGC) for new CNG fueling system.

The awarded contractor provided all of the equipment, utilities, labor, and parts required for a pipeline CNG fueling station at this location. The new CNG fueling equipment consists of such items as:

- Dual tower dryer with manual regeneration
- Compressors
- Coalescing filter assemblies
- Buffer control valve panel
- Defueling panel
- Station master control system

The existing CNG storage vessels, coalescing filter assemblies, and fast-fill dispensers were reused. An additional CNG supply pipeline was provided from the compressor area to the buffer panel. Pipes were mounted on the existing CMU wall from the compressor farm to the buffer panel.

A backup power generating system was provided and sized to provide enough electrical back up to operate two out of the three installed compressor units. Enough above ground diesel fuel storage was provided to fuel buses for a minimum of three (3) evening service periods.

Contractor demolished the existing LCNG facilities after final testing and verification of operation that the new pipeline CNG fueling system was fully operational and reliable. Demolition included removal of all LCNG equipment, and electrical system back to the main distribution board. Existing systems including but not limited to communications, methane detection, fire protection systems that were made obsolete by the removal of the LCNG system and building were removed in an approved manner. The Contractor made ready the area for bus parking including backfilling of the void left from demolishing the old LCNG building, removing bollards, and repaving the area with concrete.

Other Improvements at the East Valley site included relocation of an existing trash compactor/dumpster unit that was adjacent to the old LCNG building. This was done in order to maintain adequate bus parking and traffic flow. The existing compactor was moved to a new site adjacent to the new CNG compression plant. Contractor restored concrete paving for bus parking at the existing location and provided necessary foundations, bollards, power and pavement striping at the new location.

### **Problems Encountered**

The most major problem experienced was the coordination work with our electrical utility provider. After all of the design work, applications, fees paid, and work done, there was several months delay in them providing the electricity needed to start up the new CNG fueling system.

### **Emissions Benefits**

N/A

### **Photographs & Outreach**



### **Summary and Conclusions**

Overall the project went smooth with the exception of the delay caused by the electric utility provider as mentioned above. The work coordination and shut downs went extremely well with minimal disruption to daily activities and the agency's ability to provide service. The new CNG system has proven to be reliable and a cost savings to the agency.