

Fullerton Joint Union High School District

1/22/18

**Fullerton Joint Union High School District CNG Station
Upgrade, adding Public Fast Fill to Private Time Fill with
Shop Upgrades**

Grant # MS14075

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

Disclaimer –

The statement and conclusions in this report are those of the contractor and not necessarily those of the Mobile Source Air Pollution Reduction 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.

Project Description & Work Performed

The purpose of this project was to design and build a compressed natural gas (CNG) station replacing the existing, small, slow fill station that was past its useful life with a newer station for district buses and adding fast fill public fueling by redesigning the school district transportation yard at 1050 S Leslie, La Habra Ca. 90631. The station was designed with the purpose of facilitating both light duty natural gas vehicles (NGVs), as well as medium and heavy duty NGVs, utilizing both a slow fill model for District School Buses and a fast fill model for the public. In regards to the planning of the station, the main objective was to accommodate this station expansion using the same location currently being used for the districts School Buses. This was accomplished through the installation of two Simplex 200 HP CNG compressors capable of producing 200 standard cubic feet per minute (scfm) each, for a total of 400 scfm. The CNG station contains the following equipment:

- - (1) Gas Dryer as specified in SAE J1616
- - (2) Compressors: 200 scfm
- - (17) Dual hose time fill dispenser posts set up for 3600 psi service on all hoses.
- - (2) Dual-hose Dispensers: Kraus/Gilbarco frame w/ flow meters and card readers 0Mastercard, Visa, American Express, Discover,
- - (3) Storage Vessels: 10,000 SCF each- Total of 30,000 SCF
- - (1) Gas Meter installed by SoCal Gas
- - (1) Electrical Switch Gear/Meter and associated electrical panels
- - Remote monitoring capabilities and security cameras

The construction permits were issued February and March 2017 and grading began shortly after. Station construction process was completed by November 2017 and the certificate of occupancy was issued on November 20, 2017. Shop Methane Detection equipment and ventilation was operational January 9, 2018.

The grand opening event was held on December 5, 2017. A press release was issued December 8, 2017.

Problems Encountered

1) So Cal Gas Service:

The site had an existing gas meter that served the CNG compressors that were to be replaced. Because the District buses needed to continue to be filled onsite, a new gas service and meter was required to accommodate the larger CNG compressors. The Gas Co indicated that there would be no problem having 2 gas meters at the same site for a short period of time however when it came time to install the meter they changed their response. After a few weeks of delay, the Gas Co came up with a solution internally and was able to install the second meter so the site had both compressors operating during the commissioning of the new CNG compressors.

2) The District originally was going to bring fiber optic line to the site for internet communication, however was unable to accommodate that scope due to the available infrastructure in the street. TOMCO was directed to set up a wireless bridge across the street to the District Transportation building. There was a good deal of troubleshooting to make all the communications operate correctly through the firewall and District network.

3) During excavation on the canopy footings TOMCO encountered contaminated soil from USTs. Work was stopped and the District brought in their environmental consultant to assess the situation. The determination was that the contamination was not above levels of concern and work continued. This caused a delay of approximately 6 weeks

Emissions Benefits

	Nov 2017	Dec 2017	Jan 2018	Feb 2018	Mar 2018	Apr 2018
Therms, as documented by utility bills	4754	4870	5197	5283	6249	8620
Gasoline Gallon Equivalent (calculated at 10 CNG Therms = 8.32 GGE's, per CEC's Energy Almanac)	3955	4052	4324	4395	5199	7172
Miles traveled by CNG vehicles (calculated at 5.5 GGE per mile)	719	737	786	799	945	1304
Number of CNG Vehicles	13	13	13	13	13	13
Number of days vehicles driven	16	18	20	18	21	21
Particulate Matter in lbs. displaced by combined CNG vehicles (calculated at 15 lbs per day)	3120	3510	3900	3510	4095	4095
Oxides of Nitrogen in lbs. displaced by CNG vehicles (calculated at 22 lbs. per day)	4576	5148	5720	5148	6006	6006

Analysis

The District currently has 13 CNG School buses and plans on purchasing more as long as funding is available. It is estimated that an average school bus consumes 5.5 GGE per mile. Taking into account the combined total of all 13 buses, this project represents an estimated annual displacement of 58,200 GGE of gross polluting diesel fuel, 44,500 lbs. of particulate matter and 65,200 lbs. of NOx.

Photographs & Outreach

This project was discussed with parents and stake holders of the district through board communications, meeting presentations and with students via class projects. District Students developed a marketing strategy as part of business classes and the station was discussed in an MBA forum Wednesday April 19th 2017. A District wide contest to design a logo for the station was conducted as a way to raise awareness of the station. A grand opening event was held December 5, 2017. Advertising our station's opening, both a flyer and a press release acknowledging The MSRC, AQMD and The California Energy Commission's invaluable support in its construction, was distributed on December 8, 2017. The District also made announcements through its various social media accounts. Signage has been placed in strategic locations to direct the public to our station. Additionally permanent signs are located immediately adjacent to the station recognizing the SCAQMD and MSRC's Funding and support for the project.







**STOP MOTOR
NO SMOKING
FLAMMABLE GAS**
NATURAL GAS VEHICLE FUEL
CYLINDERS SHALL BE
PERIODICALLY INSPECTED
NORMALLY EVERY 5 YEARS TO
ENSURE SAFE OPERATION OF THE
VEHICLE. CONTACT VEHICLE OR
CYLINDER MANUFACTURER.

Project supported by
Clean Transportation
Board of Orange County
www.socalcleantrans.org





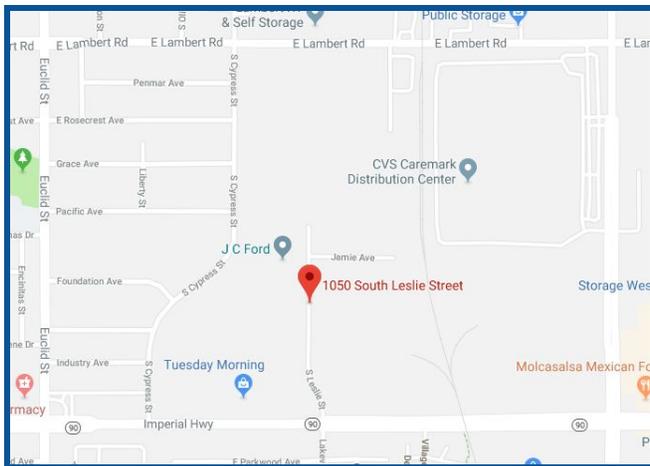
CNG Station Now Open

1050 S. Leslie Street, La Habra, CA 90631



STATION MAP

Come fuel your vehicles at La Habra's first public CNG fueling station



- 4 FAST FILL DISPENSERS
- 8-12 GGE/MIN
- 3600psi
- BUS AND TRUCK FRIENDLY
- FLEET & CREDIT CARDS ACCEPTED
- OPEN 24 HRS/7 DAYS

CNG Station funded in part by the California Energy Commission, South Coast Air Quality Management District, and the Mobile Source Air Pollution Reduction Review Committee. For questions, please email dbennett@fjuhsd.org



Summary and Conclusions

This project funded by the Mobile Air Pollution Reduction Review Committee through AB2766 grant MS14075 has achieved its goals. Our primary objective was to replace and improve our existing CNG fueling infrastructure (which began operation on 2/1/2002), add shop upgrades for the maintenance of our CNG vehicles and add a public fueling component which will serve the dual purpose of promoting the expansion of alternative fuel infrastructure in our local community and bring in much needed revenue for our school district. Since the project began we have purchased a CNG delivery truck, 2 additional CNG buses and have four more on order. Our plan is to completely convert to CNG as long as funding remains available which will further our emissions benefits.