**Public Works Department**

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# Final Report

# City of Redondo Beach

# City Compressed Natural Gas (CNG) Fueling Station Replacement

# Contract Number MS18120

# March 2, 2020

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

## Acknowledgements

The Capital Improvement Project to replace the City of Redondo Beach's CNG station with a new station was a collaborative effort between the Public Works Department along with Clean Energy, who was selected as the contractor of the project.

This report was submitted in fulfillment of MS 18120 and City CNG Fueling Station Replacement by the City of Redondo Beach under the partial sponsorship of the Mobile Source Air Pollution Reduction Review Committee (MSRC). Work was completed as of March 17, 2020.

## 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 (South Coast AQMD). The mention of commercial products, their sources or their uses in connection with material reported herein is not to be construed as either an actual or implied endorsement of such products.

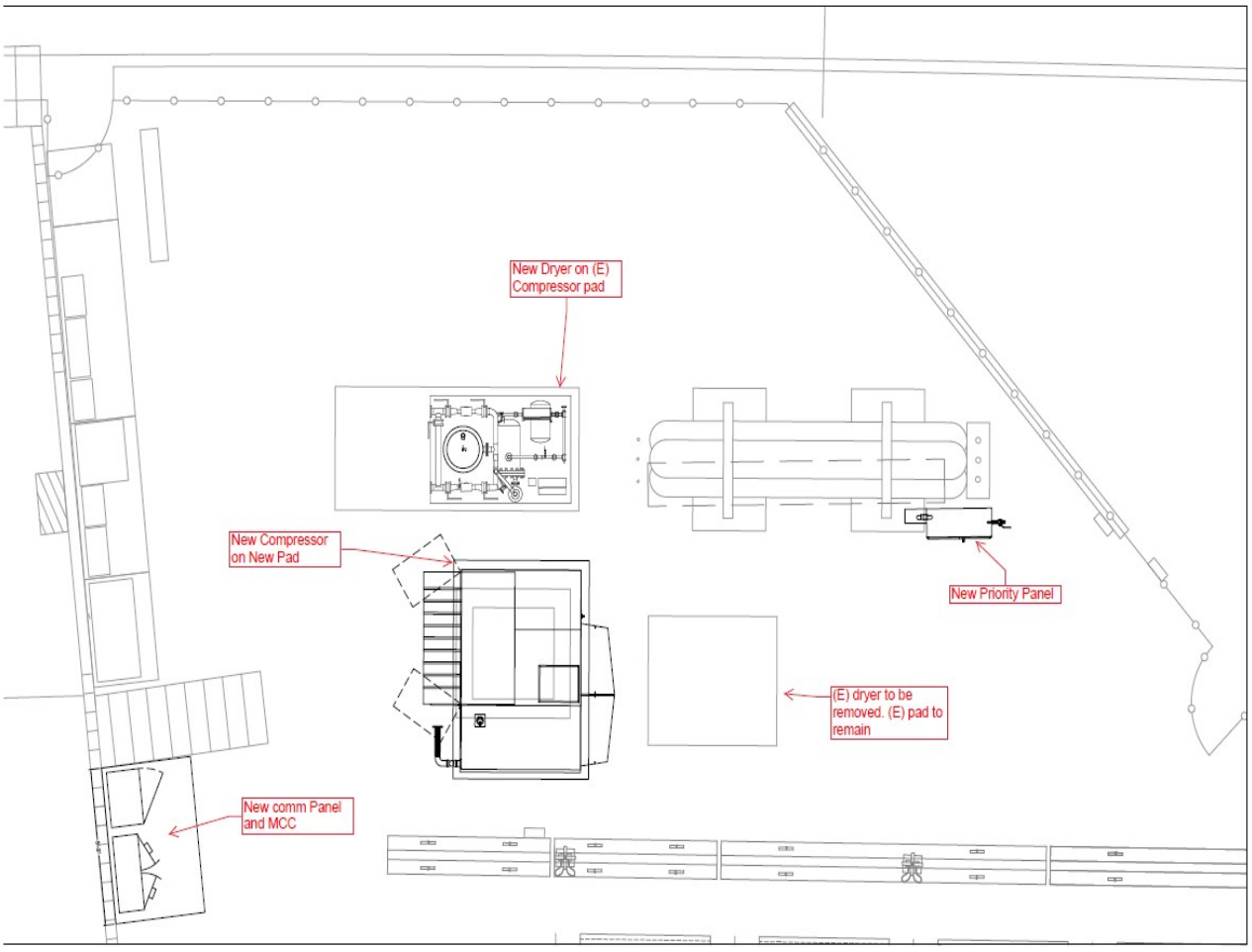
## Summary and Conclusions

1. Scope, purpose and background of the project.

   The objective of this project was to design, build and maintain a CNG vehicle fueling facility capable of providing fast-fill and time-fill fueling for fleets from the Cities of Redondo Beach and Hermosa Beach along with other potential users.

   The City of Redondo Beach CNG fueling station site is located at their public works yard at 531 North Gertruda Avenue. The station is accessible directly from Gertruda Avenue and provides diesel and unleaded dispensing as well as compressed natural gas.

Project Site Plan




The station was originally built in 2000 but had not been operational since 2016 when it suffered catastrophic equipment failures due to antiquated equipment, most of which, parts were no longer available. In 2013, the problems started when the fast-fill equipment failed, which only allowed the City to fuel a total of three vehicles overnight and forced the rest of the CNG vehicles from Redondo and Hermosa to make long daily drives outside of their scheduled routes in order to refuel. This

resulted in increased budget costs and scheduling issues for their respective fleets. In 2016, the slow-fill equipment failed, which rendered the station inoperable.

2. Concise technical description and analysis of the work performed during the course of the project that led to the conclusions. Where appropriate, include a discussion of cost projections and economic analyses. A discussion must be included describing the emissions benefits derived from this contract. This must include quantitative benefits not simply a qualitative statement that benefits were achieved. Please contact MSRC staff if assistance is needed in quantifying benefits.

   The station was configured with the following equipment:
   • ANGI NG75 50-horsepower compressor and a second Sulzer 40-horsepower compressor of unknown model.
   • Xebec STR-20NGX dryer,
   • ANGI single-hose fleet-style dispenser,
   • Three dual-hose time-fill posts and,
   • Three CP Industries storage vessels providing approximately 31,500 scf of storage.

   With the exception of the current three gas storage vessels, which are still in good working condition, this project provided all new industry-leading, reliable equipment that offers new efficiencies necessary to meet the current and future vehicle fueling demands.

| New CNG Equipment Summary | |
|---|---|
| Equipment | Specifications |
| Compressor | • One CE Compression Clean 2.0 skid package<br>• 150 HP, 5-stage compressor IMW50-7250DA-150-4500-5AC (245 SCFM at 10 psig post dryer) |
| Dryer | • One PSB 10-3 single tower gas dryer with manual regeneration, equipped with Digital Dew Point meter, sensor and alarm, 435 |
| Gas Storage[1] | • Three CP Industries ASME storage vessels with an approximate capacity of 10,500 SCF ea. |
| Priority Panel | • One CE Compression cascade-style valve panel with time-fill outlet to manage the fast-fill and time-fill operations |
| Fast-fill Dispenser | • One Kraus dual-hose, fleet style dispenser with cascade fueling and CT-1000 nozzles, model TBD |

[1]The gas storage vessels are the only equipment that is not being replaced.

**Emissions Benefits**

The City currently operated 20 transit buses and 15 CNG trucks, coupled with about five other outside CNG heavy duty vehicles. The City will also add an additional five CNG trucks this coming fiscal year and potentially more in future years. The estimated gallons of fuel consumed by these vehicles is 200,000 gallons equivalent. Utilizing Clean Energy's Emissions Calculator, which has been verified by the California Air Resources Board, this equates to a reduction of 902 metric tons per year of green house gas emissions. This reduction has the potential

to grow as the City's Fleet adds more CNG vehicles.

3. Use clear, concise statements to state any recommended future actions and further study that may be required. **There are no recommended future actions at this time. The City will continue to look at adding low emission vehicles going forward.**

4. To document the completed project, a picture or pictures of vehicles and/or infrastructure showing MSRC logo/decal must be included in the report. This section shall also include copies of any media/outreach materials and/or news clippings generated by the project. **See below**

# The City of Redondo Beach rebuilds Compressed Natural Gas (CNG) Station

Investing in Clean Air
www.CleanTransportationFunding.org
MSRC

The Project was funded in part by the Mobile Source Air Pollution Reduction Review Committee (MSRC).

As part of the City's ongoing "green efforts", in partnership with the MSRC, the City invested in rebuilding its CNG Station that allows the City Fleet, Beach Cities Transit, and other contracting agencies to fuel a cleaner alternative fuel.

## KEY BENEFITS:

- Reduction of Greenhouse gas emissions.
- Renewable Energy Source
- Future addition of Low Emission Vehicles to the City Fleet

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