Clean Transportation Funding from the MSRC

Mobile Source Air Pollution Reduction Review Committee

AB 2766 Discretionary Fund Contracts

FINAL REPORT

City of Coachella

MSRC Contract Number ML12057
AB 2766 Subvention Fund
Purchase of (1) CNG Water Tender Truck
Street Sweeping

Contract Period November 13, 2012 – November 13, 2018

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 herein is not to be construed as either an actual or implied endorsement of such products.

Acknowledgements

This report was submitted in fulfillment of ML12057 and Regional PM10 Street Sweeping Program and Electric Vehicle Purchase by the City of Coachella under the (partial) sponsorship of the Mobile Source Air Pollution Reduction Review Committee (MSRC). Work was completed as of November 13, 2018.

Executive Summary

During Fiscal Year 2015-16, 162 local governments in the South Coast Air District were eligible to receive AB 2766 Subvention Funds. In summary, these jurisdictions were subvened $22.1 million to implement projects that reduce mobile source emissions. From their AB 2766 fund balances, local governments spent $19.2 million. The two highest spending categories were Alternative Fuels/Electric Vehicles and Traffic Management projects, which claimed a combined total of 51% of the $19.2 million program expenditures. The two project categories yielding the highest portion of emission reductions for this fiscal reporting cycle were Traffic Management and Transportation Demand Management. In total, local governments implemented 395 projects of which 261 reported quantified emission reductions.

Project Description & Work Performed

The City of Coachella purchased one natural gas, heavy-duty vehicle with a gross vehicle weight rating greater than 14,000 pounds and equipped with a dedicated compressed natural gas fueled engine (CNG) for a total of $104,758 (this includes grant award money). The engine was certified by the California Air Resources Board (CARB) at, or cleaner than, the 2010 heavy duty engine emissions standards of 0.2 g/bhp-hr for oxides of nitrogen (NOx) and 0.01 g/bhp-hr for particulate matter (PM). For the period of one (1) year, the City augmented its regularly scheduled bi-monthly street sweeping program with additional sweeping on heavily impacted streets. The vehicle was placed in service on 09/16/2016.

Problems Encountered

No problems were encountered.

Emissions Benefits
Operation costs for clean-up of a sand event, including dumping, two times per week for 52 weeks at $66.00/curb mile is $27,456. City may be required to sweep more some weeks than others depending on level of disaster. Operation costs for the City's regularly scheduled street sweeping program of 142 curb miles twice per month at $19.51/curb mile is $66,490.

- ✓ New CNG Gaseous Engine Prep Package readies the V10 engine for alternative fuel
- ✓ 35-gal. fuel tank and 5-gal. DEF tank mounted under cab on driver's side for clean CA
- ✓ A new CNG/LPG Gaseous Engine Prep Package will ready the truck for Compressed Natural Gas (CNG).

City of Coachella	**NO_x Emission Reductions** (pounds per year)	**ROG Emission Reductions** (pounds per year)	**$PM_{2.5}$ Emission Reductions** (pounds per year)	**CO Emission Reductions** (pounds per year)
2021	170.6	14	128.6	0.21
2020	163.2	13.4	127.2	0.21
2019	167.5	14	129.8	0.21
2018	156.3	13	129	0.21
2017	154.1	14	130	0.21
2016	362.9	16.5	127.6	2.4

REDUCED EMISSIONS

Emission	% lower than EPA / CARB standard
Formaldehyde (HCHO)	100% lower
Nitrous oxide (N20)	80% lower
Particulate matter (PM)	80% lower
Methane (CH4)	70% lower
Nitrogen oxides (NOx)	75% lower
Carbon monoxide (CO)	65% lower
Non-methane hydrocarbons (NMHC)	64% lower
Carbon dioxide (CO2)	11% lower

Photographs & Outreach

The City of Coachella made an announcement and presentation at its City Council meeting about the grant program, the award and then issued a press release (please see attached copy).

Summary and Conclusions

The City of Coachella is committed to sustainable development through environmental protection, social responsibility and economic efficiency. Thanks to the grant funding support from the MSRC, this grant program helped the City of Coachella to purchase a CNG powered truck which has contributed to improvements in local air quality and the fulfillment of the City's corporate goals at the same time.

The knowledge and experience gained in this project is invaluable as the City of Coachella continues the process of acquiring alternative fuel vehicles. This project would not have been possible without the support and assistance of the MSRC and it is hoped that the City of Coachella will be invited to assist in the MSRC's efforts in air pollution reduction in the future.

CITY OF COACHELLA
53990 ENTERPRISE WAY, COACHELLA, CA 92236
Phone: (760) 398-3502
Website: www.coachella.org

PRESS RELEASE

FOR IMMEDIATE RELEASE:

CONTACT: Jacob Alvarez, (760) 398-3502
Administration Department

City of Coachella receives a grant from the MSRC to purchase a compressed natural gas heavy duty truck

Coachella, CA - Thanks to a $57,456-dollar grant in Clean Transportation Grant Funding from the Mobile Source Air Pollution Reduction Review Committee (MSRC), the City of Coachella was able to purchase one natural gas heavy-duty vehicle, equipped with a dedicated compressed natural gas fueled (CNG) engine. The CNG water tender truck will be used to street sweep to help mitigate airborne particulate matter stemming from blow sand and windstorms.

Natural gas powered vehicles have the potential to decrease emissions, reduce the cost of transportation, and replace fossil fuel used with natural gas use. Replacing fossil fuels with natural gas will decrease fossil fuel consumption, and is believed to reduce environmental pollution, spur economic development, and contribute to energy security. Natural gas is more than 90% methane in composition. Even so, natural gas exhibits the highest Hydrogen/Carbon ratio of all fossil fuels. A higher hydrogen/carbon ratio is preferred because this would mean more water vapor emissions than carbon dioxide into the atmosphere. Natural gas typically has a carbon content of 75% which is 11% lower compared to oil and petroleum energy sources

The city of Coachella is susceptible to severe drought, excessive flooding, high winds, blowing sand, and air inversions, each of which plays a major role in determining regional air quality. Additionally, the Coachella Valley region is in a state of "non-attainment" with respect to state and federal ambient air quality standards for ozone and PM10, due to a combination of locally-generated pollution, unique topographic and climatic characteristics, and the transport of pollutants from metropolitan areas to the west—including the effects of the Salton Sea's receding shorelines and shallower-waters that produce rotten-egg odor events during the hot summers when the monsoonal rains flow into the region. Implementing clean vehicle's into the City's fleet helps the City of Coachella to improve the air quality and the quality of life of its residents.

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