



CITY OF CULVER CITY
TRANSPORTATION DEPARTMENT
4343 DUQUESNE AVENUE, CULVER CITY, CA 90232
(310) 253-6523 FAX (310) 253-6564

Culver CITY
ART A. IDA
Transportation Director

FINAL REPORT

Contract No. ML09008

Local Match Program:
Funding Toward the Purchase of Eight (8) Heavy-Duty
Compressed Natural Gas (CNG) Vehicles

Submitted by the City of Culver City

April 30, 2013

***Prepared for the Mobile Source Air Pollution Review Committee (MSRC)
under the AB2766 Discretionary Fund Work Program***



*Culver City Employees take pride in effectively providing the highest levels of service to enrich the quality of life for the community
by building on our tradition of more than seventy-five years of public service,
by our present commitment, and by our dedication to meet the challenges of the future.*

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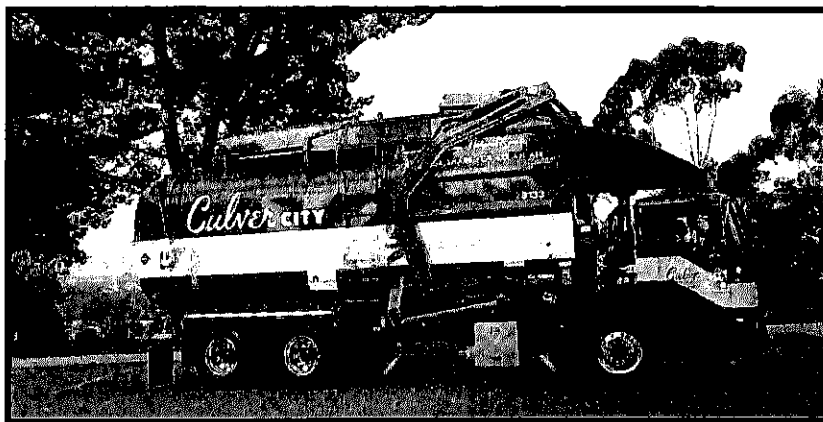
Acknowledgements

This report is submitted in fulfillment of Contract No. ML09008 and the Local Match Program for funding toward the original project to purchase eight (8) Heavy-duty Compressed Natural Gas (CNG) Vehicles (seven refuse trucks and one dump truck), by the City of Culver City under the partial sponsorship of the Mobile Source Air Pollution Reduction Review Committee (MSRC).

Work was completed as of November 30, 2012.

Disclaimer

The statements 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.



Project Description and Work Performed

The City of Culver City adopted CNG technology in 1996 in accordance with early South Coast Air Quality Management District (AQMD) air quality mandates. Seeing it as the most viable and cost effective way to lower petroleum-based engine emissions, Culver City has expanded its CNG fleet from the initial purchase of 20 transit buses in 1998 to a current total of 105 light-, medium- and heavy-duty vehicles, and a transit fleet which operates on 100% CNG. These new vehicles replace the original CNG front-loading refuse trucks purchased in 2004, thus continuing our mission to operate a clean, green fleet of alternative fuel CNG vehicles, when available.

Culver City originally submitted a proposal to purchase eight (8) heavy-duty CNG vehicles using Clean Transportation Funding from the MSRC, Local Government Match Program PA2009-07 on March 19, 2009. The City requested grant funding to offset the differential cost for the vehicle purchase, and to adhere to fleet rules for heavy-duty refuse vehicles in the region. The City identified the balance of local funds toward each vehicle from the City's Equipment Replacement Fund, which is managed by Transportation Department staff.

Contract ML09008 allocates \$25,000 per vehicle for a total of eight (8) vehicles, for a maximum contract total of \$200,000. Invoicing for the seven refuse trucks in the amount of \$175,000 was submitted on June 27, 2011 and grant funds were received in September 2011. Unfortunately, upon final receipt of the CNG dump truck, it was recently determined that this vehicle did not meet the heavy-duty weight standards of 14,001 pounds or more, and has thus been removed from the project, and no funding is being requested.

At the time of application in March 2009, development of the technical and mechanical specifications for these vehicles was already complete. Upon authorization by City Council, preproduction meetings were held with the manufacturer, and equipment development was ongoing during the production phase.

Upon delivery, each vehicle underwent further inspections by our equipment maintenance technicians, and we resolved any issues with the manufacturer. The refuse vehicles were placed into service in January 2011. All vehicles are working well in their specific capacities for heavy-duty refuse equipment for the City of Culver City, and we have received positive comments from the operators of these vehicles. Our equipment maintenance technicians continue to prefer working on natural gas engines because they are cleaner, both internally and externally, than their diesel counterparts. CNG vehicles and equipment are also more electronically advanced. Mechanics are now technicians; the most

important tool in their tool box is a laptop computer, with electronic diagnosis being the primary maintenance component.

Problems Encountered

No problems were encountered with the refuse trucks.

Emissions Benefits

Utilizing the California Air Resources Board (CARB) approved calculation methodology, emission reductions for the CNG powered refuse trucks were realized by comparing the emissions from the newer 2010 CNG engines to their 2002 CNG engine predecessor for the same application. We have calculated a NOx emission reduction of 0.963 metric tons, and a PM10 emission reduction of 0.022 metric tons over the 8-year service life of the seven refuse vehicles. The City of Culver City's mission to remain on the CNG path continues to benefit the community.

Photographs and Public Outreach

The City submitted a dynamic Public Outreach Plan in association with this project, all primary components of which have been achieved.

Display of Vehicles, City Council and Community Presentations

On December 6, 2010, staff displayed two of the seven new refuse trucks in front of City Hall with all signage acknowledging MSRC Clean Transportation Funding as having contributed to the project. In addition, City Councilmembers each acknowledged the new vehicles and our efforts toward clean, "green" operations during the Council Meeting that evening.



Community Publications

The City issued a press release regarding the new refuse trucks, which was posted on the City's website home page, www.culvercity.org. Content is included herein as Attachment A.

The announcement of receipt of these vehicles, and the funding received from the MSRC, also appeared on the City's intranet system, where employees find updates about events, activities and projects within all departments.

Use of Clean Transportation Funding Logo, Promotion of Website

All presentations, publications, articles and signage present and promote Clean Transportation Funding from the MSRC via the prominent placement of the logo, and reference to the website www.cleantransportationfunding.org. The vehicles also prominently display the Clean Transportation Funding sticker provided to us.

Summary and Conclusions

The Local Government Match Program provides an excellent opportunity for municipalities to replace their diesel-fueled heavy duty vehicles with alternative fuel replacements. This project is especially significant, as we have replaced the first, original clean-fuel CNG transit buses in our fleet with the newest, most advanced technology CNG engines available. Purchases of alternative fuel heavy-duty vehicles used for refuse collection and other Public Works operations further enhance emission reductions in the region. We are realizing significant GHG reductions through the service provided by these vehicles, as well as NOx and PM-10 over their service life. We believe Culver City's project is an excellent example of the feasibility of clean engine operations aimed at reducing air pollution emissions to improve air quality.



ATTACHMENT A

Materials posted on Culver City's website:
www.culvercity.org

***CULVER CITY REPLACES ORIGINAL CNG REFUSE TRUCKS
WITH NEW, CLEANER CNG MODEL***

Using "Clean Transportation Funding from the MSRC," Culver City has recently replaced its original CNG frontloading refuse trucks with the newest CNG engine model enhance efficiency and further reduce harmful emissions. A grant was obtained from the Mobile Source Air Pollution Reduction Review Committee (MSRC) which works conjointly with the South Coast Air Quality Management District (AQMD) to fund projects that reduce air pollution from mobile sources in Southern California, which includes all of Orange County and portions of Los Angeles, Riverside and San Bernardino counties. Their discretionary funds are also used for related planning, monitoring, enforcement and technical studies. Historically, project categories have included:

- Clean fuel infrastructure
- Clean vehicle programs
- Ridesharing
- Development of alternative fuel vehicles and parts and
- Educational projects

Over the years, the MSRC has refined their funding process to focus on projects that reduce emissions in the most cost-effective manner. Over the past five years, the Culver City Transportation Department has received over \$2 million in funding from the AQMD and the MSRC, for projects including:

- Purchases of Heavy-duty Alternative Fuel Engines for CNG transit buses and refuse vehicles
- CNG Fueling Infrastructure Programs – such as the City's CNG Station Expansion Project
- The "Showcase Program" for Heavy-duty Off-road Diesel Vehicle Retrofit Devices, and
- The Local Government Match Program – for the purchase of heavy-duty on-road alternative fuel vehicles – including a sewer truck which was the first of its kind to be manufactured in its class and application.

The MSRC posts its funding opportunities on its website, and City staff identifies the best suited vehicles to be included in the application by evaluating diesel vehicles nearing the end of their lifecycles, and determining whether a CNG alternative vehicle is available.

Public outreach is an important component of Clean Transportation Funding grants. In addition to this announcement and postings on the City's website, the City periodically showcases some of its new CNG vehicles for the City Council,

the City staff, and the community in front of City Hall. Two of the new refuse trucks were displayed for the public and the City Council on December 6, 2010.

By replacing diesel fueled vehicles with those running on clean-burning CNG, the City is significantly reducing toxic emissions and greenhouse gases from the air, namely particulate matter and nitrous oxides which have been proven to contribute to poor air quality and public health issues in our region. Culver City has been on the progressive alternative fuel path since 1996, and has won numerous recognitions and awards for its clean – green – fleet vehicle policies and operations, recently being named as the #1 Best Green Fleet in North America 2009. The City also received the distinction of being the #3 Best 100 Municipal Fleet in North America 2012, and received the NGV America Clean Air Achievement Award for outstanding contributions to the advancement of natural gas as a vehicular fuel. Culver City saves close to \$2 million annually, using CNG over petroleum fuels. The Culver CityBus fleet operates 100% on CNG, and citywide, over 100 alternative fuel vehicles are in use across all City departments. Culver City is very proud to be *doing our share for clean air!*

To learn more about Clean Transportation Funding from the MSRC, please log onto their website at www.cleantransportationfunding.org

