



CITY OF CULVER CITY

TRANSPORTATION DEPARTMENT

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ART A. IDA

Transportation Director

FINAL REPORT

Contract No. ML07046

Local Match Program:

Purchase of One (1) Compressed Natural Gas Heavy-Duty Dump Truck

Submitted by the City of Culver City

November 25, 2008

***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.

Acknowledgements

This report was submitted in fulfillment of Contract No. ML07046 and the Local Match Program for Purchase of One (1) Compressed Natural Gas Heavy-duty 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 August 31, 2008.

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 during the development of our CNG refueling station and upgraded Transportation Facility, 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 100 light-, medium- and heavy-duty vehicles, and a transit fleet which operates on 100% CNG. With the purchase of a heavy-duty CNG dump truck, Culver City continues its mission to replace its fleet vehicles with alternative fuel CNG vehicles, when available.

Culver City submitted a proposal to purchase one (1) heavy-duty CNG dump truck using Clean Transportation Funding from the MSRC, Local Government Match Program PA2007-09. The City requested grant funding of \$25,000 for the vehicle to offset the differential cost of clean engine replacement of its diesel-operated counterpart, and to act in accordance with fleet rule requirements for heavy-duty vehicles in excess of 14,000 pounds GVW. The City planned to contribute the projected balance of \$135,000 as a local-match. These funds were earmarked within other local government funding sources (\$25,000), as well as the City's Equipment Replacement Fund (ERF), which is managed by Transportation Department staff in association with the City's Budget Office. Vehicles and equipment become eligible for replacement based on life cycles, repair costs, age, usage and amortization cycles. Most of the City's rolling stock is funded for replacement by this Fund. The final cost for this vehicle was very close to the original projection, with the final copayment by the City equaling \$137,277.25.

The dump truck which was replaced by this CNG vehicle was disposed at auction in the month of September 2008.

At the time of application in June 2007, development of the technical and mechanical specifications for this vehicle was already complete. As this vehicle had not been manufactured previously utilizing a CNG engine, staff worked closely with the manufacturer and vendor to develop the most technically efficient and cost-effective heavy-duty equipment for their specific purposes. Contract Purchase Orders were issued in September 2007, and preproduction meetings were held with the manufacturer, and equipment development was ongoing during the production phase.

Upon delivery, this vehicle underwent further inspections by our equipment maintenance technicians, and we resolved any issues with the manufacturer.

The truck was put into service at the beginning of August 2008. The vehicle has worked well in its specific capacity for heavy-duty equipment for the City's Public Works Department, and we have received positive comments from the operators of this vehicle. Our equipment maintenance technicians have embraced the alternative fuel technology, and 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

As previously noted, this heavy-duty vehicle was the first of its kind for the manufacturer in this size and capacity using a CNG engine. The City kept in close contact with the manufacturer to assist with resolution of issues as they arose.

The primary delay during development, manufacturing and acceptance of the dump truck was associated with the development of the specifications, which required additional time to complete.

Emissions Benefits

Utilizing the California Air Resources Board (CARB) approved calculation methodology, emission reductions for the CNG powered dump truck were realized by comparing the emissions of the dump truck's clean CNG engine to the diesel engine it replaced. We have calculated a NOx emission reduction of 2.01 tons, and a PM10 emission reduction of 96.8 pounds over the 12-year service life of the vehicle. The City of Culver City's mission to remain on the CNG path continues to benefit the community. As vehicles near the end of their useful service lives, all efforts are made to replace those vehicles with CNG alternatives. When an alternative does not exist, City staff has taken a proactive approach and has the capability to assist manufacturers in the development of new heavy-duty alternative fuel equipment.

Photographs and Public Outreach

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

City Council and Community Presentations

On August 25, 2008, staff from the Culver City Transportation Department made a public presentation to the City Council and the community, displaying the CNG dump truck and other newly purchased CNG vehicles in front City Hall. The trucks were identified as being purchased with the support of Clean Transportation Funding from the MSRC, along with vehicle, engine, emission reduction and fuel savings information. All required signage was present.



A second Council presentation is being scheduled before the end of the year, which will include another public display of this and other CNG vehicles from the City's fleet in front of City Hall, as well as a more in-depth presentation to the Council and the community, also via webcast.



Community Publications

An article about the grant funding to purchase this dump truck and a group of CNG refuse vehicles entitled, "City Receives More Heavy-Duty Alternative Fuel Vehicles" with the Clean Transportation Funding logo and pictures of the vehicles, is currently being reviewed by management. This is expected to be posted soon on the City's website home page, www.culvercity.org under Culver City Highlights. The announcement of receipt of these vehicles, and the funding received from the MSRC, also appears 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 truck also prominently displays 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, when the technology is available. By working closely with manufacturers, the City has helped to develop the CNG vehicle alternatives to diesel counterparts that might otherwise be unavailable. We are realizing significant NOx and PM10 reductions by utilizing CNG technology. We believe Culver City's project, in conjunction with the MSRC, is an excellent example of the feasibility of clean engine replacements aimed at reduction in air pollution emissions to improve air quality.

