Prepared for the Mobile Source Air Pollution Review Committee (MSRC)

Under the AB2766 Discretionary Fund Work Program

Contract No. ML 09036

Replace 35 Refuse Trucks with Natural Gas Fueled Refuse Trucks

City of Long Beach, California

January 5, 2018

Acknowledgements

The City of Long Beach would like to thank Cynthia Ravenstein, Contract Administrator for the Mobile Source Air Pollution Review Committee, for her support, guidance and enthusiasm for the City's alternative fuel program projects. Leadership for the alternative fuel vehicle projects in the City has been provided by the City Council and City Manager, Patrick H. West. Additional recognition is due to Leslie Horikawa-Thiede and Daniel Berlenbach, Fleet Service Bureau Managers during the span of this contract. The Superintendent of Fleet Acquisitions, John Seevers, has been tireless in his efforts to secure the best alternative fuel refuse trucks at the best prices, for use in the City's refuse collection operations.

This report was submitted in fulfillment of ML 09036 and Natural Gas Refuse Truck (35) Purchases by The City of Long Beach under the (partial) sponsorship of the Mobile Source Air Pollution Reduction Review Committee (MSRC). Work was completed as of November 30, 2017.

Disclaimer

The statement and conclusions in this report are those of the contract 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.

Summary and Conclusions

1. The City of Long Beach (the City) committed $8,824,126 for the purchase of 35 new, alternative fueled refuse trucks between 2010 and 2015 (five-year term of the grant). The MSRC awarded the City $875,000 ($25,000 per unit) toward the purchase of the new vehicles. The City has a total of 82 refuse trucks in its fleet. All refuse trucks were either diesel-fueled with emission control devices on them, or were fueled by liquefied natural gas (LNG).

2. The first group of LNG-fueled refuse trucks was purchased under the same terms and conditions as the contract awarded by the Long Beach Unified School District. Ten units were purchased and placed into service by August 31, 2010. The next group of eight refuse trucks was purchased and placed into service by the end of December 2010. During the 2011-2012 years, testing of larger capacity refuse trucks showed them to be difficult to drive and utilize effectively. A grant modification request was submitted to purchase smaller capacity refuse trucks that would be more practical. A contract time extension was also granted with the request. Work with the manufacturer to design a smaller chassis created further delays in purchasing new units. Three additional LNG-fueled refuse trucks were purchased by March 2013.

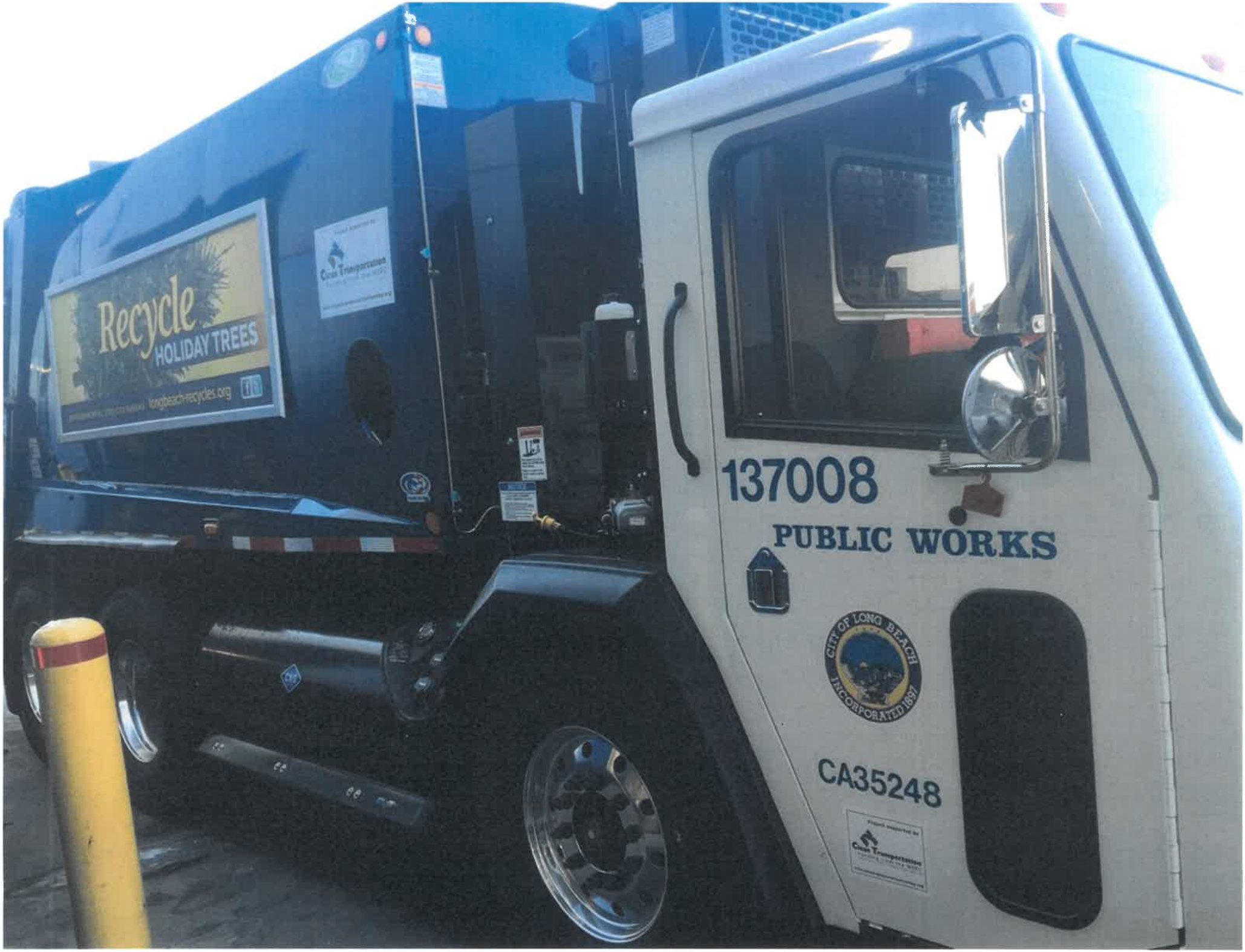
   During the period between 2014 and 2015, the Department of Public Works decided to move to the use of compressed natural gas (CNG) rather than LNG in its refuse trucks and street sweepers. This decision caused further delays in the procurement of refuse trucks, and another grant modification was requested. The grant modification was approved in July 2016. Fourteen CNG-fueled refuse trucks were purchased in several groups between September 2016 and October 2017. All 14 units have been placed into service as of November 30, 2017.

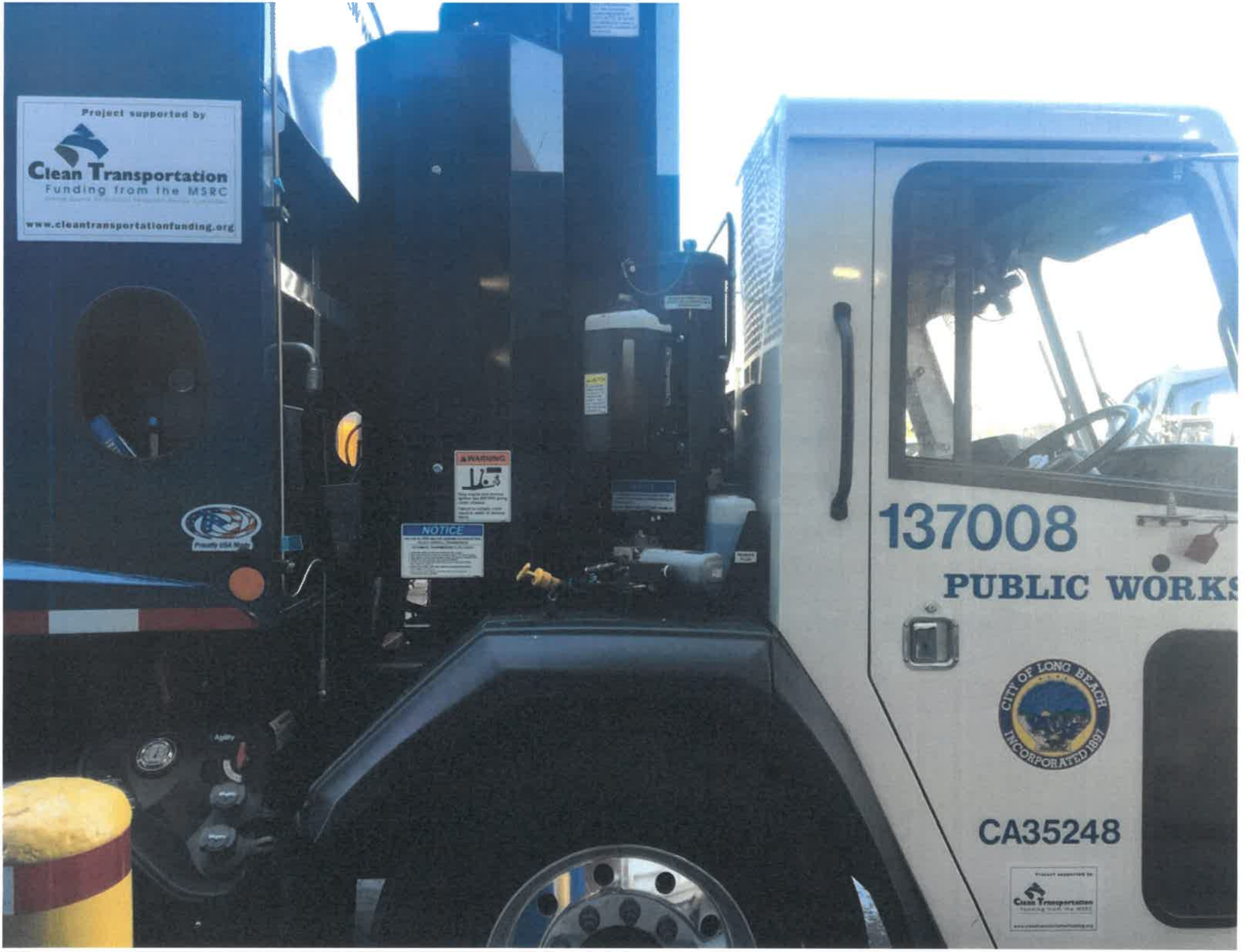
   Based on the 21 LNG-fueled refuse trucks and 14 near-zero engine CNG-fueled refused trucks, it is estimated that 13,720 short tons of greenhouse gas savings will be achieved over the 9-year life of the units.

3. The City of Long Beach is extremely grateful for the support and flexibility of the MSRC and South Coast AQMD during the grant period. This project took much longer than originally projected. The Fleet Services Bureau had five different managers during the grant period and was moved from the Public Works Department to the Financial Management Department as well. The new managers needed time to learn the Fleet Services Bureau processes and become familiar with the vehicle replacement plans, including the funds supporting them.

The combination of vehicles and equipment that were moving to alternative fuels also presented infrastructure development challenges. The City of Long Beach has now developed a Task Force of combined City department representatives to create a long-term plan for fuel infrastructure development that can support a wider variety of energy sources. Our recommendation is that municipalities include fleet and infrastructure development as part of the annual and long term strategic planning process.

4. Pictures of vehicles and outreach materials are attached to this report
   a. New CNG fueled refuse truck #137008 (2 pictures)
   b. Slides from 2010 presentation to City Council of Green Fleet Activities (2 slides)
   c. New LNG fueled refuse truck #13761 at the Long Beach Convention Center ACT Exposition in May 2012 (2 pictures)


Recycle
HOLIDAY TREES
longbeach-recycles.org
137008
PUBLIC WORKS
CITY OF LONG BEACH
INCORPORATED 1897
CA35248


Project supported by
Clean Transportation
Funding from the MSRC
www.cleantransportationfunding.org
WARNING
NOTICE
137008
PUBLIC WORKS
CITY OF LONG BEACH
INCORPORATED 1897
CA35248

Green Fleet Events

- Presentation at Fleet of electric scooter and small electric vehicle for use by either parking enforcement or mall/small venue patrol
- MEMA Association meetings where information on technologies to reduce greenhouse gas emissions was presented. This included showcasing Fleet's new LNG refuse truck
- Scheduled fleet events:

  September 25-Good Neighbor Festival (Council District 5) ,
  October 1-Fleet Visions, Santa Monica

  October2- Green Port Fest

  October 21- Long Beach Clean Cities Coalition

  "Sustainable Now Technologies"
- Demonstrated a new electric vehicle manufactured by Coda Automotive at Clean Cities July 2010 meeting

Awarded grant funds

- Mobil Source Pollution Prevention and Reduction Committee

  $875,000 to purchase 35 LNG-fueled refuse trucks
- FY10 Carl Moyer Early Emissions Reduction Program

  - $47,000 to install retrofit devices to reduce diesel particulate emissions and oxides of nitrogen on six off-road vehicle

  - $42,000 to purchase four new backhoes and two new tractors with low-emission compliant engines
- Department of Energy - Clean Cities Coalitions

  $35,000 to conduct outreach and education activities for citizens and visitors of Long Beach on ways to reduce greenhouse gas emissions


LONG BEACH
DRIVEN TO BE GREEN
13761
PUBLIC WORKS
CA35248


LONG BEACH
DRIVEN TO BE GREEN
13761

MSRC Local Government Match 2009

	Grant Number:	**ML09036**	Grant Total:	875,000.00	
		LNG fueled refuse trucks			
	Unit Number	**Unit Make/Model**	**Purchase Price**	**Reimbursement**	**Remaining**
1	13761	2010 Autocar ACX42R	258,695.32	25,000.00	850,000.00
2	13762	2010 Autocar ACX64R	268,766.72	25,000.00	825,000.00
3	13763	2010 Autocar ACX64R	268,766.72	25,000.00	800,000.00
4	13764	2010 Autocar ACX64R	268,766.72	25,000.00	775,000.00
5	13765	2010 Autocar ACX64R	268,766.72	25,000.00	750,000.00
6	13766	2010 Autocar ACX64R	268,766.72	25,000.00	725,000.00
7	13767	2010 Autocar ACX64R	268,766.72	25,000.00	700,000.00
8	13768	2010 Autocar ACX64R	268,766.72	25,000.00	675,000.00
9	13769	2010 Autocar ACX64R	268,766.72	25,000.00	650,000.00
10	13770	2010 Autocar ACX64R	268,766.72	25,000.00	625,000.00
11	13771	2010 Autocar ACX64R	268,766.72	25,000.00	600,000.00
12	13772	2010 Autocar ACX64R	268,766.72	25,000.00	575,000.00
13	13773	2010 Autocar ACX64R	268,766.72	25,000.00	550,000.00
14	13774	2010 Autocar ACX64R	268,766.72	25,000.00	525,000.00
15	13775	2010 Autocar ACX64R	268,766.72	25,000.00	500,000.00
16	13776	2010 Autocar ACX64R	268,766.72	25,000.00	475,000.00
17	13777	2010 Autocar ACX64R	268,766.72	25,000.00	450,000.00
18	13778	2010 Autocar ACX64R	268,766.72	25,000.00	425,000.00
19	13779	2010 Autocar ACX64R	276,895.00	25,000.00	400,000.00
20	13780	2010 Autocar ACX64R	244,895.00	25,000.00	375,000.00
21	13781	2010 Autocar ACX64R	244,895.00	25,000.00	350,000.00
22	137000	2016 Autocar ACX64	287,228.06	25,000.00	325,000.00
23	137002	2017 Crane Carrier	287,822.50	25,000.00	300,000.00
24	137009	2017 Crane Carrier	287,822.50	25,000.00	275,000.00
25	137003	2017 Crane Carrier	287,822.50	25,000.00	250,000.00
26	137001	2017 Crane Carrier	287,822.50	25,000.00	225,000.00
27	137010	2017 Crane Carrier	287,822.50	25,000.00	200,000.00
28	137013	2017 Crane Carrier	287,822.50	25,000.00	175,000.00
29	137012	2017 Crane Carrier	287,822.50	25,000.00	150,000.00
30	137006	2017 Crane Carrier	287,822.50	25,000.00	125,000.00
31	137005	2017 Crane Carrier	287,822.50	25,000.00	100,000.00
32	137004	2017 Crane Carrier	287,822.50	25,000.00	75,000.00
33	137008	2017 Crane Carrier	287,822.50	25,000.00	50,000.00
34	137007	2017 Crane Carrier	287,822.50	25,000.00	25,000.00
35	137011	2017 Crane Carrier	287,822.50	25,000.00	0.00
			9,623,335.12	875,000.00	