



sanitation

JOHN J. DOHERTY

Commissioner

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March 31, 2010

Honorable Michael Bloomberg
Mayor, City of New York
City Hall
New York, New York 10007

Honorable Christine Quinn
Speaker, New York City Council
City Hall
New York, New York 10007

Honorable John C. Liu
One Centre Street – Municipal Building
Room 530
New York, New York 10007

Re: Local Law 38 of 2005, Fourth Annual Report

Dear Mayor Bloomberg, Speaker Quinn, and Comptroller Liu:

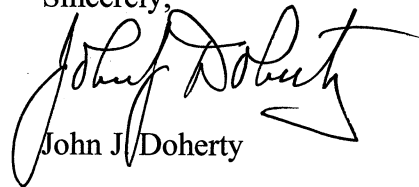
Pursuant to the New York City Administrative Code, I am pleased to submit to you the fourth annual report required by Local Law 38 of 2005.

Local Law 38 of 2005 added sections 24-163.1 and 24-163.2 to the New York City Administrative Code. Section 24-163.1 requires all City agencies to meet emissions and fuel economy standards for newly purchased light- and medium-duty vehicles. Section 24-163.2 provides that the Commissioner of Sanitation shall: (1) implement a program for testing the mechanical reliability and operational feasibility of alternative fuel street sweeping vehicles, and (2) collect and analyze data to further develop its initiatives for, and assess the feasibility of, incorporating new alternative fuel sanitation vehicles and technology into its fleet.

Section 24-163.2 also requires the Commissioner of Sanitation to report annually to the Mayor, Speaker of the City Council and Comptroller on the Department's alternative fuel street sweeping vehicle pilot project, and all other testing, analyses and assessments regarding its alternative fuel initiatives. The enclosed report is the fourth annual report on the Department of Sanitation's alternative fuel programs, including the street sweeper pilot program.

As the enclosed report indicates, the Department currently uses B5 (5% Biodiesel) for all of its diesel trucks, with the exception of one district which is using B20 (20% Biodiesel). In addition, we have 25 compressed natural gas (CNG)-powered street sweepers and 26 CNG-powered collection trucks, 28 CNG-powered light duty vehicles, 333 light duty vehicles powered by E85 ethanol, 471 light duty vehicles that are hybrid-electric, two hybrid-hydraulic collection trucks, and four hybrid-electric collection trucks. I am pleased to report that the Department's retrofit program for pre-2007 diesel trucks has been highly successful in making such trucks about as clean as CNG-fueled trucks. As all of DSNY's diesel street sweepers now have such retrofits, we have concluded from our pilot program testing CNG-fueled street sweepers that they offer minimal advantages over our regular fleet. The Department is committed to making its fleet as environmentally sustainable as possible consistent with our operational needs and cost constraints and will continue our active research and development efforts concerning alternative fuels and technologies for our fleet.

Sincerely,



John J. Doherty

c: Edward Skyler, Deputy Mayor
City Hall

Haeda Mihaltses, Director
Office of Intergovernmental Affairs, City Hall

Encl.



The City of New York Department of Sanitation



Report to the Mayor, Speaker of the City Council and Comptroller on the use of Alternative Fuel Street Sweepers and Sanitation Vehicles Pursuant to Local Law 38 of 2005



John J. Doherty, Commissioner
January 2010

I. INTRODUCTION

Local Law 38 of 2005 (LL38/2005) required the Department of Sanitation (DSNY) to implement a program for testing the mechanical reliability and operational feasibility of alternative fuel street sweeping vehicles by March 1, 2006. This law provides for a pilot project by which alternative fuel street sweeping vehicles are used exclusively in at least four sanitation districts, with at least one district in an area where high rates of asthma are found among residents. In addition, LL 38/2005 requires that DSNY assess the feasibility of incorporating new alternative fuel sanitation vehicles and technology into its fleet.¹

LL38/2008 further requires the Commissioner of Sanitation to report to the Mayor, the Comptroller and the Speaker of the Council on DSNY's alternative fuel street sweeping vehicle pilot project, and all testing, analyses and assessments of the alternative fuel street sweepers and sanitation vehicles. To fulfill this mandate, this report includes:

- The number of alternative fuel street sweeping vehicles included in the pilot project;
- The districts in which alternative fuel street sweeping vehicles are located and the type of alternative fuel used by such vehicles;
- The total number of alternative fuel sanitation vehicles owned or operated by DSNY, separated according to vehicle model and type of alternative fuel used;
- A description of all testing, analyses and assessments done on DSNY's alternative fuel street sweepers and sanitation vehicles;
- Conclusions based upon such testing, analyses and assessments;
- Information regarding efforts made by DSNY to develop initiatives for further incorporating alternative fuel sanitation vehicles into its fleet; and
- Information regarding the feasibility of incorporating alternative fuel sanitation vehicles into the DSNY fleet.

Background

While fulfilling its responsibilities to the City of New York, including garbage collection, recycling collection, street cleaning and snow removal, the Department of Sanitation (DSNY) has developed extensive experience in the testing and use of state-of-the-art technology and

¹ NYC Administrative Code § 24-163.2(c)(1), (2).

alternative fuels for its vehicle fleet. Currently all of the Department's light, medium and heavy-duty diesel vehicles utilize the industry's latest computer-controlled and regulated clean-diesel engines for their respective engine model years. The Department also implemented the use of ultra-low sulfur diesel fuel (ULSD) in its entire fleet over two years in advance of regulatory mandates.² The use of ULSD in turn allows for DSNY's expanding use of various advanced emission-control after-treatment technologies, such as diesel particulate filters and diesel oxidation catalysts (high sulfur diesel fuel harms these devices). With the use of these new technologies, heavy duty diesel truck particulate matter emissions are about as low as those from compressed natural gas (CNG)-fueled heavy duty vehicles. Similarly, nitrogen oxide emissions from the two technologies are comparable, with CNG truck NO₂ emissions slightly lower than the NO₂ emissions from diesel trucks.³ DSNY currently has particulate filters on 215 diesel powered street sweepers and 1,450 collection vehicles. Meanwhile, with the new (2006) national standards for ULSD fuel, federal standards for new on-road heavy duty diesel engines which took effect with the 2007 model year result in a reduction in particulate and nitrogen oxides pollution by over 98%, as compared with pre-1988 engines.⁴

DSNY currently has over 869 vehicles that operate on alternative fuels. DSNY is the first city agency to use E85 ethanol fuel – a mixture of 85% ethanol and 15 % gasoline – in its fleet. Currently, there are six E85 fueling facilities citywide, and 333 DSNY vehicles run on E85. DSNY also has 471 hybrid electric vehicles and 65 CNG vehicles in its active fleet.

Under LL 38/2005, alternative fuels include natural gas, liquefied petroleum gas, hydrogen, electricity, and any other fuel which is at least eighty-five percent, singly or in combination, methanol, ethanol, any other alcohol or ether.⁵ DSNY is currently utilizing CNG as an alternative fuel for certain of its street sweepers and collection vehicles. Although CNG-fueled heavy-duty vehicles emit significantly less particulate matter and nitrous oxides than pre-2007 model year diesel-fueled vehicles without retrofit technology, most of DSNY's collection trucks now have Best Available Retrofit Technology (BART) pursuant to local and federal law,

² The federal mandate for using on-road ULSD took effect in September 2006.

³ See Ayala, *et al.*, *CNG and Diesel Transit Bus Emissions in Review* (August 2003); Ayala, *et al.*, *Diesel and CNG Heavy-Duty Transit Bus Emissions over Multiple Driving Schedules: Regulated Pollutants and Project Overview* (Society of Automotive Engineers, 2002).

⁴ Nitrogen Oxides levels are capped at 0.2 grams per brake horsepower-hour (g/bhp-hr), and particulate matter is capped at 0.01 g/bhp-hr. 66 Fed. Reg 5001, 5005 (Jan 18, 2001).

⁵ NYC Administrative Code § 24-163.1(a)(1). Other types of fuels, such as biodiesel, do not qualify as alternative fuels.

and 100% of DSNY's diesel fleet is expected to have retrofits or equivalent technology by July 2012, essentially eliminating the comparative advantage for CNG with respect to particulate emissions. It has been reported that CNG trucks are somewhat quieter than diesel trucks⁶, but compaction noise from CNG collection trucks and diesel collection trucks seems generally comparable. While a gallon of CNG costs less than the equivalent amount of diesel, it has also been noted that CNG-fueled vehicles have lower fuel efficiency and emit more methane (a significant greenhouse gas) and carbon monoxide than conventional clean diesel vehicles,⁷ and the costs of CNG-fueled vehicles and CNG fueling station infrastructure are relatively high.

II. STREET SWEEPERS

This section reports on the number of alternative fuel street sweeping vehicles included in the pilot project; the districts where alternative fuel street sweeping vehicles are located and the type of alternative fuel used by such vehicles; and a description of all testing, analyses and assessments done on DSNY's alternative fuel street sweepers.

DSNY currently owns twenty-five (25) alternative fuel street sweepers, all of which use CNG (see Table 1), and all of which operate in the following four sanitation districts: Brooklyn 4, Queens 2, Queens 4, and Queens 5. In particular, ten CNG street sweepers used in the pilot study (see Table 2) have been allocated as follows: four street sweepers in Brooklyn 4 and two street sweepers each in Queens 2, Queens 4, and Queens 5. Of the four sanitation districts selected for the pilot study, Brooklyn 4 was determined to have high asthma rates among residents. These 10 pilot study CNG street sweepers were compared with ten diesel fuel powered street sweepers (see Table 3) used in certain other districts.

DSNY seeks to keep its fleet as up to date as possible. Accordingly, over a period from late 2008 into 2009 DSNY put into service 10 more new CNG street sweepers from Johnston to replace 10 of the oldest CNG street sweepers in the fleet. Although these newest sweepers were too recent to be included in the pilot study reported here, their performance is being carefully monitored separately.

⁶ INFORM, Inc., *Greening Garbage Trucks: New Technologies for Cleaner Air* (2003).

⁷ DSNY Commercial Waste Management Study, Vol. VI, at ES-5, 23 (March 2004); Ayala, *et al.*, *Diesel and CNG Heavy-Duty Transit Bus Emissions over Multiple Driving Schedules* (indicating CNG buses emit more carbon monoxide than retrofitted diesel buses).

Table 1. Total DSNY CNG Powered Street Sweepers

Vehicle ID	Make / Model	Vehicle Type	VIN #
20CNG-501	Johnston 4000	Street Sweeper	1J9VM4L903C172001
20CNG-502	Johnston 4000	Street Sweeper	1J9VM4L923C172002
20CNG-503	Johnston 4000	Street Sweeper	1J9VM4L943C172003
20CNG-504	Johnston 4000	Street Sweeper	1J9VM4L963C172004
20CNG-505	Johnston 4000	Street Sweeper	1J9VM4L983C172005
20CNG-601	Johnston 4000	Street Sweeper	1J9VM4L956C172001
20CNG-602	Johnston 4000	Street Sweeper	1J9VM4L976C172002
20CNG-603	Johnston 4000	Street Sweeper	1J9VM4L996C172003
20CNG-604	Johnston 4000	Street Sweeper	1J9VM4L906C172004
20CNG-605	Johnston 4000	Street Sweeper	1J9VM4L926C172005
20CNG-606	Johnston 4000	Street Sweeper	1J9VM4L946C172006
20CNG-607	Johnston 4000	Street Sweeper	1J9VM4L966C172007
20CNG-608	Johnston 4000	Street Sweeper	1J9VM4L986C172008
20CNG-609	Johnston 4000	Street Sweeper	1J9VM4L9X6C172009
20CNG-610	Johnston 4000	Street Sweeper	1J9VM4L966C172010
20CNG-701	Johnston 4000	Street Sweeper	1J9VM4L988C172111
20CNG-702	Johnston 4000	Street Sweeper	1J9VM4L9X8C172112
20CNG-703	Johnston 4000	Street Sweeper	1J9VM4L918C172113
20CNG-704	Johnston 4000	Street Sweeper	1J9VM4L938C172114
20CNG-705	Johnston 4000	Street Sweeper	1J9VM4L958C172115
20CNG-706	Johnston 4000	Street Sweeper	1J9VM4L978C172116
20CNG-707	Johnston 4000	Street Sweeper	1J9VM4L998C172117
20CNG-708	Johnston 4000	Street Sweeper	1J9VM4L908C172118
20CNG-709	Johnston 4000	Street Sweeper	1J9VM4L9X8C172109
20CNG-710	Johnston 4000	Street Sweeper	1J9VM4L968C172110

Table 2. Ten DSNY CNG Powered Street Sweepers Used in Pilot Study

Vehicle ID	District	VIN #	Fuel	Make / Model	In-Service date
20CNG-601	Brooklyn 4	1J9VM4L956C172001	CNG	Johnston 4000	08/28/06
20CNG-602	Brooklyn 4	1J9VM4L976C172002	CNG	Johnston 4000	10/02/06
20CNG-603	Queens 5	1J9VM4L996C172003	CNG	Johnston 4000	08/25/06
20CNG-604	Queens 4	1J9VM4L906C172004	CNG	Johnston 4000	10/26/06
20CNG-605	Brooklyn 4	1J9VM4L926C172005	CNG	Johnston 4000	09/07/06
20CNG-606	Queens 4	1J9VM4L946C172006	CNG	Johnston 4000	08/31/06
20CNG-607	Queens 2	1J9VM4L966C172007	CNG	Johnston 4000	08/28/06
20CNG-608	Queens 2	1J9VM4L986C172008	CNG	Johnston 4000	09/18/06
20CNG-609	Brooklyn 4	1J9VM4L9X6C172009	CNG	Johnston 4000	08/29/06
20CNG-610	Queens 5	1J9VM4L966C172010	CNG	Johnston 4000	08/28/06

Table 3. Ten DSNY Diesel Powered Street Sweepers Used for Comparison

Vehicle ID	District	VIN #	Fuel	Make / Model	In-Service date
20AY-039	Brooklyn 13	1J9VM4LD26C172039	Diesel	Johnston 4000	06/02/06
20AY-040	Brooklyn 15	1J9VM4LD96C172040	Diesel	Johnston 4000	05/25/06
20AY-041	Brooklyn 16	1J9VM4LD06C172041	Diesel	Johnston 4000	05/25/06
20AY-042	Brooklyn 17	1J9VM4LD26C172042	Diesel	Johnston 4000	06/08/06
20AY-043	Brooklyn 17	1J9VM4LD46C172043	Diesel	Johnston 4000	07/18/06

20AY-044	Brooklyn 18	1J9VM4LD66C172044	Diesel	Johnston 4000	06/12/06
20AY-045	Brooklyn 6A	1J9VM4LD86C172045	Diesel	Johnston 4000	06/16/06
20AY-046	Manhattan 11A	1J9VM4LDX6C172046	Diesel	Johnston 4000	12/08/06
20AY-047	Brooklyn 6A	1J9VM4LD16C172047	Diesel	Johnston 4000	12/19/06
20AY-048	Brooklyn 6A	1J9VM4LD36C172048	Diesel	Johnston 4000	12/08/06

DSNY tested its 10 pilot study alternative fuel street sweepers for operability and reliability and compared their performance to the performance of ten conventional diesel sweepers (see Tables 4 and 5). Their days in service were tracked and compared to their “down” incidents (i.e., incidents of required repairs) over the period from their in-service date through November 30, 2009. Each CNG sweeper was in service for between 1,132 and 1,194 days; the overall average was about 1,178 days of service. Each diesel sweeper was in service for between 1,078 and 1,286 days; the overall average was about 1,214 days of service. The CNG sweepers each experienced at least 12 down incidents, with a high of 33 incidents and an average of 23 incidents; in comparison, diesel sweepers had at least 6 down incidents, with a high of 21 incidents and an average of 15 incidents. The CNG sweepers’ down incidents amounted to between 57 and 246 days out of service per vehicles, with a combined total of 1,487 days out of service and an average of 149 days out of service per vehicle; diesel sweepers’ down incidents per vehicle ranged from 20 to 168 days out of service, with a combined total of 865 days out of service and an average of 87 days out of service per vehicle. The percent of time CNG sweepers spent down ranged from 4.8 % to 21 %, with an average of about 13 %, whereas the percent of time diesel sweepers spent down ranged from 1.8 % to 13 %, with an average of about 7 %.

Table 4. Reliability Statistics of CNG Powered Street Sweepers by District

Brooklyn 4		# Days In-Service	# of Down Incidents	# of Down Days	% of Down time
20CNG-601	1J9VM4L956C172001	1,191	14	83	7.0
20CNG-602	1J9VM4L976C172002	1,156	19	246	21
20CNG-605	1J9VN4L926C172005	1,181	15	169	14
20CNG-609	1J9VM4L9X6C172009	1,190	12	57	4.8

Queens 2		# Days In-Service	# of Down Incidents	# of Down Days	% of Down time
20CNG-607	1J9VM4L966C172007	1,191	33	202	17
20CNG-608	1J9VM4L986C172008	1,170	31	133	11

Queens 4		# Days In-Service	# of Down Incidents	# of Down Days	% of Down time
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20CNG-604	1J9VM4L906CI72004	1,132	33	219	19
20CNG-606	1J9VM4L946CI72006	1,188	25	72	6.1

Queens 5		# Days In-Service	# of Down Incidents	# of Down Days	% of Down time
20CNG-603	1J9VM4L996C172003	1,194	22	156	13
20CNG-610	1J9VM4L966C172010	1,191	22	150	13

Total # Days In-Service	Total # of Down Incidents	Total # of Down Days	Total % of Down time
11,784	226	1,487	13

Table 5. Reliability Statistics of Diesel Powered Street Sweepers

Vehicle ID	VIN #	# Days In-Service	# of Down Incidents	# of Down Days	% of Down time
20AY-039	1J9VM4LD26C172039	1,278	18	88	6.9
20AY-040	1J9VM4LD96C172040	1,286	18	73	5.7
20AY-041	1J9VM4LD06C172041	1,286	21	129	10
20AY-042	1J9VM4LD26C172042	1,272	16	76	6.0
20AY-043	1J9VM4LD46C172043	1,232	19	97	7.9
20AY-044	1J9VM4LD66C172044	1,268	8	119	9
20AY-045	1J9VM4LD86C172045	1,264	20	168	13
20AY-046	1J9VM4LDX6C172046	1,089	17	47	4.3
20AY-047	1J9VM4LD16C172047	1,078	10	48	4.5
20AY-048	1J9VM4LD36C172048	1,089	6	20	1.8

Total # Days In-Service	Total # of Down Incidents	Total # of Down Days	Total % of Down time
12,142	153	865	7.1

III. COLLECTION TRUCKS

DSNY currently owns 26 dedicated CNG sanitation collection trucks (see Table 6). DSNY is phasing out its older fleet (2001-2003 vintage) of CNG collection trucks that has been problematic. CNG-fueled trucks are longer than conventional sanitation vehicles, preventing them from accessing narrower streets because of their wider turning radius.⁸ In Calendar Year 2009, DSNY put into service 10 new CNG collection trucks from Crane Carrier Corporation equipped with the new generation of the Cummins ISL-gas CNG engines to replace 10 of the

⁸ Testimony of DSNY Deputy Commissioner Rocco DiRico to City Council Committee on Environmental Protection (September 23, 2004).

oldest CNG trucks in the fleet. Also in Calendar Year 2009, DSNY put into service one front-loading Crane Carrier Corporation CNG collection truck equipped with a Cummins ISL-gas CNG engine. In Fiscal Year 2009, DSNY ordered 10 additional CNG trucks from Crane Carrier Corporation that were delivered in November 2009. However, due to repeated failed cold starts upon pre-delivery inspection of these 10 CNG trucks, DSNY has not added these trucks to the fleet while the dealer investigates the issue.

Under a federal consent order, DSNY has built a fully-operational, heavy-duty vehicle CNG fueling station in Woodside, Queens, at a cost of approximately \$2,950,000.⁹ This station went into service in May 2007 and provides shorter fueling times.

Table 6. DSNY's CNG Collection Trucks¹⁰

Vehicle ID	Make / Model	Vehicle Type	VIN #
25CNG-401	Mack LE 613	Rear Loading	1M2AC12C03M008004
25CNG-402	Mack LE 613	Rear Loading	1M2AC12C23M008005
25CNG-404	Mack LE 613	Rear Loading	1M2AC12C63M008007
25CNG-405	Mack LE 613	Rear Loading	1M2AC12C83M008008
25CNG-406	Mack LE 613	Rear Loading	1M2AC12CX3M008009
25CNG-407	Mack LE 613	Rear Loading	1M2AC12C63M008010
25CNG-408	Mack LE 613	Rear Loading	1M2AC12C83M008011
25CNG-409	Mack LE 613	Rear Loading	1M2AC12CX3M008012
25CNG-410	Mack LE 613	Rear Loading	1M2AC12C13M008013
25CNG-411	Mack LE 613	Rear Loading	1M2AC12C33M008014
25CNG-412	Mack LE 613	Rear Loading	1M2AC12C53M008015
25CNG-413	Mack LE 613	Rear Loading	1M2AC12C73M008016
25CNG-414	Mack LE 613	Rear Loading	1M2AC12C93M008017
25CNG-415	Mack LE 613	Rear Loading	1M2AC12C03M008018
25CNG-416	Mack LE 613	Rear Loading	1M2AC12C23M008019
25CNG-501	Crane Carrier LET2	Rear Loading	1CYCCZ4868T048393
25CNG-502	Crane Carrier LET2	Rear Loading	1CYCCZ4868T048569
25CNG-503	Crane Carrier LET2	Rear Loading	1CYCCZ4828T048570
25CNG-504	Crane Carrier LET2	Rear Loading	1CYCCZ4848T048571
25CNG-505	Crane Carrier LET2	Rear Loading	1CYCCZ4868T048572
25CNG-506	Crane Carrier LET2	Rear Loading	1CYCCZ4888T048573
25CNG-507	Crane Carrier LET2	Rear Loading	1CYCCZ48X8T048574
25CNG-508	Crane Carrier LET2	Rear Loading	1CYCCZ4818T048575
25CNG-509	Crane Carrier LET2	Rear Loading	1CYCCZ4838T048576

⁹ This project was undertaken as part of a settlement of a lawsuit brought against the City and the New York City Department of Sanitation by the United States for violations of the Clean Air Act. *United States v. City of New York*, 99 Civ. 2207 (LAK) (S.D.N.Y.).

¹⁰ Vehicles 25CNG-301, -302, -303, -304, -305, -306, -307, -308, and -309 were purchased as part of a settlement of a lawsuit brought against the City and the New York City Department of Sanitation by the United States for violations of the Clean Air Act. *United States v. City of New York*, 99 Civ. 2207 (LAK) (S.D.N.Y.).

25CNG-510	Crane Carrier LET2	Rear Loading	1CYCCZ4858T048577
24CNG-001	Crane Carrier LET2	Front Loading	1CYCCZ4848T048392

DSNY is further developing its clean air efforts by implementing advanced technologies to reduce emissions and utilizing clean diesel fuel with a renewable alternative biofuel component. For example, in March 2007, DSNY launched a biodiesel (B5) initiative citywide on all diesel-powered equipment (on-highway and off-highway), utilizing 5% biodiesel (made from soybeans) and 95% ultra low sulfur (petroleum-based) diesel (ULSD). To date, the B5 initiative resulted in no change in vehicle performance, no operator or mechanic complaints, no increase in down rate, and good winter operability. In August 2007, DSNY implemented its B20 (20% biodiesel) pilot study in one district location (Queens 6) and testing is on-going.

Furthermore, as a part of New York City's efforts to improve air quality, save energy, and reduce fossil fuel use, DSNY issued a purchase order in Calendar Year 2008 to Crane Carrier Corporation to build three hybrid-electric diesel trucks and two hybrid-hydraulic diesel trucks (see Table 7). Under a one-year lease agreement, DSNY has agreed to test one Mack Trucks hybrid-electric truck. DSNY put into service the two hybrid-hydraulic diesel collections trucks in October 2009. DSNY is in the process of conducting pre-delivery inspections, operator and mechanic training, and route testing on the three Crane Carrier hybrid-electric diesel trucks and the Mack Trucks hybrid-electric diesel truck. DSNY intends to conduct further studies on the economic and operational feasibility of incorporating more alternative fuel sanitation vehicles into its fleet.

Table 7. DSNY's Hybrid Collection Trucks

# of Units	Chassis Mfg	Fuel	Hybrid Sys	Series/Parallel	# of Units in Service
3	Crane Carrier Corp	Diesel	Electric	Series	0
2	Crane Carrier Corp	Diesel	Hydraulic	Parallel	2
1	Mack Trucks	Diesel	Electric	Parallel	0

IV. CONCLUSIONS

Since 2007, DSNY has performed evaluations and assessments on the operation and reliability of CNG street sweepers versus conventional clean diesel street sweepers equipped with Best Available Retrofit Technology (BART) pursuant to local law. To date, clean diesel street sweepers with BART appear to be more reliable than CNG sweepers, with 7% of downtime for the diesel units compared to 13% for CNG street sweepers. Furthermore, in the late fourth quarter of 2009, Cummins announced that it would no longer offer the current CNG engine for street sweepers because it does not meet the USEPA 2010 air quality standards. Therefore, DSNY has no viable option for new CNG street sweepers. Based on the results to date, the dramatic improvements in clean diesel technology as exemplified by diesel sweepers with BART, and the lack of a commercial CNG sweeper alternative, DSNY concludes that there is no compelling reason to continue the evaluation pilot study of CNG sweepers.

Pursuant to its on-going clean fleet research and development efforts, DSNY is phasing out its older fleet of CNG sanitation collection trucks and replacing them with new CNG collection trucks. However, the last ten Crane Carrier Corporation CNG trucks ordered in Fiscal Year 2009 did not start in cold weather during the pre-delivery inspection; DSNY is waiting for the dealer to perform an investigation into the issue before DSNY incorporates these trucks into the fleet. Although as noted above CNG trucks no longer offer substantial emissions benefits over clean diesel trucks due to BART and new USEPA standards for clean diesel, DSNY will continue to evaluate the mechanical reliability and operability of CNG and other alternative fuel collection trucks.

DSNY will also continue participating in research and development of new technologies. Since 2007, DSNY's B5 initiative citywide has met with positive results and testing of the B20 initiative is ongoing in one captive fleet. DSNY is committed to exploring fully the costs and benefits of incorporating hybrid collection trucks into its fleet, as evidenced by the addition of the Crane Carrier and Mack Trucks hybrid collection trucks. To date, DSNY has put two hybrid-hydraulic diesel trucks into service and is working to incorporate the other hybrid collection trucks as soon as possible. DSNY anticipates that the annual report for LL38/2005 for 2010 will include further discussion of the reliability and fuel and emissions savings from such technology, as well as its cost.