

**Testimony of Michael Gilsenan
Assistant Commissioner, Bureau of Environmental Compliance
New York City Department of Environmental Protection**

**Committees on Environmental Protection and Sanitation and Solid Waste
Management
Council of the City of New York**

**Oversight - Implementation of Local Laws 77 of 2003, 38 of 2005, 39 of 2005,
40 of 2005, 41 of 2005, 42 of 2005 (the "clean fleet" laws)**

**Wednesday January 30, 2013
250 Broadway**

Good afternoon, Chairwoman James, Chairman Gennaro, and Members. I am Michael Gilsenan, Assistant Commissioner of the Bureau of Environmental Compliance in the New York City Department of Environmental Protection (DEP). Thank you for the opportunity to testify today at this oversight hearing on New York City's "clean fleet" laws. I am joined today by Geraldine Kelpin, Director of Air and Noise Enforcement and Policy at DEP, Keith Kerman, Deputy Commissioner and the City's Chief Fleet Officer in the Department of Citywide Administrative Services (DCAS), and Rocco DiRico, Deputy Commissioner of Support Services in the Department of Sanitation (DSNY).

Before beginning my testimony I'd like to take a moment to recognize the leadership that these committees have shown on air quality and sustainability issues over the past decade. Beginning with the passage of Local Law 77 in 2003, the Council has put forward a series of successful legislation to improve the environmental performance of the City's fleet, which has set the bar for municipalities across the country. In 2007 with the release of PlaNYC, Mayor Bloomberg built on these past efforts by setting the ambitious goal of making our air quality the cleanest of any major US City. PlaNYC included initiatives to retrofit and replace older vehicles, right-size vehicles, and pilot the use of cleaner fuels and technologies in the City's fleet. In my testimony this afternoon I will detail the City's efforts to comply with the clean fleet laws that this Council shaped

and to implement the PlaNYC initiatives, which together have made our municipal fleet the greenest in the United States.

The Bloomberg Administration is firmly committed to pursuing strategies to make existing diesel engines cleaner through use of ultra-low sulfur fuel (ULSD) and installation of emission control devices. City agency fleet managers are committed to aggressively pursuing emission reduction strategies for their diesel fleets through the use of best available control technology (BAT), the use of cleaner-burning diesel engines, and purchasing the lowest emitting vehicles with the highest fuel economy. In addition, DEP as part of the revisions to the Air Code is proposing stricter standards on the City fleet, including increasing the fuel economy percentages, requiring the use of biodiesel, and requiring that vehicles that cannot install retrofit technology after receiving a three-year waiver must retire that vehicle from service or select or purchase another vehicle that can meet emission standards.

New York City operates one of the greenest, most sustainable fleets in the country and continues to invest each year in technologies to reduce emissions. The local laws under review today have greatly advanced this effort. In the City's fleet, there are 24,958 vehicles. Of these, 10,100 (40%) utilize some type of alternative fuel or technology, with thousands of vehicles employing more than one emissions reducing approach. From FY 11 to FY 12, the City reduced total fuel use for fleets by 11%, from 30.8 million gallons to 27.5 million.

Local Law 38 requires the City to procure the most fuel efficient vehicles available for light and medium duty for at least 95% of new, non-emergency, procurements. The City reports regularly on this in the Mayor's Management Report as required and exceeded the target in FY11 and FY12 with 98% compliance each year, as is the case in most years since the law's implementation. Since the law was passed, the City has purchased over 5,600 vehicles in compliance with the law. The City now operates 4,693 hybrid gas-electric light duty fleet vehicles, one of the largest hybrid fleets in the United States. Based on manufacturer listed miles per gallon, we have improved fuel economy for our newly procured light and medium duty fleets by 18%. Actual fuel economy for our City vehicles is even better. A study by the Department of Parks and Recreation (DPR) found that actual fuel economy

for its City-owned hybrid sedans and SUVs was more than 50% better than with their non-hybrid versions. DPR and the New York Police Department (NYPD) operate modern fuel tracking systems to monitor and report on fuel use by car, driver and site. The City is now installing these units at all other agency fuel sites.

We are now taking the next steps to advance from a hybrid electric fleet to a “plug-in” electric fleet. The City currently operates 448 plug-in vehicles including 100 GM Volts, one of the largest Volt fleets in the country. (These vehicles do have small backup gas tanks.) We also operate over 200 smaller GEM electric transport vehicles, mostly at DPR. This month the City registered its first Citywide Requirements Contract for a full-use all-electric compact sedan, the Ford Focus EV. We will receive the first Focus EV sedans this spring and will soon add a medium-size EV to the contract. The City currently operates over 100 electric charging stations at City-owned garage and parking facilities citywide.

We are also right-sizing and down-sizing fleet units wherever possible through our Clean Fleet Transition Plan. For example, we right-sized 125 Ford 250 or 350 pickups, replacing them with smaller Ford Ranger or F150 units. These smaller vehicles are more fuel efficient and able to fulfill our operational needs. We are currently down-sizing 22 utility vehicles to sedans at the Department of Sanitation (DSNY), which will further reduce emissions. Working with our Clean Fleet Transition Plan NYPD has also made a substantial investment in alternative fuel vehicles and currently operates over 1,000 hybrids. Finally, we recently completed a fleet reduction of over 400 light duty vehicles.

Local Laws 39 and 77 require the retrofitting of City on-road and off-road diesel equipment respectively with Best Available Technology (BAT) to reduce emissions. Technological solutions to tailpipe emissions include:

- diesel oxidation catalysts (DOCs), which are essentially exhaust mufflers;
- diesel particulate filters (DPFs), which capture harmful particulate matter; and
- selective catalytic reduction (SCR), which adds fluid to DPF units to further capture nitrogen oxide (NO_x) emissions.

DEP monitors City fleet compliance with these laws and annually reports as required. Since 2007, federal law has required BAT for newly manufactured vehicles.

The City currently operates 5,656 fleet vehicles that are governed by Local Law 39. Of these, 95% are now in compliance, including 1,788 retrofits completed by City agencies. The only vehicles remaining are 270 in DSNY that are currently being retrofitted or assessed for salvage.

The City owns or leases 911 off-road vehicles that are governed by Local Law 77. Of these, 825 (91%) are in compliance with 86 remaining, mostly highly specialized equipment pieces at DOT. In addition, contractors for the Department of Design and Construction (DDC) use 297 off-road leased vehicles, of which 186 remain to be retrofitted. DDC has improved its compliance from 18% (47 of 266 units) in FY11 to 37% (111 of 297) and continues to focus on resolving the remaining issues.

Local Law 77 (LL 77) is the only clean fleet legislation that affects contractors who perform construction work for City agencies. As a result, compliance with LL 77 has proven to be more challenging compared to the other clean fleet bills.

Local Law 77 requires that any diesel powered off-road vehicle used by the City use ultra-low sulfur diesel (ULSD). As mentioned, it also requires these vehicles be retrofitted with an emissions control device to reduce the release of harmful pollutants. Federal regulations required ULSD in on-road diesel vehicles by July 1, 2006 and in off-road diesel vehicles by 2010. To meet these nationwide requirements, DEP and other City agencies have worked to improve air quality by going beyond the emission requirements in LL77. DPR, DSNY, DOT, the Department of Corrections, and DEP have been using ULSD, alone and in combination with biodiesel blends, and emission control devices well in advance of the effective dates of LL77. DEP, as a voluntary measure, has been using this fuel and these devices at the Croton Water Filtration Plant construction site.

The City has now achieved 91% compliance for the City off-road fleet and is working to resolve contractor issues. While we have remaining work to do, the

City has made major strides towards full compliance, despite challenging implementation barriers. Unlike for on-road vehicles, it took time for industry to standardize best available emission control equipment for off-road vehicles and the processes necessary to comply with this local law. This industry delay, in turn, caused delays in implementation of the law's measures. As technology improves and the universe of devices increases, there have been fewer operational issues with implementing this law and more agencies are coming into compliance.

The contracting aspect of Local Law 77 is also unique, as it is often difficult to know the type of BAT that is needed and then ensure that the contract adequately provides for the funding needed to allow for the appropriate BAT to be installed.

While both Local Laws 39 and 77 require the use of ULSD, New York City is also a national leader in using biodiesel. We operate 9,074 diesel fleet vehicles in total, including emergency services, which are not governed by these local laws. We currently use biodiesel blends in 68% of the fleet, in over 6,100 vehicles. The City is on track to use more than 10 million gallons of biodiesel blends for City vehicles in Fiscal Year 2013. The blends are B5 or B20 (that is, 5 or 20% biodiesel, respectively). We have also piloted B50 and B100 at DPR. The percent of the diesel fleet fuel that is blended continues to rise and is now at 73%. We anticipate increasing this further in 2014 with expanded use of B20 blends starting in April 2013. Currently biodiesel is used for all diesel equipment, except for emergency service and selected off-road vehicles due to design or warranty issues. In 2011, New York City, in recognition primarily of the efforts of DPR and DSNY, received national recognition for its leadership in biodiesel implementation from the National Biodiesel Board.

The City is also investing in hybrid diesel-electric technology, in addition to its major investment in hybrid gas-electric technology. DSNY is continuing to test heavy duty hybrid electric technology on its refuse fleet. Currently in service are five second generation HEV trucks with promising results. In addition, DSNY is currently operating 17 second-generation hybrid hydraulic refuse trucks with 28 more expected in 2013. Results of this technology are under review. Through DSNY's efforts, we have invested in 43 heavy duty trucks that operate Eaton hybrid systems, mostly at DSNY, DPR and DOT. In fact, these trucks combine

use of hybrid diesel-electric technology with biodiesel and selective catalytic reduction at the tailpipe to reduce fleet emissions with multiple technologies. Also, all medium and heavy trucks purchased from 2010 utilize selective catalytic reduction to reduce NO_x.

Finally, the City also operates three compressed natural gas (CNG) stations, two at DPR and one at DSNY. These stations support 128 CNG vehicles at those two agencies. In addition, last year the DSNY in collaboration with General Motors and Shell oil company completed a one year pilot program that successfully determined that hydrogen powered vehicles are a viable future option for zero (0) emission transportation if costs come down.

So with respect to Local Law 38, we have exceeded the goal of purchasing 95% of the City's fleet in the lowest polluting class by both purchasing over 98% of the fleet and meeting the mandated 15% increase in fuel economy for light duty vehicles in FY 11. Our success can also be measured by Local Law 39; as of FY 12, 95% of all City-owned and -operated diesel powered vehicles greater than 8,500 lbs., such as garbage collection trucks and DEP's truck fleet, use ULSD and BAT to reduce pollutants.

Local Law 38 of 2005 requires the Department of Sanitation to conduct an evaluation of alternative-fuel street sweeping vehicles. The Department has discontinued the evaluation pilot study of compressed natural gas sweepers because no manufacturer makes a CNG engine of the size needed for DSNY's street sweepers that meets the EPA 2010 air emission standard for NO_x. Further, DSNY found that CNG sweepers no longer offer substantial benefits compared to new clean-diesel sweepers.

Local Laws, 40, 41, and 42 were also passed in 2005. Similar to Local Laws 38 and 39, the aggressive work performed by DSNY, the Department of Consumer Affairs (DCA) and the Department of Education (DOE), with the assistance of DEP, has resulted in substantial compliance with the mandates of each law.

Local Law 40 of 2005 requires that all solid waste and recyclable materials contractors meet the stringent 2007 USEPA emissions standards or utilize BART

for all diesel fuel-powered motor vehicles and meet the phase-in requirements of 2004 EPA rules for new diesel fuel-powered off-road vehicles used in the performance of such contracts which operate primarily within New York City. For 2012, all of DSNY's solid waste and recyclable materials contractors complied with this mandate.

Local Law 41 (LL 41) requires all City-licensed sightseeing diesel buses to use ULSD to reduce pollutants. In addition, to lower the emission of harmful pollutants, these vehicles must install emission reduction devices. As of FY11, 100% of the required vehicles use best available retrofit technology. Also, all diesel vehicles are powered by ULSD.

Local Law 42 (LL 42) required that by September 1, 2006, certain general education diesel fuel-powered school buses be powered by ULSD. In addition, LL 42 required that by September 1, 2007, all of these school buses use best available retrofit technology (BART) to reduce emissions. As of FY 11, DOE was using ULSD for their fleet of school buses in vehicles manufactured after 2001. DOE is also going beyond the scope of the requirements of the legislation to reduce the emission of pollutants from Type C and D general education school buses by retrofitting special education buses with BART. Of DOE's total fleet, 96% are using emission control devices with 43% using the best available device.

The Department of Sanitation's Clean Fleet program involves acquiring new clean diesel trucks as the fleet turns over, and retrofitting its pre-2007 fleet with new emission control equipment—best available retrofit technology—as required by LL 39. Overall, diesel fleet emissions to date have been reduced by approximately 85% for particulate matter (PM), and by greater than 50% for nitrogen oxides (NO_x), compared with levels in 2005. DSNY uses ULSD exclusively with 5% biodiesel content across its entire diesel fleet, which achieves even greater emissions reductions, and has installed BART devices such as particulate filters on most of its pre-2007 trucks. Currently, approximately 90% of DSNY's on-road diesel fleet is equipped with BART or has factory-installed controls meeting the stringent 2007 and 2010 EPA emission standards. Of the remaining approximately 400 vehicles, about one-third are slated to be replaced within the next year with clean diesel models with factory-installed controls; therefore, retrofits are not

required. The remaining trucks are not standard rear-loading collection vehicles or street sweepers but have specialized uses and are more complex to retrofit; they are currently being evaluated for appropriate retrofits as per the latest BART rules. Lastly, with regard to LL 77, DSNY has equipped 98% of its off-road fleet with BART; the remaining 5 units (small skid steers) could be made compliant with diesel oxidation catalysts.

New York City's fleet has made enormous progress in reducing fuel use and its emissions impact. The City is recognized nation-wide among both private and public fleet operators as a leader in fleet sustainability. Working together with the City Council, all the major fleet agencies, the Office of Management and Budget, the Mayor's Offices of Operations and Long-Term Planning and Sustainability, inter-governmental partners including the New York Power Authority, Clean Cities, and EPA, and our vehicle, equipment and fuel suppliers, we continue to pursue additional sustainable approaches on multiple fronts.

Thank you for the opportunity to testify. We would be glad to answer any questions.



Written Testimony of Scott Hedderich
Submitted to the New York City Council Committee on Environmental Protection
January 30, 2013.

Chairman Gennaro and members of the Committee, thank you. I appreciate the opportunity to testify before you today.

My name is Scott Hedderich, I am Director of Corporate Affairs for Renewable Energy Group REG. Renewable Energy Group is a leading North American biodiesel producer with a nationwide distribution and logistics system. For more than a decade, REG has been a reliable supplier of biodiesel which meets or exceeds ASTM quality specifications. Utilizing an integrated value chain model, our company is focused on converting natural fats, oils and greases into advanced biofuels. REG currently has more than 225 million gallons of owned/operated annual production capacity at biorefineries across the country, as well as over 20 terminal locations including 3 in the New York metropolitan area.

As the City Council is aware, biodiesel is a diesel replacement fuel that qualifies as an "Advanced Biofuel" under the federal Renewable Fuels Standard (RFS2) program. The fuel is made from agricultural oils, fats, and waste greases and is refined to meet a specific commercial fuel definition and specification. The fuel is produced by mixing the raw materials with an alcohol to remove the glycerin and meet the D6751 fuel specification set forth by ASTM International. Biodiesel is one of the best tested alternative fuels in the country and the only alternative fuel to meet all of the testing requirements of the 1990 amendments to the Clean Air Act.

New York has been a leader in proactively addressing the health and well being of its residents. The PlaNYC document is the embodiment of that leadership. The document, updated nearly 2 years ago, sets out a well reasoned and thoughtful agenda in a number of areas touching on the lives of New Yorkers. The use of biodiesel plays a significant role in the document's air quality section in meeting the City's goal of reducing PM2.5 emissions to acceptable levels as well as the its goal of reducing the green house gas emissions from government operations by 30% by 2017.

The U.S. EPA has indicated that biodiesel made from soybeans reduces greenhouse gas emissions by 57 percent compared to petroleum. Biodiesel made from waste raw materials (used cooking oil, animal fats) is 86 percent better than petroleum. Biodiesel reduces carbon monoxide emissions by 45 percent and sulfur oxides by 98.5 percent. With respect to pollutants that directly affect human health issues such as respiratory illness and cancer, biodiesel reduces particulate matter emissions by 78.5 percent and hydrocarbons by 90 percent.

REG applauds the city of New York for its foresight and strong support of the use of biodiesel, whether through the city wide requirement to use biodiesel in heating oil (bioheat), or through the implementation of biodiesel in significant blends within the City's diesel fleet. New York has been and remains a leader in this area

As such, The U.S. biodiesel industry is looking to this market as a significant growth opportunity. The National Biodiesel Board is spending significant resources to educate consumers on the benefits of biodiesel and companies like ours are investing in long-term infrastructure to make biodiesel available year round at competitive prices.

The city has made tremendous progress in implementing the use of biodiesel in its fleet, expanding beyond the pilot Parks and Recreation use to now cover a wider array of non emergency vehicles. Implementation of B5 fleet wide is a good first step and mimics actions in states like Minnesota, where B5 is required in all diesel fuel, and Illinois where over 80% of the available diesel is B11 and can be up to B20 in the summer months. Implementation of B20 in non-emergency vehicles throughout the city fleet is the next logical step and we are pleased the city is moving in that direction.

As the City moves forward on B20, this Committee should ask itself, if it is good for the City fleet, if it's good economics, if it is good for the health and well being of New Yorkers, why stop at the City fleet? Ultimately, time will tell if it is good for the fleet, but there are examples of other municipalities and businesses operating B20 and above in their equipment with excellent results. We would expect nothing less here in New York. Future biodiesel economics are difficult to predict, just as the economics of other products in the energy sector, but looking back over the last two years biodiesel pricing has been favorable compared to oil. As to the health benefits, the data is clear biodiesel is far better for the environment than any oil derived fuel.

So the question to consider is if the city can successfully implement B20 in its fleet, and again we have every reason to believe it will, should the City Council, take that same innovative and forward thinking and apply it city wide in all diesel fuel to the benefit of all New Yorkers? Such a move would be complex and require thought and planning to execute properly, but this Committee should not shy away from asking the key questions and exploring the possibilities.

In conclusion, I would like to thank Chairman Gennaro and the committee for allowing me to testify today, for their efforts in supporting bioheat and biodiesel and for your oversight of PlaNYC and for your support of the Mayor's goal to make New York a healthier place to live.

**TESTIMONY OF
SHANE TERBLANCHE
GENERAL MANAGER, HYBRID DRIVE SYSTEMS DIVISION
PARKER HANNIFIN CORPORATION**

BEFORE THE

**COMMITTEE ON ENVIRONMENTAL PROTECTION
COUNCILMEMBER JAMES F. GENNARO, CHAIRMAN
AND
COMMITTEE ON SANITATION AND SOLID WASTE MANAGEMENT
COUNCILMEMBER LETITIA JAMES, CHAIRWOMAN**

JANUARY 30, 2013

Good afternoon Chairwoman James, Chairman Genarro and members of the Sanitation and Environmental Protection Committees. My Name is Shane Terblanche, and I am the General Manager of the Hybrid Drive Systems Division at Parker Hannifin Corporation. I want to thank all of you for the opportunity to introduce Parker Hannifin's hydraulic drive train technology known as RunWise. This technology reduces fuel consumption and emissions of large refuse trucks.

But before I give an overview of the RunWise system, I want to commend you for having this oversight hearing regarding "Clean Fleet" laws. Clearly, New York City is a national leader in urban environmental planning. These laws are intended to monitor the modernization of vehicle fleets and ensure compliance to emission standards. The goal is to reduce emissions to specific levels by certain dates in order to improve air quality and associated public health benefits. What is clear from the existing set of "Clean Fleet" laws dating back to 2003-05, is that the science and evolving standards surrounding reducing fuel consumption and emissions is changing rapidly. Parker Hannifin supports your efforts to better align "Clean Fleet" laws to emerging technology and new national standards.

For those unfamiliar with Parker Hannifin, We are the world's leading diversified manufacturer of motion and control technologies and systems, providing precision-engineered solutions for a wide variety of mobile, industrial and aerospace markets. The company employs approximately 60,000 people in 48 countries around the world, with 2012 annual sales of \$13 billion. The company was founded in 1918 and is headquartered in Cleveland Ohio.

HOW THE RUNWISE SYSTEM WORKS

Current power train systems on most refuse trucks are inefficient. Roughly 20% of the fuel energy is converted to useful work, such as propelling the truck and providing the energy to operate body implements such as cranes, snow plows, winches, loading arms, and trash compaction. With a conventional power train, the engine rarely operates at its most efficient speed and load conditions, and brake energy recovery is nonexistent.

The RunWise system is a self contained series hybrid drive system that can be implemented as a retrofit or preinstalled at the truck manufacturer. Within the RunWise system, the vehicle's input shaft delivers power from the engine into the Power Drive Unit, which drives a primary pump that supplies pressure and flow to charge the accumulators or drive two secondary hydrostatic pump-motors. The onboard controller determines how and when the pressure is used. The hydrostatic motors drive the output shaft through a simple two-speed gear reduction, either low (0-25 mph) or high (26-45 mph), depending on demand. As the vehicle reaches highway speeds above 45 mph, the Power Drive Unit shifts from high hydrostatic to mechanical direct drive. The system optimizes efficiency by matching engine load with vehicle requirements, a unique characteristic of its "series" design. All of this is accomplished automatically, providing smooth, seamless power to the driver. An important advantage of the RunWise system is efficiently recovering and storing brake energy for later use. Upon braking, the hybrid drive

system's controller commands the hydrostatic motors to function as hydraulic pumps, working seamlessly with the refuse vehicle's standard friction braking system to decelerate the vehicle, while simultaneously transforming the vehicle's *kinetic* energy into stored, high-pressure *potential* energy in the system's nitrogen-charged composite accumulators. This accumulated energy is stored until the vehicle starts moving again. During the refuse collection cycle, accumulated energy is utilized to accelerate the vehicle instead of using conventional power from the diesel engine. The more stops a vehicle makes during the day, the more efficient the system becomes relative to a conventional drive train. Because of Parker's proprietary component and system technology employed in the RunWise package, high levels of braking energy (exceeding 70 percent) can be recaptured and used compared to alternative hydraulic and battery electric hybrid approaches. It is this ability to transfer significant amounts of power, along with advanced electronic controls and engine decoupling, that enables RunWise to capture a class-leading proportion of braking energy.

BENEFITS OF THE RUNWISE SYSTEM - HIGHLIGHTS

Enhanced Fuel Economy – Fuel consumption is reduced 30%-50%, depending on route density and operating conditions. Vehicles can utilize full engine power at any time, but the system's design optimizes efficiency by matching engine load with vehicle requirements. Less engine cooling is required, extending engine life.

Reduced Emissions – Less fuel consumption results in a corresponding reduction in CO2 emissions, contributing to a greener planet.

Reduced Brake Wear – Absorption and storage of energy during deceleration results in less wear on brakes and the rear tires run cooler for longer life. Fewer brake jobs saves money. Improved braking repeatability results in reduced brake fade. RunWise accommodates ATC and ABS.

Improved Drivability – The drive train is smoother and quieter than traditional trucks, with little vibration. The no-shift feature of the hydrostatic drive contributes to smooth starts and quick launch speeds that enable drivers to cover routes quicker, increasing productivity. RunWise operates equally well in severely hot or cold conditions and can be configured to drive vehicles ranging from 16,000 pounds to more than 70,000 pounds. Waste collection fleet owners are excited about RunWise and its ability to increase their productivity and profitability. In addition to advanced series hybrid drives (RunWise) for refuse collection vehicles, Parker is also developing simplified series hydraulic hybrid drives to meet the needs of urban delivery vans and port tractors.

In summary, Parker Hannifin is proud to be part of the effort to reduce carbon based emissions that impose such a negative impact on public health, especially in densely populated urban areas. Clean Fleet laws are important because what is counted is measured, and what is measured is understood. We can not get to where we want to be in 2030 if we do not correctly monitor the path we are on now. Thanks again for allowing me to introduce Parker Hannifin's drive train technology and I would be happy to answer any questions.



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TESTIMONY OF STEVEN J. LEVY
SPRAGUE OPERATING RESOURCES LLC
BEFORE THE COMMITTEE OF ENVIRONMENTAL PROTECTION
COUNCIL OF THE CITY OF NEW YORK

OVERSIGHT HEARING:

PlaNYC's GOAL TO EXPAND THE USE OF BIODIESEL IN THE CITY'S FLEET

Wednesday January 30, 2013

Good afternoon Chairman Gennaro and members of the Environmental Protection Committee. My name is Steven J. Levy. I serve as Managing Director of Sprague Operating Resources LLC, a leading supplier of commercial transportation fuels and fleet fuel management in the city of New York. Our transportation fuels include Ultra Low Sulfur Diesel, gasoline, biodiesel, ethanol, and soon CNG (compressed natural gas) as we partner in the opening of the first true public retail CNG service station in the City of New York. I am also honored to serve as: Chair of the Empire Clean Cities (formerly the New York City Lower Hudson Valley Clean Communities), a non-profit organization tasked with advancing the region's economic, environmental and energy security by building local public-private partnerships promoting the use of clean fuels, vehicle technologies and practices to reduce petroleum consumption throughout New York City and the Lower Hudson Valley (Westchester, Rockland, and Putnam counties); Treasurer / Governing Board Member of the National Biodiesel Board; and Commissioner of the National Biodiesel Accreditation Commission, a cooperative and voluntary program for the accreditation of biodiesel producers, marketers and testing laboratories of biodiesel fuel called BQ-9000®. The program is a unique combination of American Society of Testing Material (ASTM) standards for biodiesel and a quality systems program that includes storage, sampling, testing, blending, shipping, distribution, and fuel management practices. I was also appointed by Governor Cuomo to serve on the recently-created New York State Ready Commission, tasked with finding ways to ensure critical systems and services are prepared for future natural disasters and other emergencies.



We applaud the City for its proactiveness in expanding the use of biodiesel in the City fleet. The City fleet has a long history of pioneering and implementing new fuels and technologies and has been at the forefront of the industry for years. Sprague has witnessed City efforts to be one of the most diversely-fueled major municipal fleet in the country. We have supplied the City a significant portion of its alternative clean fuel needs over the years including reformulated gasoline, ULSD, biodiesel, BioHeat®, methanol and ethanol blends. Biodiesel is an attractive fuel produced by agricultural by-products and co-products such as soybean oil, rendered fats, recycled grease and algae while affording many advantages including reduced tail pipe emissions, increased jobs, reduced lifecycle gases, and sustainable use of the used cooking oil waste stream, just to name a few. Specific fleet advantages include increased cetane and superior lubricity with high BTU values versus other alternative fuels.

Over the years I have had the honor of providing testimony for seven NYC bills, all with positive outcomes, several of which mirror today's objective of evaluating and embracing the expanded use of biodiesel. As I think back over these previous bills, I am amazed with the City's ability to introduce innovative fuel options, such as incorporating ULSD requirements, and then implementing them in a very short period of time. Sprague was an early adopter of ULSD, supplying the product ten years before the EPA mandate. There were many questions within the industry regarding the product's supply, distribution, availability, operability, and pricing. However, we were convinced that the fuel would gain traction given the significant emission reductions when coupled with new emission technology versus traditional diesel fuel. When the City began demonstrating ULSD in 2001, it was a boutique product. Special handling throughout the distribution system was critical and there were many questions regarding ongoing supply. However, like the question of biodiesel today, Sprague believed in the City's direction and innovativeness and was ready and able to support the product's introduction.

Biodiesel, as ULSD was over a decade ago, is today somewhat of a boutique product. However, there are dozens of suppliers like Sprague that believe in the continued evolution towards more environmentally-friendly fuels. The introduction of biodiesel is somewhat different than what was experienced in the early 2000's with ULSD. For example, biodiesel has dozens of processing facilities, multiple storage facilities and is shipped through multiple means of transportation including marine, rail and truck, versus ULSD when Sprague was the only wholesale supplier on the East Coast. When purchasing biodiesel blends from certified National Biodiesel BQ-9000 Marketers who incorporate the most up-to-date ASTM product specifications and engine manufacturer specifications, transportation fleets have experienced terrific success with the fuel, including the City of New York's municipal fleet. Quality biodiesel has been widely available from multiple sources in the City of New York for years, contributing to the fleet's success. Biodiesel is a proven product. In addition to purchasing biodiesel from a reputable supplier as the City considers expanding its usage, it is critical that the City incorporates a pricing



mechanism to take advantage of the evolving commodity marketplace and integrate a pricing strategy to obtain biodiesel at the most competitive market price. The optimal pricing mechanism would include values for diesel fuel including the pure biodiesel blending component (B100 or B99.9) and renewable identification numbers (RINs), as well as a clear statement regarding how to address other potential legislation including the biodiesel tax credit, which is currently in effect through December 2013. Surely the City will also consider which months higher blends will be consumed, be sure to meet engine manufacturer product specifications and continue bulk storage tank good housekeeping.

Governor Cuomo recently mentioned a few recommendations from his newly established New York State Ready Commission, addressing the crucial challenge of emergency preparedness and response for extreme weather events. We urge the City to consider the recommendations including establishing fuel contracts requiring bidders to include an emergency supply action plan in all their bids and final contracts, including biodiesel. We would also recommend considering vendors with local assets such as terminal storage and owned delivery equipment to meet the requirements of the City which are critical to emergency response and recovery.

In conclusion, the expanded use of and transition to biodiesel in the City fleet will enhance the PlaNYC sustainability efforts to provide City citizens cleaner air to breathe, increased jobs, reduction of higher carbon fuels, reduction of greenhouse gases and the benefits of a more sustainable City.

Thank you for the opportunity to comment. We are happy to entertain any questions you may have.



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Written Testimony of Raymond Albrecht, P.E.

Submitted to the New York City Council Committee on Environmental Protection

January 30, 2013

Good morning, Chairman Gennaro and members of the Environmental Protection committee. I appreciate the opportunity to testify before you today.

My name is Ray Albrecht. I serve as a Technical Representative for the National Biodiesel Board (NBB). The NBB is the trade association that represents the nation's biodiesel production facilities, marketers, and feedstock producers. The association serves as the coordinating body for research and development in the U.S.

NBB would like to commend the Environmental Protection Committee for its consideration of further programs to encourage the use of biodiesel. We share your belief that biodiesel can be the cornerstone for reaching the next level of environmental excellence for transportation in New York City.

As you may already know, biodiesel is made from agricultural oils, fats, and waste greases and is processed to meet the D6751 fuel standard established by ASTM International. U.S. biodiesel is made primarily from soybean oil, canola oil, inedible corn oil, used cooking oil, and animal fats. New sources of biodiesel feedstock include winter cover crops such as canola and pennycress, which help prevent soil erosion during the winter, as well as algae.

Continuous improvements have been made over the past decade in agricultural practices and fuel processing to reduce the energy input required to produce biodiesel. Biodiesel has recently been certified by the U.S. Department of Energy's Argonne National Laboratory as reducing direct greenhouse gas emissions by 86 percent compared to traditional petroleum-based diesel fuel. Biodiesel also achieves an approximately 70 percent reduction in greenhouse gas emissions compared to natural gas. Biodiesel is a practical and proven fuel that can help us to make real progress toward the goal of an 80 percent reduction in greenhouse gas emissions by the year 2050.

Biodiesel programs here in New York City contribute to our energy independence by providing a stable and dependable market for the many small businesses that comprise the biodiesel industry. We would expect to see economic growth throughout the broader metro New York region, both in terms of processing capacity and feedstock development, from the programs that are under consideration here today. Feedstock development is a particularly promising area for New York City, which has approximately 19 million gallons of used cooking oil that can be used for biodiesel.

Biodiesel is one of the best tested alternative fuels in the country, and the only alternative fuel to meet all of the requirements of the 1990 amendments to the Clean Air Act. The production and processing of biodiesel are also subject to the requirements of federal clean air and clean water regulations. Biodiesel feedstocks require minimal fertilizer, no irrigation, and are among the more drought resistant crops that are grown -- they offer both economic and environmental benefits to the farmer. In addition, minimal water is required for biodiesel processing. Biodiesel is a truly "water wise" fuel.

Biodiesel inherently meets the new 15 ppm sulfur federal requirement for transportation diesel fuel. It is thus a natural partner to ultra-low sulfur diesel fuel in reducing sulfur-based smog and public health impacts.

Biodiesel also has an oxygen content of about 10 to 12 percent and thus contributes to public health in several additional ways. Biodiesel can reduce carbon monoxide emissions by 45 percent and, even more importantly, it can significantly reduce carbon-based fine particulate emissions from diesel engines. Biodiesel can reduce the emissions of toxic PAH components of engine exhaust by as much as 90 percent. Biodiesel and modern diesel technology combine to achieve the same level of ultra-clean performance as compressed natural gas (CNG) engines.

Recent testing with modern diesel engines has shown that biodiesel continues to provide meaningful environmental benefits even in diesel engines with catalytic converters and particulate filters. Testing has shown that the already ultra-low emissions from modern diesel engines can be cut in half again by using biodiesel. Biodiesel also helps diesel exhaust gas treatment systems to function more durably, and thus more cleanly, over the long service life of a diesel engine.

And finally, we have learned recently from Superstorm Sandy the importance of clean fuel characteristics during major weather events, which can cause severe damage to buildings and vehicles, and unfortunate fuel spills. Biodiesel has been shown in past decades of testing to exhibit significantly higher levels of biodegradability and significantly lower levels of toxicity than petroleum diesel fuel. We believe that these particular benefits warrant greater recognition in environmental policymaking.

In conclusion, I would just like to, once again, thank Chairman Gennaro and the committee for allowing me to testify today and for considering new programs for biodiesel, which would create green jobs in the region while improving the environment and public health.



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1/30/2013

Testimony from Tri State Biodiesel (Dehran Duckworth, Managing Member) regarding Implementation of Local Laws 77 of 2003, 38 of 2005, 39 of 2005, 40 of 2005, 41 of 2005, 42 of 2005 (the "clean fleet" laws) and the status of PlaNYC's goal to expand the use of biodiesel in the City's fleet.

1. Using biodiesel reduces air pollution across the entire fleet. Clean air is an important component of a healthy environment in every community.
2. Biodiesel is the only alternative fuel to have a complete evaluation of emissions submitted to the Environmental Protection Agency. Results as follows;

Emission Type	B100	B20
Total Unburned Hydrocarbons	67% reduction	20% reduction
Carbon Monoxide	48% reduction	12% reduction
Life Cycle Carbon Dioxide	78% reduction	16% reduction
Particulate Matter	47% reduction	12% reduction
Nitrous Oxides	10% increase	-2% decrease 2% increase

3. A 1998 study sponsored by the U.S. Departments of Energy and Agriculture concluded that biodiesel reduces life cycle carbon dioxide (CO₂) emissions by 78 percent compared to diesel. Carbon dioxide is a greenhouse gas associated with global climate change.
4. Using oil from soybeans to make biodiesel generates more energy than producing the biodiesel itself. In other words, the energy output outweighs the energy input — for every unit of energy it takes to produce a gallon of biodiesel, over three units of energy are gained. Biodiesel can be made from any vegetable oil or animal fat and new feedstocks are being developed for plentiful biodiesel supply.
5. As school districts, municipalities, and fleet owners debate the many factors involved in transportation decisions, biodiesel emerges as the leading alternative choice to petroleum diesel. Biodiesel promotes positive changes in the health, equipment, economy, and environment of its users and is the fastest growing alternative fuel in the United States today.
6. One of the easiest and best options for school districts, municipalities, and fleet owners to implement to protect student, employee, and community health is to switch to biodiesel, a cleaner transportation fuel made from renewable resources. It is recognized by EPA as one of the Clean Fuel/Clean Technology options under the Clean School Bus program. It can be used in existing equipment and stored in existing facilities without modification, in any blend from one to 20 percent. In some applications and warm climates, even higher blends may be used year-round.
7. Biodiesel is a good option economically, because it is not necessary to invest in costly new vehicles or retrofit current vehicles. Any fleet can immediately become an alternative fuel fleet. Due to federal fuel blenders and local state tax incentives, the cost to the end user has become more competitive with diesel prices in recent years and many end users have reported decreased fleet maintenance costs.
8. Other cost benefits to consider besides fuel; Currently, the United States imports more than half of the petroleum we consume. If the dollars we currently send overseas were spent on domestic fuel, the U.S. economy would be strengthened. A recent study shows that \$13.6 billion will be kept in the U.S. - as opposed to spending on foreign oil - with the predicted growth of biodiesel by 2015. Using biodiesel also supports American farmers, since the major biodiesel feedstock is soybeans, with other oilseeds crops also serving as feedstocks. Finally, using biodiesel promotes U.S. energy security.
9. Biodiesel has a proven track record. In terms of horsepower, fuel economy, and torque, biodiesel is equivalent to diesel. Biodiesel increases the lubricity of the fuel, which can lead to longer engine life, lower maintenance costs, less equipment downtime, and protection against fuel injector failure. Biodiesel exceeds diesel in cetane number, resulting in superior ignition. Biodiesel is nontoxic, biodegradable, and has a higher flash point than diesel, making it more versatile where safety is concerned.

All statistics and studies were retrieved from the Alternative Fuels Data Center, www.eere.energy.gov/afdc, the U.S. Environmental Protection Agency, www.epa.gov, the National Biodiesel Board, www.biodiesel.org, and LECG, Inc. For more information about biodiesel, go to those web-sites and to the Clean Cities web site at www1.eere.energy.gov/cleancities. This document was supported in whole or in part, by a U.S. Department of Energy award (DE-FG-36-04 GO14240). This support does not constitute an endorsement by DOE of the views expressed in the article. Other partners include the Missouri School Boards' Association and the NBB.



City Council Oversight Hearing

January 30, 2013

Implementation of Local Laws 77 of 2003, 38 of 2005, 39 of 2005, 40 of 2005, 41 of 2005, 42 of 2005 (the "clean fleet" laws) and the status of PlaNYC's goal to expand the use of biodiesel in the City's fleet

Thank you for the opportunity to testify today. My name is Isabelle Silverman and I am a Senior Attorney with Environmental Defense Fund (EDF), a national non-profit organization. EDF is submitting this testimony on behalf of our 750,000 members nationwide and our 50,000 members here in New York City.¹ EDF's testimony is based on NYC DEP's Local Law Air Reports for the FY 2011 dated August 20, 2012. EDF has submitted its comments to DEP's Air Reports already last year to Jeffrey Baker from Council Member Quinn's office.

The premise of EDF's testimony is fairly simple: Diesel particulate filters (DPFs) reduce particulate matter pollution by over 90% and thanks to today's technology, DPFs can be installed on *any* diesel vehicle. DOCs only reduce particulate matter emissions by about 25% and are therefore never the available retrofit technology (BART). It is required by those local laws that BART is installed which are DPFs for all vehicles. The DEP should insist that DPFs are installed on all diesel vehicles that are required to be retrofitted under the above-mentioned local laws.

¹ Environmental Defense is a national non-profit environmental organization headquartered in New York City, with 750,000 members around the country and over 50,000 members and activists in New York City.

Here is a summary of EDF's comments organized by the different local laws:

Page	Specific Comment	General Comments
	LL38 (purchase of efficient vehicles)	
3	Why has diesel use increased with light and medium duty diesel vehicles?	
7	Impressive to see how many fuel efficient cars NYC has purchased.	So why is the Taxi of Tomorrow not a fuel efficient car and only gets 25 mpg?
	LL39 (diesel onroad vehicles)	
11	Only 77% of diesel vehicles have had a diesel pollution control device installed. Why the delay? Also, all diesel vehicles with pre-2008 engines should have diesel particulate filters (DPFs) installed and not only diesel oxidation catalysts (DOCs) which are much less effective.	Diesel particulate filters (DPFs) reduce particulate matter pollution by over 90% and can be installed on <i>any</i> diesel vehicle. The best available control technology (BART) is the DPF and not the DOC. DOCs only reduce particulate matter emissions by about 25%.
12	First table: good that the DEP vehicles will all soon have DPFs but what about the rest? There are still 1,267 vehicles that don't have BART installed. When is this going to happen? The Clean Cat DOC is only a DOC and not a DPF so it is correct that they should not be listed under vehicles retrofitted with BART. Second table: It's good that most of the vehicles have DPFs installed. I believe that the vehicles that only have DOCs installed are capable of having DPFs installed which means they should switch to DPFs. If it's technologically	We need to check with the DEP if the vehicles that only have DOCs installed are capable of having DPFs installed. If the answer is yes, then they need to switch to DPFs. It is my understanding that with today's advanced active DPFs, every diesel vehicle can be retrofitted with a DPF. There are challenges with ferries and DPFs but not vehicles.

	feasible to install a DPF, the DPF because BART and therefore mandatory. With today's technology it is technologically feasible to install DPFs on all vehicles so they should be installed or the vehicle should be replaced with a 2010 model year engine.	
	LL40 (Sanitation trucks)	
16	Very good! Most vehicles have DPFs and only a few DOCs that for technical reasons couldn't have a DPF.	
18	Re: Footnote 6: I believe that DPFs are available for pretty much any diesel vehicle so if a waiver is granted, it will need to explain why a DPF could not be installed on that particular vehicle.	LL40 subsection h states: <i>....that such technology is unavailable for purchase for such vehicle, in which case the contractor shall be required to use the technology for reducing the emission of pollutants that would be the next best available retrofit technology and that is available for purchase for such vehicle. Any waiver issued pursuant to this subdivision shall expire after three years.</i>
	LL41 (Sightseeing Buses)	
20/21	City Sights, Gray Line NY Tours, Taxi Tours, NYC Airport Express Bus: all of them are listed as having some DOCs because allegedly DPFs could not be installed on these pre-1990 engines. Huss Company makes DPFs that would fit these buses so the city should insist that they are retrofitted with DPFs. No waivers should have been granted. It is also pretty outrageous that they are driving around with 20-30 year old buses. The older the bus the more soot pollution they emit. These buses should be retired and replaced with new buses. I believe that insisting on DPFs will make these companies replace the buses	City Sights and Gray line make a fortune shuffling around tourists and might even have a city permit to do so. They should be approached by the city and urged to replace those really old buses. I have seen the black smoke coming out of these buses. If the sightseeing bus is very old, the filter (DPF) will clog up more often which leads to more maintenance but it's doable. If this is inconvenient for the bus operator, they should buy a new bus and not just get a waiver for their 20-30 year

	with brand new buses rather than bother with a DPF.	old bus.
23	What is NYC Airport Express Bus and why don't they replace that 60 year old bus??? It's very disturbing that they have such an old bus with a 30 year old dirty diesel engine. Don't they have an airport permit that could be withdrawn unless they replace their bus?	
	LL42 (School Buses)	
26	Strange that the DOE doesn't know how many buses have DOCs (and crankcases) installed I heard that they are still in the process of installing DPFs on some of the buses.	
	LL77 (Construction Vehicles)	
29	Very good, it appears that almost all of construction vehicles are using DPFs.	
31	At 7: It says that all construction equipment was able to be retrofitted with DPFs. As a result, all sightseeing buses should be able to be retrofitted with DPFs.	

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Rocco DiRico
50-07 58th ST Woodside NY
NYC DEPT of SANITATION
Same

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I represent: RENEWABLE ENERGY GROUP REG

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Name: Shane Tekblanche

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I represent: Parker Hannifin

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Name: RAY ALBRECHT / STEVEN LEVY

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I represent: NATIONAL BIODIESEL BOARD

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