Department of Education
Chancellor Richard A. Carranza

TESTIMONY OF THE NEW YORK CITY DEPARTMENT OF EDUCATION ON INT. 455

December 17, 2018

Good Morning Chair Constantinides and members of the Committee on Environmental Protection. My name is Alexandra Robinson and I am the Executive Director for Pupil Transportation for the New York City Department of Education (DOE). Thank for the opportunity to be here today to discuss Intro No. 455.

The DOE's Office of Pupil Transportation (OPT) is responsible for overseeing school transportation for NYC students. Our mission at OPT is always to provide safe and reliable service. OPT service is provided on privately contracted school buses and through a Student MetroCard program in partnership with the MTA. Transportation services for all of our students spans Pre-K through grade 12 throughout the five boroughs of New York City. For our students with disabilities whose individual education plan, or IEP, requires transportation services, we travel up to 50 miles outside of City borders into upstate New York, Long Island, New Jersey, and Connecticut.

Every school year, in partnership with privately contracted school bus companies, we serve about 150,000 students in over 2,700 district schools, charter schools, and private schools utilizing a fleet of 9,000 vehicles staffed by 14,000 bus drivers and attendants. Each semester, for eligible students, OPT issues approximately 660,000 MetroCards.

All of DOE's contracted school bus service carriers have and must continue to comply with all Federal Motor Vehicle Safety Standards (FMVSS), federal and local Environmental Protection Agencies (EPA) mandates, and any other departmental specifications.

While DOE specifies the type of vehicles vendors must use to provide transportation services, DOE does not specify the type of fuel that vehicles must use. Removing particulate matter (NOx) in the environment has been a school transportation industry priority both locally and on the national level for many years. It is important to note that DOE's vendors do not currently operate any school buses that are commonly known as "dirty diesel" -- a terminology that refers to the year a bus was manufactured and the technology it is equipped with. With each update of federal emission standards, first in 1996, then in 2000, 2007, and 2010, OPT has been proactive in its approach:

- DOE's contracted diesel-fueled fleet meets all environmental standards because they either were built after the year 2007 or, if built before then, are equipped with the latest technology.
- In order to improve and modernize the fleet and its emission output, the DOE in its 2013 and 2014 contracts with bus vendors reduced the vintage requirement for all alternative vehicles (those smaller than traditional school buses) to five years.

Most relevant to this hearing, thanks to the partnership with the City Council, the DOE is in the process of developing a Zero-emission school bus pilot, with the pending purchase of up to four electric school buses that will be owned and operated by the Department itself.

Zero-Emission vehicles, or EVs, are still fairly new to the market in the school bus world. Vehicles purchased in New York City must be purchased through the Department of Citywide Administrative Services (DCAS), which does its purchasing for vehicles through the state contracting system. To date, there are currently only two types of electric school buses available and approved through the state contracting system, the State's Office of General Services.

Thanks to the designated funding from Council Member Espinal, the DOE is in the process of purchasing up to four electric buses (Type A) to be driven through a partnership with an existing vendor. This Proof-of Concept (POC) will allow the DOE to validate the functionality of electric school buses, identify any distance and/or maintenance issues, obtain driver/operator feedback on performance, and ultimately make a recommendation for the specifications on an RFP should the DOE consider a larger scale investment in the future.

OPT is working closely with DCAS to coordinate the purchase of the buses. Our target for the initial order is the end of February. Once ordered, the buses will be built and once completed, we hope to have them on the road in fall of 2019.

As previously mentioned, EVs are relatively new to school bus operations and thus there are many barriers that any school system would face in taking these vehicles to scale. First, these vehicles are costly: the current equipment and batteries that they are outfitted with make an EV approximately four times as expensive as a comparable clean burning diesel bus. Additionally, the technology has not yet been thoroughly tested. Having said that, any new technology requires testing, and the pilot will do just that.

I would now like to turn to the proposed legislation. Int. No. 455, proposed by Council Member Dromm, requires all school buses subject to a contract with the City to eventually be EVs. While DOE supports the goal to ensure that school buses meet or exceed current air quality standards, the current market availability of EVs would not allow DOE to meet a mandate for wide usage of electric buses. In addition, requiring OPT's existing vendors to use EVs even as a portion of their fleets would require a significant investment in infrastructure at each operating facility, especially to support large-scale electric bus operations.

We also are concerned that the legislation as written would impose an unfunded mandate. While there are currently many State and Federal incentives for EVs through grants and salvage buy-backs, these opportunities are unfortunately reserved for government-owned entities. Our contracted bus service vendors therefore would not qualify for these grant opportunities. As a result, the majority of the associated expenses required to meet an EV mandate will be borne by

DOE through increases in contractors' daily busing rates, which they will use to offset the added capital costs.

Thank you again for the opportunity to testify today. I share the Council's commitment to improving our environment and I look forward to working with the council to advance our shared goals, starting with the implementation of the electric bus pilot program.

With that, I would be happy to answer any questions you may have.

December 14, 2018

FOR THE RECORD

MEMORANDUM
ON BEHALF OF NEW YORK CITY SCHOOL BUS CONTRACTORS
REGARDING INT. NO. 455 IN RELATION TO
AGE LIMITATIONS ON SCHOOL BUSES

This memorandum is submitted on behalf of school bus transportation companies which provide approximately one-half of the school buses which service the New York City Department of Education ("DOE") with respect to the transportation of school children in grades one through twelve, as well as transportation of Special Education students throughout the City of New York. Int. No. 455 provides for the change in vintage limitation for all school buses from 16 years to 10 years from the date of manufacture. We address herein the prospective cost of the proposed change in vintage.

The DOE provides school bus transportation for students with Special Education requirements and students in grades one through twelve in the largest school bus transportation system in the nation. The system employs an aggregate of 9,554 school buses consisting of 3,995 large standard school buses and 5,559 smaller van type vehicles all of which comply with the City's emissions requirements. The cost in today's market of a standard diesel powered school bus is approximately $108,750, while the cost of a van is approximately $59,812 (inclusive of sales tax of 8.875%).

Under the current 16 year vintage requirements, school bus contractors replenish portions of their fleets on an annual basis, replacing older buses (which have reached or are approaching their maximum vintage) with new vehicles at a capital expenditure planned years in advance. Under the current 16 year vintage, the DOE fleet replenishment rate averages 190 standard school buses and 124 vans per year, at annual cost of $28 million. Reducing the vintage to 10 years would require an immediate accelerated replacement in the first year of implementation of

1,142 standard buses and 745 vans at a total cost of $168 Million. Accordingly, the reduction in vintage to ten years would require an additional capital expenditure for the DOE fleet of $140 Million in the first year of implementation.

In each year thereafter at a 10 year maximum vintage, replacement would be required for 304 standard buses and 198 vans per year at an annual capital expenditure of $41.3 million as compared to $28 Million under the 16 year vintage. For a five year period, it is estimated the additional cost for vehicle replacement based on a reduced 10 year vintage would be in excess of $208 Million. A detailed chart regarding the cost of the 10 years of vintage is attached.

While we appreciate the goal of reducing emissions and eventually achieving a fleet of all electric buses, that goal must be balanced with the substantial cost entailed in reducing vintage standards.

Regarding the future requirements for all electric school buses it is clear to us that the technology for a fleet of school buses which would have the range to service the entire city is still years in the making. Current technology does not provide a range sufficient to accomplish many of the school bus routes. Moreover, although electric buses may work on a small scale, the draw of electric power for a large fleet would require a substantial overhaul in infrastructure together with the coordination of ConEdison to accommodate the surge in power that would be required to charge 10,000 electric school buses twice each day. For these reasons it is premature to adopt legislation which should await the technological advances needed to implement electric vehicles for the size of the DOE fleet.

Cost of New Bus Inclusive of 8.875% Sales Tax - $108,750
Cost of New Van Inclusive of 8.875% Sale Tax - $59,812

Cost Impact for Reduction of School Bus
Vintage from 16 years to 10 years
(assuming implementation September 2019)

VINTAGE COST AT TEN YEARS

Period	New Standard Buses		New Vans		Total	
	Number of New Standard Buses	Cost	Number of New Vans	Cost	Vehicles	Cost
2019	1,142	$124,192,500	745	44,559,940	1887	$168,752,440
2020	305	33,168,750	200	11,962,400	505	45,131,150
2021	305	33,168,750	200	11,962,400	505	45,131,150
2022	305	33,168,750	200	11,962,400	505	45,131,150
2023	305	33,168,750	200	11,962,400	505	45,131,150
	2,362	256,867,500	1545	92,409,540	3907	$349,277,040

VINTAGE COST AT 16 YEARS

Annually	190	$20,662,500	124	$7,416,688	314	$28,079,188
Total for 5 Years (2019-2023)	950	103,312,500	620	37,083,440	1,570	$140,395,940

Additional 5 year cost (10 year vintage vs 16 year vintage) $208,881,060

OFFICE OF THE BROOKLYN BOROUGH PRESIDENT

Testimony

Brooklyn Borough President Eric L. Adams

Monday, December 17, 2018

New York City Council Committee on Environmental Protection

I want to thank the City Council, Chair Costa Constantinides of the Committee on Environmental Protection, and all of the co-sponsors of this important piece of legislation, including its prime sponsor, Council Member Daniel Dromm, for holding today's hearing.

I am testifying in support of Intro 0455-2018, which would require all school buses in New York City to be all electric, zero-emission vehicles (EV) by September 1, 2040, and will limit the age of non-electric buses to 10 years from manufacture date, rather than the current 16.

In February of this year, my office's Renewable and Sustainable Energy Taskforce (ReSET) hosted a legislative breakfast that was primarily focused on the future of alternative fuels for transportation. One of the presenters, Mr. Tevin Grant, discussed the potential that New York City had to make an enormous impact on student health and the City's environment by switching to electric school buses. I am glad that the City Council is giving this possibility its full attention.

Every day, tens of thousands of school-aged children take one of approximately 9,000 buses to school in New York City. They sit inside while the buses idle and release harmful fumes into the air they are breathing. When they arrive at school, they may learn about protecting the environment in their science class, or take part in a recycling initiative organized by the school's sustainability coordinator, a mandated position that suggests the importance of environmental stewardship. They then climb back onto an idling bus and breathe in the fumes for the second time that day as they make their way home. We owe them a better environment to succeed. We owe them the respect of putting our money where our mouth is and of not putting them in harm's way every school day. And while there has been improvement in newer "clean diesel" buses, they do not eliminate the risk.

More than 13 percent of New York City school children suffer from asthma. That number climbs to 22 percent if you are a Black child and 15 percent if you are Latino.[1] We can begin to change those statistics and EV school buses can have a significant role in positively impacting children's

[1] *See* https://www1.nyc.gov/site/doh/about/press/pr2017/pr088-17.page.

health outcomes. Requiring EV school buses can also help us by being a catalyst for siting EV charging stations and promoting electric non-bus vehicles that are also good for the environment.

In my office's 2017 report, "Fueling Brooklyn's Future: Refueling Needs in a Resiliency Era,"[2] I called for additional investment in EV infrastructure to help prepare for an emergency like we experienced during Superstorm Sandy. EV buses can prime the market for a faster rollout of electric vehicles, and, in turn, more charging stations across New York City.

New York City clearly sees the benefits of EV buses, as they have purchased them for the Metropolitan Transportation Authority (MTA) bus fleet. It is time to make the same commitment to our students by requiring our school buses to be all electric by the start of the 2040 school year.

I wholeheartedly support this legislation and look forward to working with the City Council to make this vision of a greener future for our children a reality.

[2] *See* http://www.brooklyn-usa.org/wp-content/uploads/2017/07/FuelingBrooklynReport_2017-Final.pdf.

FOR THE RECORD

Lisa DiCaprio, SIERRA CLUB Statement in support of Int. 455-2018 for the December 17, 2018 City Council Committee on Environmental Protection hearing. [2 pages]

My name is Lisa DiCaprio. I am a professor of Social Sciences at NYU where I teach courses on sustainability. I am also the Conservation Chair of the Sierra Club NYC Group.

The Sierra Club NYC Group supports Int. 455-2018, introduced by Council Member Daniel Dromm, which mandates replacing all school buses with all-electric school buses.

We recommend moving up the deadline for phasing in all-electric buses to an earlier date than the 2040 deadline specified in the bill.

The Sierra Club's national campaign on electric vehicles advocates for various measures to facilitate the transition to electrical vehicles, such as incentives, rebates, and mandates. (For more information on the Sierra Club campaign, see: https://content.sierraclub.org/evguide/go-electric and https://content.sierraclub.org/evguide/factsheet)

Currently, there are about 450,000 school buses in the U.S. of which 95% are diesel buses and only a few hundred are all-electric. These buses are detrimental to the health of school children and to our environment.

The transition to all-electric school buses will reduce greenhouse gas emissions, which is especially important given the conclusions of the recent Intergovernmental Panel on Climate Change (IPCC) and Fourth National Climate Assessment reports and, most recently, the 2018 Arctic Report Card.

This bill is consistent with initiatives throughout the U.S., including in New York State and NYC, to promote electric vehicles as a way to reduce greenhouse gas emissions. Transportation is the second source of these emissions in NYC, which must be reduced by 80% by 2050.

The $350,000 cost of an all-electric school bus is about three times more expensive than a new diesel bus with modern pollution controls. However, this price will be reduced as more electric buses are manufactured and the cost of lithium batteries continues to decrease. For example, as related in a December 2018 article in Streetsblog USA, these batteries used to cost a few thousand dollars per kilowatt-hour and now cost $100 to $200 per kilowatt-hour. (See: Angie Schmitt, "Why Are We Still Waiting for Electric Buses?," Streetsblog USA, December 7, 2018: https://usa.streetsblog.org/2018/12/07/why-are-we-still-waiting-for-electric-buses) Taking into account future reductions in the cost of batteries, a Bloomberg New Energy Finance report predicts that electric buses will comprise 84 percent of the market for buses by 2030. (See: Hiroko Tabuchi, Brad Plumer, John Schwartz and Lisa Friedman, "What Are Schools Doing to Go Green?," New York Times, September 5, 2018: https://www.nytimes.com/2018/09/05/climate/what-are-schools-doing-to-go-green.html)

It is also technically feasible to convert a diesel school bus into an electric school bus, as described in a 2014 article by Thomas McMahon, Schoolbus Fleet, "Converted electric school bus debuts at California district," about a successful pilot project in Gilroy, California. (See: http://www.schoolbusfleet.com/news/685224/converted-electric-school-bus-launched-at-california-district)

Moreover, the operating expenses of electric buses are substantially less than diesel, natural gas, and diesel hybrid school buses. The Chicago Transit Authority has determined that each of its electric buses should "save $237,000 over its lifetime because e-buses have 30 percent fewer parts, no exhaust systems and do not require oil and other fluid changes." (See: Angie Schmitt, "Why Are We Still Waiting for Electric Buses?" cited above). Similarly, according to the transportation director of the Twin Rivers Unified School District in North Sacramento, the 16 all-electric school buses purchased by the district "have cost about 75 percent less to fuel. They use smart chargers to power-up during off-peak hours when electricity rates are lower. And, with fewer moving parts, they cost 60 percent less to maintain." (See: Brad Plumer, "The Wheels on These Buses Go Round and Round with Zero Emissions, New York Times, November 12, 2018: https://www.nytimes.com/2018/11/12/climate/electric-school-buses.html) For a comparison of the annual operating expenses of buses by fuel type, see the report, "Electric Buses: Clean Transportation for Healthier Neighborhoods and Cleaner Air," released on May 3, 2018 by the U.S. PIRG Education Fund: https://uspirg.org/reports/usp/electric-buses-clean-transportation-healthier-neighborhoods-and-cleaner-air

Finally, whenever a conventional school bus is replaced by an all-electric bus, I suggest giving the children on this route a handout that provides a brief explanation of the environmental and public health benefits of the new bus. In this way, school children and their parents will learn about how NYC is reducing the reliance on fossil fuels that is imperiling the future of our city. (For more information about the educational opportunities provided by sustainability initiatives, including all-electric buses, see: Hiroko Tabuchi, Brad Plumer, John Schwartz and Lisa Friedman, "What Are Schools Doing to Go Green?," cited above).

Evolv-Electric Transportation Inc. Comments to Age Limitation bill hearing of the Environmental Protection committee on Monday December 17, 2018.

By: Tevin C.S. Grant, President

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Bullet Point comments:

Evolv-Electric's comments on Dromm Electric School Bus Bill 455-2018

1. Remove requirement that all "electricity for such vehicles be generated on-site" from Bill summary.
2. Redefine hybrid vehicles to require that they be plug-in hybrids and that they have a minimum of 50 miles on electric power only.
3. The timeline to transition from diesel to all electric school buses should be moved up to 2030.
4. Establish a more detailed timeline for the addition of electric school buses.
    a. By the beginning of the 2020 school year, any school bus providers that provides more than 100 school buses must have one electric school bus per 100 school buses they provide.
    b. By the beginning of the 2023 (2025) school year, 10% of all school buses contracted for by the DOE must be all electric.
    c. By the beginning of the 2025 (2030) school year, 30% of all school buses contracted for by the DOE must be all electric.
    d. By the beginning of the 2027 (2035) school year, 60% of all school buses contracted for by the DOE must be all electric.
    e. By the beginning of the 2030 (2040) school year, 100% of all school buses contracted for by the DOE must be all electric.
5. Add incentives for school bus providers that provide electric school buses between 2020 to 2030.
    a. For example, The DOE will pay a 10% premium for electric school buses that operate 90% of the school year in 2020.
    b. This premium would decrease by 1% each year until 2030.
6. Add a penalty for school bus providers that provide diesel school buses after 2030.

a. For example, the DOE would reduce the contract price by 1% for all diesel school buses in 2030.
b. The penalty would increase by 1% each year until 2040 when the penalty would be 10%.
c. Any contractor that provides diesel school buses after the 2040 school year would have their contract price reduced by 20%.

7. Any need for additional school buses after 2025 should not be filled with diesel school buses.
8. Any need for additional school buses after 2030 can only be filled by electric school buses.
9. All school buses that have an exhaust system must be routed to the driver (left side) so that exhaust is not aimed at the side walk.
    a. All diesel school buses must have a closed crankcase ventilation system. Need to create a penalty schedule for vehicles that don't have a CCVS.
10. All diesel school buses contracted by the DOE must meet the most recent EPA diesel particulate standards by 2020. Also needs a penalty schedule.
11. City Council should keep the 10year retirement cycle for non-electric school buses.
12. DOE needs to make a plan that allows for new bus operators to have a fair shot at entering the market.
13. DOE should focus deployment on environmental justice areas first.

Revised Bill

BILL SUMMARY:

The local law will require that commencing September 1, 2020, all diesel fuel-powered school buses subject to New York City school bus contracts, must use a closed crankcase ventilation system and the particulate matter emissions of all such school buses must not exceed emission levels permitted in the most recent diesel engine emissions standards issued by the United States Environmental Protection Agency and the mileage meets or exceeds the most recent corporate average fuel economy standards for compact and large trucks. This local law further requires that all other diesel fuel-powered school buses, shall, be replaced by gasoline, compressed natural gas, plug-in hybrid or all electric school buses. This local law further provides that use of all diesel fuel-powered, gasoline, compressed natural gas or plug-in hybrid electric school buses is limited to ten years as long as the particulate matter emissions of all such school buses does not exceed emission levels permitted in the most recent diesel engine emissions standards issued by the United States Environmental Protection Agency and the mileage meets or exceeds the most recent corporate average fuel economy standards for compact and large trucks and

such school buses must thereafter be replaced with all-electric zero-emission school buses by 2030 (2040)[1].

New York City Administrative Code 24-163.9 – Transitioning of School Buses from Conventional Internal Combustion Vehicles to All-Electric Zero-Emission Vehicles

a. Definitions. For the purposes of this section only, the following terms shall have the following meanings:

"Department of education" means the New York city department of education, formerly known as the New York city board of education, and any successor agency or entity thereto, the expenses of which are paid in whole or in part from the city treasury.

"All-electric zero-emission school bus" means a bus that is all-electric and relies only on batteries as the power source. It does not rely on an internal combustion engine for any functions of the vehicle including charging the battery or powering the drivetrain. The bus can store electricity on board the vehicle in a battery and the battery can be recharged repetitively by an external source. The bus will not be able to emit tailpipe emissions.

"Plug-in hybrid electric school bus" means a school bus whose powertrain can be powered by both an electric motor and an internal combustion engine. The electric battery can be recharged repetitively by an external source and can provide at least 50 miles of all-electric propulsion.

"School bus" means any vehicle of the designation "Type A bus," "Type B bus," "Type C bus," or "Type D bus," as set forth in subdivisions x, y, z, and aa of section 720.1 of title seventeen of New York codes, rules and regulations, that is operated pursuant to a school bus contract and is used to transport children to or from any school located in the city of New York.

"School bus contract" means any agreement between any person and the department of education to transport children on a school bus.

b. (1) By September 1, 2020, one hundred percent of the diesel fuel-powered school buses used to fulfill school bus contracts shall utilize a closed crankcase ventilation system, that came equipped from the manufacturer or selected from among the mobile sources devices identified and approved as

[1] Dates in parenthesis indicate at transition timeline that ends in 2040. All other dates indicate the timeline for transitioning by 2030.

part of the diesel retrofit verified technologies list by the United States environmental protection agency or the list of currently verified diesel emission control strategies by the California air resources board, to reduce engine emissions to the school bus cabin.

(2) By September 1, 2020, one hundred percent of the diesel fuel-powered school buses used to fulfill school bus contracts shall not exceed emission levels permitted in the most recent diesel engine emissions standards issued by the United States Environmental Protection Agency (EPA) and the mileage meets of exceed the most recent corporate average furl economy standards for compact and large trucks.

(3) School buses that do not meet the requirements of both subdivisions b(1) and (2) shall be replaced with (1) a diesel school bus that meets both has a closed crankcase ventilation system and meets the most recent diesel engine emissions standards issued by the EPA, or (2) an all-electric zero-emission, gasoline-powered, compressed natural gas, or plug-in hybrid school bus, as long as the particulate matter emissions of such school bus do not exceed emission levels permitted in the most recent diesel engine emissions standards issued by the EPA.

c. Except for all-electric zero-emission school buses, no school bus can be used to fulfill any school bus contract beyond the end of the tenth year from the date of manufacture, as noted on the vehicle registration, or the end of the school year in which that date falls, whichever is later.

d. (1) The Department of Education should endeavor to transition all school buses used to fulfill their contracts will all-electric zero-emission school buses by 2030 (2040) following the schedule set forth below:

i. By September 1, 2020, all school bus operators that provides more than 100 school buses in a year shall be required to have one electric school bus for every 50 school buses they provide;

ii. By September 1, 2023 (2025), 10 percent of all school buses used to fulfill school bus contracts shall be all-electric zero emission school buses;

iii. By September 1, 2025 (2030), 30 percent of all school buses used to fulfill school bus contracts shall be all-electric zero emission school buses;

iv. By September 1, 2027 (2035), 60 percent of all school buses used to fulfill school bus contracts shall be all-electric zero emission school buses;

v. By September 1, 2030 (2040), 100 percent of all school buses used to fulfill school bus contracts shall be all-electric zero emission school buses.

(2) If the calculated required minimum number of all-electric zero-emission school buses as set forth in subdivision d in a given calendar year does not result in a whole number, the number must be rounded up to the nearest integer.

(3) By January 1, 2027 (2035), all school bus contracts can only be filled with all-electric zero-emission school buses.

(4) Exemptions will only be given if at least 95 percent of all school buses used to fulfill school bus contracts are all-electric zero-emission school buses and there are no all-electric zero-emission school bus available for purchase that can fulfill the route requirements that can be purchased for no more than 150% of the cost of a comparable internal combustion engine school bus.

e. Needs language on DOE submitting a detailed plan on how they will make the transition happen.

f. No later than December 31, 2011, and no later than December 31 of every year thereafter, the department of education shall submit a report to the mayor and the speaker of the council on compliance with this section. Such report shall include, but not be limited to, data on the age and crankcase ventilation retrofit status of every school bus pursuant to a school bus contract. The department of education shall also perform yearly reviews on a sample of school buses from at least ten different vendors to verify the accuracy of data reported.

g. This section shall not apply:

(1) where federal or state funding precludes the city from imposing the requirements of this section;

(2) to purchases that are emergency procurements pursuant to section three hundred fifteen of the New York city charter; or

(3) where federal or state law prohibits the application of the requirements of this section.

h. Any person who violates any provision of this section shall be liable for a civil penalty in accordance with section 24-178 of the code.

i. Where a person has been found to have made a false claim with respect to the provisions of this section, such person shall be subject to enforcement pursuant to the provisions of chapter eight of title seven of the code.

j. Nothing in this section shall be construed to limit the authority of the department of education or of the city of New York to cancel or terminate a contract, deny or withdraw approval to perform a subcontract or provide supplies, issue a non-responsibility finding, issue a non-responsiveness finding, deny a person or entity prequalification as a vendor, or otherwise deny a person or entity city business.

JOBS TO MOVE AMERICA

Making Our Transit Dollars Go the Distance

Electric School Bus Hearing, New York City Council: 12/17/18
Mo-Yain Tham, Jobs to Move America

Hi, I'm the Researcher at Jobs to Move America, an organization focused on good jobs through government spending. I've often wondered what happened to school buses between the hours they drop children off and pick them up again in the afternoon. Maybe the school buses were ferrying Santas and witches around, delivering the fun to interrupt a long day at school.

But there is something now that buses can be doing while waiting for school to end- recharging. As the other testimonies have stated, electric school buses provide a variety of environmental benefits for our city and children.

In addition to these benefits, JMA's experience with city transitions to public electric buses show that key community issues can be addressed. Such as:

1) Children living in transportation deserts, where they can't use a subway or public bus, would benefit from a new fleet of electric school buses.

2) Lowering the emissions our children are exposed to while walking or waiting outside.

3) Also, sourcing these electric buses in the U.S. can create new manufacturing jobs. The three major school bus manufacturers that build electric buses, IC Bus, Thomas Built Bus and Blue Bird, have facilities in the U.S.

4) The city contract can also ensure these jobs target disadvantaged communities such as women of color or veterans while also transitioning existing workers through training into these new energy jobs.

JMA helped Los Angeles Metro implement a U.S. Employment Plan into their procurement process for electric buses. The USEP is a best-value approach to evaluating bids, so agencies can consider important benefits instead of just accepting the lowest cost. This method can create a career pipeline for disadvantaged communities as well as ensuring job training for incumbent workers, all while addressing the issues of climate change and transportation access.

Also, school bus fleets have 480,000 buses compared to 70,000 public transit buses nationwide. More electric buses will drive down the cost of batteries, which lowers the upfront cost of future electric bus fleets for schools and public transit systems.

We ask New York City Council to adopt the USEP as it considers electrifying its school bus fleet, so our children can go to school on a bus that not only protects the environment but creates good jobs for our communities.

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JobsToMoveAmerica.org

JOBS TO MOVE AMERICA

Making Our Transit Dollars Go the Distance

References:

"NJ Sierra Club Initiates Campaign for Electric School Buses." Insider NJ, 6 Sept. 2018.

"Electric School Buses Take to the Road: Real-World Results." School Bus Fleet, 15 May 2018.

"Electric Buses Can Save Local U.S. Governments Billions. China's Showing Us How It's Done." Forbes, 21 May 2018.

25 Broadway, 9th Floor
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JobsToMoveAmerica.org

Statement of Adriana Espinoza
New York City Program Director
New York League of Conservation Voters
Committee on Environmental Protection
Int 0455-2018
December 17, 2018

Good morning. My name is Adriana Espinoza, Director of the New York City Program at the New York League of Conservation Voters (NYLCV). NYLCV represents over 30,000 members in New York City and we are committed to advancing a sustainability agenda that will make our people, our neighborhoods, and our economy healthier and more resilient. I would like to thank Chair Constantinides for the opportunity to testify before the Committee on Environmental Protection.

It is no longer acceptable or sustainable for the Department of Education to allow bus companies to pollute our air with their fleets of diesel buses. A transition to cleaner fuel technologies is necessary for the health and safety of our most vulnerable populations. In addition to greenhouse gas (GHG) emissions, diesel school buses emit harmful particulate matter into the air and the cabin of the buses that damage the respiratory systems of children. According to the American Lung Association, particle pollutant exposure has been linked to the development of asthma in children; increased hospitalization for asthma attacks for children; slowed lung function in children and teenagers; damage to the airways of the lungs; increased risk of death from cardiovascular disease; and increased risk of lower birth weight and infant mortality.[1]

In 2017, there were 10,350 buses transporting 147,160 students daily, the majority of whom are students with disabilities. Additionally, the majority of school buses depots are located in environmental justice communities, where lower-income communities and communities of color face higher rates of air pollution and bear the brunt of the impacts of climate change.

NYLCV estimates that there would be a reduction of roughly 18 million pounds of NOx, 74,000 pounds of PM 2.5 and 2.9 million short tons of greenhouse gases over 16 years (the average lifetime of a school bus) if we replaced NYC's diesel school buses with all-electric models. That would be the equivalent of removing 620,985 passenger vehicles from the road. [2]

For these reasons, NYLCV supports **Int 0455-2018** by Council Member Dromm to speed up the transition to cleaner, safer school buses.

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[1] Retrieved from: http://www.lung.org/assets/documents/healthy-air/state-of-the-air/sota-2018-full.pdf
[2] Calculated using the Argonne Heavy-Duty Vehicle Emissions Calculator: https://afleet-web.es.anl.gov/hdv-emissions-calculator/

Statement of Adriana Espinoza
New York City Program Director
New York League of Conservation Voters
Committee on Environmental Protection
Int 0455-2018
December 17, 2018

However, we respectfully recommend the following changes:

1. Extend the period of alternative-fuel and hybrid vehicles from 10 years of use to 12 years before requiring a full transition to all-electric school buses. These buses are already cleaner than diesel buses and have an estimated useful life of up to 16 years, so we should not overburden small businesses who were early adopters of clean technology.
2. Require the use of "zero-emission school buses" after 2040, not "all-electric zero-emission school buses," as we don't want to limit ourselves to one technology in a rapidly changing market. All-electric models are the only viable ZEV solution today, but we don't know if that will be the case in 2040.
3. Consider the possibility of a waiver for small school bus companies that may face undue financial hardship. This waiver should have strict guidelines, require an early application, and demonstrate that a full transition to ZEV is not possible in the required time frame.

The inclusion of the above items allows for a better transition to electric and other zero-emission vehicles for small business owners while also ensuring that the city can take the necessary steps to protect our environment and public health.

NYLCV is proud to have worked with the City Council over the years on policies that improve air quality and public health, and I urge the Committee on Environmental Protection to consider the aforementioned recommendations. Thank you for your time.

Contact:
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NYC Program Director
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212-361-6350 Ext. 203

Blue Bird Electric School Buses

Presented by:

Marc Riccio

Alternative Fuels Manager

Blue Bird Corporation

BLUE BIRD®

Who We Are

Blue Bird is an iconic brand synonymous with school bus with a rich legacy focused on delivering safety, quality, durability, serviceability, innovation and value for over 90 years....

BLUE BIRD®

- ✓ **Founded in 1927**
- ✓ **Only OEM 100% dedicated to school bus**
- ✓ **Exclusive purpose-built chassis**
- ✓ **#1 in North America for alternative fuel**
- ✓ **Engineered and tested to the highest safety standards**
- ✓ **Only OEM to offer complete product line with CO Rack and KY pole tests as standard**

The Alternative Fuel Experts Since 1992

Blue Bird Alternative Fuel School Buses in North America

OVER
16,500
SCHOOL
BUSES

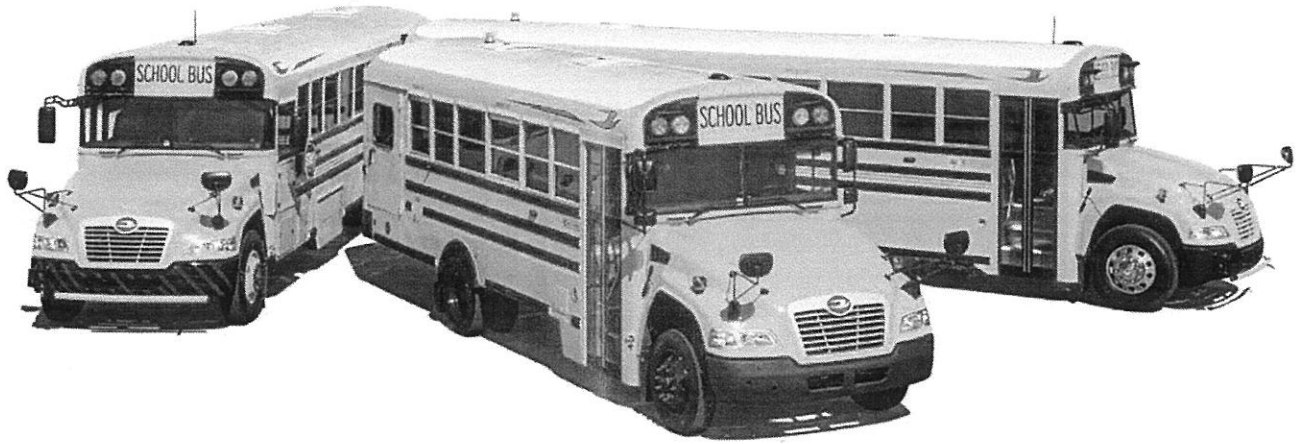
OVER
2,000
SCHOOL
DISTRICTS

POWERED BY PROPANE | POWERED BY CNG | POWERED BY GASOLINE | POWERED BY ELECTRICITY

#1 manufacturer of alternative fuel school buses

Blue Bird has produced 8X more alternative fuel buses than all competitors combined!!!

Technology Partnerships



BLUE BIRD®

BUILT Ford TOUGH

POWERED BY PROPANE

POWERED BY CNG

POWERED BY GASOLINE

POWERED BY ELECTRICITY

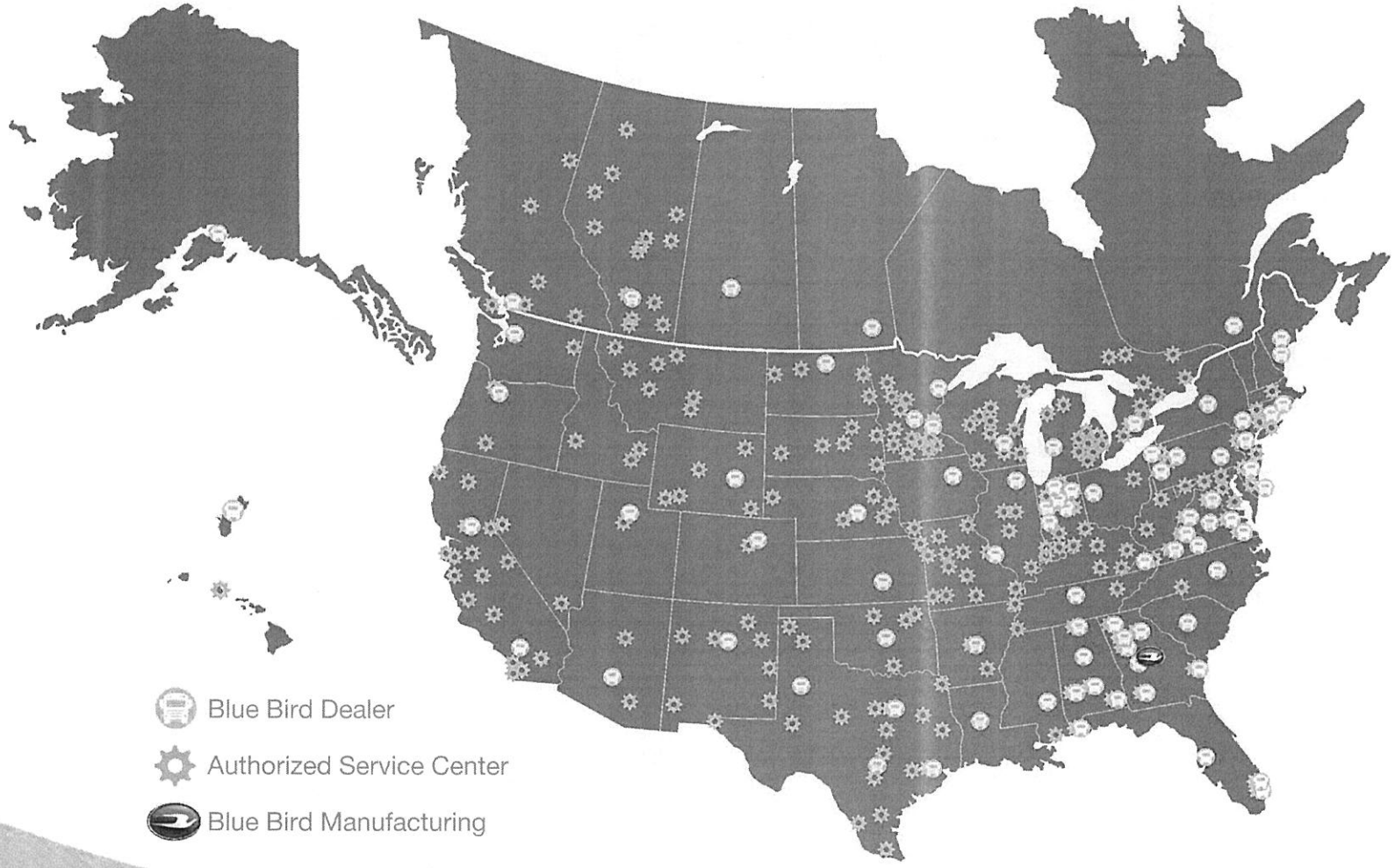
ROUSH® CLEANTECH

Cummins®

EFFICIENT DRIVETRAINS®
Zero Emissions, Full Power

Extensive Dealer & Service Network

Over 335 dealerships and affiliated vehicle service centers are available throughout North America



Regional Dealer Partnerships

BIRD BUS
Sales & Service

Official Blue Bird and Micro Bird school and commercial bus dealer for New York

Blue Bird Type C & D Electric (EV) School Bus

POWERED BY ELECTRICITY

Vision Electric

Charge Time: 6-8 Hours
GVWR: Up to 33,000 lbs.
Capacity: Up to 77 passengers
Range: Up to 120 miles

All American RE Electric

Charge Time: 6-8 Hours
GVWR: Up to 36,200 lbs.
Capacity: Up to 84 passengers
Range: Up to 120 miles

EV School Bus Key Benefits

- ✓ **Zero-emissions means faster mitigation and recovery of pollutants—tons per year**
- ✓ **Future emissions benefits over the life of the vehicle**

- ✓ **Vehicle life may be extended as fewer parts on board for fatigue and failure**
- ✓ **Elimination of fossil fuel dependence while increasing demand for renewable energy**

Positive Environmental Impact

Gas & Propane Engine

7

Quarts

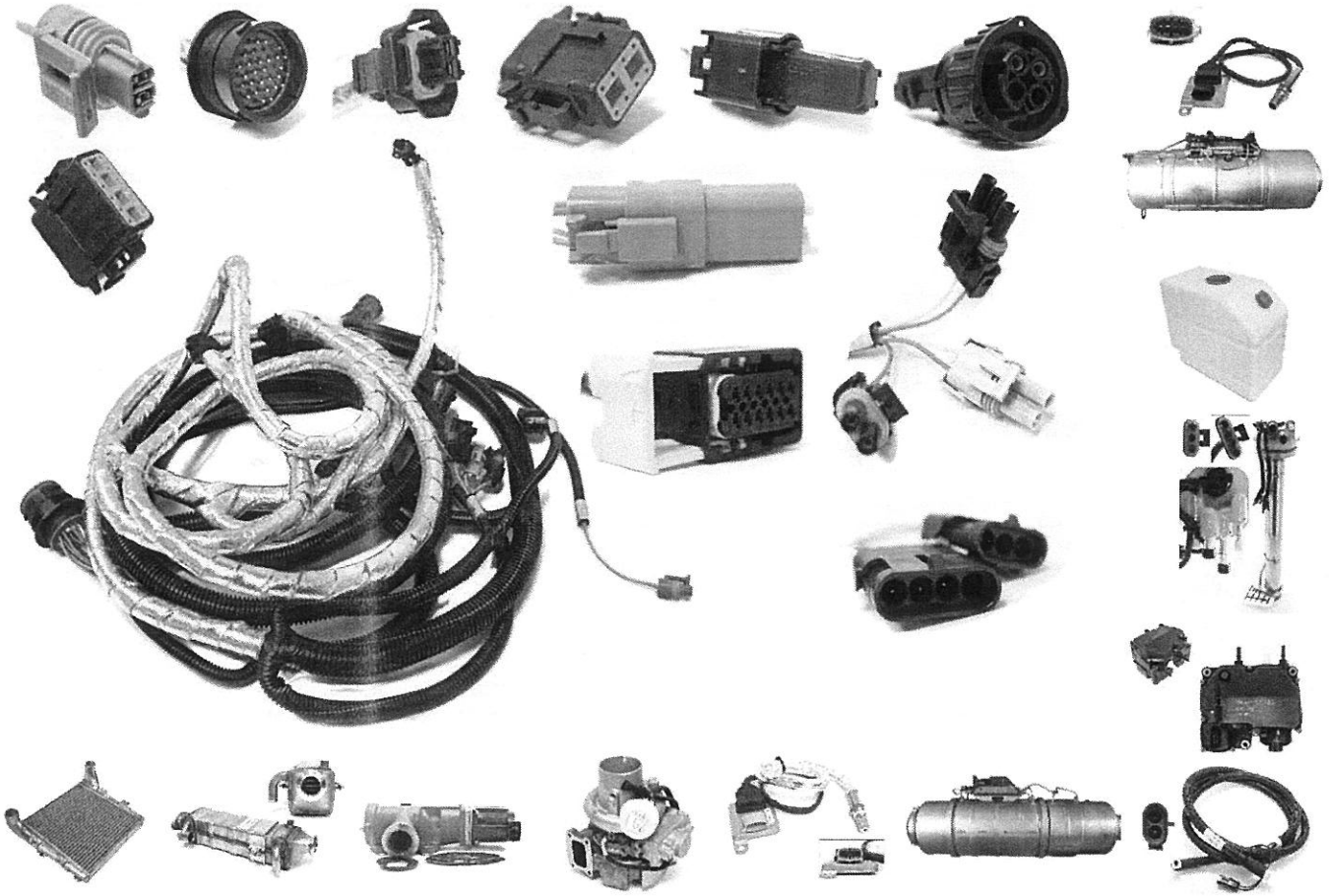
Diesel Engine

17-30

Quarts

Maintenance Components Eliminated

EGR cooler, EGR valve, turbo charger, pre-oxidation catalyst, dosing units, supply lines, DEF tank assembly, sensors and assemblies, etc.



Blue Bird EV School Bus is 100% Emissions Free

With New York City comprising the largest public fleet in North America, Blue Bird is fully committed to making a real difference for its riders and the environment in which we all live....

Emission Rates for 10-Year-Old School Buses

Average Emission Rates for 2008 Model Year School Buses

Pollutant	School Diesel Buses g/mile	School Gasoline Buses g/mile
VOC	0.642	7.58
THC	0.653	7.791
CO	2.312	89.6
NOx	10.536	7.477
$PM_{2.5}$	0.556	0.104
PM_{10}	0.604	0.145

ELIMINATED

Data Source: EPA420-F-08-026 October 2008

VOC: Volatile Organic Compounds
CO: Carbon Monoxide
HC: Hydrocarbons
PM_{10}: Particulate Matter <10 Microns
THC: Total Hydrocarbons
NOx: Nitrogen Oxides
$PM_{2.5}$: Particulate Matter <2.5 Microns

Idle Emission Rates for 10-Year-Old School Buses

Average Idle Emission Rates for 2008 Model Year School Buses

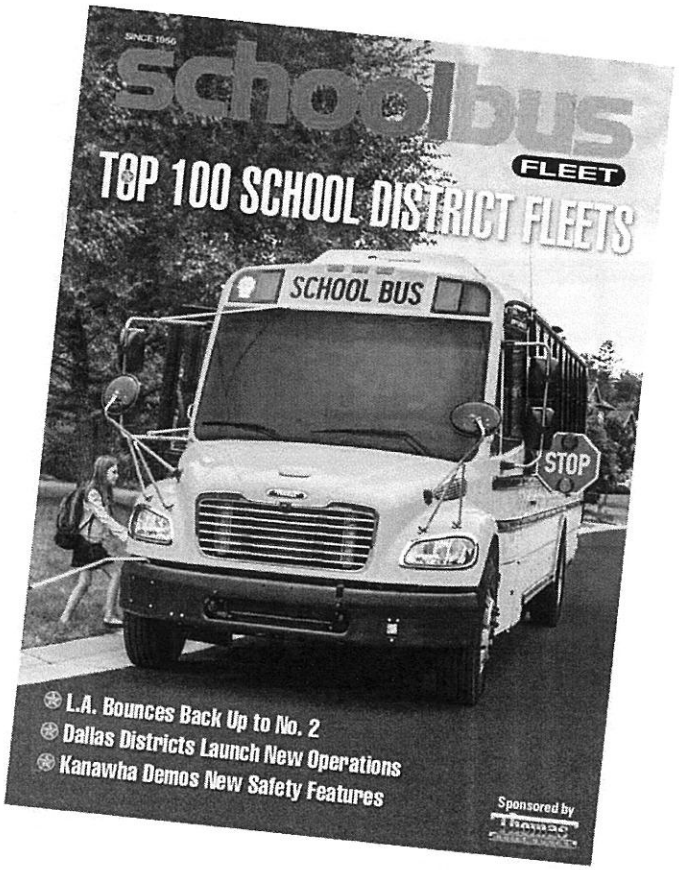
Pollutant	School Diesel Buses		School Gasoline Buses	
	g/hr	g/min	g/hr	g/min
VOC	4.968	0.083	48.903	0.815
THC	5.055	0.084	52.140	0.869
CO	25.630	0.427	1,036.000	17.267
NOx	43.505	0.725	13.373	0.228
$PM_{2.5}$	1.401	0.023	N/A	N/A
PM_{10}	1.523	0.025	N/A	N/A

Data Source: EPA420-F-08-026 October 2008

VOC: Volatile Organic Compounds
CO: Carbon Monoxide
HC: Hydrocarbons
PM_{10}: Particulate Matter <10 Microns
THC: Total Hydrocarbons
NOx: Nitrogen Oxides
$PM_{2.5}$: Particulate Matter <2.5 Microns

New York City DOE 2018: By the Numbers

- ✓ **Largest School Bus Fleet in US**
- ✓ **Route Buses: 9,200**
- ✓ **Total Buses: 11,600**
- ✓ **Fleet Break-Down: ~60% Type A / ~40% Type C**
- ✓ **Contractor Buses: 11,600 (100%)**
- ✓ **Students Transported Daily: 156,000**
- ✓ **Annual Route Mileage: 24,500,000**



Source: *School Bus Fleet Magazine, October 2018: Top 100 School District Fleets*

Type C Emissions Reduction Baseline Calculation

Type C Model Year (MY) 2007-2010 Diesel School Bus
Annual Estimated Emissions Eliminated

100% NOx Reduction	100% PM Reduction	100% CO Reduction
242.61 Tons	2.02 Tons	2,911.34 Tons

ELIMINATED

Type C 2007-2010 MY Fleet Assumptions:

- 1,840 total Type C operational diesel buses replaced with electric school bus
- Four (4) hours of active route operation daily
- 178 school days / year

Data Source: Blue Bird Emissions Calculator v6 based off of EPA heavy-duty diesel 1.2 emissions

EV Charging Options

- ✓ **AC Level 1:** Uses a 120-volt (V) alternate current (AC) power connection to a standard residential / commercial outlet capable of supplying 12-16 amps of current, for a power draw of about 1.4 to 1.9 kW when charging

- ✓ **AC Level 2:** Uses a single-phase 208 / 240V AC power connection to an electrical outlet capable of supplying 30-80 amps of current with 19.2 kW max—EV school buses can use AC Level 2 EVSE but require higher amperage and can charge a 160 kWh electric school bus between eight and nine hours and cost $3,000-$10,000, including purchase price and installation

- ✓ **DC Fast Charging (Level 3)**: Delivers high power directly into an EV battery system by converting AC into DC, using an inverter built into the EVSE and uses three-phase 200-600V AC for charging rates of up to 100 kW, enabling an EV school bus to be charged between 20-30 minutes—DC Fast Charging systems are more expensive: $15,000 for hardware, not including installation, plus $10,000-$20,000 for software

- ✓ **Bidirectional Charging (VTG):** Allows EVs to both receive energy from the grid and send energy stored in the vehicle back to the grid or a building enabling the vehicle battery to function as an energy storage resource either though an on-board system located on the bus or an off-board system which is a stationary inverter located in a DC fast charger equipped for bidirectional power flow

EV Infrastructure and Charging Considerations

- ✓ **Each Type C or D school bus currently requires a 100A breaker** for Level 2 charging, which is 19.2 kWh, so 8 hour overnight charging for full 160kWh battery pack, and roughly half that for day time opportunity charging between routes

- ✓ **Over 300A, or three electric school buses, may require a ground based, not pole based, additional transformer to handle load**

- ✓ Any type of solar or wind generation will work to power the buses in addition to the grid, but **current solar technology would require a very large array to effectively charge the buses,** which translates to significant investment and spatial considerations

- ✓ DC Fast charging is the next level up in charging and will charge buses at 25-100 kWh, but will draw a lot of power in a much shorter timeframe, affecting battery life—costs considerably more to install, with 3 phase 480V power service required

Total Cost of Ownership

Because there's no need for engine oil changes, and no transmission or engine to maintain, Blue Bird's electric buses have a lower cost of maintenance than a traditional, combustion-fueled bus

ZERO EMISSIONS
Cleaner air for our children

REDUCED MAINTENANCE COSTS
Less parts = less maintenance

TEMPERATURE CONTROL
Excellent performance in many weather conditions

GO FURTHER
Up to 120 miles on a single charge

VEHICLE TO GRID TECHNOLOGY
V2G technology allows sale of energy back into the grid

BATTERY CAPACITY
14 batteries = 160kWh

SERVICE & SUPPORT
Extensive North American dealer channel

Thank You!

Questions?

BLUE BIRD®

NYLPI

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Testimony of New York Lawyers for the Public Interest before the New York City Council Environmental Protection Committee in support of Introduction 455

December 17, 2018

Greetings Chairman Constantinides and members of the Environmental Protection Committee. New York Lawyers for the Public Interest (NYLPI) appreciates this opportunity to provide testimony in support of Introduction 455 of 2018 to require the use of electric school buses in place of older, more inefficient vehicles.

About NYLPI

NYLPI is a social justice organization that was founded forty years ago to provide critical legal services and advocacy for New Yorkers in need. We provide services through our environmental justice, health justice and disability rights programs through the community lawyering model. NYLPI's community lawyering model is a client driven process that uses all of the skills of our staff to promote sustainable solutions and strategies for neighborhood empowerment. NYLPI also operates the Pro Bono Clearinghouse which coordinates volunteer efforts from the private bar and fosters capacity building for nonprofit organizations. We are deeply committed to advancing the public interest through innovative and sustainable legal and policy solutions.

Advocating for more efficient busing solutions

We strongly support Int 455, which will require school bus companies transporting New York City students to switch to all-electric bus fleets by the year 2040.

Our goal here is to highlight the many ways that Int 455 would support and enhance our work in health justice, disability justice and environmental justice. The issue of healthier and more efficient busing cuts across all of our programmatic areas. As such, we have committed our resources and networks to pursuing a common goal of better buses for all of New York City's schoolchildren. NYLPI is actively working towards building a campaign to enhance the busing experience for all children in New York City who rely on contractors from the Department of Education to help them to get to and from school. We have learned thus far that the system is widely inefficient and places considerable strain on the students and their families, particularly students with disabilities. Our research has shown that many of these inefficient bus routes meander

through environmental justice communities which add to already high levels of air pollution and exacerbate levels of respiratory health ailments like asthma.

As one of the largest diesel-fuel vehicle fleets in New York City, school buses are a major source of greenhouse gas emissions and local air pollution. School bus emissions also have a disproportionate impact on communities and families that are most vulnerable to pollutants from diesel engines. Because school buses have an average age of about 16 years, school children and residents along these school bus routes are adversely affected as these buses continue their route or idle in front of schools. This not only poses health risks for individuals along these routes, but also environmental risks, such as the emission of greenhouse gases.

Environmental Justice Considerations

School bus depots are heavily concentrated in Environmental Justice communities throughout the five boroughs, many of which are burdened with a legacy of cumulative pollution and inequitable siting. We recently made a map of the private companies operating DOE bus routes for the 2017-2018 school year, and confirmed the location of each company's depot using Google Earth. As you can see, depots housing hundreds of school buses are located in East New York, South Bronx, Red Hook, Coney Island, and Southeast Queens. Some of these depots are very large, dispatching hundreds of buses every school day. Moreover, some drivers may return to the depot during the break between their morning and afternoon routes, resulting in hundreds of additional diesel bus trips in and out of host communities.

According to a report published by New York League of Conservation Voters Education Fund (NYLCVEF) "in New York City, there are 10,350 buses that travel 9,000 routes and transport 147,160 students daily, the majority of whom are students with disabilities."[1] Students enrolled in special education programs ride buses the longest distances, often spending hours of each school day on buses, meaning that they are also exposed to the highest levels of particulate matter and other pollutants. ***The EPA has reported that "older polluting school buses can lead to significant health risks for students who typically ride these buses for one half to two hours a day."*** For NYC students enrolled in schools outside their home community and borough, trips can often be one or two hours, particularly with worsening traffic congestion.

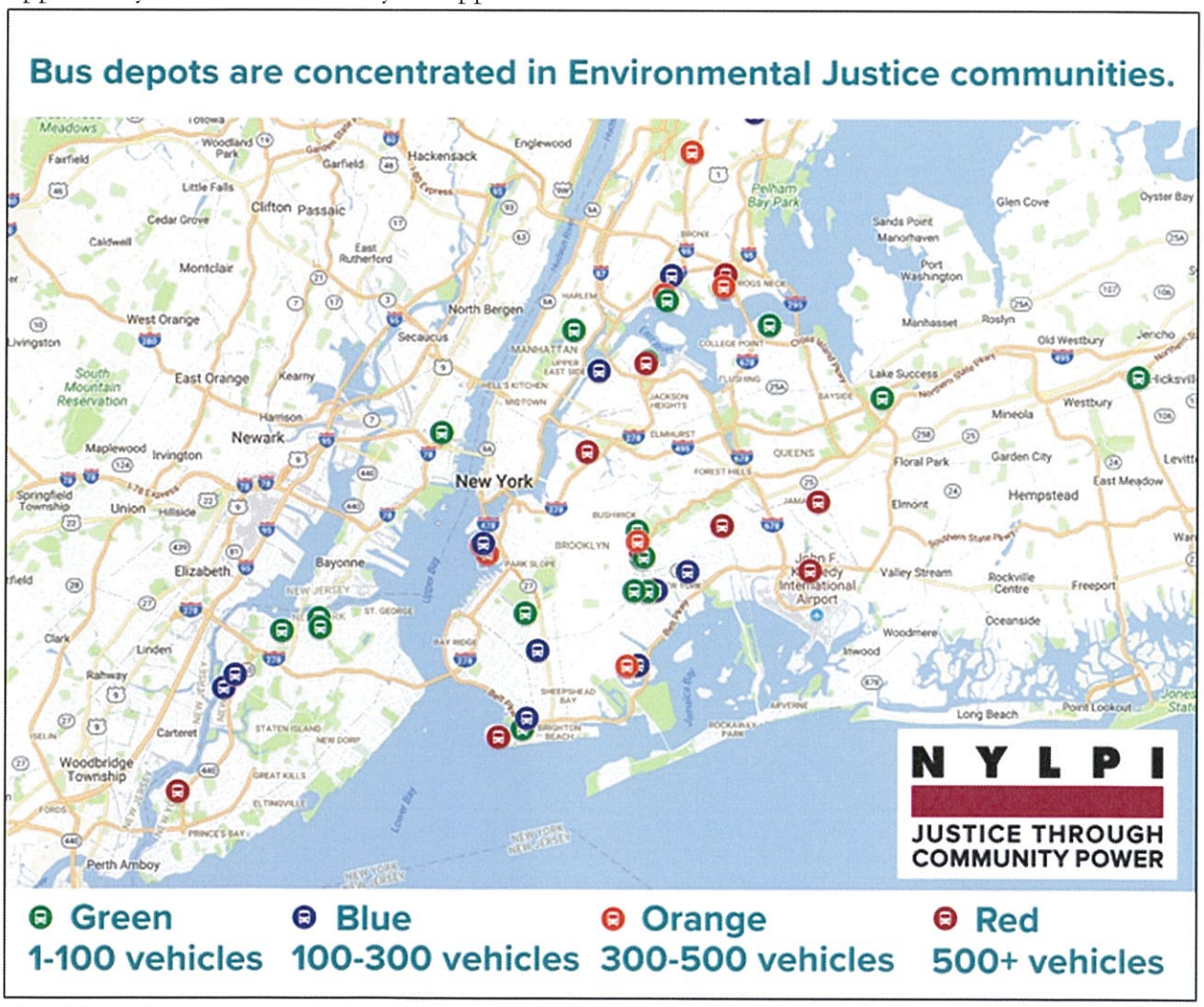
Int 455 is a sensible way of phasing in electric buses, which will greatly reduce the emissions that students, bus drivers and attendants, and environmental justice communities are exposed to every school day. We also urge that as bus contractors begin purchasing and operating low-emissions electric vehicles, they prioritize using these vehicles on the longest routes, particularly those used by students with disabilities and/or respiratory health problems such as asthma. Int 455 also ensures

[1] New York League of Conservation Voters Education Fund, New School Year, Same Dirty Buses: The Case for Electrifying New York's School Buses, September 2018, http://nylcvef.org/wp-content/uploads/2018/08/ESB_WhitePaper.pdf

that students on school buses are not susceptible to the dangers of inhaling noxious gases by phasing out buses that do not use a closed crankcase ventilation system, thereby protecting the air inside school buses.

Conclusion

Replacing our dirty school bus fleet with low- and zero-emissions vehicles also has the potential to reduce NYC's greenhouse gas emissions tens of thousands of tons each year. With every federal and international study agreeing that we have entered a period of accelerating climate change and climate-related crises, it is imperative that our City do our part. Mitigating the impact of the massive fleet of school buses that transport our children is a crucial part of a realistic, meaningful climate policy for New York City. Overall, we support Int 455 and look forward to working with the City Council and the Department of Environmental Protection Committee to continue working toward a cleaner, greener and more equitable public school transportation system. Thank you for the opportunity to submit testimony in support of this bill.



New York Lawyers for the Public Interest
Environmental Justice Program

WE ACT for Environmental Justice Testimony in Support of Intro 455

My name is Adi Varshneya and I am a community organizer with WE ACT for Environmental Justice. WE ACT has been making a difference in improving the health of residents of northern Manhattan for nearly 30 years. WE ACT strongly supports Intro 455.

Our Dirty Diesel campaign led to the implementation of stringent new bus pollution standards - the MTA switched from diesel fuel to hybrid electrics that reduce tailpipe emissions by 95%. School bus emissions pose an even more serious threat because this toxic exhaust actually accumulates inside the busses where children are sitting.

Diesel emissions are a known public health hazard, linked to respiratory problems, cardiovascular illness, and cancer. They are especially detrimental to the developing lungs of the 2 million New York City children who are subject to direct, prolonged exposure to diesel exhaust as they ride to and from school each day. In some low-income areas of New York City, such as Harlem, the childhood asthma rate is 1 in 4, compared to 1 in 11 nationwide. Asthma is a major cause of school absenteeism, which can compound social inequalities in education and lower a child's likelihood of high school graduation. A child with severe asthma might miss up to 30 days of school. We can't let the way kids are getting to school be one of the reasons why they can't go.

I live in Washington Heights, and several of the kids in my building have asthma. I've seen the financial stress this puts on families - when a child misses school because of asthma symptoms, parents are often forced to stay home from work and lose out on a day's wages. New York families pay over $1000 a year on asthma-related medical costs per child. In East Harlem, where children are hospitalized for asthma at a rate three times the citywide average, median household income is just $35,000, significantly lower than the city average. The cost burden of asthma is especially onerous for low income communities of color like ours uptown which suffer disproportionately from the impacts of air pollution.

This is also a labor issue - school bus drivers spend more time on the busses than anyone else and are directly exposed to to harmful pollutants in the workplace. Everyone deserves a safe and healthy work environment.

We cannot allow school bus diesel emissions to continue to exacerbate climate change, endanger public health, hinder our children's educations, and place undue financial strain on New York families. We have the technology and the responsibility to address this: school bus

electrification will have real benefits to New Yorkers uptown and beyond for generations to come. We urge the council to vote in favor of healthy, resilient neighborhoods and pass this bill.

Int. No.455 - A local law to amend the administrative code of the city of New York, in relation to age limitations on school buses and replacing such school buses with all electric school buses.

Hearing Monday, 12/17/18, 250 Broadway, 16th Floor

I, Catherine Skopic, citizen, parent, Vice Chair of Sierra Club New York City Group, support this bill for two main reasons: 1. it protects the health of our children and 2. it protects the health of our atmosphere by reducing carbon and GHG emissions.

1. Children, being smaller with smaller lungs, need to breath more frequently so are more greatly negatively impacted by pollutants in the air than are adults. According to the Regional School Bus Study of 2012, A Comparison of Alternative Fuels for School Transportation Fleets (SCRCOG.org), numerous pollutants can leak into passenger cabins of buses, amassing in concentrations that are much higher than outdoor air and therefore, more dangerous to children. Outdoor air around diesel school buses is harmful, as well. Children and youth need our protection for their viable future .

2. We have all witnessed the results of global warming. Every 4 years, we've had the UN reports of the Intergovernmental Panel on Climate Change (IPCC) - the most recent released in October; and we just had the release of the 4th National Climate Assessment - both filled with the most dire scientific findings yet, calling for our quick and urgent response, if we are to prevent the worst of these predictions. World leaders have been meeting in Poland for the UN Global Climate Conference working to do just this, specifically, working out rules and procedures to measure each country's emissions so that we can be accountable and accurately, fairly measure the CO2 and greenhouse gas emissions in order to more easily, quickly reach our reduction goals.

There re three types of electric vehicles: 1. all electric, 2. hybrid, 3. plug-in electric hybrid. The first type - all electric - is considered by the EPA to be zero-emissions, and is the type of electric vehicle this bill supports. All three types can cost two times more than a diesel bus - or more - but costs can be recouped by fuel savings, tax credits and other government funding programs. And how does one put a price on a child's health, free from asthma or worse?

The New York City Council is to be applauded for having introduced this bill as are all those council members who have signed and all those who will sign.

My only recommendations are that the date for the transition to all electric school buses be moved up sooner than the date included in the bill and that then, we do the same for public and, if possible, private buses that operate in the city, as well.

EDF
ENVIRONMENTAL
DEFENSE FUND
Finding the ways that work

Comments of Environmental Defense Fund
Before the Environmental Committee of the New York City Council
Regarding Int. 455-2018

December 17, 2018

Good morning, Council Member Constantinides and members of the Environmental Committee. My name is Isabelle Silverman and I am a Senior Fellow at Environmental Defense Fund (EDF). EDF is a not-for-profit, non-partisan, international environmental organization with headquarters in New York City. With over two million members, more than 35,000 of whom are New York City residents, we work to advance market-based policy to address the world's greatest environmental challenges.

EDF applauds the sponsors of Int. 455-2018 for taking much needed action to dramatically reduce pollutants and greenhouse gas emissions from the City's school bus fleet.

EDF has a long history of working with New York City to reduce emissions and improve local air quality, advocating for policies and laws that will reduce emissions from buildings and vehicles. In addition to our efforts with the Clean Heat program, which eliminated the use of No. 6 heating oil in buildings, we have worked with the City to reduce school bus emissions for over ten years by calling for the use of emissions controls equipment, such as closed crankcase ventilation systems and diesel oxidation catalysts, in diesel buses. However, these technologies only go so far, and the best approach for the health and well-being of all New Yorkers, particularly our children, would be to emit nothing at all.

Whatever technology is ultimately used to limit emissions from diesel buses, the potential for elevated in-cabin particulate matter levels is a concern. Children are among the most vulnerable to toxic diesel emissions and NY already experiences high asthma hospitalization rates remain a major health problem in New York City.

Pre-2007 engine model year buses emit an order of magnitude more particulate matter emissions than their post-2007 engine model year buses. With the current 16-year bus retirement age, these highly polluting pre-2007 buses will only be phased out in 2022. If passed, the bill presented before us today will eliminate the use of these buses for public school use, but also lay the groundwork for using cleaner buses over time, which is why we are supporting reducing the retirement age to ten years for diesel school buses.

EDF supports this bill and proposes the following changes which we believe will make the changes more equitable to bus companies and communities:

1. Alternative Fuel (Non-diesel) school buses should be allowed to be in use for 12 years and not only 10 years to ease the financial burden on small school bus businesses that have invested in alternative fuel (non-diesel) school buses.

2. Rephrase Section 3(e) changing "all-electric zero emission school buses" to "zero emission school buses". Zero emissions vehicles come in many forms and an express limitation to all-electric may limit the use of future zero emission technologies that may be more cost effective.

3. Consider the possibility of an extension for financial hardship for small school bus companies to transition fully to ZEV by 2040. Such an extension should be narrowly drafted and require early application.

Thank you for the opportunity to testify today.

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ALIGN
ALLIANCE FOR A GREATER NEW YORK

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Thank you for the opportunity to speak on this important issue. I work with ALIGN: The Alliance for a Greater New York, which has been advocating for this legislation in order to improve air quality and protect school children from dangerous exposure to poor air quality conditions that result from diesel emissions.

Right now, 125 private bus vendors drive over 10,000 busses a day around the city bringing kids to and from school. The majority of those students deal with health issues or disabilities. These children are especially vulnerable to the adverse health impacts that come from diesel exhaust. And it's not just children who are affected by each day's diesel bus traffic: drivers and employees are exposed to pollution and particulates in the air, and the neighborhoods through which busses traffic experience the negative effects of their emissions and noise. We also know that bus depots tend to be disporportionatly located in neighborhoods that are already identified as frontline and environmental justice communities, dealing with pollutants and toxins from traffic and industrial sources.

These are just some of the reasons Intro 455's passage is so critical. New York City has the opportunity to reform the industry, cut down on a harmful source of pollution in the atmosphere, elminate the need for expensive fuel and provide students and drivers with quiet, comfortable modern busses that will literally stop poisoning passengers and passersby. As an organization that seeks to align the interests of community and labor around issues of environmental and social justice, we see this bill as a clear opportunity to help workers in a previously under-regulated industry while also protecting some of New York's most vulnerable poplution from the harmful affects of climate pollution.

We know that the technology to phase out diesel and electrify the school bus fleet is readily available, growing cheaper with each passing day, and scaling-out in markets across the country. New York City should be a leader in adopting this emerging technology and helping to establish a market for modern, electric busses, which will ultimatly encourage their use in other sectors. Whether we are weighing the economics of phasing out fuel costs, the public health benefits of reducing pollution or the practicality of making school bussing more reliable and hassle-free, we need your support and passage for this bill. New York's students, parents and communities deserve nothing less.

Statement of Samantha Wilt
Senior Energy Policy Analyst, Climate and Clean Energy Program
Natural Resources Defense Council

Before the New York City Council
December 17, 2018

In support of Intro. No. 455

Good morning, I am Samantha Wilt, a senior policy analyst at the Natural Resources Defense Council. Thank you Chairman Constantinides and the committee for the opportunity to testify today in support of this bill.

NRDC has been working on air quality issues in New York City for more than 40 years, and working to prevent climate change for nearly that long. Although we have come a long way from leaded gasoline and buildings burning their garbage, we still have a serious and inequitable problem with air quality. And it has never been more clear how climate change is already affecting this city and how dire the future impacts will be without serious and accelerating efforts to reduce greenhouse gas pollution.

Children in this city have hugely disparate asthma rates based on where they live, and the color of their skin. We must do better to create a city where everyone's kids are healthy and thriving, and not suffering from preventable chronic health problems that profoundly affect their lives; reducing time they can spend in school, and causing extraordinary stress to themselves and their families.

This bill makes sure the oldest, dirtiest school buses are replaced with the cleanest ones. Electric school buses have come a long way in the past few years, and now there are a number of commercially available buses ready to start rolling in New York City. Other cities and states across the country have begun to deploy these buses, including a pilot program of a few buses just north of here, in White Plains. And last Friday California voted to require all 12,000 of their transit buses to be zero carbon starting in 2030. And MTA has committed to having all of its nearly 6,000 buses replaced by electric by 2040. As you know, there are more than 10,000 buses that the Board of Education contracts with to transport almost 150,000 kids every day. For context, the City of New York's entire vehicle fleet is about 30,000 vehicles, and we need to make all of them clean. We now have the technology to get these kids to school and make the air cleaner for them and all the other kids (and adults) whose neighborhoods they are driving through, and reduce the greenhouse gas pollution they create. Thank you again to the Chair, committee and Council for your continued leadership on climate change and air pollution, tackling these issues has never been more critical. Thank you.

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 455 Res. No. _____

☐ in favor ☐ in opposition

Date: 12/17/18

(PLEASE PRINT)

Name: Dan Welch

Address: 1437 Carroll St, Brooklyn, NY

I represent: CALSTART, Inc

Address: 67 35th St, Ste 356, Brooklyn, NY

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 455 Res. No. _____

☑ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Eric McCarthy

Address: 1 Whitlee Ct., Greenville, SC 29607

I represent: PROTERRA INC

Address: (same)

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: 12/17/18

(PLEASE PRINT)

Name: Marc Ricci

Address: 402 Blue Bird Blvd. Ft Valley, GA 31030

I represent: Blue Bird - Corporate

Address: Same As Above

Please complete this card and return to the Sergeant-at-Arms

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 4588 Res. No. _____

☒ in favor ☐ in opposition

Date: 12/17/18

(PLEASE PRINT)

Name: Emily Wier

Address: 154 W 14th St, New York

I represent: Greenlots

Address: _____

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 455 Res. No. _____

☒ in favor ☐ in opposition

Date: 12/17/18

(PLEASE PRINT)

Name: Urvi Nagrani

Address: 330 Hatch Dr. Foster City, CA 94404

I represent: Motiv Power Systems

Address: 330 Hatch Dr. Foster City, CA, 94404

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

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☒ in favor ☐ in opposition

Date: 12/17/18

(PLEASE PRINT)

Name: Samantha Wilt

Address: 19 Croton Ave, Hastings-on-Hudson, NY

I represent: Natural Resources Defense Council

Address: 40 West 20th Street, NYC

Please complete this card and return to the Sergeant-at-Arms

THE COUNCIL
THE CITY OF NEW YORK

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☒ in favor ☐ in opposition

Date: 12/17/18

(PLEASE PRINT)

Name: Peter Rego

Address: 41 University Drive Suite 400

I represent: Lion Electric Co. - USA

Address: Newtown, PA

THE COUNCIL
THE CITY OF NEW YORK

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Date: 12/17/18

(PLEASE PRINT)

Name: Danielle Spiegel-Feld

Address: 139 MacDougal Street

I represent: NYU Guarini Center on Environmental, Energy and Land Use Law

Address: ~~(same address as above)~~

THE COUNCIL
THE CITY OF NEW YORK

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Date: 12/17/18

(PLEASE PRINT)

Name: Robert Reichenbach

Address: 155 Terminal Drive, Plainview NY

I represent: Bird Bus Sales

Address: _____

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Date: 12/17/18

(PLEASE PRINT)

Name: Brett Ronan

Address: 50 Broadway

I represent: ALIGN

Address: _____

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THE CITY OF NEW YORK

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Date: _____

(PLEASE PRINT)

Name: Adriana Espinoza

Address: _____

I represent: NYLCV

Address: _____

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Date: 12/17/18

(PLEASE PRINT)

Name: Mo-Vain Tham

Address: 25 Broadway 9th fl

I represent: Jobs to Move America

Address: _____

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THE CITY OF NEW YORK

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Date: _____

(PLEASE PRINT)

Name: Keith Kerman

Address: DCAS

I represent: Chief Fleet Officer

Address: 1 Centre Street

THE COUNCIL
THE CITY OF NEW YORK

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Date: 12/17/18

(PLEASE PRINT)

Name: Tevin C.S. Grant

Address: 83 Bay 7th Street Blk NY 11228

I represent: Evolve Electric Transportation

Address: 1303 14th Ave Blk NY 11228

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Date: 12.17.18

(PLEASE PRINT)

Name: Christine Appah

Address: _____

I represent: NYLPI

Address: 151 West 30th St.

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Date: 12/17/18

(PLEASE PRINT)

Name: Aditi Varshneya

Address: 616 W 184 St, #32

I represent: WE ACT for Environmental Justice

Address: 1854 Amsterdam Ave

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THE CITY OF NEW YORK

Appearance Card

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Date: _____

(PLEASE PRINT)

Name: Silverman, Isabelle

Address: _____

I represent: EDF

Address: _____

Please complete this card and return to the Sergeant-at-Arms

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Date: _____

(PLEASE PRINT)

Name: Catherine Skopic

Address: 140 West Broadway, N.Y.C. 10013

I represent: Myself - Citizen, Parent

Address: _____

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THE CITY OF NEW YORK

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Date: 12/17/18

(PLEASE PRINT)

Name: Alexandra Robinson, Executive Director of OPT

Address: 52 Chambers St

I represent: NYC DOT, Office of Pupil Transportation (OPT)

Address: 52 Chambers St., NY, NY

Please complete this card and return to the Sergeant-at-Arms