The Council of The City of New York

Hon. Gifford Miller, Speaker

A Staff Report To:

The Committee on Oversight and Investigations

Hon. Eric Gioia, Chair

Hon. Eva Moskowitz

Hon. Christine Quinn

IDLING BUSES: EXHAUSTING OUR HEALTH

BUS LAYOVER AREA

NO STANDING

NO ENGINE IDLING
MAX FINE $800

SP-4988 DEPT. OF TRANSPORTATION
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This report can be found at the Council’s website at www.council.nyc.ny.us
EXECUTIVE SUMMARY

Bus fleets across New York City (NYC), including those of the Metropolitan Transit Authority (MTA), commuter bus lines and tour bus companies, are flaunting City law and endangering the health of NYC residents. A recent investigation by the New York City Council Investigation Division (CID) has found that in some parts of the city, over 30% of buses were observed idling for longer than the legal limit of three minutes. Long recognizing the negative environmental and health effects of diesel exhaust, NYC’s anti-idling law, in effect since 1971, has restricted motor vehicle idling to no more than three minutes.\(^1\) In addition to restricting idling, the law deems that buses may not idle at all when they reach the terminal points of their routes.

Buses and other motor vehicles generate a substantial proportion of the metropolitan region’s carbon monoxide emissions, smog and airborne toxic chemicals.\(^2\) With Local Law 6 of 1991,\(^3\) NYC began a multi-year program to replace its own motor vehicle fleet with clean energy alternatives to traditional diesel fuel. In addition, there have been several initiatives to encourage school bus fleets and double-decker tour buses to convert to emissions reduction technologies.

It is well established that diesel fuel exhaust degrades air quality and contributes to respiratory conditions and other health concerns. New York City residents, particularly children, have above average exposure to diesel exhaust. A 1993 study concluded that, on average, 53 percent of

\(^1\) NYC AC § 24-163. The exception is when outdoor temperatures are below 40° Fahrenheit, at which time idling for as long as three minutes is again permitted.
\(^3\) New York City Administrative Code (hereinafter NYC AC) sections 24-163.1 and 24-163.2
particulate matter in Manhattan was diesel particulate matter. In 1990, while the average American was exposed to 0.8 micrograms of particulate matter per cubic meter, children who were often outdoors in NYC were exposed to 4 micrograms per cubic meter—five times the national average.

Excessive bus idling remains a persistent source of complaint in communities citywide. With this in mind, CID undertook to investigate compliance with the City’s idling restrictions. Our investigation found that:

- The average idling time citywide was two minutes and 36 seconds (2:36).
- A total of 64 buses (24%) were found idling for three minutes or more. The average idling time for these buses was seven minutes and 20 seconds (7:20)—more than double the time allowed by law.

The table below details borough-specific findings:

<table>
<thead>
<tr>
<th>Borough</th>
<th>Avg. Idling Time (min.)</th>
<th>Percentage Idling &gt; 3 Min.</th>
<th>Avg. Time for Buses Idling &gt; 3 Min. (min.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manhattan</td>
<td>3:21</td>
<td>30%</td>
<td>8:26</td>
</tr>
<tr>
<td>Brooklyn</td>
<td>2:35</td>
<td>31%</td>
<td>6:13</td>
</tr>
<tr>
<td>Bronx</td>
<td>2:01</td>
<td>17%</td>
<td>6:07</td>
</tr>
<tr>
<td>Queens</td>
<td>1:58</td>
<td>20%</td>
<td>4:36</td>
</tr>
<tr>
<td>Staten Island</td>
<td>1:31</td>
<td>11%</td>
<td>6:12</td>
</tr>
</tbody>
</table>

While most buses were found to be within the three-minute limit, many of those that exceeded it did so by fairly large margins—in some cases, idling more than five times as long as they should have.

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5 Ibid, Tables 2-29 and 2-31.
In light of these findings, the CID recommends the following:

• **Call on the New York City Police Department, the New York City Department of Environmental Protection and the New York City Department of Transportation to increase enforcement of idling restrictions.**
  Stricter enforcement of the law would encourage greater compliance.

• **Adopt legislation increasing penalties for excessive vehicle idling.**
  Higher fees for violations of the law would heighten their effectiveness as a deterrent.

• **Call on the Department of Transportation to increase signage.**
  In the course of our investigation, we encountered only one sign informing bus operators of the City’s idling restrictions and warning them of possible fines for noncompliance.

• **Adopt legislation that requires all buses operating in New York City to take steps to reduce emissions.**
  Diesel-fueled buses should be outfitted with emissions-reduction technology appropriate for their age and manufacture. Also, they should be required to use ultra-low-sulfur diesel fuel.

• **Urge the Metropolitan Transportation Authority to fulfill its commitment to convert 100% of its New York City bus fleet to cleaner emissions technologies by the end of this year.**
  In April 2000, the MTA committed to a clean fuel bus program that paired purchases of alternative fuel vehicles with comprehensive retrofits of its diesel buses to substantially reduce harmful exhaust emissions.
from its New York City bus fleet. We support this goal and urge the MTA to fulfill its commitment in these last months of 2003.

- **Pass a resolution supporting New York State Senate Bill 5716.**
  The private bus operators that contract with the New York City Department of Education (DOE) have shown themselves reluctant to participate in voluntary incentive programs to convert their fleets to cleaner fuel technologies. This bill would mandate such conversion as a condition of contracting with the DOE.
BACKGROUND

Buses and other motor vehicles generate a substantial proportion of the metropolitan region’s carbon monoxide emissions, smog and airborne toxic chemicals.¹ Heavy-duty vehicles like buses “are the primary source of fine particulates,” which irritate the lungs and respiratory system, and may be human carcinogens.² In addition, heavy-duty diesel vehicles emit chemicals that react with sunlight to create ozone, both a health hazard itself and a major component of smog.”³

Residents of New York City, particularly children, have above average exposure to diesel exhaust. A 1993 study concluded that, on average, 53 percent of particulate matter in Manhattan was diesel particulate matter.⁴ In 1990, while the average American was exposed to 0.8 micrograms of particulate matter per cubic meter, children who were often outdoors in New York City were exposed to 4 micrograms per cubic meter—five times the national average.⁵

⁵ Ibid., Tables 2-29 and 2-31.
Health Effects of Diesel Exhaust

Diesel exhaust is a toxic blend of hundreds of chemical components in gaseous or particulate form. As with ozone, formed as a by-product of chemicals in diesel exhaust, the particulate matter in diesel exhaust can cause serious health problems. Particulate matter usually has a diameter of less than 2.5 microns and is not visible to the naked eye.

Both short-term and long-term exposure to diesel exhaust can be irritating to the human body. “The most readily identified acute non-cancer health effects of [diesel exhaust] are complaints of eye, throat, and bronchial irritation and neurophysiological symptoms such as headache, nausea, vomiting, and numbness and tingling of the extremities.” While human evidence is inconclusive, the U.S. Environmental Protection Agency (EPA) finds diesel exhaust “likely to be carcinogenic to humans by inhalation.” It is believed that the effects of diesel exhaust are felt more acutely by those already vulnerable: children, the elderly, and individuals with preexisting health conditions, especially preexisting respiratory conditions. According to the EPA, particulate matter such as that found in diesel exhaust is responsible for 15,000 premature deaths every year.

A May 2003 Harlem Hospital study found epidemic levels of asthma among children under 13 in a 24-block area of Central Harlem. The report found that:

...one out of every four children in New York City’s Harlem section has asthma, double the rate researchers expected and one of the
highest neighborhood rates in the nation . . . Asthma researchers have said they do not know of anywhere in the country where the rate of the disease is well documented at above 20%.\textsuperscript{12}

This report followed a 1999 study by the Mount Sinai School of Medicine that found that East Harlem had the highest annual hospitalization rate for childhood asthma in New York City.\textsuperscript{13} Many have linked the high rates of asthma in this densely populated area to the fact that seven of the City’s eight bus depots in Manhattan are sited north of 96th Street\textsuperscript{14}; finding this siting pattern discriminatory, community advocacy group West Harlem Environmental Action, Inc. (WE ACT) filed a federal civil rights complaint against the Metropolitan Transportation Authority (MTA) in November 2000.\textsuperscript{15}

**Initiatives to Limit Diesel Exhaust in New York City**

Local Law 6 of 1991\textsuperscript{16} mandated that 20% of the City of New York’s annual bus purchases, as well as those of bus fleets operating in New York City, be powered by alternative fuel. In addition, the MTA launched its Clean Fuel Bus initiative in April 2000; under this program, it committed to purchasing 550 new clean-fuel buses, to switching to ultra-low-sulfur diesel fuel for its diesel buses and to retrofitting its entire diesel bus fleet with emissions reduction technology by the end of 2003.\textsuperscript{17} As of June 2002, the MTA was reported to be on track to meet its commitment.\textsuperscript{18}

\textsuperscript{12} “Study finds one in four Harlem children has asthma.” *Immunotherapy Weekly*. 14 May 2003: 18.
\textsuperscript{16} New York City Administrative Code (hereinafter NYC AC) Sections 24-163.1 and 24-163.2.
\textsuperscript{17} Kuo, Anny. “Funds for Clean MTA Buses Approved as Budget Talks Continue.” Associated Press State & Local Wire. 12 Apr 2000.
As unregulated sources of diesel fuel exhaust, school buses present particular concerns, as they subject children to high levels of dangerous particulate matter. A California study found that the levels of diesel exhaust can be up to eight times greater inside a school bus than in outside air.\(^{19}\) New York City school bus operators are not required to use ultra-low-sulfur diesel fuel, nor are they required to retrofit older buses in order to reduce the amount of air pollution they emit.\(^{20}\)

Several recent programs have sought to provide incentives for school bus fleet owners to emissions-reducing alterations to their buses. The New York Power Authority (NYPA), for example, has agreed to retrofit 1,000 school buses in the boroughs outside Manhattan with diesel particulate filters and to pay for the switch to ultra-low-sulfur diesel fuel; as buses manufactured before 1995 cannot accept the retrofit, NYPA has also agreed to pay for oxidation catalysts, which can limit pollution in the older school buses.\(^{21}\) None of the school bus companies have taken advantage of the retrofit offer, and only one school bus company has allowed its pre-1995 school buses to be fitted with diesel oxidation catalysts.\(^{22}\) New York State Senator David Paterson has introduced legislation (New York State Senate Bill 5716) that would mandate these changes as a condition of contracting with the New York City Department of Education (DOE).


\(^{21}\) Ibid.

In July 2003, the EPA signed an agreement with the New York Association of Pupil Transportation to install pollution controls on 15,000 buses across New York State. School bus operators from New York City refused to participate in this voluntary agreement, which would provide some federal funding to retrofit older buses.23

A recent New York State initiative, the New York State Clean Air School Bus Program, is awarding the New York City Department of Education $1.25 million to retrofit 209 buses owned by Pioneer Transportation, a private bus company that contracts with the City to provide school bus services.24

While subject to the same idling restrictions as all buses, double-decker tour buses present additional issues in that most were manufactured in England between 10 and 20 years ago. As such, they lack catalytic converters, a device that promotes decomposition of harmful gases in the vehicle’s exhaust system into mostly harmless products; the buses can emit up to 25 times more diesel particles than the average city bus. These double-decker buses often emit enough diesel particles to make the emissions visible.25 Finding that the lack of catalytic converters and other emissions-reducing technology caused tour buses to have a significant negative impact on the environment, the City Council passed and Mayor Rudolph Giuliani signed Local Law 3 of 2001, which required that sightseeing buses comply with emissions standards as a condition of licensing.26

Regulation and Enforcement of Motor Vehicle Idling

In 1971, the City of New York passed a law intended to prevent the unnecessary air pollution caused by bus idling. While the law restricts the idling time of motor vehicles to a maximum of three minutes when parked, standing, or stopped, it imposes additional regulations on buses. The law states:

When the ambient temperature is in excess of forty degrees Fahrenheit, no person shall cause or permit the engine of a bus as defined in section one hundred four of the vehicle and traffic law to idle while parking, standing, or stopping (as defined above) at any terminal point, whether or not enclosed, along an established route.

Thus, buses may idle at their terminals for a maximum of three minutes only when the temperature is below 40° Fahrenheit.

In an effort to comply with federal clean air regulations, the New York City Departments of Transportation and Environmental Protection jointly began a “crackdown” on violators of this law in the summer of 1990. By 1995, the City was giving out over 500 citations for idling each year. Declaring “war on pollution,” the Department of Environmental Protection (DEP) stepped up enforcement efforts again in March 1996. DEP responded to 573 reports of idling buses citywide in 1999.

An investigation by the New York State Attorney General’s office in 2002 found that six companies, five of them bus operators, routinely violated the City’s and State’s idling regulations. In a negotiated settlement, the

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27 NYC AC § 24-163.
28 Id. Parenthetical information in the original.
31 Ibid.
companies agreed to pay a combined $103,000 to plant trees in New York City neighborhoods lacking in them, including the South Bronx, Harlem and Fort Greene.33

Investigators from the New York City Council Investigation Division (CID) contacted the offices of every New York City Council Member to identify locations where there were reports of problems with idling buses. CID surveyed a random sample of sites from this complaint list. Investigators visited and were able to time buses at a total of 30 locations, of which five were in the Bronx, three were in Brooklyn, 13 were in Manhattan, four were in Queens and five were in Staten Island. The relatively high number of sites surveyed in Manhattan is a reflection of the disproportionately large number of locations identified as problem sites in that borough.

Investigators remained at each location for one hour and timed each bus that stopped and continued to run its engine without discharging or receiving passengers. Investigators timed New York City Transit buses, double-decker tour buses, commuter buses, and privately-run buses.

Investigators recorded the temperature at each location in addition to the idling time. The investigation took place during the summer of 2003, when the temperature was always well above 40° Fahrenheit.
FINDINGS

The following results are based on the 30 locations that were visited by investigators. A total of 271 buses were observed during the course of this study.

- **Average Idling Times – Citywide.** Citywide, the average idling time was two minutes thirty-six seconds (2:36).

- **Buses Idling For More Than Three Minutes - Citywide.**
  A total of 64 (24%) of buses idled for three minutes or more. Citywide, the average idling time for these buses was seven minutes and 20 seconds (7:20).

![Average Idling Time for All Buses Observed](image)

*Idling Buses: Exhausting Our Health*
• Average Idling Times - By Borough:
  o The average idling time for buses observed in Manhattan was three minutes and 21 seconds (3:21). Thirty-five (30%) of the buses observed idled for three minutes or more.
  o The average idling time for buses observed in Brooklyn was two minutes and 35 seconds (2:35). Nine (31%) of the buses observed idled for three minutes or more.
  o The average idling time for buses observed in the Bronx was two minutes and one second (2:01). Fourteen (17%) of the buses observed idled for three minutes or more.
  o The average idling time for buses observed in Queens was one minute and 58 seconds (1:58). Three (20%) of the buses observed idled for three minutes or more.
  o The average idling time, for buses observed in Staten Island, was one minute and 31 seconds (1:31). Three (11%) of the buses observed idled for three minutes or more.

• Buses Idling For More Than Three Minutes – By Borough.
  o For those buses in Manhattan idling longer than three minutes, the average idling time was eight minutes and 26 seconds (8:26).
  o For the buses in Brooklyn idling longer than three minutes, the average idling time was six minutes and 13 seconds (6:13).
  o For those buses in Staten Island idling longer than three minutes, the average idling time was six minutes and 12 seconds (6:12).
  o For those buses in the Bronx idling longer than three minutes, the average idling time was six minutes and seven seconds (6:07).
For those buses in **Queens** idling longer than three minutes, the average idling time was four minutes and 36 seconds (4:36).

**Percentage of Buses Idling for > 3 Minutes**

- **Citywide**: 24%
- **Bronx**: 17%
- **Brooklyn**: 31%
- **Manhattan**: 30%
- **Queens**: 20%
- **Staten Island**: 11%

**Average Time for Buses Idling > 3 Minutes**

- **Citywide**: 7:20
- **Bronx**: 5:58
- **Brooklyn**: 6:13
- **Manhattan**: 8:29
- **Queens**: 4:59
- **Staten Island**: 6:12
CONCLUSION

It is well established that diesel fuel exhaust degrades air quality and contributes to respiratory conditions and other health concerns. In a heavily populated urban area like New York City, every attempt must be made to reduce emissions. Under many of the initiatives already in place, we are making progress by replacing the oldest buses with newer, cleaner alternatives, and by retrofitting other buses with emissions reducing technology. Because buses can stay on the road for decades, it is imperative that emissions reduction remain a focus of environmental and public health policy.

Reducing the idling time of buses to as slim a time as possible is an excellent way to reduce harmful emissions from buses. Although our investigation shows that most buses do not idle for more than three minutes, those that did often exceeded the three-minute benchmark by wide margins. It is our belief that with a combination of enforcement and outreach, our City can make additional improvements in reducing bus idling times—and in our air quality.
RECOMMENDATIONS

• **Call on the New York City Police Department, the New York City Department of Environmental Protection and the New York City Department of Transportation (DOT) to increase enforcement of idling restrictions.**
  Stricter enforcement of the law would encourage greater compliance. In addition, police officers, and/or enforcement personnel from DEP and DOT should be assigned to monitor trouble spots.

• **Adopt legislation increasing penalties for excessive vehicle idling.**
  Higher fees for violations of the law would heighten their effectiveness as a deterrent.

• **Call on the Department of Transportation to increase signage.**
  In the course of our investigation, we encountered only one sign informing bus operators of the City's idling restrictions and warning them of possible fines for noncompliance. An important way to ensure bus operators are informed about the law, these signs should be posted in problem areas citywide.

• **Adopt legislation that requires all buses operating in New York City to take steps to reduce emissions.**
  Diesel-fueled buses should be outfitted with emissions-reduction technology appropriate for their age and manufacture. Also, they should be required to use ultra-low-sulfur diesel fuel.
• Urge the Metropolitan Transportation Authority to fulfill its commitment under the Clean Fuel Bus initiative to convert 100% of its New York City bus fleet to cleaner emissions technologies by the end of this year.

In April 2000, the MTA committed to a clean fuel bus program that paired purchases of alternative fuel vehicles with comprehensive retrofits of its diesel buses to substantially reduce harmful exhaust emissions from its New York City bus fleet. We support this goal and urge the MTA to fulfill its commitment in these last months of 2003.

• Pass a resolution supporting New York State Senate Bill 5716.

The private bus operators that contract with the DOE have shown themselves reluctant to participate in voluntary incentive programs to convert their fleets to cleaner fuel technologies. This bill would mandate such conversion as a condition of contracting with the DOE.
APPENDIX A

Applicable Laws
NYC Administrative Code § 24-163

Operation of motor vehicle; idling of engine restricted.
No person shall cause or permit the engine of a motor vehicle, other than a legally authorized emergency motor vehicle, to idle for longer than three minutes while parking as defined in section one hundred twenty-nine of the vehicle and traffic law, standing as defined in section one hundred forty-five of the vehicle and traffic law, or stopping as defined in section one hundred forty-seven of the vehicle and traffic law, unless the engine is used to operate a loading, unloading or processing device. When the ambient temperature is in excess of forty degrees Fahrenheit, no person shall cause or permit the engine of a bus as defined in section one hundred four of the vehicle and traffic law to idle while parking, standing, or stopping (as defined above) at any terminal point, whether or not enclosed, along an established route.
Rules of the City of New York (RCNY)

6 RCNY § 2-211

(y) A sightseeing bus driver shall shut off the engine in the vehicle when the vehicle is parked. A sightseeing bus driver shall not run the engine while the vehicle is standing unless it is necessary to warm the engine in cold weather.

34 RCNY § 4-08

(p) Engine idling.

(1) Idling of vehicle engines prohibited. Except as provided for buses in paragraph (p)(2) hereof, no person shall cause or permit the engine of any vehicle, other than a legally authorized emergency motor vehicle, to idle for longer than three minutes while parking, standing or stopping unless the engine is being used to operate a loading, unloading or processing device.

(2) Idling of bus engines prohibited. No person shall cause or permit the engine of any bus to idle at a layover or terminal location, whether or not enclosed, when the ambient temperature is in excess of forty (40) degrees Fahrenheit. When the ambient temperature is forty (40) degrees Fahrenheit or less, no person shall cause or permit any bus to idle for longer than three minutes at any layover or terminal location. For the purpose of this rule, at a layover or terminal location a bus engine shall not be deemed to be idling if the operator is running the engine in order to raise the air pressure so as to release the air brakes, provided however, that this shall not exceed a period of three minutes.
APPENDIX B

New York State Senate Bill 5716
Introduced by Sens. PATERSON, ANDREWS, BRESLIN, DIAZ, DILAN, KRUEGER, KRUGER, MONTGOMERY, ONORATO, SCHNEIDERMAN, A. SMITH, M. SMITH, STAVISKY -- read twice and ordered printed, and when printed to be committed to the Committee on Rules

AN ACT to amend the administrative code of the city of New York, in relation to contracts with school bus companies

THE PEOPLE OF THE STATE OF NEW YORK, REPRESENTED IN SENATE AND ASSEMBLY, DO ENACT AS FOLLOWS:

1. Section 1. Subdivision g of section 19-606 of the administrative code of the city of New York is relettered subdivision h and a new subdivision g is added to read as follows:

G. 1. ANY BUS USED TO PROVIDE SERVICES TO STUDENTS IN CONNECTION WITH A SERVICE CONTRACT WITH THE NEW YORK CITY DEPARTMENT OF EDUCATION SHALL:

   (I) IF BUILT PRIOR TO NINETEEN HUNDRED NINETY-FIVE, BE RETROFITTED WITH DIESEL OXIDATION CATALYSTS;
   (II) IF BUILT ON OR AFTER JANUARY FIRST, NINETEEN HUNDRED NINETY-FIVE, BE RETROFITTED WITH DIESEL PARTICULATE FILTERS; AND
   (III) USE ULTRA-LOW SULFUR FUEL OR "CLEAN DIESEL".

2. ANY ALTERATION REQUIRED PURSUANT TO THIS SUBDIVISION SHALL BE COMPLETED (I) WITHIN TWO YEARS OF THE EFFECTIVE DATE OF THIS SUBDIVISION OR (II) UPON ENTERING INTO OR RENEWING A CONTRACT WITH THE NEW YORK CITY DEPARTMENT OF EDUCATION, WHICHEVER IS LATER.

S 2. This act shall take effect immediately.

EXPLANATION--Matter in ITALICS (underscored) is new; matter in brackets { } is old law to be omitted.

LBD15258-02-3 .SO DOC S 5716 *END* BTXT 2003
APPENDIX C

List of Sites Surveyed
Bronx
1. Fordham Plaza – Parallel to Third Avenue at Fordham Road
2. Third Avenue – Between Major Deegan Expressway and 138th Street
3. Westchester Square – At Benson Street
4. West Farms Square – East Tremont Avenue – Between Boston Road and Devoe Avenue
5. Riverdale Avenue – At West 263rd Street

Brooklyn
1. Livingston Street – Between Lawrence and Hoyt Streets
2. Old Fulton Street – Between Water Street and Elizabeth Place
3. Prospect Park West – At 18th Street

Manhattan
1. Central Park South – Between 5th and 6th Avenues
2. 20th Street – At Avenue C
3. 44th Street – Between 7th and 8th Avenues
4. Lexington Avenue – And 59th Street
5. East 57th Street – And 2nd Avenue
6. Broadway – Between West 178th and 179th Streets
7. 8th Avenue – Between 47th and 48th Streets
8. 43rd Street – Between 8th and 9th Avenues
9. 8th Avenue – Between 41st and 42nd Streets
10. 42nd Street – Between 8th and 9th Avenues
11. 41st Street – Between 9th and 10th Avenues
12. 126th Street Bus Depot – at Second Avenue
13. Amsterdam Bus Depot – at 128th Street
Queens
1. Queensboro Plaza – Between 22nd and 23rd Streets
2. Broadway – At Roosevelt Avenue and 74th Street
3. 80th Road – At Queens Boulevard
4. 257th Street – At Jamaica Avenue

Staten Island
1. Lincoln Avenue – At South Railroad Avenue
2. Staten Island Ferry Terminal
3. Richmond Avenue – At Arthur Kill Road
4. Richmond Terrace – At Heberton Avenue
5. Richmond Terrace – At Port Richmond Avenue