6 NYCRR Part 218, Emission Standards for Motor Vehicles and Motor Vehicle Engines

6 NYCRR Section 200.9, Referenced Material

Express Terms Summary

The New York State Department of Environmental Conservation (Department) is proposing to amend 6 NYCRR Part 218 and Section 200.9. Section 200.9 is a list that cites Federal and California codes and regulations that have been referenced by the Department while amending Part 218. The purpose of the amendment is to incorporate California's Heavy-Duty Omnibus and Phase 2 Greenhouse Gas regulations. The Department is amending Sections 218-1.1, Applicability; 218-1.2, Definitions; 218-2.1, Prohibitions; 218-3.1, Fleet Average; 218-3.2, Fleet Average Reporting; 218-3.3, Fleet Average Enforcement; 218-8, Greenhouse Gas Exhaust Emission Standards; 218-9, Emissions Control System Warranty Requirements; 218-10, Recall Requirements; and 218-11, Environmental Performance Labels. The remaining Sections in Part 218 are unchanged.

Section 218-1.1(a) is amended to include standards for 2026 and subsequent model year on-road heavy-duty engines or vehicles which use such engines.

Section 218-1.2(b) is amended to define the term 'bus line'.

Section 218-2.1(b) is amended to clarify that transit agency diesel-fueled buses are exempt from the Heavy-Duty Omnibus NOx standards and to renumber examples of exemptions.

Section 218-3.1 is amended to incorporate Heavy-Duty Omnibus NOx standards.

Section 218-3.2 is amended to correct miscellaneous typographical errors.

Section 218-3.3 is amended to correct miscellaneous typographical errors.

Section 218-8.2 is amended to create a subsection (a) and a new subsection (b).

Section 218.8.3 is amended to create a new subsection (b) and re-letter the remaining subsections.

Section 218-9.1 is amended to include new warranty coverage requirements for medium- and heavy-duty vehicles and engines.

Section 218-9.2 is amended to include new warranty claim reporting requirements for medium- and heavy-duty vehicles and engines.

Section 218-10.1 is amended to include new recall campaign requirements for medium- and heavy-duty vehicles and engines.

Section 218-10.2 is amended to include new recall plan and reporting requirements for medium- and heavy-duty vehicles and engines.

Section 218-11.1 is amended to include new environmental performance labels for medium- and heavy-duty vehicles.

6 NYCRR Part 218, Emissions Standards for Motor Vehicles and Motor Vehicle Engines

Express Terms

(Statutory Authority: Environmental Conservation Law Sections 1-0101, 1-0303, 3-0301, 19-0103, 19-0105, 19-0107, 19-0301, 19-0303, 19-0305, 19-1101, 19-1103, 19-1105, 71-2103, 71-2105; Federal Clean Air Act Section 177)

Section 218-1.1(a) is amended to read:

This Part applies to all 1993, 1994, 1996 and subsequent model-year motor vehicles that are passenger cars and light-duty trucks, motor vehicle engines, and air contaminant emission control systems; to all 2004 and subsequent model-year motor vehicles which are medium-duty vehicles, motor vehicle engines, and air contaminant emission control systems; to all 2005 and subsequent model-year motor vehicles which are heavy-duty otto-cycle engines or vehicles which use such engines; [and] to all 2005 through 2007 model-year motor vehicles which are heavy-duty [D]diesel-cycle engines or vehicles which use such engines; [and] to all 2025 and subsequent model-year motor vehicles which are medium- and heavy-duty on-road zero emission vehicles which use such engines; and to all 2026 and subsequent model-year on-road heavy-duty engines or vehicles which use such engines offered for sale or lease, or sold, or leased, for registration in this State. In the 1993 model-year, this regulation will only be effective against those engine families that are first produced more than two years from November 22, 1990.

Sections 218-1.1(b) through 218-1.2(bi) remain unchanged.

Section 218-1.2(bj) is added to read:

(bj) *Bus line* means bus line as defined in New York Consolidated Laws, Chapter 61-A, Article 1 § 2.

Section 218-2.1(a) remains unchanged.

Section 218-2.1(b) is amended to read:

(b) This Part does not apply to:

(1) a vehicle acquired by a resident of this State for the purpose of replacing a vehicle registered to such resident which was damaged or became inoperative beyond reasonable repair or was stolen while out of this State; provided that such replacement vehicle is acquired out of state at the time the previously owned vehicle was either damaged or became inoperative or was stolen; or

(2) a vehicle transferred by inheritance; or

(3) a vehicle transferred by court decree; or

(4) any vehicle sold after the effective date of this Subpart if the vehicle was registered in this State before such effective date; or

(5) any motor vehicle having a certificate of conformity issued pursuant to the Clean Air Act (42 U.S.C. section 7401 *et seq.*) (see Table 1, section 200.9 of this Title) and originally registered in another state by a resident of that state who subsequently establishes residence in this State and who upon registration of the vehicle in this State provides satisfactory evidence to the New York State Department of Motor Vehicles of the previous residence and registration; or

(6) emergency vehicles; or

(7) military tactical vehicles and equipment; or

(8) model year 2026 and subsequent diesel fueled engines used exclusively for bus lines, as referenced by 13 CCR 1956.8(a)(2)(F), for which there is no CARB certification; or

[(8)](9) vehicles exempted by California Health and Safety Code, section 43656 (See Table 1, section 200.9 of this Title).

Sections 218-2.1(c) through 218-2.4 remain unchanged.

Section 218-3.1 is amended to read:

The fleet average nonmethane organic gas exhaust emission values from passenger cars and light-duty trucks produced and delivered for sale in New York by a manufacturer each model year must not exceed the numbers set forth in California Code of Regulations, title 13, sections 1960.1(g)(2), 1961(b)(1), and 1961.2, (see Table 1, section 200.9 of this Title) except as provided in sections 1960.1(g)(2), 1961(b)(1), and 1961.2 (see Table 1, section 200.9 of this Title).

The fleet average exhaust emission standards for applicable medium- and heavy-duty engines and vehicles produced and delivered for sale in New York by a manufacturer for each model year must not exceed the values set forth in California Code of Regulations, title 13, sections 1956.8 and 1961.2, (see Table 1, section 200.9 of this Title)

(a) A manufacturer that certifies vehicles equipped with direct ozone reduction technologies will be eligible to receive NMOG credits that can be applied to the NMOG exhaust emissions when determining compliance with the standard. In order to receive credit, the manufacturer must submit an Executive Order from CARB, obtained in accordance with the provisions in California Code of Regulations, title 13, sections 1960.1(g)(1) and 1961.2 (see Table 1, section 200.9 of this Title), which determines the value of such credits for vehicles produced and delivered for sale in New York, when the manufacturer submits its annual year-end NMOG fleet average report.

(b) Credits and debits may be accrued and utilized based upon each manufacturer's sales of vehicles subject to this Part in New York, pursuant to the provisions set forth in California Code of Regulations, title 13, sections 1956.8, 1960.1(g)(2), 1961(b), and 1961.2 (see Table 1, section 200.9 of this Title).

Section 218-3.2 is amended to read:

Commencing with the 1996 model year, each manufacturer must report[,] to the [d]Department, using the same format used to report this information to CARB, the average emissions of its fleet delivered for sale in New York. Reports must be submitted to the [d]Department by March 1st of the calendar year succeeding the end of the model year.

Section 218-3.3 is amended to read:

(a) If the report issued by a manufacturer under section 218-3.2[(a)] of this Subpart demonstrates noncompliance with the fleet average contained in this Subpart, during a model year, the manufacturer must within 60 days file a fleet average enforcement report with the [d]Department documenting such

noncompliance. Fleet average enforcement reports must identify all vehicle models delivered for sale in New York and their corresponding certification standards and the percentage of each model delivered for sale in New York and California in relation to total fleet sales in the respective state.

Section 218-3.3(b) through 218-8.1(b) remain unchanged.

Section 218-8.2 is amended to read:

(a) It is unlawful for any person to sell or register, offer for sale or lease, import, deliver, purchase, rent, lease, acquire or receive a 2009, or subsequent model-year, new or used light or medium-duty passenger motor vehicle, new light or medium-duty passenger motor vehicle engine, or light or medium-duty passenger motor vehicle with a new motor vehicle engine in the State of New York which is not certified to California greenhouse gas exhaust emission standards and meets all other applicable requirements of California Code of Regulations, title 13, sections 1961.1 and 1961.3 (see Table 1, section 200.9 of this Title) and this Part except as provided in California Code of Regulations, title 13, sections 1961.1 and 1961.3 (see Table 1, section 200.9 of this Title) and this Part.

(b) It is unlawful for any person to sell or register, offer for sale or lease, import, deliver, purchase, rent, lease, acquire or receive a 2026, or subsequent model-year, new or used medium or heavy-duty motor vehicle, new medium or heavy-duty motor vehicle engine, or medium or heavy-duty motor vehicle with a new motor vehicle engine in the State of New York which is not certified to California greenhouse gas exhaust emission standards and meets all other applicable requirements of California Code of Regulations, title 17, sections 95660, 95661, 95662, and 95663 (see Table 1, section 200.9 of this Title) and this Part except as

provided in California Code of Regulations, title 17, sections 95660, 95661, 95662, and 95663 (see Table 1, section 200.9 of this Title) and this Part.

Section 218-8.3 is amended to read:

(a) The fleet average greenhouse gas exhaust emission levels from passenger cars, light-duty trucks and medium-duty passenger vehicles produced and delivered for sale in New York by a manufacturer each model-year shall not exceed the numbers set forth in California Code of Regulations, title 13, sections 1961.1 and 1961.3 (see Table 1, section 200.9 of this Title) except as provided in California Code of Regulations, title 13, sections 1961.1 and 1961.3 (see Table 1, section 200.9 of this Title).

(b) The fleet average greenhouse gas exhaust emission levels from medium and heavy-duty vehicles produced and delivered for sale in New York by a manufacturer each model-year shall not exceed the numbers set forth in California Code of Regulations, title 17, sections 95660, 95661, 95662, and 95663 (see Table 1, section 200.9 of this Title) except as provided in California Code of Regulations, title 17, sections 95660, 95661, 95662, and 95663 (see Table 1, section 200.9 of this Title).

[(b)](c) Credits and debits may be accrued and utilized based upon each manufacturer's sales of vehicles subject to this Part in New York, pursuant to the provisions set forth in California Code of Regulations, title 13, sections 1956.8, 1961.1 and 1961.3; and California Code of Regulations, title 17, section 95663 (see Table 1, section 200.9 of this [t]Title).

[(c)](d) For a given model year, manufacturers will be given the voluntary option of demonstrating compliance based on the total number of passenger cars, light-duty trucks, and medium-duty passenger vehicles certified to

the California exhaust emission standards in California Code of Regulations, title 13, sections 1961.1 and 1961.3 (see Table 1, section 200.9, of this Title), which are produced and delivered for sale in New York, California, and all other states that have adopted California's greenhouse gas emission standards pursuant to section 177 of the Clean Air Act. If a manufacturer that opts for the voluntary compliance option fails to meet the terms of the voluntary option, the manufacturer will be subject to all applicable penalties, and will be required to comply with the greenhouse gas standards as prescribed in subdivision (a) of this section.

[(d)](e) For a given model year, manufacturers may elect to demonstrate compliance with the California exhaust emissions standards by demonstrating compliance with the National Greenhouse Gas Program pursuant to California Code of Regulations, title 13, sections1961.1 and 1961.3 (see Table 1, section 200.9 of this Title). Manufacturers with outstanding greenhouse gas debits at the end of the 2011 model year are required to submit a plan to the department detailing how the debits will be offset utilizing credits earned under the National Greenhouse Gas Program.

Sections 218-8.4 through 218-8.5 remain unchanged.

Section 218-9.1 is amended to read:

For all 2016 and subsequent model year passenger cars, light-duty trucks, and medium-duty [trucks]vehicles, and motor vehicle engines; and all 2026 and subsequent model year heavy-duty vehicles and motor vehicle engines, subject to section 218-2.1 of this Part, each manufacturer shall provide warranty coverage that complies with California Code of Regulations, title 13, sections 2035[, 2037] through 2041, and 2046 (see Table 1, section 200.9 of this Title).

Section 218-9.2 is amended to read:

For all 2016 and subsequent model year passenger cars, light-duty trucks, and medium-duty vehicles, and motor vehicle engines; and all 2026 and subsequent model year heavy-duty vehicles and motor vehicle engines, subject to section 218-9.1 of this Subpart, each manufacturer shall submit warranty claim reports as required by California Code of Regulations, title 13, sections [2041]2141 through 2149 (see Table 1, section 200.9 of this Title).

Section 218-10.1 is amended to read:

For all 2016 and subsequent model year passenger cars, light-duty trucks, and medium-duty [trucks]vehicles, and motor vehicle engines; and all 2026 and subsequent model year heavy-duty vehicles and motor vehicle engines, subject to section 218-9.1 of this Part, each manufacturer shall undertake a recall campaign pursuant to California Code of Regulations, title 13, sections 2109 through 2139 and 2140 through 2149 (see Table 1, section 200.9 of this Title), unless the manufacturer demonstrates to the [d]Department that such recall is not applicable to vehicles registered in New York.

Section 218-10.2 is amended to read:

For all 2016 and subsequent model year passenger cars, light-duty trucks, and medium-duty vehicles, and motor vehicle engines; and all 2026 and subsequent model year heavy-duty vehicles and motor vehicle engines, subject to section 218-9.1 of this Part, each manufacturer shall submit recall plans and progress reports to the

[d]Department, using the same format and information as required by California Code of Regulations, title 13, sections 2141 through 2149, and 2166 through 2169.8 (see [t]Table 1, section 200.9 of this Title).

Section 218-11.1 is amended to read:

It is unlawful for any person to sell or register, offer for sale or lease, import, deliver, purchase, rent, lease, acquire, or receive a 2010[,] or subsequent, model year[,] passenger car, light-duty truck, or medium-duty passenger vehicle, 2026 or subsequent model year medium-duty vehicle, or 2026 or subsequent model year heavy-duty vehicle in the State of New York to which an environmental performance label has not been affixed pursuant to the requirements of California Code of Regulations, title 13, sections 1961, 1961.2, 1956.8, 1965, and title 17, section 95663 (see Table 1, section 200.9 of this Title).

Sections 218-11.2 through 218-12.1 remain unchanged.

6 NYCRR Part 200, General Provisions

Express Terms

(Sections 200.1 through 200.8 remain unchanged)

Section 200.9, Table 1 is amended to read as follows:

218-1.2(d)	California Code of Regulations, Title 13, Section 1962 (2-13-10)	** ***
218-1.2(e)	California Code of Regulations, Title 13, Section 1962 (2-13-10)	** ***
218-1.2(f)	Clean Air Act 42 U.S.C. Section 7543 (1988) as amended by Pub. L. 101-549 (1990)	**
	Clean Air Act 42 U.S.C. Section 7507 (1988) as amended by Pub. L. 101-549 (1990)	**
218-1.2(g)	California Health and Safety Code, Section 39003 (1975)	** †
218-1.2(j)	California Code of Regulations, Title 13, Section 1900 [(7-25-16)]<u>(4-1-22)</u>	** ***
218-1.2(l)	California Code of Regulations, Title 13, Section 1962 (2-13-10)	** ***
218-1.2(m)	California Vehicle Code, Section 165 (2013)	** †

218-1.2(n)	California Code of Regulations, Title 13, Section 1900 [(7-25-16)](4-1-22)	** ***
218-1.2(q)	California Code of Regulations, Title 13, Section 1962.1 (1-1-16)	** ***
218-1.2(w)	California Code of Regulations, Title 13, Section 1900 [(7-25-16)](4-1-22)	** ***
218-1.2(y)	California Code of Regulations, Title 13, Section 1900 [(7-25-16)](4-1-22)	** ***
218-1.2(z)	California Code of Regulations, Title 13, Section 1900 [(7-25-16)](4-1-22)	** ***
218-1.2(ab)	California Code of Regulations, Title 13, Section 1900 [(7-25-16)](4-1-22)	** ***
218-1.2(ac)	California Code of Regulations, Title 13, Section 1900 [(7-25-16)](4-1-22)	** ***
218-1.2(ad)	California Code of Regulations, Title 13, Section 1905 (7-3-96)	** ***
218-1.2(af)	California Code of Regulations, Title 13, Section 1900 [(7-25-16)](4-1-22)	** ***
218-1.2(aj)	California Code of Regulations, Title 13, Section 1962 (2-13-10)	** ***
218-1.2(ak)	California Code of Regulations, Title 13, Section 1960.5 (10-16-02)	** ***

218-1.2(ap)	California Code of Regulations, Title 13, Section 1900 [(7-25-16)](4-1-22)	** ***
218-1.2(aq)	California Code of Regulations, Title 13, Section 1900 [(7-25-16)](4-1-22)	** ***
218-1.2(at)	40 CFR Section 86.1827-01 (2-26-07)	*
218-1.2(az)	California Code of Regulations, Title 13, Section 2112 (4-1-22)	** ***
218-1.2(bc)	California Code of Regulations, Title 13, Section 1962 (2-3-10)	** ***
218-1.2(bd)	California Code of Regulations, Title 13, Section 1900 [(7-25-16)](4-1-22)	** ***
218-1.2(be)	California Code of Regulations, Title 13, Section 2035 [(10-1-19)](4-1-22)	** ***
218-1.2(bf)	California Code of Regulations, Title 13, Section 2035 [(10-1-19)](4-1-22)	** ***
218-1.2(bg)	California Code of Regulations, Title 13, Section 2035 [(10-1-19)](4-1-22)	** ***
218-1.2(bh)	California Code of Regulations, Title 13, Section 2035 [(10-1-19)](4-1-22)	** ***
218-1.2(bi)	California Code of Regulations, Title 13, Section 1900 [(7-25-16)](4-1-22)	** ***
218-1.2(bj)	New York Consolidated Laws, Chapter 61-A, Article 1 § 2. (9-22-14)	**

218-2.1(a)	California Code of Regulations, Title 13, Section 1956.8 [(4-1-20)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 1956.9 (3-6-96)	** ***
	California Code of Regulations, Title 13, Section 1960.1 (12-31-12)	** ***
	California Code of Regulations, Title 13, Section 1960.1.5 (9-30-91)	** ***
	California Code of Regulations, Title 13, Section 1960.5 (10-16-02)	** ***
	California Code of Regulations, Title 13, Section 1961 (12-31-12)	** ***
	California Code of Regulations, Title 13, Section 1961.1 (8-7-12)	** ***
	California Code of Regulations, Title 13, Section 1961.2 [(4-1-19)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 1961.3 (12-12-18)	** ***
	California Code of Regulations, Title 13, Section 1962 (2-13-10)	** ***
	California Code of Regulations, Title 13, Section 1962.1 (1-1-16)	** ***

	California Code of Regulations, Title 13, Section 1962.2 (1-1-16)	** ***
	California Code of Regulations, Title 13, Section 1963 (3-15-21)	** ***
	California Code of Regulations, Title 13, Section 1963.1 (3-15-21)	** ***
	California Code of Regulations, Title 13, Section 1963.2 (3-15-21)	** ***
	California Code of Regulations, Title 13, Section 1963.3 (3-15-21)	** ***
	California Code of Regulations, Title 13, Section 1963.4 (3-15-21)	** ***
	California Code of Regulations, Title 13, Section 1963.5 (3-15-21)	** ***
	California Code of Regulations, Title 13, Section 1964 (2-23-90)	** ***
	California Code of Regulations, Title 13, Section 1965 [(4-1-19)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 1968.1 (11-27-99)	** ***
	California Code of Regulations, Title 13, Section 1968.2 [(10-3-19)](4-1-22)	** ***

	California Code of Regulations, Title 13, Section 1971.1 [(10-3-19)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 1976 (10-8-15)	** ***
	California Code of Regulations, Title 13, Section 1978 (10-8-15)	** ***
	California Code of Regulations, Title 13, Section 2030 (9-15-14)	** ***
	California Code of Regulations, Title 13, Section 2031 (9-15-14)	** ***
	California Code of Regulations, Title 13, Section 2047 (5-31-88)	** ***
	California Code of Regulations, Title 13, Section 2065 (4-1-19)	** ***
	California Code of Regulations, Title 13, Section 2235 (10-1-19)	** ***
	Clean Air Act 42 U.S.C. Section 7521 (1988) as amended by Pub. L. 101-549 (1990)	**
218-2.1(b)(5)	Clean Air Act 42 U.S.C. Section 7401 *et. seq.* (1988) as amended by Pub. L. 101-549 (1990)	**

218-2.1(b)(8)	California Code of Regulations, Title 13, Section 1956.8(a)(2)(F) (4-1-22)	** ***
218-2.1(b)([8]9)	California Health and Safety Code, Section 43656 (1975)	***
218-2.1(d)	Clean Air Act 42 U.S.C. Section 7507 (1988) as amended by Pub. L. 101-549 (1990)	**
218-2.4	California Health and Safety Code, Section 43014 (1976)	** †
218-3.1	California Code of Regulations, Title 13, Section 1956.8 (4-1-22)	** ***
	California Code of Regulations, Title 13, Section 1960.1(g)(2) (12-31-12)	** ***
	California Code of Regulations, Title 13, Section 1961(b)(1) (12-31-12)	** ***
	California Code of Regulations, Title 13, Section 1961.2 [(4-1-19)](4-1-22)	** ***
218-3.1(a)	California Code of Regulations, Title 13, Section 1960.1(g)(1) (12-31-12)	** ***
	California Code of Regulations, Title 13, Section 1961.2 [(4-1-19)](4-1-22)	** ***
218-3.1(b)	California Code of Regulations, Title 13, Section 1956.8 (4-1-22)	** ***

	California Code of Regulations, Title 13, Section 1960.1(g)(2) (12-31-12)	** ***
	California Code of Regulations, Title 13, Section 1961(b) (12-31-12)	** ***
	California Code of Regulations, Title 13, Section 1961.2 [(4-1-19)](4-1-22)	** ***
218-4.1(a)	California Code of Regulations, Title 13, Section 1962 (2-13-10)	** ***
	California Code of Regulations, Title 13, Section 1962.1 (1-1-16)	** ***
	California Code of Regulations, Title 13, Section 1962.2 (1-1-16)	** ***
218-4.1(b)	California Code of Regulations, Title 13, Section 1963 (3-15-21)	** ***
	California Code of Regulations, Title 13, Section 1963.1 (3-15-21)	** ***
	California Code of Regulations, Title 13, Section 1963.2 (3-15-21)	** ***
	California Code of Regulations, Title 13, Section 1963.3 (3-15-21)	** ***
	California Code of Regulations, Title 13, Section 1963.4 (3-15-21)	** ***

	California Code of Regulations, Title 13, Section 1963.5 (3-15-21)	** ***
218-4.2	California Code of Regulations, Title 13, Section 2012 (3-15-21)	** ***
	California Code of Regulations, Title 13, Section 2012.1 (3-15-21)	** ***
	California Code of Regulations, Title 13, Section 2012.2 (3-15-21)	** ***
218-5.1(a)	California Code of Regulations, Title 13, Section 2061 (10-23-96)	** ***
	California Code of Regulations, Title 13, Section 2062 (8-7-12)	** ***
	California Code of Regulations, Title 13, Section 2065 (4-1-19)	** ***
218-5.2(a)	California Code of Regulations, Title 13, Section 2065 (4-1-19)	** ***
	California Code of Regulations, Title 13, Section 2109 (12-30-83)	** ***
	California Code of Regulations, Title 13, Section 2110 (11-27-99)	** ***
218-5.2(b)(1)	California Code of Regulations, Title 13, Section 2106 (11-27-99)	** ***

218-5.3(b)	California Code of Regulations, Title 13, Section 2101 (11-27-99)	** ***
218-6.2	Clean Air Act 42 U.S.C. Section 7401 *et. seq*. (1988) as amended by Pub. L. 101-549 (1990)	**
218-7.2(c)(1)	California Code of Regulations, Title 13, Section 2222 [(1-1-19)](10-1-21)	** ***
218-7.2(c)(2)	California Code of Regulations, Title 13, Section 2222 [(1-1-19)](10-1-21)	** ***
218-7.2(c)(8)	California Code of Regulations, Title 13, Section 2222 [(1-1-19)](10-1-21)	** ***
218-7.3(a)(1)	California Code of Regulations, Title 13, Section 2221 (12-30-83)	** ***
	California Code of Regulations, Title 13, Section 2224 [(8-16-90)](10-1-21)	** ***
218-7.3(a)(2)	California Code of Regulations, Title 13, Section 2224(a) [(8-16-90)](10-1-21)	** ***
218-7.4(b)(3)(i)	California Code of Regulations, Title 13, Section 2222 [(1-1-19)](10-1-21)	** ***
218-7.4(b)(3)(ii)	California Code of Regulations, Title 13, Section 2222 [(1-1-19)](10-1-21)	** ***
218-7.5(b)	California Code of Regulations, Title 13, Section 2222 [(1-1-19)](10-1-21)	** ***

218-8.1(a)	California Code of Regulations, Title 13, Section 1961.1 (8-7-12)	** ***
218-8.1(b)	California Code of Regulations, Title 13, Section 1961.1 (8-7-12)	** ***
218-8.2(a)	California Code of Regulations, Title 13, Section 1961.1 (8-7-12)	** ***
	California Code of Regulations, Title 13, Section 1961.3 (12-12-18)	** ***
218-8.2(b)	California Code of Regulations, Title 17, Section 95660 (12-5-14)	** ***
	California Code of Regulations, Title 17, Section 95661 (12-5-14)	** ***
	California Code of Regulations, Title 17, Section 95662 (12-22-21)	** ***
	California Code of Regulations, Title 17, Section 95663 (12-22-21)	** ***
218-8.3(a)	California Code of Regulations, Title 13, Section 1961.1 (8-7-12)	** ***
	California Code of Regulations, Title 13, Section 1961.3 (12-12-18)	** ***
	California Code of Regulations, Title 17, Section 95660 (12-5-14)	** ***

218-8.3(b)	California Code of Regulations, Title 17, Section 95661 (12-5-14)	** ***
	California Code of Regulations, Title 17, Section 95662 (12-22-21)	** ***
	California Code of Regulations, Title 17, Section 95663 (12-22-21)	** ***
218-8.3[b](c)	California Code of Regulations, Title 13, Section 1956.8 (4-1-22)	** ***
	California Code of Regulations, Title 13, Section 1961.1 (8-7-12)	** ***
	California Code of Regulations, Title 13, Section 1961.3 (12-12-18)	** ***
	California Code of Regulations, Title 17, Section 95663 (12-22-21)	** ***
218-8.3[c](d)	California Code of Regulations, Title 13, Section 1961.1 (8-7-12)	** ***
	California Code of Regulations, Title 13, Section 1961.3 (12-12-18)	** ***
218-8.3[d](e)	California Code of Regulations, Title 13, Section 1961.1 (8-7-12)	** ***
	California Code of Regulations, Title 13, Section 1961.3 (12-12-18)	** ***

218-8.4(a)	California Code of Regulations, Title 13, Section 1961.1 (8-7-12)	** ***
218-8.4(b)	California Code of Regulations, Title 13, Section 1961.1 (8-7-12)	** ***
218-8.5(c)	California Code of Regulations, Title 13, Section 1961.1 (8-7-12)	** ***
	California Code of Regulations, Title 13, Section 1961.3 (12-12-18)	** ***
218-9.1	California Code of Regulations, Title 13, Section 2035 [(10-1-19)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2036 (4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2037 (4-1-19)	** ***
	California Code of Regulations, Title 13, Section 2038 (8-7-12)	** ***
	California Code of Regulations, Title 13, Section 2039 (12-26-90)	** ***
	California Code of Regulations, Title 13, Section 2040 (10-1-19)	** ***
	California Code of Regulations, Title 13, Section 2041 (12-26-90)	** ***

	California Code of Regulations, Title 13, Section 2046 (2-16-79)	** ***
218-9.2	[California Code of Regulations, Title 13, Section 2140 (12-5-14)]	[** ***]
	California Code of Regulations, Title 13, Section 2141 [(4-1-19)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2142 [(2-23-90)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2143 [(11-27-99)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2144 [(11-27-99)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2145 [(8-7-12)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2146 [(11-27-99)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2147 [(12-5-14)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2148 [(11-27-99)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2149 [(2-23-90)](4-1-22)	** ***

218-10.1	California Code of Regulations, Title 13, Section 2109 (12-30-83)	** ***
	California Code of Regulations, Title 13, Section 2110 (11-27-99)	** ***
	California Code of Regulations, Title 13, Section 2111 [(12-8-10)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2112 [(12-5-14)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2113 [(1-26-95)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2114 [(11-27-99)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2115 [(1-26-95)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2116 [(1-26-95)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2117 [(1-26-95)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2118 [(1-26-95)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2119 [(11-27-99)](4-1-22)	** ***

	California Code of Regulations, Title 13, Section 2120 (1-26-95)	** ***
	California Code of Regulations, Title 13, Section 2121 [(1-26-95)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2122 (12-8-10)	** ***
	California Code of Regulations, Title 13, Section 2123 [(1-26-95)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2124 (1-26-95)	** ***
	California Code of Regulations, Title 13, Section 2125 [(1-26-95)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2126 [(1-26-95)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2127 [(1-26-95)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2128 [(1-26-95)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2129 [(1-26-95)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2130 [(11-27-99)](4-1-22)	** ***

	California Code of Regulations, Title 13, Section 2131 [(1-26-95)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2132 (1-26-95)	** ***
	California Code of Regulations, Title 13, Section 2133 [(1-26-95)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2134 (1-26-95)	** ***
	California Code of Regulations, Title 13, Section 2135 (1-26-95)	** ***
	California Code of Regulations, Title 13, Section 2136 (12-8-10)	** ***
	California Code of Regulations, Title 13, Section 2137 [(12-28-00)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2138 (11-27-99)	** ***
	California Code of Regulations, Title 13, Section 2139 [(12-5-14)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2140 [(12-5-14)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2141 (4-1-22)	** ***

	California Code of Regulations, Title 13, Section 2142 (4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2143 (4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2144 (4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2145 (4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2146 (4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2147 (4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2148 (4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2149 (4-1-22)	** ***
218-10.2	California Code of Regulations, Title 13, Section 2141 [(4-1-19)](4-1-22)	** ***

	California Code of Regulations, Title 13, Section 2142 [(2-23-90)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2143 [(11-27-99)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2144 [(11-27-99)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2145 [(8-7-12)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2146 [(11-27-99)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2147 [(12-5-14)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2148 [(11-27-99)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2149 [(2-23-90)](4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2166 (4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2166.1 (4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2167 (4-1-22)	** ***

	California Code of Regulations, Title 13, Section 2168 (4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2169 (4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2169.1 (4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2169.2 (4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2169.3 (4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2169.4 (4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2169.5 (4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2169.6 (4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2169.7 (4-1-22)	** ***
	California Code of Regulations, Title 13, Section 2169.8 (4-1-22)	** ***
218-11.1	California Code of Regulations, Title 13, Section 1965 [(4-1-19)](4-1-22)	** ***

218-11.2	California Code of Regulations, Title 13, Section 1965 [(4-1-19)](4-1-22)	** ***

Regulatory Impact Statement Summary

6 NYCRR Part 218, Emission Standards for Motor Vehicles and Motor Vehicle Engines

6 NYCRR Part 200, General Provisions

I. INTRODUCTION

The New York State (NYS) Department of Environmental Conservation (DEC) proposes to amend Title 6 of the New York Codes, Rules and Regulations (NYCRR) Part 218, "Emission Standards for Motor Vehicles and Motor Vehicle Engines," and Part 200, "General Provisions" (collectively, Part 218) to further the goals of reducing motor vehicle air pollution by incorporating the State of California's Heavy-Duty Omnibus Low NOx (oxides of nitrogen) regulation ("Heavy-Duty Omnibus") and Phase 2 Greenhouse Gas Standards ("Phase 2 GHG") for Medium- and Heavy-Duty vehicles.

II. STATUTORY AUTHORITY

The statutory authority for this amendment is found in the NYS Environmental Conservation Law (ECL), sections 1-0101, 1-0303, 3-0301, 19-0103, 19-0105, 19-0107, 19-0301, 19-0303, 19-0305, 19-1101, 19-1103, 19-1105, 71-2103, 71-2105 and section 177 of the federal Clean Air Act (42 USC 7507).

III. LEGISLATIVE OBJECTIVES

ECL Articles 1, 3, 19, and 75 provide the Commissioner with broad authority to regulate air pollution, including emissions from motor vehicles.

IV. NEEDS AND BENEFITS

The transportation sector accounts for approximately 27 percent of all GHG emissions in NYS.[1] Diesel fuel and biodiesel, mainly used by medium- and heavy-duty vehicles, accounts for 21.5 percent of all on-road transportation sector GHG emissions.[2]

Motor vehicles are also responsible for a significant portion of urban air pollution and medium- and heavy-duty vehicles are major contributors of ozone precursors.[3] The downstate New York-N. New Jersey-Long Island, NY-NJ-CT nonattainment area failed to attain federal ozone standards by a July 20, 2021 deadline. EPA has announced the nonattainment area will be reclassified to "severe."

In some urban settings, the number of medium- and heavy-duty vehicles have the greatest impact on localized NOx and fine particulate matter ($PM_{2.5}$) concentrations.[4] It is essential that DEC continue to adopt stringent mobile sources emissions standards and regulations to protect human health and the environment.

Summary - Heavy-Duty Omnibus

New York is proposing to revise Part 218 to incorporate the Heavy-Duty Omnibus and its phased implementation of NOx and PM emissions standards for medium- and heavy-duty on-road engines and vehicles. In NYS, the emission standard revisions would require sales of new engines and vehicles beginning with MY 2026 for phase one, and 2027 and subsequent MYs for phase two. California found

[1] NYS Statewide GHG Emissions Report, 1990-2019, December 30, 2021, developed under ECL sec. 75-0105, see https://www.dec.ny.gov/docs/administration_pdf/ghgsumrpt21.pdf
[2] NYS Statewide GHG Emissions Report, 1990-2019, December 30, 2021, developed under ECL sec. 75-0105, see https://www.dec.ny.gov/docs/administration_pdf/ghgsumrpt21.pdf
[3] OTC, Statement of the Ozone Transport Commission Regarding the Need to Accelerate Electrification of Medium- and Heavy-Duty Vehicles (adopted June 2, 2020), https://otcair.org/upload/Documents/Formal%20Actions/OTC%20Statement%20on%20MHD%20ZEVs_20200602.pdf.
[4] Jonathan M. Wang et al., *Near-Road Air Pollutant Measurements: Accounting for Inter-Site Variability Using Emission Factors*, 52 Env. Sci. Tech. 9495, 9502 (2018).

these standards to be technically feasible and cost-effective based on studies of commercially available control technologies.

Zero emission vehicle transition goals have already been established for NYS's largest transit authorities.[5, 6] DEC is not proposing to adopt California's Innovative Clean Transit rule under this proposal. Instead, DEC is proposing an exemption for new diesel-fueled transit buses sold to any NYS transit agency under Section 218-2.1(b).

DEC proposes to incorporate the following elements of Heavy-Duty Omnibus: NOx and PM emissions standards; the Heavy-Duty In-Use Testing Program; On-Board Diagnostic requirements; warranty requirements and useful life period requirements; emission warranty information report (EWIR) and corrective action procedure requirements; the heavy-duty durability demonstration and maintenance schedule; and the heavy-duty hybrid powertrain certification test procedure. Consistent with Heavy-Duty Omnibus, DEC proposes limited exemptions for heavy-duty engines exceeding 525 bhp and transit bus engines. DEC is also proposing a NYS-dedicated engine emission averaging, banking, and trading (ABT) program based on Heavy-Duty Omnibus.

Summary - Phase 2 GHG

To ensure adequate time for manufacturers, NYS proposes to adopt Phase 2 GHG beginning with MY 2026 medium- and heavy-duty engines and vehicles sold in NYS. Phase 2 GHG established new GHG standards for trailers; amended existing regulations to establish more stringent GHG standards

[5] https://www.governor.ny.gov/sites/default/files/atoms/files/2019StateoftheStateBook.pdf, p. 27
[6] https://new.mta.info/press-release/mta-announces-plans-increase-number-of-electric-buses-purchased-2021

applicable to tractors, vocational vehicles, pickup trucks and vans, and medium- and heavy-duty engines; and amended requirements for glider vehicles, engines, and kits. The amendments harmonized requirements with federal Phase 2 GHG standards with certain distinctions.

DEC is proposing to exclude the adoption of Phase 2 GHG requirements that apply to trailer manufacturers and trailer owners but may propose their adoption through a subsequent rulemaking.

The Phase 2 standards maintain the underlying regulatory structure developed in the prior Phase 1 program. Phase 2 GHG regulation will likely require separate credit tracking for NYS due to credit provision differences from the federal program.

IV. ESTIMATED EMISSION REDUCTIONS

The estimated emissions benefits for NYS's proposed adoption of Heavy-Duty Omnibus, relative to the revised 2022 business-as-usual scenario, are 72,840 tons of NOx from 2026-2050.

Phase 2 GHG engine standards closely align with existing federal Phase 2 GHG requirements. No additional GHG emission reductions are anticipated with NYS adoption, absent the trailer requirements.

V. ESTIMATED COSTS

Heavy-Duty Omnibus would result in an increase in production and operational costs compared to comparable engines meeting current emission standards. After accounting for differing implementation schedules and applying a scaling factor, DEC estimates the total incremental cost of NYS adopting Heavy-Duty Omnibus to be passed to vehicle buyers as $1,082,003,703.

Phase 2 GHG regulation is significantly harmonized with the federal Phase 2 GHG regulation. Most costs (and savings) associated with adoption would occur regardless as the federal requirements were adopted prior to Phase 2 GHG.

DEC estimates the incremental cost of adopting Phase 2 GHG, without the trailer requirements, for MY 2026-2028 medium- and heavy-duty engines and vehicles at $3.5 million.

Potential Impact on Consumers/Fleet Owners

DEC anticipates that medium- and heavy-duty vehicle and engine manufacturers are expected to pass Heavy-Duty Omnibus compliance costs onto NYS purchasers at similar cost or slightly less cost due to economies of scale.

California's lifetime cost analysis considered medium- and heavy-duty vehicle purchase costs, diesel exhaust fluid use, and operational savings associated with MY 2026 engines, MY 2027-2030 engines, and MY 2031 and subsequent engines. The lifetime cost increase for the population average were $2,754,[7] $5,114,[8] and $5,428[9] for the MY 2026 engines, MY 2027-2030 engines, and MY 2031 and subsequent engines, respectively. Health benefits are not included within the lifetime analysis.

Potential Impact to Businesses

The proposed adoption of Heavy-Duty Omnibus and Phase 2 GHG standards would impact medium- and heavy-duty engine and vehicle manufacturers. Approximately 31 manufacturers would be affected by Heavy-Duty Omnibus and 64 manufacturers would be affected by Phase 2 GHG based on California

[7] CARB, Heavy Duty Omnibus Form 399 Attachment, Table B-52, p. 88
[8] CARB, Heavy Duty Omnibus Form 399 Attachment, Table B-53, p. 88
[9] CARB, Heavy Duty Omnibus Form 399 Attachment, Table B-54, p. 89

information.[10,11] The cost of compliance would likely be passed onto NYS medium- and heavy-duty fleets.

VI. HEAVY-DUTY OMNIBUS - ESTIMATED SAVINGS AND MONETIZED HEALTH BENEFITS

DEC estimates the potential savings associated with warranty coverage and EWIR to NYS consumers at $191,401,831 based on California's analysis and the application of the NY/CA scaling factor and a two-year lag from California's initial reported savings.

Potential Impact to State and Local Government

DEC estimates additional sales tax revenue in NYS from higher engine and vehicle purchase prices and sale of diesel exhaust fluid of $105,626,980 (2024-2050).

VII. LOCAL GOVERNMENT MANDATES

The proposed regulations do not impose a local government mandate pursuant to Executive Order 17. No additional paperwork or staffing requirements are expected. Local governments have no additional compliance obligations as compared to other subject entities.

VIII PAPERWORK

The Heavy-Duty Omnibus would likely result in increased paperwork requirements for NYS vehicle suppliers, dealers, or local government due to warranty and recall requirements. Manufacturers would be required to submit EWIR, warranty, and recall information to DEC. Under the EWIR requirement,

[10] CARB, Heavy-Duty Omnibus ISOR, Appendix C-3: Further Detail on Costs and Economic Analysis, p.67
[11] CARB, Phase 2 GHG ISOR, Appendix H: Further Detail on Cost and Economic Analysis, Table H-10, p. H-20

manufacturers would be required to notify vehicle or engine owners of a recall or other corrective action.

The Phase 2 GHG regulation should not result in any significant paperwork requirements for NYS vehicle suppliers, dealers, or local government. Manufacturers would need to submit data to DEC regarding credit provisions and tracking.

IX. DUPLICATION

The Heavy-Duty Omnibus and Phase 2 GHG standards would supersede current federal heavy-duty engine standards and requirements. No relevant state or federal rules or other requirements would duplicate, overlap, or conflict with this rulemaking.

X. ALTERNATIVES

The Heavy-Duty Omnibus and Phase 2 GHG amendments must be adopted under CAA Section 177. NYS must adopt the more stringent California emissions standards to help meet federal ozone standards.

XI. FEDERAL STANDARDS

NYS must maintain compliance with recent California standards to achieve necessary reductions of pollutants that form ozone and exacerbate climate change. Adhering to federal standards would impede NYS's ability to make progress toward attainment of federal standards as required in its State Implementation Plan.

California's Phase 2 GHG regulation mostly aligns with federal Phase 2 GHG regulations with minor exceptions.

XII. COMPLIANCE SCHEDULE

The Heavy-Duty Omnibus and Phase 2 GHG regulations would begin with MY 2026 heavy-duty engines intended for use in vehicles with GVWR exceeding 10,000 lbs. The proposed warranty and useful life periods and EWIR and corrective action procedures from the adoption of the Heavy-Duty Omnibus would be phased-in beginning with MY 2027 engines and fully implemented for applicable 2031 and subsequent MY engines.

The Phase 2 GHG regulation would take effect with MY 2026.

Regulatory Impact Statement

6 NYCRR Part 218, Emission Standards for Motor Vehicles and Motor Vehicle Engines

6 NYCRR Part 200, General Provisions

I. INTRODUCTION

The New York State Department of Environmental Conservation (DEC or the Department) proposes to amend Title 6 of the New York Codes, Rules and Regulations (NYCRR) Part 218, "Emission Standards for Motor Vehicles and Motor Vehicle Engines," and Part 200, "General Provisions" (collectively, Part 218). These amendments will further the goals of reducing air pollution from motor vehicles by incorporating the State of California's Heavy-Duty Omnibus Low NOx (oxides of nitrogen) regulation ("Heavy-Duty Omnibus") and Phase 2 Greenhouse Gas Standards ("Phase 2 GHG") for Medium- and Heavy-Duty vehicles. The proposed amendments support the requirements of New York's Climate Leadership and Community Protection Act, Chapter 106 of the Laws of 2019 (CLCPA or Climate Act), to further reduce GHG emissions in the State.

Heavy-Duty Omnibus Regulation

The Department's proposed adoption of California's Heavy-Duty Omnibus regulation would apply to model year 2026 and subsequent medium- and heavy-duty engines intended for use in vehicle service classes in New York State.

The Department proposes the adoption of California's amended 13 CCR 1900, 1956.8, 1961.2, 1965, 1968.2, 1971.1, 2035, 2036, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2121, 2121, 2123, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2133, 2137, 2139, 2140, 2141, 2143, 2144, 2145, 2146,

2147, 2148, and 2149; amended 17 CCR 95660, 95661, 95662, and 95663; and new 13 CCR 2166, 2166.1, 2167, 2168, 2169, 2169.1, 2169.2, 2169.3, 2169.4, 2169.5, 2169.6, and 2169.8 which primarily establish NOx and particulate matter (PM) exhaust emission standards and associated test procedures for heavy-duty engines and vehicles; amend on board diagnostic (OBD) system requirements; amend the heavy-duty in-use testing program; amend the emissions warranty period and useful life requirements; amend the emissions warranty information and reporting requirements and corrective action procedures; establish in-use emissions data reporting requirements; amend averaging, banking and trading program; amend portions of California's Phase 2 Heavy-Duty Greenhouse Gas (GHG) regulations; and establish powertrain test procedures for heavy-duty hybrid vehicles.

The following documents were incorporated by reference into the Omnibus regulation:

1. California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles, as amended on September 9, 2021, incorporated by reference in 13 CCR 1956.8 and 2139.
2. California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy Duty Otto Cycle Engines, as amended on September 9, 2021, incorporated by reference in 13 CCR 1956.8 and 2139.
3. California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles, as amended on September 9, 2021, incorporated by reference in 13 CCR 1961.2;
4. California Environmental Performance Label Specifications for 2021 and Subsequent Model Year Medium-Duty Vehicles, Except Medium-Duty Passenger Vehicles, as amended on September 9, 2021, incorporated by reference in 13 CCR 1965;

5. California Greenhouse Gas Exhaust Emission Standards and Test Procedures for 2014 and Subsequent Model Heavy-Duty Vehicles, as amended on September 9, 2021, incorporated by reference in 17 CCR 95663;
6. 40 CFR §86.007-11 Emission standards and supplemental requirements for 2007 and later model year diesel heavy-duty engines and vehicles, as amended on October 25, 2016, incorporated by reference in 13 CCR 1956.8;
7. 40 CFR §86.007-30 Certification, as amended on October 25, 2016, incorporated by reference in 13 CCR 1956.8;
8. 40 CFR §86.008-10 Emission standards for 2008 and later model year Otto-cycle heavy-duty engines and vehicles, as amended on October 25, 2016, incorporated by reference in 13 CCR 1956.8;
9. 40 CFR §86.091-2 Definitions, as amended July 26, 1990, incorporated by reference in 13 CCR 1956.8;
10. 40 CFR §86.1360 Supplemental emission test; test cycle and procedures, as amended on April 28, 2014, incorporated by reference in 13 CCR 1956.8;
11. 40 CFR §1037.630 Special purpose tractors, as amended on October 25, 2016, incorporated by reference in 13 CCR 1956.8;
12. 40 CFR §1037.801 Definitions, as amended on June 29, 2021, incorporated by reference in 13 CCR 1956.8;
13. 40 CFR §1037.120 Emission-related warranty requirements, as amended June 29, 2021, incorporated by reference in 13 CCR 2035, 2036, and 2112; and
14. 40 CFR §1065.510 Engine mapping, as amended on June 29, 2021, incorporated by reference in 13 CCR 1956.8.

California Phase 2 GHG Regulation

The Department is proposing to incorporate California's Greenhouse Gas Emissions Standards for Medium- and Heavy-duty Engines and Vehicles to establish identical GHG standards and requirements applicable for tractors, vocational vehicles, pick-ups and vans, and medium- and heavy-duty engines, and amend requirements for glider vehicles, glider engines, and glider kits. The proposed amendments would apply to new California certified 2026 and subsequent model year medium- and heavy-duty engines and vehicles sold in New York State. New York State's regulatory proposal excludes those California Phase 2 GHG standards related to trailer manufacturers and trailer owners. The United States Environmental Protection Agency (EPA) and California currently do not enforce Phase 2 GHG trailer provisions.

California adopted its Phase 2 GHG on April 1, 2019, that included revisions to titles 13 and 17 of California's Code, and incorporated the following documents by reference:

1. California Greenhouse Gas Exhaust Emission Standards and Test Procedures for 2014 and Subsequent Model Heavy-Duty Vehicles (as subsequently amended on September 9, 2021)
2. California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles (as subsequently amended on September 9, 2021)
3. California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Otto-Cycle Engines and Vehicles (as subsequently amended on September 9, 2021)
4. California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles (as

subsequently amended on September 9, 2021)

5. California Environmental Performance Label Specifications for 2021 and Subsequent Model Year Medium-Duty Vehicles, Except Medium-Duty Passenger Vehicles (as subsequently amended on September 9, 2021)

The Department proposes the adoption of California's amended 13 CCR 1956.8, 1961.2, 1965, 2036, 2037, 2065, 2112, and 2141; and 17 CCR 95660, 95661, 95662, and 95663.

Of note, California's GHG emission standards and test procedures are generally aligned with federal Phase 2 GHG regulations in structure, timing, and stringency, providing nationwide consistency for medium- and heavy-duty engine and vehicle manufacturers. Section 177 of the federal Clean Air Act requires that if a state adopts California motor vehicle emissions standards (e.g., Advanced Clean Trucks, Heavy-Duty Omnibus, Phase 2 GHG), the standards must be "… identical to the California standards for which a waiver has been granted for such model year, and … California and such state [must] adopt such standards at least two years before commencement of such model year..." The Department's proposed rulemaking is identical to California's Heavy-Duty Omnibus and Greenhouse Gas Phase 2 regulations for medium- and heavy-duty engine and vehicle manufacturers. Medium- and heavy-duty engine and vehicle manufacturers will be provided at least two model years lead time before commencement in New York State. Following adoption, the Department will be required to incorporate the revisions to Part 218 and the attendant revisions to Part 200 into New York's State Implementation Plan (SIP) and provide the revised SIP to the EPA for review and approval.

II. STATUTORY AUTHORITY

The statutory authority for this amendment is found in the New York State Environmental Conservation Law (ECL), sections 1-0101, 1-0303, 3-0301, 19-0103, 19-0105, 19-0107, 19-0301, 19-0303, 19-0305, 19-1101, 19-1103, 19-1105, 71-2103, 71-2105 and section 177 of the federal Clean Air Act (42 USC 7507).

ECL section 1-0101(1) outlines the policy declaration for the Department of Environmental Conservation (Department) regarding the protection of New York State's environment and natural resources including the control of "air pollution, in order to enhance the health, safety and welfare of the people of the state and their overall economic and social wellbeing." Section 1-0101(3)(e) states:

> It shall... be the policy of the state to foster, promote, create and maintain conditions under which man and nature can thrive in harmony with each other, and achieve social, economic and technological progress for present and future generations by… [p]roviding that care is taken for the air... and other resources that are shared with the other states of the United States and with Canada in the manner of a good neighbor.

ECL section 1-0303(19) defines "pollution" as:

> the presence in the environment of conditions and or contaminants in quantities of characteristics which are or may be injurious to human, plant or animal life or to property or which unreasonably interfere with the comfortable enjoyment of life and property throughout such areas of the state as shall be affected thereby.

ECL section 3-0301(1)(a) gives the Commissioner authority to "[c]oordinate and develop policies, planning and programs related to the environment of the state and regions thereof..." Pursuant to section 3-0301(1)(b) of the ECL, the Commissioner is charged with promoting and protecting the air resources of New York including providing for the prevention and abatement of air pollution.

ECL section 3-0301(2)(a) authorizes the Commissioner to adopt rules and regulations to carry out the purposes and provisions of the ECL. Section 3-0301(2)(g) allows the Commissioner to enter and inspect sources of air pollution and to verify compliance. Section 3-0301(2)(m) gives the Commissioner authority to "adopt rules, regulations, and procedures as may be necessary, convenient, or desirable to effectuate the purposes of this chapter." Under Section 3-0301(2)(n) of the ECL, the Commissioner has the authority to "study, monitor, control and regulate pollution from motor vehicle exhaust emissions." The Commissioner's authority under Section 3-0301(2)(n) is expressly granted to further the State's policy to "[c]onserve, improve and protect its natural resources and environment and control . . . air pollution, in order to enhance the health, safety and welfare of the people of the state..."

ECL section 19-0103 is a declaration of the State's policy with specific reference to air pollution. ECL section 19-0103 states:

> It is declared to be the policy of the State of New York to maintain a reasonable degree of purity of the air resources of the State ... and to that end to require the use of all available practical and reasonable methods to prevent and control air pollution.

ECL section 19-0105 sets out the purpose of Article 19, "to safeguard the air resources of the State from pollution" consistent with the policy expressed in section 19-0103 and in accordance with other provisions of Article 19.

ECL section 19-0107(2) defines "air contaminant" as "a dust, fume, gas, mist, odor, smoke, vapor, pollen, noise or any combination thereof." ECL Section 19-0107(4) defines "air contamination" as "the presence in the outdoor atmosphere of one or more air contaminants which contribute or which are likely to contribute to a condition of air pollution." ECL Section 19-0107(3) defines "air pollution" as:

> the presence in the outdoor atmosphere of one or more air contaminants in quantities, of characteristics and of a duration which are injurious to human, plant or animal life or to property or which unreasonably interfere with the comfortable enjoyment of life and property throughout the state or throughout such areas of the state as shall be affected thereby...

ECL section 19-0107(5) defines "air contamination source" and specifically includes motor vehicles in the definition.

ECL section 19-0301(1)(a) states that consistent with the policy of the state, as it is declared in section 19-0103, the Department shall have power to formulate, adopt and promulgate, amend and repeal codes and rules and regulations for preventing, controlling or prohibiting air pollution in such areas of the state as shall or may be affected by air pollution. ECL section 19-0301(1)(b) further authorizes the Department to include in any such codes and rules and regulations provisions establishing areas of the

state and prescribing for such areas: the degree of air pollution or air contamination that may be permitted therein and the extent to which air contaminants may be emitted to the air by any air contamination source.

ECL section 19-0301(2)(a) provides that it shall be the duty and responsibility of the Department to prepare and develop a general comprehensive plan for the control or abatement of existing air pollution and for the control or prevention of any new air pollution recognizing various requirements for different areas of the state.

ECL section 19-0303 provides that the terms of any air pollution control regulation promulgated by the Department may differentiate between particular types and conditions of air pollution and air contamination sources, and the Department may recognize the difference in the State's air quality areas in its rulemaking. This section also provides that a code, rule or regulation or any amendment or repeal thereof will not be adopted until after a public hearing is held and may not become effective until filed with the Secretary of State. Finally, this section prescribes procedures for adopting any code, rule or regulation which contains a requirement that is more stringent than the federal Clean Air Act (CAA or Act) or regulations issued pursuant to the Act by the EPA.

ECL section 19-0305 provides the Commissioner with enforcement power. Section 19-0305(1) states "[t]he commissioner is hereby authorized to enforce the codes, rules and regulations of the departments established in accordance with this article." In addition, pursuant to section 19-0305(2)(l) the Commissioner may "do such other things as he may deem necessary, proper or desirable in order that he may enforce codes, rules or regulations which have been promulgated under this article."

ECL sections 19-1101, 19-1103, and 19-1105 set forth the provisions for environmental performance labels and authorizes the Commissioner to promulgate rules and regulations specifying labeling requirements and implementing such requirements.

ECL sections 71-2103 and 71-2105 set forth the civil and criminal penalty structures for violations of Article 19 and regulations promulgated pursuant to Article 19.

In addition to the above New York State authority, section 177 of the federal Clean Air Act (42 USC 7507) permits states other than California to adopt and enforce standards for motor vehicle emissions, provided that such standards are identical to California's standards and are adopted at least two years before commencement of the applicable such model year.

III. LEGISLATIVE OBJECTIVES

Articles 1 and 3 of the ECL set out the overall State policy goal of reducing air pollution and providing clean, healthy air for the citizens of New York. They provide the Department and Commissioner the general authority to adopt and enforce measures to accomplish those goals, including the regulation of mobile sources of air pollution.

In addition to the general powers and duties of the Department and Commissioner to prevent and control air pollution found in Articles 1 and 3 of the ECL, Article 19 of the ECL was specifically adopted for the purpose of safeguarding the air resources of New York from pollution. To facilitate this purpose, the Legislature bestowed specific powers and duties on the Department, including the

power to formulate, adopt, promulgate, amend, repeal, and enforce regulations for preventing, controlling and prohibiting air pollution. The Department is "expressly authorized to promulgate extensive regulations limiting exhaust emissions from motor vehicles including adoption of California certification standards."[1] This authority also specifically includes promulgating rules and regulations for preventing, controlling or prohibiting air pollution in such areas of the State that shall or may be affected by air pollution, and provisions establishing areas of the State and prescribing for such areas (1) the degree of air pollution or air contamination that may be permitted therein, and (2) the extent to which air contaminants may be emitted to the air by any air contamination source. In addition, this authority also includes the preparation of a general comprehensive plan for the control or abatement of existing air pollution and for the control or prevention of any new air pollution recognizing various requirements for different areas of the State.

In choosing to adopt and implement California standards, Section 177 states are limited to adopting identical emission standards and may not create an undue burden on the manufacturer by either preventing the sale of a car certified to California standards, or by requiring the creation of a "third vehicle." Since the early 1990's, New York has chosen to adopt California's more stringent motor vehicle standards to obtain emission reductions from new motor vehicles not provided by federal new motor vehicle standards, in furtherance of the Department's mission and obligation to control air pollution.

In addition, the Climate Act contains numerous requirements regarding climate change and the reduction of GHG emissions. For example, the Climate Act contains a new ECL Article 75, which

[1] MVMA v. Jorling, 152 Misc.2d 405, N.Y. Sup. September 3, 1991.

among other things requires a 40 percent reduction in Statewide GHG emissions from 1990 levels by 2030, and an 85 percent reduction from 1990 levels by 2050. See also 6 NYCRR Part 496 (Part 496). The CLCPA emphasizes reducing greenhouse gas emissions and co-pollutants in disadvantaged communities including requiring all state agencies to avoid disproportionately burdening disadvantaged communities when considering and issuing permits, licenses, and other administrative approvals and decisions. By January 1, 2024, the CLCPA requires the Department to promulgate regulations to ensure compliance with the Statewide GHG emission limits. The amendments are consistent with the CLCPA because they will support the reduction of GHG emissions from motor vehicles.

Based on the above, the Commissioner has very broad authority to regulate air pollution, including emissions from motor vehicles. The Department is proposing to adopt California's Heavy-Duty Omnibus regulation and Phase 2 GHG Standards for Medium- and Heavy-Duty vehicles. This regulation package will further the goals of reducing air pollution from motor vehicles by requiring stricter emissions standards and emissions-related requirements for medium- and heavy-duty vehicles.

IV. NEEDS AND BENEFITS

Given that the proposed amendments will include the regulation of GHG emissions, they are consistent with the requirements of the Climate Act. New York has made considerable progress in improving its air quality and addressing climate change, with GHG emissions falling 12 percent since 1990, when measured per the requirements of the CLCPA and Part 496. Most of New York's GHG reductions have come from the electricity sector, which have decreased more than 45 percent since 1990.[2] However, GHG emissions from the transportation sector have risen 9 percent from 1990 levels.

[2] NYS Statewide GHG Emissions Report, 1990-2019, December 30, 2021, developed under ECL sec. 75-0105, see https://www.dec.ny.gov/docs/administration_pdf/ghgsumrpt21.pdf

The transportation sector accounts for approximately 27 percent, and growing, of all GHG emissions in New York State when measured pursuant to the Climate Act and Part 496.[3] Diesel fuel and biodiesel, mainly used by medium- and heavy-duty vehicles, accounts for 21.5 percent of all on-road transportation sector GHG emissions, when measured pursuant to the Climate Act and Part 496.[4]

The Department is also tasked with mitigating the effects of criteria pollutants. A portion of New York State does not meet federal health based national ambient air quality standards (NAAQS) for ozone and has been categorized as a serious non-attainment area.[5] Nine New York State counties (Bronx, Kings, Nassau, New York, Queens, Richmond, Rockland, Suffolk, Westchester) are part of the multi-state New York-N. New Jersey-Long Island, NY-NJ-CT nonattainment area that failed to attain the NAAQS by the July 20, 2021 deadline. Consequently, on September 16, 2022, EPA announced it would reclassify the nonattainment area to "severe." DEC is expected to have 18 months from the effective date of the reclassification to develop and submit an attainment demonstration to satisfy the Clean Air Act requirements for that reclassification.

Motor vehicles are responsible for a significant portion of urban air pollution by emitting carbon dioxide, carbon monoxide, hydrocarbons, nitrogen oxides, and particulate matter, as well as mobile source air toxics such as benzene, formaldehyde, acetaldehyde, 1,3-butadiene and lead.[6] Some of these emissions are ozone precursors that lead to ground-level ozone formation. Ground-level ozone is

[3] Ibid.
[4] Ibid.
[5] U.S. Environmental Protection Agency, Nonattainment Areas for Criteria Pollutants (Green Book), May 31, 2021, https://www3.epa.gov/airquality/greenbook/hbstateb.html
[6] See Health Effects Inst., Special Report 17, Traffic-Related Air Pollution: A Critical Review of the Literature on Emissions, Exposure, and Health Effects at vii (2010), https://www.healtheffects.org/system/files/SR17TrafficReview.pdf

formed by photochemical reactions when emissions of nitrogen oxides (NO_x) and volatile organic compounds mix under sunny, hot conditions.

Medium- and heavy-duty vehicles are major contributors of ozone precursors.[7] It is estimated that on-road medium- and heavy-duty vehicles emitted approximately 40,765 tons of NO_x and 3,345 tons of $PM_{2.5}$ in New York State in 2017.[8] Medium- and heavy-duty vehicles account for approximately 46 percent[9] of the total on-road vehicle NO_x emissions while making up a smaller percentage of on-road vehicles. Diesel exhaust emissions are especially hazardous as a number of chemical components are currently deemed to be known, probable, or possible carcinogens by the International Agency for Research on Cancer carcinogens.[10]

In some urban settings, the number of medium- and heavy-duty vehicles have the greatest impact on localized NOx and $PM_{2.5}$ concentrations.[11] It is essential that the Department continue to adopt stringent mobile sources emissions standards and regulations to protect human health and the environment.

The EPA within the March 28, 2022 Notice of Proposed Rulemaking related to the "Clean Trucks

[7] OTC, Statement of the Ozone Transport Commission Regarding the Need to Accelerate Electrification of Medium- and Heavy-Duty Vehicles (adopted June 2, 2020), https://otcair.org/upload/Documents/Formal%20Actions/OTC%20Statement%20on%20MHD%20ZEVs_20200602.pdf.
[8] U.S. Environmental Protection Agency, 2017 National Emissions Inventory (NEI) Data, https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data
[9] EPA, 2017 National Emissions Inventory (NEI) Data, https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data
[10] International Agency for Research on Cancer, World Health Organization, IARC: Diesel Engine Exhaust Carcinogenic (June 12, 2012), https://templatelab.com/iarc_press_release_213_E/.
[11] Jonathan M. Wang et al., *Near-Road Air Pollutant Measurements: Accounting for Inter-Site Variability Using Emission Factors*, 52 Env. Sci. Tech. 9495, 9502 (2018).

Plan"[12] found that, "Across the U.S., NOx emissions from heavy-duty engines are important contributors to concentrations of ozone and PM2.5 and their resulting threat to public health. The emissions modeling done for the proposed rule indicates that heavy-duty engines will continue to be one of the largest contributors to mobile source NOx emissions nationwide in the future, representing 32 percent of the mobile source NOx in calendar year 2045. Furthermore, it is estimated that heavy-duty engines will represent 89 percent of the onroad NOx inventory in calendar year 2045. The emission reductions that would occur from the proposed [EPA] rule are projected to reduce air pollution that is (and is projected to continue to be) at levels that endanger public health and welfare."[13]

In light of the growing body of scientific literature evaluating the health effects of exposure to diesel exhaust, the World Health Organization's International Agency for Research on Cancer (IARC), a recognized international authority on the carcinogenic potential of chemicals and other agents, evaluated the full range of cancer-related health effects data for diesel engine exhaust (June 2012). IARC concluded that diesel exhaust should be regarded as ''carcinogenic to humans." This designation was an update from its 1988 evaluation that considered the evidence to be indicative of a ''probable human carcinogen.''[14]

Tailpipe emissions resulting from fossil fuel combustion pose a major threat to children's health and wellbeing with impacts such as "impairment of cognitive and behavioral development, respiratory

[12] EPA, "EPA Announces Clean Trucks Plan," August 2021, see https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P1012ON0.pdf
[13] Federal Register, Vol. 87, No. 59, March 28, 2022, p. 17418.
[14] IARC [International Agency for Research on Cancer], Diesel and gasoline engine exhausts and some nitroarenes. IARC Monographs Volume 105 (2013). Online at http://monographs.iarc.fr/ENG/Monographs/vol105/index.php.

illnesses, and other chronic diseases."[15] Ground-level ozone can also impair lung function in otherwise healthy people. This can result in significant hospitalization costs and mortality rates, both of which are higher in New York State than the national average.[16] Research indicates that "ambient air pollution is the leading environmental health risk factor globally" and New York ranks eleventh among major cities for deaths attributable to transportation emissions, with 24.4 percent of PM and ozone related deaths being transport-attributable.[17] $PM_{2.5}$ emissions from on-road mobile sources in the New York City region have been estimated to contribute to approximately 320 deaths and 870 hospitalizations and emergency department visits annually. Of the 320 annual deaths attributed to $PM_{2.5}$ emissions, 170 deaths can be associated with buses and trucks.[18, 19]

The effects of motor vehicle emissions also disproportionately affect those who live, work, or attend school near major roads resulting in increased incidence rate and severity of health issues associated with air pollution from vehicle emissions such as "higher rates of asthma onset and aggravation, cardiovascular disease, impaired lung development in children, pre-term and low-birthweight infants, childhood leukemia, and premature death."[20] Those included in this higher risk group include children, older adults, people with pre-existing pulmonary disease, and people of low socioeconomic status.

[15] Frederica Perera, Pollution from Fossil-Fuel Combustion is the Leading Environmental Threat to Global Pediatric Health and Equity: Solutions Exist,15 Int'l J. Envtl. Res. & Public Health 1, 1 (2018), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5800116/
[16] New York State Department of Health, New York State Asthma Surveillance Summary Report, October 2013, p. 16, http://www.health.ny.gov/statistics/ny_asthma/
[17] Susan Anenberg et al., Int'l Council on Clean Transportation, A Global Snapshot of the Air Pollution-Related Health Impacts of Transportation Sector Emissions in 2010 and 2015 (2019), https://theicct.org/sites/default/files/publications/Global_health_impacts_transport_emissions_2010-2015_20190226.pdf
[18] Susan Anenberg et al., Int'l Council on Clean Transportation, A Global Snapshot of the Air Pollution-Related Health Impacts of Transportation Sector Emissions in 2010 and 2015 (2019), https://theicct.org/sites/default/files/publications/Global_health_impacts_transport_emissions_2010-2015_20190226.pdf
[19] Iyad Kheirbeck et al., The Contribution of Motor Vehicle Emissions to Ambient Fine Particulate Matter Public Health Impacts in New York City: a Health Burden Assessment, 15 Envtl. Health 1, 5-8 (2016), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5002106/pdf/12940_2016_Article_172.pdf
[20] EPA, Near Roadway Air Pollution and Health: Frequently Asked Questions, p. 2, https://www.epa.gov/sites/production/files/2015-11/documents/420f14044_0.pdf

Low-income and disadvantaged communities are often disproportionately affected by emissions from freight movement due to their proximity to transportation infrastructure.[21]

Climate change may have adverse impacts on human health and the environment. These impacts include increased heat illnesses and mortality, respiratory illnesses from increased formation of ground-level ozone, and the introduction or spread of vector-borne illnesses. Climate change may adversely impact New York State's shoreline, drinking water sources, agriculture, forests, and wildlife diversity. Climate change trends such as rising temperatures, rising sea levels, and increased frequency of intense precipitation events have already been observed.[22] These trends are expected to continue throughout the century.

New York State has established ambitious climate change goals intended to mitigate or avoid the adverse impacts of climate change. The CLCPA puts New York on the path to carbon neutrality with the nation's most aggressive GHG reduction requirements. The CLCPA's targets include 70 percent renewable energy by 2030; 100 percent zero emission energy by 2040; and 85 percent reduction in GHG emissions from 1990 levels by 2050. The CLCPA established a 22-member Climate Action Council (CAC) charged with the development of a Scoping Plan to address the State's bold clean energy and climate agenda. Transportation is New York's largest source of GHG emissions. On May 3, 2021, the Transportation Advisory Panel (TAP) provided the CAC with a list of recommended strategies that included the adoption of California zero-emission vehicle sales regulations for passenger

[21] New York Clean Truck Program-An Analysis of the Impacts of Zero-Emission Medium- and Heavy-Duty Trucks on the Environment, Public Health, Industry, and the Economy, MJB&A (2021), https://www.ucsusa.org/sites/default/files/2021-09/ny-clean-trucks-report.pdf

[22] NYSERDA, Responding to Climate Change in New York State, November 2011, https://www.nyserda.ny.gov/About/Publications/Research-and-Development-Technical-Reports/Environmental-Research-and-Development-Technical-Reports/Response-to-Climate-Change-in-New-York

vehicles, trucks, buses, and heavy equipment.[23] On December 30, 2021, the CAC released their Draft Scoping Plan.[24] While the adoption of medium-and heavy-duty zero-emission vehicles is growing, the majority of vehicles sold today and in the near future will be internal combustion engine (ICE) vehicles. It is critical that strict emission standards for medium- and heavy-duty vehicles are adopted to ensure the goals established by the CLCPA and the federal Clean Air Act are met.

New York State is among 19 jurisdictions in the United States and Canada that have committed to accelerate the market for zero-emission trucks, vans, and buses through a Multi-State Medium- and Heavy-Duty Zero Emission Vehicle (ZEV) Memorandum of Understanding. On July 27, 2022, these jurisdictions through a ZEV Task Force released the Multi-State Medium- and Heavy-Duty ZEV Action Plan that includes the recommendation that jurisdictions consider adoption of the Heavy-Duty Omnibus regulation[25] to reduce NOx and PM emissions from medium- and heavy-duty trucks while this market segment transitions to ZEVs.

Summary - California's Heavy-Duty Omnibus Regulation

New York is proposing to revise Part 218 to incorporate the Heavy-Duty Omnibus regulation adopted by the State of California on December 22, 2021. A major component of the Heavy-Duty Omnibus regulation is the phased implementation to increase the stringency of NOx and PM exhaust emissions

[23] Climate Action Council, Transportation Advisory Panel, Recommended Strategies, May 3, 2021, https://climate.ny.gov/-/media/CLCPA/Files/2021-05-03-Transportation-Recommendations.pdf
[24] NY Climate Action Council, Draft Scoping Plan, December 30, 2021, https://climate.ny.gov/Our-Climate-Act/Draft-Scoping-Plan
[25]NESCAUM, ZEV Task Force, Multi-State Medium- and Heavy-Duty Zero-Emission Vehicle Action Plan, p. 30, July 2022. https://www.nescaum.org/documents/multi-state-medium-and-heavy-duty-zev-action-plan.pdf,

standards for California certified medium- and heavy-duty on-road engines and vehicles. The Heavy-Duty Omnibus standard revisions will be implemented in two phases. In New York State, the initial emission standard revision would govern sales of new California-certified heavy-duty engines and vehicles beginning with model year 2026. The second revision to the Heavy-Duty Omnibus emission standards would apply to sales of new California-certified heavy-duty engines and vehicles beginning with 2027 and subsequent model years.

California's Heavy-Duty Omnibus regulation includes the following components:

1. Lower NOx and PM exhaust emission standards that apply to heavy-duty engines intended for use in vehicle service classes with gross vehicle weight ratings (GVWR) greater than 10,000 lbs. The Heavy-Duty Omnibus NOx standards will be phased-in to be 75% and 90% below the current federal heavy-duty engine standards in California in 2024 (MY 2026 vehicles and engines in New York State) and in 2027, respectively. The Omnibus regulation reduces the current PM standard of 0.01 grams per brake horsepower-hour (g/bhp-hr)[26] by 50% to 0.005 g/bhp-hr to prevent potential "backsliding" through diminished PM control to meet the revised NOx standards.
2. A new low load cycle (LLC) to address emissions associated with low loads, light payload, or other conditions not sufficient to ensure proper catalyst operation.
3. Lengthened criteria pollutant emissions warranty and useful life requirements, phased-in beginning with MY2027 engines and fully implemented for MY 2031 and subsequent engines.
4. Revisions to California's Emissions Warranty Information and Reporting (EWIR) and Corrective Action Procedure amendments.

[26] Federal Register, Vol. 87, No. 59, Monday, March 28, 2022, p. 17432.

5. Updated testing procedures and reporting for heavy-duty engine and aftertreatment durability and in-use performance, including a new Three-Bin Moving Average Window (3B-MAW) test procedure.
6. A state-level emissions credit Averaging, Banking, and Trading program (i.e., NY-ABT).
7. Amendments to the powertrain certification test procedure.

Heavy-Duty Exhaust Emission Standards

The EPA last revised federal heavy-duty engine emission standards on December 21, 2000.[27] The current federal heavy-duty NOx standard of 0.2 g/bhp-hr (Federal Test Procedure, or FTP) was phased-in during the period of 2007-2010. The California Air Resources Board adopted virtually identical heavy-duty engine standards in October 2001. The Department is proposing to adopt California's more stringent heavy-duty engine NOx and PM emissions standards using existing certification cycles (heavy-duty transient FTP, RMC-SET, and idling test) as well as a new, low load cycle (LLC) developed to demonstrate emissions control under low load operation and low urban driving operation.[28]

The Department has summarized California's Omnibus Heavy-Duty NOx emission standards and associated test procedures applicable to diesel-cycle and Otto-cycle heavy duty engines and vehicle classifications, as follows.

[27] 66 FR 5002, January 18, 2001, https://www.govinfo.gov/content/pkg/FR-2001-01-18/pdf/01-2.pdf
[28] CARB, Form 399 Attachment, Proposed Heavy-Duty Engine and Vehicle Omnibus Regulation and Associated Amendments, Table III-3, p. 8.

TABLE 1

Omnibus Heavy-duty Diesel- and Otto-Cycle Engine NOx Standards[29]

(MY 2024* to 2026)

MYs	MDDE/LHDD/MHDD/HHDD				MDOE/HDO
	FTP Cycle (g/bhp-hr)	RMC-SET Cycle (g/bhp-hr	Low-load Cycle (g/bhp-hr)	Idling (g/hr)	FTP Cycle (g/bhp-hr)
2024-2026	0.050	0.050	0.200	10	0.050

*California Omnibus NOx standards would apply to New York State sales of model year 2026 and subsequent heavy-duty engines and vehicles.

MDDE: Medium-duty diesel engines 10,001-14,000 lbs. GVWR

LHDD: Light heavy-duty diesel engines 14,001-19,500 lbs. GVWR

MHDD: Medium heavy-duty diesel engines 19,501-33,000 lb. GVWR

HHDD: Heavy heavy-duty diesel engines >33,000 lbs. GVWR

MDOE: Medium-duty Otto-cycle engines 10,001-14,000 lbs. GVWR

HDO: Heavy-duty Otto-cycle engines >14,000 lbs. GVWR

RMC-SET: Ramped Modal Cycle Version of the Supplemental Emission Test

FTP: Federal Test Procedure

[29] 13 CCR 1956.8(a)(2)(C)1, 13 CCR 1956.8(c)(1)(C), and 13 CCR 1956(h)(7)

TABLE 2

Omnibus Heavy-Duty Diesel and Otto-Cycle Engine NOx Standards[30]

(MY 2027 and Subsequent)

Test Procedure	MDDE/LHDD /MHDD	MDOE/HDO	HHDD			
	MY2027 and subsequent		MY2027-2030		MY2031 and Subsequent	
	(at Useful Life)	(at Useful Life)	(≤435,000 miles)	(>435,000 miles)	(≤435,000 miles)	(>435,000 miles)
FTP Cycle (g/bhp-hr)	0.020	0.020	0.020	0.035	0.020	0.040
RMC-SET cycle (g/bhp-hr)	0.020	_	0.020	0.035	0.020	0.040
Low-load cycle (g/bhp-hr)	0.050	_	0.050	0.090	0.050	0.100
Idling (g/hr)	5 at Useful Life	_	5 at Useful Life	5 at Useful Life	5 at Useful Life	5 at Useful Life

[30] 13 CCR 1956.8.(a)(2)(D), 13 CCR 1956(h)(7)

TABLE 3

Omnibus Optional Low NOx Exhaust Emission Standards for 2024 and Subsequent Model Heavy-Duty Diesel Engines[A] (g/bhp-hr)[31]

Model Year	Test Procedure	Oxides of Nitrogen	Non-methane Hydrocarbons	Carbon Monoxide	Particulates
2024-2026	FTP and RMC cycles / Low-load cycles	0.020/0.080 or 0.010/0.040	0.14	15.5	0.005
2027 and subsequent	FTP and RMC cycles / Low-load cycle	0.010/0.025	0.14	15.5	0.005

[A]A manufacturer may not include an engine family certified to the optional NOx emission standard in the federal or NY-ABT for NOx but may include it for non-methane hydrocarbons

TABLE 4

Omnibus Optional Low NOx Exhaust Emission Standards for 2024 and Subsequent Model Otto-Cycle Heavy-Duty Engines[A] (g/bhp-hr)[32]

Test Procedure	Model Year	Oxides of Nitrogen	Non-methane Hydrocarbons	Carbon Monoxide	Formaldehyde	Particulates
FTP cycle	2024-2026	0.010 and 0.020	0.14	14.4	0.01	0.005
FTP cycle	2027 and Subsequent	0.010	0.14	14.4	0.01	0.005

[A]A manufacturer may not include an engine family certified to the optional NOx emission standard in the federal or NY-ABT for NOx but may include it for non-methane hydrocarbons

[31] 13 CCR 1956.8.(a)(2)(E)
[32] 13 CCR 1956.8.(c)(1)(D)

In lieu of engine shutdown system requirements under 13 CCR 1956.8(a)(6)(A), an engine manufacturer may elect to certify new 2024 and subsequent model year heavy-duty diesel engines to the following optional NOx idling standards:

TABLE 5

Omnibus Optional NOx Idling Emission Standards for 2024 and Subsequent Model Diesel Engines Used in Medium-Duty Vehicles from 10,001 to 14,000 GVWR and Diesel Engines Used in Heavy-Duty Vehicles Greater than 14,000 Pounds GVWR (grams per hour)[33]

Model Year	Oxides of Nitrogen
2024-2026	10
2027 and subsequent	5

California's Omnibus MY 2024-2026 NOx emissions standards completed on the FTP, Low Load, Idling, and RMC-SET cycles are technically feasible and cost-effective based on the following:

1. Several potential strategies are commercially available today including: improved thermal management; improved selective catalyst reduction (SCR) conversion efficiency during cold starts and low loads; and engine calibrations that increase exhaust gas recirculation (EGR) rates, higher idle speeds, intake or exhaust throttling, and reduce engine warm-up time to control cold start emissions. SCR system improvements, such as a combination of larger SCR catalyst volume or improved substrates, would be needed as well as thermal management

[33] 13 CRR 1956(a)(6)(C)

improvements.[34]

2. Demonstration program and modeling results support feasibility of California's MY2024-2026 heavy-duty engine NOx standards. The Southwest Research Institute (SwRI) Low NOx Stage 1 testing program showed emission levels of 0.09 g/bhp-hr on the FTP using only engine calibration strategies to reduce cold start emissions with a stock aftertreatment system.[35] Modeling by the Manufacturers of Emissions Controls Association (MECA) also showed composite FTP NOx level could be brought down to 0.03 g/bhp-hr with improved engine calibrations and average-size SCR catalysts.[36]
3. CARB certification data show many manufacturers certifying well below the current heavy-duty engine NOx standard, with some reaching 0.06 g/bhp-hr.
4. Test data on current engines in low load operation, along with the known effectiveness of currently available minor hardware modifications, support the feasibility of a 0.20 g/bhp-hr LLC standard.[37]
5. The 10 g/hr NOx idle emissions standard was determined feasible by SwRI Stage 2 Low NOx testing program.[38] SwRI evaluated the achievable emissions reduction by altering calibrations during idle. SwRI demonstrated that by increasing EGR rate and reducing exhaust flow during idle, the cooling of the aftertreatment system temperature is reduced and thus the SCR remains active leading to reduced emissions. With reduced exhaust flow, emissions were cut from 26 g

[34] CARB, Heavy Duty Omnibus ISOR, p. ES-11.
[35] Evaluating Technologies and Methods to Lower Nitrogen Oxide Emissions from Heavy-Duty Vehicles, Christopher A. Sharp, Cynthia C. Webb, Gary D. Neely, & Ian Smith, Southwest Research Institute, Project No. 19503, Final Report, April 2017. https://ww3.arb.ca.gov/research/apr/past/13- 312.pdf
[36] Technology Feasibility for Model Year 2024 Heavy-Duty Diesel Vehicles in Meeting Lower NOx Standards, Manufacturers of Emission Controls Association (MECA), June 2019. http://www.meca.org/resources/MECA_MY_2024_HD_Low_NOx_Report_061019. pdf
[37] CARB, Heavy Duty Omnibus ISOR, p. III-14
[38] CARB, Heavy Duty Omnibus ISOR, p. III-14

NOx/hr to 2.8 g NOx/hr at curb idle and to 1.6 g NOx/hr at 3.5 kW load (equivalent to HDD engine loads from auxiliaries).

6. Manufacturers could pursue hybrid or heavy-duty ZEV technologies. Manufacturers would be allowed to generate NOx credits from these heavy-duty sales beginning with model year 2022 in New York State. Credits from the heavy-duty zero-emission averaging set would expire at the end of the 2026 MY.

California's Omnibus MY 2027 and subsequent NOx emissions standards on the FTP, Low Load, Idling, and RMC-SET cycles are technologically feasible and cost effective for the following reasons:

1. The proposed 2027 model year NOx standards are technologically feasible with the same strategies identified for the 2024 through 2026 model years standard as well as including improved calibration, improved SCR conversion during low load and cold start, and engine hardware improvements. The SwRI Low NOx Stage 3 program identified several aftertreatment designs that could meet a 0.02 g/bhp-hr standard. CARB determined the appropriate emission standards at the proposed lengthened useful lives by extrapolating the test results from the SwRI Low NOx testing program.[39]
2. Demonstration program results and related work by manufacturers support the feasibility of the 0.020 g/bhp-hr NOx standard.[40]
3. Advanced engine architectures currently being researched show potential for meeting the proposed 2027 model year NOx standards with significantly lower GHG emissions than today's

[39] CARB, Heavy Duty Omnibus ISOR, p. III-16
[40] CARB, Heavy Duty Omnibus ISOR, See Section III, Subsection 1.2.2. Summary of Technical Feasibility Rationale for 2027 and Subsequent Standards, Demonstration program results and related work by manufacturers support the feasibility of a 0.020 g/bhp-hr NOx standard. https://ww3.arb.ca.gov/regact/2020/hdomnibuslownox/isor.pdf

engines.[41]

4. Simulation modeling supports the 0.02 g/bhp-hr NOx standard. Modeling by MECA showed emission levels of 0.014 to 0.016 g/bhp-hr NOx on the FTP are feasible with engine calibrations, cylinder deactivation, dual SCR systems with close-coupled light-off SCR and dual dosing, and exhaust system insulation.
5. EPA also found that its proposed "…Options 1 and 2 standards have been shown to be feasible for compression ignition engines based on testing of the CARB Stage 3 and EPA Stage 3 engine with a chemically- and hydrothermally-aged aftertreatment system."[42]

The Department proposes to adopt California's revised Heavy-Duty Omnibus PM standard of 0.005 g/bhp-hr. The PM standard would apply to New York State sales of model year 2026 and subsequent heavy-duty engines and vehicles. CARB notes that, "Certification data indicate most engines have PM certification levels well below the current 0.01 g/bhp-hr PM standard and certify close to 0.001 g/bhp-hr. However, over the last few MYs some manufacturers have elected to certify some of their engine families to higher PM emission levels. CARB staff discovered that the increase in some PM emission certification levels was due to some engine manufacturers choosing to use less efficient (more porous) diesel particulate filters (DPFs) to reduce engine backpressure, resulting in higher PM emission rates, although still compliant with the current PM standard. Thus, to prevent manufacturers using less efficient DPFs and maintain current robust PM emission control performance near 0.001 g/bhp-hr levels, there is a need for a lower PM standard."[43]

[41] CARB, Heavy Duty Omnibus ISOR, See Section III, Subsection 1.2.2. Summary of Technical Feasibility Rationale for 2027 and Subsequent Standards. https://ww3.arb.ca.gov/regact/2020/hdomnibuslownox/isor.pdf
[42] Federal Register / Vol. 87, No. 59 / Monday, March 28, 2022 / Proposed Rules, p. 17462
[43] CARB, Heavy Duty Omnibus ISOR, p. II-10.

Consistent with California's Heavy-Duty Omnibus regulation, the Department proposes to provide the following limited exemptions:

Heavy-Duty Engines > 525 bhp Limited Exemption

California's Heavy Duty Omnibus regulation provides a limited exemption for model year 2024-2026 heavy-duty diesel engines rated at or above 525 bhp maximum power. Heavy-duty diesel engines rated at or above 525 bhp maximum power represent a relatively low sales volume. Applicable diesel engine manufacturers would have difficulty allocating resources to redesign existing engines to meet the proposed standards while also redesigning higher sales volume engines and vehicles to meet the standards. The limited exemption would give manufacturers time and flexibility to meet the standard and continue to certify and produce vehicles for sale in New York.

This exemption is only eligible for manufacturers who had previously certified and sold California-certified engines. The number of these engines sold through this limited exemption is limited to 110 percent of the manufacturers' 2018 or 2019 model year New York sales volume, whichever is greater. Manufacturers utilizing the exemption are required to meet CARB's pre-2024 model year idling requirements of 30 grams of NOx per hour.

Note that the >525 bhp exemption has a shorter duration in New York as this proposal would adopt California's Heavy-Duty Omnibus regulation beginning with MY 2026 heavy-duty engines and vehicles sold in New York.

Transit Bus Engine Exemption

A market-dominant manufacturer of transit bus diesel engines announced that it will not

manufacture diesel-compliant engines with California's Heavy-Duty Omnibus regulation. CARB created a diesel engine exemption for transit agencies within the structure of the California Innovative Clean Transit (ICT) regulation. The Department proposes to exempt transit bus diesel engines from the Heavy-Duty Omnibus requirements to avoid the potential for creating a "third vehicle" as prohibited by Section 177 of the Clean Air Act.

Of note, zero emission vehicle transition goals have already been established for New York State's largest transit authorities.[44, 45] The Department is not proposing to adopt California's ICT rule under this proposal. Instead, the Department is proposing an exemption for new diesel-fueled transit buses sold to any New York State transit agency under Section 218-2.1(b).

The Heavy-Duty Omnibus regulation includes a certification pathway that enables heavy-duty engine manufacturers to produce limited quantities of legacy engines[46] in 2024-2025 MYs to help avoid any product availability issues in that period. This certification pathway would expire prior to New York's implementation with MY2026 heavy-duty engines and vehicles sold in New York.

Heavy-Duty In-Use Test Procedure Amendments

New York is proposing to revise Part 218 to incorporate California's Heavy-Duty In-Use Testing Program (HDIUT)[47] as revised by the Heavy-Duty Omnibus amendments. California's HDIUT program will replace the current Not-To-Exceed (NTE) test procedure with a Three-Bin Moving

[44] https://www.governor.ny.gov/sites/default/files/atoms/files/2019StateoftheStateBook.pdf, p. 27.
[45] https://new.mta.info/press-release/mta-announces-plans-increase-number-of-electric-buses-purchased-2021
[46] 13 CRR 1956.8(a)(C)3
[47] 13 CCR §2140

Average Window (3B-MAW) test procedure[48] beginning with the 2024 and subsequent model year heavy-duty engines, as the NTE test method was determined to provide an incomplete representation of in-use heavy-duty vehicle conditions. The 3B-MAW test procedure for diesel engines distinguishes modes of operation according to three bins: idle operation, low load operation (similar to LLC), and medium to high load operation (similar to FTP/RMC-SET). In-use compliance tests shall be performed pursuant to "California Exhaust Emissions Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles" (last amended September 9, 2021). Heavy-duty Otto cycle engines would be evaluated on the FTP cycle only, as these engines are not required to certify to idle, LLC, or RMC-SET standards.[49, 50]

Onboard Diagnostic (OBD) Requirements

In 2005, CARB adopted heavy-duty on-board diagnostic (HD OBD) requirements for 2010 and subsequent MY heavy-duty engines and vehicles, which was phased in with full implementation required for the 2013 MY.[51] The self-diagnostic systems incorporated into a vehicle's on-board computer rely primarily on software to detect emission-control system malfunctions. OBD continuously works in the background during vehicle operation by monitoring emission-related components and, when applicable, alerts the vehicle operator of detected malfunctions by illuminating the malfunction indicator light (MIL) on the vehicle's instrument panel. OBD stores important information, including identification of the faulty component or system and the nature of the fault, which allows for quicker diagnosis and proper repair of the problem by technicians. OBD systems also

[48] California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles, p. 87.
[49] CARB, Heavy Duty Omnibus ISOR, III.A.3.1. "2024 to 2026 HDIUT Program Amendments," p. III-33.
[50] CARB, California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Otto-Cycle Engines and Vehicles, August 27, 2020, p. 13.
[51] CARB, Heavy Duty Omnibus ISOR, p. I-8.

influence and interact with other CARB emission requirements. For example, the detection of faults during the emission warranty period provides a clear notification to the vehicle operator that a warranty repair is needed.

OBD by design alerts the vehicle operator to emission-related failures and malfunctions that should be repaired during the warranty period. California's prior (2018) warranty amendments specified that failures that cause the vehicle's OBD MIL to illuminate are considered a warrantable condition. This promotes the repair of malfunctioning emission-related parts (and systems and/or parts or systems used by OBD systems to monitor for faults) that trigger the MIL on heavy-duty engines in a timelier manner during the lengthened warranty periods. CARB staff expects that clearly linking warranty and OBD for all heavy-duty vehicles would incentivize vehicle owners to address the causes of MIL illumination more quickly, especially in cases where no loss of vehicle performance or fuel economy is apparent.[52]

Under the Heavy-Duty Omnibus revisions, CARB included revisions to 13 CCR sections 1968.2 and 1971.1 to NOx and PM malfunction criteria and "test-out" criteria to keep these criteria around current levels (i.e., use a NOx emission standard of 0.20 g/bhp-hr and a PM standard of 0.01 g/bhp-hr when determining these criteria).

California recognized that current OBD systems may not presently have the capability to accurately measure NOx emissions at the levels corresponding to the more stringent NOx emission standards. The Heavy-Duty Omnibus revisions therefore keep OBD malfunction emission thresholds at today's

[52] CARB, Heavy Duty Omnibus ISOR, p. III-52

levels.[53] "Since the OBD thresholds would be kept at the same levels and manufacturers are anticipated to largely use the same emission controls for the 2024 MY as those used to meet the current 0.2 g/bhp/hr standard, it is expected that manufacturers would not have to change (or would only need slight changes or additions to) their existing OBD monitors to meet the proposed OBD thresholds in 2024."[54]

Warranty Period, Useful Life Periods, and Emissions Warranty Information and Reporting

New York is proposing to amend Part 218 to incorporate California's Heavy-Duty Omnibus engine warranty requirements and useful life period requirements for heavy-duty engines. The lengthened Omnibus minimum warranty mileage periods for California-certified heavy-duty vehicle engines are being phased in beginning with model year 2027 until model year 2031. The amendments apply to diesel, gasoline, and alternative fuel engines as well as engine families used in hybrid vehicle applications. The amendments also apply to engines in vehicles that use a California-certified hybrid powertrain and the California-certified hybrid powertrain itself.

The lengthened warranty periods account for approximately 75 to 80 percent of the engine's useful life reflecting the longer service lives of modern heavy-duty vehicles. The lengthened warranty periods also incentivize vehicle owners to complete routine maintenance and encourage manufacturers to make more durable parts.

The Heavy-Duty Omnibus amendments include an operational-hours warranty for all heavy-duty categories to ensure vocational vehicles used mainly in start/stop operations, or with a substantial

[53] CARB, Heavy Duty Omnibus FSOR, p. 142.
[54] CARB, Heavy Duty Omnibus FSOR, p. 85.

amount of idle operation, are reasonably covered. Under the proposed amendments, any failure that causes the vehicle's OBD MIL to illuminate is considered a warrantable condition. This linking of warranty and OBD applies to all heavy-duty vehicles beginning with model year 2027.

Warranty coverage would apply to all California-certified vehicles and California-certified engines, regardless of where the vehicle is registered, beginning with the 2027 model year. The California warranty would remain with the vehicle/engine if it were to be sold or moved and registered outside of New York State.

The Heavy-Duty Omnibus revisions also include warranty requirements for heavy-duty hybrid powertrains certified through the optional certification test procedure. In general, the warranty periods for California-certified heavy-duty diesel engines would be applicable to California-certified heavy-duty hybrid powertrains for use in comparable vehicles. The warranty period for MY 2022 and subsequent hybrid powertrains optionally certified pursuant to 13 CRR §1956.8 are outlined within 13 CRR §2036(c)(10).

The Heavy-Duty Omnibus regulation includes longer useful life periods for heavy-duty engines used in heavy-duty vehicles. The lengthened useful life period requirements would provide for more durable emission control systems that comply with applicable emission standards throughout a greater portion of heavy-duty engine and vehicle service lives, resulting in greater overall emission reductions than from the standards alone. The Department has summarized the Heavy-Duty Omnibus Warranty and Useful Life periods under Table 6 below:

TABLE 6

Omnibus Warranty and Useful Life Periods

MY	LHDD	MHDD	HHDD	HDO
WARRANTY[55]				
2022-2026*	110,000 miles 5 years	150,000 miles 5 years	350,000 miles 5 years	50,000 miles 5 years
2027-2030	150,000 miles 7 years/ 7,000 hours	220,000 miles 7 years/ 11,000 hours	450,000 miles 7 years/ 22,000 hours	110,000 miles 7 years/ 6,000 hours
2031 and Subsequent	210,000 miles 10 years/ 10,000 hours	280,000 miles 10 years/ 14,000 hours	600,000 miles 10 years/ 30,000 hours	160,000 miles 10 years/ 8,000 hours
USEFUL LIFE[56]				
2024-2026*	110,000 miles 10 years	185,000 miles 10 years	435,000 miles 10 years/ 22,000 hours	110,000 miles 10 years
2027-2030	190,000 miles 12 years	270,000 miles 11 years	600,000 miles 11 years/ 30,000 hours	155,000 miles 12 years
2031 and Subsequent	270,000 miles 15 years	350,000 miles 12 years	800,000 miles 12 years/ 40,000 hours	200,000 miles 15 years

*California Omnibus NOx standards would apply to New York State sales of model year 2026 and subsequent heavy-duty engines and vehicles.

[55] 13 CCR §2036(c)
[56] 13 CCR §2112(l)(18)-(21)

New York is proposing to amend Part 218 to incorporate the Heavy-Duty Omnibus EWIR and corrective action procedure requirements. The Heavy-Duty Omnibus regulation amended California's existing EWIR and corrective action procedures to improve the effectiveness of the previous program. The Omnibus revisions promote the identification and correction of emission control component problems more expeditiously to prevent, or reduce, excess emissions associated with defective components. The need for corrective action relies on warranty failure rates and prevents the use of components that are known to have failure rates that exceed corrective action thresholds in future MYs.

Additional Omnibus requirements associated with recalls and corrective action are outlined within the FSOR and 13 CCR §2166.1, §2167, §2168, §2169, §2169.1 2169.2, §2169.3, §2169.4, §2169.5, §2169.6, §2169.7.

The Department has summarized the Heavy-Duty Omnibus recall reporting and corrective action thresholds based on 13 CCR §2143, §2144, §2145, §2146 as shown in Table 7.

TABLE 7

Omnibus Recall Reporting and Corrective Action Thresholds

MYs	Emission Warranty Information Report (EWIR)	Field Inspection Report (FIR)	Emissions Information Report (EIR)	Recall or Corrective Action Threshold
2024 – 2026	1% or 12 Unscreened Claims	4% or 25 Unscreened Claims	4% or 25 Failures	4% or 25 Failures (whichever greater)
2027 – 2030	1% or 12 Unscreened Claims	Years 1-5 4% or 25 Unscreened Claims Years 6-7 5% or 30 Unscreened Claims Years 8-10 7% or 50 Unscreened Claims	Years 1-5 4% or 25 Failures Years 6-7 5% or 35 Failures	Years 1-5 4% or 25 Failures (whichever greater) Years 6-7 5% or 35 Failures (whichever greater)
2031 and subsequent	1% or 12 Unscreened Claims	Years 1-5 4% or 25 Unscreened Claims Years 6-7 5% or 35 Unscreened Claims Years 8-10 7% or 50 Unscreened Claims	Years 1-5 4% or 25 Failures Years 6-7 5% or 35 Failures Years 8-10 7% or 50 Failures	Years 1-5 4% or 25 Failures (whichever greater) Years 6-7 5% or 35 Failures (whichever greater) Years 8-10 7% or 50 Failures

The proposed lengthened warranty requirements were determined feasible. Some OEMs and third-party warranty providers already offer warranties longer than current requirements. Based on CARB's assessment of several data sources, a significant portion of vehicles are warranted past current California requirements as some manufacturers offer extended warranties that range up to 7 years or 700,000 miles, and third-party warranty providers offer warranties as high as 1,000,000 miles.

Heavy-Duty Durability Demonstration / Maintenance Schedule

To certify an engine, an engine manufacturer demonstrates an engine's durability by conducting durability testing[57, 58] on the engine with all emission control systems installed and operating, including any aftertreatment devices (e.g., SCR for NOx control, a DPF for PM control). The durability tests demonstrate that the engine and its associated emissions control systems are sufficiently durable to comply with the emission standards over the engine's full useful life. The Heavy-Duty Omnibus regulation includes options to the mileage and service accumulation procedures for the durability demonstration.[59] A manufacturer is allowed to schedule the repair or replacement of some components at specific intervals during the durability demonstration provided that such repairs or replacements are included within the allowable maintenance schedules for vehicle owners. The maintenance schedule includes all emission-related and non-emission-related maintenance requirements for each specific engine and aftertreatment system. The Heavy-Duty Omnibus amendments revise scheduled maintenance interval provisions[60] to ensure the effectiveness of the lengthened emissions defects

[57] CARB, Heavy Duty Omnibus ISOR, pp. I-37 to I-41.
[58] California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles, p. 53-67.
[59] CARB, Heavy Duty Omnibus FSOR, p. 8.
[60] California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles, p. 49-53.

warranty for the intended periods so that their associated emission reductions would be achieved.[61]

Emissions Averaging, Banking, and Trading Program

The Department is proposing the development of a New York State dedicated heavy-duty engine emission averaging, banking, and trading (ABT) program based on the California ABT ("CA-ABT') developed by the Heavy-Duty Omnibus regulation. The CA-ABT requirements and calculations are outlined within the "California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-duty Diesel Engines and Vehicles" and "California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Otto-Cycle Engines and Vehicles" (amended September 9, 2021).

A NY-ABT is necessary should New York adopt the Heavy-Duty Omnibus regulation as New York's standards (like California's) would differ from U.S. EPA standards. As such, the current federal ABT accounting mechanism would no longer accurately account for credits generated in New York State.

For 2022 and subsequent model year California-certified medium-duty engine families, heavy-duty engine families and optionally certified Otto-cycle hybrid powertrain families, manufacturers may begin participating in the NY-ABT. For 2024 and subsequent model years, all manufacturers that certify products in California must enroll in the NY-ABT program. Heavy-duty zero-emission powertrain families can participate in the NY-ABT program. All NY-ABT calculations must be performed using

[61] CARB, Heavy Duty Omnibus FSOR, p. 2.

the New York sales volume.[62]

Only federal credits generated from 2010 to 2021 model year engines could be transferred into the NY-ABT; credits generated prior to the 2010 model year would not be eligible for transfer. Manufacturers that do not begin enrollment in the NY-ABT program in 2022 model year may not transfer any federal-ABT credits into the NY-ABT program.

Like the CA-ABT, the NY-ABT program would include four averaging sets: light heavy-duty diesel, medium heavy-duty diesel, heavy heavy-duty diesel, and heavy-duty zero-emission. The transfer of credits between any averaging sets is prohibited with the exception of the heavy-duty zero-emission averaging set.

The number of federal credits eligible for transfer would be limited based on the volume of heavy-duty engine sales a manufacturer has in New York. The limit is determined by the percentage of New York engine sales relative to national sales for each averaging set over the preceding three model years (2019-2021). Credits in the NY-ABT bank may only be used for five model years after the year in which they are generated (including transferred federal credits).

The Heavy-Duty Omnibus regulation includes a heavy-duty zero-emission averaging set to incentivize the production of heavy-duty ZEVs. Zero-emission powertrain families with models used in class 4 through 8 vehicles are eligible to generate NOx and PM credits in the heavy-duty zero-emission

[62] California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles, September 9, 2020, p. 33-44.
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2020/hdomnibuslownox/30dayappb1.pdf

averaging set. Zero-emission NOx and PM credits can be banked for use in future model years through model year 2026. For example, credits generated in model year 2024 may be used to demonstrate compliance with emission standards only through model year 2026. Credits generated through the heavy-duty ZEV averaging set can be transferred into any other averaging set, allowing manufacturers to make more heavy-duty ZEVs in lieu of certifying other engine families to more stringent standards. Beginning with the 2024 model year, zero emission powertrains must be certified through California's Zero-Emission Powertrains program to receive credits.[63, 64]

The NY-ABT program for medium-duty and heavy-duty diesel engines and optionally certified diesel hybrid powertrain families will have separate family emission limits (FELs) for each certification emissions test cycle: FTP, RMC, and LLC for engine families (Vehicle-FTP, Vehicle-RMC and Vehicle-LLC cycles for optionally certified diesel hybrid powertrain families).[65]

Manufacturers that produce and certify engines and optionally certified hybrid powertrains that comply with future model year requirements in 13 CCR 1956.8, 1968.2, 1971.1, 2035, 2036, 2112 and 2139 are, on a voluntary basis, eligible for early compliance credit multipliers.[66] Early compliance credit multipliers will only be available for 2022 through 2030 model year California certified engine families and optionally certified diesel hybrid powertrains.

[63] California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles, September 9, 2020, p. 40
[64] California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Otto-Cycle Engines and Vehicles, September 9, 2020, p. 17
[65] California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles, September 9, 2020, p. 36-39
[66] California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles, September 9, 2020, p. 41-43

Credits generated from zero-emission powertrain families are not eligible for early compliance credit multipliers.

A manufacturer must submit end-of-year reports for each engine family, optionally certified diesel hybrid powertrain family, and zero-emission powertrain family participating in the NY-ABT program.

Heavy-duty Hybrid Powertrain Certification Test Procedure

The Heavy-Duty Omnibus regulation amended the powertrain certification test procedures for heavy-duty hybrid vehicles to provide manufacturers a voluntary option to certify hybrid powertrains to criteria pollutant emission standards. These amendments would align with federal procedures for powertrain testing based on EPA's Phase 2 Greenhouse Gas (GHG) technical amendments for powertrain testing.[67] This certification process provides an option for manufacturers of hybrid powertrains to certify their product in addition to the existing heavy-duty engine certification.

Unlike the current process for heavy-duty hybrid vehicle certification, where only the engine is certified and hybrid components are later added on, the hybrid powertrain test procedure requires the entire hybrid powertrain, including the combustion engine and all associated hybrid components, to be tested and certified as a total package.[68] Manufacturers could optimize and account for the benefits of hybridization that the traditional engine certification procedure is unable to fully capture. The heavy-duty hybrid powertrain certification is intended to be a separate but equal pathway to certify to the required emission standards.

[67] CARB, Heavy Duty Omnibus FSOR, p. 3.
[68] CARB, Heavy Duty Omnibus FSOR, p. 237.

To ensure that the certified emission levels are maintained throughout the life of the product, as well as to warrant that the two certification pathways are equal, the same warranty and useful life requirements are applied, regardless of the certification procedure.[69] Any certification requirements, such as OBD, useful life, emissions warranty, recall provisions, etc., that apply to an engine certified on an engine dynamometer would also apply to a hybrid powertrain certified using the optional hybrid powertrain certification test procedure. California test procedures section 86.080-12, and elsewhere, explicitly require a hybrid powertrain optionally certified pursuant to 13 CCR 1956.8 to comply with all requirements applicable to on-road heavy-duty engines, including requirements for OBD system as specified in 13 CCR 1968.2 and 1971.1 et seq. All components, both hybrid and conventional components, that are grouped together as a certified hybrid powertrain would be subject to those requirements, including hybrid components that cause the MIL to be illuminated.[70]

Summary - California's Phase 2 Greenhouse Gas Regulation

To ensure adequate time for manufacturers, New York State proposes to adopt California's Phase 2 Greenhouse Gas Standards regulation beginning with MY 2026 heavy-duty engines and vehicles sold in New York.

The California Phase 2 GHG standards were adopted in 2018 to establish new GHG standards for trailers; amended existing regulations to establish more stringent GHG standards applicable to tractors, vocational vehicles, pickup trucks and vans (PUVs), and medium- and heavy-duty engines; and amended requirements for glider vehicles, glider engines, and glider kits. The California amendments "… largely harmonized requirements with federal Phase 2 [GHG] standards, allowed CARB to certify

[69] CARB, Heavy Duty Omnibus FSOR, p. 237.
[70] CARB, Heavy Duty Omnibus FSOR, p. 240.

new motor vehicle engines and new motor vehicles as well as trailers to GHG standards, and gave CARB the authority to enforce the regulatory requirements."[71]

The Department is excluding the adoption of California's Phase 2 GHG trailer requirements that apply to trailer manufacturers and trailer owners under this proposed rulemaking. On December 22, 2016, the Truck Trailer Manufacturing Association (TTMA) filed a petition for reconsideration with the EPA and a petition for review with the U.S. Court of Appeals for the D.C. Circuit,[72] challenging the authority of the EPA and the National Highway Traffic Safety Administration (NHTSA) (the "Agencies") to regulate the non-engine parts of vehicles under Section 202 of the CAA.[73] On May 8, 2017, the Court granted the Agencies' request to put the case on hold pending administrative review and, at the request of TTMA, stayed the trailer provisions of the rule on October 27, 2017. CARB subsequently notified affected entities that enforcement of the California's GHG trailer standards (Cal. Code Regs, tit. 17 §§ 95663(c) and (d)) was suspended.[74] The CARB enforcement suspension as related to Phase 2 GHG trailer standards remains in place. On November 12, 2021, the Court of Appeals ruled against the Agencies for the inclusion of trailers within the Phase 2 rule. The Court found that trailers have no motor and therefore cannot be considered motor vehicles. The court granted the petition and vacated all portions of the federal rule that apply to trailers. California's enforcement suspension as related to Phase 2 GHG trailer standards remains in place, as it continues to evaluate the Court's decision. In sum, EPA and CARB are currently not implementing or enforcing Phase 2 GHG trailer standards. As such, the Department is proposing to not adopt the trailer requirements invalidated by the DC Circuit Court.

[71] CARB, Phase 2 GHG Final Statement of Reasons for Rulemaking, Including Summary of Comments and Agency Response, February 8, 2018, p. 1.
[72] *Truck Trailer Manufacturers Association, Inc. V. U.S. Environmental Protection Agency, et al*., No. 16-1430 (DC Cir, Dec. 22, 2016).
[73] 81 FR 73478, "*Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles - Phase 2*", final rule. October 25, 2016.
[74] CARB, Enforcement of California Phase 2 GHG Trailer Requirements, Advisory #295, December 3, 2019.

EPA and NHTSA finalized the federal Heavy-Duty Phase 2 GHG and fuel efficiency program in 2016.[75] Both the federal and California Phase 2 GHG programs include technology-advancing performance-based standards for highway heavy-duty vehicles and heavy-duty engines that are being phased-in over time. The initial standards for most vehicles and engines commenced in MY 2021; stringency will increase in MY 2024; and will culminate in final MY 2027 standards.

The Phase 2 GHG standards maintain the underlying regulatory structure developed for the prior Phase 1 program, such as the general categorization of medium- and heavy-duty vehicles and the separate standards for vehicles and engines. However, the Phase 2 program will build on and advance Phase 1 in several important ways including the following:

1. Standards are based not only on currently available technologies but also on utilization of technologies under development or not yet widely deployed while providing significant lead time to assure adequate time to develop, test, and phase in these controls;
2. By including vehicles produced by small business manufacturers with appropriate flexibilities for these companies;
3. By incorporating enhanced test procedures that (among other things) allow individual drivetrain and powertrain performance to be reflected in the vehicle certification process; and
4. By using an expanded and improved compliance simulation model.[76]

As noted above, California's Phase 2 GHG regulation largely aligns with the current federal Phase 2 GHG regulations with the following distinctions:

[75] 81 FR 73478, October 25, 2016.
[76] 81 FR 73478, October 25, 2016.

1. California's Phase 2 GHG regulation no longer includes a "Deemed to Comply" provision as the prior Phase 1 GHG regulation. Applicable medium- and heavy-duty manufacturers are required to submit information directly to CARB for independent verification and certification under the California Phase 2 GHG regulation.
2. California Phase 2 GHG regulation includes additional labeling requirements for Class 2b and 3 PUVs.[77, 78]
3. California requires that emission control identifiers (ECIs) be printed on the labels for tractor and vocational vehicles to facilitate visual inspection.[79, 80]
4. California Phase 2 GHG regulation requires additional reporting of air conditioning (A/C) system information to support the A/C leakage standard.[81, 82]
5. California Phase 2 GHG regulation provides low-Global Warming Potential (GWP) refrigerant credits to manufacturers for vehicles with a refrigerant with a GWP of 150 or less in its motor vehicle A/C system.[83]
6. California Phase 2 GHG regulation has additional requirements for plug-in hybrid electric vehicles (PHEVs) to qualify for federal advanced technology multiplier credit including no increase in oxides of nitrogen (NOx) emissions and all-electric range (AER) requirements.[84, 85]

[77] CARB, Phase 2 GHG FSOR, Items 7 and 29, pp. 7-8 and 29-31.
[78] California Environmental Performance Label Specifications for 2021 and Subsequent Model Year Medium-Duty Vehicles, Except Medium-Duty Passenger Vehicles
[79] CARB, Phase 2 GHG ISOR, p. III-13-III-15
[80] Attachment B, Final Phase 2 Greenhouse Gas Amendments to California Greenhouse Gas Exhaust Standards and Test Procedures for 2014 and Subsequent Model Heavy-duty Vehicles, §1037.135, p. B-12
[81] CARB, Phase 2 GHG FSOR, Items 3.e, 11, and 12, p. 6, 19, and 20
[82] Attachment B, Final Phase 2 Greenhouse Gas Amendments to California Greenhouse Gas Exhaust Standards and Test Procedures for 2014 and Subsequent Model Heavy-duty Vehicles, pp. B-2-B-3. See: https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2018/phase2/finalattb.pdf?_ga=2.154250864.992038992.1655318039-1203100794.1653585482
[83] Attachment B, Final Phase 2 Greenhouse Gas Amendments to California Greenhouse Gas Exhaust Standards and Test Procedures for 2014 and Subsequent Model Heavy-duty Vehicles, p. B-4-B-6, B-12, B-21, B-22
[84] CARB, Phase 2 GHG FSOR, p. 22-27

7. California Phase 2 GHG regulation includes an additional compliance option that would allow transit bus manufacturers that certify their New York-sold transit buses with the federal custom chassis standards to produce a certain percentage of the New York-sold zero emission transit buses.[86, 87]
8. California Phase 2 GHG requires all glider manufacturers, including small manufacturers, to use 2010 and newer engines in gliders.[88, 89]

California's Phase 2 GHG regulations require manufacturers, including those producing gliders, to provide engine family information along with vehicle identification number for each certified vehicle in the vehicle's end-of-year report.[90]

California's Phase 2 GHG regulation will likely require separate credit tracking for New York State due to credit provision differences from the federal program:

- Manufacturers may generate low-GWP refrigerant extra credits.
- Additional requirements for manufacturers that produce transit buses that are California-certified to the custom chassis standards.
- Additional requirements to allow the use of a PHEV advanced technology multiplier of 3.5 (no NOx increase, all-electric range.).

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[85] Attachment B, Final Phase 2 Greenhouse Gas Amendments to California Greenhouse Gas Exhaust Standards and Test Procedures for 2014 and Subsequent Model Heavy-duty Vehicles, p. B-1, B-2, B-13., B-29, and B-30
[86] CARB, Phase 2 GHG FSOR, Items 3.c. and 16, pp. 6 and 21.
[87] Attachment B, Final Phase 2 Greenhouse Gas Amendments to California Greenhouse Gas Exhaust Standards and Test Procedures for 2014 and Subsequent Model Heavy-duty Vehicles, p. B-20.
[88] CARB, Phase 2 GHG FSOR, p. 36.
[89] Attachment B, Final Phase 2 Greenhouse Gas Amendments to California Greenhouse Gas Exhaust Standards and Test Procedures for 2014 and Subsequent Model Heavy-duty Vehicles, pp. B-14 and B-19. https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2018/phase2/finalattb.pdf?_ga=2.154250864.992038992.1655318039-1203100794.1653585482
[90] CARB, Heavy Duty Omnibus FSOR, Item 9, p. 18.

If one or more of the above applies, the manufacturer will be required to submit a New York-specific credit tracking document.

V. ESTIMATED EMISSION REDUCTIONS ASSOCIATED WITH NEW YORK STATE ADOPTION OF CALIFORNIA'S HEAVY-DUTY OMNIBUS AND PHASE 2 GREENHOUSE GAS REGULATIONS

The proposed adoption of California's Heavy-Duty Omnibus regulation revises existing medium- and heavy-duty engine NOx and PM exhaust standards.

In 2021, the Northeast States for Coordinated Air Use Management (NESCAUM) commissioned the International Council on Clean Transportation (ICCT) with Sonoma Technologies to complete EPA Motor Vehicle Emissions Simulator (MOVES3) modeling to estimate NOx, particulate matter, and greenhouse gas emissions reductions associated with potential Section 177 state adoption of several California medium- and heavy-duty vehicle focused regulations (Advanced Clean Trucks, Heavy Duty Low NOx Omnibus, and Phase 2 Greenhouse Gas). The ICCT analysis utilized MOVES at the county scale for 2017 National Emissions Inventory (NEI) representative counties and time periods of 2020-2040 and 2020-2050.[91] The Department incorporated the MOVES modeling results within New York State's adoption of the ACT regulation in December 2021.

For this proposed rulemaking, ICCT and Sonoma Technologies completed a similar modeling exercise

[91] See: https://theicct.org/sites/default/files/publications/nys-hdv-regulation-benefits-2-may2021.pdf

to estimate NOx and greenhouse gas emission reductions should New York State adopt California's Heavy-Duty Omnibus and Phase 2 GHG standards commencing with MY2026 heavy-duty engines and vehicles.[92] The previous business-as-usual (BAU) modeling scenario completed in 2021 for New York State's ACT rulemaking was revised to reflect the following:

1. New York State adopted California's Advanced Clean Trucks regulation on December 29, 2021, thereby establishing a new baseline as medium-and heavy-duty manufacturers will be required to sell an increasing percentage of medium-and heavy-duty zero emission vehicles in New York State beginning with MY 2025;
2. New York State enacted Chapter 423 Laws of 2021 which added §19-0306-b to Environmental Conservation Law[93] to require 100% of the new medium-and heavy-duty trucks sales in New York to be zero emission vehicles by 2045, where feasible. Sales of new diesel- and spark-ignition medium and heavy-duty vehicles would therefore be prohibited beginning in 2045; and
3. New York State Education Law[94] was revised to require that, by July 1, 2027, all new school bus purchases made by public school districts, or their contractors, must be zero-emission buses. Further, no later than July 1, 2035, all school buses operated and maintained by public school districts, or their contractors, must be zero-emission buses.

The revised BAU for the Heavy-Duty Omnibus/Phase 2 GHG proposal also included the previously modeled zero-emission goals for major New York State transit bus authorities.

Collectively these New York State laws and policies clearly establish future medium- and heavy-duty

[92] https://theicct.org/benefits-ca-multi-state-reg-data/
[93] https://www.nysenate.gov/legislation/laws/ENV/19-0306-B
[94] https://www.nysenate.gov/legislation/bills/2021/A9006

zero-emission sales and transition goals that effectively reduce future medium- and heavy-duty ICE vehicle sales, including those ICE trucks and buses that would otherwise be subject to the proposed Heavy-Duty Omnibus NOx exhaust emission standards.

The estimated emissions benefits associated with New York's proposed adoption of California's Heavy-Duty Omnibus regulation, relative to the revised 2022 BAU scenario, is listed in Table 8 below.

TABLE 8

Estimated NOx Emission Benefits (2026-2050)
From New York State's Adoption of the Heavy-Duty Omnibus Regulation

Year	Tank-to-Wheel NOx Emissions (short tons per year)
2026	360
2027	740
2028	1,100
2029	1,470
2030	1,830
2031	1,970
2032	2,110
2033	2,250
2034	2,400
2035	2,533
2036	2,740
2037	2,940
2038	3,140
2039	3,350
2040	3,550
2041	3,710
2042	3,870
2043	4,030
2044	4,180
2045	4,345
2046	4,250
2047	4,140
2048	4,050
2049	3,940
2050	3,843
Total (2026-2050)	72,840

As previously noted, California's Phase 2 GHG engine standards closely align with existing federal Phase 2 GHG requirements. No additional GHG emission reductions are anticipated with New York State adoption, as New York is not proposing to adopt the California Phase 2 GHG trailer requirements. The ICCT/Sonoma Technologies MOVES effort did include a modeling scenario for adoption of the California Phase 2 GHG trailer provisions[95], but this is not included within this regulatory proposal.

VI. ESTIMATED COSTS ASSOCIATED WITH NEW YORK STATE ADOPTION OF CALIFORNIA HEAVY-DUTY OMNIBUS AND PHASE 2 GREENHOUSE GAS REGULATIONS

The Heavy-Duty Omnibus regulation would require medium- and heavy-duty engine and vehicle manufacturers to produce and sell lower NOx emitting medium- and heavy-duty engines which would result in an increase in production and operational costs compared to comparable engines meeting current emission standards. The Department estimated the potential costs and savings associated with New York's adoption of California's Heavy-Duty Omnibus regulation by evaluating the California rulemaking analysis completed by the California Air Resources Board (CARB). The Department finds that the economic impacts prepared by CARB for the implementation of the Heavy-Duty Omnibus regulation within the State of California adequately reflects the likely economic impacts that New York State would experience should New York State adopt identical Heavy-Duty Omnibus requirements. The Department concludes that the California cost analysis represents the most comprehensive and reliable source of cost information available.

CARB notes that "…elements contributing to the increase in upfront costs include the development of

[95] https://theicct.org/benefits-ca-multi-state-reg-data/

technologies needed to meet more stringent certification requirements, such as the reduction of emission standards over existing and new regulatory cycles, modifications to the durability demonstration for certification, and lengthened certification useful life. Other costs associated with operational costs include lengthened warranty periods, amendments to EWIR reporting procedures, new more stringent in-use test procedures and OBD NOx data collection and reporting. There are also proposed elements that are not expected to have a cost impact, such as powertrain test procedures, heavy-duty vehicle GHG tractor APU certification amendments, Phase 2 GHG cleanup amendments, and OBD requirements."[96]

CARB's final cost analysis[97] considered incremental costs and savings associated with Heavy-Duty Omnibus requirements within the following categories:

1. Standards, Certification, and New Technology
2. In-Use Amendments
3. Lengthened Warranty
4. Durability Demonstration
5. EWIR Amendments
6. Average/Banking/Trading (ABT)
7. Annual Diesel Exhaust Fluid (DEF) Consumption

As noted under Section V., California and New York have differing goals related to zero emission sales and transition goals that will impact future medium- and heavy-duty engine and vehicle sales in the respective states. As examples, while both California and New York have adopted ACT, California

[96] CARB, Heavy Duty Omnibus Form 399 Attachment, p. 20.
[97] Form 399 Attachment, Proposed Heavy-Duty Engine and Vehicle Omnibus Regulation and Associated Amendments, Section B. ESTIMATED COST, p. 20-93.

requires medium- and heavy-duty ZEV sales beginning with MY 2024 while New York will start with MY2025. Secondly, New York State has established that all new sales of medium-and heavy-duty vehicles are to be zero emission, where feasible, by 2045.

The Department evaluated California's cost analysis with consideration of the estimated number of future sales of Heavy-Duty Omnibus-certified engines in California[98] and New York during the period of 2026-2045. The New York State sales estimates of Heavy-Duty Omnibus certified vehicles were based on the ICCT/Sonoma Technologies MOVES modeling exercise reflecting the revised BAU scenario. While different emissions models (i.e., EMFAC, MOVES3) and assumptions were used to estimate the Heavy-Duty Omnibus ICE sales in California and New York, the Department found it appropriate to apply a NY/CA scaling factor of 0.59 to the applicable California incremental cost estimates.[99] The Department's application of the scaling factor was applied to both estimated costs and savings (Section VII).

The Department also made these additional cost adjustments to California incremental costs, where applicable:

1. The Department excluded the first two years of any California incremental cost (categories noted above) to reflect different implementation schedules (i.e., CA: MY2024, NY: MY2026).
2. The Department excluded all California incremental costs during calendar years 2045-2050 as New York will require all new heavy-duty engine and vehicle sales to be zero emission vehicles in New York State beginning in 2045, where feasible.

[98] Form 399 Attachment, "Table B-4: Projected Statewide New Medium- and Heavy-Duty-Duty Engine Sales from 2022-2030," p. 28.
[99] Form 399 Attachment, "Table B-1: Estimated Proposed Regulation Statewide Incremental Costs from 2022 through 2050 (2018$)," p. 22.

3. The Department excluded California's In-Use Amendments and Durability Demonstration incremental costs as these costs are not attributable to Section 177 states.
4. The Department considered DEF costs in New York State for calendar years 2026 to 2050.

Based on the above, the Department estimates the incremental cost of New York State adopting the Heavy-Duty Omnibus regulation as follows:

TABLE 9

Estimated Proposed Heavy Duty Omnibus Incremental Costs

from 2024 through 2044 (2018$) in New York State

Cost Category	Incremental Cost
Standards, Certification, and New Technology	$656,418,274
Lengthened Warranty	$195,820,231
Emission Warranty Information and Reporting	$72,755,352
NY-ABT Average/Banking/Trading Program	$540,799
Diesel Emission Fluid Consumption	$156,469,047
Total Costs Passed to Vehicle Buyers	$1,082,003,703

California Phase 2 GHG Cost

California's Phase 2 GHG regulation is significantly harmonized with the federal Phase 2 GHG regulation. Thus, most of the costs (and savings) associated with adopting California Phase 2 GHG

would occur regardless as the federal requirements were adopted prior to California's Phase 2 GHG program. The Department's primary purpose in proposing the adoption of the California Phase 2 GHG standards is to maintain identicality with California medium- and heavy-duty vehicle and engine requirements thereby avoiding the creation of any "third vehicle"[100] requirements. As previously noted, New York is excluding the adoption of California Phase 2 GHG trailer requirements within this proposal. As such, costs associated with California Phase 2 GHG trailer requirements are not considered within the Department's cost evaluation.

CARB estimated California's Phase 2 GHG regulation compliance costs by certification costs, labeling requirements, A/C reporting requirements, California credit tracking, and additional credit provisions (e.g., low GWP refrigerants, PHEV, transit bus custom chassis). A summary was provided within California's Phase 2 GHG ISOR, Table VII-1, and the Economic Data within the Phase 2 Background Materials.[101] The Department concludes that some manufacturer costs reflected in the CARB analysis would not apply to Section 177 state adoptions as manufacturers would have previously received certification approval in California. The Department estimates that the incremental cost of New York State adopting the California Phase 2 GHG regulation, without the trailer requirements, for MY 2026-2028 heavy-duty engines and vehicles at $3.5 million due to labeling and credit tracking for tractors and vocational vehicles; New York State credit tracking; increased unit cost and credit tracking associated with low GWP refrigerants; and Class 2b/3 consumer labeling.

VII. HEAVY-DUTY OMNIBUS REGULATION - ESTIMATED SAVINGS AND MONETIZED HEALTH BENEFITS

[100] Clean Air Act, 42 U.S.C §7507.
[101] https://ww2.arb.ca.gov/our-work/programs/greenhouse-gas-standards-medium-and-heavy-duty-engines-and-vehicles/background-materials-phase2

There are several elements of the proposed Heavy-Duty Omnibus regulation that will likely result in cost savings to medium- and heavy-duty vehicle and engine buyers and operators. Such elements include lengthened warranty periods, lengthened useful life, and revised proposed EWIR and corrective action procedures. While there will be increased costs associated with the lengthened warranty requirements that would likely to be passed onto consumers through increased medium- and heavy-duty vehicle and engine prices, consumers are also likely to recoup some of these upfront costs through savings over time in reduced operation and maintenance expenses. The proposed EWIR and corrective action procedure amendments would require manufacturers to expeditiously repair or replace parts identified as having systemic issues. Components determined to have systemic issues would be repaired and replaced under an extended warranty or recall. The Department estimates the potential savings associated with warranty coverage and EWIR to New York State consumers at $191,401,831 based on California's analysis and the application of the NY/CA scaling factor and a 2-year lag from California's initial reported savings.

The proposed adoption of the Heavy-Duty Omnibus regulation would also reduce NOx emissions, resulting in significant health benefits for New Yorkers. These health benefits include fewer instances of premature mortality, fewer hospital and emergency room visits, and fewer missed days at school and work. The realized benefits would provide the greatest impact for those individuals that operate medium- and heavy-duty vehicles and populations that live close to concentrated medium- and heavy-duty vehicle emissions.

The estimated health benefits for New York's proposed adoption of the Heavy-Duty Omnibus regulation were derived from a NESCAUM-sponsored CO-Benefits Risk Assessment (COBRA version 4) using a discount rate of 3%.[102] The May 2022 ICCT/Sonoma Technologies MOVES3 modeling run (period of 2026-2050) provided the emission reduction inputs to the COBRA modeling. The New York State population estimates were based on the 2017 U.S. Census Bureau National Population Projections adjusted at the state and county levels using the COBRA population inventory database.

TABLE 10

Estimated Health Benefits from Heavy Duty Omnibus Adoption in New York State (2026 - 2050)

Valuation Values in Million 2018$

Item	Avoided Premature Deaths	Avoided Hospitalizations Cardiovascular Illness	Avoided Hospitalizations Respiratory Illness	Avoided Emergency Room Visits	Total
# of Incidents	66 - 150	17	11	35	-
Valuation	$811 - 1,834	$0.86	$0.58	$0.020	$825 - $1,859

The proposed rulemaking does not include the adoption of California Phase 2 GHG trailer requirements.

Summary of Proposed Regulation Costs, Savings, Benefits, and Emissions Reductions

[102] Health Impact Assessment of New York State Adoption of California's Heavy Duty Low NOx Omnibus and Phase 2 GHG Regulations, May 2022. https://www.nescaum.org/documents/cobrasimulation_ny_icct_05-17-2022.pdf/

Heavy-Duty Omnibus Regulation:

Total NOx Benefits (2026-2050): 72,840 tons

Cost: $1,082,003,703

Savings: $191,410,831

Monetized Health Benefit: $825,000,000 - $1,859,000,000

Phase 2 GHG:

Cost: $3,505,426

CARB found that the benefit-cost ratio for their adoption of the Heavy-Duty Omnibus regulation was over eight, indicating the benefits greatly outweigh the costs.[103]

EPA's March 2022 NPRM included a cost evaluation for the proposed federal NOx program (Clean Trucks Program). EPA's proposed Option 1 more closely aligns with California's Heavy-Duty Omnibus Regulation. EPA found that annual benefits of proposed Option 1 are greater than the annual costs in 2045 (annual net benefits of $8.1 to $28 billion using a 7 percent discount rate; and $9.2 to $31 billion using a 3 percent discount rate).[104]

Potential Impact on Consumers/Fleet Owners

As noted above, CARB completed a lifetime cost analysis for Heavy-Duty Omnibus certified 2024 and subsequent model year engines for each vehicle class. The California analysis assumed that all

[103] CARB, Form 399 Attachment, Proposed Heavy-Duty Engine and Vehicle Omnibus Regulation and Associated Amendments, p. 117.
[104] US EPA, Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards, Draft Regulatory Impact Statement, March 2022, p. 403.

regulatory compliance costs in California would be passed onto California fleets. Similarly, the Department anticipates that medium- and heavy-duty vehicle and engine manufacturers are expected to pass Heavy-Duty Omnibus compliance costs onto New York State medium- and heavy-duty vehicle and engine purchasers at similar cost or slightly less cost due to economies of scale.

Industry stakeholders raised concerns regarding the compliance cost estimates during California's Heavy-Duty Omnibus rulemaking. Independent cost evaluations were also completed as summarized in the ICCT report, "What Will It Really Cost to Build the Next Generation of Low-NOx Trucks?"[105] As one example, from the five studies evaluated, ICCT found significant cost variation of the engine incremental cost (12L–13L engines) at the final step of the Heavy-Duty Omnibus regulation. The range of per-engine costs (for 12L-13L) varied from a low of $2,170 to a high of $80,821. In response to proposed warranty requirements concerns, CARB was directed to engage with affected stakeholders to conduct a warranty cost study.[106] CARB's warranty study concluded that, "…the Omnibus Regulation requirements continue to be cost-effective with benefits estimated to outweigh its costs by a factor of 10 (i.e., monetized benefits of $23.4 billion vs. costs of $2.39 billion)."[107]

During California's Advanced Clean Trucks and Heavy-Duty Omnibus comment periods, industry stakeholders raised the possibility of "pre-buy/no-buy" impacts on future vehicle and engines sales. It is possible that fleet owners would choose to "pre-buy" or accelerate their purchases of medium- and heavy-duty vehicles prior to New York's proposed adoption of the Heavy-Duty Omnibus (2026 model

[105] https://theicct.org/what-will-it-really-cost-to-build-the-next-generation-of-low-nox-trucks/
[106] CARB, California Air Resources Board Staff Report on the Warranty Cost Study for 2022 and Subsequent Model Year Heavy-Duty Diesel Engines, December 2021. https://ww2.arb.ca.gov/sites/default/files/2022-01/warranty_cost_study_final_report.pdf,
[107] CARB, California Air Resources Board Staff Report on the Warranty Cost Study for 2022 and Subsequent Model Year Heavy-Duty Diesel Engines, December 2021, p. ES-2. https://ww2.arb.ca.gov/sites/default/files/2022-01/warranty_cost_study_final_report.pdf.

year). The extent of "pre-buy" is highly uncertain and could also vary by regulation due to difficult-to-predict industry dynamics (e.g., low supply of federally certified pre-2026 model year trucks) and global economics (e.g., diesel fuel prices). In cases where pre-buying occurs, fleets would still, in aggregate, replace older, high-emitting vehicles with newer, lower emission vehicles. In the pre-buy response to the 2007 criteria pollutant standards, pre-buying was found to be "approximately symmetric, short-lived, and small in volume relative to the previous estimates."[108] Examining the effects of the most recent federal 2007 and 2010 model year heavy-duty engine certification standards, a smooth growth in vehicle demand was noted prior to, and during the implementation of the 2014 Phase I efficiency and emission standards.

EPA conducted its own analysis of past pre-buy and low-buy instances for the Clean Trucks Plan, noting "… results show no statistically significant sales effects for Class 6 vehicles";[109] "… few statistically significant results for Class 7…";[110] and "… for both pre-buy and low-buy sales, impacts on Class 8 vehicles are of limited duration and range from zero impact to about two percent."[111] Actual pre-buy/no buy purchases would diminish the benefits of the Heavy-Duty Omnibus program to some extent.

California's lifetime cost analysis considered medium- and heavy-duty vehicle purchase costs, DEF use, and operational savings associated with MY 2026 engines, MY 2027-MY 2030 engines, and MY 2031 and subsequent engines. This lifetime analysis also considered engine type (e.g., HHDD, MHDD, LHD,

[108] Katherine Rittenhouse and Matthew Zaragoza-Watkins, Strategic Response to Environmental Regulation: Evidence from U.S. Heavy-Duty Vehicle Air Pollution Regulations at 33, MIT CEEPR Working Paper (2016).
[109] US EPA, Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards, Draft Regulatory Impact Analysis, March 2022, p. 409.
[110] US EPA, Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards, Draft Regulatory Impact Analysis, March 2022, p. 409.
[111] US EPA, Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards, Draft Regulatory Impact Analysis, March 2022, p. 418.

HDO, MDDE-3, MDOE-3). The lifetime net impacts (cost increase) for the population average were $2,754,[112] $5,114,[113] and $5,428[114] for the MY 2026 engines, MY 2027-MY 2030 engines, and MY 2031 and subsequent engines, respectively. Health benefits are not considered within the lifetime analysis.

Potential Impact to State and Local Government

The proposed adoption of California's Heavy-Duty Omnibus regulation will result in additional purchase and operational costs to local and state agencies, but not above those costs experienced by consumers. A portion of these state and local government costs will be offset through operational savings. It is anticipated that New York State and local governments would experience an increase in sales tax revenue from the higher purchase price of Heavy-Duty Omnibus certified engines and vehicles and from the sale of DEF. The Department estimates additional sales tax revenue in New York State of $105,626,980 (2024-2050) based on California's cost analysis for local[115] and state[116] tax revenues and the Department's application of a NY/CA scaling factor.

Potential Impact on Business Competitiveness

The proposed adoption of California's Heavy-Duty Omnibus and Phase 2 GHG regulations is not expected to result in any significant impact to business competitiveness.

Potential Impact on Employment

[112] CARB, Heavy Duty Omnibus Form 399 Attachment, Table B-52, p. 88.
[113] CARB, Heavy Duty Omnibus Form 399 Attachment, Table B-53, p. 88.
[114] CARB, Heavy Duty Omnibus Form 399 Attachment, Table B-54, p. 89.
[115] CARB, Form 399 Attachment, Table FA-2, Summary of Fiscal Impacts to Local Government by Fiscal Year (2018$), p. 125.
[116] CARB, Form 399 Attachment, Table FB-2, Summary of Fiscal Impacts to State Government by Calendar Year (2018$), p. 128.

The proposed adoption of California's Heavy-Duty Omnibus and Phase 2 GHG regulations is not expected to result in any significant impact to employment.

Potential Impact on Business Creation, Elimination or Expansion

The proposed adoption of California's Heavy-Duty Omnibus and Phase 2 GHG regulations is not expected to result in any significant impact to business creation, elimination, or expansion.

Potential Impact to Businesses

The proposed adoption of California's Heavy-Duty Omnibus and Phase 2 GHG regulations would impact medium- and heavy-duty engine and vehicle manufacturers. Based on California information,[117,118] the Department estimates that approximately 31 manufacturers would be impacted by the Heavy-Duty Omnibus, while 64 manufacturers would be affected by the Phase 2 GHG regulation. The Heavy-Duty Omnibus and P2 GHG estimates both include engine manufacturers and zero-emission vehicle manufacturers. The Phase 2 GHG estimate additionally includes vehicle manufacturers that use internal combustion engines. Most of the affected manufacturers are located outside of New York. In line with California's cost analysis, it is anticipated that the cost of compliance would be passed onto New York medium- and heavy-duty fleets that purchase the California-certified vehicles.

VIII. LOCAL GOVERNMENT MANDATES

The proposed regulations do not impose a local government mandate pursuant to Executive Order 17. No additional paperwork or staffing requirements are expected. Local governments have no additional compliance obligations as compared to other subject entities.

[117] CARB, Heavy-Duty Omnibus ISOR, Appendix C-3: Further Detail on Costs and Economic Analysis, p.67.
[118] CARB, Phase 2 GHG ISOR, Appendix H: Further Detail on Cost and Economic Analysis, Table H-10, p. H-20.

IX. PAPERWORK

The Heavy-Duty Omnibus regulation is likely to result in increased paperwork requirements for New York vehicle suppliers, dealers, or local government as a result of warranty and recall requirements. Manufacturers would submit materials directly to California for engine certification. Manufacturers would be required to submit EWIR, warranty, and recall information to the Department similar to California adjusted to reflect New York State vehicles. Under the EWIR requirement, manufacturers would be required to notify vehicle or engine owners of a recall or other corrective action.

The proposed adoption of California's Phase 2 GHG Regulation should not result in any significant paperwork requirements for New York vehicle suppliers, dealers, or local government. Manufacturers would submit materials to California for Phase 2 GHG certification. Manufacturers would need to submit data to the Department with regards to credit provisions and tracking.

X. DUPLICATION

With New York's final adoption of the Department's proposal, California's Heavy-Duty Omnibus and Phase GHG standards would supersede current federal heavy-duty engine standards and requirements.

There would be no relevant state or federal rules or other requirements that would duplicate, overlap, or conflict with this rulemaking.

XI. ALTERNATIVES

The option of maintaining the current federal NOx and GHG standards while implementing the ACT regulation (M/HD ZEV sales beginning with MY2025) without adopting CARB's Heavy-Duty Omnibus

and Phase 2 GHG amendments was reviewed and rejected. The Department believes this is not permissible under CAA Section 177 due to the identicality requirement. New York State must also adopt the more stringent California emissions standards to achieve the emission reductions necessary for the attainment and maintenance of federal ozone standards.

XII. FEDERAL STANDARDS

US EPA regulation established the existing heavy-duty engine NOx standards in 2001.[119] In August 2021, the U.S. EPA announced its Clean Trucks Plan[120] that "… will result in decreasing emissions from new heavy-duty vehicles, including long-haul tractors, buses, commercial delivery trucks, and many other types of trucks... By December 2022, EPA will propose and finalize new stringent emissions standards to reduce nitrogen oxides (NOx) pollution from trucks starting in model year 2027." On March 28, 2022, EPA published the "Proposed Rule and Related Materials for Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards"[121] to revise the federal heavy-duty vehicle emission control program, including options for revised NOx standards, test procedures, regulatory useful life, and emission-related warranty beginning as early as the 2027 model year. EPA's proposal also included targeted updates to the existing Heavy-Duty Greenhouse Gas Emissions Phase 2 program, proposing that further GHG reductions occur in the MY 2027 timeframe. Two primary options were presented. EPA is currently evaluating public comments and the proposed rule has not been finalized.

[119] Federal Register, Vol. 66, No. 12, Thursday, January 18, 2001, pp. 5002-5193.
[120] https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P1012ON0.pdf
[121] https://www.govinfo.gov/content/pkg/FR-2022-03-28/pdf/2022-04934.pdf

Should "Option 1" be selected and the federal regulation adopted by the end of CY2022, a revised federal heavy-duty engine NOx standard would be similar to California's Heavy-Duty Omnibus regulation in stringency but with an extended implementation period. A revised federal heavy-duty engine low-NOx standard could not be implemented before model year 2027 due to required lead-time requirements. As such, there would be an initial gap between the Heavy-Duty Omnibus proposal (proposed to begin in New York with MY 2026) and federal implementation (MY 2027). Further, the Heavy-Duty Omnibus regulation would require the full phase-in of the revised NOx standard in MY 2027, while the federal program (if Option 1 is selected) would not be effective until MY 2031. CARB has summarized the programmatic differences between the Heavy-Duty Omnibus regulation and Options 1 and 2 of EPA's NPRM.[122]

California's Phase 2 GHG regulation mostly aligns with federal Phase 2 GHG regulations with minor exceptions previously mentioned.

The severity of New York State's air quality problems dictates that New York State must maintain compliance with recent improvements in the California standards to achieve necessary reductions of pollutants that aid in the formation of ground-level ozone, as well as climate change. Adhering to federal standards would impede New York's ability to attain and maintain ambient air quality standards and make reasonable further progress as required in its State Implementation Plan.

XIII. COMPLIANCE SCHEDULE

[122] https://ww2.arb.ca.gov/sites/default/files/2022-05/CARB_Omnibus_vs_US_EPA_CTP_Proposal_Final_1.pdf

The Heavy-Duty Omnibus and California Phase 2 GHG Standards regulations would take effect beginning with the 2026 model year heavy-duty Otto-cycle and heavy-duty diesel engines intended for use in vehicles with GVWR greater than 10,000 lbs. The proposed warranty and useful life periods and EWIR and corrective action procedures from the adoption of California's Heavy-Duty Omnibus would be phased-in beginning with 2027 model year engines and would be fully implemented for applicable 2031 and subsequent model year engines.

The California Phase 2 GHG regulation would take effect with the 2026 model year.

Job Impact Statement

6 NYCRR Part 218, Emission Standards for Motor Vehicles and Motor Vehicle Engines

6 NYCRR Part 200, General Provisions

1. Nature of Impact:

The New York State Department of Environmental Conservation (DEC or the Department) proposes to amend Title 6 of the New York Codes, Rules and Regulations (NYCRR) Part 218, "Emission Standards for Motor Vehicles and Motor Vehicle Engines," and Part 200, "General Provisions" (collectively, Part 218). These amendments will further the goals of reducing air pollution from motor vehicles by incorporating the State of California's Heavy-Duty Omnibus Low NOx (oxides of nitrogen) regulation ("Heavy-Duty Omnibus") and Phase 2 Greenhouse Gas Standards ("Phase 2 GHG") for Medium- and Heavy-Duty vehicles. The proposed amendments support the requirements of New York's Climate Leadership and Community Protection Act, Chapter 106 of the Laws of 2019 (CLCPA or Climate Act), to further reduce GHG emissions in the State.

The Department does not anticipate any significant impact to jobs/business creation, elimination, or expansion as a result of the proposed regulation.

2. Categories and numbers affected:

The Department does not anticipate any significant impact to jobs/business creation, elimination, or expansion as a result of the proposed regulation.

3. Regions of adverse impact:

The proposed regulation applies statewide and the Department does not anticipate any specific regions of adverse impact.

4. Minimizing adverse impact:

The Department will hold public commenting periods for the proposed regulation as a part of the rulemaking process which will allow for stakeholders to participate in the rulemaking process and voice any concerns related to jobs/business creation, elimination, or expansion.

The Department will assess public comments regarding jobs/business creation, elimination, or expansion received in the public commenting period of the proposed regulation.

5. Self-employment opportunities:

The Department is not currently aware of any self-employment opportunities.

Rural Area Flexibility Analysis

6 NYCRR Part 218, Emission Standards for Motor Vehicles and Motor Vehicle Engines

6 NYCRR Part 200, General Provisions

1. Types and estimated numbers of rural areas:

The New York State Department of Environmental Conservation (DEC or the Department) proposes to amend Title 6 of the New York Codes, Rules and Regulations (NYCRR) Part 218, "Emission Standards for Motor Vehicles and Motor Vehicle Engines," and Part 200, "General Provisions" (collectively, Part 218). These amendments will further the goals of reducing air pollution from motor vehicles by incorporating the State of California's Heavy-Duty Omnibus Low NOx (oxides of nitrogen) regulation ("Heavy-Duty Omnibus") and Phase 2 Greenhouse Gas Standards ("Phase 2 GHG") for Medium- and Heavy-Duty vehicles. The proposed amendments support the requirements of New York's Climate Leadership and Community Protection Act, Chapter 106 of the Laws of 2019 (CLCPA or Climate Act), to further reduce GHG emissions in the State.

There are no requirements in the proposed regulation that apply only to rural areas.

2. Reporting, record keeping, other compliance requirements, and professional services:

There are no specific requirements in the proposed regulation that apply exclusively to rural areas.

3. Costs:

The Department estimates the incremental cost of New York State adopting the Heavy-Duty Omnibus regulation as follows:

TABLE 1
Estimated Proposed Heavy Duty Omnibus Incremental Costs from 2024 through 2044 (2018$) in New York State

Cost Category	Incremental Cost
Standards, Certification, and New Technology	$656,418,274
Lengthened Warranty	$195,820,231
Emission Warranty Information and Reporting	$72,755,352
NY-ABT Average/Banking/Trading Program	$540,799
Diesel Emission Fluid Consumption	$156,469,047
Total Costs Passed to Vehicle Buyers	$1,082,003,703

The Department estimates that the incremental cost of New York State adopting the California Phase 2 GHG regulation, without the trailer requirements, for model year 2026-2028 heavy-duty engines and vehicles at $3.5 million for the following:

- Labeling and credit tracking for tractors and vocational vehicles
- New York State credit tracking
- Increased unit cost and credit tracking associated with refrigerants with a low global warming potential
- Class 2b/3 consumer labeling

Overall, the Department does not anticipate any significant costs to rural areas.

4. Minimizing adverse impact:

The proposed regulation is a statewide regulation with no specific focus on rural areas. Overall, the Department does not anticipate any significant adverse impacts to rural areas.

The Department will assess public comments regarding rural impacts received in the public commenting period of the proposed regulation.

5. Rural area participation:

The Department will hold public commenting periods for the proposed regulation as a part of the rulemaking process which will allow for stakeholders in rural areas to participate in the rulemaking process.

Regulatory Flexibility Analysis for Small Businesses and Local Governments

6 NYCRR Part 218, Emission Standards for Motor Vehicles and Motor Vehicle Engines

6 NYCRR Part 200, General Provisions

1. Effect of rule:

The New York State Department of Environmental Conservation (DEC or the Department) proposes to amend Title 6 of the New York Codes, Rules and Regulations (NYCRR) Part 218, "Emission Standards for Motor Vehicles and Motor Vehicle Engines," and Part 200, "General Provisions" (collectively, Part 218). These amendments will further the goals of reducing air pollution from motor vehicles by incorporating the State of California's Heavy-Duty Omnibus Low NOx (oxides of nitrogen) regulation ("Heavy-Duty Omnibus") and Phase 2 Greenhouse Gas Standards ("Phase 2 GHG") for Medium- and Heavy-Duty vehicles. The proposed amendments support the requirements of New York's Climate Leadership and Community Protection Act, Chapter 106 of the Laws of 2019 (CLCPA or Climate Act), to further reduce GHG emissions in the State.

2. Compliance requirements:

The proposed regulation will impact medium- and heavy-duty vehicle and engine manufacturers. The Department anticipates that medium- and heavy-duty vehicle and engine manufacturers are expected to pass Heavy-Duty Omnibus compliance costs onto New York State heavy-duty vehicle and engine purchasers at similar cost or slightly less cost due to economies of scale, resulting in increased purchase and operational costs to small businesses.

The proposed adoption of California's Heavy-Duty Omnibus regulation will result in additional purchase and operational costs to local and state agencies, but not above those costs experienced by consumers.

3. Professional services:

There are no professional services needed by small business or local government to comply with the proposed regulation.

4. Compliance costs:

The Department estimates the incremental cost of New York State adopting the Heavy-Duty Omnibus regulation as follows:

TABLE 1
Estimated Proposed Heavy Duty Omnibus Incremental Costs
from 2024 through 2044 (2018$) in New York State

Cost Category	Incremental Cost
Standards, Certification, and New Technology	$656,418,274
Lengthened Warranty	$195,820,231
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The Department estimates that the incremental cost of New York State adopting the California Phase 2 GHG regulation, without the trailer requirements, for model year 2026-2028 heavy-duty engines and vehicles at $3.5 million for the following:

- Labeling and credit tracking for tractors and vocational vehicles
- New York State credit tracking
- Increased unit cost and credit tracking associated with refrigerants with low global warming potential
- Class 2b/3 consumer labeling

5. Economic and technological feasibility:

The Department believes that the proposed regulation is technologically feasible and cost effective with

commercially available and demonstrated technologies. Please see the proposed regulation Regulatory Impact Statement pages 25-28 for more details.

The Department estimates the following regulation costs, savings, benefits, and emissions reductions showing the economic feasibility of the proposed regulation:

Heavy-Duty Omnibus Regulation:

Total NOx Benefits (2026-2050): 72,840 tons

Cost: $1,082,003,703

Savings: $191,410,831

Monetized Health Benefit: $825,000,000 - $1,859,000,000

Phase 2 GHG:

Cost: $3,505,426

6. Minimizing adverse impact:

For small businesses and local governments, while there will be increased costs associated with the lengthened warranty requirements that would likely be passed onto small businesses and local governments through increased heavy-duty vehicle and engine prices, small businesses and local governments are also likely to recoup some of these upfront costs through savings over time in reduced operation and maintenance expenses.

Additionally, a portion of these state and local government costs will be offset through operational savings. It is anticipated that New York State and local governments would experience an increase in sales tax revenue from the higher purchase price of Heavy-Duty Omnibus certified engines and vehicles and from the

sale of diesel emission fluid (DEF). The Department estimates additional sales tax revenue in New York State of $105,626,980 (2024-2050).

7. Small business and local government participation:

The Department will hold public commenting periods for the proposed regulation as a part of the rulemaking process which will allow for small businesses and local government to participate in the rulemaking process.

The Department will assess public comments regarding small businesses and local governments received in the public commenting period of the proposed regulation.

8. For rules that either establish or modify a violation or penalties associated with a violation:

The proposed regulation does not modify any existing violations or penalties associated with a violation under 6 NYCRR Part 218 or 6 NYCRR Part 200.

Summary of the Assessment of Public Comments

6 NYCRR Part 218, Emission Standards for Motor Vehicles and Motor Vehicle Engines

6 NYCRR Section 200, General Provisions

The New York State Department of Environmental Conservation (DEC or the Department) has amended Title 6 of the New York Codes, Rules and Regulations (NYCRR) Part 218, "Emission Standards for Motor Vehicles and Motor Vehicle Engines," and Part 200, "General Provisions" (collectively, Part 218). These amendments will further the goals of reducing air pollution from motor vehicles by incorporating the State of California's Heavy-Duty Omnibus Low NOx (oxides of nitrogen) regulation ("HD Omnibus") and Phase 2 Greenhouse Gas Standards ("P2 GHG") for Medium- and Heavy-Duty vehicles. The proposed amendments support the requirements of New York's Climate Leadership and Community Protection Act, Chapter 106 of the Laws of 2019 (CLCPA or Climate Act), to further reduce GHG emissions in the State.

Some commenters, including environmental groups and a health advocacy group, supported the Department's HD Omnibus and P2 GHG adoption. Other commenters, primarily trade associations representing engine and truck manufacturers, construction materials businesses, gasoline retailers, the food industry, automobile and trucking dealerships, trucking and goods movement businesses, liquid fuel marketers, county and town highway superintendents, the agricultural industry, and general contractors were opposed to the regulations. Comments covered topics including the United States Environmental Protection

Agency's (EPA) Final Clean Trucks Plan (CTP) regulation, feasibility of the HD Omnibus regulation standards, zero-emission vehicle (ZEV) adoption, "pre-buy" and "no-buy" scenarios, New York (NY) business competitiveness, cost-benefits analysis, the emergency rulemaking process, requests to delay adoption, vehicle availability, NY vehicle sales, HD vehicle purchase costs, industry- and business-specific impacts, potential California amendments to the HD Omnibus regulation's legacy engine provisions, increased costs to consumers, clean air benefits, health benefits, need for stricter transportation emission standards, NY's air quality problems and related health issues, the HD Omnibus regulation transit agency exemption, the need for strong state standards, environmental justice, the need for continued emissions reductions in NY, and topics beyond the scope of this rulemaking.

Multiple Commenters requested that the Department align with EPA's CTP regulation rather than adopt the HD Omnibus regulation, stating that the CTP regulation is more cost-effective, takes operational considerations into account, and will result in more emissions reductions. The Department's response emphasized that the HD Omnibus regulation is more effective than the CTP regulation in reducing emissions. Adoption of the HD Omnibus is critical for NY's air quality goals since parts of NY are in a non-attainment area for ozone that must be brought into attainment as required by the Clean Air Act. Additionally, the HD Omnibus regulation must be adopted due to the identicality provision of Section 177 of the Clean Air Act following New York's previous adoption of the Advanced Clean Trucks (ACT) regulation (2021).

Some Commenters stated that the HD Omnibus regulation standards are not technologically feasible. Conversely, other Commenters stated that the HD Omnibus regulation standards are technologically feasible. The Department agrees that the HD Omnibus regulation standards are technologically feasible as set forth more fully in the RIS and Assessment of Public Comments.

Commenters stated that adoption of the HD Omnibus regulation will interfere with ZEV adoption and the implementation of the Advanced Clean Trucks (ACT) regulation. The Department disagrees with the assertion that adoption of the HD Omnibus regulation conflicts or otherwise interferes with the implementation of the ACT ZEV regulation in NY.

Some Commenters asserted that adoption of the HD Omnibus regulation will impact new truck purchasing decisions, including “pre-buy” and “no-buy” scenarios. Other Commenters stated that possible “pre-buy” and “no-buy” effects associated with adoption of the HD Omnibus regulation will not be substantial. The Department agrees that the extent of the “pre-buy” and “no-buy” scenarios could vary by regulation, are not likely to be substantial, are highly uncertain, and are very difficult to predict with confidence.

Commenters stated that adoption of the HD Omnibus regulation will put NY businesses at a competitive disadvantage leading to new HD truck sales in neighboring states and potentially in job losses. The Department disagrees with the assertation that NY businesses will be at a

competitive disadvantage with adoption of the HD Omnibus regulation as set forth more fully in the Assessment of Public Comments.

Commenters stated that the Department's cost-benefit analysis in the Regulatory Impact Statement was improperly calculated and did not compare to the CTP. The Department disagrees with the assertation that the cost-benefit analysis was improperly calculated. The Department's cost-benefit analysis was proper, in accordance with state law, and was completed prior to EPA's release of the final CTP regulation.

One Commenter stated that the Department improperly used its authority to perform an emergency adoption. The Department disagrees with the assertation that it improperly used its authority to perform an emergency adoption as set forth more fully in the Assessment of Public Comments.

Commenters requested that the Department delay its implementation of the HD Omnibus regulation. The Department disagrees since NOx emissions reductions benefits are needed in NY, and these would be lost if implementation of the HD Omnibus regulation was delayed.

Commenters stated that the HD Omnibus regulation will significantly impact vehicle availability once the HD Omnibus regulation standards take effect in EMY 2026. The Department disagrees with the assertation that adoption of the HD Omnibus regulation will

significantly impact vehicle availability once the HD Omnibus regulation standards take effect in EMY 2026 as set forth more fully in the Assessment of Public Comments.

Commenters stated that adoption of the HD Omnibus regulation will lead to NY truck sales being lost to other states that have not adopted the HD Omnibus regulation. The Department disagrees with the assertion that adoption of the HD Omnibus regulation will lead to NY truck sales being lost to other states that have not adopted the HD Omnibus regulation, as set forth more fully in the Assessment of Public Comments.

Some Commenters stated that adoption of the HD Omnibus regulation will result in significant increases in new HD vehicle purchase prices. Conversely, another Commenter stated that adoption of the HD Omnibus regulation will result in smaller and less significant vehicle purchase price increases.

The Department disagrees with the magnitude of new HD vehicle purchase price increases asserted by some commenters. The Department agrees that the adoption of the HD Omnibus regulation will typically result in a HD vehicle purchase price increase, however, it notes that many cost evaluations of the HD Omnibus regulation have been performed. Based primarily on the assumptions employed, the predicted HD purchase price increases varied over a wide range. The Department considers the California rulemaking cost analysis as the best source of information. The Department finds that the costs associated with the HD Omnibus regulation are reasonable considering the corresponding monetized benefits.

Commenters stated that adoption of the HD Omnibus regulation will adversely impact their business, industry, or disrupt the supply chain. The Department disagrees with the assertation that adoption of the HD Omnibus regulation will adversely impact businesses, industries, or disrupt the supply chain as set forth more fully in the Assessment of Public Comments.

Commenters stated that the HD Omnibus regulation is infeasible and should not be implemented, citing the potential amendments to the HD Omnibus regulation that the California Air Resources Board (CARB) is considering to the existing legacy engine provisions. The Department disagrees with the assertation that the HD Omnibus regulation is infeasible. The Department is aware of potential amendments to the HD Omnibus regulation by CARB to provide greater manufacturer compliance flexibility through the legacy engine provisions.

One Commenter stated that adoption of the HD Omnibus regulation will lead to increased food costs to consumers. The Department disagrees with the assertation that the adoption of the HD Omnibus regulation will lead to increased food costs to consumers.

Commenters stated that adoption of the HD Omnibus regulation in NY will result in clean air benefits. The modeling referenced by the RIS was completed with NYS-specific inputs and estimated significant NOx emission reduction benefits from the HD Omnibus regulation in NY as set forth more fully in the Assessment of Public Comments.

Commenters stated that adoption of the HD Omnibus regulation in NY will result in health benefits. The health risk assessment referenced by the RIS estimated significant monetized health benefits from the HD Omnibus regulation.

Commenters stated the need for stricter transportation emission standards. The Department agrees that strict transportation emission standards are needed in NY.

Commenters noted NY's air quality problems and related health risks. It is essential that NY continue to adopt stringent mobile sources emissions standards and regulations to protect human health and the environment, especially in Disadvantaged Communities (DACs) that have historically borne the brunt of these impacts.

Commenters noted the importance of environmental justice and the adverse impacts of air pollution on DACs and stated that the proposed regulations are important to addressing these concerns. The Department agrees that the adopted regulations are critical in reducing the adverse air pollution impacts in DACs throughout New York State. It is essential that New York State continues to adopt stringent mobile sources emissions standards and regulations to protect human health and the environment, especially in DACs that have historically borne the brunt of these impacts.

Commenters stated that adoption of the HD Omnibus regulation is necessary as the federal CTP regulation is insufficient and falls short. The Department found that the HD Omnibus regulation can provide greater NOx emission reductions from medium- and heavy-duty engines than the final federal CTP. While the Department and other stakeholder have expressed some concerns with several aspects of the CTP, the Department does recognize EPA's efforts to lower NOx emissions compared to current federal standards.

Commenters stated that while this rulemaking is a necessary and important step, additional emissions reductions are needed in NY. While portions of these comments are beyond the scope of this rulemaking, the Department will continue to assess additional regulations, control measures, programs, and potential funding sources to meet the ozone National Ambient Air Quality Standards (NAAQS), maintain compliance with the particulate matter NAAQS, and mitigate the disproportionate impacts of medium- and heavy-duty vehicle traffic on DACs.

Commenters noted the Department's regulatory definition of the HD Omnibus transit agency exemption and made suggestions of alternative regulatory definitions. The Department believes its regulatory definition is adequate.

Some Commenters mentioned other issues, such as battery electric vehicles, their usage, and their adoption. These comments are outside the scope of this rulemaking.

6 NYCRR Part 218, Emission Standards for Motor Vehicles and Motor Vehicle Engines

6 NYCRR Section 200, General Provisions

Assessment of Public Comments

Comments Received from December 28, 2022, through 5:00 P.M., March 6, 2023

New York Should Align with the Federal Environmental Protection Agency Clean Trucks Plan Final NOx Standards Instead of Adopting the California Heavy-Duty Omnibus Program

Comment 1: The New York Construction Materials Association (NYMaterials) recognizes that New York is seeking to achieve its ambitious greenhouse gas (GHG) emission reduction goals from all sectors of the economy. However, any initiative being advanced to reduce the State's GHG emissions must also consider other environmentally sound and cost-effective alternatives, which the proposed Rule fails to include. In lieu of adopting California's Heavy-Duty Low NOx (nitrogen oxide) Omnibus (HD Omnibus) Regulations, NYMaterials urges the State to adopt the U.S. Environmental Protection Agency's (EPA) final nationwide heavy-duty on-highway (HDOH) low-NOx regulations. Not only will EPA's regulations create a stringent nationwide low-NOx standard for the same HDOH vehicles and engines covered by California's HD Omnibus Regulations, but EPA's standards are also achievable and incorporate cost and operational considerations. Commenter 1.

Comment 2: The EPA has adopted regulations, under its Clean Trucks Plan (CTP), that implement comprehensive emissions-control requirements for the same heavy-duty vehicles (HDVs) and engines covered by the HD Omnibus regulations. The CTP establishes the most stringent low-NOx standards that can be achieved, taking costs and other important factors into account. These federal regulations level the playing field with interstate competitors – and will not put New York businesses at a competitive disadvantage - and will provide a cost-effective, environmentally sound alternative to the HD Omnibus regulations. Commenters 2, 3, 4, 5, 6, 10 11, 12, 14, 16.

Comment 3: The EPA has already adopted regulations, which take into consideration economic impact while also implementing a better, more sustainable environmental solution with respect to the trucking industry. Moving forward with New York-specific HD Omnibus regulations is redundant and will have less environmental benefit, would disrupt the fragile food supply chain, and potentially exacerbate our industry's labor shortage. Commenter 4.

Comment 4: The Trucking Association of New York (TANY) supports a national standard over individual state adoptions of the California HD Omnibus rule. National standards provide clarity and maintain a level playing field. TANY urges the New York State Department of Environmental Conservation (DEC or Department) to reconsider adoption of the HD Omnibus regulations. Commenter 7.

Comment 5: Instead of adopting the HD Omnibus regulations, New York should adopt the nationwide low-NOx regulations adopted EPA. EPA's CTP implements comprehensive emissions-control requirements for the same HDOH vehicles and engines covered by the HD Omnibus regulations. They establish stringent low-NOx standards that will result in reductions in HDOH engine and vehicle emissions, taking costs and other important considerations into account. See 42 U.S.C. § 7521 (a)(3)(A). The Federal regulations provide a cost-effective, environmentally sound alternative to the HD Omnibus regulations, all while leveling the playing field with New York interstate competitors. Commenters 8, 9.

Comment 6: It is well-established that national standards are far more effective than state-specific requirements for regulating HDOH vehicle and engine emissions since those sources are inherently designed for and utilized in interstate commerce. New York must carefully consider the unique situation of the state and the impact of interstate commerce and competition. Commenters 8, 9.

Comment 7: Greater New York Automobile Dealers Association (GNYADA) members are committed to GHG reductions and want to be part of the solution, however we cannot support the adoption of unrealistic and damaging regulations when there are more reasonable alternatives, that accomplish the same cleaning of the environment aspirations, such as those adopted by the EPA. Commenter 12.

Comment 8: Associated General Contractors of New York State (AGC NYS) urges DEC to reserve action on the emergency rule to adopt California's HD Omnibus Low-NOx regulations for HDOH engines and vehicles, and to reject adoption of the proposed Rulemaking in favor of the EPA's final nationwide HDOH low-NOx CTP. Not only will EPA's regulations create a stringent nationwide low-NOx standard for the same HDOH vehicles and engines covered by California's HD Omnibus Regulations, but EPA's standards are also achievable and incorporate cost and operational considerations. Commenter 13.

Comment 9: It is now clear beyond any legitimate dispute that CARB's HD Omnibus Regulations, in contrast with EPA's, are neither feasible nor cost-effective. This is an additional reason to cease any further action on this final rulemaking. There is no question that opting-in to the HD Omnibus regulations will do more harm than good. Commenter 15.

Comment 10: New York Materials recognizes and supports the various aspects of the state's ambitious GHG reduction goals that were established in the Climate Act. Notwithstanding that, we think that any initiative that's being advanced to reduce the emissions must consider other environmentally sound cost-effective alternatives. Personally, we believe that the proposed rule fails to do so. In lieu of adopting California's regulations, we would urge the state to consider adopting EPA's final nationwide Low NOx CTP. Not only will EPA's regulations create a stringent nationwide standard, but EPA's standards are also achievable and incorporate both cost and operational considerations. Commenter 1.

Response to Comments 1-10: As listed below, the Department finds multiple reasons to support the adoption and implementation of the California HD Omnibus regulation rather than to default to EPA's "Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards," or Clean Trucks Plan (CTP), published on January 24, 2023.[1]

First, based on ambient monitoring data, a portion of New York State does not meet federal health- and welfare-based national ambient air quality standards (NAAQS) for ozone.[2] Nine New York State counties (Bronx, Kings, Nassau, New York, Queens, Richmond, Rockland, Suffolk, Westchester) are part of the multi-state New York-Northern New Jersey-Long Island, NY-NJ-CT nonattainment area. The nine New York counties are collectively referred to as the New York Metropolitan Area (NYMA). The multi-state nonattainment area failed to attain the 2008 ozone NAAQS by the July 20, 2021 deadline. On September 16, 2022, EPA announced the reclassification of the multi-state nonattainment area to "severe," and extended the compliance deadline to July 20, 2027.

Additionally, NYMA is also classified as a moderate ozone nonattainment area with the more stringent 2015 ozone NAAQS, with an attainment deadline of August 3, 2024. As such, it is essential that the Department continue to adopt stringent mobile source emissions standards and

[1] USEPA "Control of Air Pollution from New Motor Vehicles: Heavy Duty Engine and Vehicle Standards (Final Rule)," 88 Fed. Reg. 4,296 (Jan. 24, 2023).
[2] EPA, Nonattainment Areas for Criteria Pollutants (Green Book), May 31, 2021, https://www3.epa.gov/airquality/greenbook/hbstateb.html.

regulations to protect human health and the environment. Approximately 40 percent of the diesel fueled HDVs registered in New York State are registered within the NYMA.[3]

In contrast to the assertions made by several Commenters, the Department finds that California's HD Omnibus regulations provide for greater NOx emission reductions than EPA's final CTP.[4,5]

The adopted HD Omnibus regulation is also important to improving air quality within Disadvantaged Communities (DACs) throughout New York State. Despite representing a small fraction (presently less than four percent[6]) of all vehicles registered within New York State, diesel-powered trucks and freight movement in general represent significant sources of air pollution in DACs.[7,8] DACs are often disproportionally impacted due to their proximity to transportation infrastructure.[9] The HD Omnibus regulations offer an opportunity to take a critical step in improving air quality in DACs that have historically borne the brunt of these impacts.

[3] DEC, Enhanced Motor Vehicle Inspection/Maintenance (I/M) Program, 2021 Annual I/M Report, Table II.B.1, p. 8, https://www.dec.ny.gov/docs/air_pdf/eim2021report.pdf.
[4] CARB, "Workshop: Comparison of the Omnibus Regulation and the Clean Trucks Plan (CTP) Oxides of Nitrogen (NOx) Rule" presentation. March 3, 2023. https://ww2.arb.ca.gov/sites/default/files/2023-03/March_3_Workshop_Slides__V03022023.pdf. See slide 8, which notes that alignment with the CTP NOx rule would lead to NOx benefit losses of up to 32 percent in 2037 due to the compliance allowance and temperature adjustment.
[5] Ozone Transport Commission, "OTC Mobile Sources Committee Overview, OTC/MANEVU Stakeholders Meeting" presentation, slide 5, April 21, 2023, https://otcair.org/upload/Documents/Meeting%20Materials/1%2020230421%20OTC%20MSC.pdf.
[6] DEC, Enhanced Motor Vehicle Inspection/Maintenance (I/M) Program, 2021 Annual I/M Report, Table II.B.1, p. 8, https://www.dec.ny.gov/docs/air_pdf/eim2021report.pdf.
[7] "Space-Based Observational Constraints on NO2 Air Pollution Inequality from Diesel Traffic in Major US Cities." https://agupubs.onlinelibrary.wiley.com/doi/10.1029/2021GL094333.
[8] New York Scoping Plan, Chapter 11. Transportation, p. 159, https://climate.ny.gov/-/media/project/climate/files/Chapter-11.-Transportation.pdf.
[9] MJ Bradley and Associates, Union of Concerned Scientists, Natural Resources Defense Council. New York Clean Trucks Program: An Analysis of the Impacts of Zero-Emission Medium- and Heavy-Duty Trucks on the Environment, Public Health, Industry, and the Economy. Sept. 2021. https://www.ucsusa.org/sites/default/files/2021-09/ny-clean-trucks-report.pdf

The California HD Omnibus and federal CTP have differing implementation schedules. The adopted HD Omnibus regulation applies to New York sales beginning with the 2026 engine model year (EMY). The federal CTP will take effect beginning with the 2027 EMY. Emission modeling using New York-specific inputs indicates the potential to achieve 360 tons of additional NOx emission reductions attributed to the EMY 2026 sales.[10] These NOx emissions reductions are necessary to continue progress towards attainment of ozone NAAQS. These NOx reductions have the additional benefit of improving air quality in DACs.

Second, the Department believes that the federal CTP falls short, in comparison to the HD Omnibus regulation, in reducing medium- and heavy-duty vehicle (M/HDV) emissions. On March 24, 2023, CARB submitted to EPA Administrator Michael Regan a Petition for Reconsideration and, in the Alternative, for Rulemaking regarding the CTP.[11] Subsequently, on March 27, 2023, New York and 15 other states submitted a related Petition for Reconsideration concerning EPA's adoption of the CTP.[12] These petitions describe concerns shared by the signatory states regarding two provisions included in the final CTP:

- A temperature adjustment to the off-cycle NOx standards, and
- An "interim" (though without an established expiration date) NOx compliance allowance for in-use testing.

[10] DEC, RIS, Table 8, https://www.dec.ny.gov/docs/air_pdf/emer218hdomnibu.pdf
[11] CARB, Petition for Reconsideration and, in the Alternative, for Rulemaking: Seeking the Amendment of the Rulemaking Entitled "Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards", EPA-HQ-OAR-2019-0055; FRL-7165-02-OAR, March 24, 2023.
[12] States, Petition for Reconsideration of Control of Air Pollution from New Motor Vehicles: Heavy Duty Trucks and Engines (88 FR 4296) (January 24, 2023).

The multi-state petition states:

> *The final HD Rule includes two compliance flexibilities for which EPA failed to provide sufficient notice and opportunity for comment, and that will allow significant excess emissions of NOx in conflict with EPA's duty to set standards that attain "the greatest degree of emission reduction achievable." 42 U.S.C. § 7521(a)(3). These compliance flexibilities are not justified based on the rulemaking record before the agency and should be reconsidered.*
>
> *First, the HD rule includes a temperature adjustment to the off-cycle NOx standards, set forth in 40 C.F.R. § 1036.104 (a)(3)(Table 3), that was not included in EPA's notice of proposed rulemaking.*[13] *Even assuming there may be reason to allow flexibility for operations at extreme temperature levels, this provision applies at temperatures between 5 and 25 degrees Celsius (or 41 to 77 degrees Fahrenheit), temperatures routinely encountered by trucks in our States and throughout the nation. In California alone, this gaping loophole is projected to result in up to 4 tons per day of excess NOx emissions by 2037.*[14] *Our States expect analogous impacts.*
>
> *Second, the HD Rule includes a NOx compliance allowance of 15 mg/hp-hr for in-use testing that equates to an approximate 30-40 percent increase in NOx emissions compared to the NOx emission standards to which engines were certified, perpetuating*

[13] Compare proposed 40 C.F.R. § 1036.104 (a)(3) (Table 3) (87 Fed. Reg. at 17,662) with final 40 C.F.R. § 1036.104 (a)(3) (Table 3) (88 Fed. Reg. at 4,489).
[14] CARB, Workshop: "Comparison of the Omnibus Regulation and the Clean Trucks Plan (CTP) Oxides of Nitrogen (NOx) Rule." March 3, 2023. Available at https://ww2.arb.ca.gov/sites/default/files/2023-03/March_3_Workshop_Slides_V03022023.pdf.

the destructive discrepancy between standards on paper vs. performance on the road.[15] *See, 40 C.F.R. §1036.150(y). While the proposed rule did include a NOx compliance allowance for in-use testing, that provision was described exclusively as an interim measure to provide a transition period for technology development.*[16] *Yet the final HD Rule codifies that compliance allowance as a permanent measure, with no explanation for the change.*[17] *As State Petitioners previously commented, there was no technological justification for this allowance even as an interim measure,*[18] *but it was clearly arbitrary for EPA to abandon any sunset date, without notice, locking in these harmful excess NOx emissions indefinitely.*

Third, New York State adopted California's Advanced Clean Trucks (ACT) regulation in 2021. ACT includes a zero-emission vehicle (ZEV) sales requirement – an emissions standard – for applicable HDVs and engines. EPA approved the State of California's waiver request for preemption for ACT on April 2, 2023.[19] In accordance with Section 177 of the federal Clean Air Act (CAA), New York is required to adopt California's HD Omnibus and Phase 2 Greenhouse Gas Standards (P2 GHG) regulations to maintain identicality with California's program and to

[15] For example, the final HD Rule's NOx standards during initial certification testing are 35mg/hp-hr for steady-state and transient mid- and high-load conditions; and 50 mg/hp-hr during low-load conditions. 88 Fed. Reg. at 4,305. By adding the allowance of 15 mg/hp-hr for testing in-use engine performance set forth in 40 C.F.R. § 1036.50(y), the standards rise to 50 mg/hp-hr at mid- and high-load, and 65 mg/hp-hr at low-load.
[16] EPA, "Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards," proposed rule. Published March 28, 2022. 87 FR 17563.
[17] EPA, "Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards," final rule. Published January 24, 2023; effective March 27, 2023. 88 FR 4502-03.
[18] Multistate Comment Letter (Appendix I) at pp. 17-19.
[19] EPA news release: "EPA Grants Waivers for California's On-highway Heavy-duty Vehicle and Engine Emission Standards." March 31, 2023. https://www.epa.gov/newsreleases/epa-grants-waivers-californias-highway-heavy-duty-vehicle-and-engine-emission.

avoid the creation of a "third" vehicle.[20] For these reasons, New York adopted HD Omnibus rather than defaulting to the federal CTP.

Comment 11: By law, EPA's final very-stringent CTP low-NOx regulations will achieve the greatest feasible reductions in HDOH engine and vehicle emissions, taking costs and other important considerations into account. See 42 U.S.C. § 7521 (a)(3)(A). At the same time, because EPA's CTP regulations reflect the emissions test data and results that have been developed over the two years since the California Air Resources Board (CARB) first proposed the HD Omnibus regulations, the CTP regulations are more feasible and cost-effective than CARB's. HD Omnibus will ensure that new HDOH vehicles and engines will remain available for sale and purchase, including in New York. In addition, it is well-established that national standards are far more effective than state-specific requirements for regulating HDOH vehicle and engine emissions since those sources are inherently designed for and utilized in interstate commerce. Further, nationwide standards mitigate the potential pre-buy/no-buy impacts of new state-specific HDOH emissions standards and are far more cost-effective since the attendant regulatory costs can be allocated across national sales volumes as opposed to much lower state-specific sales. Commenter 15.

[20] 42 U.S. Code § 7507.

Response to Comment 11: CARB demonstrated the feasibility of the HD Omnibus standards through several stages of emission testing completed at the Southwest Research Institute (SwRI).[21, 22] See Response to Comment 19 for further details.

While a national HD NOx regulation implemented in all 50 states would offer advantages due to a broader geographic scope, the Department finds that EPA's final CTP is not as effective as CARB's HD Omnibus.[23,24] Additionally, many of New York's neighboring states have either adopted (MA, VT, NJ) or are contemplating adoption (CT) of California's HD Omnibus, thereby providing regional consistency and a competitive balance.

The HD Omnibus regulation includes compliance flexibilities[25] for applicable engine and vehicle manufacturers to ensure there is an adequate supply of HD Omnibus compliant vehicles. At the

[21] SwRI press release: "SwRI Technology Reduces Heavy-Duty Diesel Emissions to Meet Stringent CARB 2027 Requirements." https://www.swri.org/press-release/swri-technology-reduces-heavy-duty-diesel-emissions-meet-stringent-carb-2027-nox.
[22] SAE International, "CARB Low NOx Stage 3 Program – Final Results and Summary." April 6, 2021. https://www.sae.org/publications/technical-papers/content/2021-01-0589/.
[23] CARB, "Workshop: Comparison of the Omnibus Regulation and the Clean Trucks Plan (CTP) Oxides of Nitrogen (NOx) Rule" presentation. March 3, 2023. https://ww2.arb.ca.gov/sites/default/files/2023-03/March_3_Workshop_Slides__V03022023.pdf. See slide 8, which notes that alignment with the CTP NOx rule would lead to NOx benefit losses of up to 32 percent in 2037 due to the compliance allowance and temperature adjustment.
[24] Ozone Transport Commission, "OTC Mobile Sources Committee Overview, OTC/MANEVU Stakeholders Meeting" presentation, slide 5, April 21, 2023, https://otcair.org/upload/Documents/Meeting%20Materials/1%2020230421%20OTC%20MSC.pdf.
[25] Averaging, banking, and trading program ("California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel-Engines and Vehicles" [§86.xxx-15.B.3], "California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Otto-Cycle Engines and Vehicles" [§86.xxx-15.B.3]); Transit agency diesel-fueled bus and engine exemption (13 CCR 1956.8(a)(2)(F)), Heavy-duty engines > 525 bhp limited exemption (13 CCR 1956.8(a)(2)(C)2.); Legacy engine provisions (13 CCR 1956.8(a)(2)(C)3.)

request of OEMs,[26] CARB has requested comment on providing potentially additional flexibility through revisions to the existing legacy engine provisions.[27] Please see Response to Comments 116-120 for more details.

The Department believes there will be an adequate supply of vehicles for sale with the HD Omnibus regulation. Please see Response to Comments 69-82 for more details.

Regarding the "pre-buy"/"no-buy" scenarios, please see Response to Comments 32-45 for more details.

As set forth in the cost-benefit analysis in the Regulatory Impact Statement (RIS), the Department believes the attendant regulatory costs associated with HD Omnibus are reasonable.

Comment 12: EPA's final HDOH low-NOx regulations largely mirror CARB's but do so in a way that is fully implementable in MY 2027, and without utilizing CARB's higher interim emission standards from and after the 435,000-mile mark. In that regard, for medium/high-load in-use operations, EPA's CTP low-NOx standard (i.e., 0.058 grams per brake horsepower-hour (g/bhp-hr)) is actually more stringent than the second step of CARB's HD Omnibus in-use low-

[26] CARB, Resolution 23-15, "Delegation of Authority to the Executive Officer to Consider Proposed Amendments to Mobile Source Regulations," p. 2, March 23, 2023. https://ww2.arb.ca.gov/sites/default/files/barcu/board/res/2023/res23-15.pdf.
[27] CARB, "Heavy-Duty Engine and Vehicle Omnibus Regulation" presentation. February 13, 2023. https://ww2.arb.ca.gov/sites/default/files/2023-02/acfpres230213_ADA.pdf. See slides 84-87.

NOx standard (i.e., 0.060 g/bhp-hr). Notwithstanding its greater stringency, EPA's in-use NOx standard – the truly operative standard that impacts ambient air quality – is more feasible than CARB's because EPA's standards provide for an in-use variability allowance and utilize an implementable "2-bin" approach as opposed to CARB's unworkable and undemonstrated "3-bin" approach. The net result is that EPA's finalized regulations are and will be more effective at reducing in-use HDOH NOx emissions in New York than CARB's. Commenter 15.

Response to Comment 12: The Department disagrees with several of the Commenter's assertions. Separate emissions modeling efforts from CARB and Ozone Transport Commission indicate that California's HD Omnibus regulations provides for greater NOx reductions compared to EPA's final CTP.[28,29] There are several standards/requirements of the federal CTP regulation (e.g., heavy-duty diesel engine low load cycle (LLC) EMY 2027+ NOx standards) that are individually deemed to be more stringent than comparable HD Omnibus standards/requirements. CARB may complete a future amendment to the HD Omnibus regulation and/or attendant procedures to potentially align HD Omnibus with these more restrictive CTP provisions.[30] Further, CARB, in their Petition for Reconsideration to the EPA, states, "…for model year 2027 and beyond, there may be opportunities to align the strongest parts of our programs, and we recognize that the possibility of more fully aligned programs is

[28] CARB, "Workshop: Comparison of the Omnibus Regulation and the Clean Trucks Plan (CTP) Oxides of Nitrogen (NOx) Rule" presentation. March 3, 2023. https://ww2.arb.ca.gov/sites/default/files/2023-03/March_3_Workshop_Slides__V03022023.pdf. See slide 8, which notes that alignment with the CTP NOx rule would lead to NOx benefit losses of up to 32 percent in 2037 due to the compliance allowance and temperature adjustment.

[29] Ozone Transport Commission, "OTC Mobile Sources Committee Overview, OTC/MANEVU Stakeholders Meeting" presentation, slide 5, April 21, 2023, https://otcair.org/upload/Documents/Meeting%20Materials/1%2020230421%20OTC%20MSC.pdf.

[30] CARB, Public Workshop: "Discuss the recent U.S. EPA Clean Trucks Plan Nitrogen Oxides (CTP-NOx) Rule," at 56 minutes. https://www.youtube.com/watch?v=Cgr6SY3bkQo.

worth exploring in future. In particular, we hope to work together on further refining provisions of the U.S. EPA rule with which CARB will be unable to align as things stand, but which might be modified in positive ways through further collaboration."[31]

CAA Section 209(b)(1) states, "...the State standards will be, in the aggregate [emphasis added], at least as protective of public health and welfare as applicable Federal standards" in order for EPA to grant a waiver.[32] Further, under CAA Section 209(b)(2), "... [i]f each State standard is at least as stringent as the comparable applicable Federal standard, such State standard shall be deemed to be at least as protective of health and welfare as such Federal standards for purposes of paragraph (1)."[33] If CARB amends the HD Omnibus regulation, NY will review those amendments for, among other things, consistency and identicality purposes.

By letter dated January 31, 2022, CARB submitted to EPA a request for a waiver of preemption and an authorization under the CAA for the HD Omnibus regulation. EPA conducted a public hearing and accepted written public comment.[34] As of this date of this Assessment of Public Comments, EPA has not announced its determination on CARB's HD Omnibus waiver. Should California adopt amendments to the HD Omnibus regulation in the future, NYS will review those amendments for, among other things, consistency and identicality purposes.

[31] CARB, Petition for Reconsideration and, in the Alternative, for Rulemaking: Seeking the Amendment of the Rulemaking Entitled "Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards," EPA-HQ-OAR-2019-0055; FRL-7165-02-OAR, March 24, 2023.
[32] 42 U.S. Code § 7543(b)(1).
[33] 42 U.S. Code § 7543(b)(2).
[34] EPA, "California State Motor Vehicle Pollution Control Standards and Nonroad Engine Pollution Control Standards; The 'Omnibus' Low NOx Regulation; Request for Waivers of Preemption; Opportunity for Public Hearing and Public Comment." Notice. June 13, 2022. 87 FR 35765-35768.

The Department and other stakeholders have expressed concern with the final CTP “in-use variability allowance.” Please see Response to Comments 1-10 for greater detail on the Department’s concerns regarding the final CTP “interim” NOx compliance allowance for in-use testing.

CAA Section 177 requires that states adopt standards identical to California's for a given weight class. New York is preempted from making modifications, including any changes to the testing requirements, which may result in the creation of a “third vehicle” standard. CARB-sponsored testing completed by SwRI demonstrated the feasibility of the three-bin moving average window (3B-MAW) approach for 2027 and subsequent EMY engines The three bins were deemed necessary to consider typical modes of operation: idle, low-load, and medium/high load. The Department notes that it is possible for a HD vehicle to pass heavy-duty in use testing (HDIUT) whether evaluated using 2B-MAW and/or 3B-MAW.

Comment 13: Details of where CARB’s HD Omnibus standards are less effective than EPA’s are attached as Exhibit “A” to these comments. Those charts clearly depict the relative benefits of EPA’s CTP regulations. In light of the greater efficacy and cost-effectiveness of EPA’s just-finalized HDOH low-NOx regulations, there is no longer any reasonable, non-arbitrary basis for the DEC to move forward with the opt-in rulemaking at issue. Simply stated, EPA’s CTP regulations will be more effective at reducing NOx emissions in New York State than CARB’s

unworkable HD Omnibus standards. Accordingly, the DEC should withdraw this rulemaking. Commenter 15.

Comment 14: EPA has recently finalized a comprehensive and stringent suite of nationwide low-NOx regulations for new HDOH engines and vehicles. Those nationwide CTP regulations will take effect starting with the 2027 EMY, just one year after the proposed HD Omnibus opt-in would take effect. Importantly, as also noted, the CTP regulations mirror the HD Omnibus regulations in all key aspects – new dramatically lower NOx and particulate matter (PM) standards; new low-load NOx standards; new "binned" moving-average window (MAW)-based in-use standards; enhanced on-board diagnostic standards; and significantly extended useful life and emissions warranty requirements – but do so in a more feasible and far more cost-effective manner. As a result, and as depicted in Exhibit "A," EPA's nationwide CTP regulations will yield greater HDOH emission reductions in New York than could be achieved under a state-specific implementation of the infeasible HD Omnibus regulations. Commenter 15.

Response to Comments 13-14: As noted above in Response to Comment 12, CARB acknowledged that HD Omnibus could be amended if necessary to ensure it is at least as effective as EPA's final CTP.[35] If HD Omnibus is subsequently amended, NYS would review those amendments as necessary and appropriate.

[35] CARB, Public Workshop: "Discuss the recent U.S. EPA Clean Trucks Plan Nitrogen Oxides (CTP-NOx) Rule," at 56 minutes. https://www.youtube.com/watch?v=Cgr6SY3bkQo.

Additionally, the Commenter's "Exhibit A" does not fully consider real world differences between HD Omnibus and the final CTP. See Response to Comments 1-10 (interim compliance margin, low temperature adjustment) and Response to Comments 32-45 ("Pre-buy"/ "No-buy").

The Department notes that the Commenter, both in the above comments and in other submitted comments, asserts that EPA's CTP is technically feasible and should be followed as a national program, while the HD Omnibus regulation is technically infeasible. The submitted "Exhibit A" highlights those areas in which the Commenter finds EPA's final CTP to be more stringent than the HD Omnibus regulation. The Department finds the final CTP and HD Omnibus are very similar in many technical aspects. It appears the commenter asserts that the ostensibly less stringent HD Omnibus regulation is technically infeasible while the purportedly more stringent final CTP regulation is a model program. The Department finds this assertion subjective and does not agree with the Commenter's characterization. The Department also disagrees with the Commenter's assertion that the federal CTP provides for greater NOx reductions compared to California's HD Omnibus regulations.[36,37]

Comment 15: EPA's single-step nationwide CTP low-NOx standards will yield greater overall emission benefits in New York (likely 39 percent better) than CARB's infeasible multi-step

[36] CARB, "Workshop: Comparison of the Omnibus Regulation and the Clean Trucks Plan (CTP) Oxides of Nitrogen (NOx) Rule" presentation. March 3, 2023. https://ww2.arb.ca.gov/sites/default/files/2023-03/March_3_Workshop_Slides__V03022023.pdf. See slide 8, which notes that alignment with the CTP NOx rule would lead to NOx benefit losses of up to 32 percent in 2037 due to the compliance allowance and temperature adjustment.

[37] Ozone Transport Commission, "OTC Mobile Sources Committee Overview, OTC/MANEVU Stakeholders Meeting" presentation, slide 5, April 21, 2023, https://otcair.org/upload/Documents/Meeting%20Materials/1%2020230421%20OTC%20MSC.pdf.

phased-in program because: EPA's standards are implementable and more effective; new low-NOx trucks will continue to be available for sale in New York under the CTP program; the ACT program will continue to be implemented; the anticipated pre-buy/no-buy impacts and market disruptions will be avoided; and the HDOH vehicle fleet will continue to turnover in a cost-effective manner toward a ZEV-truck future. None of that holds true for the HD Omnibus standards. Consequently, there is no sound reason at this juncture to support any continuing efforts to opt-in to CARB's HD Omnibus. At the same time, there are multiple compelling reasons against any such course of action. Commenter 15.

Comment 16: A far more effective bridge to the widespread sale and deployment of new advanced HDOH vehicles is through the more cost-effective nationwide lower-NOx CTP regulations that EPA has finalized. Future federally certified lower-NOx HDOH engines and vehicles will ensure that businesses and municipalities in every state, including New York, have access to the full range of powertrain and vehicle solutions they are accustomed to purchasing today. They will not be forced to pay premium prices for new products, to purchase outside their brand preference, or to seek purchase opportunities in neighboring states. They can maintain profitability without resorting to purchasing used, higher-emitting vehicles, or maintaining their existing fleet longer without the environmental benefits gained from new vehicle purchases. Commenter 15.

Response to Comment 15-16: The Department disagrees with the assertion that the federal CTP will provide greater NOx emissions reduction than California's HD Omnibus regulation.[38,39] See Responses to Comments 12 and 13-14.

The Department believes there will be adequate vehicle supply with the HD Omnibus regulation. See Response to Comments 69-82 for further details.

The Department believes the HD Omnibus regulation will not impact ACT implementation and ZEV adoption. See Response to Comments 29-31 for further details.

The Department believes there will be minimal impact from "pre-buy"/"no-buy" scenarios. See Response to Comments 32-45 for further details.

Comment 17: The significant nationwide NOx reductions from EPA's CTP low-NOx program for commercial vehicles and engines will address any remaining nearer-term air quality issues in New York. To the extent that there might be other local needs to reduce emissions from NOx "hotspots" within the State, those local needs could be best addressed through more specific

[38] CARB, "Workshop: Comparison of the Omnibus Regulation and the Clean Trucks Plan (CTP) Oxides of Nitrogen (NOx) Rule" presentation. March 3, 2023. https://ww2.arb.ca.gov/sites/default/files/2023-03/March_3_Workshop_Slides__V03022023.pdf. See slide 8, which notes that alignment with the CTP NOx rule would lead to NOx benefit losses of up to 32 percent in 2037 due to the compliance allowance and temperature adjustment.

[39] Ozone Transport Commission, "OTC Mobile Sources Committee Overview, OTC/MANEVU Stakeholders Meeting" presentation, slide 5, April 21, 2023, https://otcair.org/upload/Documents/Meeting%20Materials/1%2020230421%20OTC%20MSC.pdf.

approaches, such as targeted accelerated fleet turnover programs, deployment of ZEVs and equipment at specific facilities, utilization of the State's purchasing and contracting power to acquire ZEV trucks, and other targeted incentive programs, rather than through the adverse statewide economic and environmental impacts that would result from the implementation of CARB's infeasible and cost-prohibitive HD Omnibus program. Accordingly, New York should align with EPA's CTP regulations as the best option for achieving the State's air quality goals during the bridge years before significant ZEV-truck market penetration takes hold. Commenter 15.

Response to Comment 17: The Department finds that California's HD Omnibus regulations provides for greater NOx reductions than EPA's CTP.[40,41] New York cannot forego additional NOx reductions during the "bridge years" referenced by the commenter. New York State continues to need the additional NOx reductions the HD Omnibus regulations provide over the CTP. See Response to Comments 1-10 for further details.

Additionally, New York is prioritizing medium- and heavy-duty (M/HD) ZEV adoption in the state through a variety of laws, regulations, executive policy, and programs. See Response to Comments 29-31 for further details.

[40] CARB, "Workshop: Comparison of the Omnibus Regulation and the Clean Trucks Plan (CTP) Oxides of Nitrogen (NOx) Rule" presentation. March 3, 2023. https://ww2.arb.ca.gov/sites/default/files/2023-03/March_3_Workshop_Slides__V03022023.pdf. See slide 8, which notes that alignment with the CTP NOx rule would lead to NOx benefit losses of up to 32 percent in 2037 due to the compliance allowance and temperature adjustment.

[41] Ozone Transport Commission, "OTC Mobile Sources Committee Overview, OTC/MANEVU Stakeholders Meeting" presentation, slide 5, April 21, 2023, https://otcair.org/upload/Documents/Meeting%20Materials/1%2020230421%20OTC%20MSC.pdf.

Comment 18: The basic principles of administrative rulemakings are intended to prevent the adoption of regulations that cannot be effectively implemented. DEC should refrain from adopting such unworkable standards here, especially when the regulations that the DEC is poised to finalize are on the verge of being amended to try to account for their practical infeasibility. There's a much better way forward for New York State: that is, alignment with EPA standards which take effect in 2027 and which will not cause product blackouts. Commenter 15.

Response to Comment 18: The Department believes there will be adequate vehicle supply with the HD Omnibus regulation, see Response to Comments 69-82 for further detail.

CARB has demonstrated the feasibility of the HD Omnibus NOx standards. California has recently requested comment on potential HD Omnibus revisions to provide greater manufacturer compliance flexibility limited to within the 2024-2026 timeframe. Regarding the potential legacy engine provisions amendments, please see Response to Comments 116-120.

Feasibility of HD Omnibus Standards

Comment 19: Independent engine-emissions testing has demonstrated California's low-NOx standards to be unachievable by 2026. DEC should consider a more practical rule that would allow for reductions that are realistic given current technology. Commenter 1.

Response to Comment 19: The Department disagrees with the Commenter's assertion. California's HD Omnibus 2024-2026 EMY NOx emissions standards, as completed on the Federal Test Procedure (FTP), Low Load, Idling, and Ramped Modal Cycle-Supplemental Emissions Test (RMC-SET) cycles are technically feasible and cost-effective based on the following:

1. Several emission control strategies are commercially available today, including improved thermal management; improved selective catalytic reduction (SCR) conversion efficiency during cold starts and low loads; and engine calibrations that increase exhaust gas recirculation (EGR) rates, idle speeds, intake or exhaust throttling, and reduce engine warm-up time to control cold start emissions. SCR system improvements, such as a combination of larger SCR catalyst volume or improved substrates, would be needed as well as thermal management improvements.[42]
2. Demonstration programs and modeling results support the feasibility of California's 2024-2026 EMY HD Omnibus. The SwRI Low NOx Stage 1 testing program showed emission levels of 0.09 g/bhp-hr on the FTP using only engine calibration strategies to reduce cold start emissions with a stock aftertreatment system.[43] Modeling by the Manufacturers of Emissions Controls Association (MECA) also showed composite FTP

[42] CARB, HD Omnibus Initial Statement of Reasons (ISOR), p. ES-11. https://ww3.arb.ca.gov/regact/2020/hdomnibuslownox/isor.pdf.
[43] SwRI, "Evaluating Technologies and Methods to Lower Nitrogen Oxide Emissions from Heavy-Duty Vehicles," Christopher A. Sharp, Cynthia C. Webb, Gary D. Neely, & Ian Smith, Project No. 19503 Final Report, April 2017. https://downloads.regulations.gov/EPA-HQ-OAR-2019-0055-0138/content.pdf.

NOx level could be brought down to 0.03 g/bhp-hr with improved engine calibrations and average-size SCR catalysts.[44]

3. CARB certification data show many manufacturers certifying well below the current heavy-duty engine NOx certification standard, with some reaching 0.06 g/bhp-hr.
4. Test data on current engines in low load operation, along with the known effectiveness of currently available minor hardware modifications, support the feasibility of a 0.20 g/bhp-hr LLC standard.[45]
5. The 10 g/hr NOx idle emissions standard was determined feasible by SwRI Stage 2 Low NOx testing program.[46] SwRI evaluated the achievable emissions reduction by altering calibrations during idle. SwRI demonstrated that by increasing EGR rate and reducing exhaust flow during idle, the cooling of the aftertreatment system temperature is reduced and thus the SCR remains active leading to reduced emissions.
6. Use of heavy-duty hybrid or ZEV technologies. Manufacturers are allowed to generate NOx credits from heavy-duty sales through the NY-ABT beginning with the 2022 EMY in New York State. Credits from the heavy-duty zero-emission averaging set could be used to offset vehicle models that cannot achieve compliance with the revised HD Omnibus certification NOx standards. Heavy-duty zero-emission averaging set credits expire in NY at the end of the 2026 EMY[47].
7. The HD Omnibus EMY 2026 (first year of NYS implementation) NOx standards for heavy heavy-duty diesel engines (0.050 g/bhp-hr for the FTP cycle and the RMC-SET

[44] MECA, Technology Feasibility for Model Year 2024 Heavy-Duty Diesel Vehicles in Meeting Lower NOx Standards, June 2019. https://www.meca.org/wp-content/uploads/resources/MECA_MY_2024_HD_Low_NOx_Report_061019.pdf.
[45] CARB, HD Omnibus ISOR, p. III-14.
[46] Ibid.
[47] DEC, RIS, p.40.

cycle, 0.200 g/bhp-hr for the LLC cycle) are less stringent than the [next model year] CTP EMY 2027 NOx standards for heavy heavy-duty engines (0.035 g/bhp-hr for the FTP cycle and the RMC-SET cycle, 0.050 g/bhp-hr for the LLC). EPA found the EMY 2027 final CTP standards to be technologically achievable in that time frame.[48]

Of note, Cummins announced a new engine launching in EMY 2026 that would meet EPA's CTP EMY 2027 standards a year early – and, by extension, would also meet the HD Omnibus EMY 2026 NOx emissions certification standards (first year of NYS implementation).[49]

Additionally, the Department believes California's HD Omnibus 2027 EMY and subsequent NOx emissions standards on the FTP, Low Load, Idling, and RMC-SET cycles are technologically feasible and cost effective for the following reasons:

1. The proposed 2027 EMY NOx standards are technologically feasible with the same strategies identified for the 2024 through 2026 EMY standard with additional reductions provided by improved calibration, SCR conversion during low load and cold start, and engine hardware improvements. The SwRI Low NOx Stage 3 program identified several aftertreatment designs that could meet a 0.02 g/bhp-hr standard. CARB determined the

[48] EPA, "Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards," final rule. Published January 24, 2023; effective March 27, 2023. 88 FR 4328.
[49] Cummins, "Cummins Announces New X10 Engine, Next in the Fuel-Agnostic Series, Launching in North America in 2026," February 13, 2023. https://www.cummins.com/news/releases/2023/02/13/cummins-announces-new-x10-engine-next-fuel-agnostic-series-launching-north.

appropriate emission standards at the proposed lengthened useful lives by extrapolating the test results from the SwRI Low NOx testing program.[50]

2. Demonstration program results and related work by manufacturers support the feasibility of the 0.020 g/bhp-hr NOx standard.[51]
3. Advanced engine architectures currently being researched show potential for meeting the proposed 2027 EMY NOx standards with significantly lower GHG emissions than today's engines.[52]
4. Simulation modeling supports the 0.02 g/bhp-hr NOx standard. Modeling by MECA showed emission levels of 0.014 to 0.016 g/bhp-hr NOx on the FTP are feasible with engine calibrations, cylinder deactivation, dual SCR systems with close-coupled light-off SCR and dual dosing, and exhaust system insulation.[53]
5. EPA found that its proposed CTP "…[Option 1] standards have been shown to be feasible for compression ignition engines based on testing of the CARB Stage 3 and EPA Stage 3 engine with a chemically- and hydrothermally-aged aftertreatment system."[54]
6. In EMY 2019, 15 engine families, using either compressed natural gas (CNG) or liquefied petroleum gas (LPG), were able to certify to CARB's 2013 optional low NOx standards (0.02 g/bhp-hr)[55] which correspond to the HD Omnibus EMY 2027 and

[50] CARB, HD Omnibus ISOR, p. III-16.
[51] CARB, HD Omnibus ISOR, See Section III, Subsection 1.2.2. Summary of Technical Feasibility Rationale for 2027 and Subsequent Standards, Demonstration program results and related work by manufacturers support the feasibility of a 0.020 g/bhp-hr NOx standard.
[52] CARB, HD Omnibus ISOR, See Section III, Subsection 1.2.2. Summary of Technical Feasibility Rationale for 2027 and Subsequent Standards.
[53] MECA, "Technology Feasibility for Heavy-Duty Diesel Trucks in Achieving 90% Lower NOx Standards in 2027," February 2020. https://www.meca.org/wp-content/uploads/resources/MECA_2027_Low_NOx_White_Paper_FINAL.pdf
[54] EPA, "Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards," proposed rule. March 28, 2022. 87 FR 17461-17463.
[55] CARB, HD Omnibus ISOR, Table I-2, p. I-6.

subsequent NOx certification emission standards. The Department notes that there are other HD Omnibus requirements (e.g., warranty, useful life) in addition to emissions certification standards that will apply beginning with EMY 2027 heavy-duty engines.

7. The Achates Power heavy-duty diesel opposed piston engine, a project funded by CARB and other partners, has entered into fleet service in a Peterbilt 579 tractor with Walmart Corporation. This opposed piston engine, currently operating on the road, is capable of meeting HD Omnibus EMY 2027 standards.[56] Early field portable emissions monitoring system (PEMS) testing is showing substantial NOx and GHG reductions. When evaluated using the 3B-MAW methodology, the PEMS testing emissions data showed average in-use emissions 0.15 g/hr for the idle bin, 0.042 g/hp-hr for the low load bin, and 0.020 g/hp-hr for the medium- and high-load bin. This Class 8 diesel opposed piston demonstration truck, which is currently in revenue service, shows a cost-effective path for compliance with the HD Omnibus/P2 GHG EMY 2027 standards.[57,58,59,60]

Comment 20: It has become increasingly clear that the HD Omnibus regulations are, in fact, infeasible and cost-prohibitive. More specifically, two years have passed since CARB first proposed the HD Omnibus Low-NOx requirements. During that time, SwRI, the expert

[56] Achates Power, “Near-Zero Heavy-Duty Diesel Engine Enters Fleet Service.” April 6, 2022. https://achatespower.com/wp-content/uploads/2022/04/Achates-Power-Ultralow-NOx-Heavy-Duty-Diesel-Engine-Enters-Fleet-Service.pdf.
[57] Salvi, A. "Heavy Duty Opposed Piston Engine Demonstration," CRC Real World Emissions Workshop. March 15, 2022.
[58] Achates Power, Heavy-Duty Diesel Engine In-Use Testing Results. April 2022. https://achatespower.com/wp-content/uploads/2022/04/Achates-Power-Heavy-Duty-Diesel-In-Use-Testing-Results.pdf.
[59] Achates Power, Ultralow NOx during Low-loads and Idle. June 2021. https://achatespower.com/wp-content/uploads/2021/06/Achates-Power-Ultralow-NOx-at-Low-Loads-and-Idle.pdf.
[60] Achates Power, “Heavy Duty Opposed Piston Engine Demonstration” presentation. CRC Real World Emissions Workshop, March 15, 2022. https://downloads.regulations.gov/EPA-HQ-OAR-2019-0055-1186/attachment_6.pdf.

emissions-research laboratory engaged by both CARB and EPA, has conducted additional emissions testing of the low-NOx "Stage 3" prototype engines and aftertreatment systems that are the technical bases for the HD Omnibus and CTP regulations. Those additional tests have shown, among other things, that: (i) CARB's proposed in-use "Bin 3" emission standard is infeasible under various test cycles, as well as at the proposed extended useful life and emissions warranty mileages; (ii) CARB's standards provide no variability allowance or compliance margin to account for engine/aftertreatment component and manufacturing variances, test-to-test variability, or to reflect the impacts of in-use ambient operating conditions, including ambient temperatures, extreme duty cycles, and in-use fuel-quality issues; (iii) certain of CARB's standards would compel additional measure to ensure higher exhaust temperatures under low loads, which will increase carbon dioxide (CO2) emissions; and (iv) under cold ambient temperatures, the NOx emissions from the "Stage 3" prototype increase by 0.04 g/bhp-hr (or more), which is 2-times more than CARB's proposed primary certification NOx standard (0.02 g/bhp-hr). Commenter 15.

Response to Comment 20: The Department disagrees with Commenter's assertions and offers the following points:

i. The Department believes the three-bin moving average window (3B-MAW) is feasible. See Response to Comment 12 for further details.

ii. In its Petition for Reconsideration of the CTP,[61] CARB notes that, according to the EPA's Regulatory Impact Analysis, the "interim" NOx compliance allowance for in-use testing included the final CTP is "intended to account for the emission variance associated with sulfation, fuels, sensors, production variability, and field aging."[62] The Commenter and EPA cite similar reasons as to the necessity of a compliance margin. (e.g., "engine/aftertreatment component and manufacturing variances, test-to-test variability, or to reflect the impacts of in-use ambient operating conditions, including ambient temperatures, extreme duty cycles, and in-use fuel-quality issues"). As previously stated, CARB and, separately, New York, as part of a multi-state Petition of Reconsideration of the CTP, questioned the need for an "interim" in-use NOx compliance allowance included within EPA's final CTP. CARB found that "...the field aging input should be eliminated from the compliance allowance calculation methodology due to a robust engine screening and disqualification process, and to factors already accounted for in the determination of the medium heavy-duty engine certification standard and for extended durability testing of heavy heavy-duty engines. The inclusion of the field aging input amounts to double counting this variability in the compliance allowance methodology."

[61] CARB, Petition for Reconsideration and, in the Alternative, for Rulemaking: Seeking the Amendment of the Rulemaking Entitled "Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards," EPA-HQ-OAR-2019-0055; FRL-7165-02-OAR, March 24, 2023.
[62] EPA, Regulatory Impact Analysis, "Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards." RIA EPA-420-R- 22-035. December 2022. pp. 124-126.

As additionally detailed in CARB's Petition for Reconsideration of the CTP, and as expressed in point iv. below, the Department also disagrees with the Commenter's claimed emissions increases from cold ambient temperatures.

iii. CARB in its HD Omnibus Final Statement of Reasons (FSOR) responded to a similar comment from EMA, Daimler, Navistar, and Volvo regarding the potential trade-offs between NOx and CO2 controls. In summary, CARB responded that, "[w]hile these engine calibration techniques used to increase exhaust temperatures and reduce NOx emissions may inherently increase CO2 emissions, these strategies may be optimized in order to minimize any GHG emission impacts… other emission control options that do not impact GHG emissions may be utilized in combination with engine calibrations to increase exhaust temperatures during cold start."[63] Similarly, MECA found that "[i]t has now been widely demonstrated that the traditional trade-off relationship between CO2 and NOx emissions at the tailpipe has been overcome and reductions of both pollutants can be achieved simultaneously through the use of commercially available technologies."[64]

iv. In its Petition for Reconsideration of the CTP,[65] CARB provided arguments against the inclusion of a temperature adjustment within the final CTP. CARB completed an evaluation of their heavy-duty in-use testing (HDIUT) data to assess the relationship between exhaust gas temperature (EGT), ambient temperature, and engine power. CARB states that, "[i]n conclusion, CARB staff's analysis of the available HDIUT data from

[63] CARB, FSOR, (a)iii.1., p. 33.
[64] MECA, "Technology Feasibility for Heavy-Duty Diesel Trucks in Achieving 90% Lower NOx Standards in 2027," p.2. February 2020. https://www.meca.org/wp-content/uploads/resources/MECA_2027_Low_NOx_White_Paper_FINAL.pdf.
[65] CARB, Petition for Reconsideration and, in the Alternative, for Rulemaking: Seeking the Amendment of the Rulemaking Entitled "Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards", EPA-HQ-OAR-2019-0055; FRL-7165-02-OAR, March 24, 2023.

three different original equipment manufacturers (OEMs) (currently there are only seven different OEMs that certify on-road heavy-duty diesel engines) suggests that for current production engines, EGT is not a function of ambient temperature. Our analysis contradicts the assumed dependence of exhaust temperature on ambient temperature." As previously stated, New York and 15 other signatory states of the multi-state Petition of Reconsideration of the CTP also took issue with EPA's inclusion of a temperature adjustment to the off-cycle NOx standards.

Comment 21: Last-minute regulatory amendments, which are still being worked on in advance of a CARB Board hearing on April 27th, in effect confirm that the HD Omnibus standards are unworkable. That infeasibility will only increase starting in 2027 – the second year of the DEC's proposed opt-in – when the HD Omnibus certification standards for NOx are slated to drop to 0.02 g/bhp-hr. Commenter 15.

Response to Comment 21: The possibility for CARB to revise for the legacy engine provisions through HD Omnibus amendments was in response to manufacturers' requests for compliance flexibility[66], not due to the technical infeasibility of HD Omnibus. See Response to Comments 116-120.

[66] CARB, Resolution 23-15, "Delegation of Authority to the Executive Officer to Consider Proposed Amendments to Mobile Source Regulations," p. 2, March 23, 2023. https://ww2.arb.ca.gov/sites/default/files/barcu/board/res/2023/res23-15.pdf.

Regarding the feasibility of HD Omnibus 2027 EMY and beyond standards, please see Response to Comment 19.

Regarding vehicle availability and supply, please see Response to Comments 69-82.

Comment 22: Importantly, the regulation strengthens testing to better ensure that needed improvements are working as expected in real-world conditions and builds in requirements to lengthen warranty and useful life period requirements as well as reporting on those factors starting in 2027. The Environmental Defense Fund (EDF) fully supports ambitious but achievable standards for NOx and PM in 2024 and 2027 set forth in the HD Omnibus, as adopted in California, as well as the more comprehensive and protective testing procedures, and believe it is appropriate for New York to employ these same standards. These enhanced standards, which have been extensively vetted, will ensure emissions are reduced in all operating modes, such as in residential neighborhoods exposed to high truck traffic. Also, these more protective standards prevent PM emissions from backsliding. CARB staff demonstrated the technical feasibility of both the 2024 and 2027 proposed NOx standards through several years of extensive development and testing in partnership with the SwRI.[67] The development and testing, together with related work by manufacturers, show that the proposed 2024 standards can be met using a combination of improved engine calibration, the newest configuration of after-treatment devices and urea injection. And the 0.02 g/bhp-hr. NOx standard proposed for the 2027 EMY and subsequent

[67] CARB, Public Hearing to Consider the Proposed Heavy-duty Engine and Vehicle Omnibus Regulation and Association Amendments, Staff Report: Initial Statement of Reasons (2020) at ES-12.

years can be achieved by adding cylinder deactivation – a technology widely used in passenger vehicles.[68] Commenter 74.

Comment 23: The timeline set out by the current iteration of the low NOx rule does not present undue constraints. The low NOx standards that immediately preceded CARB's recent low NOx rule, which largely mirrored the EPA standards, were some of the most technology-forcing emissions standards ever adopted – requiring the development of a completely new catalyst, new particulate filters, and a system that had to track the amount of NOx in the tailpipe, an amount that varies greatly under different driving conditions and integration of an advanced and complex engine exhaust gas recirculation system. Further, those new technological elements all had to work in concert without significantly impacting fuel consumption. Despite these challenges, manufacturers were readily able to meet these standards in a timely manner and maintained the minimal impact of fuel consumption required. In contrast, "meeting the envisioned CARB 2024 targets would require very modest increases in technical complexity and costs."[69] Thus, compliance can reasonably be achieved on the timeline set forth by CARB and there is no reason to expect that industry cannot rise to the occasion. Commenter 74.

Comment 24: EDF fully supports CARB's proposed 2024 EMY NOx and PM standards and the 2027 EMY NOx standard on existing regulatory cycles. CARB staff has demonstrated the technical feasibility of both the 2024 and 2027 proposed NOx standards through several years of

[68] Ibid., at III-12 to III-27.
[69] ICCT, "Estimated cost of diesel emissions-control technology to meet the future California low NOx standards in 2024 and 2027," May 20, 2020. https://theicct.org/publications/cost-emissions-control-ca-standards.

extensive development and testing in partnership with SwRI.[70] The proposed standards will have no adverse impact on CO2 emissions or fuel consumption.[71] Past heavy-duty diesel NOx standards resulted in an increase in fuel consumption. SwRI has shown that this tradeoff can be prevented. While testing has seen NOx emissions deteriorate slightly above the proposed 2027 standard as the test engine is approaching the end of its useful life, SwRI has identified additional approaches that engine manufacturers can pursue to prevent a decrease in the effectiveness of these vehicles in achieving the needed emission reductions. SwRI evaluated several engine modifications that could prevent an increase in fuel consumption while simultaneously reducing NOx. SwRI down-selected cylinder deactivation as the most practical technology to improve engine efficiency and reduce CO2. Cylinder deactivation also increases exhaust temperature, which reduces CO2 by improving NOx catalyst efficiency, especially at low speed and low load conditions where current after-treatment systems have been less effective due to low exhaust temperature. Thus, cylinder deactivation helps achieve a 90 percent reduction in NOx emissions under most driving conditions with no increase in CO2 emissions or fuel consumption. These approaches increase the efficiency of the NOx after-treatment devices to reduce NOx emissions below the proposed standard, allowing for future deterioration. Moreover, engine manufacturers still have several years to improve the NOx control system before New York's proposed compliance starts in the 2026 EMY, ample time to address emission deterioration. Commenter 74.

[70] CARB, HD Omnibus ISOR, ES-12.
[71] CARB, HD Omnibus ISOR, V-5.

Comment 25: The Low NOx HD Omnibus Rule makes much-needed reforms, such as strengthening NOx and PM emission standards for new M/HDVs, introducing a new NOx standard for a low-load certification cycle, extending manufacturer warranties, and improving in-use testing to better align with actual operations. Importantly, the HD Omnibus lowers the NOx emission limit for new fossil fueled M/HDVs by 90 percent by 2027 to 0.020 g/bhp-hr. This 90 percent reduction is highly feasible. Nearly a decade of rigorous research, testing, and demonstrations convincingly show a 0.020 g/bhp-hr standard for the 2027 EMY can be met.

More than eight years ago, SwRI began work with local, state, and federal regulators and industry to determine whether technologies could meet a 0.020 g/bhp-hr NOx requirement. The most recent results from this multimillion-dollar demonstration project are conclusive: the Low NOx Rule's 2027 requirements can be met with considerable margins across real-world truck routes.[72]

While the SwRI demonstration project proves what is possible, the companies building emission control systems are delivering solutions. According to MECA, their members are developing numerous engines and aftertreatment technologies "to simultaneously meet future NOx and GHG emission standards" which "include electrification, advanced turbochargers, EGR systems, cylinder deactivation, advanced catalysts and substrates, novel aftertreatment architectures, and dual urea dosing with optional heating."[73]

[72] CARB, Appx. I: Current and Advanced Emission Control Strategies and Key Findings of CARB/SwRI Demonstration Work, June 23, 2020. https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2020/hdomnibuslownox/appi.pdf.
[73] MECA, Statement on the U.S. Environmental Protection Agency's Notice of Proposed Rulemaking, Docket ID No. EPA-HQ-OAR-2019-0055, at 1, May 16, 2022. https://downloads.regulations.gov/EPA-HQ-OAR-2019-0055-1320/attachment_1.pdf.

Innovation is driving cost-effective solutions. In fact, the technologies to meet the Low NOx Rule's first stage that runs through 2026 are already commercially available at minimal cost, and truck manufacturers have more than enough lead time to explore and commercialize existing demonstration projects to meet the second stage beginning in 2027. One such project deployed a Class 8 Peterbilt tractor in Walmart's fleet capable of meeting the 2027 NOx emission limit.[74] while improving fuel economy by 10 percent and using a technology—an opposed piston engine—that is expected to cost less than current engines. The HD Omnibus is designed to drive innovation to achieve substantial pollution reduction within a realistic timeframe. Demonstration projects are proving that a suite of technologies is available to meet the Low NOx standards while potentially cutting costs for fleets and manufacturers. Thus, New York can confidently move forward adopting the HD Omnibus rule knowing that it is technologically feasible and cost-effective. Commenters 75-84.

Comment 26: CARB has shown that these standards are feasible across the country through multiple technological pathways that manufacturers can meet during the lead time to 2024 - 2026 -- whether it be through technologies like improved thermal management of exhaust temperatures, improved SCR conversion efficiency on lower engine loads, improved engine calibration, hardware changes, and also advanced after-treatment systems. Commenter 86.

Comment 27: Opponents of the rule will seek out every opportunity to halt action and scale back New York's ambition. And they might suggest that the rule is technically infeasible, but this is

[74] Achates Power, In-Use Emissions Report for Heavy-Duty Diesel Engine, April 2022, https://achatespower.com/wp-content/uploads/2022/04/Achates-Power-In-Use-Emissions-Measurements.pdf.

incorrect. Plenty of real-world testing shows that the rules and requirements can be met and manufacturers of the emission control technology are rolling out solutions. There is simply no justification for not making the HD Omnibus rule permanent. Commenter 81.

Comment 28: Despite arguments to the contrary, the HD Omnibus is both feasible and beneficial. The regulation is technologically feasible and carries only a modest increase in technical complexity and costs when compared to preceding standards that manufacturers were able to meet. Commenter 74.

Response to Comments 22-28: The Department thanks you for your comments. The Department agrees that the HD Omnibus standards are technically feasible and cost effective.

Cost of HD Omnibus Will Slow ZEV Adoption

Comment 29: The adoption of this rule in New York will delay the deployment of and disincentivize investments in new cleaner propulsion technologies in the near-term given cost and operational issues undermining the State's goal of converting to ZEVs. Simply put, an operator that must invest significant funds in a vehicle now will seek to capitalize on that investment longer, delaying a conversion purchasing ZEV vehicles. Commenter 1.

Comment 30: EMA member companies are investing billions of dollars to develop HDOH ZEVs, and fully support expanding the market in New York for those heavy-duty ZEVs. EMA and its members agree that ZEVs are – and need to be – the future of the commercial trucking industry. However, the DEC's proposal to adopt CARB's HD Omnibus regulations will not foster or accelerate the transition to ZEV trucks in New York. Rather, the proposed opt-in is far more likely to upend the HDOH market in New York and will undermine the implementation of the ACT regulations that the DEC adopted at the end of 2021, which will similarly disrupt and undermine the deployment of ZEV trucks in the State. Commenter 15.

Comment 31: Adoption of the proposed HD Omnibus rule will result in diminished returns in terms of emission reductions, and a wholesale undermining of the DEC's prior opt-in to CARB's ACT program, since the mandated number of ZEV-truck sales under the ACT regulations is entirely dependent on and derived from the number of sales of conventionally fueled new trucks in New York. If that number drops to zero or near-zero in New York in 2027, so too will the mandated number of ZEV-truck sales. All of that runs directly counter to the state's goal of accelerating the transition to ZEV trucks. Commenter 15.

Response to Comments 29-31: California's ACT regulation, adopted in New York in 2021,[75] will ensure the acceleration of M/HD ZEVs within New York State through progressively increasing annual ZEV sales percentages from 2025-2035. The Department maintains its

[75] New York State Governor Kathy Hochul, "Governor Hochul Announces Adoption of Regulation to Transition to Zero-Emission Trucks." December 30, 2021. https://www.governor.ny.gov/news/governor-hochul-announces-adoption-regulation-transition-zero-emission-trucks.

obligation to ensure that conventionally fueled HDVs do not compromise public health and welfare. Heavy-duty diesel trucks are more of a public health concern, compared to light-duty passenger vehicles as heavy-duty diesel vehicles have a long useful life. There remains a long-term need for cleaner, less polluting heavy-duty engines as even cleaner HD Omnibus compliant vehicles will remain in operation well past the state's 100 percent ZEV sales mandate of 2045. The Department believes the costs associated with the HD Omnibus regulation are reasonable and that the ACT and HD Omnibus are complementary regulations. The Department's rulemakings have complied with the minimum model year lead time requirements in the implementation of new emission standards.

As noted in Response to Comments 87-92, and as set forth in the RIS, there will be an incremental cost to the purchase price of a new heavy-duty truck certified to the HD Omnibus standards. DEC has reviewed California's projected costs for new heavy-duty engines subject to the HD Omnibus regulation and find them to be reasonable. The Department reviewed multiple cost studies associated with the HD Omnibus regulation and found the California cost analysis is the best and most comprehensive source of information. The California cost-benefit analysis indicated that the monetary benefits of the HD Omnibus outweigh the costs. See also the Response to Comments 61-62 for more details.

In addition to the ACT regulation, New York State has adopted additional laws, regulations, and executive policy to promote medium- and heavy-duty ZEV adoption. These include:

1. NYS' 100 percent M/HDV sales requirement beginning in 2045 (Chapter 423 of the Laws of 2021).
2. NYS' 100 percent ZEV school bus sales beginning with EMY 2027; full transition to a 100 percent in-use ZEV school bus fleet by 2035 (Chapter 56 of the Laws of 2022).
3. The Metropolitan Transportation Authority's (MTA's) policy to transition to a 100 percent ZEV transit bus fleet by 2040 (MTA Zero-Emission Bus Transition Plan 2022).
4. Five transit fleets' (Suffolk, Westchester, CDTA, NFTA, RGRTA) transition to a 25 percent ZEV transit bus fleet by 2025; 100 percent ZEV transit bus fleet by 2035 (2020 New York State Governor's State of the State Address).
5. NYS' state fleet goal for 100 percent of its M/HDVs to be ZEV by 2040 (New York State Governor's Executive Order 22).
6. Medium-and Heavy-Duty Make Ready Order[76]

New York State provides new medium- and heavy-duty ZEV purchase incentives (Class 4-8) using Volkswagen settlement funds (and previously CMAQ funds) through two vehicle replacement programs. The New York State Energy and Research Development Authority's (NYSERDA) New York Truck Voucher Incentive Program (NYTVIP) is a statewide program that offers incentives, up to $185,000 for Class 8 trucks and up to $385,000 for Class 8 transit buses, to cover the incremental cost of a new M/HD ZEV.[77] The New York City Department of

[76] New York Department of Public Service, Case 18-E-0138, Proceeding on Motion of the Commission Regarding Electric Vehicle Supply Equipment and Infrastructure, Order Establishing Electric Vehicle Infrastructure Make-Ready Program and Other Programs (July 16, 2020) ("Make-Ready Program Order"), https://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterSeq=56005.
[77] NYSERDA Truck Voucher Incentive Program. https://www.nyserda.ny.gov/All-Programs/Truck-Voucher-Program.

Transportation's (NYC DOT) Clean Truck Program (CTP) focuses on the nine-county NYMA, comprised of Bronx, Kings, Nassau, New York, Queens, Richmond, Rockland, Suffolk and Westchester counties. The NYC DOT CTP also offers incentives, up to $185,000 for Class 8 trucks, to cover the incremental cost of a new M/HD ZEV.[78]

Regarding vehicle availability and supply, please see Response to Comments 69-82.

For the reasons stated above, The Department disagrees with the assertion that HD Omnibus adoption conflicts or otherwise interferes with the implementation of the ACT ZEV regulation in New York.

"Pre-Buy" and "No-Buy" Scenarios

Comment 32: DEC's "benefits" assumptions overlook the fact that truck purchasers in New York likely would buy any needed new HDVs in advance of the implementation of CARB's standards (a "pre-buy"), which would be followed by a long deferral of any new truck purchases after the California standards take effect in New York (the ensuing "no-buy"). Alternatively, truck owners may simply retain their older vehicles for as long as possible, or will make any new truck purchases out-of-state. The net result is that the emissions reductions that the DEC is assuming (based solely on outdated analyses performed by entities other than the DEC, including

[78] NYC DOT Clean Trucks Program. https://www.nycctp.com/available-funding/.

the Northeast States for Coordinated Air Use Management (NESCAUM) and the International Council on Clean Transportation (ICCT)) will not actually occur given the anticipated response of the MD/HD vehicle market to the adoption of CARB's standards in New York. Commenter 15.

Comment 33: The adoption of the California regulations will result in the longer-term emission of harmful pollutants by encouraging the extension of the service life of vehicles currently in use to avoid compliance costs (and performance issues) derived from the proposed Rulemaking. Commenter 1.

Comment 34: If the HD Omnibus regulations are adopted in New York, businesses will be forced to keep older, higher emitting trucks in service for longer periods of time. Commenters 2, 3, 5, 6.

Comment 35: If the HD Omnibus regulations are adopted in New York, in order to avoid significant supply chain disruptions, we will be forced to keep older, higher emitting trucks in service for longer periods of time. As a result, food retailers will have to undertake costly extended maintenance of older trucks and lose business when those older trucks can no longer function. Commenter 4.

Comment 36: However, adoption of aggressive environmental policies that do not consider the challenges with which the industry will have to comply will have the unintended consequence of keeping older trucks on the road longer. It’s not that the industry does not want to invest in cleaner vehicles, they simply cannot afford to. Commenter 7.

Comment 37: If the HD Omnibus regulations are adopted in New York, to stay competitive in our industry, we will be forced to keep older, higher emitting trucks in service for longer periods of time. As a result, we will have to undertake costly extended maintenance of older trucks and lose potential business when those older trucks can no longer function, all while producing no net emissions reductions. In fact, given the situation adopting this regulation will cause in New York, it is likely that New York will produce more emissions because the older trucks with no emission protections will stay on the road. Commenter 8, 9, 11, 12, 16.

Comment 38: If the HD Omnibus regulations are adopted in New York, municipalities will be forced to keep older, higher emitting trucks in service for longer periods of time than we do now. As a result, we will have to undertake costly extended maintenance of older trucks, lose road and bridge construction time when older trucks can no longer function, and seek truck sales from other states, assuming such transactions are even permitted. New York's air quality would benefit without the disruption in municipal highway and bridge maintenance and construction activities if the state simply aligns with the nationwide low-NOx regulations adopted by EPA. Commenter 10.

Comment 39: Used truck sales would only add to keeping non-compliant vehicles on the road longer. Commenter 12.

Comment 40: It will do nothing to reduce CO2 emissions, as older vehicles will stay on the road or trucking companies will find inventory elsewhere. Commenter 14.

Comment 41: It can be expected that the market for new truck sales in New York HDOH truck market will largely shut down once the DEC's proposed opt-in takes effect. Other potential options will be for truck operators to buy their new (and used) trucks outside of New York or to simply hold on to their current trucks longer. Commenter 15.

Comment 42: If the turnover of the HDOH trucking fleet is reduced dramatically as the result of HD Omnibus-imposed product blackouts, NOx emission inventories in New York will go up. A 20-year-old truck emits ten times more pollutants than trucks with current emissions control technology. Older higher-emitting trucks invariably will remain on the road longer and will experience higher and higher rates of deterioration. Indeed, recent analyses conducted by independent experts at Ramboll have shown that implementing CARB's HD Omnibus regulations, with the attendant adverse product-availability consequences, will result in 39 percent higher NOx inventories as of 2035 when compared against the scenario where the State elects to follow EPA's recently finalized CTP regulations, which take effect starting in 2027, and which will not result in product blackouts. Commenter 15.

Comment 43: If CARB-compliant products will not be available in New York from and after 2027, fleet operators will accelerate their purchase of new federally certified vehicles in New York, or acquire new trucks in adjacent non-opt-in states, rely more on the used truck market, or simply retain their existing fleet vehicles longer. All of those actions will have a negative impact on future air quality and delay progress in the attainment of air quality goals. Commenter 15.

Comment 44: More specifically, since O.E.M.s will not be able to produce full product lines that can meet the HD Omnibus medium-duty and heavy-duty engine standards, including those that would take effect in New York starting in 2026, fleet purchasers will not be able to buy most of the new trucks they will need starting then, and so many will be required to hold onto their older trucks longer. The net result will be less reductions in NOx emission inventories in New York than if New York simply aligned itself with the nationwide Low NOx regulations for trucks that EPA finalized at the end of last year. Commenter 15.

Comment 45: The adoption of the California regulations, unfortunately, may result and very well likely result in the longer-term emission of harmful pollution because it will encourage owners to extend the service lines of vehicles that currently having surfaced to avoid compliance costs within a rule as well as potential performance issues. Commenter 1.

Response to Comments 32-45: It is possible that NYS fleet owners could choose to accelerate their purchases of new M/HDVs prior to New York's implementation of HD Omnibus ("pre-buy" scenario). The extent of "pre-buy" has been established as being highly uncertain and could vary by specific regulation, industry dynamics (e.g., low supply of federal certified pre-2026 EMY trucks), and global economics (e.g., diesel fuel prices, inflation, current supply chain shortages and disruptions). Where pre-buying does occur, fleets would still, in aggregate, be replacing older, high-emitting vehicles with newer, lower emission vehicles.

As stated in the RIS, in the pre-buy response to the 2007 criteria pollutant standards, pre-buying was found to be "approximately symmetric, short-lived, and small in volume relative to the previous estimates."[79]

EPA conducted its own analysis of past pre-buy and low-buy instances for its CTP rulemaking noting that "… results show no statistically significant sales effects for Class 6 vehicles;[80] "few statistically significant results for Class 7;[81] and "...for both pre-buy and low-buy sales, impacts on Class 8 vehicles are of limited duration and range from zero impact to about two percent."[82]

[79] Katherine Rittenhouse and Matthew Zaragoza-Watkins, "Strategic Response to Environmental Regulation: Evidence from U.S. Heavy-Duty Vehicle Air Pollution Regulations" at 33, MIT CEEPR Working Paper (2016).
[80] EPA, Regulatory Impact Analysis, "Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards." RIA EPA-420-R- 22-035. December 2022. p. 409.
[81] Ibid., p. 409.
[82] Ibid., p. 419.

In response to comments relating to pre-buy and low-buy effects (including from ACT Research), EPA reaffirmed that, "EPA's peer-reviewed approach continues to be appropriate given the data and literature that are currently available ... is based on the best reasonably obtainable scientific, technical, and economic information available ... in compliance with [Office of Management and Budget] Circular A4,[83] and that, [t]he model and assumptions used by ACT Research did not include sufficient detail for EPA to evaluate or replicate that approach."[84]

Actual pre-buy/no buy purchases would diminish the benefits of either the federal CTP or HD Omnibus programs to some extent, but this cannot be accurately assessed. As set forth in the RIS, the HD Omnibus is projected to significantly reduce emissions of NOx in New York State.

The Department notes that in the analysis cited by Comment 42, it is unclear to what extent the analysis appropriately applied the final CTP temperature adjustment and interim compliance margin into NOx emission reduction estimates. As stated previously, the Department disagrees with assertions regarding the extent of pre-buy and no-buy assumptions made for the NYS HD Omnibus scenario. It is also unclear as to whether, or to what extent, any similar pre-buy and no-buy assumptions were made for the EPA CTP scenario within the analysis.

[83] Office of Management and Budget Circular A-4 provides guidance to Federal Agencies on the development of regulatory analyses as required under Executive Order 12866. https://obamawhitehouse.archives.gov/omb/circulars_a004_a-4/#d.
[84] EPA, "Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards," final rule. Published January 24, 2023, effective March 27, 2023. 88 FR 4430.

Comment 46: History demonstrates that forecasts of pre-buying in response to earlier generations of emissions standards did not materialize. In reality, "the pre-buy in response to 2007 criteria pollutant standards [was found] to be approximately symmetric, short-lived, and small in volume relative to previous estimates"[85] – indicating that fears of mass purchase of more polluting vehicles before implementation of a standard may not come to fruition. The bottom line is that, rather than seeing fleets buy dirtier, ostensibly cheaper vehicles in a panic, there is clear evidence that there is no meaningful adjustment in market purchasing as a result of these standards – fleets recognize the cost savings over time of cleaner vehicles and do not seem inclined to ignore those benefits to reap the marginally lower purchase price of more polluting vehicles while they still can. Commenter 74.

Comment 47: The Low NOx rule will not result in pre-buying to avoid more stringent regulations based on past experience. Fleets recognize the cost savings over time of cleaner vehicles and do not seem inclined to ignore those benefits to reap the marginally lower purchase price of more polluting vehicles while they still can. Commenter 74.

Response to Comments 46-47: The Department agrees that the extent of the "pre-buy" and "no-buy" scenarios are highly uncertain, could vary by regulation, and are difficult to predict. See Response to Comments 32-45.

[85] Katherine Rittenhouse and Matthew Zaragoza-Watkins, Strategic Response to Environmental Regulation: Evidence from U.S. Heavy-Duty Vehicle Air Pollution Regulations at 33, MIT CEEPR Working Paper (2016).

New York State Businesses Will Be at a Competitive Disadvantage and Lose Jobs and Businesses to Other States

Comment 48: The emergency rule and Rulemaking will continue to place New York businesses at an economically competitive disadvantage with neighboring states that follow the EPA regulations. Commenter 1.

Comment 49: The proposed Rulemaking will not achieve its purported environmental goals unless it incorporates realistic measures that can be achieved. Significantly, it will also increase the potential for leakage, as companies will determine whether this additional, potentially significant cost, renders business in New York State too costly compared to other States. Commenter 1, 13.

Comment 50: California may be able to implement such a program successfully because of California's vast size and the lack of neighboring states to large population centers. That is not true in New York. If New York adopts these regulations, New York will lose businesses and jobs to neighboring states such as New Jersey, Connecticut, Pennsylvania, Massachusetts and Vermont. Commenter 8.

Comment 51: California may be able to implement such a program successfully because of California's vast size and the lack of neighboring states to large population centers. That is not

true in New York. If New York adopts these regulations, New York will lose businesses and jobs to neighboring states such as New Jersey, Connecticut, Pennsylvania, Massachusetts and Vermont. Commenter 9.

Comment 52: In particular, truck dealerships in New York will face significant adverse consequences, and if New York-based fleet operators were to choose to relocate out-of-state, significant in-state job losses would result across the wide-ranging trucking sector, including within the goods-movement, warehousing, and truck-servicing and repair sectors. Commenter 15.

Comment 53: Furthermore, the emergency rule will continue to place New York businesses at an economically competitive disadvantage because we'll be implementing different standards than our neighboring states, and therefore, it will be much more difficult to do business in terms of our competition with New York and with Connecticut, New Jersey, and Massachusetts. Commenter 1.

Response to Comments 48-53: DEC's adoption of HD Omnibus is not expected to result in a significant impact to business competitiveness.[86] Many neighboring states (CT,[87] MA,[88] NJ,[89] and VT[90]) are also "Section 177" states that have adopted or are considering adoption of California's HD Omnibus rule. Heavy-duty emissions standards will likely be substantially harmonized between New York and some of its neighboring states.

Cost-Benefit Analysis

Comment 54: The RIS discussion of the costs and benefits is premised on comparison to the EPA regulations existing at the time of issuance. On January 25, 2023, the EPA formally published its Notice of Adoption of revised heavy-duty engine and vehicle standards. The proposed Rulemaking proposed by DEC, however, fails to provide a detailed benefit-cost comparison to implementation of the final EPA regulations or to consider the EPA's analysis and rationale for its final regulations. Until such time a comparison is completed, and the incremental costs/benefits are available for public review, NYMaterials urges DEC to reserve further action on adopting California's regulations. Commenter 1.

[86] NYSDEC, RIS, p. 61., https://www.dec.ny.gov/docs/air_pdf/emer218hdomnibu.pdf
[87] Connecticut Department of Energy and Environmental Protection, "An Assessment of Connecticut's Need to Adopt California's Medium and Heavy-Duty Vehicle Emission Standards." https://portal.ct.gov/-/media/DEEP/air/mobile/MHD/MHD_Whitepaper_030822.pdf.
[88] Massachusetts Department of Environmental Protection, Massachusetts Low Emission Vehicle (LEV) Program. https://www.mass.gov/guides/massachusetts-low-emission-vehicle-lev-program
[89] New Jersey Department of Environmental Protection, New Jersey Administrative Code 7:27-28A. https://dep.nj.gov/aqm/rules/rules27/.
[90] Vermont Department of Environmental Conservation, Recently Adopted and Proposed Regulations. https://dec.vermont.gov/air-quality/laws/recent-regs.

Comment 55: Specific to the DEC proposed regulation, and partially due to the EPA standard, TANY would note that the emissions benefits cited in the RIS are overstated. The business-as-usual modeling scenario was developed in 2021 and updated as part of this rulemaking to incorporate current NYS zero-emission initiatives, but it does not reflect the benefits of the federal low-NOx rule. Commenter 7.

Comment 56: The emission benefits cited in the RIS are overstated. The business-as-usual modeling scenario was developed in 2021 and updated as part of this rulemaking, but it does not reflect the benefit of the federal Low NOx rule that was just adopted on January 24, 2023. Aside from these changes that are expected with CARB, TANY is also very concerned about the impact the regulation will have on the cost and availability of HDVs in New York. Commenter 7.

Comment 57: The RIS discussion of cost and benefits really fails to provide a detailed cost-benefit comparison to EPA's regulations. We truly believe that EPA's regulations should be compared to New York's in a more detailed manner to see if it would actually help achieve all the goals laid out in the Climate Act. The outcome would be much better if more time was provided to review and assess whether EPA will meet those standards. Commenter 1.

Comment 58: DEC has not conducted any independent analysis of whether the proposed opt-in will actually result in any net emissions benefits in New York. Instead, the DEC has relied almost exclusively on out-of-date California-focused analyses that CARB conducted nearly three

years ago. (See RIS, pp. 25-27.) In that regard, and as noted, the DEC has failed to quantify how the amount of emission reductions under EPA's finalized CTP regulations compare against the potential reductions under an HD Omnibus opt-in. The DEC should not proceed with the proposed rulemaking until that baseline quantitative comparative analysis is completed and vetted. Until the results from that most basic analysis are known, the DEC will not be able to establish that its proposed opt-in will yield any actual net benefits for New York. Indeed, as Exhibits "A" and "C" confirm, it is clear that the CTP regulations will yield greater net emissions benefits than would CARB's HD Omnibus regulations. Thus, it is equally clear that the DEC's opt-in proposal is unsound and unreasonable. Commenter 15.

Comment 59: In light of more recent technical developments and findings, EPA has rightly concluded that a full nationwide implementation of CARB's HD Omnibus program is not feasible. Perhaps even more significant, it appears that the DEC has not conducted any due diligence of its own regarding these important intervening technical developments, but instead appears to be relying solely on CARB's out-of-date and incomplete analysis from more than two years ago. (See DEC's RIS, pp. 25-27, 51, et seq.) That approach is insufficient to support New York's contemplated final adoption of the HD Omnibus regulations, especially since the DEC has not conducted any assessment whatsoever of the relative efficacy of EPA's recently finalized regulations. Commenter 15.

Comment 60: DEC's CARB-reliant cost-benefit analysis cannot and does not support the proposed rulemaking, especially when there is a more cost-effective alternative in the form of EPA's finalized CTP regulations. Commenter 15.

Response to Comment 54-60: The federal CAA requires that EPA and CARB provide manufacturers with adequate lead time when revising emissions standards. In accordance with the two-year lead-time requirements of Section 177 of the CAA,[91] the Department could not delay adoption of HD Omnibus (effective in CA with 2024 EMY) in its effort to require HD Omnibus-compliant engine and vehicle sales in New York beginning with the 2026 EMY.

The Department found that the California summary of HD Omnibus costs represent the best and most comprehensive source of cost information available. Where appropriate, the Department adjusted the California costs considering adoption in New York State.

The Department disagrees with the assertion that the projected benefits associated with NYS adoption of the HD Omnibus are overestimated. The Department's analysis included California costs that were deemed to be relevant to New York, excluded costs that were deemed not to be applicable in New York, and modified California costs and inputs for New York conditions. Furthermore, the Department's analysis applied New York's social cost of carbon set forth in the Department's Value of Carbon Guidance established under the CLCPA. The Department is

[91] 42 U.S. Code § 7507.

granted deference in selecting the methodology and conducting its analysis and determined that its referenced cost/benefit analysis to be reasonable and supported. The Department also evaluated information provided by stakeholders during the regulatory comment period and found varied assessments with both less and greater benefits reported for New York State adoption of the HD Omnibus regulation.

The Department notes that its cost/benefit analysis to support the HD Omnibus rulemaking was completed prior to EPA's release of its final CTP regulation. Even so, the Department conducted a review of the CTP regulatory docket and found that the CARB and EPA cost/benefit analyses for HD Omnibus[92] and CTP,[93] respectively, are not only directly aligned but in close agreement.

For reasons stated in Response to Comments 1-10, the Department did not pause the proposed adoption of HD Omnibus due to the anticipated development of related federal regulations. The Department (and other stakeholders) had petitioned EPA to complete revised federal national NOx standards as early as 2016.[94] There remains some uncertainty with the emission reduction benefits associated with the "final" CTP. As noted above, multiple Petition for Reconsideration

[92] CARB HD Omnibus Form 399 Attachment, Table E.1, p. 119.
[93] EPA, Regulatory Impact Analysis, "Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards," RIA EPA-420-R- 22-035. December 2022. Table 9-1, p. 404.
[94] South Coast Air Quality Management district et al. "Petition to EPA for Rulemaking to Adopt Ultra-Low NOx Exhaust Emissions Standards for On-Road Heavy-duty Trucks and Engines." June 3, 2016. Letter from New York DEC and other Organizations Joining the Petition June 15, 2016.

and, in the Alternative, for Rulemaking have been submitted to EPA.[95,96] The petitions describe concerns shared by the states regarding two provisions included in the final CTP: the temperature adjustment to the off-cycle NOx standards and the "interim" NOx compliance allowance for in-use testing.

Comment 61: The acknowledged costs of the California HD Omnibus Regulations of more than $1 billion will be passed on to NYMaterials members through higher upfront vehicle costs. This threatens the construction materials industry and thus the ability of the State to achieve the State's current mission as well as Climate Leadership and Community Protection Act (CLCPA) goals. Commenter 1.

Comment 62: The acknowledged costs of the California HD Omnibus Regulations of more than $1 billion will be passed on to AGC NYS members through higher upfront vehicle costs. This threatens the construction industry and thus the ability of the State to achieve the State's current mission as well as CLCPA goals. With already historic high inflation leading to less construction put in place, this added expense to contractors will in certainly drive-up costs to New York taxpayers in the state. Commenter 13.

[95] CARB, Petition for Reconsideration and, in the Alternative, for Rulemaking: Seeking the Amendment of the Rulemaking Entitled "Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards", EPA-HQ-OAR-2019-0055; FRL-7165-02-OAR, March 24, 2023

[96] States, Petition for Reconsideration of "Control of Air Pollution from New Motor Vehicles: Heavy Duty Engine and Vehicle Standards" (88 Fed. Reg. 4,296) (January 24, 2023); Non-Governmental Organizations, Petition for Reconsideration of "Control of Air Pollution from New Motor Vehicles: Heavy Duty Engine and Vehicle Standards," 88 Fed. Reg. 4,296 (Jan. 24, 2023) (EPA-HQ-OAR-2019-0055)

Response to Comments 61-62: As set forth in the RIS, the Department acknowledges there will be incremental purchase costs associated with the adoption of the HD Omnibus, but the monetary benefits of HD Omnibus outweigh the costs. The Department's cost/benefit analysis found that the costs of adopting HD Omnibus were $1,082,003,703, while the monetized benefits, including significant health benefits, of adopting HD Omnibus ranged from $825,000,000 - $1,859,000,000.[97] During California's rule making, CARB found that the benefit-cost ratio for their adoption of the HD Omnibus regulation was over eight, indicating the benefits greatly outweigh the costs.[98] Additionally, as a part of its cost/benefit analysis, the Department found that there would be $191,401,831 in savings to New York State consumers due to the warranty coverage and emissions warranty information and reporting requirements (EWIR) provision in HD Omnibus.[99]

Comment 63: DEC is simply applying a relative sales-based scaling factor to the understated cost estimates that CARB generated back in 2019 and 2020. (See RIS, pp. 51-54.) Commenter 15.

Response to Comment 63: As set forth in more detail in the RIS, the Department estimated the potential costs and savings associated with New York's adoption of California's HD Omnibus regulation by evaluating the California rulemaking analysis completed by CARB. The Department finds that the economic impacts assessment prepared by CARB for the implementation of the HD Omnibus regulation within the State of California adequately reflects

[97] DEC, RIS, Page 58.
[98] CARB, HD Omnibus Form 399 Attachment, Proposed Heavy-Duty Engine and Vehicle Omnibus Regulation and Associated Amendments, p. 117.
[99] DEC, RIS, Page 56.

the likely economic impacts that New York State would experience should New York State adopt identical HD Omnibus requirements. The Department concludes that the California cost analysis represents the most comprehensive and reliable source of cost information available.

The Department determined – and maintains – that the application of a scaling factor based on estimated future vehicles sales after an initial adjustment of California costs is an appropriate methodology for the determination of applicable New York State costs and benefits for several reasons. The Department evaluated California's cost analysis with consideration of the estimated number of future sales of HD Omnibus-certified engines in California[100] and New York during the period of 2026-2045. The New York State sales estimates of HD Omnibus-certified vehicles were based on the ICCT/Sonoma Technologies MOVES modeling exercise reflecting the revised business-as-usual (BAU) scenario.[101] While different emissions models (i.e., EMFAC, MOVES3) and assumptions were used to estimate the HD Omnibus ICE sales in California and New York, the Department found it appropriate to apply a NY/CA scaling factor of 0.59 to the applicable California incremental cost estimates.[102] The Department's application of the scaling factor was applied to both applicable California costs and savings.

The Department did not adopt the CARB cost analysis without due consideration of New York State factors. Contrary to the implication, the Department did not simply apply a single scaling

[100] CARB, HD Omnibus Form 399 Attachment, "Table B-4: Projected Statewide New Medium- and Heavy-Duty-Duty Engine Sales from 2022-2030," p. 28.
[101] DEC, RIS, p.47, *et. seq.*
[102] CARB, HD Omnibus Form 399 Attachment, "Table B-1: Estimated Proposed Regulation Statewide Incremental Costs from 2022 through 2050 (2018$)," p. 22.

factor to the California cost analysis. Some costs and savings within the CARB analysis were excluded while others were revised to reflect New York conditions. The Department made the following appropriate adjustments to California incremental costs, where applicable:

1. The Department excluded the first two years of any California incremental cost (categories noted above) to reflect different implementation schedules (i.e., CA: 2024 EMY, NY: 2026 EMY).
2. The Department excluded all California incremental costs during calendar years 2045-2050 as New York will require all new heavy-duty engine and vehicle sales to be ZEVs in New York State beginning in 2045, where feasible.
3. The Department excluded California's In-Use Amendments and Durability Demonstration incremental costs as these costs are not attributable to Section 177 states.
4. The Department considered diesel exhaust fluid costs in New York State for calendar years 2026 to 2050.

For these reasons, the Department maintains that, following initial adjustments to California's cost/benefit analysis, the use of a scaling factor based on estimated future vehicles sales is an appropriate methodology for the determination of applicable New York State costs and benefits.

Comment 64: There are multiple other reasons why the DEC's cost-benefit assumptions are insufficient. By way of example, the DEC has not provided any independent estimate of how many new conventionally fueled trucks supposedly would be sold and registered in New York on an annual basis from and after the 2026/2027 EMYs, also factoring any expected pre-buy/no-buy market behavior and product blackouts, if the DEC proceeds to implement the infeasible HD

Omnibus program. Without any attempted accurate estimate of those supposed in-State new truck sales, the potential emissions benefits in New York from opting-in to CARB's HD Omnibus rule cannot be assessed in any reasonable manner. The fact that the DEC has not yet assessed that most basic information in this rulemaking process (including the likely undermining of the DEC's prior opt-in to the ACT regulations) demonstrates that the regulatory impact analysis at issue is fundamentally inadequate. Commenter 15.

Response to Comment 64: Regarding vehicle availability and supply, please see the Response to Comments 69-82.

Regarding the "pre-buy"/"no-buy" scenario, please see the Response to Comments 32-45.

The Department's modeling of the benefits of the HD Omnibus regulation, as set forth in the RIS, appropriately models the future and sales of both conventionally fueled and M/HD ZEV trucks in New York State, accounting for New York State's specific laws, regulations, and executive policy.[103] For these reasons, the Department believes its cost-benefit analysis fully captures the effects of HD Omnibus.

Rulemaking Process

[103] ICCT, "Benefits of Adopting California Medium- and Heavy-Duty Vehicle Regulations," September 27, 2022. https://theicct.org/benefits-ca-multi-state-reg-data/.

Comment 65: The proposed rulemaking was issued both as an emergency rule, effective as of the December 2022 publication, and as a proposed promulgation. To the extent that this was completed to ensure that New York could mandate the rule as soon as the 2026 EMY, this will deprive the regulated industry (and manufacturers) of vital time to not only plan for the necessary upgrades (to the extent they exist and can be successfully implemented) but will force costs and operating uncertainty on these vehicles two years sooner. Crucially, the State Administrative Procedure Act (SAPA) does not allow an agency to adopt emergency rulemakings simply to beat the clock as DEC appears to be doing here. There must be lawful grounds to do so. This notice of emergency rulemaking does not comply with the SAPA requirements. The RIS fails to provide the necessary description of the nature of the alleged emergency - SAPA § 202(6)(d)(iv). To the contrary, the minimal statement makes it clear that the alleged emergency is of the State's own making. The emergency rulemaking is clearly intended to permit the new emission rules to apply to the 2026 EMY under 42 USC§ 7507. However, this is not a genuine emergency that supports an emergency rulemaking. Therefore, the emergency rulemaking is improper and should be rescinded. Demetriou v. New York state Dep't of Health, 74 Misc. 3d 792, 797-98 (Nassau County Sup. Ct. 1995). Commenter 1.

Comment 66: We would challenge the need for the emergency rule other than to stop the clock and meet the 2026 engine vehicle year as opposed to 2027. I urge DEC to pause action until such analysis with EPA can be completed to -- if they do, in fact, help achieve our goals and get us there in a more reasonable manner. Commenter 1.

Response to Comments 65-66: The Department's authority for its emergency adoption and findings of necessity are set forth fully in its rulemaking documents and are repeated here for convenience. The State Administrative Procedures Act (SAPA) Section 202(6) provides that a State agency may dispense with all or part of the normal rulemaking requirements and adopt a rule on an emergency basis if "[the] agency finds that the immediate adoption of a rule is necessary for the preservation of the public health, safety, or general welfare and that compliance with the [normal rulemaking] requirements ... would be contrary to the public interest." The Department amended 6 NYCRR Part 218 to incorporate the State of California's Heavy-Duty Omnibus Low NOx (oxides of nitrogen) regulation and Phase 2 Greenhouse Gas Standards for Medium- and Heavy-Duty vehicles ("HD Omnibus" and "P2 GHG," respectively). As further detailed below and in the Department's Notice of Emergency Adoption, the Department finds that failure to adopt and maintain the most stringent vehicle emissions standards possible by immediately adopting this amendment will be detrimental to the public health and general welfare in the State and that compliance with the normal rulemaking requirements would be contrary to public interest. In particular, failure to immediately adopt California's stricter motor vehicle emissions reduction program in New York will: 1) further exacerbate significant adverse impacts to human health, the environment and the general welfare; 2) result in New York's continued failure to attain the federal health-based air quality standards; 3) hinder New York's ability to meet its climate action goals; and 4) result in New York's failure to regulate model year 2026 and subsequent medium- and heavy-duty engines regulated under this amendment as prescribed by the CAA's two-year lead time requirement.

New York first adopted California's new motor vehicle standards in 1990 pursuant to section 177 of the federal CAA and has maintained the program – including adoption of GHG emissions standards and revisions concerning ZEV sales – since then. New York has regularly adopted these programs to provide significant air pollutant emissions reductions compared to its federal emissions counterparts and are included within New York's State Implementation Plan (SIP). As stated in the Department's RIS, New York State must maintain compliance with recent improvements in the California standards to achieve the necessary reductions of pollutants that aid in the formation of ground-level ozone, as well as climate change. As required by Section 177 of the CAA, the Department's adoption of California's ACT, HD Omnibus, and HD Phase 2 GHG standards, respectively, will maintain identicality with California's current heavy-duty motor vehicle standards.

As further detailed in the Department's RIS, motor vehicles are responsible for a significant portion of urban air pollution by emitting carbon dioxide, carbon monoxide, hydrocarbons, NOx, and PM, as well as mobile source air toxics such as benzene, formaldehyde, acetaldehyde, 1,3-butadiene and lead. Some of these emissions are ozone precursors that lead to ground-level ozone formation. Ground-level ozone is formed by photochemical reactions when emissions of NO_x and volatile organic compounds mix under sunny, hot conditions.

M/HDVs are major contributors of ozone precursors. It is estimated that on-road M/HDVs emitted approximately 40,765 tons of NO_x in New York State in 2017. M/HDVs account for approximately 46 percent of the total on-road vehicle NO_x emissions while making up a smaller

percentage of all on-road vehicles. The immediate adoption of this amendment is critical to meeting federal health-based air quality standards and providing clean air to the citizens of New York. A portion of New York State still does not meet federal health-based NAAQS for ozone and continues to be categorized by EPA as a nonattainment area. Recently, the New York-Northern New Jersey-Long Island, NY-NJ-CT nonattainment area - also referred to as the New York Metro nonattainment area and comprised of Bronx, Kings, Nassau, New York, Queens, Richmond, Rockland, Suffolk, and Westchester Counties - failed to attain the NAAQS by the July 20, 2021 federal deadline. In response, EPA reclassified the New York Metro nonattainment area from "serious" to "severe" – thus requiring New York to take additional measures to reduce harmful pollutants. Thus, reductions in motor vehicle emissions are critical to meeting the ozone NAAQS.

On-road M/HDVs also accounted for approximately 3,345 tons of fine particulate matter ($PM_{2.5}$) in New York State in 2017. Diesel $PM_{2.5}$ emissions are especially hazardous as a number of chemical components are currently deemed to be known, probable, or possible carcinogens. In 2012, the World Health Organization's International Agency for Research on Cancer evaluated the full range of cancer-related health effects data for diesel engine exhaust and concluded that diesel exhaust should be regarded as ''carcinogenic to humans."

Tailpipe emissions resulting from fossil fuel combustion also pose a major threat to children's health and wellbeing with impacts such as "impairment of cognitive and behavioral

development, respiratory illnesses, and other chronic diseases."[104] Ground-level ozone can also impair lung function in otherwise healthy people, which can result in significant hospitalization costs and mortality rates, both of which are higher in New York State than the national average. Research indicates that "ambient air pollution is the leading environmental health risk factor globally" and New York ranks eleventh among major cities for deaths attributable to transportation emissions, with 24.4 percent of PM- and ozone-related deaths being transport-attributable.[105] $PM_{2.5}$ emissions from on-road mobile sources in the New York City region have been estimated to contribute to approximately 320 deaths and 870 hospitalizations and emergency department visits annually. Of the 320 annual deaths attributed to $PM_{2.5}$ emissions, 170 deaths can be associated with buses and trucks.

Also, the effects of motor vehicle emissions disproportionately affect those who live, work, or attend school near major roads resulting in increased incidence rate and severity of health issues associated with air pollution from vehicle emissions such as "higher rates of asthma onset and aggravation, cardiovascular disease, impaired lung development in children, pre-term and low-birthweight infants, childhood leukemia, and premature death."[106]. Those included in this higher risk group include children, older adults, people with pre-existing pulmonary disease, and people of low socioeconomic status. Additionally, low-income and DACs are often disproportionately affected by emissions from freight movement due to their proximity to transportation infrastructure.

[104] DEC, RIS, footnote 15.
[105] DEC, RIS, footnote 17.
[106] DEC, RIS, footnote 20.

Additionally, the adoption of this amendment supports the requirements of New York's CLCPA, which established ambitious climate policy goals. Climate change is having adverse impacts on human health and the environment, including increased heat illnesses and mortality, respiratory illnesses from increased formation of ground-level ozone, and the introduction or spread of vector-borne illnesses. Climate change is also adversely impacting New York State's shoreline, drinking water sources, agriculture, forests, and wildlife diversity. Climate change trends such as rising temperatures, rising sea levels, and increased frequency of intense precipitation events have already been observed and these trends are expected to continue throughout the century.

To mitigate or avoid the adverse impacts of climate change, the State has established the CLCPA to put New York on the path to carbon neutrality with the nation's most aggressive GHG reduction requirements. The CLCPA's targets include 70 percent renewable energy by 2030; 100 percent zero-emission energy by 2040; and an 85 percent reduction in GHG emissions from 1990 levels by 2050. The CLCPA established a 22-member Climate Action Council (CAC) charged with the development of a Scoping Plan to address the State's bold clean energy and climate agenda. As part of the Scoping plan, a Transportation Advisory Panel was created to develop and provide the CAC with a list of recommended strategies. A significant component of those strategies includes the consideration of California's ZEV regulations for passenger vehicles, trucks, buses, and heavy equipment. The CLCPA requires bold action in addressing climate change, and the immediate adoption of this amendment will support the emission reduction requirements of the CLCPA and addressing adverse impacts to health and welfare from the transportation sector.

For the Department to ensure the goals established by the CLCPA and the federal CAA are met, it was critical that strict emission standards for M/HDVs were adopted no later than the end of 2022. CAA Section 177 requires that States seeking to adopt California's more protective new motor vehicle standards to provide motor vehicle manufacturers with two full years advanced notice - referred to as a two-year lead time - before the start of the vehicle model year. A model year starts as early as January 2 of the preceding calendar year. In order for New York to achieve the emission reduction benefits under this amendment and avoid adverse impacts to human health and the environment caused by a delay or failure to effectuate these measures, New York must adopt this amendment prior to January 2, 2023, which is two years prior to the January 2, 2025 start date for the 2026 model year vehicles targeted under this amendment. As detailed in the RIS, the failure to adopt this amendment for the 2026 MY will result in an estimated emissions reduction loss of 360 tons of NOx for that year alone.[107] As set forth above, each model year delayed will result in ever-increasing adverse human health and environmental impacts from harmful motor vehicle emissions - thereby pushing New York further away from attaining the federal air quality standards and the State's climate action goals under the CLCPA.

As set forth in these findings, failure to maintain the most stringent vehicle emissions standards possible by immediately adopting this rule will be detrimental to the public health and general welfare of New York. While the Department prefers to submit a rule through the normal State rulemaking process, compliance with the normal rulemaking requirements of SAPA Section 202

[107] DEC, RIS, Table 8.

would be contrary to the public interest in this instance as the immediate adoption of this rule is necessary to preserve the public health and general welfare of the citizens of the State. As explained in the foregoing, the loss in emission reductions from new motor vehicles caused by the failure to adopt this amendment prior to the end of 2022 would detrimentally impact human health in New York, the State's ability to attain the health-based NAAQS as required by the CAA and impair New York's ability to meet the ambitious climate action goals of the CLCPA. To maintain the cleanest motor vehicle standards available to New York, we must adopt these standards now. This amendment is adopted as an emergency measure because time is of the essence.

Delay Adoption

Comment 67: The emergency rulemaking is not proper and, therefore, any final rule should only apply to the 2027 EMY, the same as the EPA's final regulations. Complying with a proper rulemaking timeline would also allow DEC to evaluate EPA's proposal and the costs and benefits of that proposal compared to the California HD Omnibus Rule. Thus, there is no discernable environmental harm by deferring action on adopting the California HD Omnibus Regulations, at least until EPA's final low-NOx regulations can be assessed to verify that New York's needs will be addressed under the EPA's national, pragmatic, and more cost-effective regulations. The outcome would be a better written rule that provides more opportunity for emissions reductions or alternatives that can manage costs and business expectations. Commenter 1.

Comment 68: We encourage DEC to delay the adoption of the HD Omnibus regulation until all stakeholders can understand what changes CARB makes, how that compares to the federal rule, and what their impacts will be in New York State. Commenter 7.

Response to Comments 67-68: In addition to the reasons stated elsewhere in this document, the RIS, and the Department's Certificate of Adoption and Findings of Necessity, the Department disagrees that no environmental harm would be done by deferring adoption. Adoption of HD Omnibus for the 2026 EMY would provide 360 additional tons of needed NOx reductions, benefitting the NYMA nonattainment area and DACs throughout the state. See Response to Comments 1-10 and 65-66.

Vehicle Availability

Comment 69: We understand that if this regulation goes into effect, it will substantially limit the availability of new HDOH trucks for sale in New York State, starting as early as 2026. Our businesses, and others like ours, need to be able to buy new trucks to maintain and grow our businesses, and we cannot compete without the means to produce, transport, and sell our goods. Commenters 2, 3, 5, 6, 11, 12.

Comment 70: We understand that if this regulation goes into effect, it will substantially limit the availability of new HDOH trucks for sale in New York State, starting as early as 2026. It is

imperative for our industry that the ability to purchase new trucks remains viable and affordable. Commenter 4.

Comment 71: Adoption of the proposed regulations will limit the availability of new HDOH trucks for sale in New York and substantially raise the cost of those trucks, something the trucking industry can ill afford. Commenter 7.

Comment 72: Trucking Association of New York anticipates that considering the new national standard that manufacturers may choose not to produce CARB-compliant HDOH trucks for sale in New York as of the 2027 EMY. According to the Truck and Engine Manufacturer's Association, no commitments have been made by any OEM regarding the availability of CARB-compliant products for the 2027 EMY and beyond. Commenter 7.

Comment 73: If this regulation goes into effect, it will substantially limit the availability of new HDOH trucks for sale in New York State, starting as early as 2026. Not only will inventory be severely restricted, but the price of available trucks will also skyrocket. Our businesses, and others like ours, must regularly buy new trucks to maintain and grow our businesses. The prices contemplated for a truck if this regulation were to be adopted will cripple our small businesses and will inhibit the ability of many of the companies to buy new, more fuel-efficient trucks. Commenter 8.

Comment 74: If this regulation goes into effect, it will substantially limit the availability of new HDOH trucks for sale in New York State, starting as early as 2026. Not only will inventory be severely restricted, but the price of available trucks will also skyrocket. The majority of movers in New York State are small, family-owned businesses that operate on small margins. Our businesses, and others like ours, must regularly buy new trucks to maintain and grow our businesses. The prices contemplated for a truck if this regulation were to be adopted will cripple our small businesses and will inhibit the ability of many of the companies to buy new, more fuel-efficient trucks. Commenter 9.

Comment 75: New York State County Highway Superintendents Association understands that if this regulation goes into effect, it will substantially limit the availability of new HDOH trucks for sale in New York State, starting as early as 2026. Our construction vehicles and equipment needs are highly specialized, have demanding performance standards and must be adaptable to accept interchangeable attachments. Municipalities should be assured that a significant variety of these trucks will be available at scale to purchase and at reasonable cost to the taxpayers before moving forward. We see no evidence that the market for these trucks that meet the new standards will exist in any meaningful way under the proposed timeframe. Commenter 10.

Comment 76: New York franchised truck dealers would not have the ability to acquire compliant new truck inventory – which may ultimately result in the loss of this sector of the retail industry. Commenter 12.

Comment 77: Our truck division members sell heavy duty trucks. Manufacturers are advising our members there will be few if any heavy-duty trucks that conform to the draft regulations available for the 2026/2027 EMY. If the draft regulation goes into effect in the projected time frame, NYSADA's truck division dealers will have few, if any, heavy duty trucks to sell. That will harm our dealers and their employees, and the State's economy. Commenter 14.

Comment 78: Due to the now-confirmed infeasibility of CARB's standards, if the DEC proceeds to implement those standards, it can be anticipated that manufacturers will not produce CARB-compliant HDOH trucks for sale in New York as of the 2027 EMY. Consequently, it is highly likely that if the DEC adopts the HD Omnibus regulations, there will be significant shortages (or "product blackouts") of new trucks available for sale in New York to truck dealers and truck operators as of 2027. Commenter 15.

Comment 79: Not one OEM has committed to certify any HDOH truck engines to CARB's 2027 EMY HD Omnibus standards. Thus, the product blackouts occurring now under the HD Omnibus regulations will only get substantially worse, including in New York, as of 2027. States outside of California should work to avoid (not implement) that type of adverse market outcome. Otherwise, the consequences could be severe – both environmentally and economically. Commenter 15.

Comment 80: DEC's opt-in proposal utterly fails to account for the likely result that manufacturers will simply choose to exit the New York market for new HD/MD vehicle sales

rather than trying to comply with CARB's infeasible and cost-prohibitive HD Omnibus standards. Commenter 15.

Comment 81: We understand that if this regulation goes into effect, it will substantially limit the availability of new HDOH trucks for sale in New York State, starting as early as 2026. Municipalities need to be able to buy new trucks to maintain our aging transportation infrastructure. Commenter 16.

Comment 82: Since the HD Omnibus regulations are largely infeasible as a practical matter, their adoption almost certainly will lead to product blackouts, which will reduce fleet turnover. Commenter 15.

Response to Comments 69-82: As stated above, and as discussed in the RIS, emissions testing conducted by the SwRI has shown that the 2026 EMY standards are achievable. DEC believes there will be a sufficient volume of trucks available in the 2026 EMY as manufacturers are required to produce HDVs certified to these emissions standards as early as the 2024 EMY in California. This concern may be further diminished with additional compliance flexibility being considered by CARB under the existing legacy engine provisions. By considering industry input,[108] CARB is demonstrating its desire to work with manufacturers to prevent any product

[108] CARB, Resolution 23-15, "Delegation of Authority to the Executive Officer to Consider Proposed Amendments to Mobile Source Regulations," p. 2, March 23, 2023. https://ww2.arb.ca.gov/sites/default/files/barcu/board/res/2023/res23-15.pdf.

shortages. Any amendments that CARB implements to HD Omnibus would need to be reviewed by New York for purposes of maintaining identicality.

Regarding the potential legacy engine provisions amendments, please see Response to Comments 116-120.

For concerns with the technical feasibility of the HD Omnibus standards, please see Response to Comment 19.

NY Vehicle Sales Will Be Lost to Other States

Comment 83: We will have to undertake costly extended maintenance of older trucks, lose business when those older trucks can no longer function, and New York truck sales will be lost to other states – all while producing no net emissions reductions, and likely producing more emissions than if New York simply aligns with the nationwide low-NOx regulations adopted by EPA, as discussed below. Commenters 2, 3, 5, 6.

Comment 84: Additionally, New York truck sales will be lost to other states – all while producing no net emissions reductions, and likely producing more emissions than if New York simply aligns with the recent nationwide low-NOx regulations adopted by EPA. Commenter 4.

Comment 85: New York customers interested in or needing to buy newer more efficient trucks will be forced to buy out of state, costing New York millions in lost sales and associated sales tax revenue. Commenter 12.

Comment 86: In addition, to the extent that fleet operators are compelled to acquire new vehicles out-of-state, that would result in a cascading series of negative economic impacts as well. Commenter 15.

Response to Comments 83-86: Many of New York's neighboring states are also "Section 177" states that have adopted, or intend to adopt, California's HD Omnibus regulation. See Response to Comments 48-53 for further details.

DEC does not expect a significant loss of new HDV sales to states that certify to federal CTP standards. Once HD Omnibus is implemented in NY (EMY 2026), any non-California certified vehicle will not be able to be registered in New York State if it has been operated fewer than 7,500 miles.[109]

Vehicle Costs

[109] 6 NYCRR Subdivision 218-2.1(c).

Comment 87: Even if truck manufacturers are able to build and offer California-compliant trucks in New York, the relative sales prices of those limited-available trucks is expected to increase dramatically compared to federally certified trucks, by approximately $35,000 per-truck. For our and other businesses that are already struggling due to the pandemic and the current surge in inflation, that would be overwhelming and would result in the potential shuttering of businesses, lost jobs and adversely impacted communities throughout the state. Commenters 2, 3, 5, 6, 9, 12.

Comment 88: If manufacturers cannot build and offer compliant trucks in New York, the additional cost and limited supply is expected to dramatically increase their relative sales price compared to a federally compliant truck, by approximately $45,000 per truck. For our industry, which is currently navigating a significant labor shortage, rising inflation and an uncertain economic climate, these increased costs are significant and disruptive. Commenter 4.

Comment 89: We also believe that even if truck manufacturers are able to build and offer California-compliant trucks in New York, the relative sales prices of those limited-available trucks are expected to increase dramatically compared to federally certified trucks. For our customers and our businesses that are already struggling due to the pandemic, the current overall surge in inflation, and the specific price increases in fuels, the cost increases would be overwhelming and could result in the downsizing of businesses, lost jobs, and hindered delivery of essential liquid fuels to consumers in the state. Commenter 8.

Comment 90: We are further advised that even if truck manufacturers are able to build and offer California-compliant trucks in New York, the relative sales prices of those limited-available trucks is expected to increase dramatically compared to federally certified trucks, by approximately $35,000 per-truck. For our businesses that are already struggling due to recently adopted labor costs specific to farmers, the pandemic, the impact of the Ukrainian war affecting our input costs, other supply chain issues, and the current surge in inflation, this rule would be overwhelming and would result in the potential shuttering of businesses, lost jobs and adversely impacted communities throughout the state. Commenter 11.

Comment 91: DEC claims that the costs to HDOH vehicle purchasers in New York from the proposed opt-in will be approximately $5,400 per-truck starting in the 2027 EMY. (Id. at 61.) That cost estimate is unreasonably low. More recent analyses by ACT Research and Ricardo confirm that the per-truck cost impacts of CARB's HD Omnibus regulations would be approximately $35,000 for HHD trucks, not including the extra operating costs associated with increased diesel exhaust fluid usage. Commenter 15.

Comment 92: We are further advised that even if truck manufacturers are able to build and offer California-compliant trucks in New York, the relative sales prices of those limited- available trucks is expected to increase dramatically compared to federally certified trucks, by approximately $35,000 per-truck. For our municipalities already struggling due the current surge in inflation, that would be overwhelming. Commenter 16.

Response to Comments 87-92: DEC disagrees with the magnitude of the incremental cost increases stated by the Commenters. The final California cost analysis provided a range of purchase price increases associated with the revised HD Omnibus requirements. These ranged from a low of $413 for MDOE-3 vehicles (across all steps of HD Omnibus) to a high of $6,737 for heavy heavy-duty diesel vehicles during the EMY 2027 to EMY 2030 step of HD Omnibus.[110] Further, EPA found the per-vehicle costs of their final CTP standards ranged from $2,458, for gasoline heavy-duty engines used in transit buses and other buses, to $8,304 for heavy heavy-duty diesel engines used in various applications.[111] The Department found the California cost analysis to be the best and most comprehensive source of information. The adoption of HD Omnibus is not expected to result in any significant impact to business competitiveness.

Industry stakeholder concerns regarding the compliance cost estimates were previously raised during California's HD Omnibus rulemaking. Independent cost evaluations have since been completed by various organizations considering the final step of the HD Omnibus regulation (2031 EMY). These evaluations report a wide range in incremental per-engine cost estimates, with the following serving as examples for 12L-13L engines. ICCT estimated an increase of $2,170 to $3,239 for the cost of hardware, durability, and research & development (R&D).[112] MECA estimated an increase of $3,550 to $4,800 for the cost of hardware, durability, R&D, and

[110] CARB HD Omnibus Form 399 Attachment, Tables B-52, B-53, and B-54.
[111] EPA, "Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards," Final Rule. Published January 24, 2023, effective March 27, 2023. Tables V-10 through V-16. 88 FR 4409-4412..
[112] ICCT, "Estimated Cost of Diesel Emissions-Control Technology to Meet the Future California Low NOx Standards in 2024 and 2027." https://theicct.org/publications/cost-emissions-control-ca-standards.

warranty costs.[113] CARB estimated an increase of $6,057 for the cost of hardware, durability, R&D, warranty costs, and compliance activities.[114] On the other extreme, through surveys of its commercial vehicle and engine manufacturer members, EMA estimated an increase of up to $80,821 for hardware, durability, R&D, warranty costs, and compliance activities.[115]

In response to proposed warranty requirements concerns, CARB was directed to engage with affected stakeholders to conduct a warranty cost study. CARB's warranty study concluded that, "…the Omnibus Regulation requirements continue to be cost-effective with benefits estimated to outweigh its costs by a factor of 10 (i.e., monetized benefits of $23.4 billion vs. costs of $2.39 billion)."[116] CARB's analysis[117] raised concerns with alternate estimates and, as noted elsewhere in this document, is considered the best source of information.

Comment 93: The DEC, like CARB, also tries to claim that some of the expected per-truck cost increases will be offset by the "savings over time in reduced operation and maintenance expenses." (Id. at 56.) That is a flawed assumption, since it presumes that OEMs will not be able to accurately assess and pass on to customers the actual costs associated with lengthened

[113] MECA, "Technology Feasibility for Heavy-Duty Diesel Trucks in Achieving 90% Lower NOx Standards in 2027," p.3. February 2020. https://www.meca.org/wp-content/uploads/resources/MECA_2027_Low_NOx_White_Paper_FINAL.pdf.
[114] CARB, HD Omnibus FSOR, p.305. This number is updated from $8,478 estimate in the CARB HD Omnibus ISOR to account for the ACT regulation and the 30-Day and 15-Day Notice Amendments.
[115] EMA, Comments of the Truck and Engine Manufacturers Association to the State of California Air Resources Board, p.5. August 13, 2020. https://www.arb.ca.gov/lists/com-attach/8-hdomnibus2020-1jACGvmafqDgElXk.pdf.
[116] CARB, California Air Resources Board Staff Report on the Warranty Cost Study for 2022 and Subsequent Model Year Heavy-Duty Diesel Engines, December 2021, p. ES-2. https://ww2.arb.ca.gov/sites/default/files/2022-01/warranty_cost_study_final_report.pdf.
[117] CARB HD Omnibus FSOR, p.305 argues EMA's cost assessment is artificially high, as it cumulates costs per engine by summing costs for 2024, 2027, and 2031 EMY requirements, and it assumes the entire aftertreatment system would need to be replaced two times over the heavy HDV useful life.

emission warranties and regulatory useful lives. The history of pricing in the HDOH engine and vehicle market conclusively refutes that assumption. Commenter 15.

Response to Comment 93: As set forth in the RIS, the HD Omnibus regulation will result in an incremental cost increase to a new vehicle purchase, which is expected to be passed on to the consumer. Estimates of incremental vehicle purchase costs increases vary and are driven by differing cost estimates associated with lengthened warranty periods. See Response to Comments 87-92 for more details. However, there are some benefits and savings provided to the consumer (not manufacturer) over the lifetime of these vehicles due to the warranty coverage and EWIR provisions of HD Omnibus. The operational benefits and savings to the consumer include less out-of-pocket costs for repairs during the longer warranty periods; more durable component design by manufacturers considering the lengthened useful life periods and durability demonstration protocol for lengthened useful life periods, resulting in fewer failures and downtime; and more savings and less out-of-pocket costs attributed to extended warranties and recalls from the EWIR provisions.[118] CARB is considering amending HD Omnibus to more closely align with EPA's final CTP. See Response to Comment 12 for more details.

Comment 94: Though the lifecycle cost increase of buying a new, cleaner diesel truck meeting the 0.02 g/bhp-hr proposed standard ranges from about 5 to 9 percent, depending on the truck size and EMY, this is unlikely to be a barrier to many businesses purchasing new trucks,

[118] CARB HD Omnibus Form 399 Attachment, p. 99.

particularly if financial incentives are designed to address the upfront cost in the early years of deployment. Commenter 74.

Response to Comment 94: The Department thanks you for your comments. The Department agrees that that the costs associated with HD Omnibus are reasonable considering the corresponding monetized benefits.

Industry- and Business-Specific Impacts

Comment 95: If the DEC adopts the HD Omnibus regulations, our businesses will be harmed. Commenters 2, 6, 8, 9.

Comment 96: If the DEC adopts the HD Omnibus regulations, our businesses will be harmed or potentially destroyed. Commenter 5.

Comment 97: If this regulation is permanently adopted, it will negatively impact our region's businesses. Commenter 3.

Comment 98: If the DEC adopts the HD Omnibus regulations, Capital Region businesses will be harmed. Commenter 3.

Comment 99: If the DEC adopts the HD Omnibus regulations, our businesses will be harmed, and our consumers will be paying higher costs for fresh food. Commenter 11.

Comment 100: If the DEC adopts the HD Omnibus regulations, these businesses will be harmed and so will the many union workers employed at our local dealerships. Commenter 12.

Comment 101: We are especially concerned about the impact this will have upon the franchised retail truck dealers and the thousands of people who are employed to support these operations. Commenter 12.

Comment 102: If this regulation is permanently adopted, it will impact our industry businesses by not only increasing costs but also making it more difficult to deliver goods to our customers and for these reasons, we urge DEC to not adopt this regulation. Commenter 6.

Comment 103: If this regulation is permanently adopted, it will impact our businesses by leading to not only increased costs for consumers but a loss of jobs in the moving industry. For these reasons, we urge DEC to not adopt this regulation. Commenter 9.

Comment 104: If this regulation is permanently adopted, it will impact our businesses by leading to not only increased costs for consumers but a loss of jobs in the energy industry. For these reasons, we urge DEC to not adopt this regulation. Commenter 8.

Comment 105: If this regulation is permanently adopted, it will significantly impact our businesses by creating product blackouts, increased transportation costs for farmers, and higher food costs for consumers. For these reasons, we urge DEC to not adopt this regulation. Commenter 11.

Comment 106: If this regulation is permanently adopted, it will impact our businesses by loss of jobs, increased costs, unavailability of inventory to sell to local buyers, and for these reasons, we urge DEC to not adopt this regulation. Commenter 12.

Comment 107: The impacts to New York businesses and consumers if new trucks are not available for purchase will be profound. Goods movement is the life blood of the State's economy. If that vital function is hampered or diminished due to the absence of new trucks to do the work in a reliable and cost-effective manner, every aspect of the State's economy will suffer. Commenter 15.

Comment 108: If this regulation is permanently adopted, it will negatively impact our taxpayers and for these reasons, we urge DEC to not adopt this regulation. Commenter 16.

Comment 109: To be clear, the trucking industry fully supports policies that address climate change and incentivize the ship's cleaner vehicles. However, it must be done in a commonsense manner that allows the trucking industry the ability to comply. Continually, increasing the cost associated with operating trucks in New York will only serve to harm this essential industry forcing many small businesses to consider closing their doors or moving operations out of the state. It's not that they don't want to invest in cleaner vehicles, they simply cannot afford to. Commenter 7.

Comment 110: We believe the proposed rules would do nothing more than what the EPA regulations produce and would inflict serious and possibly irreparable harm on our 148 truck/RV dealer members and their 7,400 direct employees. Commenter 14.

Response to Comments 95-110: The analysis provided within the RIS has shown that the benefits of HD Omnibus likely outweigh the costs, as set forth in Response to Comments 61-62. The Department does not anticipate any significant impact to jobs/business creation, elimination, or expansion as a result of the HD Omnibus adoption and implementation.

Additionally, CARB found as a part of their HD Omnibus rulemaking that:

> *The Proposed Regulation is not anticipated to directly result in business creation or elimination. The Proposed Regulation may indirectly have a small impact on business*

creation or elimination as California fleets that purchase California-certified vehicles will face increased costs... The overall job impacts of the Proposed Regulation are small relative to the total California economy. The Proposed Regulation is unlikely to cause impacts of greater than 0.0 percent increase or a 0.01 percent decrease in jobs in any given year. The sector most impacted would be the transportation sector, and the years with maximum impact would be 2029 through 2050 where employment is estimated to decrease by 0.02 percent relative to the baseline.[119]

Comment 111: We are especially concerned about the impact this will have upon the Motor Transport industry including Governmental and Municipal vehicles, food services, emergency vehicles including ambulances, police vehicles, and all vehicles involved in promoting the continuation of commerce. Commenter 5.

Comment 112: If this regulation is permanently adopted, it will impact our businesses by the potential of not being able to provide diesel powered vehicles for all types of transport vehicles including front line safety, emergency and required delivery vehicles and the potential loss of jobs, substantial increase in cost of operations and for these reasons, we urge DEC to not adopt this regulation. Commenter 5.

[119] CARB HD Omnibus Form 399 Attachment, p. 15.

Response to Comments 111-112: See Response to Comments 95-110. In addition, emergency vehicles defined by 6 NYCRR Subpart 218-2.1(b) are exempt from these regulations.

Comment 113: The retail food industry and the entirety of the food supply chain are heavily reliant on the trucking industry. Permanent adoption of the proposed regulations will greatly disrupt the food supply chain, causing irreparable harm on our industry and within the communities we serve. Commenter 4.

Comment 114: Also, consider the food supply chain which stretches from coast to coast, as highlighted numerous times during the COVID pandemic. The shortages and delays in product availability ebbed and flowed throughout the pandemic and lingers still. This has driven public awareness as to the dependency that our industry has on the policies and procedures adopted by the federal government and by neighboring states. The proposed HD Omnibus wholly fails to acknowledge the layers of complexity within the supply chain, the significant reliance the food industry has on the trucking industry and the impact on the operations of businesses that do not strictly operate within the confines of the state. The food industry is essential to every community across the state and country. We pride ourselves in promoting health living, a cleaner environment, and community investment. Yet the fact remains that the grocery industry is in a financially volatile situation, with annual increases in operations. The industry already operates on finite profit margins. We cannot afford to be further squeezed without proper consideration of the costs. Commenter 4.

Comment 115: We are especially concerned about the impact this will have upon the agricultural industry. From the COVID-19 pandemic, farmers and consumers alike have learned how important the supply chain is. Any negative impacts to the supply chain resulted in a disruption to farmers and the inputs they needed for their businesses. Negative impacts to the supply chain also resulted in consumers having difficulties in accessing affordable, fresh food. This regulation would have a similar impact to farmers and consumers. Many farmers are in a unique industry in that they buy inputs for their businesses at retail value, but largely sell their products at a wholesale value. This creates incredibly thin margins for farmers to operate their businesses. The agricultural industry is also adjusting to increased labor costs from a variety of recently adopted legislation. To further add operating costs as a result of adopting these regulations would be a misstep for our farmers. Commenter 11.

Response to Comments 113-115: See Response to Comments 95-110. The Department does not anticipate any disruption to the supply chain as a result of these regulations.

Potential California HD Omnibus Amendments to Legacy Engine Provision

Comment 116: Adoption of the regulations would be premature at this time. During a workshop held by CARB on February 13, 2023, it was acknowledged that unanticipated changes in product lines have prevented manufacturers from producing engines certified to the California 2024 standard. As a result, CARB has recognized that additional flexibility may be needed in their own HD Omnibus rule. CARB is looking at several possible solutions to address the issue,

including adjusting the 45 percent and 25 percent production caps on legacy engines; changing the NOx credit pricing threshold from $4,000 for each medium and heavy-duty engine to dollar per Megagram ($/Mg); and allowing cross-trading of credits between different service classes to offset legacy engine deficits. We anticipate that there will need to be CARB action in April or later to avoid limiting the supply of new trucks offered for sale in California. Commenter 7.

Comment 117: CARB has conceded at a workshop held on February 13, 2023 that OEMs have confirmed that they will only be able to certify very limited numbers and types of new trucks to the CARB HD Omnibus standards starting in 2024. Faced with those very real product constraints and blackouts, CARB staff are scrambling right now to try to increase and extend out to 2026 the allowances under the HD Omnibus regulations for the sale of "legacy" engines meeting the current 2023 EMY emissions standards. CARB materials regarding the pending blackout-motivated amendments to the HD Omnibus regulations are attached as Exhibit "B." Commenter 15.

Comment 118: Commercial vehicle and engine manufacturers likely will be so overwhelmed by the scope, stringency, and timing of CARB's HD Omnibus requirements that the major manufacturers will be forced to exit the California market. Indeed, that is happening right now, and CARB staff are being forced to make last-minute regulatory amendments to allow for the increased sales of "legacy" engines over longer periods of time. Commenter 15.

Comment 119: The consequences of product blackouts due to the constraints of the HD Omnibus regulations are very real. Indeed, on February 13, 2023, CARB held a workshop to announce that it will have to revise and expand the flexibilities and exemptions available during the first three years of the HD Omnibus program to address the fact that without those substantive amendments, the availability of new trucks will drop dramatically, such that the leading OEMs will only be able to cover a fraction of the medium-duty and heavy-duty engine market in California. To remedy that major problem, CARB is proposing to raise and extend the cap on the sale of legacy engines, 0.2 gram engines, during the first three years of the HD Omnibus program. CARB will present these proposed amendments at a public workshop on March 3rd. The same product availability concerns are almost certain to persist, if not worsen, when the HD Omnibus NOx standards drop to 0.02 grams in 2027-- what would be the second year of New York's opt-in. Indeed, no OEM – not one – has committed to the manufacture of any diesel medium-duty or heavy-duty engines meeting CARB's 0.02 gram NOx standard. The last-minute amendments that CARB is being forced to consider to try to assure product availability serve as implicit confirmation that the HD Omnibus regulations as originally enacted are not fully feasible or implementable. Commenter 15.

Comment 120: We feel the adoption of the CARB standards at this time would be premature. CARB is currently proposing to revise the HD Omnibus regulation due to manufacturers not being able to produce engines certified to the new California 2024 standard. They're actually looking at increasing the number of federally certified engines that can be sold in California, and this information was just made public on February 13, 2023. We suspect there will be board

action in April or later to avoid limiting the supply of new trucks being offered for sale in California. Commenter 7.

Response to Comments 116-120: CARB is demonstrating its desire to work with manufacturers to prevent any product shortages and is seeking comment from applicable engine manufacturers regarding potential revisions to the existing (EMY 2024, 2025) legacy engine provision amendments. CARB, through its Resolution 23-15, granted its Executive Officer the authority to approve revisions to its mobile source regulations "in order to provide engine and vehicle manufacturers additional compliance flexibility so that such manufacturers can more easily transition to the more stringent requirements of applicable mobile source regulations, while also ensuring those flexibilities will not (emphasis added) reduce the emissions benefits of CARB's mobile source regulations…"[120] Any amendments that CARB adopts into HD Omnibus will need to be subsequently reviewed by NYS for purposes of maintaining identicality.

Increased Cost to Consumers

Comment 121: The heightened costs to consumers cannot be ignored. New York is already the fourth highest cost-of-living state in the United States (U.S.).[121] New Yorkers will be forced to bear the burden of the higher trucking costs as a result of both maintaining older trucks and

[120] CARB, Resolution 23-15, "Delegation of Authority to the Executive Officer to Consider Proposed Amendments to Mobile Source Regulations," March 23, 2023. https://ww2.arb.ca.gov/sites/default/files/barcu/board/res/2023/res23-15.pdf.
[121] Missouri Economic Research and Information Center. https://meric.mo.gov/data/cost-living-data-series.

purchasing New York compliant trucks. It has been determined by the U.S. Department of Agriculture that food price inflation has had a 20.4 percent change from 2018-2022. The only other category that outpaced the food inflation changes were transportation costs, at a 26.4 percent increase.[122] These increased costs to consumers would impede their abilities to purchase fresh and affordable food. Commenter 11.

Response to Comment 121: Regarding "pre-buy"/"no-buy" scenarios. Please see Response to Comments 32-45.

The Department expects the benefits of HD Omnibus will outweigh the costs. Please see Response to Comments 61-62.

Clean Air Benefits of Adopting California's HD Omnibus and P2 GHG

Comment 122: By requiring cleaner combustion engines, as well as ensuring real-world reductions from those engines, the HD Omnibus rule can significantly expand on – and complement – the clean air benefits of the previously adopted ACT rule that drives increasing levels of zero-emission trucking in New York. Commenter 17.

[122] U.S. Department of Agriculture Economic Research Service, Food Price Inflation Over 2018-22 is Outpaced Only by Transportation. https://www.ers.usda.gov/data-products/ag-and-food-statistics-charting-the-essentials/food-prices-and-spending/.

Comment 123: The HD Omnibus standards are designed to cut new engines' emissions of ozone-forming NOx by 90 percent, with stronger warranty and durability provisions to ensure real-world emission controls. To meet and maintain clean air standards, controlling NOx emissions from the trucking sector must be addressed, and the HD Omnibus rule is designed specifically to do that. Further, the Phase 2 GHG standards will update important climate-pollution standards to address climate-health risks associated with vehicle emissions. Commenter 17.

Comment 124: Adopting the low NOx Rule can help New York ensure a significant reduction in emissions as the transportation sector continues to rapidly deploy zero-emission solutions. Conventionally powered vehicles will be on the roads for some years in the future, and to protect public health in vulnerable communities, it will be imperative that the State address the tailpipe emissions from new fossil fuel heavy-duty trucks and buses. The low NOx rule provides an important complement to the ACT rule that was recently adopted in New York. Alongside the ACT, the low NOx rule will advance cleaner vehicle technology while addressing the pressing need for cleaner air in communities suffering from dangerous pollution levels. CARB explicitly recognizes that these benefits are at the heart of the regulation, stating that the regulation "will cut truck emissions, including during low load conditions… [and thus] will help to reduce adverse health impacts and improve air quality throughout the state, especially in these areas which are disproportionately impacted by truck emissions."[123] The low NOx Rule recognizes the

[123] EDF, "Accelerating to 100% Clean: Zero-Emitting Vehicles Save Lives, Advance Justice, Create Jobs," Aug. 27, 2020 at 4, https://www.edf.org/sites/default/files/documents/TransportationWhitePaper.pdf.

significant and negative impacts that will result from not taking decisive action and delivers a 90 percent reduction in the amount of NOx permitted to be emitted from trucks on the road by 2027– estimated by CARB to be the equivalent of taking 16 million vehicles off California's roads.[124] Commenter 74.

Comment 125: The Low NOx Rule will reduce emissions from new M/HDVs by 90 percent starting in the 2027 EMY.[125] An independent analysis performed by MJ Bradley & Associates found the Low NOx Rule could reduce cumulative statewide NOx emissions by 217,000 metric tons by 2050.[126] Commenters 75-84.

Comment 126: The Heavy-Duty HD Omnibus rule ensures all new fossil fuel trucks that continue to be sold in New York are as clean as possible. It is also a vital complement to the ACT. It supports the state's goals of achieving near-term emission reductions while transitioning to a zero-emission truck fleet statewide. Commenter 80.

Response to Comments 122-126: The Department thanks you for your comments. The Department notes that multiple stakeholders provided NOx emission reductions data associated

[124] EDF, "Accelerating to 100% Clean: Zero-Emitting Vehicles Save Lives, Advance Justice, Create Jobs," Aug. 27, 2020 at 4, https://www.edf.org/sites/default/files/documents/TransportationWhitePaper.pdf.
[125] The HD Low-NOx Rule establishes a NOx emission standard for 2027 EMY and later vehicles of 0.02 g/bhp-hr, a ~43 percent reduction of NOx emissions compared to the federal standard.
[126] MJ Bradley and Associates, Union of Concerned Scientists, Natural Resources Defense Council. New York Clean Trucks Program: An Analysis of the Impacts of Zero-Emission Medium- and Heavy-Duty Trucks on the Environment, Public Health, Industry, and the Economy. Sept. 2021. https://www.ucsusa.org/sites/default/files/2021-09/ny-clean-trucks-report.pdf.

with New York State adoption of the HD Omnibus regulation. The Department's analysis estimates a total NOx emission reduction benefit from adopting HD Omnibus in New York of 72,840 tons from 2026-2050.[127]

Health Benefits of Adopting California's HD Omnibus and P2 GHG

Comment 127: New York has already demonstrated leadership in tackling the harms of trucking pollution by adopting the ACT zero-emission truck sales standard to drive the transition away from combustion. American Lung Association (ALA) research highlights the major health benefits to be gained along major freight corridors by transitioning to zero-emission technologies.[128] We also recognize the need to hold combustion trucking to more health-protective standards through the HD Omnibus. Several studies have highlighted the increased health benefits of adoption and implementation of the ACT and Low NOx rules in parallel, noting significant increased health benefits of doing so.[129,130] The NYDEC estimated the potential health benefits of the HD Omnibus ranging as high as $1.9 billion and far exceeding the potential program costs.[131] Commenter 17.

[127] DEC, RIS, Table 8, p. 49.
[128] ALA, "Delivering Clean Air," October 2022. https://www.lung.org/getmedia/e1ff935b-a935-4f49-91e5-151f1e643124/zero-emission-truck-report.pdf.
[129] ICCT, "Benefits of adopting California medium- and heavy-duty vehicle regulations in New York State," May 2021. https://theicct.org/sites/default/files/publications/nys-hdv-regulation-benefits-2-may2021.pdf.
[130] MJ Bradley and Associates, Union of Concerned Scientists, Natural Resources Defense Council. New York Clean Trucks Program: An Analysis of the Impacts of Zero-Emission Medium- and Heavy-Duty Trucks on the Environment, Public Health, Industry, and the Economy. Sept. 2021. https://www.ucsusa.org/sites/default/files/2021-09/ny-clean-trucks-report.pdf.
[131] DEC, RIS at pp 54-57.

Comment 128: A recent report[132] from the Union of Concerned Scientists, the Natural Resources Defense Council, and MJ Bradley and Associates showed that if New York pairs the HD Omnibus rule with the ACT (which was already adopted), the Empire State could see more than $21.4 billion in public health, environmental, and economic benefits in that same timeframe. Commenters 18-73.

Comment 129: In addition to being feasible, California regulators determined that the standards provide net societal benefits. According to CARB staff's thorough assessment, in California, the monetized health benefits of the NOx emissions reductions are eight times greater than the costs of compliance, primarily as a result of the significant prevention of nearly 3,900 premature deaths.[133] Commenter 74.

Comment 130: As part of a broader suite of policies, this rule would result in significant health benefits – contrary to the intimation that these positive impacts do not outweigh costs. As stated above, the emissions from M/HDVs are significant, with pollution from vehicles resulting in severe health impacts, missed workdays, and hospital visits. Given that the low NOx rule can greatly alleviate those impacts, the commensurate monetized health benefits in California, estimated by CARB, are $36.8 billion dollars[134] which are significantly more than the costs of

[132] MJ Bradley and Associates, Union of Concerned Scientists, Natural Resources Defense Council. New York Clean Trucks Program: An Analysis of the Impacts of Zero-Emission Medium- and Heavy-Duty Trucks on the Environment, Public Health, Industry, and the Economy. Sept. 2021. https://www.ucsusa.org/sites/default/files/2021-09/ny-clean-trucks-report.pdf
[133] CARB, Public Hearing to Consider the Proposed Heavy-duty Engine and Vehicle Omnibus Regulation and Association Amendments, Staff Report: Initial Statement of Reasons (2020) at V-11, Table V-4 and IX-49, Table IX-33.
[134] Ibid. at V-11.

the regulation.[135] The significance of such health benefits should not be given short shrift in the context of an analogous New York rule. Indeed, the estimated NOx emission reductions from implementation of this rule amounts to approximately 72,840 [tons].[136] DEC estimates that the NOx reductions in these proposed rules could avoid as many as 150 premature deaths, 28 hospitalizations relating to cardiovascular or respiratory illnesses, and 35 emergency room visits, a monetized value of $825 billion to $1.859 trillion in benefits by 2050. Commenter 74.

Comment 131: These reductions could result in an additional roughly 303 avoided pollution-related deaths and 199,640 minor health cases[137] attributable to the Rule over the same period.[138] This more than doubles the public health benefits of the ACT rule alone. Many of these health benefits come from the decreased secondary pollutant formation from NOx including fine PM (PM2.5) and ground-level ozone, which themselves have health impacts mentioned above.[139] Commenters 75-84.

Comment 132: The HD Omnibus can drastically cut emissions from the most polluting diesel engines in a state with some of the worst health impacts from dirty diesel in the country. This rule would result in cumulative NOx emissions reductions of over 217,000 metric tons through 2050, which would lead to a large amount of public health benefits. These include a cumulative

[135] https://ww3.arb.ca.gov/regact/2020/hdomnibuslownox/isor.pdf at IX-12.
[136] ICCT, "Benefits of Adopting California's Heavy-Duty Vehicle Omnibus Standards and GHG Phase II Trailer Standards in New York State," September 2022. https://theicct.org/wp-content/uploads/2022/09/HDV-fact-sheet-NY-092122.pdf.
[137] Includes reduced cases of acute bronchitis, exacerbated asthma, and other respiratory symptoms, and reduced restricted activity days and lost workdays.
[138] New York Clean Trucks Program. See: https://www.ucsusa.org/sites/default/files/2021-09/ny-clean-trucks-report.pdf
[139] EPA, "Ground-Level Ozone (Smog) Information" https://www3.epa.gov/region1/airquality/index.html.

over 300 premature deaths; over 290 hospital visits, and around 200,000 cases of other respiratory illnesses through 2050. All this amounts to $3.5 billion in public health benefits, so the costs of not adopting this regulation are far too great. Commenter 86.

Comment 133: A recent report found that the HD Omnibus would reduce cumulative NOx emissions in New York State by 217,000 megatons through 2050, and adopting HD Omnibus on a permanent basis will double the public health benefit compared to a scenario with only ACT on the books. ACT and HD Omnibus together will prevent 540 premature deaths, 523 hospital visits, and over 350,000 more minor respiratory incidents generating an estimated $6.3 billion in health benefits for the state Realizing these emission reductions and public health benefits is critical given New York's chronic and persistent air quality problems. Commenter 81.

Comment 134: Given exposure to air pollution contributes to cardiovascular and respiratory illnesses that can exacerbate COVID-19, the public health imperative to eliminate tailpipe emissions could hardly be more urgent. This is all the more true given that truck traffic has now surpassed pre-pandemic levels. The positive impact of the low NOx rule is clear. The health benefits worth as much as $1.86 trillion in the state by 2050 significantly outweigh the cost of compliance. Commenter 74.

Comment 135: Several studies have highlighted the increased health benefits of adoption and implementation of the ACT and the Low NOx rules in parallel, noting significant increased health benefits of doing both rules at the same time. Your own agency has estimated the potential

benefits of the HD Omnibus, far exceeding the potential program costs. It's important to note that any delay in implementation means more pollution in communities throughout New York for longer periods of time. We urge you to adopt and finalize the rules and begin implementing them on schedule. Commenter 87.

Comment 136: By promoting the transition to ZEVs, these regulations will minimize criteria pollutants from M/HDVs. This will improve air quality and yield public health benefits, in particular for low-income and communities of color adjacent to ports, highways, and other transportation infrastructure that have been unduly burdened by diesel vehicle emissions. The ALA estimates that transportation electrification can yield significant public health benefits saving the New York over $4 billion in health impact costs and avoiding 351 premature deaths, 5,000 by asthma attacks, and 18,735 workdays lost in 2050.[140] Commenter 88.

Response to Comments 127-136: The Department thanks you for your comments. Though other analyses have been performed regarding the health benefits of adopting HD Omnibus in New York, the Department's analysis estimates the monetized health benefits of adopting HD Omnibus in New York as $825,000,000 - $1,859,000,000. This is attributed to estimated 2026-2050 NOx reductions of 72,840 tons, and an estimated 66 to 150 avoided premature deaths, 17 avoided hospitalizations for cardiovascular illness, 11 avoided hospitalizations for respiratory illness, and 35 avoided emergency room visits.[141]

[140]ALA, "The Road to Clean Air: Benefits of a Nationwide Transition to Electric Vehicles," September 2020. https://www.lung.org/getmedia/99cc945c-47f2-4ba9-ba59-14c311ca332a/electric-vehicle-report.pdf.
[141] DEC, RIS, Table 8, p.49, and Table 10, p. 57.

Need for Stricter Transportation Emission Standards

Comment 137: As noted in the proposed rule, New York depends on the stronger state vehicle emission standards to attain and maintain air quality standards, and these rules are central to bringing clean air benefits home:

> *The severity of New York State's air quality problems dictates that New York State must maintain compliance with recent improvements in the California standards to achieve necessary reductions of pollutants that aid in the formation of ground-level ozone, as well as climate change. Adhering to federal standards would impede New York's ability to attain and maintain ambient air quality standards and make reasonable further progress as required in its State Implementation Plan.*[142]

Calls to delay or reject these life-saving rules are misguided and serve to extend the heavy burdens caused by heavy-duty trucking in New York's most vulnerable communities. Commenter 17.

Comment 138: The transportation sector in New York is responsible for more climate damaging emissions than almost any other sector. To meet our aggressive climate goals, as well as to clean our local air and strengthen local economies, we must rapidly move away from combustion powered vehicles of all kinds. Commenters 18-73.

[142] DEC, RIS: Emission Standards for Motor Vehicles and Motor Vehicle Engines at p. 65.

Comment 139: Significant near-term deployment of cleaner M/HDVs is a critical component of a just transition to a low-emissions future. Despite making up approximately five percent of vehicles on the road in New York, M/HDVs are responsible for more than a third of climate-worsening carbon dioxide emissions in New York's transportation sector.[143] Commenter 74.

Comment 140: In New York, transportation accounts for 29 percent of the State's GHG emissions, ranking it second behind only fossil fuel combustion in buildings.[144] While GHG emissions in many sectors have declined since 1990, transportation GHG emissions increased 10 percent between 1990 and 2019.[145] On-road light- and HDVs in New York also are a significant source of conventional air pollution, including NOx, accounting for over 35 percent of statewide NOx emissions.[146] To reduce climate change impacts and improve air quality and health, it is clear that New York must work to zero-out pollution from one of the largest sources of emissions in the state. Cleaning up vehicle emissions is also long overdue for the communities living adjacent to highways, ports, and freight hubs that disproportionately suffer from harmful air pollution. This can lead to reduced emergency visits, and health costs, and improve health outcomes. Stronger emissions standards will protect our cities and environmental justice communities across the state. Commenters 75-84.

[143] DEC Stakeholder Outreach on Part 218, https://www.dec.ny.gov/docs/air_pdf/hdvwebinar021721.pdf; Governor Kathy Hochul legislative announcement, https://www.governor.ny.gov/news/advance-climate-week-2021-governor-hochul-announces-new-actions-make-new-yorks-transportation.
[144] DEC, "2022 Statewide GHG Emissions Report: Summary Report," pp. vi, Table ES.3.
[145] DEC, "2022 Statewide GHG Emissions Report," pp. ix.
[146] EPA, "2017 National Emission Inventory" (herein U.S. EPA, 2017 NEI), https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data#dataq, On-road light- and heavy-duty vehicles account for 88,305 out of statewide 247,127 tons of NOx emissions in New York.

Comment 141: HDVs represent an outsized share of conventional air pollution from on-road vehicles. Despite diesel vehicles constituting only 4.1 percent of the State's vehicle fleet,[147] HDVs, which are overwhelmingly diesel fueled, account for 46 percent of on-road NOx emissions in New York.[148] NOx is a pollutant in its own right and is also a precursor of dangerous smog and fine particulate pollution. Fine particulates (smaller than 2.5 microns, also known as PM2.5), which penetrate deep into the lungs and cause a host of adverse health outcomes, are also emitted directly in large quantities by on-road vehicles in New York, accounting for nearly 4,000 tons of direct PM2.5 pollution.[149] The HD Omnibus regulations will help to reduce the NOx and PM pollution in New York stemming from the state's M/HDVs. Commenters 75-84.

Comment 142: HD Omnibus builds on decades of effort both to control transportation sector emissions and also to limit smog-forming NOx that contribute to unhealthy air in the NYMA. Commenters 75-84.

Comment 143: In New York, the transportation sector greatly contributes to GHG emissions. These emissions from the transportation sector have risen by 10 percent since 1990 and are projected to continue to rise. Much of the increase comes from diesel trucks and buses, which

[147] Vehicle, Snowmobile, and Boat Registrations, https://data.ny.gov/Transportation/Vehicle-Snowmobile-and-Boat-Registrations/w4pv-hbkt.
[148] EPA, 2017 National Emission Inventory. Heavy-duty on-road vehicles account for 40,766 out of 88,305 tons of on-road NOx emissions in New York.
[149] EPA, 2017 National Emissions Inventory. On-road light- and heavy-duty vehicles account for 3,842 tons of PM2.5.

have been outsized contributors to emissions despite representing a tiny fraction of the overall vehicle fleet. However, the disproportionate health impacts of air pollution, including higher asthma rates and more emergency room visits, could not be clearer. Exposure to vehicle tailpipe emissions is a major reason for this disparity. Commenter 80.

Comment 144: As noted in the proposed rulemaking documents, New York depends on the stronger state vehicle emission standards to maintain and attain air quality standards. And these rules are central to bringing the clean air benefits home. It's noted in the report the severity of New York state's air quality problems dictates that the state must maintain compliance with recent improvements in the California standards. The HD Omnibus will cut new engine emissions of ozone-forming NOx by ninety percent in 2027 with stronger warranty and durability provisions that are critical to ensuring real-world emission controls -- not just lab testing of the trucks, engines, and the certification levels, but actually controlling real-world emissions to benefit communities throughout New York. Commenter 87.

Comment 145: Now is the time to transition to cleaner transportation. As a concerned resident, I am writing to urge DEC to adopt the Advanced Clean Cars II rule as well as the HD Omnibus rule. These rules are vital to ensure rapid reductions in climate-changing emissions and air pollution. Making the transition to 100 percent ZEV sales as well as reducing diesel emissions from trucks are vital steps for the Empire State to take. Cars and trucks are responsible for more heat-trapping emissions than almost any other sector. Tailpipe emissions not only drive climate

change but form PM2.5, which is associated with the greatest proportion of adverse health effects related to air pollution in the country.

We are running out of time to address the climate crisis. With each year of inaction, the consequences of unchecked global warming pollution grow more severe at the expense of New Yorkers across the state. Severe droughts, and heat waves—the list goes on. We have an opportunity to be among the first states in the Northeast to join California in adopting the most ambitious vehicle standards in the nation. It's time for New York to continue to step up as a climate leader. Commenters 89-857.

Comment 146: I am writing as a New York physician and public health/environmental protection advocate who has experienced the danger and destruction due to climate change and strongly supports and only uses renewable wind and solar energy to power everything in my apartment. As our state, country and the world are experiencing the continued increase in violent storms, and wildfires with increased loss of life due to the climate change disaster, the time to transition to 100 percent use of renewable energy in our homes and to power our modes of transportation is now with no more time to waste.

Please be aware that the latest assessment by the Intergovernmental Panel on Climate Change is a stark reminder of the dangerous path we are traversing. It is crucial for our state and country to immediately lower emissions to combat climate change and long-term disruption of key natural systems. Residents across our state are also aware of these dangers due to increased exposure to

heat waves, drought, and more extreme weather events that are impacting virtually everyone. Commenter 420.

Comment 147: In New York, transportation is the second largest source of GHG emissions.[150] It also significantly contributes to harmful air pollutants, which adversely impact public health. In 2015, transportation pollution cost New Yorkers over $7.9 billion in health costs including premature deaths, heart attacks, asthma, emergency room visits and lost workdays.[151] Moreover, tailpipe emissions from the sector, especially from M/HD diesel trucks and buses, disproportionally impacts environmental justice communities.[152] For all these reasons, ACE NY and United support New York's adoption of a comprehensive regulatory framework to reduce pollution from transportation and fulfill the goals of the CLCPA. A major step to meeting our Climate Law goals is New York's adoption of California's regulations for zero-emission passenger cars, pickup trucks, and SUVs, as well as the HD Omnibus rules. Commenter 88.

Response to Comments 137-147: The Department thanks you for your comments. The Department agrees that strict transportation emission standards are needed in New York State. It is essential that New York continues to adopt stringent mobile sources emissions standards and regulations to protect human health and the environment, especially in DACs that have

[150] DEC, "Statewide Greenhouse Gas Report." The transportation sector accounts for 28 percent of statewide GHG emissions in New York State. https://www.dec.ny.gov/energy/99223.html.
[151] ALA, "Clean Air Future: Health and Climate Benefits of Zero Emission Vehicles," Holmes-Gen, B and W. Barett, October 2016. https://www.lung.org/getmedia/b4231b57-878c-4263-8c2b-8c4cb80d86ca/2016zeroemissions.pdf.
[152] Union of Concerned Scientists, "Inequitable Exposure to Air Pollution from Vehicles in New York State" fact sheet, June 21, 2019.
https://www.ucsusa.org/sites/default/files/attach/2019/06/Inequitable-Exposure-to-Vehicle-Pollution-NY.pdf

historically borne the brunt of these impacts. For more details on New York State's air quality issues and their impact on DACs, please see Response to Comments 1-10.

New York's Air Quality Problems and Related Health Risks

Comment 148: New Yorkers face significant air pollution burdens, with over 7 million children and adults living in communities impacted by unhealthy levels of ozone ("smog") pollution, The ALA's State of the Air 2022 report also noted the NYMA ranks 14th among all American cities for unhealthy ozone pollution.[153] Breathing unhealthy air can cause serious health consequences, including asthma attacks, increased risk of respiratory infection, heart attacks and strokes, lung cancer and premature death. Children, older adults, people with heart and lung illnesses, lower income residents and people of color face increased risks due to poor air quality. Many communities, including communities of color and lower income communities, face increased risks due to high concentrations of toxic truck emissions along major freight corridors.[154] Climate change amplifies public health risks and disparities, including increasing conditions for poor air quality. Commenter 17.

Comment 149: Not only are cars and trucks a climate issue for New York, but they are also a public health issue. Diesel pollution[155] in particular is responsible for dangerous levels of NOx

[153] ALA, "State of the Air 2022," April 2022. www.lung.org/sota.
[154] EPA, "Fact Sheet: Transportation Pollution and Environmental Justice," March 2022. https://nepis.epa.gov/Exe/ZyPDF..cgi?Dockey=P10144Y3.pdf
[155] Union of Concerned Scientists, "Exposure to Diesel Particulate Pollution in New York State," November 17, 2021. https://www.ucsusa.org/resources/diesel-pollution-ny.

and PM2.5 that increases the risk of severe respiratory illnesses and other health problems. Studies continue to link long-term exposure to PM2.5 with an increased risk of death[156] from the COVID-19 pandemic. Commenters 18-73.

Comment 150: Tailpipe emissions from M/HDVs are a public health menace that cause widespread harm in New York. In addition to their sizable GHG impact, these vehicles are responsible for an outsized portion of harmful, localized pollution from transportation. In the New York metro region, pollution contributes to an estimated 21,000 children developing asthma every year.[157] This localized pollution disproportionately impacts certain communities across the state – typically low- and moderate-income individuals and environmental justice communities – that are more likely to reside near freight corridors, ports, bus depots, and New York's many major airports.[158] Communities of color and low-income individuals are statistically much more likely to live near busy roads and have commensurately higher exposure to harmful transportation pollution. Relevant for New York, a recent Union of Concerned Scientists study found that Asian American, Black and Latino American residents in the Northeast and Mid-Atlantic region were exposed to 66 percent more air pollution from cars and trucks than white residents.[159] Of course, this contributes to heightened levels of respiratory and cardiovascular disease, comorbidities that may exacerbate the severity of COVID-19.[160] With truck traffic

[156] Union of Concerned Scientists, "Numbers that Take Your Breath Away: COVID-19, Air Pollution, and Equity," April 28, 2020. https://blog.ucsusa.org/cecilia-moura/numbers-that-take-your-breath-away-covid-19-air-pollution-and-equity.
[157] EDF, "500 Trucks Pass Through One Newark Intersection in an Hour. Kids are Paying the Price," May 27, 2022. https://www.edf.org/article/500-trucks-pass-through-one-newark-intersection-hour-kids-are-paying-price.
[158] Ibid.
[159] Ibid.
[160] Andrea Pozzer, et al., "Regional and global contributions of air pollution to risk of death from COVID-19," 116 Cardiovascular Research 2247 (Dec. 1, 2020). https://academic.oup.com/cardiovascres/article/116/14/2247/5940460.

having surpassed pre-COVID levels in New York, even as the pandemic continues to depress car traffic associated with commuting,[161] the public health imperative to eliminate tailpipe emissions could hardly be more urgent. Commenter 74.

Comment 151: To put a finer point on it, allowing transportation and freight to continue with the status quo will have a detrimental and significant impact on health in communities, particularly those near highways and other major sources of transportation pollution. Indeed, a recent national study estimates that more than 2,600 people die prematurely every year because of the health burden from the M/HDV vehicle pollution on our roads and highways.[162] Similarly, up to 18,000 deaths are likely in 2025 across the nation from PM2.5 and ozone (the latter of which is largely a result of NOx emissions),[163] demonstrating the severe impact of this sector on human health. As such, New York must take action to start mitigating the impact of these vehicles – and ensure that environmental justice communities are prioritized through complementary policies with infrastructure and vehicle deployment to make sure that the most impacted communities are not left behind. Commenter 74.

Comment 152: Pollution from motor vehicle engines and vehicle tailpipes continue to harm the public's health, welfare, as well as the broader environment and is a major source of criteria

[161] New York Times, "As Traffic Roars Back, Neighborhoods Outside Manhattan Feel the Pain," December 28, 2021. https://www.nytimes.com/2021/12/28/nyregion/nyc-traffic-today.html.
[162] EDF, "Clean Trucks, Clean Air, American Jobs," March 2021. https://www.edf.org/sites/default/files/2021-03/HD_ZEV_White_Paper.pdf.
[163] EDF, "Accelerating to 100% Clean: Zero-Emitting Vehicles Save Lives, Advance Justice, Create Jobs," August 27, 2020 at 4, https://www.edf.org/sites/default/files/documents/TransportationWhitePaper.pdf.

pollutants as well as GHG emissions. If New York's adoption of stricter-than-federal standards were needed in past decades, there is more reason than ever for the state to adopt new standards to meet these compelling and extraordinary conditions. Commenters 75-84.

Comment 153: New York's M/HDVs are responsible for 52 percent of all on-road NOx emissions from the state's on-road vehicles, as well as 45 percent of on-road, direct PM2.5 emissions and 24 percent of GHG emissions,[164] or approximately 15.4 million metric tons of CO2 equivalent.[165] NOx contributes to ozone and the formation of secondary PM, which, along with primary PM emissions, are associated with an increased risk of premature deaths, hospitalization, and emergency room visits. Exposure to fossil fuel exhaust can lead to premature death and other devastating health problems, including asthma and respiratory distress,[166] pregnancy complications and adverse reproductive outcomes,[167] cardiac and vascular

[164] "New York Clean Trucks Program," https://www.ucsusa.org/sites/default/files/2021-09/ny-clean-trucks-report.pdf.
[165] Ibid.
[166] Stephanie Lovinsky-Desir et al., Air pollution, urgent asthma medical visits and the modifying effect of neighborhood asthma prevalence, 85 Pediatric Research 36, October 2018, https://doi.org/10.1038/s41390-018-0189-3; Gayan Bowatte et al., Traffic related air pollution and development and persistence of asthma and low lung function, 113 Env't Int'l 170, April 2018, https://www.sciencedirect.com/science/article/pii/S0160412017319037.
[167] Jun Wu et al., Association Between Local Traffic-Generated Air Pollution and Preeclampsia and Preterm Delivery in the South Coast Air Basin, 117 Envtl. Health Persp. 1773, Nov. 2009, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2801174/; Qi Yan et al., Maternal serum metabolome and traffic-related air pollution exposure in pregnancy, 130 Env't Int'l 104872, 2019, https://doi.org/10.1016/j.envint.2019.05.066; Li Fu et al., The associations of air pollution exposure during pregnancy with fetal growth and anthropometric measurements at birth: a systematic review and meta-analysis, 26 Envtl. Sci. and Pollution Res. 20137, 2019, https://doi.org/10.1007/s11356-019-05338-0.

impairments,[168] and heightened cancer risk.[169] In 2022 the Health Effects Institute completed the largest ever review of existing research on long-term exposure to traffic-related air pollution and health outcomes and "found a high or moderate-to-high level of confidence in an association between long-term exposure to [traffic-related air pollution] and the adverse health outcomes all-cause, circulatory, ischemic heart disease (IHD), and lung cancer mortality; asthma onset in both children and adults; and acute lower respiratory infections (ALRI) in children."[170] Reducing M/HDV air pollution is vital for improving public health and meeting the federal NAAQS for ozone and PM2.5.

Some 72 million people in the U.S. are estimated to live near freight activity.[171] These individuals are more likely to be people of color, to have lower-incomes and to be disproportionately exposed to elevated levels of diesel pollution.[172] People living near freight

[168] Kimberly Berger et al., Associations of Source-apportioned Fine Particles with Cause-specific Mortality in California, 29 Epidemiology 639, September 2018, https://pubmed.ncbi.nlm.nih.gov/29889687/; Stacey Alexeef et al., High-resolution mapping of traffic related air pollution with Google street view cars and incidence of cardiovascular events within neighborhoods in Oakland, CA, 17 Envtl. Health, May 2018, https://doi.org/10.1186/s12940-018-0382-1; J.E. Hart et al., Ischaemic Heart Disease Mortality and Years of Work in Trucking Industry Workers, 70 Occupational and Envtl. Med. 523, August 2013, https://pubmed.ncbi.nlm.nih.gov/22992341/.

[169] CARB, Cal. EPA, Supplement to the June 2010 Staff Report on Proposed Actions to Further Reduce Diesel Particulate Matter at High-Priority California Railyards, July 5, 2011, http://www.arb.ca.gov/railyard/commitments/suppcomceqa070511.pdf; Press Release, Int'l Agency for Res. on Cancer, Diesel Engine Exhaust Carcinogenic June 12, 2012, https://www.iarc.who.int/wp-content/uploads/2018/07/pr213_E.pdf; L. Benbrahim-Tallaa et al, Carcinogenicity of Diesel-Engine and Gasoline-Engine Exhausts and Some Nitroarenes, 13 The Lancet Oncology 663, June 2012, http://doi.org/10.1016/S1470-2045(12)70280-2.

[170] "Systematic Review and Meta-analysis of Selected Health Effects of Long-Term Exposure to Traffic-Related Air Pollution," https://www.healtheffects.org/publication/systematic-review-and-meta-analysis-selected-health-effects-long-term-exposure-traffic.

[171] EPA, "Transportation and Environmental Justice." https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P10144Y3.pdf.

[172] ICF International, October 2019; Rosenbaum, Arlene, Seth Hartley, and Chris Holder. "Analysis of Diesel Particulate Matter Health Risk Disparities in Selected US Harbor Areas." American Journal of Public Health 101, no. S1, December 1, 2011: S217– 23. https://doi.org/10.2105/AJPH.2011.300190.

hubs—including ports, highways, warehouses, and rail and intermodal yards—often suffer from the combined activity of diesel-fueled heavy-duty trucks, equipment, rail, and vessels.[173]

Sadly, a person's zip code remains the most significant predictor of their health and wellbeing. Low-income neighborhoods and communities of color breathe in an average of 28 percent more NOx pollution than higher-income and majority white neighborhoods.[174] This is a direct result of their proximity to major sources of truck pollution, such as freight corridors. These same communities suffer from additional harms from the freight sector: the paved areas and large, low buildings dominating freight facilities contribute to urban heat island effects, stormwater issues and other environmental impacts. Other industrial sources are often clustered near freight facilities, producing air and water pollution, and toxic releases, further harming communities already impacted by diesel truck pollution. These communities can also face racism and other forms of discrimination that increase their vulnerability to environmental threats. In fact, freight-impacted communities are even more vulnerable to the impacts of air and other pollution because of socio-demographic stressors—including racial segregation, high rates of poverty, lack of access to affordable foods, and lack of access to healthcare—compared to communities that do not face these stressors.[175] Research on cumulative impact has found that the same amount of pollution can result in more harm to people facing additional and compounded stressors than to

[173] See, e.g., Loma Linda University, Report, Project ENRRICH: A Public Health Assessment of Residential Proximity to a Goods Movement Railyard, http://www.aqmd.gov/docs/default-source/clean-air-plans/clean-communitiesplan/enrrich_final_report_29may2014.pdf.
[174] Mary Angelique G. Demetillo et al., Space-Based Observational Constraints on NO2 Air Pollution Inequality From Diesel Traffic in Major US Cities, Geophys. Research Letters, Vol. 48 No. 17, Aug. 25, 2021, https://doi.org/10.1029/2021GL094333.
[175] Environmental Justice Health Alliance for Chemical Policy Reform, Coming Clean, and Campaign for Healthier Solutions, Life at the Fenceline: Understanding Cumulative Health Hazards in Environmental Justice Communities, September 2018, https://new.comingcleaninc.org/assets/media/documents/Life%20at%20the%20Fenceline%20-%20English%20-%20Public.pdf; Rachel Morello-Frosch et al., "Understanding the Cumulative Impacts of Inequalities in Environmental Health: Implications for Policy," Health Affairs 30, no. 5, 2011, pp. 879-998.

people who do not.[176] It also recognizes that multiple stressors frequently share interrelated origins. Consequently, people of color and people with low incomes face some of the highest levels of pollution and are least equipped to ward off the consequences.[177]

Like truck pollution, climate change impacts people of color and low-income communities disproportionately. The EPA found that low-income people and people of color are more likely to a) live in areas where they suffer health impacts from air quality associated with climate change (such as asthma onset for children and death from older adults), b) lose labor hours for extreme weather, and c) risk death from extreme temperatures.[178] A 2021 study shows that in U.S. cities people of color are more likely to be exposed to heat intensity in urban "heat islands,"[179] and people with lower incomes and people of color are more likely to lack air conditioning.[180] In addition, vulnerable populations are more likely to be exposed to climate extremes at work, especially in outdoor jobs, and to lack adequate access to health care.[181] In these and other ways, climate change exacerbates existing health conditions for disproportionately impacted communities who have fewer resources to deal with them. Commenters 75-84.

[176] Yukyan Lam, Kim Wasserman, Juliana Pino, Olga Bautista, Peggy Salazar and Maria Lopez-Nunez, "Seeing the Whole: Using Cumulative Impacts to Advance Environmental Justice," February 2022.
[177] Ibid.
[178] EPA. 2021. Climate Change and Social Vulnerability in the United States: A Focus on Six Impacts. U.S. Environmental Protection Agency, EPA 430-R-21-003. www.epa.gov/cira/social-vulnerability-report at 35-38.
[179] Hsu, A., G. Sheriff, T. Chakraborty, Diego Manya, "Disproportionate exposure to urban heat island intensity across major US cities," Nature Communication, 12, 2721, 2021, https://doi.org/10.1038/s41467-021-22799-5, pp. 4-5 and map.
[180] Mann, Rebecca, and Jenny Schuetz, "As Extreme Heat Grips the Globe, Access to Air Conditioning is an Urgent Public Health Issue," The Avenue, Brookings, July 25, 2022, https://www.brookings.edu/blog/the-avenue/2022/07/25/as-extreme-heat-grips-the-globe-access-to-air-conditioning-is-an-urgent-public-health-issue/.
[181] Jordan, Rob, "Stanford Researchers Discuss Extreme Heat's Impacts on Laborers," Stanford Woods Institute for the Environment, 2022, https://woods.stanford.edu/news/stanford-researchers-discuss-extreme-heat-s-impacts-laborers.

Comment 154: New York currently fails to meet federal air quality standards for ozone, including the most recent 2015 standard and the 2008 standard. And in fact, it was downgraded to severe non-attainment of the 2008 standard underscoring the need to address the M/HDV sector, which contributes the largest share of ozone precursors, and until recently has not been the subject of serious air quality regulation. Commenter 81.

Comment 155: Adoption of California's HD Omnibus is a vital tool for improving air quality, promoting public health, and addressing New York's persistent challenges in meeting health-based NAAQS for smog. Despite diesel vehicles only being 4.1 percent of the state's vehicle fleet, HDVs, which are overwhelmingly diesel fueled, account for nearly half of New York's on-road NOx emissions. NOx is a pollutant in its own right and is also a precursor of dangerous smog and fine particulate pollution. Fine particulates penetrate deep into lungs and cause a host of diverse health outcomes, and are also emitted directly in large quantities by on-road vehicles in New York accounting for nearly 4,000 tons of direct PM2.5 pollution. The NYMA continues to experience some of the worst smog levels in the Eastern U.S. Smog formation in New York is overwhelmingly a function of NOx emissions, which would be directly and significantly reduced by the HD Omnibus. Commenter 78.

Comment 156: Given the health burdens New York's communities -- particularly environmental justice communities -- have faced for too long, dramatically reducing harmful emissions from diesel M/HDVs is moral and imperative. It will alleviate the emissions and public health harm

from polluting trucks and send strong market signals to complement the ACT. It's beneficial, feasible, and should be adopted as quickly as possible. Commenter 74.

Comment 157: These policies are important complements to the previously adopted ACT rule that will drive increasing levels of zero-emission trucking in New York. New Yorkers face significant air pollution burdens with over seven million children and adults living in communities now impacted by unhealthy levels of ozone pollution. The ALA's State of the Air report in 2022 noted that the greater NYMA ranks number fourteen in the nation for unhealthy ozone pollution. Breathing unhealthy air can cause a wide range of serious health consequences including asthma attacks, increased respiratory infections, heart attacks and strokes, lung cancer, and premature death. Commenter 87.

Response to Comments 148-157: The Department thanks you for your comments. It is essential that New York continue to adopt stringent mobile sources emissions standards and regulations to protect human health and the environment, especially in DACs that have historically borne the brunt of these impacts. For more details on New York State's air quality issues and their impact on DACs, please see Response to Comments 1-10.

For more details related to health benefits associated with New York State adoption of the HD Omnibus regulation, please see Response to Comments 127-136.

Battery Electric Vehicles

Comment 158: We are especially concerned about the impact these regulations will have upon the costs imposed on lumber and building materials industry businesses and their ability to deliver goods to customers. On average, our members have 10 heavy duty trucks each and 4 medium duty trucks. Some have as many as 93 heavy duty trucks in their fleet, and to replace all those trucks with electric trucks, would be an enormous financial burden our small business members cannot afford. On the other hand, is the mileage these heavy-duty trucks travel for deliveries. Our members go on deliveries as short at eight but as long as 200 miles. The current average distance an electric car can travel is about 250 miles on one charge. Given that medium and heavy-duty trucks are hundreds of times heavier than passenger cars, the distance they can be expected to go on one charge will be much shorter and interfere with our members' ability to deliver to their current customer base. Commenter 6.

Comment 159: Battery-electric cars and trucks also do not release tailpipe emissions.[182] In 2018, charging an electric vehicle (EV) at home in New York City was the equivalent of paying $0.36 per gallon of gasoline. And rural EV drivers could save an average of $533 annually by switching from gasoline to electricity. It is crucial to build out these programs so that New York has a chance of meeting its aggressive climate goals, especially in one of the sectors that has been the hardest to decarbonize. Commenters 18-73.

[182] Union of Concerned Scientists, "Electric Vehicle Benefits for New York." https://www.ucsusa.org/sites/default/files/attach/2019/04/State-Benefits-of-EVs-NY.pdf.

Comment 160: For many years, New York State policies have been consistent with California's zero emission standards. The Advanced Clean Cars II and HD Omnibus rules will further stimulate market development and investment in EVs and charging infrastructure throughout New York State. This will hasten widespread EV adoption by New Yorkers. Transportation electrification is a critical piece of the overall strategy to transition to this clean energy future. In addition to the CLCPA goals, New York has a target of having 850,000 ZEVs on the road by 2025 and 2 million by 2030. However, as of January 2023, the state is only nine percent[183] of the way to meeting this goal. Commenter 88.

Response to Comments 158-160: These comments are outside the scope of this rulemaking.

HD Omnibus Transit Agency Exemption

Comment 161: The enforcement provisions of these standards and their associated exemptions must be tailored to New York's unique policy environment. In the proposed rule summary, DEC proposes to exempt 2026 EMY diesel-powered transit buses for which there is no CARB certification, stating that the state has not chosen to adopt California's Innovative Clean Transit regulation. The New York City area has set ambitious goals for transit electrification: the MTA

[183] As of January 3, 2023, New York had 75,051 registered electric vehicles on the road, https://www.nyserda.ny.gov/All-Programs/ChargeNY/Support-Electric/Map-of-EV-Registrations.

has a goal of a fully electric fleet by 2040.[184] While recognizing MTA is the largest agency in the state, EDF urges New York to reduce emissions and set explicit statewide electrification goals. In New Jersey, the Department of Environmental Protection conditioned transit agencies' exemption from its low NOx rule upon the agency's demonstration, via application for exemption before purchase, that there are no diesel-powered CARB-certified transit buses for the relevant EMY.[185] New York could follow a similar approach. In order to better ensure swift, meaningful pollution reduction, this rule should focus on all vehicle types; despite the MTA's goal, action needs to be statewide, rather than just in the largest cities. As such, DEC should encourage proactive engagement from transit agencies during this process and consider conditioning their exemption. Commenter 74.

Response to Comment 161: The Department included a NYS transit agency diesel-fueled bus exemption following CARB's reasoning for its own exemption. CARB's FSOR for HD Omnibus explains: "The transit agencies are concerned with the ability to purchase diesel-fueled buses in the future because the only manufacturer of diesel-fueled urban bus engines recently expressed its intent to no longer produce diesel urban bus engines in California, starting in 2024."[186] As such, the Department does not see a need to require transit agencies to submit an application for exemption.

[184] The City, "MTA Surging Ahead with Electric Bus Plans," April 27, 2022. https://www.thecity.nyc/environment/2022/4/27/23045575/mta-surging-ahead-with-electric-bus-plans.
[185] New Jersey Department of Environmental Protection. https://www.nj.gov/dep/rules/proposals/proposal-20221107a.pdf at 30.
[186] CARB, HD Omnibus FSOR, p. 100.

It is important to note that New York State has adopted a complementary suite of M/HD ZEV laws, regulations, and executive policy to promote zero-emission transit bus adoption, including:

1. NYS' 100 percent M/HDV sales requirement beginning in 2045 (2021 Laws of NY, Chapter 423)
2. MTA's policy to transition to a 100 percent ZEV transit bus fleet by 2040
3. Five transit fleets' (Suffolk, Westchester, CDTA, NFTA, RGRTA) transition to a 25 percent ZEV transit bus fleet by 2025; 100 percent ZEV transit bus fleet by 2035 (2020 SOTS address)
4. Transit Authority Make-Ready Program[187]

The Department, through its Volkswagen settlement funds and NYSERDA's NYTVIP incentive program, has also made available incentives to help cover the incremental cost of a new M/HD ZEV, including up to $385,000 for transit buses.

Comment 162: With respect to the above-referenced combined Emergency/Proposed Rulemaking, we respectfully offer comment on a potential discrepancy between the emergency rule and the proposed rulemaking relating to the scope of the exemption for transit buses, as well as a recommended approach for resolving the apparent discrepancy. In our view, it appears that the exemption for transit buses in the emergency rule is for "transit agency diesel-fueled buses"; and in the proposed rulemaking is for "diesel fueled engines used exclusively for bus lines". In our view, this apparent discrepancy can be appropriately resolved by including the following

[187] New York Department of Public Service, Case 18-E-0138, Proceeding on Motion of the Commission Regarding Electric Vehicle Supply Equipment and Infrastructure, Order Establishing Electric Vehicle Infrastructure Make-Ready Program and Other Programs (July 16, 2020) ("Make-Ready Program Order"), https://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterSeq=56005.

definition of “bus lines” in the proposed rulemaking: ‘Bus line’ means bus line as defined in New York Consolidated Laws, Chapter 61-A, Article 1 § 2, including bus lines owned or operated by a transit agency regardless of whether the bus line owns or operates ‘over-the-road’ buses. Commenter 85.

Response to Comment 162: The Department believes its definition of “bus line” is adequate. Pursuant to subsection 3 of section 2 of the New York State Transportation Law, "bus line" is defined as a sub-classification of common carrier of passengers by motor vehicle that is usually characterized by the use of vehicles having a seating capacity of greater than twenty passengers; by multiple pickup and discharge points along designated routes; and by no prearrangements or reservations by passengers.

Strong State Standards Are Needed

Comment 163: “Section 177 States” and California must provide long-term certainty through its programs to protect public health and the environment. States have the obligation and authority to ensure continued progress occurs on reducing GHG and other air pollutants, regardless of federal action (or in-action). Providing long-term certainty to the industry, as this proposed rule does, will be important not only today, but in future environments where federal inaction on climate could occur again. Several auto manufacturers– including Ford, Volkswagen, BMW,

Honda, and Volvo– support California's right to set its own more stringent-than-federal auto pollution standards, and the rights of states to also adopt these rules.[188] Commenters 75-84.

Response to Comment 163: The Department thanks you for your comment.

Environmental Justice

Comment 164: New York State needs a holistic strategy to address and eliminate the environmental and human health impacts of trucks and goods movement, which fall disproportionately on communities of color and low-income communities. These communities have borne the brunt of air quality impacts from transportation and breathe the dirtiest air in the state. Ending exposures to diesel exhaust, which is a known carcinogen, is a particularly important public health and environmental justice goal. Commenter 81.

Comment 165: The HD Omnibus regulation is an important complement to the ACT rule. Alongside the ACT, this rule will advance cleaner vehicle technology while also addressing the pressing need for cleaner air in communities suffering from dangerous pollution levels. Deployment of M/HDVs with significantly lower emissions is needed to reflect the urgency of the health crisis caused by transportation pollution. It has been well- established that diesel

[188] "State of Ohio, et al., Petitioners, v. Environmental Protection Agency, et al., Respondents," https://blogs.edf.org/climate411/files/2023/02/Industry-Respondent-Intervenors-Initial-Brief-Feb.-13-2023_.pdf.

trucks and buses have an outsized impact on GHG emissions and PM pollution, and that these localized emissions disproportionately impact certain communities. For example, 74 percent of African-American and 80 percent of Asian-American New York residents live in areas with higher than average PM concentrations. Typically, low- and moderate-income households and environmental justice communities, that are more likely to live near the truck- and bus-attracting freight corridors, ports, depots, warehouses, and airports that attract high concentrations of these polluting trucks and buses. Commenter 74.

Comment 166: Due to a long history of racially motivated zoning, transportation, and land use decisions, people of color are much more likely to live near trucking corridors and major highways and be disproportionately impacted by poor air quality and associated health impacts. Using hyper-local monitoring for PM2.5, NYC-EJA identified several air pollution hotspots, mostly near heavily trafficked facilities and corridors in the Bronx and Brooklyn with some measured levels exceeding those registered at official monitors by a factor of twenty. This finding confirms prior studies showing that the impact of air pollution near Hunts Point in the Bronx varies across the community as a function of large truck traffic. Commenter 80.

Comment 167: EPA notes that 72 million Americans live in close proximity to major freight routes, the majority of whom are people of color with lower incomes. They face increased, high concentrations of toxic truck emissions and greater negative health consequences as a result. Climate change amplifies the public health risks and disparities associated with pollution and

increases the conditions for poor air quality. These rules are important to addressing both of these crises. Commenter 87.

Response to Comment 164-167: The Department thanks you for your comments. The Department agrees that the adopted regulations are critical in reducing the adverse air pollution impacts in DACs throughout New York State. It is essential that New York State continues to adopt stringent mobile sources emissions standards and regulations to protect human health and the environment, especially in DACs that have historically borne the brunt of these impacts. For more details on New York State's air quality issues and their impact on DACs, please see Response to Comments 1-10.

Adoption of HD Omnibus is Needed Due to Insufficient Federal EPA CTP Final NOx Standards

Comment 168: In late December, the EPA issued new standards that target dangerous tailpipe pollution from trucks in the coming years, the first time it has updated these standards in more than two decades.[189] But these standards fall far short of the mark set by California, and EPA missed a critical opportunity to slash soot and smog and accelerate the shift to the cleanest vehicles. For instance, under the current test procedure, the federal standard allows for up to 75 percent more emissions than then HD Omnibus. The warranty and useful life requirements for

[189] EPA, "Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards," final rule. Published January 24, 2023; effective March 27, 2023. 88 FR 4502-03.

Class 8 vehicles also increased but fall short of the HD Omnibus, at 450,000 miles and 650,000 miles, respectively, short of the 600,000 miles and 800,000 miles required by the HD Omnibus. Furthermore, these rules contain a gaping loophole that adjusts the in-use requirements of the standard when engines are operating at ambient temperatures under 77°F—hardly frigid temperatures—and excludes data below 40°F entirely. This loophole allows for as much as a 60 percent increase in allowable emissions under these very common ambient conditions.[190]

Given the deficiencies with EPA's truck NOx regulations, states like New York must forge a more protective path than the one set by the federal government. Adopting regulations like the HD Omnibus rule will help secure the public health of state residents. Commenters 75-84.

Comment 169: Though there is a newly issued federal standard on trucks and buses, this one allows for almost double the amount of pollutants while also containing major loopholes such as an ambient temperature adjustment that allows for as much as a 60 percent increase in emissions, more than the already weak federal standard. New York must forge a more protective path and the HD Omnibus rule is a step closer towards securing the public health for state residents. Commenter 86.

Comment 170: Vehicle emission standards, including the HD Omnibus rule that is the subject of today's hearing and the ACT rule adopted in 2021 must be core to this strategy. These enforceable measures will drive significant emissions reductions and are especially vital given

[190] Union of Concerned Scientists, "The EPA's New Truck Rule is a Modest Step When What is Needed is a Giant Leap," Dave Cooke, December 20, 2022. https://blog.ucsusa.org/dave-cooke/the-epas-new-truck-rule-is-a-modest-step-when-what-is-needed-is-a-giant-leap.

the insufficiency of federal standards. The HD Omnibus rule should be seen as a complement to the ACT rule. While the latter will ensure that an increasing share of M/HDVs sold in New York are zero emissions, the former, today's rule, will serve to drastically reduce emissions from the remaining share working in tandem to deliver cleaner air throughout New York. Commenter 81.

Comment 171: To achieve these vital NOx emission reductions, New York cannot rely on federal standards. EPA's HDV NOx standards finalized last year fell far short of protecting public health. EPA failed to even come close to matching the stringency of California's HD Omnibus, and even more concerningly incorporated a massive polluter-requested temperature exemption that threatens to gut even the modest efficacy of its rule. New York should act to truly protect the health of its residents by adopting the more protective California standard. Commenter 78.

Response to Comment 168-171: The Department agrees that HD Omnibus will provide greater NOx emission reductions from M/HD engines than the final federal CTP. While the Department and other stakeholders have expressed some concerns with several aspects of the CTP as noted in the multi-state Petition for Reconsideration, the Department recognizes EPA’s efforts to lower NOx emissions comparted to current federal standards. Please see Response to Comments 1-10 for further details.

Additional Emissions Reductions Are Needed In NY

Comment 172: While an important step, both the ACT and the HD Omnibus cannot be relied on alone to address New York State environmental injustices. Additional actions targeting emissions reductions and communities must also be taken by New York State and local government and include policies that target emissions reductions at ports, warehouses, distribution centers, school bus depots, refuse truck hubs, and other freight hubs, as well as other low- and no-emission zones or other California vehicle emission standards. Commenter 86.

Comment 173: Even with this rule and other rules in place, more actions will be needed to live up to the CLCPA's equity provisions, which call for prioritizing and targeting DACs. Specifically, we urge DEC and the Hochul administration to adopt an indirect source rule for e-commerce mega warehouses and to identify other diesel emission hotspots for targeted action. Commenter 81.

Comment 174: Adoption of HD Omnibus is a necessary but insufficient step towards environmental justice (EJ). This rule will reduce toxic air pollution across the state but does not guarantee emissions reductions in EJ communities. The state should develop a strategy to target the dirtiest diesel engines in EJ communities to get those vehicles off the road. This would include policies that target electrification at ports, warehouses, distribution centers, school bus depots, refuse truck hubs, and other freight hubs, as well as others such as low and no-emissions zones and other California vehicle emission standards. Such a strategy is in line with the CLCPA, which calls for prioritizing emission reductions in designated DACs, and would

implement the recommendations in the Final Scoping Plan, which calls for 100 percent electrified ports and other freight hubs. Cleaning up HDV emissions is long overdue for the communities living adjacent to highways, ports, and freight hubs that disproportionately suffer from harmful air pollution. This can lead to reduced emergency visits, and health costs, and improve health outcomes. Stronger NOx standards will protect our cities and environmental justice communities across the state. Commenters 75-84.

Comment 175: While it is important to note that adopting and moving forward with HD Omnibus rule is a necessary step toward environmental justice, it is insufficient on its own. The state should go further and also develop a targeted comprehensive strategy to get the dirtiest diesel vehicles in environmental justice communities off the road, including electrification at ports, warehouses, distribution centers, school bus depots, refuse truck hubs, and other freight hubs. Such a strategy aligns with the CLCPA prioritizing emission reductions in designated DACs. This would reduce emergency visits and health costs and improve health outcomes. Stronger NOx standards like the ones promoted in the HD Omnibus will protect our cities and environmental justice communities across the state. Commenter 80.

Response to Comments 172-175: The Department thanks you for your comments. While portions of the comment are beyond the scope of this rulemaking, the Department will continue to assess additional regulations, control measures, programs, and potential funding sources to meet the ozone NAAQS, maintain compliance with the PM NAAQS, and mitigate the disproportionate impacts of M/HDV traffic on DACs.

List of Commenters

1. Ronald L. Epstein, New York Construction Materials Association (NYMaterials)
2. Chris Daniello, Long Island Gasoline Retailers Association (LIGRA)
3. Thomas J. O'Connor, Capital Region Chamber
4. Michael P. Durant, The Food Industry Alliance of New York State
5. Douglas Austin, Diehl & Sons, Inc. (New York Freightliner)
6. Katherine Slye-Hernandez, PhD, Northeastern Retail Lumber Association of New York (NRLA-NY)
7. Kendra L. Hems, Trucking Association of New York (TANY)
8. Kris DeLair, Empire State Energy Association, Inc. (ESEA)
9. William Whalen, New York State Movers & Warehousemen's Association
10. Kevin P. Rooney P.E., New York State County Highway Superintendents Association (NYSCHSA)
11. Ashley Oeser, New York Farm Bureau
12. Mark Schienberg, Greater New York Automobile Dealers Association (GNYADA)
13. Walter Pacholczak, Associated General Contractors of New York State (AGC NYS)
14. Bob Vancavage, The New York State Automobile Dealers Association (NYSADA)
15. Timothy A. French, Truck & Engine Manufacturers Association (EMA)
16. David Miller, New York State Association of Town Superintendents of Highways (NYSAOSTOH)
17. Trevor Summerfield, American Lung Association
18. Matthew Alinger, Ph.D.

19. Gertrude Battaly, M.A./M.S.
20. Stu Blechner, D.D.S.
21. Laura Bozzi, Ph.D.
22. Joan Budd, M.D.
23. Lih-Fan Chang, M.D.
24. Shoshanna Cole, Ph.D.
25. Douglas Conant, Dr. P.H.
26. Joan Curcio, Ph.D.
27. Vincent D'Aco , M.A./M.S.
28. Nancy D'Angelo, M.A./M.S.
29. Jim Derzon, Ph.D.
30. Susan Ettinger, Ph.D.
31. Hasson Harris Wilcher, B.A./B.S.
32. A. Ali Heggo, Ph.D.
33. Jack Homer, Ph.D.
34. Tri Huynh, B.A./B.S.
35. Christopher J Jensen, Ph.D.
36. Christopher Judd, Ph.D.
37. Adnan Khan, M.A./M.S.
38. Pete Klosterman, Post Doc
39. Eileen Leonard, M.A./M.S.
40. Elaine Livingston, M.A./M.S.
41. Nerissa Russell, Ph.D.

42. Antonio Saporito, Ph.D. Candidate
43. Eric Sawyer, Ph.D.
44. Margaret Snowden, M.D.
45. Regi Teasley, Dr. P.H.
46. Burton Thelander, M.A./M.S.
47. Mary Thorpe, M.A./M.S.
48. Steven Ungar, Ph.D.
49. Judith Weis, Ph.D.
50. Carson Witte, Ph.D. Candidate
51. Harvey Berman, M.D.
52. Jason Black, M.A./M.S. Candidate
53. Patricia Flood, M.A./M.S.
54. William Forrest, Ph.D.
55. Peter Galvani, Ph.D.
56. Andrew Goldstein, M.D.
57. Steven Goldstein, M.D.
58. Terry Gordon, Ph.D.
59. Nathaniel Gould, M.D.
60. Jay Greenberg, Ph.D.
61. Sharon Greene, Ph.D.
62. Anshul Gupta, Ph.D.
63. Daniel Lutzker, Ph.D.
64. Mordecai-Mark Mac Low, Post Doc

65. Patrick McCann, M.A./M.S.
66. Tim Moran, M.A./M.S.
67. Jean Naples, Post Doc
68. Michael Niemack, Ph.D.
69. Sharon Nolting, M.A./M.S.
70. Melissa Paige, Ph.D. Candidate
71. Lou Priem, M.D.
72. Edith Robbins, Ph.D.
73. Bill Rosenthal, Ph.D.
74. Neda Deylami, Environmental Defense Fund
75. Kathy Harris, Natural Resources Defense Council
76. Patricio Portillo, Natural Resources Defense Council
77. Josh Berman, Sierra Club Environmental Law Program
78. Jessica Enzmann, Sierra Club
79. Conor Bambrick, Environmental Advocates of New York
80. Kevin Garcia, NYC Environmental Justice Alliance
81. Alok Disa, Earthjustice
82. Rachel Spector, Earthjustice
83. Melissa Iachetta, New Yorkers for Clean Power
84. Paulina Muratore, Union of Concerned Scientists
85. Jonathan Federman, Esq., Brown & Weinraub, PLLC
86. Kevin Shen, Union of Concerned Scientists
87. Will Barrett, American Lung Association

88. Anne Reynolds, The Alliance for Clean Energy New York, Advanced Energy United
89. A P Koedt
90. A W
91. Aaron Fumarola
92. Aaron Moulin
93. Abbe Lyons
94. Adam Cooper
95. Adam Nazimowitz
96. Adam Schwartz
97. Adelaide Kent
98. Adrienne Yurick
99. Ahren Sedlock
100. Aileen Renner
101. Aitor Suarez
102. Alan Dreiblatt
103. Alan Hoffner
104. Alan Stein
105. Alec Thorp
106. Alex Kowtun
107. Alexander Goasdoue
108. Alice and Donald Pulver
109. Alistair Kanaan
110. Alix Keast

111. Amy Benesch
112. Amy Briamonte
113. Andre Mirabelli
114. Andrea Pennisi
115. Andrea Taylor
116. Andrea Zinn
117. Andrew Graham
118. Andrew Joncus
119. Andrew Phillips
120. Andrew Robbins
121. Andy Chapman
122. Angelo Madrigale
123. Anita Brandariz
124. Ann Eberle
125. Ann Fraser
126. Ann Hollinger
127. Anne Heaney
128. Anne Marie Bucher
129. Anne Nelson
130. Annette Nelson
131. Anthony Guillaume
132. Anthony LaRocca
133. Anthony Terranova

134. Antonio Fernandez
135. Arianna Dutter
136. Arlene Scovotti
137. Arlene Zuckerman
138. Art Shervs
139. Arthur Kundhart
140. Aubrae Lamparella
141. Audrey Levin
142. August Oberti
143. B O'Connell
144. Barbara Brasel
145. Barbara Coley
146. Barbara Karcher
147. Barbara Mastorgi
148. Barbara Prato
149. Barbara Regan
150. Barbara Ungar
151. Beatrice Simmonds
152. Benjamin Martin
153. Bennett Brumson
154. Bente Videbaek
155. Bernadette Andaloro
156. Bernadette Belcastro

157. Beth Darlington
158. Beth Jane Freeman
159. Bibi Prival
160. Bill Demo
161. Bill King
162. Bob Giambalvo
163. Boman Bushor
164. Brenda Lee
165. Brian Greenberg
166. Brigid Moreno
167. Brigid Vele
168. Brittany Barringer
169. Brooke Bell
170. Bruce Markens
171. Bryan Christian
172. Bryan Haynes
173. C de Ben
174. Caitie Moore
175. Caitlin A Anderson
176. Callan Ditmyer
177. Candia Katich
178. Caren Flashner
179. Carla Cherry

180. Carla Mabanta
181. Carmen Plaza
182. Carol and Barry Meehan
183. Carol Chappell
184. Carol Elias
185. Carol Lipsky
186. Carol Myers
187. Carolyn Bartholomew
188. Carolyn Clark Pierson
189. Catherine Campbell
190. Catherine Clifton
191. Catherine Doyle
192. Catherine Rowan
193. Catherine Wright
194. Cathleen Kelly
195. Cathy Carleton
196. Cathy Marczyk
197. Cathy Yee
198. Cecilia Barea
199. Celeste Winkle
200. Charlene Greynolds
201. Charles Browning
202. Charles Casper

203. Charles Wittman
204. Chris Baird
205. Chris Ness
206. Chris Newcomb
207. Chris Washington
208. Christian Perring
209. Christine Carreda
210. Christine Sheppard
211. Christopher J Jensen
212. Christopher Kohlman
213. Cindy Graham
214. Cindy Schultz
215. Clare Rakshys
216. Claudia Leff
217. Coleen Gowans
218. Conney Joa
219. Connie Allison
220. Conrad Schaub
221. Constance Colvin
222. Craig Stallone
223. Cree Maxson
224. Cynthia Nelson
225. D R Yale

226. Dale Goldstein
227. Dan Piccolo
228. Daniel Bower
229. Daniel Klein
230. Daniel Kreiss
231. Daniel L Harris
232. Daniel Laemmerhirt
233. Daniel Lutzker
234. Daniel Meyers
235. Daniel Rausher
236. Daniel Spilman
237. Danne Tinsley
238. Danny M
239. Darian Mark
240. Darrell Noel
241. Daryl Denning
242. Daryl Pierce
243. David Amrod
244. David Bly
245. David Brandt
246. David Friedman
247. David Lambert
248. David Licht

249. David Rasmussen
250. David Waschman
251. David Wells
252. Dawn Chin
253. Dawn Kenyon
254. Debi Holt
255. Deborah Carroll
256. Deborah Coble
257. Dejania Cotton-Samuel
258. Deni Mack
259. Denise Anzelmo
260. Denise Ezrow
261. Denise J. Tartaglia
262. Dennis Brennan
263. Dennis Knaack
264. Derek Foster
265. Derinda Nilsson
266. Destiny Orantes
267. Diana Praus
268. Diane Basile
269. Diane Englander
270. Dianne Noblett
271. Dolores Schaefer

272. Donald Lathrop
273. Donn K Carroll
274. Donna Mummery
275. Dora Hage
276. Dora Hage
277. Doreen Tignanelli
278. Dorothy Walsh
279. Douglas Cooke
280. Douglas Frye
281. Douglas Kinney
282. Duane Greene
283. Eda Kapsis
284. Edith Robbins
285. Edris Boyll-Kuzia
286. Edward Ciaccio
287. Edward Colley
288. Edward Palone
289. Edward Rengers
290. Ela Thomas
291. Elaine Krautman
292. Elaine Linet
293. Elaine Livingston
294. Elaine Shuster

295. Eleanor Joyce
296. Elena C
297. Elizabeth Bradshaw
298. Elizabeth Craig
299. Elizabeth Dierker
300. Elizabeth F
301. Elizabeth Shephard
302. Elizabeth Ungar
303. Ellen Asher
304. Ellen Fleishman
305. Ellen Fox
306. Ellen Leaf
307. Ellen Pomeroy
308. Ellen Zaltzberg
309. Ellen Zapf
310. Elyse Brows
311. Emmet Ryan
312. Eric Bare
313. Eric Beam
314. Eric Chamama
315. Eric Eisenberg
316. Eric Wessman
317. Erica von Nardroff

318. Erich Winkler
319. Estervina Bykov-Green
320. Eugene Doyle
321. Eva Marks-Curatolo
322. Eva Melas
323. Evelyn Malone
324. Flo Brodley
325. Flo Fender
326. Frances Richard
327. Francisco Velez
328. Franco de Nicola
329. Frank Rehor
330. Frank Silagy
331. Frederick Cardini
332. Freya Goldstein
333. G Douglas Ray
334. G. Paxton
335. Gabriel Bobek
336. Gabriel Gomes
337. Gary Stephenson
338. Gay Brookes
339. Gene Mackay
340. George Brieger

341. George Connolly
342. George Dillmann
343. George Y Bramwell
344. Gerald Bates
345. Gerald Walsh
346. Gerhard Paluca
347. Gertrude Battaly
348. Ginger Comstock
349. Glen Weisberg
350. Glenn Hufnagel
351. Godlind Johnson
352. Grace Bileta
353. Gre Perr
354. Greg Rieves
355. Greg Singer
356. Gregg Mayer
357. Gregory Marks
358. Gregory Stoner
359. Guy Quinlan
360. Guy Winig
361. Hal Pillinger
362. Harriet Shalat
363. Hasson Harris Wilcher

364. Hayden Brockett
365. Heather Turbush
366. Heidi Cleven
367. Helen O. Littledale
368. Helene Herman
369. Hendricka Samytowski
370. Herb Oringel
371. Herbert Winter
372. Hope Carr
373. Hope Schnee
374. Howard Levitsky
375. Ilene Choi
376. Ilya Speranza
377. Indira Hersey
378. Irene Franck
379. Iris Rochkind
380. Isabelle Kanz
381. Isabelle Lorans
382. Ismet Kipchak
383. J L Keith
384. J N
385. J Pearlman
386. J Stewart

387. Jacalyn Dinhofer
388. Jack Polonka
389. Jack Shapiro
390. Jackie Stolfi
391. Jackie Swift
392. Jacquelyn Scioscia
393. Jacques Mounier
394. James Bell
395. James Berger
396. James Bochenek
397. James Cooper
398. James DeJager
399. James Gray
400. James Hicks
401. James Hoover
402. James Jones
403. James Martin
404. James Nowack
405. James Yvonne Tittle
406. Jamie DePaoli
407. Jamilah Elder
408. Jan Emerson
409. Janet Brown

410. Janet Forman
411. Janet Linde
412. Janet Mardfin
413. Janet McGarry
414. Janet Moser
415. Janice Bailey
416. Janine Vinton
417. Jay Greenberg
418. Jay Holmes
419. Jean A Marwick
420. Jean Naples
421. Jeanie Shraeger
422. Jeff Bohan
423. Jeff McMahon
424. Jeff Morris
425. Jeffrey Baker
426. Jendra Jarnagin
427. Jennifer Harris
428. Jennifer Kovencz
429. Jennifer Neale
430. Jennifer Spirakis
431. Jennifer Valentine
432. Jerilyn Sackler

433. Jerry Rivers
434. Jessica Miracola
435. Jill Greenberg
436. Jill Levy
437. Jill Nicholas
438. Jim Gross
439. Jim Long
440. Joan Hausladen
441. JoAnn Pedersen
442. Joanna Roy
443. JoAnne Metzler
444. Joanne Yeary
445. Joel Brown
446. John Asvestas
447. John Brantley
448. John Heyneman
449. John Hogan
450. John Kim
451. John Kovencz
452. John L Staton
453. John Markowitz
454. John Papandrea
455. John Schmidt

456. John Stanton
457. Johnny Bel
458. Jon Gordon
459. Jon Nelson
460. Jonathan Paris
461. Jonathan Weiss
462. Jordan Lipka
463. Jordan Shapiro
464. Jose Caraballo
465. Joseph de Feo
466. Joseph Dulski
467. Joseph F Muratore
468. Joseph Lawson
469. Joseph M Varon
470. Joseph Quirk
471. Josh Konheim Heffron
472. Joy Smiley
473. Juanita Garnett
474. Judith Ackerman
475. Judith Lasko
476. Judith Weis
477. Julianne Chen
478. Julianne Weisner-Chianese

479. Kahlil Goodwyn
480. Kara Huberman
481. Karen Cotterell
482. Karen Duda
483. Karen Intorcia
484. Karen Kirkhart
485. Karen Miller
486. Karen Thomas
487. Karl Hildenbrand
488. Karl Mueller
489. Karla Kavanaugh
490. Kate Frangos
491. Kate Pfordresher
492. Katherine Skolnick
493. Katherine Stewart
494. Kathleen R Davis
495. Kathleen Susman
496. Kathryn Schneider
497. Kathryn Woodruff
498. Kathy Devos
499. Kathy Franklin
500. Kathy Haverkamp
501. Keba Jones

502. Keitha Farney
503. Kelly DeVine
504. Kelly Jean Clair
505. Kenneth Apostol
506. Kenneth Lay
507. Kenneth Tullipano
508. Kenya Pena
509. Kevin Ascher
510. Kevin Fritz
511. Kevin Grimes
512. Kevin Kurtz
513. Kevin O'Rourke
514. Kiamesha Sims
515. Kim Hill
516. Kimberly Badger
517. Kirstin Peterson
518. Kitty Savage
519. Kristopher Burrell
520. Kyle Gage
521. Kyra Legaroff
522. Larry Lubonty
523. Laura Busam
524. Laura Pitt Taylor

525. Lauren Felicione
526. Lawrence Hilf
527. Lawrence Ross
528. Leah Hallow
529. Lena Tabori
530. Lenore Greenberg
531. Lesyle Smith
532. Lih-Fan Chang
533. Lilian Rolfs
534. Linda Allen
535. Linda Fighera
536. Lisa A Cammett
537. Lisa Dates
538. Lisa Goren
539. Lisa Reinhold
540. Liz Mahoney
541. Ljubica Stefer-Stefancic
542. Lloyd Greene
543. Lois S
544. Lori Alicie
545. Lori Heinl
546. Lori Sieman
547. Lorin Silverman

548. Lou Priem
549. Louis Blair
550. Louis Esposito
551. Lucille Nurkse
552. Lynn Bowdery
553. Lynn Hoch
554. Lynn Skibinski
555. Lynne Teplin
556. M. E. Monti
557. Madalyn Benoit
558. Madhumita Chatterjee
559. Mara Lopez
560. Marcello Franciamore
561. Marcia Lewin
562. Marcia Migdal
563. Marcia Westra
564. Margaret Gryska
565. Margaret Scripp
566. Marge Dakouzlian
567. Margot VanEtten
568. Marguerite Scheyer
569. Maria Asteinza
570. Maria Clair-Howard

571. Maria Folley
572. Maria Miranda
573. Mariana Morse
574. Marianne Dietrich
575. Marianne Pratt
576. Marie Garescher
577. Marija Stroke
578. Marilyn Dragon
579. Marilyn Kaggen
580. Marilyn Monoclava
581. Marina Barry
582. Marjorie Kurtz
583. Mark Barkan
584. Mark Christensen
585. Mark Daitsman
586. Mark Mansfield
587. Mark Tlemann
588. Mark Walth
589. Marlena Lange
590. Marley McDermott
591. Marsha Smith
592. Martha Lynch
593. Martin Bunis

594. Martin Sticht
595. Martiza Vazquez
596. Mary Ann Smith
597. Mary Ann Tober
598. Mary Boudreau
599. Mary de Spirt
600. Mary Fox
601. Mary Hinton
602. Mary Lou Zeis
603. Mary McGeary
604. Mary Nolan
605. Mary Paula Bautista
606. Mary Roberts
607. Mary Thorpe
608. Mary Zulack
609. Maryann Barulich
610. MaryAnn Denning
611. Maud Easter
612. Maureen Carroll
613. Melissa Barnard
614. Melissa Miller
615. Melissa Paige
616. Melissa van Wijk

617. Meredith Kent-Berman
618. Merle Molofsky
619. Michael Bruckheimer
620. Michael Fegan
621. Michael Gelfer
622. Michael Gnat
623. Michael Gutleber
624. Michael Laird
625. Michael Madden
626. Michael Rosenberg
627. Michele Johnson
628. Michele Temple
629. Michelle Renee Shafran
630. Michelle Santantonio
631. Mimi Rosenfeld
632. Mini Liu
633. Mitchell Stachowicz
634. Mo Kafka
635. Monica Beyer
636. Moraima Suarez
637. Murugan Pandian
638. Myrella Triana
639. N D

640. N Dumser
641. N. F. Taussig
642. Nadine Godwin
643. Nancy Bolan
644. Nancy Prowell Prowell
645. Nancy Scheck
646. Nancy Schulman
647. Nancy Ward
648. Naomi Klass
649. Naomi Lehman
650. Natasha Schwartz
651. Nathalie Camus
652. Nathaniel Sivin
653. Nerissa Russell
654. Nicholas Falletta
655. Nicholas Prychodko
656. Nichole Vivion
657. Nick Byrne
658. Nick Vivian
659. Nicky Grist
660. Nicolas Estevez
661. Nola Heidlebaugh
662. Norman Lander

663. Oscar Zamora
664. P V
665. Pamela Brocious
666. Pamela Guyon
667. Pamylle Greinke
668. Patrice Miller
669. Patricia A Sacco
670. Patricia Adamo
671. Patricia Brescia-Cantine
672. Patricia Marinaccio
673. Patricia Salcedo
674. Patrick Hono
675. Patrick McCann
676. Patrick Schnell
677. Paul Ghenoiu
678. Paul Meyers
679. Paul Mokhiber
680. Paul Packer
681. Paul S Lipton
682. Paul Schaefer
683. Pete Klosterman
684. Peter Etu
685. Peter Farris

686. Peter Galvani
687. Peter Giurato
688. Peter Gradoni
689. Peter McKnight
690. Peter Winkler
691. Petra Jones
692. Phil Chambers
693. Phil Fram
694. Phillip Hope
695. Pippa Pearthree
696. R Doty
697. R Wheeler
698. Rachel Berg
699. Rachel Ptacek
700. Rebeca Taub
701. Rebecca Berlant
702. Rebecca Levinson
703. Rebecca Novick
704. Rehana Huq
705. Rev John Long
706. Rhonda Cooper
707. Rib Puc
708. Richard Gibbons

709. Richard Gilbert
710. Richard Gueir
711. Richard Jandoli
712. Richard Leigh
713. Richard Picone
714. Richard Stern
715. Richard Tidd
716. Richard Wolff
717. Rita-Ann Fitzgerald
718. Rob Fursich
719. Robert Banov
720. Robert Cushing
721. Robert Fanniff
722. Robert H. Feuchter
723. Robert Jacobson
724. Robert Liebman
725. Robert Lombardi
726. Robert Minnick
727. Robert Pierce
728. Robert Puca
729. Robert Snyder
730. Robert Verity
731. Robert Zeller

732. Robin Blakesly
733. Robin Del Pino Ferries
734. Robin Spiegelman
735. Rochelle Killingbeck
736. Roland D'Amour
737. Rose Marie Wilson
738. Rosemarie Pace
739. Rosemary Clifford
740. Rosemary Gutwillig
741. Roy Zarow
742. Roz Forman
743. Rudolph Ripp
744. Ruth Gitto
745. Ruth Neuwald Falcon
746. Ruth Siekevitz
747. Rutherford Charlot
748. S. M. Carter
749. Sabine Roehr
750. Samuel Thorpe
751. Sandra Mattson
752. Sandy McGovern
753. Sarah Apfel
754. Sarah Curtiss

755. Sarah Gallagher
756. Sarah Gallagher
757. Sarah Hamilton
758. Sarah Hunnewell
759. Sarah Walling
760. Scott Davis
761. Scott Korman
762. Scott Wasserman
763. Sean Adair
764. Seth Schneider
765. Seth Silverman
766. Shani Schulman
767. Sharon Carey
768. Sharon Goel
769. Sharon Longyear
770. Sharon Nolting
771. Shaun Knutsen
772. Sheila Nelson
773. Sheila Stone
774. Shelley Sheldon
775. Sherita Wilson
776. Shoshanna Cole
777. Sonia Goldstein

778. Sonia Romero Villanueva
779. Soretta Rodack
780. Stan Janzick
781. Stephan Feldstein
782. Stephanie Christoff
783. Stephanie Cuellar
784. Stephanie Cybulski
785. Stephanie Doba
786. Stephanie Ellis
787. Stephanie Llinas
788. Stephanie Zaientz
789. Stephen Appell
790. Stephen Day
791. Stephen Karinsky
792. Stephen MacNish
793. Steve Ungar
794. Steven Bennett
795. Steven Goldstein
796. Steven Lowenthal
797. Sue Maxam
798. Susan Baxter
799. Susan Carter
800. Susan Castelli-Hill

801. Susan E Butler
802. Susan Ehrhardt
803. Susan Emery
804. Susan G
805. Susan Picard
806. Susan Wald
807. Susan Yerry
808. Susanna Levin
809. Suzanne Charle
810. Suzanne Hoover
811. Sven Furburg
812. T Mitchell
813. Tavia Gilbert
814. Taylor Drew
815. Ted Neumann
816. Teresa Dybvig
817. Terrence Thompson
818. Terri Brady
819. Terry Hasan
820. Thaddea Campain
821. Thomas Bain
822. Thomas Burns
823. Thomas Keane

824. Thomas Kirk
825. Thomas Moulton
826. Tim Groeger
827. Tim Moran
828. Timothy Raymond
829. Toni Danielson
830. Tracey Groomes
831. Tracy Marafiote
832. Valerie Rounds-Atkinson
833. Valerie Van Isler
834. Vicki Casarett
835. Vicky Harrington
836. Victor Provenzano
837. Victoria Fox
838. Vincent Colletti
839. Vincent Daco
840. Walter Alton
841. Ward Giblin
842. Warren Vieira
843. Wendi Cohen
844. Wendy Alberg
845. Wendy Brawer
846. Wendy Fast

847. Wes Ernsberger

848. William Forrest

849. William Louden

850. William Malmros

851. William Roberson

852. William Schwarz

853. William Wurtz

854. Won Ng

855. X Harris

856. Yvonne Simmons

857. Zoe Strassfield