NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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November 29, 2021

Ms. Lisa Garcia
Regional Administrator
U.S. Environmental Protection Agency, Region 2
290 Broadway, 26th Floor
New York, NY 10007-1866

Dear Administrator Garcia:

The New York State Department of Environmental Conservation (DEC) is hereby submitting for approval into the New York State Implementation Plan (SIP) the enclosed attainment demonstration pursuant to the 2008 ozone National Ambient Air Quality Standards (NAAQS). The New York-Northern New Jersey-Long Island, NY-NJ-CT nonattainment area (referred to as the New York metropolitan area (NYMA)) was reclassified to "serious" nonattainment for the 2008 ozone NAAQS effective September 23, 2019;[1] DEC was therefore required to submit an attainment demonstration to EPA as a SIP revision.

DEC continues to take extremely aggressive actions to reduce emissions of the primary ozone precursors, nitrogen oxides (NOx) and volatile organic compounds (VOCs), both in the NYMA and statewide. Aside from the established stationary, area, and mobile source measures that go beyond federal requirements, New York is accelerating the transformation of its vehicle fleet to a zero-tailpipe emission transportation system. Compliance with the 2008 ozone NAAQS has been impaired by inadequate federal regulation of transported pollution that fails to hold upwind states accountable for their share of the pollution entering the NYMA. The two-year time frame resulting from EPA's September 2019 reclassification of the NYMA to serious nonattainment was also inadequate for demonstrating attainment.

The enclosed attainment demonstration submitted pursuant to Clean Air Act (CAA) section 182(c) demonstrates that the NYMA did not attain the 2008 ozone NAAQS by the serious-area attainment deadline of July 20, 2021 based on certified air quality data through the 2020 ozone season. DEC is requesting that EPA reclassify the area to "severe" nonattainment as expeditiously as possible, and give New York, New Jersey, and Connecticut adequate time to develop attainment demonstrations for the "severe" classification.

[1] "Determinations of Attainment by the Attainment Date, Extensions of the Attainment Date, and Reclassification of Several Areas Classified as Moderate for the 2008 Ozone National Ambient Air Quality Standard," Final Rule. Published August 23, 2019; effective September 23, 2019. 84 FR 44238-44254.

The enclosed attainment demonstration uses the previously submitted 2011 base year inventory and includes a complete 2020 projection inventory, and demonstrates that the area is meeting and exceeding the three percent-per-year reasonable further progress requirements. DEC also certifies that certain previously approved CAA requirements for ozone nonattainment areas remain adequate, and that no revisions to the state plan are necessary for these previously approved requirements. Specifically, DEC certifies that the emission inventory, emission statement, enhanced vehicle inspection and maintenance, nonattainment new source review, and RACT requirements are up-to-date and satisfy the requirements for the 2008 ozone NAAQS.

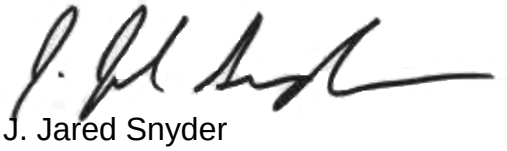
The proposed SIP revisions underwent a public review period. A Notice of Public Comment Period was published in DEC's Environmental Notice Bulletin (ENB) on June 16, 2021 and DEC accepted written comments through July 16, 2021. Comments were received from EarthJustice on behalf of itself and 18 other environmental and health organizations.

The following documents are enclosed:

1. NEW YORK STATE IMPLEMENTATION PLAN FOR THE 2008 OZONE NATIONAL AMBIENT AIR QUALITY STANDARDS; NEW YORK-N. NEW JERSEY-LONG ISLAND, NY-NJ-CT SERIOUS NONATTAINMENT AREA; Final Proposed Revision; November 2021;
2. Notice of Public Comment Period as published in the June 16, 2021 ENB;
3. Assessment of Public Comments.

Please contact Mr. Robert Bielawa or Mr. Scott Wajda-Griffin at 518-402-8396 if you have any questions.

Sincerely,



J. Jared Snyder
Deputy Commissioner
Office of Climate, Air & Energy

Enclosures

c: R. Ruvo, EPA Region 2
R. Bielawa
S. Wajda-Griffin

NEW YORK STATE OF OPPORTUNITY. | Department of Environmental Conservation

NEW YORK STATE IMPLEMENTATION PLAN FOR THE 2008 OZONE NATIONAL AMBIENT AIR QUALITY STANDARDS

NEW YORK-N. NEW JERSEY-LONG ISLAND, NY-NJ-CT SERIOUS NONATTAINMENT AREA

Final Proposed Revision

November 2021

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Bureau of Air Quality Planning

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EXECUTIVE SUMMARY

In 2008, the U.S. Environmental Protection Agency (EPA) revised the primary and secondary National Ambient Air Quality Standards (NAAQS) for ozone to levels of 0.075 parts per million. EPA designated the New York-Northern New Jersey-Long Island, NY-NJ-CT metropolitan area (New York metropolitan area, or NYMA) as a nonattainment area for the 2008 ozone NAAQS effective July 20, 2012.

The NYMA failed to attain the NAAQS by the marginal attainment date of July 20, 2015 and was reclassified to moderate nonattainment effective June 3, 2016. With a moderate classification, New York was required to submit a State Implementation Plan (SIP) revision that demonstrated how the NYMA would attain the 2008 NAAQS by July 20, 2018 (based on monitored air quality data from 2015-2017). On November 10, 2017, the New York Department of Environmental Conservation (DEC) submitted a demonstration to EPA which concluded that the NYMA would not attain the 2008 NAAQS by the July 20, 2018 moderate area deadline. DEC used that submission to request an immediate reclassification to serious nonattainment and to be placed on a schedule for attainment by the serious area deadline of July 21, 2021 (based on 2018-2020 monitored data).

The NYMA reclassification to serious nonattainment was effective on September 23, 2019. This demonstration shows that ozone concentrations in the NYMA continue to exceed the 2008 NAAQS based on certified monitoring data for the 2018 through 2020 period; this finding is consistent with projected 2020 photochemical air quality modeling conducted by DEC. While ozone reduction efforts have resulted in a long-term declining trend and all New York monitors exhibit attainment of the NAAQS, monitors in Connecticut continue to measure nonattainment.

New York currently has some of the most stringent control programs for nitrogen oxides (NOx) and volatile organic compounds (VOCs) in the country. These control programs include the following:

- Reasonably Available Control Technology (RACT) standards on all major NOx and VOC stationary sources including electric generating units (EGUs) and non-EGUs;
- California's motor vehicle emission standards – most recently the Low Emission Vehicle III standards – which more stringently regulate the amount of NOx emitted from motor vehicles than federal emission standards;
- Statewide vehicle inspection and maintenance requirements that include testing of older, high-emitting vehicles to significantly reduce on-road mobile emissions;
- Measures to reduce VOC emissions from a variety of large source categories that have been recommended by the Ozone Transport Commission including consumer products, architectural and industrial maintenance coatings, portable fuel containers, adhesives and sealants, asphalt paving, and solvent metal cleaning processes;

- Lowest Achievable Emission Rate standards on all new sources in the NYMA with the potential to emit 25 tons per year or more of NOx or VOCs, and on all existing minor sources that would undergo modifications with emissions above these thresholds; and,
- Subpart 227-3, a recently adopted control measure that will reduce NOx emissions from “peaking” turbines -- old, inefficient units that operate only on the hottest summer days when electricity demand is at its highest.

While mobile sources are largely regulated at the federal level, New York State is aggressively improving the efficiency of its vehicle fleet. Aside from the measures listed above, New York is leveraging over $127 million in funding from the Volkswagen settlement for a wide variety of mitigation projects that will result in significant NOx reductions while accelerating the transformation to a zero-tailpipe emission transportation system. The proposed mitigation actions generally include replacing or repowering older, dirtier diesel-powered vehicles with newer, cleaner vehicles including a strong preference for all-electric vehicles, where feasible.

Also, on July 14, 2020, Governor Andrew Cuomo signed the Multi-State Zero Emission Medium- and Heavy-Duty Vehicle Memorandum of Understanding, joining 14 other states and the District of Columbia in an agreement to develop an action plan to ramp up electrification of buses and trucks. New York committed to work collaboratively to accelerate the market for electric medium- and heavy-duty vehicles, with the goal of ensuring that all new medium- and heavy-duty vehicle sales be zero emission vehicles by 2050 with an interim target of 30 percent zero-emission vehicle sales in these categories of vehicles by 2030.

The NYMA continues to be significantly impacted by interstate transport and mobile source emissions. DEC has repeatedly urged EPA to develop a stringent program under the Clean Air Act’s (CAA) good neighbor clause. Instead, EPA has developed rules that were too late, providing only some benefit in the last year of a three-year compliance period; too weak, with control cost thresholds significantly lower than those implemented by the downwind states that fail to require significant control improvements; and too limited in scope, with EPA excluding high-emitting non-EGU sources. Until such time that EPA and upwind states satisfactorily address transport and EPA takes additional steps to regulate mobile source emissions, New York will continue to suffer from the resulting economic disparities as it struggles to attain the ozone NAAQS despite the efforts outlined in this attainment demonstration.

The prior administration’s rollback of vehicle emission standards has also frustrated New York’s progress in reducing ozone levels. On September 27, 2019, EPA finalized its “One National Program” Rule which revoked California’s ability to set its own mobile source standards and took away the ability of other states to adopt California standards to improve their own air quality issues. On March 21, 2020, EPA and the National Highway Traffic Safety Administration (NHTSA) finalized fuel economy and carbon dioxide emission standards for model year 2021 through 2026 light-duty vehicles, which

greatly weakened previously-established standards. New York encourages EPA and NHTSA to expeditiously proceed with restoring and strengthening those standards and restoring the waiver of preemption that allows New York to adopt stronger California standards.

Meanwhile, New York State continues to exceed its Reasonable Further Progress emission reduction requirements. This SIP details how sources in the NYMA go well beyond the required 27 percent emission reductions from the 2011 base year. This requirement is being met through a combination of NOx and VOC reductions, with excess reductions of NOx totaling an additional 21.17 percent in 2020.

The 2011 base-year inventory was officially submitted to EPA on November 10, 2017 for approval into the New York SIP pursuant to CAA sections 169A(b), 172(c)(3), and 182(a)(1). This baseline emissions inventory is summarized in Section 4, with additional details provided in New York's 2017 moderate area attainment SIP and available upon request. Also included in Section 4 is a projection inventory for 2020. Photochemical modeling results based on the 2020 projection inventory are included in Section 5. Section 6 documents how the State of New York meets the three percent per annum Reasonable Further Progress mandate for serious nonattainment areas.

DEC is also certifying that its existing ozone program fulfills all SIP requirements for a serious nonattainment area pursuant to the 2008 ozone NAAQS. The following previously-approved SIP elements remain adequate, and no revisions to the state plan are necessary.

- Emission Inventory: Pursuant to CAA sections 182(a)(3)(A) and 182(c), the emission inventory requirement is addressed through the submission of the 2011 baseline emission inventory;
- Emission Statements: Pursuant to CAA sections 182(a)(3)(B) and 182(c), the emission statement requirement is fully addressed through 6 NYCRR Subpart 202-2, "Emission Statements";
- RACT: Pursuant to CAA sections 182(b)(2) and 182(c), NOx and VOC RACT requirements are fully addressed as discussed in Section 7;
- Vehicle Inspection and Maintenance: Pursuant to CAA section 182(c)(3), the vehicle inspection and maintenance requirement is fully addressed through 6 NYCRR Part 217, "Motor Vehicle Emissions";
- Nonattainment New Source Review: Pursuant to CAA sections 182(b)(5) and 182(c), the nonattainment New Source Review requirement is fulfilled by 6 NYCRR Part 231, "New Source Review for New and Modified Facilities."

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List of Commonly Used Acronyms and Abbreviations

ACT	Alternative Control Techniques
AIM	Architectural and Industrial Maintenance
AMCC	Aftermarket Catalytic Converter
BACT	Best Available Control Technology
BART	Best Available Retrofit Technology
CAA	Clean Air Act
CARB	California Air Resources Board
CFR	Code of Federal Regulations
CMV	Commercial Marine Vessels
CSAPR	Cross-State Air Pollution Rule
CTG	Control Techniques Guidelines
DEC	New York State Department of Environmental Conservation
DG	Distributed Generation
DV	Design Value
ECL	Environmental Conservation Law
EGU	Electric Generating Unit
EIA	Energy Information Administration
EPA	United States Environmental Protection Agency
ERC	Emission Reduction Credit
ERTAC	Eastern Regional Technical Advisory Committee
FAA	Federal Aviation Administration
FR	Federal Register
GVWR	Gross Vehicle Weight Rating
HAP	Hazardous Air Pollutant
I/M	Inspection and Maintenance
ISA	Integrated Science Assessment
LAER	Lowest Achievable Emission Rate
LEV	Low Emission Vehicle
LTO	Landing and Take-Off
MACT	Maximum Achievable Control Technology
MANE-VU	Mid-Atlantic and Northeast Visibility Union
MARAMA	Mid-Atlantic Regional Air Management Association
MOVES	Motor Vehicle Emissions Simulator
MPO	Metropolitan Planning Organization
MVEB	Motor Vehicle Emission Budget
NAAQS	National Ambient Air Quality Standard
NAMS	National Air Monitoring Station
NEI	National Emissions Inventory
NESCAUM	Northeast States for Coordinated Air Use Management
NO	Nitric Oxide
NO_2	Nitrogen Dioxide
NOx	Oxides of Nitrogen
NSR	New Source Review

NYCRR	New York Codes, Rules, and Regulations
NYMA	New York Metropolitan Area
NYVIP	New York Vehicle Inspection Program
OBD	Onboard Diagnostic
OSD	Ozone Season Day
OTC	Ozone Transport Commission
OTR	Ozone Transport Region
PM	Particulate Matter
$PM_{2.5}$	Particulate Matter (Fine)
PM_{10}	Particulate Matter (Coarse)
ppm	Parts per Million
PSD	Prevention of Significant Deterioration
QA	Quality Assurance
RACM	Reasonably Available Control Measures
RACT	Reasonably Available Control Technology
RE	Rule Effectiveness
RFP	Reasonable Further Progress
RVP	Reid Vapor Pressure
SCC	Source Classification Code
SIP	State Implementation Plan
SLAMS	State and Local Air Monitoring Station
SO_2	Sulfur Dioxide
TIP	Transportation Implementation Plan
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compound

SECTION 1: BACKGROUND AND OVERVIEW OF FEDERAL REQUIREMENTS

A. Introduction

Due to the severity of the health and welfare effects associated with ground-level ozone, the Clean Air Act (CAA) requires the U.S. Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS) designed to protect public health and the environment. The CAA allows EPA to establish two types of NAAQS for six criteria air pollutants: Primary standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.

The EPA Administrator is tasked with considering the available scientific evidence and associated quantitative analyses in setting a primary standard that is requisite (i.e. neither more nor less stringent than necessary) to protect public health with an adequate margin of safety. The Administrator also considers the full body of evidence on welfare effects and related analyses (including the evidence of effects associated with cumulative seasonal exposures of the magnitudes allowed by the current standard) in determining a secondary standard that provides the requisite protection of public welfare from known or anticipated adverse effects.

B. Ozone Formation

Ozone is produced through complex chemical reactions in which its precursors – primarily oxides of nitrogen (NOx) and volatile organic compounds (VOCs) – react in the presence of sunlight and high temperatures. Ozone that is found high in the earth's upper atmosphere (stratosphere) is beneficial because it inhibits the penetration of the sun's harmful ultraviolet rays to the ground. Ozone, however, can also form near the earth's surface (troposphere). This ozone, commonly referred to as ground-level ozone, is breathed in by or comes into contact with people, animals, crops and other vegetation, and can cause a variety of serious health effects and damage to the environment. Stratospheric ozone can occasionally mix down and contribute to ozone levels in the troposphere.

Complicating the formation of ground-level ozone is the fact that the chemical reactions that create ozone can take place while the pollutants are being blown through the air (or "transported") by the wind. This means that elevated levels of ozone can occur many miles away from the source of their original precursor emissions. Therefore, unlike more traditional pollutants (e.g., sulfur dioxide (SO_2) and lead, which are emitted directly and can be controlled at their source), reducing ozone concentrations poses additional challenges.

1. Ozone Precursor: Oxides of Nitrogen

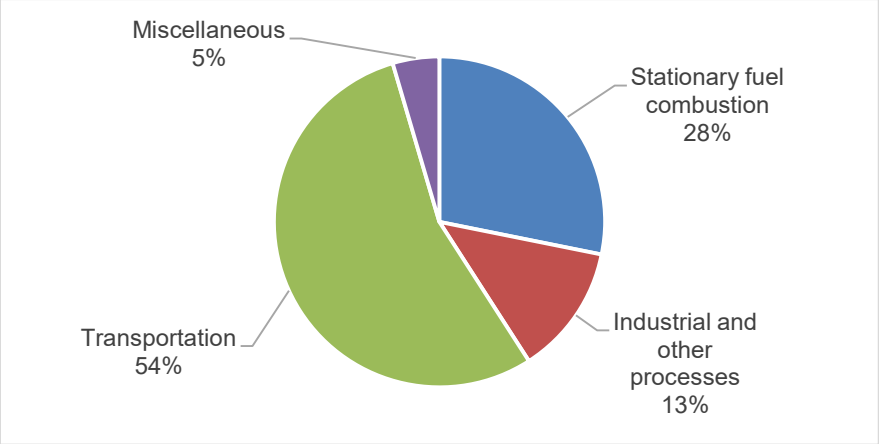
NOx is a group of gases including nitric oxide (NO) and nitrogen dioxide (NO_2). NO_2 is a reddish-brown, highly reactive gas that is formed in the air through the oxidation of NO. When NO_2 reacts with other chemicals in the atmosphere, it contributes to the formation of ozone and may also form particulate matter (PM), haze, and acid rain. Sources of NO and NO_2 include motor vehicle exhaust (including both gasoline- and diesel-fueled vehicles), the burning of coal, oil, and natural gas, and industrial processes such as welding and electroplating.

Although most NOx is emitted as NO, it is readily converted to NO_2 in the atmosphere. Since a considerable portion of the NOx in the air is attributed to motor vehicles, concentrations tend to peak during the morning and afternoon rush hours.

A challenging aspect of controlling ozone pollution in New York City is the nonlinear response of ozone to precursor concentrations. Local ozone concentrations may be suppressed by excess NOx emissions in a process referred to as NOx titration. Controlling excess NOx emissions can reduce this suppressive effect and increase ozone concentrations locally until such time that NOx becomes the limiting precursor.

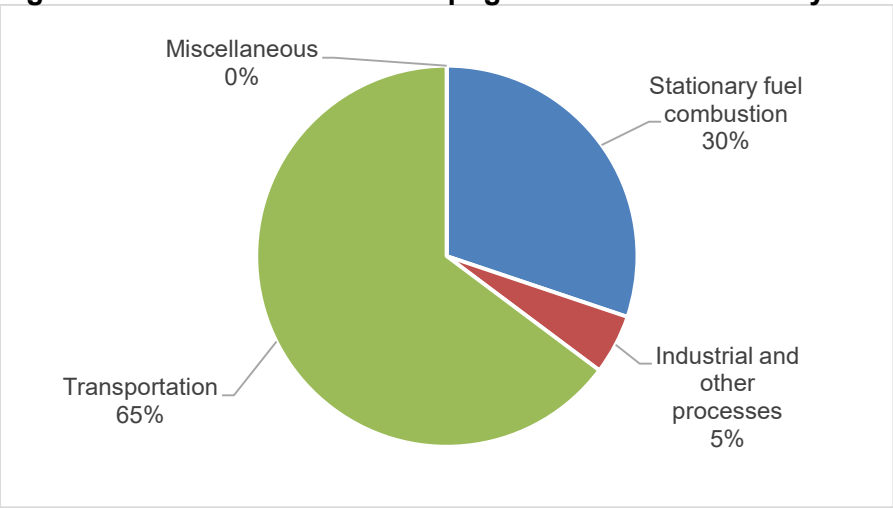
Figure 1 shows the national breakdown of NOx emissions by category. In this chart, fuel combustion refers to stationary sources (i.e., from electric utility, industrial, and other sources). Transportation is considered a mainly localized contributor of NOx, while fossil fuel combustion and industrial sources have transport impacts, making them more of a regional issue. Figure 2 provides these data for New York State.[1]

Figure 1. National Anthropogenic NOx Emissions by Source Category for 2019



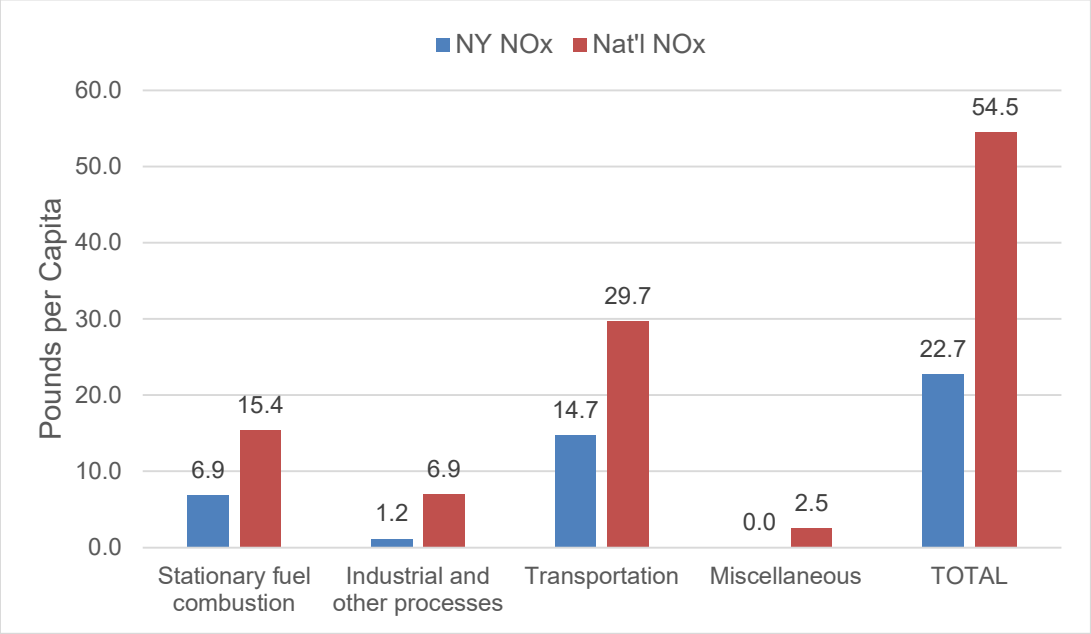
[1] U.S. EPA; Air Pollutant Emissions Trends Data. https://www.epa.gov/air-emissions-inventories/air-pollutant-emissions-trends-data. Accessed January 6, 2020.

Figure 2. New York State Anthropogenic NOx Emissions by Source Category for 2019



The following figure displays 2019 per-capita NOx emissions at the New York State and national levels for the same categories as in Figures 1 and 2.[2] For each category, emissions in New York State are well below the national emission rate.

Figure 3. New York State and National NOx Emissions per Capita for 2019



2. Ozone Precursor: Volatile Organic Compounds

VOCs are chemicals that evaporate (or volatilize) when they are exposed to air. They are referred to as organic because they contain carbon. Some VOC compounds are

[2] Ibid.; Population data via U.S. Census Bureau. https://www.census.gov/newsroom/press-releases/2019/popest-nation.html. Accessed January 6, 2020.

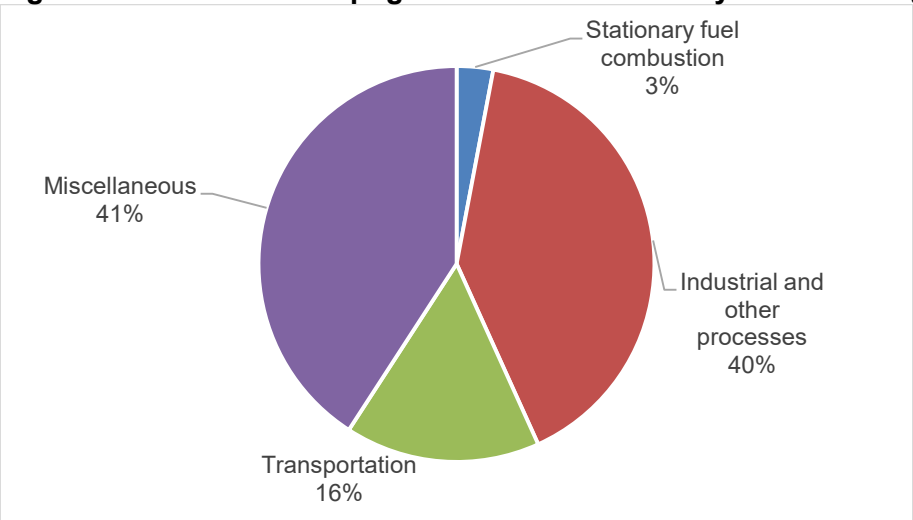
highly reactive with a short atmospheric lifespan, while others can have a very long lifespan. The short-lived compounds contribute substantially to atmospheric photochemical reactions and thus the formation of ozone.

VOCs are used in the manufacture of, or are present in, many products used daily in both homes and businesses. Some products, like gasoline, actually are VOCs. VOCs are used as fuels (gasoline and heating oil) and are components of many common household items (polishes, cosmetics, perfumes, and cleansers). They are also used in industry as degreasers and solvents, and in dry cleaning. VOCs are present in many fabrics and furnishings, construction materials, adhesives, and paints. Examples of more well-known VOC species include carbon tetrachloride, benzene, and toluene. Because of their widespread historical use and past lack of stringent disposal requirements, they remain in our air, soil, and water in varying concentrations.

Anthropogenic VOCs are primarily emitted into the air by motor vehicle exhaust, industrial processes, and the evaporation of solvents, oil-based paints, and gasoline from gas pumps. Biogenic VOCs, such as isoprene, are commonly emitted by vegetation.

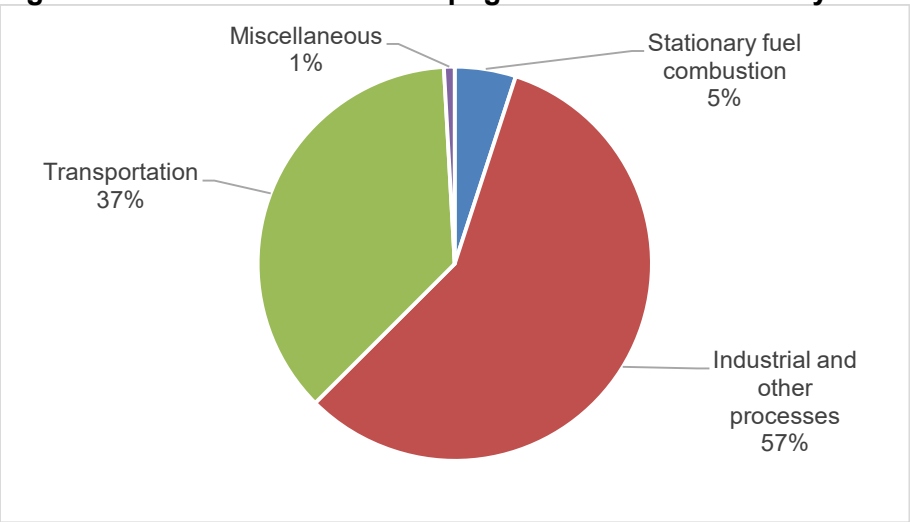
Figure 4 shows the national breakdown of anthropogenic VOC emissions by category. As with the NO_x chart, fuel combustion refers to stationary sources (i.e., from electric utility, industrial, and other sources). Figure 5 provides these data for New York State.[3]

Figure 4. National Anthropogenic VOC Emissions by Source Category for 2019



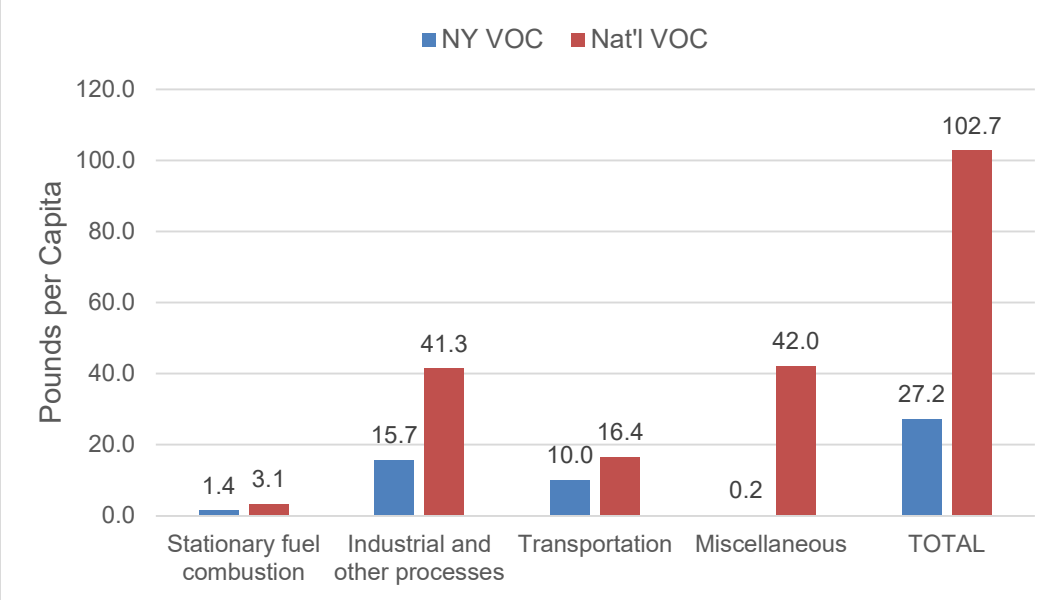
[3] U.S. EPA; Air Pollutant Emissions Trends Data; https://www.epa.gov/air-emissions-inventories/air-pollutant-emissions-trends-data. Accessed January 6, 2020.

Figure 5. New York State Anthropogenic VOC Emissions by Source Category for 2019



The following figure displays 2019 per-capita VOC emissions at the New York State and national levels for the same categories as in Figures 4 and 5.[4] For each category, emissions in New York State are well below the national emission rate.

Figure 6. New York State and National VOC Emissions per Capita for 2019



C. Health and Welfare Effects

EPA's Integrated Science Assessment (ISA) for ozone has determined that a ''causal'' relationship exists between short-term exposure to ozone in ambient air and effects on

[4] Ibid.; Population data via U.S. Census Bureau. https://www.census.gov/newsroom/press-releases/2019/popest-nation.html. Accessed January 6, 2020.

the respiratory system and that a ‘‘likely to be causal’’ relationship exists between long-term exposure to ozone in ambient air and respiratory effects.[5] The ISA also determined that the relationships between short-term exposures to ozone in ambient air and cardiovascular effects are likely to be causal, based on expanded evidence in the current review.[6] Additionally, the latest review strengthened the body of evidence indicating the occurrence of respiratory effects due to long-term ozone exposure.[7]

Ground-level ozone can irritate lung airways and cause skin inflammation much like sunburn. Other symptoms from exposure include wheezing, coughing, pain when taking a deep breath, and breathing difficulties during exercise or outdoor activities. Even at very low levels, exposure to ground-level ozone can result in decreased lung function, primarily in children active outdoors, as well as increased hospital admissions and emergency room visits for respiratory illnesses among children and adults with pre-existing respiratory diseases (e.g. asthma). People with respiratory problems are most vulnerable to the health effects associated with ozone exposure, but even healthy people that are active outdoors can be affected when ozone levels are high.

In addition to its health effects, ozone interferes with the ability of plants to produce and store nutrients, which makes them more susceptible to disease, insects, harsh weather, and other pollutants. This impacts annual crop production throughout the United States, resulting in significant losses and injury to native vegetation and ecosystems. In addition, ozone damages the leaves of trees and other plants, ruining the appearance of cities, national parks, and recreation areas. Ozone can also damage certain man-made materials, such as textile fibers, dyes, rubber products, and paints.

D. Clean Air Act Amendments of 1990

During the fall of 1990, and after years of debate, the U.S. Congress approved changes to the federal CAA – the first since 1977. Congress added provisions that addressed acid rain, hazardous air pollutants (HAPs), and stratospheric ozone concerns, and also significantly changed the way in which states were to address remaining attainment problems for criteria pollutants, including ground-level ozone. As opposed to the past when areas were merely designated as attainment, nonattainment, or unclassifiable, the 1990 Amendments required areas to also be classified according to severity. Additional requirements were placed on areas with more severe classifications, and additional time was provided to demonstrate attainment with the NAAQS.

E. History of the 8-Hour Ozone NAAQS

In an effort to develop a standard more protective of public health than the existing 1-hour standards, EPA promulgated ozone standards of 0.08 parts per million (ppm)

[5] U.S. EPA; “Integrated Science Assessment for Ozone and Related Photochemical Oxidants; External Review Draft.” September 2019. EPA/600/R-19/093. Table IS-1.
[6] Ibid. Section IS.1.3.1.
[7] Ibid. Appendix 3 Section 3.2.6.

measured over an 8-hour period (known as the 8-hour standard or 1997 NAAQS) on July 18, 1997.[8] After a long period of litigation, EPA finalized designations for the 1997 NAAQS on April 30, 2004.[9] A number of areas within New York State were designated nonattainment for the 1997 NAAQS at the time, including the New York-Northern New Jersey-Long Island, NY-NJ-CT area (hereafter "New York metropolitan area" or NYMA). All nonattainment areas located in New York now monitor attainment of the 1997 NAAQS. The 1997 NAAQS was revoked by EPA effective April 6, 2015.[10]

The next iteration of the NAAQS – and the focus of this SIP revision – was published on March 27, 2008.[11] The 2008 standards modified only the level of the existing standards, lowering both the primary and secondary standards from 0.08 ppm to 0.075 ppm in response to the latest health and welfare studies. EPA's designations and classifications were delayed due to a reconsideration of the 2008 NAAQS that was proposed on January 19, 2010, but ultimately abandoned.[12] Designations for the 2008 standards became effective on July 20, 2012.[13]

On October 1, 2015, EPA announced a new, more stringent ozone NAAQS in light of evidence that the 2008 standards were not sufficiently protective of public health and welfare.[14] The levels of the primary and secondary standards were both lowered to 0.070 ppm.

A subsequent NAAQS review that was finalized in late 2020 retained the level of the NAAQS at 0.070 ppm.[15] This 2020 review was included among the agency actions that the new EPA Administrator will review in accordance with President Biden's Executive Order, "Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis."[16]

[8] "National Ambient Air Quality Standards." Final Rule. Published July 18, 1997; effective September 16, 1997. 62 FR 38856-38896.
[9] "Air Quality Designations and Classifications for the 8-Hour Ozone National Ambient Air Quality Standards; Early Action Compact Areas with Deferred Effective Dates." Final Rule. Published April 30, 2004; effective June 15, 2004. 69 FR 23858-23951.
[10] "Implementation of the 2008 National Ambient Air Quality Standards for Ozone: State Implementation Plan Requirements." Final Rule. Published March 6, 2015; effective April 6, 2015. 80 FR 12264-12319.
[11] "National Ambient Air Quality Standards for Ozone." Final Rule. Published March 27, 2008; effective May 27, 2008.
[12] "National Ambient Air Quality Standards for Ozone." Proposed Rule. Published January 19, 2010. 75 FR 2938-3052.
[13] "Air Quality Designations for the 2008 Ozone National Ambient Air Quality Standards." Final Rule. Published May 21, 2012; effective July 20, 2012. 77 FR 30088-30160.
[14] "National Ambient Air Quality Standards for Ozone." Final Rule. Published October 26, 2015; effective December 28, 2015. 80 FR 65292-65468.
[15] "Review of the Ozone National Ambient Air Quality Standards." Final Rule. Published and effective December 31, 2020. 85 FR 87256-87351.
[16] https://www.whitehouse.gov/briefing-room/statements-releases/2021/01/20/fact-sheet-list-of-agency-actions-for-review/

F. Designation and Requirements of the 2008 Ozone NAAQS

The CAA requires states to ensure that all areas within their jurisdiction meet and maintain air quality levels that comply with the NAAQS prescribed by the federal government.

Effective July 20, 2012, EPA designated two areas as nonattainment for the 2008 NAAQS: the Jamestown, NY area, comprised of Chautauqua County; and the New York-N. New Jersey-Long Island, NY-NJ-CT area, comprised of the New York State counties of Bronx, Kings, Nassau, New York, Queens, Richmond, Rockland, Suffolk, and Westchester, as well as twelve counties from New Jersey and three from Connecticut. Both areas were classified as marginal nonattainment, with an attainment date of July 20, 2015.[17]

EPA published its final actions for marginal nonattainment areas on May 4, 2016.[18] In this final reclassification rule, EPA determined that the Jamestown, NY area had demonstrated attainment with the 2008 ozone NAAQS based on monitored air quality data from 2012-2014, whereas the NYMA continued to exceed the NAAQS. EPA reclassified the NYMA to moderate nonattainment with an attainment date of July 20, 2018.

DEC formally requested a reclassification to serious nonattainment on November 10, 2017 in light of monitoring and modeling evidence that demonstrated continued nonattainment. The NYMA indeed surpassed its July 20, 2018 attainment date without complying with the NAAQS. EPA finalized a reclassification of the NYMA to serious nonattainment effective September 23, 2019.[19]

[17] "Air Quality Designations for the 2008 Ozone National Ambient Air Quality Standards." Final Rule. Published May 21, 2012; effective July 20, 2012. 77 FR 30088-30160.

[18] "Determinations of Attainment by the Attainment Date, Extensions of the Attainment Date, and Reclassification of Several Areas for the 2008 Ozone National Ambient Air Quality Standards"; Final Rule. Published May 4, 2016. Effective June 3, 2016. 81 FR 26697-26722.

[19] "Determinations of Attainment by the Attainment Date, Extensions of the Attainment Date, and Reclassification of Several Areas Classified as Moderate for the 2008 Ozone National Ambient Air Quality Standards"; Final Rule. Published August 23, 2019. Effective September 23, 2019. 84 FR 44238-44245.

SECTION 2: NEW YORK REGULATIONS FOR OZONE PRECURSORS

A. Introduction

This section summarizes previous regulatory commitments in New York State and the NYMA that control emissions of NOx and VOCs from the mobile, stationary, and area source sectors, as well as newly adopted or revised regulations. Many control measures were adopted or revised since 2008 as part of the state's efforts to attain the NAAQS in the NYMA. Part D of Title I of the CAA requires that these measures be implemented and meet Reasonable Further Progress (RFP) goals as the area strives to reach attainment. Due to anti-backsliding requirements, these past commitments continue indefinitely unless replaced by an equivalent or stricter emission reduction strategy.

DEC works closely with the Ozone Transport Commission (OTC) to develop stationary- and area-source control measures that states can implement to help reduce ozone precursor emissions throughout the Ozone Transport Region (OTR). DEC also develops its own regulations that target source categories that have meaningful potential emission reductions of NOx and VOCs, and implements regulations that mirror federal programs (e.g., EPA's interstate trading rules) as well.

A number of these regulations set Reasonably Available Control Technology (RACT) standards for NOx and VOCs, where RACT is defined as "the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility."[20] RACT standards take the form of either presumptive emission limits (based on available control technologies and cost) or facility-specific emission limits.

DEC has long called for EPA to adopt or update control programs at the federal level - e.g., rules targeting emissions from architectural and industrial maintenance coatings, consumer products, and heavy-duty diesel engines. Consistent national standards will improve air quality and reduce burdens on manufacturers. Additionally, on April 21, 2021, a group of bipartisan governors wrote to President Biden about leveraging his American Jobs Plan to provide a strong framework for the American-made zero-emission vehicle (ZEV) market, in part by setting national standards for light-, medium-, and heavy-duty vehicles.[21] EPA must also ensure RACT is properly enforced in applicable upwind areas to reduce inequities between upwind and downwind states.

Control measures that have been proposed or adopted that did not yield emission reductions in time to benefit the 2020 ozone season are listed in section 2.C.

[20] "State Implementation Plans; Nitrogen Oxides Supplement to the General Preamble; Clean Air Act Amendments of 1990 Implementation of Title I." Proposed Rule. Published November 25, 1992. 57 FR 55620.

[21] April 21, 2021 letter to President Biden from the Governors of the States of California, Connecticut, Hawaii, Maine, Massachusetts, New Jersey, New York, New Mexico, North Carolina, Oregon, Rhode Island, and Washington.

B. Previously Implemented Control Measures

Part 205: Architectural and Industrial Maintenance (AIM) Coatings

VOC content limits for AIM coatings contained in Part 205 reduce VOC emissions from the area source sector. It is periodically updated with new and/or more stringent VOC limits informed by OTC model rules. (DEC recently finalized a revision to Part 205; see section 2.C). Part 205 also contains labeling and reporting requirements, compliance provisions, and test methods.

Part 210: Emissions and Labeling Requirements for Personal Watercraft Engines

New York adopted California's emissions standards for personal watercraft in 2003, which reduce emissions of hydrocarbons, NOx, and PM beyond the levels achieved by federal standards by imposing lower emission certification levels beginning with model year 2006 and becoming increasingly stringent thereafter. In addition, the personal watercraft engine program includes test procedures for new and in-use engines, which guarantees compliance with the standards, establishes an environmental label program, and extends emission warranty requirements. Emissions from manufacturers' entire product lines must be certified as meeting the corporate average requirement.

Subpart 212-3: Reasonably Available Control Technology for Major Facilities

This regulation requires a source-specific RACT analysis for each emission point at a facility that emits NOx at major NOx facilities or VOCs at major VOC facilities. Its requirements are mostly generic, with specific requirements only for coating operations not subject to Part 228.

Subpart 212-4: Control of Nitrogen Oxides for Hot Mix Asphalt Production Plants

This new subpart was promulgated on September 30, 2010 to control NOx from asphalt production plants. Currently, all asphalt production plants in New York State are minor facilities. The dryer operation is the main source of NOx emissions at these facilities. This regulation requires best management practices and the installation of low NOx burners where economically feasible to reduce emissions.

Subpart 217-6: Motor Vehicle Enhanced Inspection and Maintenance Program Beginning January 1, 2011

New York State has implemented an approved statewide, enhanced motor vehicle inspection and maintenance (I/M) program under Title 6 of the New York Codes, Rules, and Regulations (NYCRR) Part 217-6 and 15 NYCRR Part 79 to limit ozone precursor emissions from motor vehicles. The current New York Vehicle Inspection Program (NYVIP2) requires an appropriate emissions inspection (e.g., onboard diagnostic (OBDII) or low enhanced inspection) for most vehicles annually and with change of vehicle ownership. The emissions inspection is completed along with a safety inspection. The appropriate emissions inspection is determined by vehicle model year, gross vehicle weight rating (GVWR), fuel type, and registration class. The latest NYVIP2

annual I/M report (2019) can be found at the following webpage: http://www.dec.ny.gov/chemical/85985.html

Part 218: Emission Standards for Motor Vehicles and Motor Vehicle Engines

Section 177 of the CAA permits states to adopt new motor vehicle emissions standards that are identical to California's. DEC has exercised this option by incorporating the latest California emissions standards for light-duty vehicles through Part 218. In this regulation, New York State requires that new on-road motor vehicles sold in New York meet the California emissions standards. (DEC recently finalized a revision to incorporate aftermarket catalytic converter (AMCC) standards; see section 2.C).

The low-emission vehicle (LEV) regulations provide flexibility to auto manufacturers by allowing them to certify their vehicle models to one of several different emissions standards. These consist of several different tiers of increasingly stringent LEV emission standards to which a manufacturer may certify a vehicle, including LEV, ultra-low-emission vehicle (ULEV), super-ultra-low-emission vehicle (SULEV), and ZEV. The different standards are intended to provide flexibility to manufacturers in meeting program requirements. However, manufacturers must demonstrate that the overall fleet for each model year meets the specified non-methane organic gas standard for that year. These requirements are progressively more stringent with each model year.

A 2016 update to Part 218 incorporated California's latest LEV standards (LEV III) and ZEV standards into New York's program. The LEV III amendment takes effect for 2017 through 2025 model year passenger cars, light-duty trucks, and medium-duty passenger vehicles. The ZEV revisions apply to 2018 through 2025 model year passenger cars, light-duty trucks, and medium-duty vehicles.

The LEV III amendments allow vehicle manufacturers the voluntary option of demonstrating compliance with EPA Tier 3 emission standards rather than LEV III standards for model years 2017 through 2025. EPA's rule coupled the more stringent vehicle emissions standards with a reduction in gasoline sulfur content, which will allow for more effective emission control systems.[22]

Part 220: Portland Cement Plants and Glass Plants

Revisions were made to Part 220 effective July 11, 2010. In updating the regulation, the existing requirements for Portland cement plants were moved to Subpart 220-1 and new requirements for glass manufacturing plants were placed in Subpart 220-2. The update also required sources from each sector to perform a source-specific RACT analysis. (Due to the variation in processes and NOx control technologies for each source type, DEC opted against presumptive NOx limits.) Analyses must be updated upon subsequent renewal of Title V permits pursuant to DEC's guidance document DAR-20. Two cement plants and four glass manufacturing plants in New York State are subject to these regulations, though none are located within the NYMA.

[22] "Control of Air Pollution from Motor Vehicles: Tier 3 Motor Vehicle Emission and Fuel Standards." Final Rule. Published April 28, 2014; effective June 27, 2014. 79 FR 23414-23886.

Subpart 225-3: Fuel Consumption and Use - Gasoline

New York State adopted Subpart 225-3 to limit the volatility, or Reid Vapor Pressure (RVP), of motor fuel statewide as a strategy for controlling VOC emissions from motor vehicles. Specifically, this regulation established a maximum RVP of 9.0 pounds per square inch for all gasoline sold or supplied to retailers and wholesale purchaser-consumers anywhere in New York State from May 1 through September 15 of each year. Subpart 225-3 requires DEC to grant case-by-case exceptions for gasoline-alcohol blends to exceed 9.0 pounds per square inch RVP.

Part 226: Solvent Cleaning Processes and Industrial Cleaning Solvents

Part 226 sets guidelines for the cleaning of metal surfaces by VOC-containing substances. (DEC recently finalized a revision to incorporate the industrial cleaning solvents CTG; see section 2.C). This regulation limits the vapor pressure of solvents and contains specifications for control equipment and proper operating practices for a variety of degreasing operations, in addition to general requirements for storage and record-keeping.

Subpart 227-2: Reasonably Available Control Technology (RACT) for Major Sources of Oxides of Nitrogen (NOx)

Subpart 227-2 controls NOx emissions from a variety of emission sources at major facilities, including utility/industrial/commercial/institutional boilers, combustion turbines, and stationary internal combustion engines. More stringent emission limits went into effect July 1, 2014.

Presumptive NOx RACT emission rates are set for most unit types based on the size of the unit and fuel type. Units that cannot meet the presumptive NOx limits, in addition to certain other types of units (e.g., all combined cycle (including cogeneration) combustion turbines), must submit a case-by-case RACT analysis to DEC to determine a facility-specific emission limit.

The regulation also allows for alternate compliance options such as fuel switching and system-wide averaging. Testing, monitoring, and reporting requirements are also included.

Subpart 228-1: Surface Coating Processes

Part 228 limits the VOC content for each gallon of coating and sets minimum efficiency standards for VOC control equipment. It also contains requirements for application techniques, opacity limits, and housekeeping.

Subpart 228-2: Commercial and Industrial Adhesives, Sealants and Primers

DEC updated this regulation on June 5, 2013 utilizing the 2006 OTC model rule for adhesives, sealants, adhesive primers and sealant primers which was based, in turn, on California Air Resources Board (CARB) standards. This regulation places VOC content limits on these products, requires specific labeling standards, and provides an option for

add-on control systems to meet the required content limits. Also included are requirements for surface preparation and cleanup solvents. Emission reductions from this regulation are primarily observed from the area source sector.

Part 229: Petroleum and Volatile Organic Liquid Storage and Transfer

This regulation limits VOC emissions from applicable gasoline bulk plants, gasoline loading terminals, marine loading vessels, petroleum liquid storage tanks, or organic liquid storage tanks.

Part 230: Gasoline Dispensing Sites and Transport Vehicles

This regulation contains requirements for Stage I and Stage II gasoline dispensing sites (DEC recently finalized a revision to discontinue the State II requirements; see section 2.C). Stage I systems are required statewide, while Stage II systems are mandated only in the NYMA and the lower Orange County towns of Blooming Grove, Chester, Highlands, Monroe, Tuxedo, Warwick, and Woodbury. Part 230 affects gasoline-dispensing sites whose annual throughput exceeds 120,000 gallons, although this minimum throughput level does not apply to the NYMA.

A Stage I vapor collection system captures gasoline vapors which are displaced from underground gasoline storage tanks when those tanks are filled. These vapors are forced into a vapor-tight gasoline transport vehicle or vapor control system through direct displacement by the gasoline being loaded. A Stage II vapor collection system captures at least 90 percent, by weight, of the gasoline vapors that are displaced or drawn from a vehicle fuel tank during refueling; these vapors are then captured and either retained in the storage tanks or destroyed in an emission control device. DEC, however, has ceased enforcement of the Stage II requirements in favor of the onboard refueling and vapor recovery systems that come equipped in newer model year vehicles, as they have demonstrated a greater degree of VOC emissions control.

Part 231: New Source Review for New and Modified Facilities

Part 231 has regulated the New Source Review (NSR) program for nonattainment areas since 1979. Part 231 was revised in 2009 to include the regulation of emission increases of attainment pollutants under Prevention of Significant Deterioration (PSD).

The regulation was written and amended to conform to federal guidelines and requirements on new sources and modifications at major facilities in nonattainment and attainment areas which would cause emission increases exceeding de minimis levels set forth in the regulation. The base requirements for applicable sources in nonattainment areas are that Lowest Achievable Emission Rate (LAER) control technology be applied and that emission offsets be provided. The base requirements for applicable sources in attainment areas are that Best Available Control Technology (BACT) be applied and the facility conducts modeling and ambient air monitoring of the applicable pollutants with respect to ambient air quality standards.

Part 233: Pharmaceutical and Cosmetic Manufacturing Processes

This regulation limits VOC emissions from synthesized pharmaceutical or cosmetic manufacturing processes. Compliance requires the installation of control devices, along with monitoring, recordkeeping, and leak repair.

Part 234: Graphic Arts

This regulation sets control requirements and/or limits VOC contents to reduce emissions from packaging rotogravure, publication rotogravure, flexographic, offset lithographic, and screen-printing processes. It was updated on July 8, 2010 to address recent Control Techniques Guidelines (CTGs) for flexible package printing and offset lithographic and letterpress printing.

Part 235: Consumer Products

The consumer products rule regulates the VOC content of consumer and commercial products that are sold to retail customers for personal, household, or automotive use, along with the products marketed by wholesale distributors for use in commercial or institutional settings such as schools and hospitals. The regulation also includes labeling, reporting and compliance requirements that apply to manufacturers of these products. An update to this regulation was effective on October 15, 2009 based on a 2006 OTC model rule which, in turn, was informed by amendments put forth by CARB in 2005. Section 2.C discusses a subsequent update effective early in 2021.

Part 239: Portable Fuel Container Spillage Control

DEC updated this regulation in 2009 to better control VOC emissions resulting from evaporation through the diurnal cycle and spillage from portable fuel containers. The update eliminated the automatic shutoff feature, fill height, and flow rate standards from the previous rule to simplify fueling and lessen spillage. The revisions also required certification and compliance of portable fuel containers prior to their sale and expanded the definition of a non-compliant container, effectively regulating diesel and kerosene containers in the same manner as portable fuel containers.

Part 241: Asphalt Pavement and Asphalt-Based Surface Coating

DEC adopted the new Part 241 on January 1, 2011 to regulate the use of cutback and emulsified asphalts in paving operations. The regulation limits the amount of petroleum distillate allowed in emulsified asphalt, while prohibiting the use of cutback asphalt in most circumstances. It also places VOC content limits on asphalt-based surface coatings.

Part 243: Transport Rule NOx Ozone Season Trading Program

Part 243 codifies the “good neighbor” requirements of CAA section 100(a)(2)(D)(i) at the state level. Part 243 was initially effective on October 19, 2007 to manage the NOx ozone season trading program for the Clean Air Interstate Rule. EPA later updated its

NOx trading program through the July 6, 2011 Cross-State Air Pollution Rule (CSAPR),[23] and Part 243 was revised to reflect this update.

The ozone season trading program was again updated in October 2016, resulting in adjusted NOx emission budgets to address the 2008 ozone NAAQS. DEC revised Part 243 to replace the default allowance allocation provisions with its own allocation methodology. EPA approved the Part 243 revisions effective August 8, 2019.[24] Additionally, for the recently finalized Revised CSAPR Update, EPA will establish initial allowance allocations to existing units under a Federal Implementation Plan using the allocation methodology contained in this approved regulation.[25]

CSAPR targets NOx emissions from fossil fuel-fired electric generating unit (EGU) sources serving, at any time on or after January 1, 2005, a generator with nameplate capacity of more than 25 megawatts producing electricity for sale. CSAPR allows these sources to trade emissions allowances with other sources within or across states, while firmly constraining any emissions shifting that may occur by requiring a strict emission ceiling in each state (i.e. the budget plus variability limit). It also includes assurance provisions that ensure each state will make the necessary emission reductions by requiring additional allowance surrenders in the instance that emissions in the state exceed the state's assurance level.

Part 249: Best Available Retrofit Technology (BART)

DEC's BART regulation was promulgated in response to the federal rule for regional haze which is aimed at reducing the impacts of visibility-impairing pollutants on Class I areas. The BART program targets emissions of NOx (as well as SO_2 and coarse particulate matter (PM_{10})) from certain categories of stationary sources which began operation between 1962 and 1977. DEC identified 19 subject facilities in New York State, which are complying through a variety of options including unit shutdown, emission caps, add-on control technology, and process modifications.

MACT

Under section 112 of the 1990 CAA Amendments, HAPs are required to be controlled by what is determined to be the Maximum Achievable Control Technology (MACT). Since many organic HAPs are also VOCs, the use of MACT results in the reduction of VOC as well as NOx emissions. DEC has been adopting MACT control requirements as they have been developed by EPA and has therefore been realizing the reductions resulting from the MACT program. These federal regulations are incorporated by reference in 6 NYCRR 200.10 (Tables 3 and 4).

[23] "Federal Implementation Plans: Interstate Transport of Fine Particulate Matter and Ozone and Correction of SIP Approvals." Final Rule. Published August 8, 2011; effective October 7, 2011. 76 FR 48208-48483.
[24] "Approval of Air Quality Implementation Plans; New York; Cross-State Air Pollution Rule; NOx." Final Rule. Published and effective August 8, 2019. 84 FR 38878-38882.
[25] "Revised Cross-State Air Pollution Rule Update for the 2008 Ozone NAAQS," Final Rule. Published April 30, 2021; effective June 29, 2021. 86 FR 23054.

Federal Reformulated Gasoline – Phase I and II

CAA section 211(k) requires that reformulated gasoline be sold in certain ozone nonattainment areas. The current federal Phase II reformulated gasoline standards, effective January 1, 2000, require 25 to 29 percent VOC emission reductions. Retail distribution of reformulated gasoline is required in the NYMA and Orange County. Dutchess County has also opted into the reformulated gasoline program.

Federal Highway Diesel Fuel (with State Backstop) and Heavy-Duty Highway Diesel Emissions Standards

New York State's motor vehicle diesel fuel program is identical to the EPA motor vehicle diesel fuel regulations, which regulate the heavy-duty vehicle and its fuel as a single system. EPA published its final rule for heavy-duty diesel engines that would reduce NOx emissions by 95 percent from then-current levels (in addition to reducing PM by 90 percent) on January 18, 2001.[26]

These standards, which apply to heavy-duty highway engines and vehicles greater than 8,500 pounds GVWR, are based on the use of high-efficiency catalytic exhaust emission control devices or comparably effective advanced technologies. DEC adopted CARB heavy-duty diesel standards for model years 2005-2007 (to prevent backsliding that may have occurred under the federal standards) and reverted to the federal standards for 2008 and beyond.

The rule's emission limits were phased in between 2007 and 2010. It established standards for NOx and non-methane hydrocarbons of 0.20 grams per brake horsepower-hour (g/bhp-hr) and 0.14 g/bhp-hr, respectively. EPA projects a 2.6 million-ton reduction of NOx emissions in 2030 when the current heavy-duty vehicle fleet is completely replaced with newer heavy-duty vehicles that comply with these emission standards. The sulfur content of diesel fuel was reduced by 97 percent to 15 ppm to allow for the necessary control devices to achieve such a reduction.

Federal Non-Highway Diesel Fuel and Emissions Standards

EPA published a rule to regulate emissions of NOx and PM from nonroad diesel vehicles on June 29, 2004.[27] Overall, the rule is projected to result in a 90 percent reduction in NOx emissions, equivalent to 738,000 tons annually by 2030.

The non-road standards apply to diesel engines that are used in construction, agricultural, industrial, and airport applications. Standards varied by engine size with implementation dates beginning in 2008. The rule was fully phased-in as of 2015. This rule also took advantage of the new low-sulfur fuel requirements in order to achieve the necessary NOx and PM reductions.

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[26] "Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements." Final Rule. Published January 18, 2001; effective March 19, 2001. 66 FR 5002-5193.

[27] "Control of Emissions of Air Pollution from Nonroad Diesel Engines and Fuel." Final Rule. Published June 29, 2004; effective August 30, 2004. 69 FR 38958-39273.

EPA also issued a separate rulemaking that targeted NOx and PM emissions from locomotive and marine diesel engines.[28] This rule is projected to result in an 80 percent reduction in NOx emissions over engines meeting the current standards, equivalent to approximately 800,000 tons annually by 2030.

The rule applies to all types of locomotives, including line-haul, switch, and passenger, and all types of marine diesel engines below 30 liters per cylinder displacement, including commercial and recreational, propulsion, and auxiliary. The near-term (Tier 3) emission standards for newly-built engines began its phase-in starting in 2009. The near-term program also includes new emission limits for existing locomotives and marine diesel engines that apply when they are remanufactured.

The long-term (Tier 4) emissions standards for newly-built locomotives and marine diesel engines are based on the application of high-efficiency catalytic after-treatment technology. These standards began to take effect in 2014 for marine diesel engines and in 2015 for locomotives.

C. Newly Adopted or Revised Control Measures

Part 203: Emissions from Oil and Natural Gas Activities
DEC has proposed a new Part 203 to regulate emissions of VOCs and methane from the oil and gas sector. This regulation would fulfill New York's obligation to implement the CTG for this sector and also help meet New York's greenhouse gas targets as described in the Climate Leadership and Community Protection Act. The proposal seeks emission reductions from equipment and components that are associated with a variety of source types. Existing and new units are both targeted for reductions.

Part 205: Architectural & Industrial Maintenance (AIM) Coatings
The latest revision to the AIM coatings regulation was adopted on December 11, 2019 with more stringent VOC content limits that were to become effective January 1, 2021. However, DEC exercised enforcement discretion in issuing a one-year extension to compliance deadlines due to the COVID-19 pandemic and manufacturers' inability to comply with the earlier deadline. DEC also made the notable change of removing the "quart exemption" for certain coatings sold in packages of one liter or less because of unintended consequences resulting from the exemption.

Subpart 218-7: Aftermarket Parts
On February 12, 2020, DEC adopted amendments to Part 218 to incorporate revisions to the standards for new California-certified AMCCs. The proposed amendments prohibit the offering for sale, sale, advertising, and installation of federal-certified AMCCs for use on any vehicle in New York regardless of the vehicle's emissions

[28] "Control of Emissions of Air Pollution from Locomotive Engines and Marine Compression-Ignition Engines Less Than 30 Liters per Cylinder; Republication." Final Rule. Published June 30, 2008; effective July 7, 2008. 73 FR 37096-37350.

certification or state of registration. Legal replacement options will be California AMCCs or original equipment manufacturer parts. The lone exception will be for vehicles that have been granted a waiver from DEC. The prohibition of federal certified AMCCs became effective January 1, 2021. The amendments also include provisions pertaining to AMCC installation requirements; AMCC installer recordkeeping requirements; recordkeeping requirements for AMCC manufacturers, distributors, wholesalers, and retailers; and clarification of AMCC manufacturer reporting requirements.

Subpart 219-10: Reasonably Available Control Technology (RACT) for Oxides of Nitrogen (NOx) at Municipal and Private Solid Waste Incineration Units

DEC adopted a new Subpart 219-10 effective March 14, 2020 that limits emissions of NOx from municipal and private solid waste combustion units on a 24-hour average and annual average basis. The regulation requires the application of RACT based on the combustion technology employed at the facility. Facilities are required to demonstrate compliance with these new limits through Continuous Emissions Monitoring systems.

Part 222: Distributed Generation Sources

On February 19, 2020 DEC adopted an updated Part 222, which replaced a rule that was initially adopted in 2016 but never went into effect due to a legal challenge. Distributed generation (DG) sources are engines used by a site to supply electricity outside that which is supplied by the electrical grid. This regulation applies to owners and operators of DG sources classified as economic dispatch sources located in the NYMA with a maximum mechanical output rating of 200 horsepower or greater where the potential to emit NOx at a facility is less than 25 tpy. There are two phases of control requirements; one became effective on May 1, 2021 and the second phase becomes effective on May 1, 2025.

Part 226: Solvent Cleaning Processes and Industrial Cleaning Solvents

Under a revision adopted October 1, 2019, existing Part 226 was re-designated Subpart 226-1 and retained the title “Solvent Cleaning Processes,” while a second subpart, “Industrial Cleaning Solvents,” was added to implement the related 2006 CTG. The collective Part 226 is now titled “Solvent Cleaning Processes and Industrial Cleaning Solvents.” The new Subpart 226-2 establishes VOC content limits for cleaning solvents used in operations not covered by other regulations. It applies to new facilities upon start-up and existing facilities generally as of November 1, 2020.

Subpart 226-2 applies to the owner or operator of a facility which has actual emissions of three tons or more of VOCs from industrial cleaning solvents on a 12-month rolling total basis. It specifically applies to the cleaning of foreign materials from surfaces of unit operations such as large and small manufactured components, parts, equipment, floors, tanks, and vessels. Emissions from all methods of cleaning, including by hand, will be considered toward the applicability criteria.

Subpart 227-3: Ozone Season Oxides of Nitrogen (NOx) Emission Limits for Simple Cycle and Regenerative Combustion Turbines

This regulation became effective on January 16, 2020. It lowers allowable NOx emissions from simple cycle and regenerative combustion turbines during the ozone season. These units, which are sometimes referred to as peaking units, run to meet electric load during periods of peak electricity demand, which are the hot summer days when there is a strong likelihood of high ozone concentrations. Many peaking units in New York have high NOx emission rates, are inefficient, and are approaching 50 years of age. NOx emission limits are phased in through 2025 and allow for averaging with new renewable energy sources.

Part 230: Gasoline Dispensing Sites and Transport Vehicles
Part 230 was revised effective February 11, 2021 to strengthen VOC requirements. The rule includes federal requirements for gasoline dispensing facilities (GDFs) pursuant to Title 40 of the Code of Federal Regulations (CFR), Part 63, Subpart CCCCCC. The revised Part 230 extends the federal rule Stage I vapor control requirements (which capture vapors during deliveries) to include medium-sized GDFs located in the NYMA with annual gasoline throughputs lower than the federal rule threshold to achieve increased VOC emission reductions.

Revisions to Part 230 also include the removal of Stage II vapor recovery systems whose function has been replaced by On-board Refueling Vapor Recovery systems due to incompatibility and increased vapor production by the outdated systems. Gasoline dispensing sites must remove such systems by February 11, 2022.

Part 235: Consumer Products
This rule became effective on February 11, 2021. DEC revised Part 235 to set VOC content limits for nine new product categories and lower the VOC content limits for ten existing product categories. The new VOC limits were based on a 2010 OTC model rule and have a compliance date of January 1, 2022.

SECTION 3: AIR QUALITY NETWORK AND DATA

A. Introduction

DEC continuously assesses ozone air pollution levels throughout the state and subsequently submits the monitored data to EPA through its Air Quality System (AQS). The NYMA contains many of New York's ozone monitors due to its high population density and the prevalence of ozone in the area. Design values (DVs) calculated from data collected by these air quality monitors are compared to the NAAQS to determine compliance.

B. State Monitoring Network

DEC maintains a monitoring network that fulfills EPA requirements and is sufficient to accurately gauge air quality in the NYMA and other regions of New York State. As required by 40 CFR Part 58.10(d), *"the State...agency shall perform and submit to the EPA Regional Administrator an assessment of the air quality surveillance system every 5 years to determine, at a minimum, if the network meets the monitoring objectives defined in appendix D to this Part, whether new sites are needed, whether existing sites are no longer needed and can be terminated, and whether new technologies are appropriate for incorporation into the ambient air monitoring network."*

The most recent "New York State Ambient Air Monitoring Program Network Assessment" was completed on June 10, 2020 and was approved by EPA on January 11, 2021.[29] This assessment satisfies the requirements of 40 CFR 58.10(d). All monitoring networks operated by DEC's Bureau of Air Quality Surveillance in the Division of Air Resources were evaluated to ensure they met the monitoring objectives as defined by the regulations. Considerations were given to population and geographical coverage, air quality trends, attainment classification, emissions inventory, parameters monitored, special purpose monitors, health-related and scientific research, external data users, new and proposed regulations, quality assurance (QA), technology, personnel, and training.

Additionally, since July 2007, each state (or where applicable, local) agency is required to *"adopt and submit to the Regional Administrator an annual monitoring network plan which shall provide for the establishment and maintenance of an air quality surveillance system that consists of a network of SLAMS monitoring stations including FRM, FEM, and ARM monitors that are part of SLAMS, NCore stations, CSN stations, state speciation stations, SPM stations, and/or, in serious, severe and extreme ozone nonattainment areas, PAMS stations, and SPM monitoring stations."*[30] DEC prepares an Annual Monitoring Network Plan that fulfills these requirements. EPA approved the latest version of this plan on January 11, 2021.[31]

[29] Available here: http://www.dec.ny.gov/chemical/65574.html
[30] 40 CFR 58.10, "Annual monitoring network plan and periodic network assessment", section (a)(1).
[31] Available here: http://www.dec.ny.gov/chemical/33276.html

In addition to the QA and quality control procedures implicit in the daily operation of each network component, independent and regularly scheduled audits are performed by personnel from the Ambient Monitoring Section of the Bureau of Quality Assurance. They also carry out the Performance Evaluation Program for the Federal Reference Method fine particulate matter ($PM_{2.5}$) network, and "Through the Probe" audits for all gaseous pollutants. All QA requirements specified in the monitoring rules of 40 CFR Parts 53 and 58 are adhered to.

Once the QA process is complete and ambient air monitoring data have been assured as accurate, precise, and complete, these data are submitted by DEC to EPA's AQS.

C. NYMA Ozone Air Quality Network

The State and Local Air Monitoring Stations (SLAMS) together with the National Air Monitoring Stations (NAMS) constitute New York's Ambient Air Monitoring System which provides the data used to demonstrate attainment. The principal objective of the ozone monitoring network is to determine the exposure of the state's population to ambient ozone.

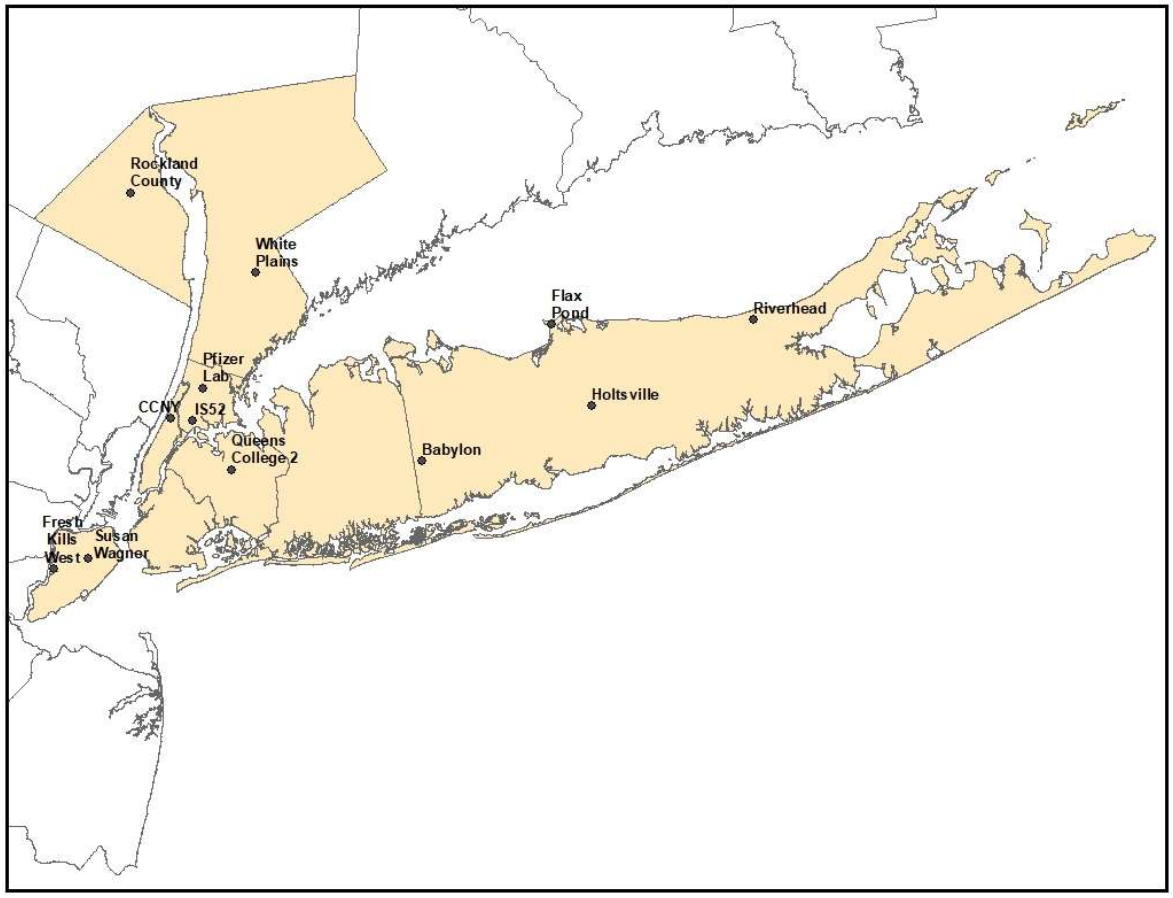
Ambient ozone concentration data for the NYMA are provided by the monitors listed in Table 1 and shown in Figure 7. DEC presently operates 28 TEI Model 49C ozone monitors statewide, 10 of which are located within the NYMA, that use the ultraviolet photometric method for detection. All NYMA ozone monitors operate continuously.

Table 1. Ozone Monitors Located in NYMA

AIRS ID	DEC ID	Site Name	County	Location
36-103-0002	5150-02	Babylon	Suffolk	72 Gazza Blvd., Babylon
36-103-0009	5151-10	Holtsville	Suffolk	57 Division St., Holtsville
36-103-0004	5155-01	Riverhead	Suffolk	3059 Sound Ave., Riverhead
36-103-0044	5151-12	Flax Pond	Suffolk	15 Shore Dr., East Setauket
36-061-0135	7093-25	CCNY	New York	160 Convent Ave., New York
36-005-0133	7094-10	Pfizer Lab	Bronx	200th St & Southern Blvd., Bronx
36-005-0110	7094-07	IS 52	Bronx	681 Kelly St., Bronx
36-081-0124	7096-15	Queens College	Queens	65-30 Kissena Blvd., Flushing
36-085-0067	7097-01	Susan Wagner	Richmond	1200 Manor Rd., Staten Island
36-085-0111	7097-17	Fresh Kills West*	Richmond	310 West Service Rd., Staten Island
36-119-2004	5902-04	White Plains	Westchester	240 Orchard St., White Plains
36-087-0005	4353-02	Rockland County	Rockland	South Mountain Rd., Pomona

*Temporary location of ozone monitor during construction at Susan Wagner site

Figure 7. Map of NYMA Ozone Monitors



D. 2020 Design Values

The ozone DV is calculated as the three-year average of the annual fourth-highest daily maximum 8-hour concentration. This DV is then compared to the level of the standard to determine compliance. Table 2 provides the most recent DV data, including the fourth-highest daily maximum 8-hour ozone concentrations for 2018, 2019, and 2020, and the resulting 2020 DVs. Concentrations are provided for the Connecticut and New Jersey portions of the NYMA as well.

All 2020 DVs in the New York and New Jersey portions of the NYMA comply with the 2008 ozone NAAQS. The Connecticut portion of the NYMA, however, contains multiple monitors that had DV's that exceeded the NAAQS. The "DV monitor," defined as the highest-concentration monitor that determines compliance for the entire tri-state area, is represented by the Greenwich monitor in Fairfield County, Connecticut. This site recorded a 2020 DV of 0.082 ppm.

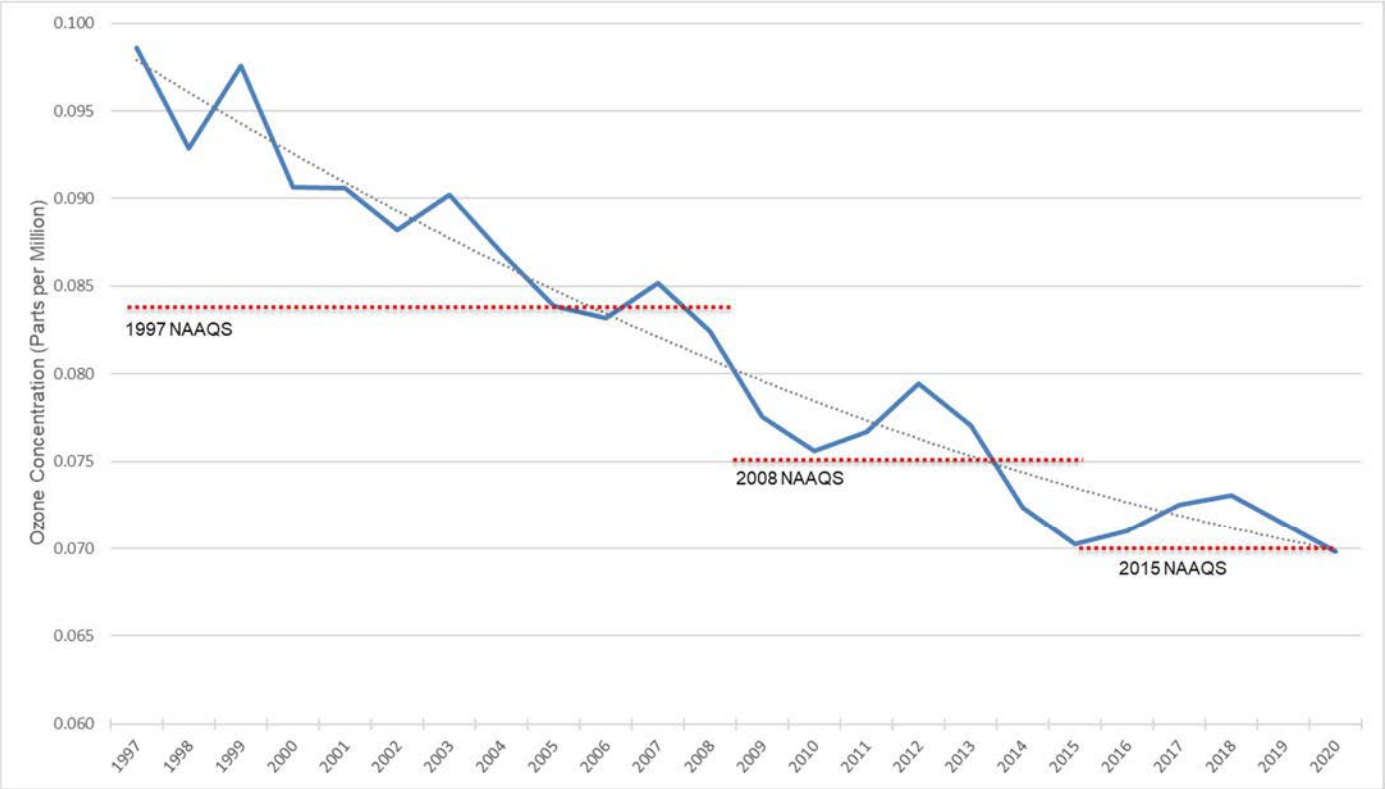
These data indicate the NYMA has failed to attain the 2008 ozone NAAQS by the serious area deadline of July 20, 2021.

Table 2. NYMA 2020 DVs for the 2008 Ozone NAAQS (ppm)

AIRS ID	Station	County	DEC Region/ State	2018 4th Max	2019 4th Max	2020 4th Max	2020 DV
36-103-0002	Babylon	Suffolk	1	0.074	0.072	0.069	**0.071**
36-103-0009	Holtsville	Suffolk	1	0.076	0.068	0.073	**0.072**
36-103-0004	Riverhead	Suffolk	1	0.072	0.070	0.069	**0.070**
36-103-0044	Flax Pond	Suffolk	1	0.074	0.073	N/A	-
36-061-0135	CCNY	New York	2	0.077	0.066	0.069	**0.070**
36-005-0133	Pfizer Lab	Bronx	2	0.077	0.068	0.069	**0.071**
36-005-0110	IS52	Bronx	2	0.071	0.069	0.066	**0.068**
36-081-0124	Queens College 2	Queens	2	0.073	0.071	0.071	**0.071**
36-085-0067	Susan Wagner	Richmond	2	(closed)	(closed)	(closed)	-
36-085-0111	Fresh Kills West	Richmond	2	0.077	0.065	0.062	**0.068**
36-119-2004	White Plains	Westchester	3	0.078	0.069	0.067	**0.071**
36-087-0005	Rockland County	Rockland	3	0.072	0.066	0.062	**0.066**
09-001-0017	Greenwich	Fairfield	CT	0.086	0.084	0.077	**0.082**
09-001-1123	Danbury	Fairfield	CT	0.075	0.071	0.067	**0.071**
09-001-3007	Stratford	Fairfield	CT	0.083	0.082	0.076	**0.080**
09-001-9003	Westport	Fairfield	CT	0.084	0.081	0.073	**0.079**
09-007-0007	Middletown	Middlesex	CT	0.077	0.076	0.068	**0.073**
09-009-0027	New Haven	New Haven	CT	0.072	0.072	0.068	**0.070**
09-009-9002	Madison Beach	New Haven	CT	0.077	0.083	0.080	**0.080**
34-003-0006	Leonia	Bergen	NJ	0.079	0.071	0.066	**0.072**
34-013-0003	Newark	Essex	NJ	0.071	0.064	0.064	**0.066**
34-017-0006	Bayonne	Hudson	NJ	0.078	0.065	0.063	**0.068**
34-019-0001	Flemington	Hunterdon	NJ	0.072	0.064	0.059	**0.065**
34-023-0011	Rutgers Univ.	Middlesex	NJ	0.076	0.070	0.066	**0.070**
34-025-0005	Monmouth Univ.	Monmouth	NJ	0.068	0.067	0.062	**0.065**
34-027-3001	Chester	Morris	NJ	0.073	0.062	0.060	**0.065**
34-031-5001	Ramapo	Passaic	NJ	0.069	0.062	0.062	**0.064**
34-041-0007	Columbia WMA	Warren	NJ	0.067	0.058	0.053	**0.059**

While ozone concentrations in the Connecticut portion of the NYMA have been relatively flat in recent years, concentrations in the New York portion of the NYMA have exhibited a long-term declining trend. Figure 8 shows the historic DVs from the New York portion of the NYMA, represented as the average of DVs through 2020 from all monitors with a valid DV in a given year.

Figure 8. Historic NYMA DV Trend – New York Monitors Only



SECTION 4: EMISSION INVENTORIES

A. Introduction and Submission of 2011 Base Year Inventory

DEC developed a full 2011 base year inventory for New York State that was submitted to EPA to be approved into the SIP on November 10, 2017. Included as Appendix A is a by-county summary of 2011 emissions of $PM_{2.5}$ and PM_{10}, VOCs, NOx, SO_2, ammonia, and carbon monoxide for the NYMA area. More detailed base year inventory documents are available upon request.

The 2011 base year ozone season day (OSD) inventory was utilized in this ozone SIP to project a future-year (2020) inventory. This section begins with a summary of the 2011 base-year inventory OSD emissions for the NYMA.[32] The 2020 projection year OSD inventories are then provided. OSD emissions are adjusted for the various types of emission source sectors based on their activity level during the summer ozone season.

The source sectors enumerated in this section are divided into the following source categories: point, nonpoint (or area), nonroad mobile, on-road mobile, and biogenic. Explanations of the methodologies used to produce the projection inventories for each of these source categories are provided throughout this section.

B. Summary of 2011 Base Year Ozone Season Day Emissions

For this portion of the inventory, the fundamental unit for each source sector is tons of emissions per OSD. The OSD inventory is reported on a "by-county" basis for the various source sectors. The by-county 2011 OSD inventories for CO, NO_x, and VOCs are summarized in Appendix A. Point source emissions are presented with and without rule effectiveness (RE) factored in.

Table 3 summarizes the 2011 OSD values for the NYMA, with the percent share of each sector following as Table 4.

Table 3. NYMA Summary of 2011 OSD Emissions (Tons per Day)

2011 New York Metropolitan Area (NYMA) Ozone Season Day							
	Point	Point with RE	Nonpoint	Nonroad	On-Road	Biogenic	Total for all sectors*
CO	88.57	100.29	46.18	1,088.43	1,018.81	22.11	2,264.10
NO_x	344.88	356.98	52.49	155.07	205.86	1.35	759.65
VOC	11.26	13.59	301.11	96.88	104.46	191.15	704.86

*Point source emissions with rule effectiveness not included in the total for all sectors

[32] Note that the methodology for development of the base year inventory can be found in the previous attainment SIP for the moderate NYMA nonattainment area as submitted November 10, 2017.

Table 4. NYMA Summary of 2011 OSD Emissions Contributions by Sector

Percent of All Sectors*			
	CO	NO_x	VOC
Point	3.91%	45.40%	1.60%
Nonpoint	2.04%	6.91%	42.72%
Nonroad	48.07%	20.41%	13.74%
On-Road	45.00%	27.10%	14.82%
Biogenic	0.98%	0.18%	27.12%
All Sectors	100.00%	100.00%	100.00%

*Point source emissions with rule effectiveness not included in the total for all sectors

C. Methodology for Computing Ozone Season Day Values from Annual Estimates

OSD emission inventories for most categories are derived from annual inventories and are estimated by adjustments to reflect the relative difference of emission patterns during the ozone season when compared to cooler months. Depending upon source sector activity levels, some source categories are more or less likely to have emissions during an OSD; for example, an OSD is less likely to have emissions related to space heating and more likely to have emissions related to air conditioning or painting. Many categories have relatively constant emissions throughout the year (e.g., consumer products such as deodorant or house cleaning products). OSD estimates attempt to characterize those seasonal differences to more accurately reflect emissions during the summer season.

Nonpoint sector OSD emissions were calculated using the following formula:

$$\text{OSD Emissions} = \frac{\text{Annual Emissions} * \text{Ozone Season Factor}}{52 * \text{Activity Days per Week}}$$

The ozone season factor and the number of days per week differed for each nonpoint category; for example, the annual emissions for consumer products are simply divided by the product of 7 days per week times 52 weeks per year because consumer products are generally used uniformly throughout the year. For dry cleaning, the emissions are assumed to be consistent throughout the year, but emissions are assumed to occur five days per week, so annual emissions for this category are divided by 260 (5*52) to estimate OSD emissions. For AIM coatings, activity is higher during the summer, so an adjustment factor (or ozone season factor) of 1.3 is applied during the summer based on EPA guidance.[33] Appendix J presents OSD factors and data for activity days per week for each nonpoint source classification code (SCC).

[33] STAPPA-ALAPCO-EPA Emission Inventory Improvement Program; Volume III: Chapter 3 – Architectural Surface Coating, page 3-4. November 1995.

Point source sector OSD emissions are calculated from the operational information provided on the emission statement forms. This information includes the process throughput and a breakdown of operation by season, including the number of days the process was in operation during that season. OSD emissions were calculated for each process at point sources by multiplying the annual emissions by the seasonal operating percentage, then dividing by the number of days that process was in operation during the 2011 ozone season.

For most nonroad categories (i.e., commercial marine vessels (CMV), rail, airports) there is no documentation that supports using any seasonal adjustment factors to develop daily emissions. Therefore, OSD emissions were calculated for these categories by dividing the annual emissions by 365.

The two categories that are derived utilizing seasonal factors and model runs specific to the development of OSD emissions are onroad and nonroad equipment. OSD emissions are generated from the Motor Vehicle Emissions Simulator (MOVES) model using data specific to June, July, and August.

For biogenic sources, ozone day emissions were estimated by taking the mean daily biogenic emissions during the months of June, July and August for each county.

D. Summary of 2020 Projection Year Ozone Season Day Emissions

For the NYMA and its serious classification, the projection year of interest is 2020. The county-level 2020 OSD inventories for CO, NO_x, and VOCs are summarized in Appendix B and C, respectively, for point and nonpoint sources; Appendix D and F contain the county-level 2020 inventories for on-road and nonroad sources, respectively.

Table 5 summarizes the 2020 OSD inventory projections for the NYMA, with the percent share of each sector following as Table 6.

Table 5. NYMA Summary of 2020 OSD Emissions (Tons per Day)

2020 New York Metropolitan Area (NYMA) Ozone Season Day							
	Point	Point with RE	Nonpoint	Nonroad	On-Road	Biogenic	Total for all sectors*
CO	76.04	83.31	42.01	1,689.75	708.36	22.11	2,538.27
NO_x	184.20	239.49	46.74	134.45	89.07	1.35	455.81
VOC	9.55	11.56	254.52	99.69	56.41	191.15	611.32

*Point source emissions with rule effectiveness not included in the total for all sectors

Table 6. NYMA Summary of 2020 OSD Emissions Contributions by Sector

Percent of All Sectors*			
	CO	NO_x	VOC
Point EGU	3.00%	40.41%	1.56%
Nonpoint	1.66%	10.25%	41.63%
Nonroad	66.57%	29.50%	16.31%
On-Road	27.91%	19.54%	9.23%
Biogenic	0.87%	0.30%	31.27%
All Sectors	100.00%	100.00%	100.00%

*Point source emissions with rule effectiveness not included in the total for all sectors

E. Methodology for 2020 Projection Year Emissions

1. Point and Nonpoint Inventory Methodology

The 2011 non-EGU point and nonpoint source emissions inventories were projected using the growth factors developed by the Mid-Atlantic Regional Air Management Association (MARAMA) in consultation with DEC. The emissions used for projections were developed for 2020. The MARAMA methodology and results can be found in Appendix G.

For EGU point sources, MARAMA used the projection tool developed by state, local and tribal air management agencies with guidance from the Eastern Regional Technical Advisory Committee (ERTAC). The ERTAC projection tool uses 2011 emissions data from EPA's Clean Air Markets Division and growth factors developed from the U.S. Department of Energy's Energy Information Administration (EIA) data and other sources to create a 2020 emissions inventory for EGUs.

Structure fire and landfill emissions were last estimated in 2008. It is assumed that the 2008 estimates carry over to 2020.

Sample calculations for point and nonpoint sources using the growth and control factors are provided in Appendices H-1 and H-2.

2. Nonroad Inventory Methodology

a. Nonroad Equipment

When completing future year projections, the MOVES model incorporates emissions effects that result from both anticipated changes in equipment activity as well as deterioration of equipment. The model also accounts for expected turnover of old equipment. Emissions from these sources were estimated using MOVES2014a model for 2020. The MOVES2014a Nonroad model was used to calculate the inventory for the nine NYMA counties for all months of the year. County-specific temperature and fuels

blend data for each month of the year were inputted into the model to account for differences across the state.

For fuels, New York is separated into two areas to account for the federally mandated Reformulated Gas program in place in NYMA. Fuels blend data for 2020 are based on recommendations from the Bureau of Mobile Sources and Technology Development's Fuels Impact and Program Support Section taking into account all regulatory requirements for fuels in New York for 2020. Temperature data were acquired from the National Oceanic and Atmospheric Administration from 33 airport locations across New York State as well as surrounding locations to create county-by-county MOVES2014a inputs.

With these data compiled, the nonroad configuration file for the MOVES2014a non-road run was created and the MOVES2014a was run. Post-processing scripts were then used to process and aggregate the MOVES2014a nonroad outputs into OSD emissions by SCC and by county. OSD emissions were based on average daily emissions for the months of June, July and August.

b. C1 and C2 Commercial Marine Vessels and Locomotives and Rail Yard Projections

To project emissions for C1/C2 vessels, locomotives, and rail yards to 2020, New York relied upon emission projections developed by MARAMA using EPA data and methodologies. These methodologies supported the development of a projection factor (combined growth and control factor) for C1/C2 vessels and for locomotives.

EPA national projection factors by SCC and pollutant between 2011 and future years reflect the Tier 4 emissions standards and fuel requirements,[34] as well as the locomotive and marine rule which phased in starting in 2009.[35]

According to EPA, future-year C1/C2 vessel and rail emission projections account for increased fuel consumption based on EIA fuel consumption projections, and emissions reductions resulting from emissions standards from the aforementioned locomotive and marine rule. These standards lowered diesel sulfur content and tightened emission standards for existing and new locomotives and commercial marine vessels that resulted in lower future-year PM, SO_2, and NOx emissions. MARAMA created projection factors for all future years through 2040 for each type of engine and each pollutant.

MARAMA provided the "C1C2RAIL 2016_04_29.xlsx" spreadsheet that was used to obtain growth factors for C1/C2 vessels and locomotives. The spreadsheet, available as Appendix K, contains four tabs labeled General Methodology, Growth Raw Data, NEI to

[34] "Control of Emissions of Air Pollution from Nonroad Diesel Engines and Fuel." Final Rule. Published June 29, 2004; effective August 30, 2004. 69 FR 38958-39273.

[35] "Control of Emissions of Air Pollution from Locomotive Engines and Marine Compression-Ignition Engines Less Than 30 Liters per Cylinder." Final Rule. Published May 6, 2008; republished June 30, 2008; effective July 7, 2008. 73 FR 25098-25352.

Growth Factor XWALK, and EMF Projection Packet. The growth factors for the year 2020 were obtained by entering 2011 as a base year and 2020 as a future year into "The Growth Raw Data" tab.

The growth factors from emissions data from this spreadsheet were applied to New York's 2011 base year data to obtain the 2020 emissions for C1/C2 vessels and locomotives. 2020 OSD emissions data were obtained by dividing the annual emissions data by 365 days per year.

Resources for 2020 projection year methodology for C1/C2 CMVs, locomotives, and rail yards include the following documents, available upon request:

1. 2011 National Emissions Inventory, version 2 Technical Support Document, August 2015;
2. Technical Support Document - Preparation of Emissions Inventories for the Version 6.2, 2011 Emissions Modeling Platform, U.S. EPA, August 2015;
3. Technical Support Document - Emission Inventory Development For 2011, 2018 And 2028 For The Northeastern U.S. Alpha2 Version, MARAMA, November 23, 2015;
4. Technical Support Document - Emission Inventory Development for 2011 and 2017 for the Northeastern U.S. Beta2 Version, July 12, 2017.

c. C3 Commercial Marine Vessels

To project emissions for C3 CMV to 2020, pollutant- and geographic-specific projection factors were applied that reflect assumed growth and final Emissions Control Area-International Marine Organization (ECA-IMO) controls. Projection factors for creating the New York's 2020 C3 CMV inventory from 2011 are provided in Table 7.

Table 7. CMV Projection Factors

Region	Year	2020 Adjustments Relative to 2011					
		CO	NO_x	PM_{10}	$PM_{2.5}$	SO_2	VOC
East Coast	2020	1.508	0.964	0.205	0.204	0.054	1.508
Great Lakes	2020	1.166	0.960	0.155	0.153	0.041	1.166

MARAMA provided the "C3Marine 2016_02_20.xlsx" spreadsheet which was used to obtain projection factors for C3 marine vessels. The spreadsheet, available as Appendix L, contains four tabs labeled General Methodology, Growth Raw Data, NEI to Growth Factor XWALK, and EMF Projection Packet. The growth factors for the year 2020 were obtained by entering 2011 as a base year and 2020 as a future year into the "Growth Raw Data" tab.

The growth factors from emissions data from this spreadsheet were applied to the 2011 base year to obtain the 2020 emissions for C3 CMV. 2020 OSD emissions data were obtained by dividing the annual emissions data by 365 days per year.

Resources for 2020 projection year methodology for C3 CMVs are the same as those listed in the preceding section on C1/C2 CMVs, locomotives, and rail yards.

d. Airports

To project airport emissions for 2020, New York obtained 2011 airport emissions data from EPA's Emissions Inventory System. New York updated its inventory of airports to remove facilities that are no longer operational, to add new facilities, and to correct inaccuracies such as facility names and locations. For newly added facilities, no emissions data were available for 2011. To obtain estimated emissions for these facilities, a comparison was done of pre-existing facilities within the same county with similar operational data. The operational data was obtained from the Federal Aviation Administration (FAA) 5010 Airport Master Record data.[36]

To project the NEI 2011v2 data to 2020, New York relied upon growth factors developed by MARAMA. Future year airport emissions projections were obtained by applying airport- and SCC-specific growth factors to the 2011 emissions data. These growth factors were developed from itinerant (ITN) operations at airports. ITN operations are aircraft landings and take-offs (LTOs) where an aircraft takes off from one airport and lands at another airport, or the aircraft lands at one airport after taking off from another airport. The ITN data were obtained from the FAA's Terminal Area Forecast system. EPA applied a cap of 2.0 (100 percent increase) on projection factors for state-level defaults and 5.0 for airport-specific entries.

MARAMA provided the spreadsheet, included as Appendix M, that was used to obtain New York-specific growth factors by entering 2020 as the "future year" in the "Growth Raw Data" tab. These growth factors were then applied to the annual emissions data for the National Emission Inventory (NEI) 2011v2 to obtain 2020 projected emissions data. Additional airport emissions data are provided in Appendix N. 2020 OSD emissions data were obtained by dividing the annual emissions data by 365 days per year.

Resources for 2020 projection year methodology for airports are the same as those listed in the preceding section on C1/C2 CMVs, locomotives, and rail yards.

3. On-Road Inventory Methodology

New York State developed projection year on-road mobile source emission inventories utilizing EPA's MOVES model, MOVES2014. The emission inventories are modeled in accordance with EPA's "*MOVES2014 and MOVES2014A Technical Guidance: Using MOVES to Prepare Emission Inventories for State Implementation Plans and Transportation Conformity (EPA-420-B-15-093, November 2015*).

[36] Accessed at: http://www.gcr1.com/5010web/

The on-road component of the 2020 projection year inventory includes an estimate of emissions from all motorized vehicles operated on public roadways, including emissions from refueling discussed in more detail below. Projection inputs are prepared from vehicle miles traveled (VMT) growth based on linear regression of Highway Performance Monitoring System historical data for forecasting VMT prepared by the New York State Department of Transportation, which is specific to county and road type. The same growth rate is applied to the base year vehicle population by source type and road type associations. Vehicle age distributions are grown using the EPA's "Age Distribution Projection Tool for MOVES2014," version 11/21/2014. Fuel information is provided for future years based on properties expected to be in place per fuel supply region (upstate/downstate) and expected seasonal changes, as well as regulatory requirements. All other inputs remain the same as those used to develop the 2011 base year except for an adjustment required to account for the extra leap year day which impacts growth estimates.

2020 annual and OSD MOVES2014 emission estimates can be found in Appendix D.

a. Refueling emissions

DEC calculated 2020 future year refueling emissions using MOVES2014 following the same methodologies described above for the on-road portion of the inventory. 2020 annual and OSD MOVES2014 refueling emission estimates can be found in Appendix E. While detailed breakouts of refueling emissions have been provided in the appendices, these emissions are added to and included with on-road emissions summaries in this document.

4. Biogenic Inventory Methodology

Biogenic emissions levels were maintained at the 2011 levels for year 2020.

F. Summary of Emissions Changes between Base Year and Projection Year

Tables 8 and 9 summarize the difference in emissions between the 2011 base year and 2020 projection year. Negative numbers denote decreases in emissions over this time period. Table 8 represents the change on a tons-per-OSD basis within the NYMA and Table 9 represents this change on a percentage basis.

Table 8. 2011 to 2020 Emissions Difference in NYMA (OSD Tons)

2020 - 2011 NYMA OSD (tpd)	CO	NOx	VOC
Point	-12.53	-160.68	-1.71
Point w/RE	-16.98	-117.49	-2.03
Nonpoint	-4.17	-5.75	-46.59
Nonroad	601.32	-20.62	2.81
On-Road	-310.45	-116.79	-48.05
Biogenic	0.00	0.00	0.00
All Sectors*	274.17	-303.84	-93.54

*Point source emissions with rule effectiveness not included in the total for all sectors

Table 9. 2011 to 2020 Emissions Difference in NYMA (Percent)

2020 - 2011 NYMA OSD (%)	CO	NOx	VOC
Point	-14.1%	-46.6%	-15.2%
Point w/RE	-16.9%	-32.9%	-14.9%
Nonpoint	-9.0%	-11.0%	-15.5%
Nonroad	55.2%	-13.3%	2.9%
On-Road	-30.5%	-56.7%	-46.0%
Biogenic	0.0%	0.0%	0.0%
All Sectors*	12.1%	-40.0%	-13.3%

*Point source emissions with rule effectiveness not included in the total for all sectors

G. Conformity Requirements

The CAA prohibits federally-funded projects from interfering with the ability of a state to come into compliance with a NAAQS through its SIP. SIPs establish baseline emissions and project emission changes through the period of future years covered by the SIP. The projected emission levels throughout this period are a part of the state's budget for emissions of the pollutant(s) covered by the SIP.

Under conformity requirements, emissions from federally-funded or -approved projects are not allowed to cause these emission budgets to be exceeded. The motor vehicle emissions budgets (MVEBs) are presented in subsection 2 below.

1. Transportation Conformity

Under the CAA, federally funded transportation projects must not cause or contribute to new air quality violations, worsen existing violations, or delay timely attainment of a NAAQS. In other words, these projects, and any emissions changes resulting from them, must "conform" to implementation plans developed by states for the criteria pollutants. Conformity generally applies to projects funded or approved by the Federal Highway Administration or the Federal Transit Administration in areas that do not meet, or previously have not met, a NAAQS for a criteria pollutant (i.e., nonattainment or

maintenance areas). A one-year grace period is allowed for newly-designated nonattainment or maintenance areas.

Conformity does not apply in attainment or unclassifiable areas. Conformity determinations are also not required for certain exempt projects, such as safety projects (e.g., lighting, guardrails), vehicle rehabilitation, shelters, and maintenance building construction, and other projects such as sign removal, noise reduction, and planning.

Generally, the metropolitan planning organizations (MPOs) involved in transportation planning for each area are responsible for determining if projects and their overall transportation implementation plan (TIP) conform to the state's SIP. The MPOs develop the necessary conformity determinations allowing for public input and hearings in the process demonstrating that their transportation projects meet conformity requirements. State transportation departments and air agencies, and the Federal Highway Administration, Federal Department of Transportation, and EPA are all involved in reviewing conformity determinations and TIPs developed by the MPOs.

State air quality plans contain emission reductions for each pollutant or precursor for each source sector (i.e., on-road motor vehicles, nonroad equipment and vehicles, and stationary and area sources). The level of emissions for on-road motor vehicles, such as cars, trucks, and buses, is referred to as the "motor vehicle emissions budget." Budgets are developed as part of the air quality planning process by state air quality or environmental agencies, and approved by EPA. For transportation conformity, projected emission changes resulting from construction projects involving highway and transit use must not cause this budget to be exceeded. Both long- and short-term emissions must be considered, including the direct emissions of NOx and VOCs.

To maintain conformity, emissions from new projects can be mitigated or offset. This can be done through planning strategies or Transportation Control Measures, which are specific projects or programs designed to reduce emissions from transportation sources by reducing vehicle use, changing traffic flow, or congestion conditions. Examples include programs for improving public transit, developing high occupancy vehicle facilities, and ordinances to promote non-motorized vehicle travel.

2. Motor Vehicle Emission Budgets

For the purposes of transportation conformity, the emission budget is essentially a cap on the total emissions allocated to on-road vehicles. The projected regional emissions calculated based on a transportation plan, transportation improvement program, or project may not exceed the MVEB or cap contained in the appropriate SIP. Emissions in years for which no motor vehicle emissions budgets are specifically established must be less than or equal to the motor vehicle emissions budget established for the most recent prior year.

For transportation conformity, the two primary ozone precursors (NOx and VOCs) must be considered in the conformity process in ozone nonattainment areas. The proposed transportation conformity emission budgets are provided in Table 10. These proposed budgets are based on the latest planning assumptions, MOVES modeling, and the development of the 2011 base-year inventory and projection inventories for 2020. Note that the 2020 MVEB is a projection from the 2011 base year inventory, and that the 2020 VOC MVEB excludes emissions from refueling.

Table 10. Motor Vehicle Emission Budgets

Year	VOC (tpd)	NOx (tpd)
2020	54.51	89.07

3. General Conformity

CAA section 176(c) prohibits federal agencies from conducting activities in nonattainment or maintenance areas that do not conform to a state's SIP. General conformity requirements are in place to ensure federal activities not related to transportation or highway projects do not interfere with the SIP budgets, do not cause or contribute to new NAAQS violations, and ensure the timely attainment and maintenance of the NAAQS as the schedule exists in the SIP. Examples of types of activities that could be affected by general conformity requirements are harbor dredging or beach rehabilitation by the Army Corps of Engineers, where heavy diesel equipment is used both on land and on offshore vessels thus increasing emissions of NOx.

General conformity differs from transportation conformity in that it applies to projects that were not considered in the TIP, as the TIP applies to highways and mass transit. All federal actions not covered under transportation conformity are covered under general conformity requirements unless the actions do not exceed de minimis levels. General conformity requirements can be met by:

- showing emission increases are already covered in the SIP;
- the state agreeing to modify the SIP to include the emissions;
- finding offsets for the increased emissions; or
- mitigating the increased emissions.

Conformity restrictions may also be avoided through construction strategies or planning, such as conducting construction operations outside of the ozone season when specific NOx emission restrictions do not apply.

SECTION 5: AIR QUALITY MODELING

Photochemical modeling for the 2020 projection year was developed by OTC and Mid-Atlantic/Northeast Visibility Union (MANE-VU) states working collaboratively utilizing the SMOKE/WRF/CMAQ and CAMx modeling systems. This collaborative effort allows the modeling results to be used by all regional states in their ozone SIPs and future regional haze efforts.

Future DVs were projected by calculating a Relative Response Factor for each monitor and multiplying it by the base DV (actually the average of the three DVs that "straddle" the baseline inventory year, i.e., the average of the 2010, 2011, and 2012 DVs).

Included as Appendix O is the "Technical Support Document; Emission Inventory Development for 2011 and Projections to 2020 and 2023 for the Northeastern U.S.; GAMMA Version."[37] It provides a thoroughly detailed description of the methodology used to accurately model the region's current and future air quality.

The modeled 2020 DVs for the tri-state NYMA are provided in Table 11 (CAMx and CMAQ results including water cells) and Table 12 (CAMx and CMAQ results discounting water cells). These results indicate that the NYMA is expected to be in nonattainment of the 2008 ozone NAAQS through at least 2020, with values exceeding 0.075 ppm for each case except for CAMx with water cells.

Monitoring data through the 2020 ozone season, provided in Section 3.D, lend support to the results of the projection modeling – specifically, that the NYMA will remain in nonattainment of the 2008 NAAQS.

[37] MARAMA. January 29, 2018.

Table 11. Projected 2020 Ozone DVs in the NYMA with Water Cells (ppm)

AIRS ID	DEC Reg./ State	Site	County	2011 DV	2020 Future DV CAMx	2020 Future DV CMAQ
36-103-0002	1	Babylon	Suffolk	0.083	0.075	0.075
36-103-0009	1	Holtsville	Suffolk	0.078	0.070	0.072
36-103-0004	1	Riverhead	Suffolk	0.078	0.068	0.068
36-061-0135	2	CCNY	New York	0.073	0.068	0.067
36-005-0133	2	Pfizer Lab Site	Bronx	0.074	0.070	0.068
36-081-0124	2	Queens College 2	Queens	0.078	0.071	0.071
36-085-0067	2	Susan Wagner HS	Richmond	0.081	0.073	0.079
36-119-2004	3	White Plains	Westchester	0.075	0.070	0.072
36-087-0005	3	Rockland County	Rockland	0.075	0.064	0.064
09-001-0017	CT	Greenwich	Fairfield	0.080	0.072	0.076
09-001-1123	CT	Danbury	Fairfield	0.081	0.069	0.070
09-001-3007	CT	Stratford	Fairfield	0.084	0.073	0.076
09-001-9003	CT	Westport	Fairfield	0.083	0.074	0.083
09-007-0007	CT	Middletown	Middlesex	0.079	0.066	0.066
09-009-0027	CT	New Haven	New Haven	0.074	0.064	0.067
09-009-9002	CT	Madison	New Haven	0.085	0.073	0.073
34-003-0006	NJ	Leonia	Bergen	0.077	0.065	0.066
34-013-0003	NJ	Newark - Firehouse	Essex	0.078	0.066	0.066
34-017-0006	NJ	Bayonne	Hudson	0.077	0.066	0.068
34-019-0001	NJ	Flemington	Hunterdon	0.078	0.064	0.064
34-023-0011	NJ	Rutgers University	Middlesex	0.081	0.067	0.068
34-025-0005	NJ	Monmouth University	Monmouth	0.080	0.067	0.069
34-027-3001	NJ	Chester	Morris	0.076	0.062	0.064
34-031-5001	NJ	Ramapo	Passaic	0.073	0.063	0.063
34-041-0007	NJ	Columbia WMA	Warren	0.066	0.054	0.054

Table 12. Projected 2020 Ozone DVs in the NYMA without Water Cells (ppm)

AIRS ID	DEC Reg./ State	Site	County	2011 DV	2020 Future DV CAMx NW	2020 Future DV CMAQ NW
36-103-0002	1	Babylon	Suffolk	0.083	0.076	0.075
36-103-0009	1	Holtsville	Suffolk	0.078	0.069	0.069
36-103-0004	1	Riverhead	Suffolk	0.078	0.067	0.068
36-061-0135	2	CCNY	New York	0.073	0.065	0.065
36-005-0133	2	Pfizer Lab Site	Bronx	0.074	0.065	0.065
36-081-0124	2	Queens College 2	Queens	0.078	0.071	0.071
36-085-0067	2	Susan Wagner HS	Richmond	0.081	0.069	0.070
36-119-2004	3	White Plains	Westchester	0.075	0.065	0.068
36-087-0005	3	Rockland County	Rockland	0.075	0.064	0.064
09-001-0017	CT	Greenwich	Fairfield	0.080	0.071	0.083
09-001-1123	CT	Danbury	Fairfield	0.081	0.069	0.070
09-001-3007	CT	Stratford	Fairfield	0.084	0.073	0.075
09-001-9003	CT	Westport	Fairfield	0.083	0.072	0.075
09-007-0007	CT	Middletown	Middlesex	0.079	0.066	0.066
09-009-0027	CT	New Haven	New Haven	0.074	0.063	0.064
09-009-9002	CT	Madison	New Haven	0.085	0.072	0.072
34-003-0006	NJ	Leonia	Bergen	0.077	0.065	0.066
34-013-0003	NJ	Newark - Firehouse	Essex	0.078	0.066	0.066
34-017-0006	NJ	Bayonne	Hudson	0.077	0.066	0.067
34-019-0001	NJ	Flemington	Hunterdon	0.078	0.064	0.064
34-023-0011	NJ	Rutgers University	Middlesex	0.081	0.067	0.068
34-025-0005	NJ	Monmouth University	Monmouth	0.080	0.067	0.066
34-027-3001	NJ	Chester	Morris	0.076	0.062	0.064
34-031-5001	NJ	Ramapo	Passaic	0.073	0.063	0.063
34-041-0007	NJ	Columbia WMA	Warren	0.066	0.054	0.054

SECTION 6: REASONABLE FURTHER PROGRESS

A. Introduction

The CAA requires ozone nonattainment areas classified as moderate or higher to submit plans demonstrating gradual progress toward attainment of the NAAQS. RFP is defined by section 171(1) of the CAA to mean ‘‘such annual incremental reductions in emissions of the relevant air pollutant as are required by [part D of title I] or may reasonably be required by the Administrator for the purpose of ensuring attainment of the applicable [NAAQS] by the applicable date.’’

The RFP requirements for the 2008 ozone NAAQS are codified in 40 CFR 51.1110 and are discussed in EPA's 2008 ozone implementation rule.[38] The implementation rule states that, "for purposes of the 2008 ozone NAAQS, the EPA interprets the RFP requirement of CAA section 172(c)(2) to require an area classified as Moderate to achieve an average 3 percent annual reduction…for the first 6 years following the baseline year, and the RFP requirement in CAA section 182(c)(2)(B) to require the same thing for areas classified as Serious or higher."[39] "For Serious and above areas, CAA section 182(c)(2)(B) requires an additional 3 percent per year reduction in VOC emissions, averaged over consecutive 3-year periods…until the attainment date."[40]

Because the NYMA had previously met the 15 percent RFP requirements for VOC for the 1997 NAAQS, "RFP requirements may be satisfied with reductions in either NOx or VOC emissions."[41] For the NYMA serious nonattainment area, this 27 percent reduction requirement must be met by the end of the nine-year period regardless of whether the area attains the NAAQS. The emission reduction calculations contained in this section utilize the inventory data that include RE.

EPA no longer requires the calculation of non-creditable emissions reductions because of the minimal effect of their exclusion. This includes measures related to motor vehicle exhaust or evaporative emissions promulgated by January 1, 1990; regulations concerning Reid vapor pressure promulgated by November 15, 1990; measures to correct previous RACT requirements; and measures required to correct previous I/M programs.

Although DEC's modeling demonstration and 2020 DVs indicate that the NYMA do not meet the serious area attainment deadline of July 20, 2021, the RFP calculations indicate that the 27 percent reduction requirement will be achieved through a combination of NOx and VOC emission reductions through 2020. The following subsections provide details of these calculations.

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[38] "Implementation of the 2008 National Ambient Air Quality Standards for Ozone: State Implementation Plan Requirements." Final Rule. Published March 6, 2015; effective April 6, 2015. 80 FR 12264-12319.
[39] Ibid. p.12276.
[40] Ibid. p.12271.
[41] Ibid. p.12276.

B. 2020 VOC Reductions

The following steps were used to calculate the VOC reductions that have occurred between the 2011 base year and 2020 projection year. A 27 percent VOC reduction is the goal, but NOx reductions may be used to fulfill the RFP requirements in the event of a shortfall.

Step 1: Compile the base year inventory for VOC emissions in the NYMA, including biogenic emissions. Section 4 contains the 2011 base year inventory, summarized here on an OSD basis with RE factored in.

Table 13. 2011 NYMA Base Year VOC Inventory for RFP

Sector	VOC (tpd)
Point (non-EGU) w/ RE	7.93
Point (EGU) w/ RE	5.66
Nonpoint	301.11
Nonroad	96.88
On-Road	104.46
Biogenic	191.15
All Sectors	707.19

Step 2: Remove the biogenic emissions from the base year inventory to develop the base year anthropogenic inventory.

Table 14. 2011 NYMA Base Year Anthropogenic VOC Inventory for RFP

Sector	VOC (tpd)
Point (non-EGU) w/ RE	7.93
Point (EGU) w/ RE	5.66
Nonpoint	301.11
Nonroad	96.88
On-Road	104.46
Anthropogenic Sectors	516.04

Step 3: Multiply the base year anthropogenic inventory from Step 2 by 0.73 to identify the required 2020 VOC emissions to fulfill the 27 percent RFP requirement.

516.04 tpd VOC * 0.73 = 376.71 tpd VOC

Step 4: Determine the 2020 projection year anthropogenic inventory for the NYMA. Section 4 contains the 2020 projection year inventory, summarized here on an OSD basis. Emission Reduction Credits (ERCs) are also being added to the projection inventory. ERCs are credits that are generated when a facility shuts down or voluntarily reduces its permitted emissions by accepting a federally-enforceable emission limit or

operating condition. The ERCs can be used to offset emission increases from facilities constructing or modifying air emission sources subject to NSR. Since they can be used at any time in the future, they must be accounted for in the VOC projection inventory.

Table 15. 2020 NYMA Projection Year Anthropogenic VOC Inventory for RFP

Sector	VOC (tpd)
Point w/ RE	11.56
VOC ERCs	2.22
Nonpoint	254.52
Nonroad	99.69
On-Road	56.41
Anthropogenic Sectors	**424.40**

Step 5: Compare the 2020 projection year anthropogenic VOC inventory for the NYMA (determined in step 4) to the required 2020 VOC emissions (determined in step 3). Comparison of the figures in Steps 3 and 4 shows that there is a shortfall of 47.69 tpd (424.40 tpd – 376.71 tpd) to demonstrate RFP through 2020. NOx reductions must therefore be relied upon to meet the requirement.

There is no longer a requirement for a portion of VOC reductions to be held to fulfill the contingency measure requirement.[42] The VOC shortfall to demonstrate RFP therefore remains as 47.69 tpd or 9.24 percent (47.69 tpd / 516.04 tpd).

C. 2020 NOx Reductions

Step 1: Compile the base year inventory for NOx emissions in the NYMA, including biogenic emissions, on an OSD basis with RE factored in.

Table 16. 2011 NYMA Base Year NOx Inventory for RFP

Sector	NOx (tpd)
Point (non-EGU) w/ RE	45.68
Point (EGU) w/ RE	311.30
Nonpoint	52.49
Nonroad	155.07
On-Road	205.86
Biogenic	1.35
All Sectors	771.75

Step 2: Remove the biogenic emissions from the base year inventory to develop the base year anthropogenic inventory.

[42] Ibid. p.12285.

Table 17. 2011 NYMA Base Year Anthropogenic NOx Inventory for RFP

Sector	NOx (tpd)
Point (non-EGU) w/ RE	45.68
Point (EGU) w/ RE	311.30
Nonpoint	52.49
Nonroad	155.07
On-Road	205.86
Anthropogenic Sectors	770.40

Step 3: Multiply the base year anthropogenic inventory from Step 2 by 0.9076 (1 – 9.24 percent VOC shortfall) to identify the required 2020 NOx emissions to fulfill the remainder of the RFP requirement.

770.40 tpd NOx * 0.9076 = 699.22 tpd NOx

Step 4: Determine the 2020 projection year anthropogenic inventory for the NYMA. Section 4 contains the 2020 projection year inventory, summarized here on an OSD basis. ERCs are being added to the NOx projection inventory to account for credits that may be used in the future.

Table 18. 2020 NYMA Projection Year Anthropogenic NOx Inventory for RFP

Sector	NOx (tpd)
Point w/ RE	239.49
NOx ERCs	26.39
Nonpoint	46.74
Nonroad	134.45
On-Road	89.07
All Sectors	**536.14**

Step 5: Compare the 2020 projection year anthropogenic NOx inventory for the NYMA (determined in step 4) to the required 2020 NOx emissions (determined in step 3). Projected NOx emissions for 2020 easily fulfill the remainder of the 27 percent RFP mandate. Surplus NOx emissions total 163.08 tpd (699.22 tpd – 536.14 tpd), which is equivalent to a **21.17 percent** surplus (163.08 tpd / 770.40 tpd).

RFP is therefore successfully demonstrated for the NYMA pursuant to CAA section 182(b)(1) and 40 CFR 51.1110.

D. Simplified RFP Calculation

This section replicates the calculation made above in an alternate, percentage-based format which expresses the fulfillment of the RFP goal more simply.

VOC:
516.04 tpd base inventory – 424.40 tpd projection inventory = 91.64 tpd reduction
91.64 tpd reduction / 516.04 tpd base inventory = **17.76%** VOC reduction

Remainder of RFP mandate to be fulfilled by NOx: 27% - 17.76% = **9.24%**

NOx:
770.40 tpd base inventory – 536.14 tpd projection inventory = 234.26 tpd reduction
234.26 tpd reduction / 770.40 tpd base inventory = **30.41%** NOx reduction

30.41% NOx reduction – 9.24% NOx target reduction = **21.17%** NOx reduction surplus

E. Contingency Measures

Contingency measures are additional controls that must be implemented pursuant to CAA section 172(c)(9) if a nonattainment area fails to meet an RFP milestone or attain the NAAQS by the applicable deadline. Such measures are to take effect in any such case without further action by the state or the Administrator. These requirements were upheld in a January 29, 2021 court decision, *Sierra Club v. EPA*, that found contingency measures are indeed only valid when these measures follow the "triggering conditions" pursuant to the "plain text" of the CAA.[43]

Because DEC does not have the legal authority to implement a regulation with "trigger conditions," it is awaiting guidance from EPA on how to best address the January 29, 2021 court decision in its SIPs. DEC has historically used a "weight-of-evidence" approach to satisfy the contingency measure requirements because emissions reductions from these "weight-of-evidence" measures/programs are not credited in the SIP upon submission.

Importantly, DEC also believes that it is illogical to hold regulations in reserve to be implemented as contingency measures at a later date when all potential emission reductions are needed immediately. Even when DEC "immediately" implements all VOC and NOx regulations that are economically and technically feasible, the NYMA is still in nonattainment, and is projected to be in nonattainment beyond the "serious" nonattainment deadline of July 20, 2021.

EPA's implementation rule for the 2008 ozone NAAQS notes that "contingency measures should represent one year's worth of progress, amounting to reductions of 3 percent of the baseline emissions inventory" in the year following that in which the failure has been identified.[44] The RFP calculations in sections 6.B through D demonstrate that the 27 percent RFP requirement has easily been met, with surplus NOx reductions of 21.17 percent. Therefore, for this attainment demonstration, DEC is also relying on these excess emission reductions from adopted regulations and

[43] Sierra Club v. Environmental Protection Agency, No. 15-1465 (D.C. Cir. 2021).
[44] 2008 Ozone NAAQS Implementation Rule, p.12285.

additional future emission reductions from currently adopted regulations to satisfy the contingency measure requirements.

For instance, 6 NYCRR Subpart 227-3 will result in significant NOx reductions on the hottest summer days most conducive to ozone formation in two phases (one in 2023, the other in 2025). DEC estimates that NOx emission reductions from pre-1986 simple-cycle combustion turbines that act as “peaking units” would be approximately 900 tons per year, or 50 percent, on high-ozone days. Additionally, fleet turnover will continue to provide mobile source reductions not accounted for in this SIP. All regulations discussed in Section 2.C will provide emission reductions beyond the 2020 ozone season.

DEC will also continue to evaluate potential control strategies that would further reduce VOC and NOx in the NYMA and help bring the area into attainment.

SECTION 7: REASONABLY AVAILABLE CONTROL TECHNOLOGY (RACT)

RACT is defined as the lowest emissions limit that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility. CAA section 183 requires EPA to issue, and periodically update as needed, guidance that would help states meet RACT requirements. This includes the development of CTG and Alternative Control Techniques (ACT) documents for controlling NOx and VOCs from stationary sources. CTGs presumptively define a level of control as RACT; ACT documents do not formally define RACT, but describe available measures that are technologically and economically feasible that states can adopt to satisfy RACT.

CAA sections 182(b)(2) and 182(f) require ozone nonattainment areas classified as moderate and above to adopt RACT for sources that are subject to CTGs, and for non-CTG major sources of VOCs and NOx, respectively. CAA section 184 further requires states such as New York that reside in the OTR to implement RACT with respect to all sources covered by CTGs. States must demonstrate via a SIP submission that the state's RACT requirements for NOx and VOCs are current and appropriate to meet the requirements of the 8-hour ozone NAAQS.

EPA initially issued three sets of CTG documents establishing a "presumptive norm" for RACT for several VOC source categories. The three sets of CTGs were:

- Group I – issued before January 1978 (15 CTGs);
- Group II – issued in 1978 (nine CTGs); and
- Group III – issued in the early 1980's (five CTGs).

Another 18 CTGs were later issued between December 1992 and September 2008, and one additional CTG on October 20, 2016. VOC ACT documents were issued between 1983 and 1994, while NOx ACT documents were issued between 1992 and 1995, along with September 2000 updates to the stationary internal combustion engine and cement kiln ACTs.

DEC submitted a RACT SIP for the 2008 ozone NAAQS on December 22, 2014 due to New York State being located within the OTR;[45] a second RACT SIP was submitted on November 10, 2017 that specifically addressed the NYMA following its moderate nonattainment reclassification;[46] a third RACT SIP was submitted on January 28, 2021 that specifically addressed the NYMA following its serious reclassification.[47] All three RACT SIPs concluded that the RACT rules in place at the time met the criteria for RACT for the 2008 ozone standard.

EPA conditionally approved New York State's RACT program on December 12, 2017, contingent on the adoption of the industrial cleaning solvents CTG into state

[45] https://www.dec.ny.gov/docs/air_pdf/sip2014ractprop.pdf
[46] https://www.dec.ny.gov/docs/air_pdf/sip2008ractnymafinal.pdf
[47] https://www.dec.ny.gov/docs/air_pdf/sipozoneract2021.pdf

regulation.[48] To fulfill the conditional requirement, DEC revised Part 226 to add a new Subpart 226-2, "Industrial Cleaning Solvents," which became effective on November 1, 2019. This regulation includes the requirements of the industrial cleaning solvents CTG issued by EPA in September 2006.

On May 13, 2020, EPA approved New York's statewide RACT SIP, the NYMA-specific RACT SIP submitted by DEC on November 11, 2017 for the moderate reclassification, the implementation of the industrial cleaning solvents CTG, and certifications for the state's enhanced vehicle I/M program, emissions statement program, and nonattainment NSR program.[49]

DEC plans to adopt and implement EPA's 2016 oil and natural gas CTG in a timely manner, as discussed in Section 2.C. New York's adopted RACT regulations will then be consistent with all CTGs and ACTs that have been released by EPA to date.

In some instances, sources at some New York State facilities cannot meet presumptive RACT emission limits or are otherwise required to perform a control analysis to finalize a source-specific RACT emission limit. In such cases DEC is required to submit source-specific SIP revisions. RACT determinations made on a source-specific basis consider the latest emission control technology and use the cost thresholds – established in 1994 and continuously adjusted to account for inflation – to determine what constitutes technically and economically feasible controls for that particular source.

[48] "Approval and Promulgation of Implementation Plans; New York; Reasonably Available Control Technology for the 2008 8-Hour Ozone National Ambient Air Quality Standards." Final Rule. Published December 12, 2017; effective January 11, 2018. 82 FR 58342-58347. Proposed approval conditioned on adoption of industrial cleaning solvents CTG.

[49] "Approval and Promulgation of Implementation Plans; New York; Reasonably Available Control Technology for the 2008 8-Hour Ozone National Ambient Air Quality Standards in the New York Metropolitan Area Moderate Nonattainment Area." Final Rule. Published May 13, 2020; effective June 12, 2020. 85 FR 28490-28493.

SECTION 8: REASONABLY AVAILABLE CONTROL MEASURES (RACM)

A. Introduction

RACM requirements are set forth in CAA section 172(c)(1) and apply to all nonattainment areas that are required to submit an attainment demonstration. EPA guidance interprets the RACM provision to require a demonstration that the state has adopted all reasonable measures to meet RFP requirements and to demonstrate attainment as expeditiously as practicable and that no additional measures that are reasonably available will advance the attainment date or contribute to RFP for the area.

DEC confirms that New York has adopted all reasonable measures to meet RFP requirements, as Section 6 demonstrates a surplus of NOx emission reductions in the NYMA. The next section provides details on DEC's plans for RACM.

B. RACM for the 2008 Ozone NAAQS

Information on DEC's regulations that reduce NOx and VOC emissions in the NYMA are included in Section 2.C. These include recent updates to existing regulations, such as AIM and consumer products, and new regulations specifically targeting emissions on high electric demand days, such as the DG and "peaker" turbine rules. These newly revised and adopted regulations are in addition to those listed in Section 2.B which are already in effect. Many programs that address emissions from the mobile sector are implemented and enforced by agencies other than DEC and are therefore not listed in Section 2.

DEC constantly collaborates with the OTC in evaluating NOx and VOC emissions to help identify new and existing sources and source categories where emissions can be reduced. OTC considers EPA's CTGs and Control Strategy Tool (and formerly the AirControlNET database), emission control initiatives in other states, mobile source measures developed by CARB, and stakeholder input when doing its evaluations. Over the years, OTC's workgroups have identified and reviewed many candidate control measures.

DEC also collaborates with the New York State and New York City Departments of Transportation, the New York State Energy Research and Development Authority, the Port Authority of New York and New Jersey, and other agencies to address the transportation sector, which is the largest contributor of NOx emissions in the NYMA (see Figure 2). New York has also collaborated with other states to develop regional solutions to transportation emissions. Driven by the need for emission reductions of both ozone precursors and greenhouse gases pursuant to New York's Climate Leadership and Community Protection Act, a substantial effort is underway to develop zero-emission light-, medium- and heavy-duty fleets. Any emissions reductions from these programs have been and will continue to be reflected in actual monitoring data

and in updates to the baseline and projection inventories used in attainment demonstrations.

DEC will develop a more robust RACM demonstration in the next iteration of the attainment demonstration for the 2008 ozone NAAQS when EPA reclassifies the NYMA from “serious” nonattainment to “severe” nonattainment. An attainment demonstration for that classification will likely be due 12 months from the effective date of the reclassification.

SECTION 9: PERMIT PROGRAM

An air pollution permitting program for stationary sources helps assure the emission reductions called for in a SIP are achieved. New York's air permitting program identifies and controls various sources of air pollution ranging in size from large industrial facilities and power plants to small commercial operations such as dry cleaners.

Before 1970, few emission limitations were placed on the pollutants that could be discharged to the air. When the first federal air quality standards were issued, New York's air was more polluted than the standards allowed in several areas. Today, however, air quality in most areas of New York meets standards that are much more rigorous than those of 1970. As new information on the health and environmental effects of air pollution has become available, new state and federal standards have been established and emission limits have been tightened to protect public health and the environment. By requiring the use of effective pollution control technology and enforcing compliance with these requirements through permitting, DEC's air permitting program has been a vital means of reducing air emissions to meet ever more stringent air quality standards.

Title V of the CAA requires states to implement a permitting program for major stationary sources. Section 19-0311 of Article 19 of the Environmental Conservation Law (ECL) directs DEC to establish a permitting program to implement Title V of the CAA. In addition, DEC has implemented a permitting program for minor sources of air pollution. DEC's permitting regulations are set forth at 6 NYCRR Part 201, "Permits and Registrations." The two most common types of permits for air contamination sources are described in Part 201 and include State Facility permits (Subpart 201-5) and Title V permits (Subpart 201-6).

State Facility permits are issued to facilities whose emissions are below the major source threshold (as defined in Part 201) and meet the criteria for permitting under Subpart 201-5. These are stationary source facilities that generally meet one or more of the following characteristics:

- Require and have accepted an emission cap pursuant to Subpart 201-7 to limit their potential to emit regulated air contaminants to avoid the requirement to obtain a Title V permit or other applicable requirement;
- Have been granted a variance pursuant to an air regulation implemented by DEC;
- Have annual actual emissions of one or more persistent, bioaccumulative, and toxic compounds equal to or greater than the thresholds listed in table 1 of Subpart 201-9, except where the facility is a stationary or portable combustion installation;
- Have annual actual emissions of any regulated air contaminant in excess of the thresholds in Subpart 201-4.

Title V permits are required for major facilities under the CAA and the ECL and the implementing regulations at 40 CFR Part 70 and 6 NYCRR Subpart 201-6, respectively. These include stationary source facilities which meet any of the following characteristics:

- Have a potential to emit that is major as defined in Part 201;
- Are subject to a New Source Performance Standard and/or National Emission Standards for Hazardous Air Pollutants and are specifically required to obtain a Title V permit;
- Are subject to federal acid rain program requirements;
- Are a facility in a category designated by the EPA Administrator.

Title V permits have greatly assisted DEC's efforts to ensure that major sources are operating in compliance with applicable air pollution control laws and regulations. Notably, the Title V permit contains all applicable requirements for a major stationary source, the approved test methods by which a source will determine whether it is in compliance with those requirements, and conditions requiring prompt reporting of all violations and emission limit exceedances. The Title V permit also includes conditions for recordkeeping, monitoring, and reporting, including the requirement for facilities to prepare semi-annual reports of their monitoring activities, annual reports of their emissions, and an annual certification that they have operated in compliance with all applicable requirements. All this information is accessible to the public. Thus, the Title V permit provides both DEC and members of the public with a clear picture of what a facility does, what requirements are applicable to a facility, what measures the facility must implement to control its emissions of air pollutants, and how the facility will determine whether it is operating in compliance with those applicable requirements. Most of the terms of the Title V permit are also federally enforceable meaning citizens can bring suit to address violations of the permit.

To obtain a permit, a facility owner or operator must apply to DEC using a form designated for this purpose. Applicants must supply information on the facility's emissions, the processes operating at the facility, the raw materials being used, the height and location of stacks or vents, the requirements that apply to the facility, and the controls being applied. DEC develops air pollution permits based on the information in the applications and DEC's own assessment of the applicable regulations.

The information generated by the permit process is also used by DEC in its air quality planning to ensure the effective implementation of control measures needed to curb air pollution. Air permits play a direct role in the implementation of emission reduction requirements at stationary sources. For example, RACT requirements intended to reduce VOC and NOx emissions, as well as NOx budgets and other requirements applicable to large sources, are set forth in regulations that serve as the source of conditions in permits issued by DEC. Permit terms and conditions in turn ensure that the facility is complying with applicable regulatory requirements. The result is that DEC can document that it is achieving the emission reduction targets contained in the SIP which are necessary to improve air quality in New York State.

All other non-major facilities that meet the criteria of Subpart 201-4 can obtain a minor facility registration rather than a permit. Registration facilities must have actual emissions of all regulated air contaminants less than one-half of the major source threshold. Registration facilities are still required to meet all applicable requirements in accordance with federal and DEC regulations. DEC, in addition, can enforce these regulatory obligations through its authority under the ECL and CAA.

SECTION 10: CLEAN AIR ACT SECTION 110 MEASURES

Sections 110(a)(1) and 110(a)(2) of the CAA direct each state to develop and submit to EPA a plan that provides for the implementation, maintenance, and enforcement of the NAAQS. Such plans, commonly referred to as "infrastructure SIPs," are required within three years of any NAAQS revision. Section 110(a)(1) contains the general requirements for submitting a SIP to address a new or revised NAAQS, while section 110(a)(2) specifies the substantive elements to be contained in the plan, which relate to the general information and authorities that constitute the basic structural requirements for an air agency's overall air quality management program to be effective.

EPA's most recent section 110 guidance pertaining to the 2008 ozone (and other) NAAQS was released on September 13, 2013.[50] Additional information specifically addressing the interstate transport "good neighbor" provision of section 110(a)(2)(D)(i)(I) was provided in an EPA memorandum on January 22, 2015.[51] Implementation guidance for the 2015 ozone NAAQS introduced no new requirements for infrastructure SIPs.[52] Pursuant to these guidance documents, infrastructure SIPs must address the following elements of CAA section 110(a)(2):

110(a)(2)(A)	Emission Limits and Other Control Measures
110(a)(2)(B)	Ambient Air Quality and Monitoring/Data System
110(a)(2)(C)	Programs for Enforcement of Control Measures and for Construction or Modification of Stationary Sources
110(a)(2)(D)	Interstate Pollution Transport; Interstate Pollution Abatement and International Air Pollution
110(a)(2)(E)	Adequate Resources and Authority, Conflict of Interest, and Oversight of Local Governments and Regional Agencies
110(a)(2)(F)	Stationary Source Monitoring and Reporting
110(a)(2)(G)	Emergency Episodes
110(a)(2)(H)	SIP Revisions
110(a)(2)(I)	Plan Revisions for Nonattainment Areas
110(a)(2)(J)	Consultation with Government Officials, Public Notification, PSD and Visibility Protection
110(a)(2)(K)	Air Quality Modeling and Submission of Modeling Data
110(a)(2)(L)	Permitting Fees
110(a)(2)(M)	Consultation and Participation by Affected Local Entities

[50] "Guidance on Infrastructure State Implementation Plan (SIP) Elements under Clean Air Act Sections 110(a)(1) and 110(a)(2)." EPA Office of Air Quality Planning and Standards. September 13, 2013.

[51] "Information on the Interstate Transport "Good Neighbor" Provision for the 2008 Ozone National Ambient Air Quality Standards (NAAQS) under Clean Air Act (CAA) Section 110(a)(2)(D)(i)(I)." Memorandum from Stephen D. Page, Director, EPA Office of Air Quality Planning and Standards, to Regional Air Division Directors. January 22, 2015

[52] "Implementation of the 2015 National Ambient Air Quality Standards for Ozone: Nonattainment Area State Implementation Plan Requirements." Final rule. Published December 6, 2018; effective February 4, 2019. 83 FR 62998-63036.

DEC submitted its infrastructure SIP for the 2008 ozone NAAQS on April 4, 2013 and supplemented the transport portion (section 110(a)(2)(D)) on September 25, 2018. EPA approved the SIP in a series of actions (the exception being the interstate contribution requirements of section 110(a)(2)(D)(i)(I), which were disapproved in order to implement CSAPR).[53,54,55] New York State continues to provide for the successful implementation, maintenance, and enforcement of the 2008 ozone NAAQS.

[53] "Partial Approval and Partial Disapproval of Air Quality Implementation Plans; New York; Interstate Transport Infrastructure SIP Requirements for the 2008 Ozone NAAQS." Final Rule. Published August 26, 2016; effective September 26, 2016. 81 FR 58849-58855.

[54] "Approval and Promulgation of Implementation Plans; New York Prevention of Significant Deterioration of Air Quality and Nonattainment New Source Review; Infrastructure State Implementation Plan Requirements." Final Rule. Published December 27, 2016; effective January 26, 2017. 81 FR 95047-95050.

[55] "Approval of Air Quality Implementation Plans; New York; Infrastructure Requirements for the 2008 Ozone, 2010 Sulfur Dioxide, and 2012 Fine Particulate Matter National Ambient Air Quality Standards." Final Rule. Published October 10, 2019; effective November 12, 2019. 84 FR 54502-54507.

SECTION 11: NEW SOURCE REVIEW (NSR)

New major stationary sources of air pollution (as defined by the CAA) and major stationary sources which undertake major modifications are required to obtain a permit before commencing construction. The review process through which permits are issued is known as NSR. NSR is required for major sources whether the source or modification is located in an area classified as attainment, nonattainment, or unclassifiable.

For nonattainment areas, the permits are called nonattainment NSR (NNSR) permits. Permits for sources in attainment and unclassifiable areas are referred to as PSD permits. NSR encompasses both the NNSR and PSD permit programs.

The NSR program is in place to protect the air quality in the areas where sources are being constructed or modified, as well as areas that might be affected by transport. These programs are integral to the success of the various SIP efforts, ensuring that new major sources and modifications to existing sources do not interfere with attainment and maintenance of the NAAQS or exacerbate air quality problems in existing nonattainment areas.

The NSR permitting program in New York is implemented through the provisions of 6 NYCRR Part 231, “New Source Review for New and Modified Facilities.” This rule underwent a major revision in 2009 to conform to recent federal guidelines. With that revision, New York took back the administration of the PSD program for attainment pollutants (i.e., all pollutants subject to a NAAQS, regulated under a New Source Performance Standard, or regulated under the CAA except HAPs in section 112), which had been under EPA’s purview since 2004. The revised rule also incorporated provisions to ensure enforceability of the rule and effective monitoring, recordkeeping, and reporting.

Assessment of Public Comments
Proposed Attainment State Implementation Plan
for the Serious Nonattainment New York Metropolitan Area
for the 2008 Ozone National Ambient Air Quality Standards

Comment 1: These steps [to reduce emissions of volatile organic compounds (VOCs) and nitrogen oxides (NOx) from stationary sources] will be insufficient if not accompanied by measures to significantly reduce mobile source emissions within the state. Notably, New York must reform the transportation sector to meet the greenhouse gas (GHG) reduction mandates in the Climate Leadership and Community Protection Act (CLCPA) which also requires the state to prioritize the reduction of co-pollutant emissions that disproportionately impact communities of color and low-income communities. Among other relevant policies, the Department of Environmental Conservation (DEC) should adopt measures such as California's Advanced Clean Trucks (ACT) and Heavy-Duty Omnibus (HDO) rules, as well as implement Indirect Source Rules (ISR) to better regulate air pollution from medium- and heavy-duty vehicles (MHDVs) serving warehouses, distribution centers, and ports.

Response 1: The commenter observes that numerous emission reduction policies have been implemented to improve air quality in the New York metropolitan area (NYMA) but notes that they must be accompanied by mobile source measures. The attainment demonstration, as proposed, does not provide a detailed summary of the many mobile source measures that have been, and continue to be, implemented in New York State and specifically the NYMA because of the timing associated with the Environmental Protection Agency's (EPA's) reclassification of the area from moderate to serious nonattainment in August 2019.

Significant progress is already being made in reducing ozone precursors; Table 9 of the State Implementation Plan (SIP), for example, includes data showing that the on-road mobile source sector accounted for the greatest reduction of NOx (56.7 percent), VOC (46.0 percent), and carbon monoxide (30.5 percent) emissions of all source sectors between 2011 and 2020.

Notably, DEC proposed a revision to Part 218 on September 8, 2021 to adopt California's ACT standards which would complement New York's on-going efforts to electrify the transportation sector.[1] Given that many of New York's disadvantaged communities are adjacent to industrial facilities and transit routes with heavy truck traffic, the proposed adoption of the ACT standards would also help to address the disproportionate health risks and pollution burdens affecting these communities.

[1] DEC Air Pollution Regulatory Revisions. Available at https://www.dec.ny.gov/regulations/26402.html.

Additional Measures Intended to Reduce Mobile Source Emissions

Zero-Emission Vehicles Legislation: On September 8, 2021, Governor Hochul signed legislation (A.4302/S.2758) that sets a goal for all new passenger cars and trucks sold in New York State to be zero-emissions by 2035.[2] Under the new law, new off-road vehicles and equipment sold in New York are targeted to be zero-emissions by 2035, and new MHDV sales by 2045. The law also requires the development of a zero-emissions vehicle development strategy by 2023, which will be led by the New York State Energy Research and Development Authority (NYSERDA) to expedite the implementation of the state policies and programs necessary to achieve the law's new goals.

Zero-Emission Vehicles Funding: To help achieve the state's ambitious climate goals, New York is investing more than $1 billion in zero-emissions vehicles over the next five years. Active medium- and heavy-duty truck initiatives within New York State include zero-emission truck purchase vouchers through the New York Truck Voucher Program and New York City Clean Trucks Program, utility "Make Ready" investment for charging stations, fleet assessment services, and a $24 million electric Truck and Bus Prize Challenge.

Volkswagen Settlement Funding: New York is leveraging $127.7 million from the Volkswagen settlement to advance clean transportation initiatives for many on-road and nonroad vehicle types in New York. Key goals include:

- Reducing diesel exhaust emissions by replacing or repowering older, dirtier diesel vehicles and engines with new all-electric, alternative fueled, or diesel vehicles and engines.
- Considering statewide air quality improvement goals while prioritizing those areas most impacted by diesel emissions, including environmental justice (EJ) communities.
- Accelerating the transition to a zero-emission transportation system by promoting greater use of all-electric vehicles and prioritizing diesel-to-electric replacement projects.
- Achieving desired environmental benefits as cost-effectively as possible by leveraging private and other financing.

Volkswagen settlement information can be found on the DEC website.[3]

Multi-State Electrification Agreement: In 2020, New York and 14 states and the District of Columbia agreed to develop an action plan to accelerate the electrification of buses

[2] Announcement available at https://www.governor.ny.gov/news/advance-climate-week-2021-governor-hochul-announces-new-actions-make-new-yorks-transportation.
[3] Volkswagen Settlement Information. Available at https://www.dec.ny.gov/chemical/109784.html and https://www.dec.ny.gov/chemical/118556.html.

and trucks and to consider adopting California's ACT regulation.[4] Participating states also committed to work together to accelerate the market for electric MHDVs, including delivery trucks, box trucks, and buses. The collective goal is to ensure that 100 percent of all new medium- and heavy-duty vehicle sales be zero-emission vehicles by 2050, with an interim target of 30 percent zero-emission vehicle sales in these categories of vehicles by 2030.

Outreach to President Biden: On April 21, 2021, New York and 11 other states asked President Biden to put the U.S. on a path to ensure that all vehicles sold in the country are zero-emission vehicles.[5] The letter asks the federal government to set standards to ensure that all new passenger cars and light duty trucks are zero-emission by 2035, and that MHDVs are zero-emissions by 2045. The states also encouraged the Biden Administration to advance new electric vehicle tax credits, enhanced existing electric vehicle tax credits, funding for investment in charging, and fueling infrastructure and other reforms. In addition, in December 2020, New York committed to continue to work with other states to equitably reduce air pollution, create healthier communities, and invest in cleaner transportation.[6]

Community Project Funding: The New York State Department of Transportation (NYSDOT) oversees other mobile source programs – notably, the Transportation Alternatives Program (TAP) and Congestion Mitigation and Air Quality Improvement Program (CMAQ).[7] These programs aim to support New York's climate goals and help communities deliver safe, transformative, and innovative projects and programs that, among other things, reduce vehicle emissions and traffic congestion. Combined, NYSDOT's TAP-CMAQ program provides reimbursement of up to 80 percent of project-related costs for bicycle, pedestrian, multi-use path, and non-motorized transportation-related projects and programs, with the remaining 20 percent provided by project sponsors. Applications are being solicited for 2021 projects and programs; awarded projects are listed on the NYSDOT webpage for 2016 ($16.1 million to New York City; $2.2 million to Long Island) and 2018 ($14.6 million to New York City; $5.5 million to Long Island).

Bus Electrification: In May 2021, the New York Power Authority (NYPA) finalized a $39 million agreement to install more than 50 overhead chargers to power new electric buses that will be coming next year to four Metropolitan Transportation Authority (MTA) depots in New York City. The new infrastructure is part of MTA's plan to upgrade its

[4] Medium- and Heavy-Duty Zero Emission Vehicles Multi-State Memorandum of Understanding (MHD ZEV MOU). Available at https://www.dec.ny.gov/chemical/121209.html.
[5] April 21, 2021 letter to President Biden from group of Mayors. Available at https://www.governor.ny.gov/sites/default/files/2021-04/Joint_Governors_Letter_04212021.pdf.
[6] Next Steps for the Transportation and Climate Initiative. Available at https://www.transportationandclimate.org/sites/default/files/TCI%20Next%20Steps%2012.20.pdf.
[7] 2021 Transportation Alternatives Program (TAP) and Congestion Mitigation and Air Quality Improvement (CMAQ) Program. Available at https://www.dot.ny.gov/TAP-CMAQ.

facilities to support its commitment to purchase only electric buses starting in 2028 and to have an all-electric 5,800-bus fleet by 2040 – supporting an objective to increase the number of electric buses in New York and for the five largest transit operators (in Suffolk County, Westchester County, Albany, Rochester, and Buffalo) to electrify 100 percent of their fleets by 2035 as announced in the 2021 State of the State address.

Charging Station Funding: New York State also offers several programs related to electric vehicles that provide incentives and discounts on the installation of charging stations.[8]

While DEC does not include emission estimates from all these programs, changes in emissions are captured as air quality improvements across the monitoring network and when DEC updates its base year inventories.

Additional California- and U.S.-Led Mobile Source Measures

DEC regularly adopts California mobile source standards to achieve its emission reduction goals. As previously noted, DEC has proposed adoption of an ACT rule modeled off California's rule. DEC is also evaluating California's proposed HDO, Advanced Clean Cars 2, and Advanced Clean Fleets rules, and the South Coast Air Quality Management District's (SCAQMD's) finalized ISR for warehouses to consider emission reduction opportunities for such sources.

Additionally, DEC is closely watching and assessing EPA's progress in developing its Cleaner Trucks Initiative.[9] On August 5, 2021, EPA announced plans to reduce emissions of NOx and GHG from heavy-duty trucks through a series of rulemakings over the next three years. The first rulemaking, to be finalized in 2022, will apply to heavy-duty vehicles starting in model year 2027. DEC also provided testimony on August 25, 2021 to EPA regarding its proposed rule for light-duty vehicle greenhouse gas standards to express the need for stringent requirements.[10]

Climate Leadership and Community Protection Act of 2019

In 2019, New York passed the nation-leading CLCPA to empower every New Yorker to fight climate change at home, at work, and in their communities. New York's climate agenda is the most aggressive climate and clean energy initiative in the nation, calling for an orderly and just transition to clean energy that creates jobs and continues fostering a green economy as New York State recovers from the COVID-19 pandemic.

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[8] Charging Station Programs. Available at https://www.nyserda.ny.gov/All-Programs/Programs/ChargeNY/Charge-Electric/Charging-Station-Programs.

[9] EPA's Cleaner Trucks Initiative. Available at https://www.epa.gov/regulations-emissions-vehicles-and-engines/cleaner-trucks-initiative.

[10] "Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions Standards," Proposed Rule. Published August 10, 2021. 86 FR 43726-43811

The Transportation Advisory Panel formed under the CLCPA underwent an extensive public and stakeholder engagement effort to develop its list of recommended transportation strategies. The advisory panel considered mitigating strategies that would expedite the transition of vehicles and fleets to electric/zero-emission technologies; enhance the availability, accessibility, reliability, and affordability of public transportation; align and integrate transportation investments into land use and development to mitigate carbon emissions; and implement market-based strategies to impact travel decisions and finance investments in clean transportation. On May 10, 2021 the advisory panel presented its recommended strategies to the Climate Action Council for consideration for implementation in the state.[11]

Through the CLCPA, New York is on a path to achieve its mandated goal of a zero-emission electricity sector by 2040, including 70 percent renewable energy generation by 2030, and to reach economy-wide carbon neutrality. It builds on New York's unprecedented investments to ramp up clean energy including over $21 billion in 91 large-scale renewable projects across the state, $6.8 billion to reduce buildings emissions, $1.8 billion to scale up solar, more than $1 billion for clean transportation initiatives, and over $1.2 billion in NY Green Bank commitments. Combined, these investments are supporting more than 150,000 jobs in New York's clean energy sector in 2019, a 2,100 percent growth in the distributed solar sector since 2011, and a commitment to develop 9,000 megawatts of offshore wind by 2035.

New York will build on this progress and reduce GHG emissions by 85 percent from 1990 levels by 2050, while ensuring that at least 35 percent (with a goal of 40 percent) of the benefits of clean energy investments are directed to disadvantaged communities, and advance progress towards the state's 2025 energy efficiency target of reducing on-site energy consumption by 185 trillion British Thermal Units of end-use energy savings.

Comment 2: Addressing New York State’s chronic and severe air quality issues would benefit all New Yorkers and could help ameliorate the state’s pronounced disparities in air pollution exposures…This evidence points to a broad collective failure to address the sources of pollution that most directly impact New York State’s EJ communities.

Response 2: DEC acknowledges that certain communities are historically and disproportionately impacted by pollution. Through this submission and the numerous related laws, regulations, policies and requirements, DEC is acting to minimize and eventually eliminate this disparity. For example, the proposed ACT rule will directly benefit the disadvantaged communities that are in closest proximity to heavy truck traffic; New York’s Volkswagen plan has prioritized project spending in areas most impacted by diesel emissions, including EJ communities; and the CLCPA has

[11] New York Climate Action Council – Meetings and Materials. Available at https://climate.ny.gov/Climate-Action-Council/Meetings-and-Materials.

established Climate Justice and Just Transition working groups for incorporating the needs of disadvantaged communities into the progress made under the CLCPA.

Comment 3: As New York State develops a plan to attain the 2008 ozone National Ambient Air Quality Standards (NAAQS), as well as the stricter 2015 NAAQS, it is important to recognize the impact climate change will have on ozone pollution.

Response 3: DEC recognizes that climate change will impact ozone pollution, as higher temperatures induce greater rates of ozone formation. New York's programs to reduce the negative impacts of climate change will have the co-benefit of reducing ozone precursors.

Comment 4: Within the subset of transportation-attributable health impacts, [the International Council on Clean Transportation study entitled "A Global Snapshot of the Air Pollution-Related Health Impacts of Transportation Sector Emissions in 2010 and 2015"] found the "dominant contribution" was linked to diesel-powered vehicles and engines including trucks and non-road vehicles. Moreover, adopting emission standards and other transportation sector-specific policies led to a meaningful reduction in transportation-attributable factors (TAFs) from 2010 to 2015. This finding underscores the need for DEC and other air agencies to enhance emission standards, improve compliance and enforcement practices with respect to existing standards, and accelerate fleet turnover of dirty vehicles, especially in urban areas and other concentrated centers of vehicle activity.

Response 4: As discussed in the response to comment #1, a variety of control measures are being developed to strengthen emission standards and reduce TAFs and their associated health impacts.

New York State has various additional programs to accelerate fleet turnover of light-, medium-, and heavy-duty vehicles, including those located in urban areas with higher vehicle activity:

- New York Truck Voucher Incentive Program (NYSERDA)[12] – Provides vouchers, or discounts, to fleets across New York State that purchase or lease all-electric, hydrogen, hybrid, CNG, or propane MHDVs (weight class 3 through 8) and scrap a similar older diesel vehicle that is part of their fleet.
- New York City Clean Trucks Program (NYCDOT)[13] – Offers rebate incentives, including for new electric trucks, to truck owners operating within the program-approved Industrial Business Zones in potential EJ areas throughout New York City.

[12] Truck Voucher Incentive Program. Available at https://www.nyserda.ny.gov/All-Programs/Programs/Truck-Voucher-Program.
[13] NYC Clean Trucks Program. Available at https://www.nycctp.com/.

- New York Public Service Commission "Make-Ready Order" – Authorizes investor-owned utilities to collect up to $701 million from customers to fund a new electric vehicle infrastructure program and associated projects that will incentivize development of thousands of publicly accessible charging locations.
- Drive Clean Rebate (NYSERDA)[14] – Offers a point-of-sale rebate (up to $2,000) toward the purchase or lease of a new electric car.
- EVolve NY (NYPA)[15] - Includes a major expansion in the state's fast charging stations, programs to educate consumers about the benefits of electric vehicles, and incentives to promote their adoption.
- Grant funding for municipalities (DEC)[16] – The Climate Smart Communities Grant program provides 50/50 matching grants to cities, towns, villages, and counties of the State of New York and boroughs of New York City for eligible climate change mitigation, adaptation, and planning and assessment projects including for the transportation sector.
- New York Clean Transportation Prizes (NYSERDA) – Awards monetary prizes under three prize competitions (Clean Neighborhoods Challenge, Electric Mobility Challenge, and Electric Truck & Bus Challenge) to electrify transportation and enhance clean mobility in disadvantaged communities.

Comment 5: The Draft SIP does not sufficiently address NOx emissions, which are the "major drivers" of ground-level ozone concentrations across the Northeast.

Response 5: DEC agrees that NOx emissions are a major driver of ground-level ozone concentrations in the Northeast. Section 6 of the proposed SIP details the NOx emission reductions from 2011 to 2020 and how they met and exceeded the requirements of Clean Air Act (CAA) sections 172(c)(2) and 182(c)(2)(B). The NYMA achieved NOx emission reductions more than 21 percent greater than the CAA required over this period.

DEC is supplementing these ongoing NOx reductions with newly adopted and revised NOx reduction strategies, which are outlined in Section 2.C of the proposed SIP. Included are control measures that will be particularly effective at reducing NOx emissions in the NYMA on high ozone days, such as standards for distributed generation sources and "peaker" combustion turbines.

Comment 6: DEC has previously acknowledged the "increasing difficulty of achieving additional" NOx and other ozone precursor emissions reductions, signaling the urgent need to address the MHDV sector, which its current plan all but ignores. Using the "best inventory available," Ozone Transport Commission (OTC) data show that mobile

[14] Drive-Clean Rebate for Plug-In Electric Cars. Available at https://www.nyserda.ny.gov/All%20Programs/Programs/Drive%20Clean%20Rebate.
[15] EVolve NY. Available at https://evolveny.nypa.gov/.
[16] Grant Funding for Municipalities. Available at https://www.dec.ny.gov/energy/109181.html.

sources are “now the number one contributor to high ozone levels” in the region. In the NYMA specifically, recent contribution modeling projects that mobile sources will account for over 70 percent of high ozone levels in 2023—a higher percentage than any other nonattainment area in the region.

Response 6: Due to the efforts to reduce ozone precursor emissions in New York State over the past 20 plus years, it is getting more difficult to find technically and economically feasible emissions reductions. New York relies heavily on its participation as an OTC member for analyzing inventory data and identifying additional control measures to adopt, and acknowledges that additional mobile measures, like those for the MHDV sector, will be needed to attain the ozone standards. See the response to comments 1 and 4 for information on the many control measures New York is working to adopt that will reduce emissions from the MHDV sector. Measures adopted by DEC will be added to the SIP at the appropriate time.

Comment 7: Given the magnitude of NOx emissions from MHDVs and other diesel sources on New York and NYMA monitors, any effort to attain the NAAQS must prioritize these critical sources. The Draft SIP fails to provide such measures. While these figures provide an estimation of the current impact of MHDV emissions on ozone concentrations, it is important to recognize that changes in consumer patterns are projected to increase truck trips and vehicle miles traveled over the next 25–30 years…such growth is certainly going to impact the NYMA’s ability to attain the ozone NAAQS and should prompt DEC to intensify its efforts to control these emissions as part of its SIP.

Response 7: DEC recognizes the impact that reducing emissions from this sector would have in improving air quality and reaching attainment of the federal standards. DEC notes that it has included all regulations that had been proposed at the time the SIP was noticed for public comment. Additional regulations developed by DEC, such as those discussed in response to comment 1, will be included once the regulations have been proposed.

Comment 8: DEC fails to consider a range of potential Reasonably Available Control Measures (RACM) related to transportation or give any justification as to why measures proposed by the OTC or adopted by other states would not be effective or could not be implemented. The Draft SIP’s conclusory approach to RACM and failure to include more comprehensive policies to reduce NOx emissions from the transportation sector are inadequate to meet the state’s obligations under the CAA… DEC’s failure to consider a range of potential RACM in the Draft SIP violates the CAA. Section 172(c)(1) of the CAA requires that states implement “*all* reasonably available control measures as expeditiously as practicable.”

Response 8: RACM must be economically and technologically feasible and also able to advance the attainment date by a year – in other words, for the 2020 design value on which determination of the 2008 ozone NAAQS was based, these measures would have had to be implemented and yielding emission reductions prior to the end of the 2019 ozone season. Given this information, it was technically impossible to complete regulatory actions under RACM, given the September 2019 reclassification.

In response to this comment, DEC revised the RACM section of the SIP to provide additional details. DEC will continue investigating control measures that could improve air quality in all parts of the NYMA and provide more extensive RACM discussions in future attainment demonstrations.

Comment 9: DEC has not met its burden of showing why potential RACM were not adopted on technological or economic grounds. DEC offers no justification in its Draft SIP for why potential RACM were not adopted, merely stating: “DEC confirms that RACM has been met in the NYMA and that no additional measures could be adopted that would advance the attainment date.” DEC does not list potential RACM it considered, let alone explain why it declined to adopt them. DEC thus falls far short of meeting its obligations under the CAA to justify its decision to decline to adopt potential RACM.

Response 9: Please see the response to comment 8.

Comment 10: DEC in the Draft SIP fails to analyze or implement these potential strategies [CAA section 108(f) transportation control measures], contrary to EPA’s explicit guidance regarding RACM. The Draft SIP makes no mention of section 108(f) transportation control measures (TCMs)…DEC must revise its plan to evaluate whether any TCMs, individually or bundled together, would advance the attainment date in the NYMA. While all TCMs must be considered, two warrant careful consideration as part of a revised RACM analysis: 1) “programs to control extended idling…”, and 2) programs to facilitate mass transit and minimize the use of single-occupancy vehicles. Such TCMs are likely to make sense for the NYMA and are similar to programs implemented in neighboring states. DEC must provide a detailed analysis and justification for why such measures are not included in its proposed SIP. At a minimum, such an analysis should be detailed enough to allow for a determination as to whether any set of TCMs must be implemented as RACM, including quantification of potential emission benefits and discussion of area-specific considerations regarding technological or economic viability. Finally, EPA guidance makes clear that the section 108(f) TCMs are meant to be illustrative of potential TCMs and are not designed to be exhaustive. DEC bears the burden of identifying other potential TCMs—other than those listed in section 108(f)—that might accelerate attainment of the ozone NAAQS.

Response 10: DEC continues to consider TCMs that could further reduce ozone precursor emissions. Statewide and local NYMA anti-idling laws already exist, though the latter are not included in SIPs because they are local programs that are not enforceable by DEC. For a measure to be included in the SIP, the local implementing agency needs to agree to allow the state to put it in the SIP. Historically, this has been problematic because inclusion in the SIP comes with federal enforceability at the local level and a commitment from the state to make up those reductions if the local program is revoked. DEC would also note that regardless of a program's inclusion or exclusion in a SIP, programs that drive emission reductions will be captured by our air quality monitoring network. Further, programs and their respective emission rate and activity changes will be reflected by the next base year inventory that takes that new information into account.

Regarding the facilitation of mass transit and curbing the use of single-occupant vehicles, NYSDOT's TAP-CMAQ programs provide funding for such projects. CLCPA's Transportation Advisory Panel has also made recommendations to the Climate Action Council that address the need for greater availability, accessibility, reliability, and affordability of public transportation, particularly for unserved and underserved communities.[17] If those recommendations are implemented, DEC will evaluate their impact in future submissions.

Comment 11: Contrary to EPA guidance, DEC's RACM analysis makes no mention of measures adopted in other states. EPA has made clear in numerous documents that any such measures must be included in a state's RACM analysis. DEC must revise its SIP to affirmatively identify and review measures adopted by other states and in other nonattainment areas within the region and throughout the country. Had DEC conducted an adequate RACM analysis as required by the CAA and in line with EPA guidance, it would have identified and addressed measures implemented in other states and in nonattainment areas outside the NYMA.

Response 11: Please see the response to comment 8. DEC plans to include a complete analysis in the attainment demonstration for the 2015 ozone NAAQS, and for the attainment demonstration for the 2008 ozone NAAQS when EPA reclassifies the NYMA to nonattainment with a "severe" classification.

Comment 12: Given the projected increase in goods movement activity in the New York City region, and the related 40 percent increase in truck vehicle populations, DEC must consider, as part of a revised RACM analysis, the viability of facility-based mobile source measures for warehouse distribution centers.

[17] Transportation Advisory Panel Recommended Strategies. Available at: https://climate.ny.gov/-/media/CLCPA/Files/2021-05-03-Transportation-Recommendations.pdf.

Response 12: DEC is currently analyzing the recently adopted SCAQMD ISR for warehouses and is considering other emission reduction opportunities for such sources.

Comment 13: DEC must consider [mobile source control measures implemented by SCAQMD and the California Air Resources Board (CARB)/other agencies] as part of its RACM analysis. Two regulatory measures—the ACT Rule and the HDO Rule—would provide the largest benefit in terms of NOx reductions.

Response 13: DEC considers CARB and SCAQMD mobile source control measures and implements those that are technologically and economically feasible in New York. DEC proposed a revision to Part 218 on September 8, 2021 to adopt California's ACT rule and is considering adoption of the HDO rule once California finalizes its own adoption.

Comment 14: DEC should consider the emissions reduction potential and viability of a measure to restrict passenger vehicle idling statewide.

Response 14: DEC agrees that vehicle idling restrictions are an important source of emission reductions. There are various anti-idling laws throughout the state: as the commenter notes, New York City has a three-minute idling rule for all vehicles, and a five-minute idling rule applies to heavy-duty diesel vehicles statewide. New York does not have statewide light-duty idling restrictions because they are already in place where they are needed most and expanding such restrictions statewide would be very difficult to enforce.

Some local municipalities have set their own anti-idling rules, often with exemptions for passenger comfort. Local laws are not included in SIPs because they are local programs that are not enforceable at the state level by DEC. For a measure to be included in the SIP, the local implementing agency needs to work with DEC to allow the state to put it in the SIP. Historically, this has been problematic because inclusion in the SIP comes with federal enforceability at the local level and a commitment from the state to make up those reductions if the local program is revoked.

Comment 15: DEC must carefully consider OTC model rules for adoption as part of its RACM analysis. Given the OTC's role in supporting state efforts to achieve compliance with the NAAQS, model rules developed through the OTC should clearly be included in the universe of measures considered as candidate RACM. This is especially true for those addressing mobile sources, and even more urgent for non-road vehicles, which, as mentioned above, are the single largest contributor to high ozone levels at many monitors in New York State and throughout the region. In 2012, the OTC developed a model rule and guidance to address idling of non-road engines, and the rule has since been adopted in some form by Connecticut, Rhode Island, and the District of Columbia. There is no basis for DEC not to consider a similar rule for adoption in New York State,

and given the existence of similar rules to address idling of passenger vehicles and heavy-duty vehicles in part or all of the state, it should be presumed that a nonroad idling rule would be feasible based on an area-specific analysis.

Response 15: As a member of the OTC, DEC provides input during development and then carefully assesses all final model rules developed by OTC for potential adoption in New York (including mobile source measures). DEC did not use the model rule as a template to address idling of non-road engines in New York; enforcement would be challenging since these engines often operate on private property as opposed to anti-idling measures for heavy-duty diesel vehicles on public roadways, and at the time of this proposal DEC was unable to quantify the potential emission reductions in New York with enough accuracy to move forward with the rule at this time.

Comment 16: DEC's exceedingly thin analysis of reasonably available control measures does not honor the urgency with which Congress directed states to pursue attainment of NAAQS…DEC has not met its statutory burden—clarified by both EPA and the D.C. Circuit—to act "as expeditiously as practicable" to implement RACM and attain the NAAQS. DEC has not explained that its proposed schedule is the "earliest schedule" it could have chosen, or explained it needs more time due to "economic or technologic infeasibility." In addition to its unsupported assertion that "no additional [RACM] could be adopted that would advance the attainment date," DEC says: "Even when DEC 'immediately' implements all VOC and NOx regulations that are economically and technically feasible, the NYMA is still in nonattainment, and is projected to be in nonattainment beyond the 'serious' nonattainment deadline of July 20, 2021." DEC cannot relieve itself of its continued obligation to make expeditious progress toward attainment by pointing to the failure of the NYMA to sufficiently reduce ozone pollution by the current deadline. Further, DEC must recognize that even steps toward attainment have public health benefits, regardless of the attainment/nonattainment designation.

Response 16: As mentioned above, DEC has updated the RACM discussion in this SIP and plans to include a complete analysis in the attainment demonstration for the 2015 ozone NAAQS, and for the attainment demonstration for the 2008 ozone NAAQS when EPA reclassifies the NYMA to nonattainment with a "severe" classification.

Comment 17: California's plans, in particular, provide a roadmap towards attainment of the NAAQS in the NYMA…Rather than developing a plan to address transportation sector emissions generally and the MHDV sector in particular, DEC simply asserts that New York State has "some of the most stringent control programs" for ozone precursors.

Looking forward, New York should implement several important rules already adopted or proposed in California targeted to reduce MHDV NOx emissions and help achieve attainment of the 2008 Ozone NAAQS. First, California's ACT and HDO Rules together

are meant to speed up the transition to electrification of MHDVs, resulting in zero tailpipe emissions, and to reduce NOx emissions from truck fleets while the transition to electrification is still in process. In addition, an ISR for ports and warehouse facilities would help curb emissions from the growing number of truck trips associated with e-commerce and goods movement and would target those reductions in the most overburdened communities hosting those facilities, which tend to be communities of color and lower-income communities. Upon adoption of these rules, New York should submit a revised SIP.

Response 17: Please see the response to comment #1 which discusses the proposed revisions to Part 218 to adopt the ACT rule, DEC's consideration of other California/SCAQMD rules, and additional measures to reduce emissions from the MHDV sector.

Comment 18: Given the magnitude of New York State's air quality problems and the need, repeatedly confirmed by the OTC, to address heavy-duty diesel emissions, DEC must adopt CARB's regulatory measures targeting that sector. The two measures expected to provide the largest benefit in NOx emissions and ozone concentrations are the ACT and HDO Rules, both of which address the MHDV fleet by accelerating deployment of zero-emission trucks and low-NOx heavy-duty engines. Adopting both of these rules in New York State, as permitted under section 177 of the Act, would reduce annual NOx emissions from the state's MHDV fleet by nearly half by 2050, and would achieve double the emissions reduction compared to a "business as usual" scenario. These measures are necessary to offset the projected increase in truck trips and volumes and to control emission from this high priority sector. Moreover, these policies would lead to direct emission reductions near heavily-trafficked corridors and facilities, which would improve air quality and alleviate health disparities in EJ communities. Given the rapid evolution of technology across MHDV sectors and use cases, and the improving economics of electric trucks compared to combustion alternatives, there is no technological or economic justification for DEC not adopting these rules and incorporating them into its plan as soon as feasible.

Response 18: Please see the response to comments 1 and 4 regarding the ACT and HDO rules and additional control measures targeting the MHDV sector.

Comment 19: New York State has already committed to a 100 percent zero-emission vehicle sales target for MHDVs by 2050, with an interim 30 percent target by 2030, as part of the Multi-State Medium- and Heavy-Duty Zero Emission Vehicle Memorandum of Understanding, clearly underscoring both the technological and economic viability of such measures.

DEC has already taken the preliminary steps in promulgating new regulations to adopt the ACT and HDO rules, citing NOx emissions reductions as a primary justification. To

maximize the emission reduction benefit of these rules, it is critical that these regulations be finalized before the end of this year and incorporated into the SIP shortly thereafter. In addition, DEC should begin a planning process to adopt emission standards and zero-emission vehicle sales targets for other categories of vehicles regulated in California, such as drayage trucks, airport shuttles, transport refrigeration units, and port equipment.

Response 19: DEC is watching California's development of its Advanced Clean Fleets regulation, which in California would require public and private businesses to purchase a certain number of ZEVs from certain source categories. DEC is assessing the draft rule's applicability to and potential impact in New York State.

Additionally, Governor Hochul on September 8, 2021 signed legislation (A.4302/S.2758) establishing a 2035 goal for all new passenger cars and trucks sold in New York to be zero emissions. The legislation also calls for 100 percent of in-state sales of new MHDVs to be zero-emissions by 2045, and for all off-road vehicles and equipment sales by 2035.

Comment 20: New York should consider adopting a similar rule as a measure intended to reduce NOx emissions from the many diesel trucks that are associated with warehouses and distribution centers, particularly those within the NYMA. An ISR on warehouses, ports, and distribution centers would help to achieve further emissions reductions not yet realized by current regulations.

Response 20: New York is assessing the recently-adopted SCAQMD ISR and is considering a similar rule for the NYMA.

Comment 21: Adoption of the ACT rule and a port/warehouse ISR would serve the CLCPA goals of reducing GHG and co-pollutant emissions and benefiting EJ communities…There is no question that vehicle electrification and reduction of truck traffic and emissions in overburdened communities will be required to comply with the CLCPA…An ISR in particular would advance the environmental justice and equity goals of the CLCPA because such a rule would be geographically targeted to facilities that cause heavy localized truck traffic and local pollution, and which are often located in areas likely to fall under the CLCPA's definition of "disadvantaged communities." An ISR targeting emissions from MHDVs serving warehouses, distribution centers, and ports would reduce GHG emissions and improve air quality in environmental justice communities in accordance with CLCPA mandates.

To account for the GHG emission benefits of potential SIP measures, DEC should follow its own guidance regarding emission pricing in evaluating measures such as the ACT and HDO Rules and potential ISRs…When considering the implementation of potential control measures for inclusion in subsequent SIP revisions, DEC must

consider the economic benefits, as outlined in the guidance's pricing model, of reducing emissions from MHDVs, which disproportionately impact highly populated, pollution-burdened areas. It is likely that regulations mitigating or eliminating these tailpipe emissions would yield significant benefits well in excess of compliance costs and provide net benefits in New York State. In general, this type of an analysis should be used by DEC in considering the economic viability of potential measures as part of its RACM analysis.

Response 21: Thank you for your comment. The state will continue to advance all measures necessary to achieve the goals of the CLCPA. Concurrently, DEC will evaluate what rules can be quantified and included in future SIP submissions.

Comment 22: Projecting to 2023, transportation will remain the dominant source of NOx emissions in New York State. Transportation emissions account for a greater share of NOx emissions in New York State than for the OTR as a whole, which has identified reducing NOx emissions from heavy-duty diesel trucks as a major priority and has formally adopted a strategy to promote electrification of MHDVs as a means of achieving the ozone NAAQS. These efforts are critical since EPA modeling shows that on-road heavy-duty, on-road light-duty and non-road vehicles will each contribute substantially to ozone concentrations in the Northeast through 2025. Failing to address transportation emissions will jeopardize attainment of the ozone NAAQS by the 2027 deadline for severe areas.

Response 22: DEC agrees that emission reductions from medium- and heavy-duty trucks would help move the NYMA area toward attainment. Please see the response to comments 1 and 4 regarding New York's efforts to address emissions from these sources.

Comment 23: Given these interrelated policy mandates, we cannot afford to address transportation sector emissions in a piecemeal, siloed fashion. Achieving these mandates will require actions from a number of state agencies, even after the Climate Action Council adopts formal recommendations for the transportation sector. New York State must develop an integrated framework to deal with mobile sources, akin to CARB's Mobile Source Strategy, to ensure that all policy goals are achieved in full and as efficiently as possible. By necessity, this framework will touch on various sectors, and the planning process needs to be an interagency one.

Response 23: DEC agrees that an interagency approach is crucial for meeting the goals of the CLCPA. As the co-chair of the Climate Action Council, DEC is committed to working with all parties in achieving the mandates of the CLCPA. In addition, DEC moderates monthly calls with the Interagency Zero-Emission Vehicle Planning Taskforce created following the 2013 light-duty Zero-Emission Vehicle MOU; development of the Volkswagen Beneficiary Mitigation Plan involved the cooperation of

the DEC, NYSERDA, NYPA, Port Authority of New York and New Jersey, DOTs of New York State and City, and transit bus authorities statewide; and all agencies with a vested interest in advancing zero-emission vehicles were involved in crafting the Public Service Commission Make-Ready Order. DEC fully intends to carry these interagency efforts into future planning.

List of Commenters

All comments submitted by EarthJustice on behalf of itself and the following organizations:

- Alliance of Nurses for Healthy Environments
- Asthma and Allergy Foundation of America
- Concerned Health Professionals of NY
- EarthKind Energy Consulting
- El Puente
- Environmental Advocates of New York
- GreenLatinos
- Long Island Progressive Coalition
- New York City Environmental Justice Alliance
- New York Lawyers for the Public Interest
- New York Public Interest Research Group
- New York State Public Health Association
- North Brooklyn Neighbors
- Mothers Out Front New York
- Tri-State Transportation Campaign
- Sierra Club
- Union of Concerned Scientists
- David O. Carpenter, Director, Institute for Health and the Environment at the University at Albany

Notice of Public Comment Period

Revision to the New York State Implementation Plan for the 2008 Ozone National Ambient Air Quality Standards pertaining to the New York-N. New Jersey-Long Island, NY-NJ-CT Serious Nonattainment Area

Notice is hereby given that the New York State Department of Environmental Conservation (NYS DEC) plans to submit a State Implementation Plan (SIP) revision to the United States Environmental Protection Agency (EPA).

NYS DEC plans to make a submission pursuant to Clean Air Act Section 182(c) pertaining to the 2008 ozone National Ambient Air Quality Standards (NAAQS). The New York-Northern New Jersey-Long Island, NY-NJ-CT (New York metropolitan area, or NYMA) nonattainment area failed to attain the 2008 ozone NAAQS by the "moderate" attainment date of July 20, 2018, and was reclassified by EPA to "serious" nonattainment effective September 23, 2019. A serious nonattainment classification requires a state to submit a SIP revision demonstrating how the area will attain the NAAQS by the July 20, 2021 deadline (based on monitored air quality data from 2018-2020).

Although the NYMA will fail to attain the 2008 NAAQS by the deadline based on certified 2018-2020 monitoring data, this proposed submission demonstrates that New York is exceeding the mandated emission reduction targets and fulfills other Clean Air Act-mandated requirements associated with the serious nonattainment classification.

NYS DEC is providing a 30-day period to comment on the proposed submission or request a hearing. **Written comments should be submitted by 5:00 p.m. on July 16, 2021 to:** Scott Wajda-Griffin, NYS DEC - Division of Air Resources, 625 Broadway, 11th Floor, Albany, NY 12233-3251, or by e-mail to: dar.sips@dec.ny.gov. Scott Wajda-Griffin can be reached at (518) 402-8396 with any questions regarding the proposed SIP revision.