NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DESIGNATION RECOMMENDATION FOR THE
2024 FINE PARTICULATE MATTER
NATIONAL AMBIENT AIR QUALITY STANDARD

A. Introduction

On February 7, 2024, the United States Environmental Protection Agency (EPA) promulgated a revised primary annual Fine Particulate Matter ($PM_{2.5}$) National Ambient Air Quality Standard (NAAQS), strengthening the standard from 12.0 micrograms per cubic meter ($\mu g/m^3$) to 9.0 $\mu g/m^3$; retained the existing 24-hour $PM_{2.5}$ standard at 35 $\mu g/m^3$; retained the existing 24-hour PM_{10} (coarse particle) standard at 150 $\mu g/m^3$; and retained the current suite of secondary PM standards.

States can choose to submit their initial designations recommendations to the EPA for the revised 2024 revised primary annual $PM_{2.5}$ NAAQS no later than 1 year following promulgation of the revised NAAQS, or by February 7, 2025. This document is New York State's initial designation recommendation.

B. Background

EPA established NAAQS for six criteria air pollutants, including particulate matter (PM) to protect the public health and welfare. EPA describes PM as "a complex mixture of extremely small particles and liquid droplets…made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles."[1]

$PM_{2.5}$ (i.e., PM with an aerodynamic diameter less than or equal to 2.5 micrometers) is produced by combustion, including vehicle exhaust, and by chemical reactions of gases such as sulfur dioxide (SO_2), nitrogen oxides (NO_x), volatile organic compounds (VOCs), and ammonia (NH_3). Adverse health effects from breathing air with high $PM_{2.5}$ concentrations include premature death, increased respiratory symptoms and disease, chronic bronchitis, and decreased lung function—particularly for individuals with asthma.

In 1997, EPA introduced the first $PM_{2.5}$ NAAQS.[2] The first $PM_{2.5}$ NAAQS was set at 15 micrograms per cubic meter ($\mu g/m^3$), based on an annual arithmetic mean over three years; and at 65 $\mu g/m^3$, based on the 98th percentile of 24-hour values averaged over three years. These are known as the annual and 24-hour standards, respectively. The New York-N. New Jersey-Long Island, NY-NJ-CT area is currently designated as a "Maintenance" area for the 1997 annual NAAQS. The New York-N. New Jersey-Long Island, NY-NJ-CT area consists of the following

[1] U.S. Environmental Protection Agency, "Particulate Matter" webpage, www.epa.gov/pm/
[2] **Federal Register** / Vol. 62, No. 138, p. 38652; published July 18, 1997

counties in New York State: Suffolk, Nassau, Richmond, Kings, Queens, New York, Bronx, Westchester, and Rockland, and Orange. No other areas in New York State are designated "non-attainment" or "maintenance."

In 2006, EPA revised the 24-hour NAAQS, lowering it from 65 $\mu g/m^3$ to 35 $\mu g/m^3$.[3] At that time, EPA retained the annual NAAQS of 15 $\mu g/m^3$. The New York-N. New Jersey-Long Island, NY-NJ-CT area is currently designated as a "Maintenance" area for the 2006 24-hour annual NAAQS. The New York-N. New Jersey-Long Island, NY-NJ-CT area consists of the following counties in New York State: Suffolk, Nassau, Richmond, Kings, Queens, New York, Bronx, Westchester, and Rockland, and Orange. No other areas in New York State are designated "non-attainment" or "maintenance."

In 2012, EPA revised the annual $PM_{2.5}$ NAAQS, lowering it from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. At that time, EPA retained the 24-hour $PM_{2.5}$ NAAQS of 35 $\mu g/m^3$. No areas in New York State are designated "nonattainment" or "maintenance" for the 2012 $PM_{2.5}$ annual or 24-hr NAAQS.

On February 7, 2024, EPA revised the annual $PM_{2.5}$ NAAQS, lowering it from 12.0 $\mu g/m^3$ to 9.0 $\mu g/m^3$.[4] At that time, EPA retained the 24-hour $PM_{2.5}$ NAAQS of 35 $\mu g/m^3$.

C. EPA Guidance on Area Designations for the 2024 PM2.5 NAAQS

NYSDEC used the February 7, 2024 EPA Memorandum entitled "Initial Areas Designations for the 2024 Revised Primary Annual Fine Particle National Ambient Air Quality Standard" to develop this designation recommendation. As a framework for area-specific analyses, the EPA intends to use, and recommends that states base their nonattainment area boundary recommendations on, an evaluation of information relevant to five factors: air quality data, emissions-related data, meteorology, geography/topography, and jurisdictional boundaries. However, NYSDEC contends that general meteorology, geography/topography, and jurisdictional boundary parameters have not changed from those used in previous area designations for the $PM_{2.5}$ NAAQS. Consequently, NYSDEC is relying solely on air quality and emissions related data in this designation recommendation.

D. Identifying Nonattainment Areas

Section 107(d)(1) of the CAA directs EPA to designate an area "nonattainment" if it is violating the NAAQS or if it is contributing to a violation of the NAAQS in a nearby area. For this purpose, the EPA intends to evaluate areas using the most recent complete 3 consecutive calendar years of quality-assured, certified air quality data in the EPA's Air Quality System (AQS).

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[3] **Federal Register** / Vol. 71, No. 200, p. 61144; published October 17, 2006

[4] Federal Register :: Reconsideration of the National Ambient Air Quality Standards for Particulate Matter

The following tables present 2023 $PM_{2.5}$ Design Values using actual monitoring data from 2021, 2022, and 2023 from EPA's Air Trends website as retrieved on October 8, 2024.[5] Only valid data from EPA certified monitors in the State and monitors in the NY-NJ-CT maintenance area are included.

Table 1: New York; 2023 Design Value; $PM_{2.5}$ 24-Hour NAAQS of 35 µg/m^3

New York County Name	AQS Site ID	Local Site Name	2023 Design Value (µg/m^3)
Albany	360010005	Albany County Health Dept	20
Albany	360010012	Loudonville	19
Bronx	360050110	IS 52	20
Bronx	360050133	Pfizer Lab Site	21
Chautauqua	360130006	Dunkirk	19
Erie	360290002	Amherst	22
Erie	360290005	Buffalo	19
Erie	360290023	Buffalo Near-Road	20
Essex	360310003	Whiteface Base	12
Kings	360470122	JHS 126	20
Monroe	360550015	Rochester Near-Road	17
Monroe	360551007	Rochester 2	19
New York	360610079	IS 45	22
Onondaga	360671015	East Syracuse	19
Orange	360710002	Newburgh	20
Queens	360810124	Queens College 2	22
Queens	360810125	Queens College Near Road	19
Richmond	360850055	Richmond Post Office	27
Steuben	361010003	Pinnacle State Park	20
Suffolk	361030002	Babylon	19

[5] Air Quality Design Values | US EPA

Table 2: New York; 2023 Design Value; $PM_{2.5}$ Annual NAAQS of 9.0 $\mu g/m^3$

New York County Name	AQS Site ID	Local Site Name	2023 Design Value ($\mu g/m^3$)
Albany	360010005	Albany County Health Dept.	6.8
Albany	360010012	Loudonville	6.2
Bronx	360050110	IS 52	7.9
Bronx	360050133	Pfizer Lab Site	7.7
Chautauqua	360130006	Dunkirk	6.7
Erie	360290002	Amherst	7.2
Erie	360290005	Buffalo	7.4
Erie	360290023	Buffalo Near-Road	7.7
Essex	360310003	Whiteface Base	4.0
Kings	360470122	JHS 126	8.0
Monroe	360550015	Rochester Near-Road	7.2
Monroe	360551007	Rochester 2	6.5
New York	360610079	IS 45	7.8
Onondaga	360671015	East Syracuse	6.1
Orange	360710002	Newburgh	6.6
Queens	360810124	Queens College 2	8.1
Queens	360810125	Queens College Near Road	7.9
Richmond	360850055	Richmond Post Office	8.3
Steuben	361010003	Pinnacle State Park	5.9
Suffolk	361030002	Babylon	7.0

Table 3: New Jersey; 2023 Design Value; $PM_{2.5}$ 24-Hour NAAQS of 35 µg/m^3

New Jersey County Name	AQS Site ID	Local Site Name	2023 Design Value (µg/m^3)
Bergen	340030010	Fort Lee Near Road	24
Hudson	340171003	Jersey City Firehouse	21
Middlesex	340230011	Rutgers University	21
Morris	340273001	Chester	20
Union	340390004	Elizabeth Lab	23
Union	340392003	Rahway	21

Table 4: New Jersey; 2023 Design Value; $PM_{2.5}$ Annual NAAQS of 9.0 µg/m^3

New Jersey County Name	AQS Site ID	Local Site Name	2023 Design Value (µg/m^3)
Bergen	340030010	Fort Lee Near Road	8.5
Hudson	340171003	Jersey City Firehouse	7.8
Middlesex	340230011	Rutgers University	8.4
Morris	340273001	Chester	6.1
Union	340390004	Elizabeth Lab	9.4*
Union	340392003	Rahway	7.8

*New York is developing its designation recommendation with the premise that the current 2023 design value at Elizabeth Lab in Union County, New Jersey will be adjusted downward, below the NAAQS, when Exceptional Events are considered; and that 2024 design values will confirm that the current 2023 design value is an exception.

Table 5: Connecticut; 2023 Design Value; $PM_{2.5}$ 24-Hour NAAQS of 35 µg/m^3

Connecticut County Name	AQS Site ID	Local Site Name	2023 Design Value (µg/m^3)
Fairfield	090010010	Roosevelt School-Bridgeport	21
Fairfield	090011123	Western Conn State Univ	21
New Haven	090090027	Criscuolo Park-New Haven	20
New Haven	090092123	Meadow And Bank Streets	20

Table 6: Connecticut; 2023 Design Value; $PM_{2.5}$ Annual NAAQS of 9.0 µg/m^3

Connecticut County Name	AQS Site ID	Local Site Name	2023 Design Value (µg/m^3)
Fairfield	090010010	Roosevelt School-Bridgeport	7.4
Fairfield	090011123	Western Conn State Univ	7.0
New Haven	090090027	Criscuolo Park-New Haven	7.2
New Haven	090092123	Meadow And Bank Streets	7.4

E. Control Measures

The downward trend in particulate emissions is a result of the permanent and enforceable reductions that occur statewide from the many state and federal air quality regulations. Recent updates to New York's regulations include revisions to 6 NYCRR Part 205 – Architectural and Industrial Maintenance Coatings that imposes VOC limits on paints and sealants. While VOC reductions primarily contribute to reductions in ozone formation, they can also play a role in reducing secondary PM formation. Part 205 was submitted on October 14, 2020 and approved by EPA into the SIP on October 3, 2022.

Revisions to 6 NYCRR Part 227 include Subpart 227-3, Ozone season NO_x limits for turbines which establishes more stringent limits on simple-cycle and combined-cycle turbines during the ozone season. Subpart 227-1, also applying to stationary turbine installations, lowers PM

emission limits for all existing and new stationary combustion installations that either predate or are not subject to federal New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP) rules. Subpart 227-1 was submitted on March 26, 2021 and approved by EPA into the SIP on June 5, 2023.

Another significant new rule is the update to 6 NYCRR Part 218 – Emission Standards for Motor Vehicles, incorporating the latest of California's Advanced Clean Cars, Advanced Clean Trucks, and Heavy-Duty Omnibus regulations. These programs have been adopted by NYSDEC and will take effect starting in model year 2025 for passenger cars and model year 2026 for heavy-duty vehicles. A SIP revision was submitted to EPA on January 26, 2024 and approval is still pending.

F. Conclusion

NYSDEC is recommending that New York State in its entirety be designated attainment for the 2024 $PM_{2.5}$ Annual and 24-hour NAAQS based on the information and data contained herein.