NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

The State of New Jersey
Department of Environmental Protection

Five-Year Progress Report

for the

Regional Haze
Second Planning Period

July 2025

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ACRONYMS AND ABBREVIATIONS

AMPD	Air Markets Program Database
CAA	Clean Air Act
CFR	Code of Federal Regulations
CO	Carbon monoxide
CO_2	Carbon dioxide
CSAPR	Cross-State Air Pollution Rule
CTG	Control Technology Guideline
EGU	Electric Generating Unit
USEPA	U.S. Environmental Protection Agency
F&W	U.S. Fish and Wildlife
FED	Federal Land Manager Environmental Database
FLM	Federal Land Manager
FR	Federal Register
FS	U.S. Forest Service
FSELs/AELs	Facility-Specific Emission Limits/Alternative Emission Limits
GHG	Greenhouse Gas
ICI	Industrial, Commercial and Institutional Boilers
IM	Inspection and Maintenance for Motor Vehicles
IMPROVE	Interagency Monitoring of Protected Visual Environments
MACT	Maximum Achievable Control Technology
MANEVU	Mid-Atlantic/Northeast Visibility Union
Mm-1	Inverse Megameters
NAAQS	National Ambient Air Quality Standard
NEI	National Emissions Inventory
NESHAPS	National Emission Standards for Hazardous Air Pollutants
NH_3	Ammonia
NO_x	Nitrogen Oxides
NPS	National Park Service
NSPS	New Source Performance Standards
OBD	On Board Diagnostics
PM	Particulate Matter
PM10	Particulate Matter < 10 microns
PM2.5	Particulate Matter < 2.5 microns
RHR	Regional Haze Rule
RICE	Reciprocating Internal Combustion Engines
RPG	Reasonable Progress Goal
RPO	Regional Planning Organization
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
VOC	Volatile Organic Compounds

INTRODUCTION

Section 169A of the Clean Air Act (CAA) "declares as a national goal the prevention of any future, and the remedying of any existing, impairment of visibility in mandatory class I Federal areas which impairment results from manmade air pollution." Mandatory class I Federal areas (referenced hereinafter as Class I areas) consist of National Parks greater than 6,000 acres, wilderness areas & national memorial parks greater than 5,000 acres, and international parks, all of which were in existence as of August 7, 1977. Visibility was found to be an important value at 156 of these areas.

The CAA directed the U.S. Environmental Protection Agency (USEPA) to promulgate regulations aimed at meeting the goals of Section 169A. To this end, USEPA adopted the Regional Haze Rule (RHR) in 1999. The RHR was amended and revised in 2005 and 2017 and is codified under 40 CFR 51.300-309. The overarching goal of the RHR is to achieve natural visibility conditions at Class I areas by 2064. The RHR requires states to submit two types of regional haze planning documents: regional haze state implementation plans (SIPs), which include a 10-year planning period, and progress reports, which are typically submitted at the mid-point of each planning period. While the regional haze SIPs include the similar required information such that they also serve as progress reports, the mid-course progress reports are stand-alone documents required by the RHR.

This document is intended to fulfill the requirements of paragraphs 51.308(g), (h), and (i) of the RHR and to serve as a progress report for the second regional haze planning period from 2018 to 2028. In this progress report, New Jersey affirms that its approved regional haze SIP for the second planning period[1] is adequate for making reasonable progress towards the RHR goal of achieving natural visibility conditions at Class I areas by 2064. In addition, New Jersey declares that no further revision of its second planning period regional haze SIP is required at this time.

New Jersey has consulted with the Federal Land Managers (FLM) on the contents of this progress report and made a draft available for public review prior to this submittal to USEPA. However, per revisions made to the RHR in 2017[2], this progress report is not being submitted as a formal SIP revision.

New Jersey is a member of the Mid-Atlantic/Northeast Visibility Union (MANEVU). MANEVU's voting membership includes 11 states, the District of Columbia, and two tribal nations: Penobscot Indian Nation and the St. Regis Mohawk Tribe. Additional MANEVU members include USEPA, the U.S. Fish and Wildlife Service (F&W), the U.S. Forest Service (FS), and the U.S. National Park Service (NPS). There are seven Class I areas within the MANEVU region. The MANEVU Class I areas are listed below along with the state/province in which they are located. The names in parentheses indicate the larger area in which the Class I area is embedded.

- Acadia National Park, ME
- Moosehorn Wilderness Area, ME (Moosehorn National Wildlife Refuge)
- Roosevelt/Campobello International Park, New Brunswick Canada
- Great Gulf Wilderness Area, NH (White Mountain National Forest)

[1] 88 FR 78650
[2] 82 FR 3078

- Presidential Range - Dry River Wilderness Area, NH (White Mountain National Forest)
- Brigantine Wilderness Area, NJ (E.B. Forsythe National Wildlife Refuge)
- Lye Brook Wilderness, VT (Green Mountain National Forest)

A map of the MANEVU region, including the Class I areas within, is provided in Figure 1.

MANEVU provides technical assistance, facilitates discussion, and encourages coordinated action among its member agencies. It also fosters communication with other regional planning organizations (RPOs) that are engaged in planning activities related to regional haze. These RPOs are shown in Figure 2.

Figure 1: MANEVU Region and MANEVU Class I Areas

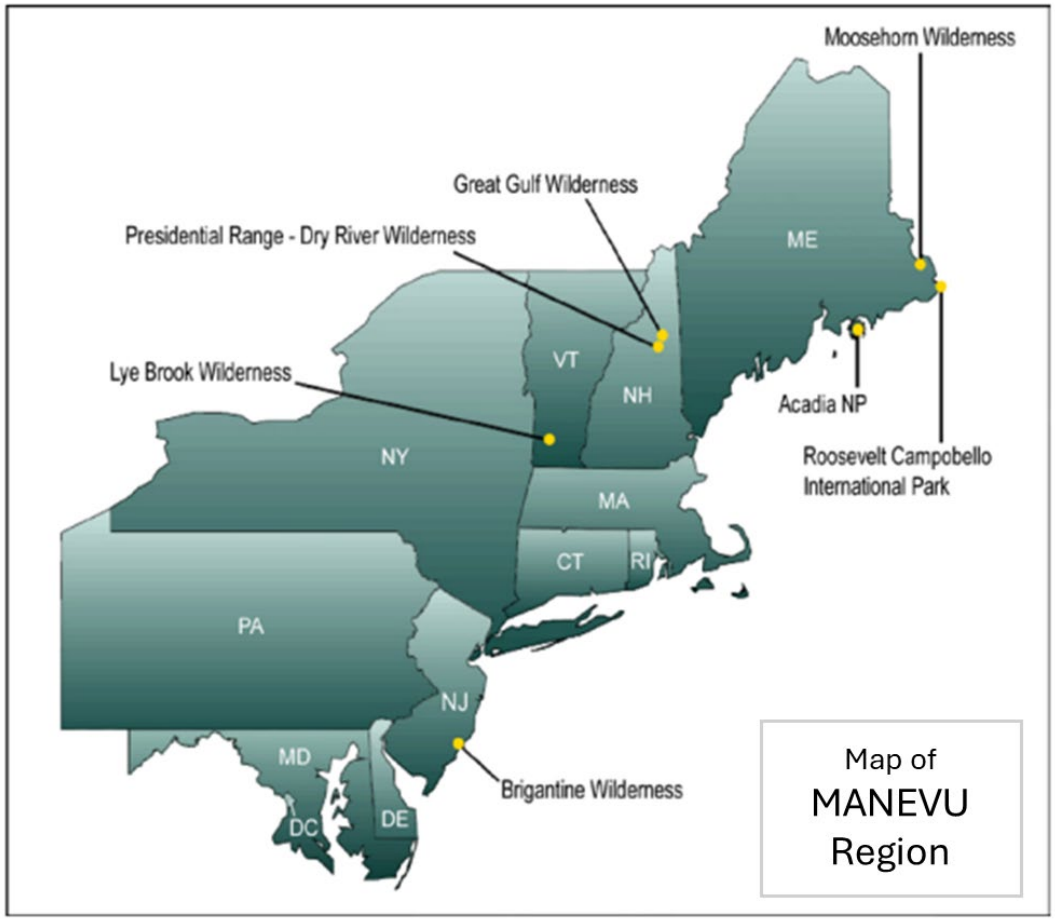


Figure 2: U.S. Regional Planning Organizations

The remainder of this document is organized to follow the structure of the progress report requirements of the RHR, as shown in Table 1 below.

Table 1: Organization of Progress Report

40 CFR 51.308	Chapter	Description
(g)(1)	1	Implementation status of measures for achieving Reasonable Progress Goals (RPGs) at Class I areas within and outside the state
(g)(2)	2	Overview of the emissions reductions achieved with the measures described in Chapter 1
(g)(3)	3	Summary of visibility conditions changes at Class I areas in the state and the MANEVU region
(g)(4)	4	Change in emissions since the time of the second planning period regional haze SIPs
(g)(5)	5	Evaluation of any significant changes in emissions since the time of the second planning period regional haze SIPs
(g)(6)	6	Assessment that New Jersey's current plan elements and strategies are sufficient for New Jersey, and states with Class I areas affected by New Jersey's emissions, to meet the RPGs that were established in the second planning period regional haze SIPs
(g)(7)	N/A	Review of visibility monitoring strategy for the first regional haze planning period
(g)(8)	N/A	Assessment of the most recent periodic assessment of New Jersey's smoke management program
(h)	7	Affirmation that New Jersey's current plan is adequate to ensure reasonable progress and that no revision to the plan is needed at this time
(i)	8	A description of the consultation with the Federal Land Managers and the public comment process

Chapter 1 STATUS OF IMPLEMENTED MEASURES

40 CFR 51.308(g)(1) requires "A description of the status of implementation of all measures included in the implementation plan for achieving reasonable progress goals for mandatory Class I Federal areas both within and outside the state." In its regional haze SIP for the second planning period, New Jersey, in coordination with MANEVU, determined that the following measures were necessary for making reasonable progress:

1. Year-round use of control technologies for electric generating units (EGUs) ≥ 25MW
2. Four-factor analysis of sources with potential for 3.0 inverse megameters (Mm-1) or greater visibility impacts
3. Low sulfur fuel oil strategy
4. Updating permits, enforceable agreements, and/or rules to lock in lower emission rates
5. Controls for peaking units on high electric demand days
6. Energy efficiency
7. Continued emission reductions from ongoing pollution control programs
8. Measures to mitigate impact from construction activities

These measures were adopted into New Jersey's long-term strategy (LTS) as permanent and enforceable measures. These measures and their original implementation are described in detail in Section 4.6 of New Jersey's regional haze SIP for the second planning period. Numbers one through six are part of the MANEVU “Asks”, and numbers seven through eight are additional measures. All of these enforceable measures remain fully implemented and there has been no change in implementation status since the time that New Jersey's regional haze SIP and associated rulemaking were formally adopted. The current implementation of these measures is described below.

1.1 Year-Round Use of Control Technologies for EGUs ≥ 25MW

This MANEVU Ask requires Electric Generating Units ≥ 25MW with installed NO_x and/or SO_2 controls to run existing controls on a year-round basis to ensure the most effective use of control technologies or obtain equivalent alternative emission reductions.

The control limits required by New Jersey’s NO_x Reasonably Available Control Technology (RACT) rules[3] are implemented year-round. In addition, New Jersey’s operating permits require that units run their controls on a year-round basis whenever the units are in operation to ensure the most effective use of control technologies. These enforceable measures minimize emissions of haze precursors. New Jersey meets the requirements of this Ask.

1.2 Four-Factor Analysis of Sources with Potential for 3.0 Mm-1 or Greater Visibility Impacts

This MANEVU Ask requires emission sources modeled by MANEVU that have the potential for

[3] N.J.A.C 7:27-19: Control and Prohibition of Air Pollution by Oxides of Nitrogen https://www.nj.gov/dep/aqm/rules27.html

3.0 Mm-1 or greater visibility impacts at any MANEVU Class I area, as identified by the MANEVU contribution analyses, to perform a four-factor analysis for reasonable installation or upgrade of emission controls.

Emissions from units located in New Jersey are well-controlled, with most of them having a visibility impact below 1.0 Mm-1, and less than the 3.0 Mm-1 threshold. BL England, situated in Upper Township, Cape May County, New Jersey, was the only facility in New Jersey identified above the threshold with a visibility impact of 5.6 Mm-1. New Jersey did not perform a four-factor analysis for BL England because the plant shut down permanently in May 2019, and all permits were terminated before the analysis could begin. DEP Air Compliance and Enforcement staff conducted a site investigation at BL England on September 20, 2019, and observed that units 1, 2, and 3 were decommissioned and rendered inoperable. On December 3, 2019, the DEP terminated the air operating permit at BL England Generating Station. Due to the shutdown of BL England in May 2019, no further action on these units is needed.

Additional reductions in visibility impairing pollution have also been achieved by other Electric Generating Units (EGUs) in New Jersey. The last remaining three coal EGUs in New Jersey ceased operation in 2022. According to the USEPA's Clean Air Markets Program Data (CAMPD) Carneys Point Unit 2 and Logan Generating Plant Unit 1 last operated on May 31, 2022, while Carneys Point Unit 1 last operated on June 7, 2022. The operating permit for the coal-fired Units 1 and 2 at Carney's Point was terminated on September 15, 2022, and the permit for Logan Generating Plant Unit 1 was terminated on December 2, 2022. These permit terminations were confirmed by NJDEP Air Compliance and Enforcement staff.

New Jersey has met the requirements of this Ask.

1.3 Low Sulfur Fuel Oil Strategy

This MANEVU Ask requires each MANEVU state that has not yet fully adopted an ultra-low sulfur fuel oil standard as requested by MANEVU in 2007 to pursue this standard as expeditiously as possible and before 2028, depending on supply availability.

On October 25, 2010, New Jersey adopted rules[4] to modify the sulfur in fuel limits in accordance with the definition of reasonable measures needed to meet the goal of the MANEVU "Ask". The New Jersey rule (N.J.A.C. 7:27-9 et seq.) lowered the sulfur content of all distillate fuel oils (including #2 fuel oil and lighter) to 15 ppm, effective from July 1, 2016. Additionally, the rule lowered the sulfur content of #4 fuel oil to 2,500 ppm and set a range of 3,000 to 5,000 ppm for #6 fuel oil, both effective from July 1, 2014.[5] These limits comply with the MANEVU Ask.

On December 2, 2022, New Jersey took additional steps to improve visibility and adopted rules at N.J.A.C. 7:27F-3 that ban #4 and #6 fuel oil for combustion in New Jersey on or after January 31, 2023. The rule allows for any No. 4 fuel oil or No. 6 fuel oil that was stored in New Jersey before January 31, 2023, to still be used, stored, offered for sale, sold, delivered, or exchanged in trade within the State for two years after that date. This effectively eliminates the sulfur

[4] N.J.A.C. 7:27-9: Sulfur in Fuels (42 N.J.R. 2244) https://www.nj.gov/dep/aqm/rules27.html

[5] The maximum sulfur content of #6 fuel oil varies depending on the county where the fuel oil is burned. The northern part of New Jersey has a lower maximum sulfur content for residual fuel oil at 3,000 ppm while the southern part of New Jersey has a maximum sulfur content of 5,000 ppm. See N.J.A.C. 7:27-9 et seq. https://www.nj.gov/dep/aqm/rules27.html

content in these fuels, as they will no longer be combusted in New Jersey after the two-year sell-through period, with compliance expected by 2025.

New Jersey has met the requirements of this Ask.

1.4 Updating Permits, Enforceable Agreements, and/or Rules to Lock in Lower Emission Rates

This MANEVU Ask requires EGUs and other large emission sources greater than 250 MMBTU per hour heat input that have switched operations to lower emitting fuels to pursue updating permits, enforceable agreements, and/or rules to lock in lower emission rates for SO_2, NO_x, and PM.

New Jersey EGUs and other large point emission sources that have switched operations to lower-emitting fuels are locked into the lower emission rates for SO_2, NO_x and PM by permits, enforceable agreements, and/or rules. NJ's rules are among the most stringent in the Nation for EGUs. As shown below in Table 1-1, NJ has several rules that set stringent short term emission limits for coal-fired, oil and gas boilers and combustion turbine EGUs. Most recently, on December 2, 2022, NJDEP adopted rules that set new Electric Generating Unit (EGU) emission limits starting June 1, 2024. In addition, the final three coal EGUs in New Jersey ceased operation in 2022. According to the USEPA's Clean Air Markets Program Data (CAMPD) Carneys Point Unit 2 and Logan Generating Plant Unit 1 last operated on May 31, 2022, and Carneys Point Unit 1 last operated on June 7, 2022. The Carneys Point operating permit for the coal-fired Units 1 and 2 was terminated on September 15, 2022, and the units were confirmed to be in a nonoperational state by NJDEP Enforcement staff. The operating permit for Logan Generating Plant Unit 1 was terminated on December 2, 2022, and the unit was confirmed to be in a nonoperational state by NJDEP Enforcement staff.

If a source in NJ intends to switch fuels, these units are required to amend their permits through the New Source Review (NSR) process if they plan to switch back to coal or fuel that will increase emissions. Any change in fuel, unless already permitted, constitutes a modification.[6] N.J.A.C. 7:27-22 requires that an application to modify the permit be submitted prior to the fuel change.

New Jersey has met the requirements of this Ask.

1.5 Controls for Peaking Units on High Electric Demand Days

This MANEVU Ask requires controls for NO_x emissions from peaking combustion turbines that have the potential to operate on high electric demand days, where emission rules have not been adopted. The "Ask" requests NO_x emission standards of no greater than 25 ppm at 15% O_2 for natural gas and 42 ppm at 15% for fuel oil, but at a minimum meet NO_x emissions standards of no greater than 42 ppm at 15% O_2 for natural gas and 96 ppm at 15% O_2 for fuel oil.

New Jersey adopted amendments to N.J.A.C 7:27-19.5, which became effective on April 20, 2009, with emission reductions effective in 2009 and 2015. These regulations set performance

[6] N.J.A.C 7:27-22.1

standards to reduce NO_x emissions and control peaking combustion turbines[7] that primarily operate on high electric demand days.[8] Specifically, they require 0.75 pounds of NO_x per MWh (25 ppm at 15% O_2) for natural gas and 1.20 pounds of NO_x per MWh (42 ppm at 15% O_2) for oil in combined cycle combustion turbines or a regenerative cycle combustion turbines. For simple cycle combustion turbines, the regulations require 1.00 pounds of NO_x per MWh (25 ppm at 15% O_2) for natural gas and 1.60 pounds of NO_x per MWh (42 ppm at 15% O2) for oil. New Jersey's rule limits for natural gas and fuel oil turbines are equal to or more stringent than the limits requested in the "Ask".

New Jersey has met the requirements of this Ask.

1.6 Energy Efficiency

This MANEVU Ask requires that States consider and report in their SIPs on measures or programs to decrease energy demand using energy efficiency and increase the use within their state of Combined Heat and Power (CHP) and other clean Distributed Generation technologies including fuel cells, wind, and solar.

In 1977, New Jersey enacted a law requiring a regularly updated Energy Master Plan to address the production, distribution, consumption, and conservation of electricity in New Jersey. The law requires the Plan to include not only long-term objectives, but also interim measures that are consistent with and necessary to achieving those objectives. The Energy Master Plan was updated in October of 2008 and December of 2011. The latest update was released on January 27, 2020, when Governor Murphy unveiled the 2019 New Jersey Energy Master Plan.[9] The 2019 plan provides a blueprint for the total conversion of New Jersey's energy profile to 100 percent clean energy by 2050. This 2050 target was advanced to 2035 when Governor Murphy signed Executive Order No. 315 on February 15, 2023. The next Energy Master Plan is under development and is expected to further refine the state's greenhouse gas reduction and clean energy strategies.

On July 6, 2007, Governor Corzine signed the Global Warming Response Act.[10] The Act requires New Jersey to reduce greenhouse gas emissions by 20 percent by 2020, and by 80 percent by 2050. Measures to meet these requirements will also help reduce SO_2, PM, and NO_x emissions and improve visibility. The most recent Global Warming Response Act 80×50 Report was released in October 2020.[11]

On January 29, 2018, Governor Phil Murphy signed Executive Order No.7 directing New Jersey's return to full participation in the Regional Greenhouse Gas Initiative (RGGI).[12] Specifically, the Executive Order directed DEP to initiate rulemaking by February 28, 2018. New

[7] Peaking combustion turbine is defined for the purposes of this "Ask" as a turbine capable of generating 15 megawatts or more, that commenced operation prior to May 1, 2007, is used to generate electricity all or part of which is delivered to electric power distribution grid for commercial sale and that operated less than or equal to an average of 1,752 hours (or 20%) per year during 2014 to 2016.
[8] N.J.A.C. 7:27-19: Control and Prohibition of Air Pollution from Oxides of Nitrogen https://dep.nj.gov/wp-content/uploads/aqm/sub19.pdf
[9] See Press Release at: https://www.nj.gov/governor/news/news/562020/approved/20200127a.shtml and Document at: https://nj.gov/emp/docs/pdf/2020_NJBPU_EMP.pdf
[10] N.J.S.A 26:2C-37
[11] https://dep.nj.gov/wp-content/uploads/climatechange/nj-gwra-80x50-report-2020.pdf
[12] https://nj.gov/infobank/eo/056murphy/pdf/EO-7.pdf

Jersey adopted rules and formally rejoined RGGI on June 17, 2019.[13] RGGI is part of Governor Murphy's goal to achieve 100% clean energy by 2050. New Jersey's participation in RGGI will shift the State's power sector towards clean and renewable energy sources such as wind, solar, and fuel cells, and will help reduce emissions and improve visibility.

On May 23, 2018, Governor Murphy signed the New Jersey Clean Energy Act (P.L.2018, c.17). The Act strengthened New Jersey's Renewable Portfolio Standard by requiring 35% renewable power by 2025 and 50% renewable power by 2030, and codified goals for offshore wind and energy storage. It also requires energy efficiency measures to reduce at a minimum annual electricity usage by 2% and annual natural gas usage by 0.75%. The BPU ultimately set the goal at 1.10% for natural gas reductions and 2.15% for electricity reductions based on achievable potential found in the 2019 Market Potential Study. The Act also set a requirement for the State to implement a benchmarking program. Established in 2022 and effective December 2023, the Energy and Water Benchmarking Program requires commercial and public buildings over 25,000 square feet to benchmark their energy and water usage with continued tracking of performance over time.

Additionally, effective in 2023, the State's Appliance Standards Law (P.L. 2021 c.464) furthered energy and emissions savings in buildings by setting minimum energy and water efficiency requirements for appliances sold in New Jersey. The State also updated its building codes, to incorporate greater energy efficiency and conservation requirements for both new residential and commercial buildings, adopting the 2021 International Energy Conservation Code (IECC) (N.J.S.A. 5:23-3.18) and ASHRAE Standard 90.1-2019 (N.J.S.A. 5:23-3.16).

Governor Murphy signed three Executive Orders[14,15,16] that direct all New Jersey state agencies with responsibilities under the Offshore Wind Economic Development Act to fully implement it. The Orders also established goals to increase New Jersey's offshore wind power to 11,000 megawatts by 2040.

Decarbonization of buildings is a priority for the state of New Jersey. Building decarbonization is a critical component of the 2019 New Jersey Energy Master Plan and the 2020 Global Warming Response Act 80x50 Report. Both reports identify the need to transition to electric buildings and call for a modernization of building codes, incentive programs and state policy to achieve this transformation.

Building upon this work, Governor Murphy's Executive Order 316 set a target to install zero-carbon-emission space heating and cooling systems in 400,000 homes and 20,000 commercial properties and make 10% of all low-to-medium income (LMI) properties electrification ready by 2030. NJ further committed as part of the United States Climate Alliance agreement to collectively install 20 million heat pumps across participating states by 2030.In addition, the NJDEP's Commissioner signed a memorandum of understanding (MOU) with states within the Northeast States for Coordinated Air Use Management (NESCAUM) to transition 65% of residential heating and cooling equipment sales to zero emission heat pumps by 2030 and 90% by 2040. Both the United States Climate Alliance and NESCAUM agreements aim to ensure at least 40% of benefits flow to low-income households and disadvantaged communities.

[13] https://www.state.nj.us/dep/aqes/docs/co2-budget-adoption.pdf
[14] Executive Order #8, January 31, 2018. https://nj.gov/infobank/eo/056murphy/pdf/EO-8.pdf
[15] Executive Order #92, November 21, 2019. https://nj.gov/infobank/eo/056murphy/pdf/EO-92.pdf
[16] Executive Order #307, September 21, 2022. https://nj.gov/infobank/eo/056murphy/pdf/EO-307.pdf

Beyond setting targets, the State is actively participating in three planning processes to inform its building decarbonization strategy. The Governor's Office is currently creating a strategic building decarbonization roadmap that will identify critical near-term actions to enable the transition of the state's building stock away from fossil fuels and towards renewable and energy efficient technologies. Additionally, NESCAUM and the signatory states of its MOU are in the process of creating a State Action Plan that will include strategies for decarbonizing buildings. Also, the New Jersey Board of Public Utilities (NJBPU)_is currently developing the NJ Zero Energy Buildings Roadmap that will identify key approaches for zero energy buildings using building codes. Combined, these plans will provide detailed pathways for NJ to electrify its building stock and will reap air quality benefits across the state.

Work is also underway to bring federal home energy rebates to New Jersey. The NJBPU held a technical conference related to federal home energy rebates in 2023 and released a request for information in 2024 regarding the design of the incentives using HOMES/HER and HEEHR/HEAR funding. NJ applied for federal Home Energy Rebates on August 1, 2024. The US Department of Energy (DOE) is reviewing the application to confirm the programs are designed to maximize the benefits to consumers. The rebate programs New Jersey applied for include Home Efficiency Rebates and Home Electrification and Appliance Rebates. The State applied for a funding amount of approximately $182,960,000.

For more information about New Jersey's energy policies, see https://dep.nj.gov/cleanenergy/nj/.

New Jersey has met the requirements of this Ask.

1.7 Continued Emission Reductions from Ongoing Pollution Control Programs

New Jersey is required to consider emission reductions from ongoing pollution control programs in its Regional Haze Progress Report to satisfy the requirements for 40 CFR 51.308(g)(1).

Table 1-1 below identifies the control measures in New Jersey's regional haze SIP that apply to sources that were relied on to meet the requirements of the regional haze program. This includes:

a) All federal and state measures that continue to be relied upon for reasonable progress from the first and in the second planning periods, and;

b) The status of all measures determined to be necessary for reasonable progress in the first and second periods to address regional haze at Class I areas both within and outside the state.

Table 1-1: New Jersey's Post 2002 Control Measures					
State or Federal	**Measure**	**Effective Start Date/ Range of Benefits**	**Pollutant**	**New Jersey Administrative Code**	**USEPA Approval**
State	NO_x Budget	1999, 2003	NO_x, SO_2	NA	10/1/07
State	EGU: BL England Administrative Consent Order	2000-2015	NO_x, PM2.5, SO_2	NA	NA
State	EGU: PSEG-Consent Decree	2002-2010	NO_x, PM2.5, SO_2	NA	7/26/02; 11/30/06
State	Phase I and II Gasoline Vapor Recovery 2003	2003	VOC	7:27-16	7/2/04
State	Consumer Products 2005	2005	VOC	7:27-24	1/25/06
State	Architectural Coatings 2005	2005	VOC	7:27-23	11/30/05
State	Mobile Equipment Refinishing (Autobody)	2005	VOC	7:27-16	7/2/04
State	Solvent Cleaning	2005	VOC	7:27-16	7/2/04
State	Portable Fuel Containers 2005	2005-2015 (1)	VOC	7:27-24	1/25/06
State	Mercury Rule	2006-2012	Hg, PM2.5, SO_2, NO_x	7:27-27	NA
State	Refinery Consent Decree: ConocoPhillips	2006-2014	PM, SO_2, NO_x, VOC	NA	Filed 1/27/05
State	Refinery Consent Decree: Valero (Paulsboro)	2006-2014	PM, SO_2, NO_x, VOC	NA	Filed 6/16/05
State	Refinery Consent Decrees: Sunoco	2006-2014	PM, SO_2, NO_x, VOC	NA	Filed 12/2/03
State	ICI Boilers, Turbines and Engines 2005	2007-2010	NO_x	7:27-27.19	7/31/07
State	Asphalt Paving (cutback and emulsified)	2009	VOC	7:27-16.19	8/3/10
State	Consumer Products 2009	2009	VOC	7:27-24	7/22/10
State	Adhesives & Sealants	2009	VOC	7:27-26	7/22/10
State	CTG: Printing	2009	VOC	7:27-16.7	8/3/10
State	Sewage and Sludge Incinerators	2009	NO_x	7:27-19.28	8/3/10
State	New Jersey Low Emission Vehicle (LEV) Program	2009 (1)	NO_x, VOC, CO, PM2.5, SO_2	7:27-29	2/13/08
State	Municipal Waste Combustors (Incinerators)	2009, 2010	NO_x	7:27-19.13	8/3/10
State	Asphalt Production Plants	2009, 2011	NO_x	7:27-19.9	8/3/10

Table 1-1 (continued) New Jersey's Post 2002 Control Measures					
State or Federal	**Measure**	**Effective Start Date/ Range of Benefits**	**Pollutant**	**New Jersey Administrative Code**	**USEPA Approval**
State	EGU: High Electric Demand Day (HEDD)	2009, 2015	NO_x	7:27-19.29	8/3/10
State	ICI Boilers 2009	2009-2011	NO_x	7:27-19.7	8/3/10
State	Portable Fuel Containers 2009	2009-2019 (1)	VOC	7:27-24	7/22/10
State	IM: Program Revisions 2009	2010	VOC, NO_x, CO	7:27-15	9/16/11
State	IM: Diesel Smoke Cutpoint	2010, 2011	PM2.5, NO_x	7:27-14	3/9/2023
State	Petroleum Storage Tanks	2010-2019	VOC	7:27-16.2	8/3/10
State	Vehicle Idling Rule Amendments	2011	PM2.5, NO_x	7:27-14.1, 14.3	4/14/09
State	Glass Manufacturing	2012	NO_x	7:27-19.10	8/3/10
State	EGU: Coal-fired Boilers, Oil and Gas Fired Boilers	2013	NO_x, PM2.5, SO_2	7:27-4.2, 10.2,9.4	8/3/10
State	Low Sulfur Fuel Oil	2014, 2016	PM2.5, SO_2, NO_x	7:27-9	1/3/12
State	Refinery Consent Decree: Hess	2015	PM, SO_2, NO_x, VOC	NA	Filed 6/19/12
State	CTG: Fiberglass Boat Manufacturing(2008 CTG)	2018	VOC	7:27-16.14	10/9/18
State	CTG: Industrial Cleaning Solvents (2006 CTG)	2018	VOC	7:27-16.24	10/9/18
State	CTG: Misc. Metal and Plastic Parts Coatings (2008 CTG)	2018	VOC	7:27-16.15	10/9/18
State	CTG: Paper, Film, and Foil Coatings(2007 CTG)	2018	VOC	7:27-16.7	10/9/18
State	Phase I and II Gasoline Vapor Recovery 2017	2018	VOC	7:27-16	6/18/20
State	Stationary Gas Turbines and Engines (NO_x ACT)	2020	NO_x	7:27-19.5, 19.8	10/9/18
State	Permitting/Nonattainment New Source Review (NNSR) and Prevention of Significant Deterioration (PSD)	Ongoing	NO_x, VOC, PM2.5, SO_2	7:27-8,18, 22	NA
State	Voluntary Mobile Measures	Ongoing	NO_x, VOC, CO, PM2.5, SO_2	NA	NA
Federal	Tier 1 Vehicle Program	1994 (1)	NO_x, VOC, CO, PM2.5	NA	NA

Table 1-1 (continued) New Jersey's Post 2002 Control Measures					
State or Federal	**Measure**	**Effective Start Date/ Range of Benefits**	**Pollutant**	**New Jersey Administrative Code**	**USEPA Approval**
Federal	Diesel Compression Ignition Engines	1996 - 2015 (1)	NO_x, VOC, CO, PM2.5, SO_2	NA	NA
Federal	Spark Ignition Engines, Equipment, and Vessels at or below 19 kW (Lawn and Garden and Small Watercraft)	1997 - 2016 (1)	NO_x, VOC, CO, PM2.5, SO_2	NA	NA
Federal	Refueling Onboard Refueling Vapor Recovery	1998 (1)	NO_x, VOC, CO, PM2.5	NA	NA
Federal	Locomotive and Marine Compression-Ignition Engines Less Than 30 Liters per Cylinder Tier 0	1998 (1)	NO_x, VOC, CO, PM2.5, SO_2	NA	NA
Federal	National Low Emission Vehicle Program (NLEV)	1999 (1)	NO_x, VOC, CO, PM2.5, SO_2	NA	NA
Federal	Locomotive and Marine Compression-Ignition Engines Less Than 30 Liters per Cylinder Tier 2	2002 (1)	NO_x, VOC, CO, PM2.5, SO_2	NA	NA
Federal	Tier 2 Vehicle Program/Low Sulfur Fuels	2004 (1)	NO_x, VOC, CO, PM2.5, SO_2	NA	NA
Federal	Diesel Marine Engines over 37 kW: Category 1 Tier 2, Category 3 Tier 1	2004 (1)	NO_x, VOC, CO, PM2.5, SO_2	NA	NA
Federal	Large Industrial Spark-Ignition Engines over 19 kW (>50 hp) Tier 1	2004 (1)	NO_x, VOC, CO, PM2.5, SO_2	NA	NA
Federal	Heavy-Duty Vehicle Standards and Diesel Fuel Sulfur Control	2004-2010 (1)	NO_x, VOC, CO, PM2.5, SO_2	NA	NA
Federal	Recreational Vehicles (Snowmobiles, Off-road Motorcycles, All-terrain Vehicles)	2006 - 2012 (1)	NO_x, VOC, CO, PM2.5, SO_2	NA	NA
Federal	Diesel Marine Engines over 37 kW: Category 2 Tier 2	2007 (1)	NO_x, VOC, CO, PM2.5, SO_2	NA	NA
Federal	Large Industrial Spark-Ignition Engines over 19 kW (>50 hp) Tier 2	2007 (1)	NO_x, VOC, CO, PM2.5, SO_2	NA	NA
Federal	Petroleum Refineries NSPS Subpart JA		NO_x, VOC, SO_2	NA	NA
Federal	Locomotive and Marine Compression-Ignition Engines Less Than 30 Liters per Cylinder Tier 3	2008 (1)	NO_x, VOC, CO, PM2.5, SO_2	NA	NA
Federal	Diesel Marine Engines over 37 kW: Category 3 Tier 2	2011 (1)	NO_x, VOC, CO, PM2.5, SO_2	NA	NA
Federal	Residential Woodstove NSPS	1988 and 2014	NO_x, VOC, CO, PM2.5	NA	NA
Federal	Locomotive and Marine Compression-Ignition Engines Less Than 30 Liters per Cylinder Tier 4	2014 (1)	NO_x, VOC, CO, PM2.5, SO_2	NA	NA

Table 1-1 (continued) New Jersey's Post 2002 Control Measures					
State or Federal	**Measure**	**Effective Start Date/ Range of Benefits**	**Pollutant**	**New Jersey Administrative Code**	**USEPA Approval**
Federal	EGU: CSAPR, CSAPR Update, Revised CSAPR Update	2015, 2017, 2021	NO_x	NA	NA
Federal	Boiler/Process Heater NESHAP	2016	NO_x, VOC, CO, PM2.5, SO_2	NA	NA
Federal	EGU: Mercury and Air Toxics Standards (MATS), Coal- and oil-fired	2016	NO_x, VOC, CO, PM2.5, SO_2	NA	NA
Federal	Diesel Marine Engines over 37 kW: Category 3 Tier 3	2016 (1)	NO_x, VOC, CO, PM2.5, SO_2	NA	NA
Federal	Natural Gas Turbine NSPS	2017	NO_x, VOC, CO, PM2.5, SO_2	NA	NA
Federal	RICE NESHAP	2017	NO_x, VOC, CO, PM2.5, SO_2	NA	NA
Federal	RICE NSPS	2017	NO_x, VOC, CO, PM2.5, SO_2	NA	NA
Federal	Process Heater NSPS	2017	NO_x, VOC, CO, PM2.5, SO_2	NA	NA
Federal	Tier 3 Vehicle Program/ Fuel Standards	2017 (1)	NO_x, VOC, CO, PM2.5, SO_2	NA	NA
Federal	GHG Emission Standards for Passenger Cars and Light Trucks Through Model Year 2026	2023 (1)	GHGs, NO_x, VOC, CO, PM2.5, SO_2	NA	NA
Federal	EGU: Good Neighbor Plan	2023	NO_x	NA	NA
Benefits Starting Post 2023					
State	EGU Emission Limits	2024-2035	CO_2,CO,NO_x,PM2.5, SO_2,VOC	7:27F-2	Pending
State	Advanced Clean Trucks (ACT)	2025 (1)	CO_2, NO_x, PM2.5	7:27-31, 33	NS
State	Mobile Cargo Handling Equipment at Ports and Intermodal Rail Yards	2025-2030	NO_x,PM2.5, Black Carbon	7:27-34	Pending
State	#4 and #6 Fuel Oil Ban	2025	CO_2, NOx, SO_2	7:27F-3	Pending
State	IM: Heavy Duty OBD	2026 (estimate)	NO_x, VOC, CO, PM2.5, SO_2	7:27-14	5/9/18
State	IM: Medium Duty Diesel Vehicles (MDDVs)	2026 (estimate)	NO_x, PM2.5	7:27-14	NS
State	Advanced Clean Cars II	2027 (1)	CO_2,NOx,PM2.5	7:27-29A	NS
State	Heavy Duty New Engine Standards (Omnibus)	2027 (1)	NO_x	7:27-28A	NS

Table 1-1 (continued) New Jersey's Post 2002 Control Measures					
State or Federal	**Measure**	**Effective Start Date/ Range of Benefits**	**Pollutant**	**New Jersey Administrative Code**	**USEPA Approval**
Federal	Heavy-Duty Engine and Vehicle Standards	2027 (1)	NO_x, VOC, CO, PM2.5	NA	NA
Federal	Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-duty and Medium-Duty Vehicles	2027 (1)	GHGs, NO_x, VOC,PM	NA	NA
Federal	Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles – Phase 3	2027 (1)	GHGs, NO_x, VOC, PM, SO2	NA	NA
Federal	EGU: Mercury and Air Toxics Standards (MATS), Coal- and oil-fired	2028	NO_x, VOC, CO, PM2.5, SO_2	NA	NA

Table 1-1 Legend/Notes:

1. Turnover rule which means measure has cumulative benefits each year until complete fleet or equipment turnover

CO = Carbon monoxide
CO_2 = Carbon dioxide
CSAPR = Cross-State Air Pollution Rule
CTG = Control Technology Guideline
EGU = Electric Generating Unit
FSELs/AELs = Facility-Specific Emission Limits/ Alternative Emission Limits
GHG = Greenhouse Gas
ICI = Industrial, Commercial and Institutional Boilers
IM = Inspection and Maintenance for Motor Vehicles
MACT = Maximum Achievable Control Technology
NA = Not Applicable
NESHAP = National Emission Standards for Hazardous Air Pollutants
NO_x = Nitrogen oxides
NS = Not Submitted
NSPS = New Source Performance Standards
OBD = On-board Diagnostics
PM2.5 = Fine Particulate Matter
RICE = Reciprocating Internal Combustion Engines
SO_2 = Sulfur Dioxide
VOC = Volatile Organic Compounds

Other New Jersey Initiatives and Adopted Rules

In addition, New Jersey is evaluating, implementing, proposing and adopting several additional measures as part of its climate change goals, which will also help reduce regional haze. These measures include the following:

Electric Vehicles

To reach its air pollution goals, the State must transition from fossil fuel-powered vehicles to electric vehicles. New Jersey will continue to develop sufficient electric vehicle (EV) infrastructure, conduct education outreach, and provide incentives through funding and grant programs. On January 17, 2020, Governor Murphy signed landmark legislation that established goals and incentives for the increased use of plug-in electric vehicles in New Jersey. This legislation establishes New Jersey as a leader in attracting electric vehicles to the state thereby making significant contributions to the attainment of existing air pollution and energy goals. The Law includes the following goals/requirements:

- At least 330,000 of the total number of registered light duty vehicles in the State shall be electric vehicles by December 31, 2025, and at least 2 million by end of 2035.
- At least 85 percent of all new light duty vehicles sold or leased in the State shall be plug-in electric vehicles by December 31, 2040.
- By December 31, 2025, at least 400 DC Fast Chargers and 1,000 Level Two Chargers shall be available for public use in the State,
- By December 31, 2025, at least 15 percent of all multi-family residential properties in the State shall be equipped with Electric Vehicle Service Equipment (EVSE) for the routine charging of plug-in electric vehicles by residents, and this rises to 30 percent by December 31, 2030.
- By December 31, 2024, at least 10 percent of the new bus purchases made by the New Jersey Transit Corporation shall be zero emission buses, and the percentage of zero emission bus purchases shall increase to 50 percent by December 31, 2026, and 100 percent by December 31, 2032, and thereafter.

The State has awarded $193 million since 2019 to support the adoption of, access to, and charging of light-duty zero-emission vehicles (ZEVs), resulting in 36,413 vehicles incentivized for private/personal use and 331 vehicles incentivized for local government. This funding also incentivized 1,840 locations with 7,190 charging stations and 12,437 ports. Since 2019, the State has also awarded $333 million in funding to support the purchase of, access to, and charging of medium- and heavy-duty electric vehicles. This funding supported the purchase of 544 trucks/cargo vans, including 56 garbage trucks, 252 buses/shuttle buses, 276 school buses, and 179 port and airport vehicles/equipment.

In 2011, only 338 electric vehicles were registered in the State. As of December 2024, 218,631 electric vehicles, including battery electric vehicles and plug-in hybrid electric vehicles, are registered in the State, marking a significant increase over the ten-year period. See https://dep.nj.gov/drivegreen/electric-vehicle-basics/ website for more information.

To meet the State's goals to transition the transportation sector, the Department will also:

- Treasury awarded a statewide contract for electric vehicle service equipment that will assist all levels of government in purchasing and installing electric vehicle charging stations. This contract compliments electric vehicles currently available on the state purchasing contract while taking advantage of the State's purchasing power to influence electric vehicle adoption and markets.

- In accordance with the Electric Vehicle Law, N.J.S.A. 48:25-1, develop goals for vehicle electrification and infrastructure development that address medium-duty and heavy-duty on-road diesel vehicles.

- Continue collaboration with the Northeast States for Coordinated Air Use Management (NESCAUM), a non-profit association of 8 northeastern states, to implement a multi-state zero-emission medium- and heavy-duty vehicle action plan.

- Continue outreach campaigns to enhance public awareness and education that include the following:

    - Publicize available transportation electrification resources through its “Drive Green” website;
    - Pursue partnerships with car dealerships and the PlugStar dealer training, which since launch, has resulted in 49 dealers trained and 28,000 visits to the website;
    - Participate in the regional “Drive Change. Drive Electric” consumer awareness campaign, which has seen over 40,000 visitors to the State’s website;
    - Destination Electric campaign, which has four New Jersey communities;
    - Development of a State-specific consumer awareness campaign as required by the EV Law;
    - Promote EV “Ride and Drive” events. There have been 17 held so far, with estimated attendees and 1,164 test drives.

- Continue to implement NJDEP Administrative Order 2021-05, establishing the Department’s policy to only purchase the most fuel-efficient vehicles possible, including purchasing combustion engine vehicles only where strictly necessary, and requiring the deployment of necessary EV charging infrastructure as well as the development of plans to deploy charging infrastructure on State-owned lands and at workplace facilities.

- Continue to implement the eMobility Grant Program which has provided funding for seven projects that will provide clean transportation options to citizens who may not own their own vehicles. These programs help alleviate traffic congestion, improve air quality, and connect more people to jobs, educational opportunities, medical services, and public resources.

- DEP developed three planning toolkits to assist electrification efforts at workplaces, multi-unit dwellings and for eMobility projects. In addition, numerous resources have been developed to assist local government, fleets and citizens on programs and incentives available.

- In coordination with agency partners (BPU/EDA/DOT), continue focused investment of available resources (e.g., National Electric Vehicle Infrastructure Formula Program, Infrastructure Investment and Jobs Act) to build charging infrastructure and incentivize electric vehicle adoption and transition. NJ Department of Transportation will administer approximately $100 million as part of NJ’s National Electric Vehicle Infrastructure (NEVI) Formula Program which will focus on construction or upgrades to direct current fast chargers along NJ interstates. As part of a $700 million national competition, DEP was awarded $10 million in funding from the Charging and Fueling Infrastructure Discretionary Grant Opportunity’s Community Program (CFI) for the Urban/Suburban Area Charging and Fueling Solutions focus area. DEP will use the funding to provide convenient, affordable EV charging solutions for residents of multi-unit dwellings, prioritizing LMI communities. NJ also received $6 million in Electric Vehicle Charger Reliability and Accessibility Accelerator funding to upgrade and repair existing electric vehicle charging infrastructure.

- DEP will focus $728,000 in Clean Air Act Grants from the Inflation Reduction Act to provide an awareness campaign and technical assistance on transitioning to electric vehicles.

- In conjunction with state agencies from Connecticut, Delaware, and Maryland, NJDEP was awarded $249 million under the US EPA's Climate Pollution Reduction Grant (CPRG) Implementation program. C3 will:
    - Deploy medium- and heavy-duty electric vehicle charging infrastructure along the I-95 corridor and adjacent roads from Connecticut to Maryland.
    - Provide technical assistance to charging site developers.
    - Deliver training and support services to establish a skilled workforce.
    - As one of the most densely populated corridors, cutting air pollution from trucks in the I-95 region could improve quality of life for millions of people.

- In conjunction with Maryland and Pennsylvania DOT, NJDEP secured $18.6 million award aimed at advancing transportation decarbonization efforts across the region. NJ's allocation of $6.1 million targets the strategic deployment of truck charging depots along key regional interstate corridors, including I-81 and I-78.

- Continue to assist fleets in the transition to electric medium and heavy-duty vehicles with NJ's Fleet Advisor Program. This program provides free technical assistance to small fleets by conducting an on-site electric infrastructure assessment, providing vehicle recommendations, cost projects and zero emission basics resulting in a personalized Fleet Electrification Roadmap. This program will assist at least 15 fleets per year.

- Work with the Division of Community Affairs and legislative partners to update building codes to ensure adoption of the most progressive standards including those requiring new buildings to be "EV ready" which will lower barriers and costs of adoption for new EV users.

The Electric School Bus Program

The NJDEP's Electric School Bus Grant program provides up to $15,000,000 per year for three years to replace diesel school buses with battery-electric school buses per P.L. 2022, c.86, The New Jersey Electric School Bus Law. The program is designed to encourage and monitor the transition to electric school buses throughout the state and in each year of funding, requires at least half of the school districts or school bus contractors selected must operate within an overburdened community. The first year of funding provided grants to 14 school districts for a total of 48 electric school buses and associated charging stations. Eligible applicants are schools and school districts that operate school bus services as well as school bus contractors working in conjunction with schools or school districts.

The rules the NJDEP has adopted in support of its electric vehicle goals are discussed below.

New Jersey Protecting Against Climate Threats (NJPACT) Rules

In addition to the legislation discussed above, on January 27, 2020, Governor Murphy signed Executive Order Number 100 (EO 100) that initiated a targeted regulatory reform effort that will modernize New Jersey environmental laws. EO 100 is referred to as Protecting Against Climate Threats (NJ PACT). NJ PACT will usher in systemic change, modernizing air quality and environmental land use regulations, that will enable governments, businesses, and residents to effectively respond to current climate threats and reduce future climate damages.

As a national leader in environmental protection, the NJDEP has and will continue to create a regulatory roadmap to reduce emissions, build resilience, and adapt to a changing climate. This includes the enactment of new air pollution regulations that achieve critically needed reductions in carbon dioxide and short-lived climate pollutants (e.g., methane and black carbon) including technology-forcing measures that pave the way for a clean-energy economy.

Based on this EO, New Jersey has adopted several rules as follows:

Advanced Clean Trucks (ACT)

On November 1, 2021, NJDEP adopted rules based on California's Advanced Clean Trucks regulations requiring increasing sales fractions of medium and heavy-duty trucks be zero emission vehicles (ZEVs). The requirements of this rule are identical to the California Advanced Clean Trucks rule and will be effective starting with model year 2025.

EGU Emission Limits

As discussed above, on December 2, 2022, NJDEP adopted rules that set new Electric Generating Unit (EGU) emission limits starting June 1, 2024.

#4 and #6 Fuel Oil Ban

As discussed above, on December 2, 2022, NJDEP adopted rules banning #4 and #6 fuel oil, with a compliance date in 2025 with a two year sell through period.

Mobile Cargo Handling Equipment at Ports and Intermodal Rail Yards

On December 29, 2022, NJDEP adopted rules that require diesel mobile cargo handling equipment at ports and intermodal rail yards to meet performance standards that reflect best available control technology, with a compliance date in 2025.

Heavy Duty New Engine Standards (Omnibus)

On April 21, 2023, NJDEP adopted rules based on California's Omnibus regulations that require manufacturers selling new gasoline and diesel-powered vehicles rated in excess of 8,500 pounds gross vehicle weight rating (GVWR) in New Jersey to comply with the California emission standards for NO_x. The requirements begin with model year 2027.

Medium Duty Diesel Vehicles (MDDVs) IM

On April 21, 2023, NJDEP adopted amendments that include a medium duty diesel inspection and maintenance program. The program establishes emission inspection procedures and standards for diesel vehicles with a GVWR greater than 8,500 and less than 14,001 pounds. The estimated start date of the program is in 2026.

Advanced Clean Cars II

On November 21, 2023, NJDEP adopted rules based on California's Advanced Clean Cars II regulations requiring manufacturers of passenger cars and light-duty trucks to meet an annual zero-emission vehicle (ZEV) requirement. Additionally, the regulation includes more stringent

multi-pollutant exhaust emission standards that manufacturers of internal combustion engine passenger cars, light-duty trucks, and medium-duty vehicles must meet. The requirements begin with model year 2027.

Other Transportation and Clean Air Initiatives

On April 17, 2020, the NJDEP, Board of Public Utilities (BPU) and Economic Development Authority (EDA) jointly released a strategic funding plan for investing the auction proceeds from the State's participation in RGGI. New Jersey plans to invest an estimated $80 million each year in programs that reduce both greenhouse gas emissions and criteria pollutants. The majority (75%) of this investment will be used for clean and equitable transportation projects to accelerate transportation electrification in the State, focusing on reducing emissions from transportation sources in communities disproportionately impacted by the effects of pollution.[17] The results of the spending are provided on the New Jersey RGGI Climate Investment Dashboard.[18]

In addition, New Jersey is taking action in two areas that are important for future reductions in both GHGs and PM2.5 precursor pollutants; the implementation of fuel cell technology and the promotion of ZEVs for medium/heavy duty vehicles.

On June 19, 2020, Governor Murphy signed legislation that establishes a New Jersey Fuel Cell Task Force that will recommend a plan to increase the use of fuel cells in the State. The task force will issue a yearly report that will include any recommendations for legislative or regulatory action that are necessary to effectuate the plan.[19]

On July 14, 2020, it was announced that New Jersey was one of 15 states and the District of Columbia to sign a memorandum of understanding (MOU).[20] The MOU commits the signers to work collaboratively to advance and accelerate the market for electric medium- and heavy-duty vehicles. The 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 by 2030. A multi-state action plan was released July 2022 to identify barriers and propose solutions to support widespread electrification of medium- and heavy-duty vehicles.[21]

1.8 Measures to Mitigate Impact from Construction Activities

In 1999, New Jersey adopted standards that reduce "fugitive dust" emissions from construction.[22]

[17] https://nj.gov/rggi/docs/rggi-strategic-funding-plan.pdf
[18] https://njdep.maps.arcgis.com/home/item.html?id=71e62ee3de2d4a6585bf4766881406c6
[19] Senate No. 762, State of New Jersey, 219th Legislature.
[20] https://ww2.arb.ca.gov/sites/default/files/2020-07/Multistate-Truck-ZEV-Governors-MOU-20200714.pdf
[21] https://www.dec.ny.gov/docs/air_pdf/mhdzevmou041122.pdf
[22] Standards for Soil Erosion and Sediment Control in New Jersey. Promulgated by the New Jersey State Soil Conservation Committee. Adopted July 1999.

New Jersey has existing rules to limit the idling of vehicles and equipment.[23] On November 16, 2009, New Jersey promulgated a rule revision to further reduce allowable smoke from on-road diesel engines.[24] These measures will help reduce emissions and regional haze.

Federal projects or activities taken in New Jersey must comply with the Federal General Conformity Rules[25] in a nonattainment or maintenance area for ozone, fine particulate matter (PM2.5), and CO. The general Conformity Rule requires that VOC, NO_x, CO and PM2.5 direct and indirect emissions from a project that exceed de minimis levels be mitigated, unless the activities are exempt. Emissions reductions obtained through the implementation of measures required by Federal General Conformity Rules in a nonattainment or maintenance area for ozone, fine particulate matter (PM2.5), and CO will also reduce emissions from projects and help reduce regional haze.[26] Federal actions taken in New Jersey must comply with the Federal General Conformity Rules for PM2.5 in the 13 counties in maintenance of the PM2.5 standard and in the entire State for 8- hour ozone.

Additionally, New Jersey considers additional mitigating measures for construction activities on a case-by-case basis depending on the size and nature of the construction being done and the review of the potential emissions on the property in relation to any potential off-site impacts. To implement these requirements, the DEP can use existing authority under the Waterfront Development Rules, as well as Environmental Impact Statements required pursuant to the National Environmental Policy Act and/or Executive Order. In addition, any unreasonable off-site air quality impacts during construction can be addressed by New Jersey's general prohibition of air pollution at N.J.A.C. 7:27-5 et seq. Mitigation measures would be required if construction activities unreasonably interfere with the enjoyment of life or property.

[23] N.J.A.C. 7:27-14.3 for diesel fueled vehicles and N.J.A.C. 7:27-15.8 for gasoline fueled vehicles.
[24] N.J.A.C. 7:27-14: Control and Prohibition of Air Pollution from Diesel-Powered Motor Vehicles (Including Idling) (41 N.J.R. 4195 (b)). http://www.nj.gov/dep/aqm/CPR-041708.pdf
[25] 40 CFR 93.150
[26] 40 CFR 93.150

Chapter 2 EMISSIONS REDUCTIONS ACHIEVED

40 CFR 51.308(g)(2) requires "A summary of the emissions reductions achieved throughout the state through the implementation of the measures described in paragraph (g)(1) of this section." This section of the progress report gives a description of some of the emissions reductions associated with the measures described above in Chapter 1.

The emission reductions achieved by the measures described in Chapter 1 are illustrated by the emission trends shown later in this document in Chapter 4. Approximately two decades of emissions trends are provided for ammonia, nitrogen oxides (NO_x), coarse particulate matter (PM10), fine particulate matter (PM2.5), sulfur dioxide (SO_2), and volatile organic compounds (VOC). Because of the early implementation of these measures in New Jersey, the longer time frame becomes necessary to display the reductions achieved from these measures.

The low sulfur fuel oil strategy is illustrated in Table 2-1, which compares sulfur dioxide (SO_2) emissions associated with the combustion of fuel oils in New Jersey using the 2011, 2014, 2017, and 2020 National Emissions Inventories (NEI).[27] This data reflects emissions before and after adoption of New Jersey rules in 2010 to limit the sulfur content in fuel oil.

Table 2-2 compares SO_2 emissions associated with the combustion of fuel oil in New Jersey and the MANEVU region in 2017 and 2020 from the NEI. While New Jersey adopted the low sulfur fuel oil rule in 2010[28], some MANEVU states and jurisdictions did not have low sulfur fuel oil standards in effect in 2017. The 2020 NEI is reflective of all MANEVU states and jurisdictions having adopted the low sulfur fuel oil standards as was requested of all MANEVU jurisdictions in the MANEVU Intra-RPO "Ask".[29]

Table 2-1: SO_2 Emissions in New Jersey (Tons) from Fuel Oil Combustion Sources

Sector	2011	2014	2017	2020
Electric Generation	169	136	13	5
Industrial Boilers, ICEs	1,087	530	10	2
Comm/Institutional	1,536	1,513	6	19
Residential	3,857	2,106	18	2
Total	**6,649**	**4,285**	**47**	**28**

[27] USEPA, NEI Emissions Inventory System (EIS) Sector Summaries.
[28] N.J.A.C. 7:27-9.1 and 9.2. Sulfur in Fuels Final Adoption.
[29] "2017 Statement of MANEVU Class 1 Area States Regarding Action in States Within the MANEVU Region," August 25, 2017.

Table 2-2: SO_2 Emissions in New Jersey Compared to the MANEVU Region (Tons) from Fuel Oil Combustion Sources

	New Jersey			MANEVU Total		
Sector	**2017**	**2020**	**Difference**	**2017**	**2020**	**Difference**
Electric Generation	13	5	-8	9,395	6,804	-2,591
Industrial	10	2	-8	3,769	2,142	-1,627
Commercial/Institutional	6	19	+13	3,995	1,847	-2,148
Residential	18	2	-16	9,805	215	-9,590
Total	**47**	**28**	**-19**	**26,964**	**11,008**	**-15,956**

New Jersey's low sulfur fuel oil rule was effective in two phases, with Phase 1 in July of 2014 and Phase 2 in July of 2016. Therefore, significant reductions are shown in New Jersey in the 2014 and 2017 inventories. Significant decreases are also seen in the MANEVU region from 2017 to 2020 because some of the states adopted rules later than New Jersey.

Chapter 3 VISIBILITY CONDITIONS AND CHANGES

Per 40 CFR 51.308(g)(3), States with Class I areas must assess the visibility conditions and changes, as described in items i through iii below, expressed in terms of five-year averages of the annual haze index values, in deciviews, for the 20% Most Impaired and Clearest days.

i. Current visibility conditions
ii. The difference between current conditions and baseline conditions
iii. The change in visibility impairment over the period since the period addressed in the most recent plan required under 51.308(f)

The applicable period to assess current conditions is the most recent five-year period preceding the required date of the progress report for which data are available six months preceding the required date of the progress report. Based on this criterion, the most recent five-year period for this progress report submittal is 2018-2022.

To satisfy items i and ii, current conditions, baseline conditions, and the difference between the two are shown in Tables 3-1 and 3-2 for the 20% Most Impaired and the 20% Clearest days respectively. For item iii, Tables 3-3 and 3-4 repeat the current conditions and present the conditions that were most recent at the time that the second planning period regional haze SIPs were drafted (these are labeled as "Most Recent Plan"). All the haze indexes presented below are based on data that was measured and analyzed as part of the Interagency Monitoring of Protected Visual Environments (IMPROVE) program.[30,31]

It is important to note that, because of their proximity to each other, Moosehorn and Roosevelt Campobello share an IMPROVE monitor, and similarly, Great Gulf and Presidential Range - Dry River share an IMPROVE monitor. Because the year 2000 data was missing for Great Gulf, Great Gulf's baseline haze index is based on 2001-2005.

Table 3-1: Baseline and Current Conditions for MANEVU Class I Areas, 20% Most Impaired Days (in deciviews)

Class I Area	State/Province	Baseline 2000-2004	Current 2018-2022	Difference
Acadia National Park	ME	22.01	13.84	-8.17
Moosehorn Wilderness Area	ME	20.65	12.86	-7.79
Roosevelt Campobello Int'l Park	NB			
Great Gulf Wilderness Area	NH	21.88	11.82	-10.06
Presidential Range - Dry River Wild. Area	NH			
Brigantine Wilderness Area	NJ	27.43	16.91	-10.52
Lye Brook Wilderness Area	VT	23.57	13.34	-10.23

Note: The Brigantine and Moosehorn Wilderness Areas did not have complete data in 2020.
Difference = Current minus Baseline; therefore, negative differences indicate an improvement in visibility since the time of baseline.

[30] Interagency Monitoring of Protected Visual Environments (IMPROVE) Program Data
[31] The data was accessed via the Federal Land Manager Environmental Database

Table 3-2: Baseline and Current Conditions for MANEVU Class I Areas, 20% Clearest Days (in deciviews)

Class I Area	State/Province	Baseline 2000-2004	Current 2018-2022	Difference
Acadia National Park	ME	8.78	6.20	-2.58
Moosehorn Wilderness Area	ME	9.16	6.10	-3.06
Roosevelt Campobello Int'l Park	NB			
Great Gulf Wilderness Area	NH	7.65	4.53	-3.12
Presidential Range - Dry River Wild. Area	NH			
Brigantine Wilderness Area	NJ	14.33	9.97	-4.36
Lye Brook Wilderness Area	VT	6.37	4.41	-1.96

Note: The Brigantine and Moosehorn Wilderness Areas did not have complete data in 2020.
Difference = Current minus Baseline; therefore, negative differences indicate an improvement in visibility since the time of baseline

Table 3-3: Most Recent Plan and Current Conditions for MANEVU Class I Areas, 20% Most Impaired Days (in deciviews)

Class I Area	State/ Province	Most Recent Plan 2015-2019	Current 2018-2022	Difference
Acadia National Park	ME	14.24	13.84	-0.40
Moosehorn Wilderness Area	ME	12.99	12.86	-0.13
Roosevelt Campobello Int'l Park	NB			
Great Gulf Wilderness Area	NH	12.33	11.82	-0.51
Presidential Range - Dry River Wild. Area	NH			
Brigantine Wilderness Area	NJ	18.53	16.91	-1.62
Lye Brook Wilderness Area	VT	14.06	13.34	-0.72

Note: The Brigantine and Moosehorn Wilderness Areas did not have complete data in 2020.
Difference = Current minus Most Recent Plan; therefore, negative differences indicate an improvement in visibility since the time of the second planning period regional haze SIPs.

Table 3-4: Most Recent Plan and Current Conditions for MANEVU Class I Areas, 20% Clearest Days (in deciviews)

Class I Area	State/ Province	Most Recent Plan 2015-2019	Current 2018-2022	Difference
Acadia National Park	ME	6.36	6.20	-0.16
Moosehorn Wilderness Area	ME	6.48	6.10	-0.38
Roosevelt Campobello Int'l Park	NB			
Great Gulf Wilderness Area	NH	4.69	4.53	-0.16
Presidential Range - Dry River Wild. Area	NH			
Brigantine Wilderness Area	NJ	10.81	9.97	-0.84
Lye Brook Wilderness Area	VT	4.88	4.41	-0.47

Note: The Brigantine and Moosehorn Wilderness Areas did not have complete data in 2020.
Difference = Current minus Most Recent Plan; therefore, negative differences indicate an improvement in visibility since the time of the second planning period regional haze SIPs.

Lastly, Tables 3-5 and 3-6 compare the current conditions with the modeled 2028 reasonable progress goals. Table 3-5 presents the comparison for 20% Most Impaired days and Table 3-6 for the 20% Clearest days.

Table 3-5: Modeled 2028 Reasonable Progress Goals (RPGs) and Current Conditions for MANEVU Class I Areas, 20% Most Impaired Days (in deciviews)

Class I Area	State/Province	RPG 2028	Current 2018-2022	Difference
Acadia National Park	ME	13.35	13.84	0.49
Moosehorn Wilderness Area	ME	13.12	12.86	-0.26
Roosevelt Campobello Int'l Park	NB			
Great Gulf Wilderness Area	NH	12.00	11.82	-0.18
Presidential Range - Dry River Wild. Area	NH			
Brigantine Wilderness Area	NJ	17.97	16.91	-1.06
Lye Brook Wilderness Area	VT	13.68	13.34	-0.34

Note: The Brigantine and Moosehorn Wilderness Areas did not have complete data in 2020.
Difference = Current minus RPG; therefore, negative differences indicate that current conditions are lower (i.e., better) than the 2028 RPGs.

Table 3-6: Modeled 2028 RPGs and Current Conditions for MANEVU Class I Areas, 20% Clearest Days (in deciviews)

Class I Area	State/Province	RPG 2028	Current 2018-2022	Difference
Acadia National Park	ME	6.33	6.20	-0.13
Moosehorn Wilderness Area	ME	6.45	6.10	-0.35
Roosevelt Campobello Int'l Park	NB			
Great Gulf Wilderness Area	NH	5.06	4.53	-0.53
Presidential Range - Dry River Wild. Area	NH			
Brigantine Wilderness Area	NJ	10.47	9.97	-0.50
Lye Brook Wilderness Area	VT	3.86	4.41	0.55

Note: The Brigantine and Moosehorn Wilderness Areas did not have complete data in 2020.
Difference = Current minus RPG; therefore, negative differences indicate that current conditions are lower (i.e., better) than the 2028 RPGs.

For MANEVU Class I areas, including New Jersey's Brigantine Wilderness Area, Tables 3-1 and 3-2 show that current five-year haze indexes are lower than those from the time of baseline, meaning that visibility has improved since the time of baseline for both the 20% Most Impaired and the 20% Clearest days, respectively.

Tables 3-3 and 3-4 show that current five-year haze indexes at Brigantine Wilderness Area and other MANEVU Class I areas are lower than those at the time of the second planning period regional haze SIPs, indicating improvements in visibility since the second planning period addressed in the most recent regional haze SIPs at all MANEVU Class I areas for both the 20% Most Impaired and the 20% Clearest days.

Finally, Tables 3-5 and 3-6 show that current five-year haze indexes are all below the modeled 2028 RPGs at Brigantine Wilderness Area. The current five-year haze indexes for MANEVU Class I Areas are generally all below the 2028 RPG's with the exception of Acadia National Park

which is slightly above the modeled 2028 RPG for 20% Most Impaired days by 0.49 deciviews, and Lye Brook Wilderness Area by 0.55 deciviews for the 20% Clearest days.

In addition to the visibility improvements at MANEVU Class I areas, visibility has improved at the following Class I areas that are considered nearby to MANEVU:

- Dolly Sods and Otter Creek in West Virginia
- James River Face and Shenandoah National Park in Virginia

Visibility metrics for these Class I areas, the MANEVU Class I areas, and the MANEVU and Nearby IMPROVE Protocol sites are shown in the MANEVU Technical Support Committee's 2022 Visibility Data Report, which is provided as Attachment A.

Chapter 4 CHANGE IN EMISSIONS

Federal regulation 40 CFR 51.308(g)(4) requires an analysis tracking the change in emissions of pollutants contributing to visibility impairment from all sources in the state. The emission changes should be identified by source type or activity. The emissions analysis should cover the timeframe since the previous regional haze SIP planning period. Paragraph 51.308(g)(4) has two distinct requirements that revolve around two separate sets of emissions inventory data as described below:

i. Emissions from all sources and activities:

The primary source of this data is the National Emissions Inventory (NEI), which is compiled and released on a triennial basis by the USEPA. The NEI is made up of emissions estimates submitted by state, local, and tribal air agencies and/or supplemented with USEPA's own estimates. For the 51.308(g)(4) requirement, the analysis must extend at least through the most recent NEI year for which data is available six months prior to the required date of the progress report. NEI information and data can be found at https://www.epa.gov/air-emissions-inventories/national-emissions-inventory-nei.

ii. Emissions from sources that report to a centralized USEPA database:

USEPA requires certain applicable power plants or electric generating units (EGUs) to report their emissions directly to USEPA in accordance with requirements in programs including the Cross-State Air Pollution Rule and its subsequent revisions/updates, the Acid Rain Program and NO_x Budget Trading Program (a retired program). This data is known as Clean Air Markets Division (CAMD) data or Air Markets Program Database (AMPD) data and can be downloaded from USEPA's website at https://ampd.epa.gov/ampd/. There is a small amount of large industrial boilers that were/are required to report under the retired NO_x Budget Trading Program, but CAMD sources are primarily EGUs. For purposes of 51.308(g)(4), the analysis must extend through the most recent year available six months prior to the required date of the progress report.

Emission Summaries

The subsections below summarize the emissions and change in emissions since the time of the second planning period regional haze SIPs for all emissions sources and AMPD emissions sources, respectively. The following visibility impairing pollutants are covered in the summaries:

- Ammonia (NH_3)
- Nitrogen Oxides (NO_x)
- Particulate Matter < 10 microns (PM10)
- Particulate Matter < 2.5 microns (PM2.5)
- Sulfur Dioxide (SO_2)
- Volatile Organic Compounds (VOC)

As described above, the source of this data is USEPA's NEI or for AMPD specific summaries, USEPA's CAMD Program. The most recent NEI available six months prior to the due date of the second planning period progress reports (i.e., this submittal) is the 2020 NEI. The figures below compare emissions estimates from the 2020 NEI with those from the 2017 NEI, which was the

most recently available NEI at the time of the second planning period regional haze SIPs. To provide a broader trend, emissions estimates from prior NEIs are also shown. Emission estimates are provided for New Jersey as well as the other MANEVU states. The state-specific charts are broken down into the following emissions source categories:

- Point sources include large sources of emissions located at a discrete geographic point. Examples include power plants, manufacturing facilities and large institutional facilities. Point sources typically hold a federal/state/tribal/local air permit and report their emissions to the state/tribal/local air agency and/or USEPA directly. For NO_x and SO_2, the state-specific charts further divide point sources into those that report to AMPD and those that do not. As of 2008, USEPA also included mobile source nonroad emissions from airports, and railroad switch yards as point sources in the NEI.

- Nonpoint sources are stationary area sources and some mobile sources. Area sources are those that are too widespread or numerous to be accounted for individually. Therefore, emissions are estimated for these categories using activity data such as population, employment, and fuel use. There are many nonpoint area subcategories, but a handful of examples include residential fuel combustion, residential wood burning, consumer product use, paints, commercial cooking, paved and unpaved road dust, agricultural tilling and any stationary source not included in the point source sector. The nonpoint inventory also includes wild and prescribed burning, which are events in the modeling platforms. The nonpoint NEI inventory also includes sources that are not area sources. As of 2008, the USEPA includes emissions from the mobile source nonroad categories for commercial marine vessels and underway rail emissions (not including emissions at railroad switch yards which are in the point source inventory) in the nonpoint NEI.

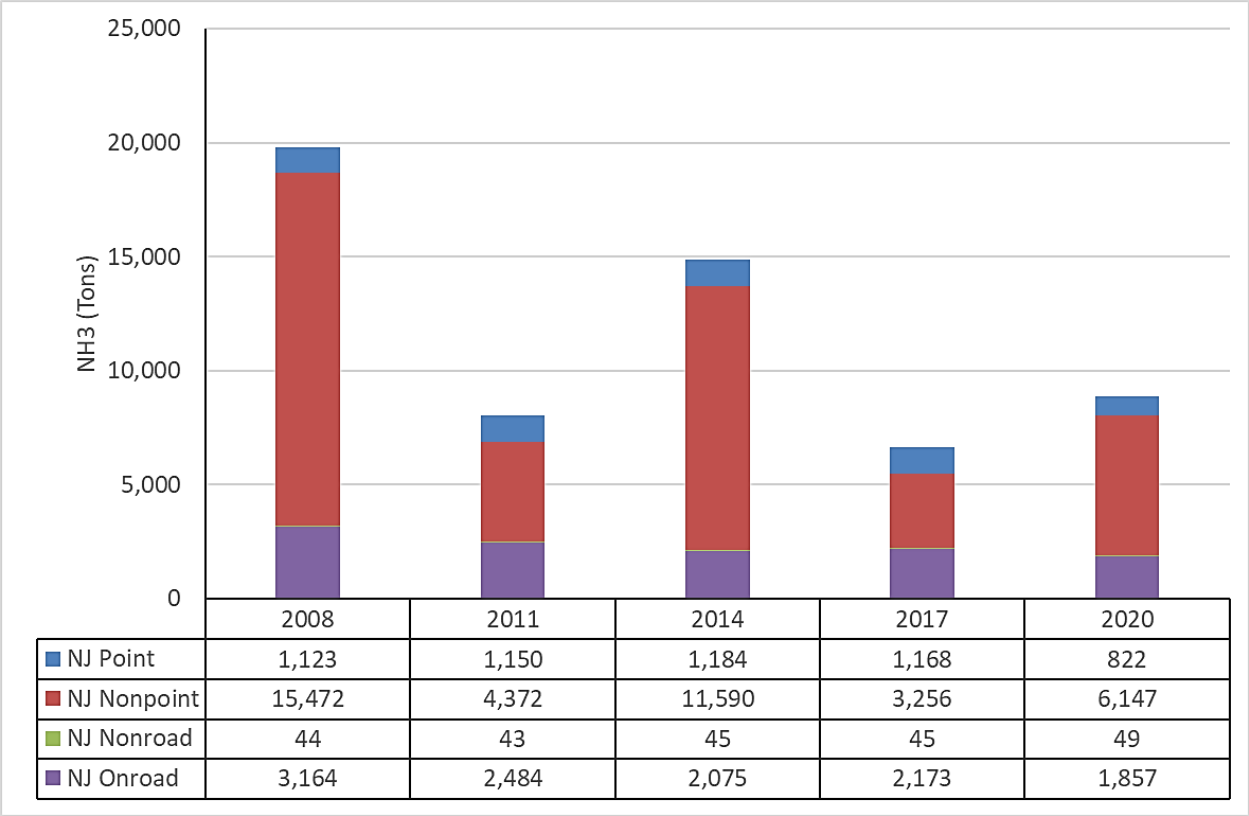
- Nonroad mobile sources are equipment and vehicles that do not primarily travel on roadways. Examples include construction equipment, industrial equipment such as forklifts, recreational watercraft and vehicles, and lawn & garden equipment. Nonroad emissions from airports and railroad switch yards are included as point sources and emissions from other railroad activities and commercial marine vessels are included as nonpoint sources.

- Onroad sources are vehicles that primarily travel on roadways such as cars, trucks, buses, and motorcycles. As of 2011 NEI v2, USEPA includes vehicle refueling at gasoline service stations in the onroad sector instead of the area or nonpoint sector.

4.1 Ammonia

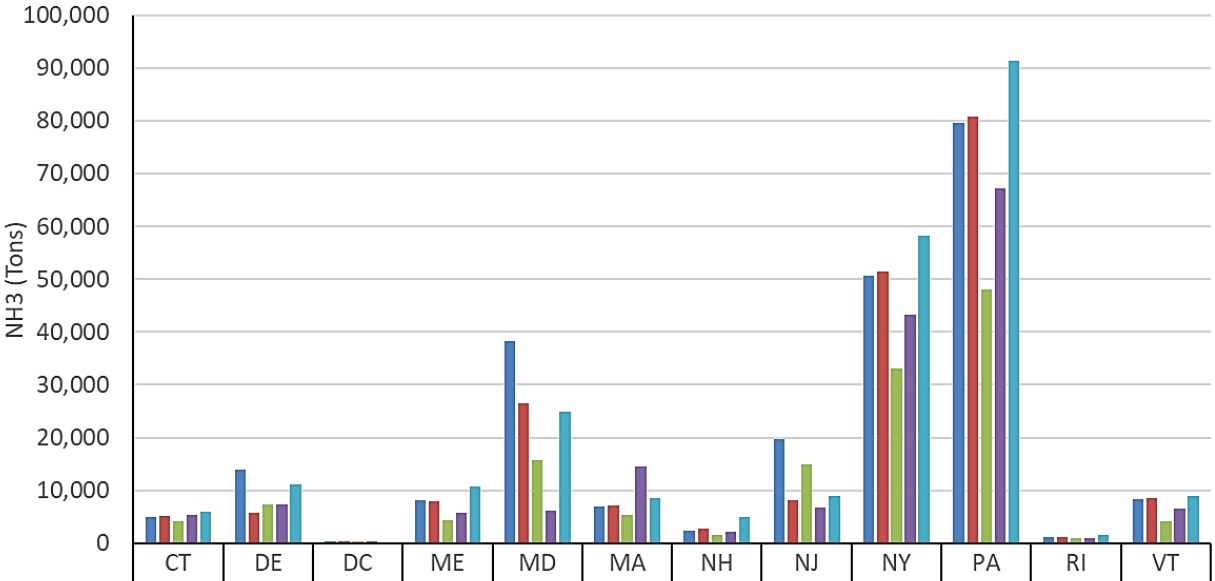
Ammonia emissions for New Jersey and the MANEVU region are shown in Figures 4-1 and 4-2, respectively.

Figure 4-1: 2008 to 2020 Ammonia Emissions for New Jersey (Tons)



	2008	2011	2014	2017	2020
NJ Point	1,123	1,150	1,184	1,168	822
NJ Nonpoint	15,472	4,372	11,590	3,256	6,147
NJ Nonroad	44	43	45	45	49
NJ Onroad	3,164	2,484	2,075	2,173	1,857

Figure 4-2: 2008 to 2020 Ammonia Emissions for MANEVU (Tons)



	CT	DE	DC	ME	MD	MA	NH	NJ	NY	PA	RI	VT
2008	4,989	13,975	354	8,207	38,288	6,929	2,311	19,804	50,737	79,588	1,092	8,379
2011	5,200	5,771	330	8,024	26,429	7,177	2,684	8,049	51,487	80,871	1,075	8,567
2014	4,194	7,252	317	4,356	15,746	5,411	1,645	14,895	33,110	48,000	862	4,148
2017	5,296	7,353	263	5,765	6,108	14,492	2,122	6,642	43,180	67,183	873	6,490
2020	5,930	11,119	236	10,795	24,822	8,477	4,959	8,875	58,297	91,288	1,542	8,879

The highest ammonia emissions in New Jersey are in the nonpoint category (livestock, fertilizer, wood burning) followed by onroad sources. Ammonia emissions in New Jersey have experienced major changes in methodologies for each NEI and a trend cannot be interpreted from these graphs.

In Figure 4-1, fluctuations in New Jersey nonpoint emissions from 2008 to 2014 are due to reporting, grouping and methodology changes. In 2002, 2008 and 2014 New Jersey submitted emissions from domestic and wild animals, and human perspiration to the USEPA. New Jersey was the only state to calculate and submit these emissions. EPA included them in the 2008 and 2014 NEI, however, did not include them in the 2011 NEI, thereby causing a discrepancy

Figure 4-2 shows total ammonia emissions for all NEI data categories combined for the MANEVU states. Some year-to-year variability can be seen. However, for the majority of MANEVU states, ammonia emissions for 2014 are lower than they were for earlier years. New Jersey's emissions trend is different than other states because, as discussed above, New Jersey was the only state to submit domestic and wild animal, and human perspiration ammonia emissions. USEPA included these emissions in the 2008 and 2014 NEI, however, did not include them in the 2011 NEI, thereby causing the discrepancy. The decreases shown from 2008 to 2014 are more comparable for New Jersey data.

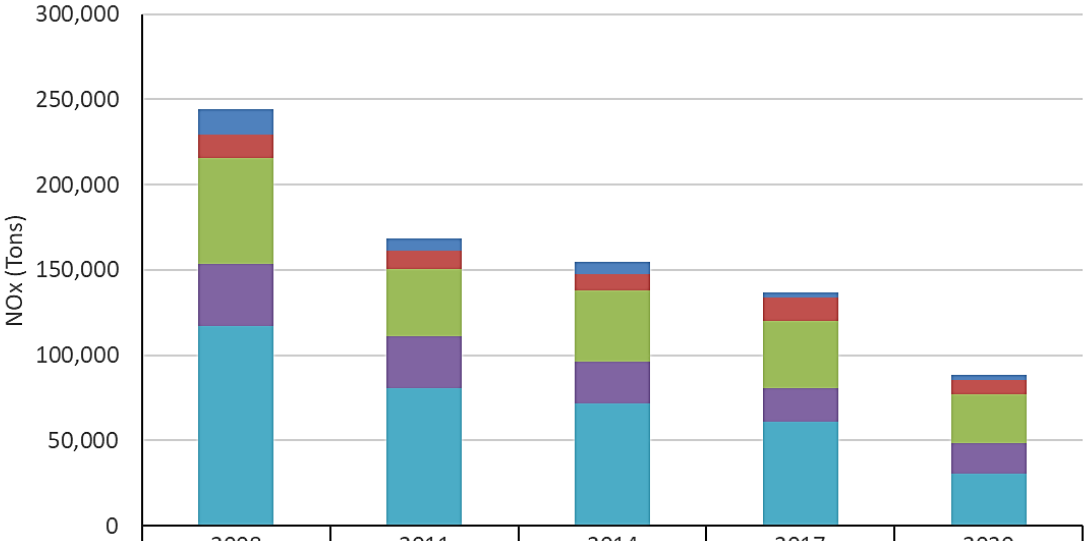
According to Sections 9 and 10 of the 2020 NEI technical support documentation, there were methodology changes to the agricultural fertilizer and livestock waste categories that resulted in

higher ammonia emissions estimates.[32] Most states had an increase in ammonia emissions for 2020 compared to previous years, which was likely caused by these methodology changes rather than a true increase in emissions.

4.2 Nitrogen Oxides (NO_x)

Figures 4-3 and 4-4 below show NO_x emissions in New Jersey and the MANEVU region, respectively. Note that Figure 4-3 breaks point sources further down into AMPD and non-AMPD sources.

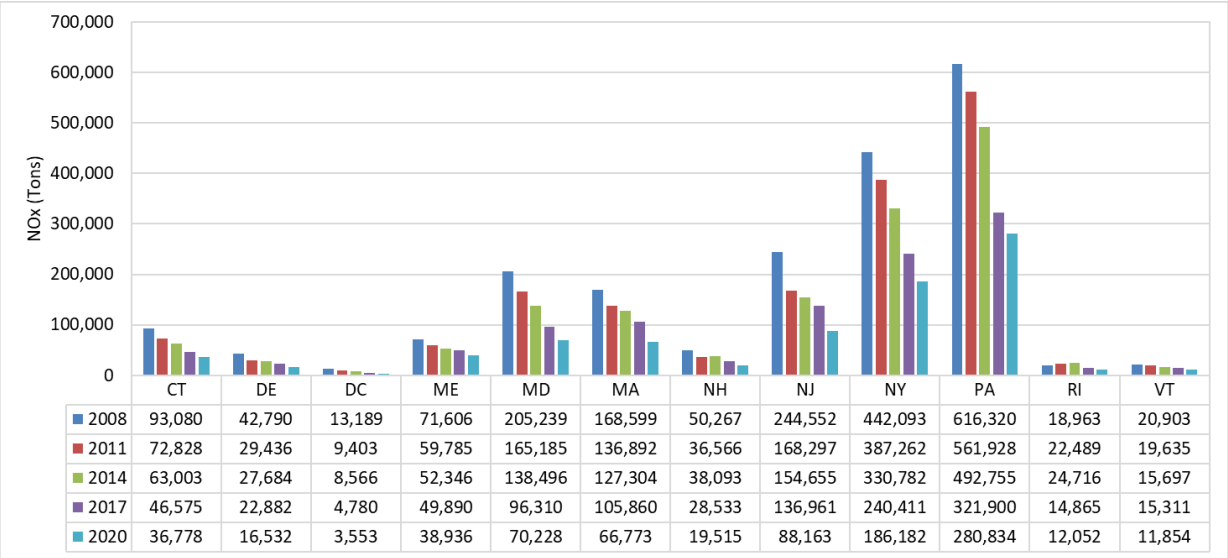
Figure 4-3: 2008 to 2020 NO_x Emissions for New Jersey (Tons)



	2008	2011	2014	2017	2020
AMPD Point	15,147	7,040	7,096	3,443	2,575
Non-AMPD Point	13,591	10,882	9,778	13,487	8,508
Nonpoint	62,264	39,373	41,292	39,178	28,936
Nonroad	36,342	30,303	25,055	20,172	17,397
Onroad	117,208	80,699	71,433	60,681	30,746

[32] https://www.epa.gov/air-emissions-inventories/2020-national-emissions-inventory-nei-technical-support-document-tsd

Figure 4-4: 2008 to 2020 NO_x Emissions for MANEVU (Tons)



	CT	DE	DC	ME	MD	MA	NH	NJ	NY	PA	RI	VT
2008	93,080	42,790	13,189	71,606	205,239	168,599	50,267	244,552	442,093	616,320	18,963	20,903
2011	72,828	29,436	9,403	59,785	165,185	136,892	36,566	168,297	387,262	561,928	22,489	19,635
2014	63,003	27,684	8,566	52,346	138,496	127,304	38,093	154,655	330,782	492,755	24,716	15,697
2017	46,575	22,882	4,780	49,890	96,310	105,860	28,533	136,961	240,411	321,900	14,865	15,311
2020	36,778	16,532	3,553	38,936	70,228	66,773	19,515	88,163	186,182	280,834	12,052	11,854

The NO_x emissions in New Jersey are primarily dominated by the onroad mobile category, followed by the nonpoint category. Note, as discussed above, the nonpoint category in graphs above combines stationary areas sources with the mobile categories of commercial marine vessel (CMV) and underway rail emissions. The highest NOx emissions in New Jersey's 2017 nonpoint NEI inventory are from CMVs, followed by residential fuel combustion (heating) and rail emissions. For the onroad mobile NO_x emissions, there has been a steep decline due to Federal regulations for gasoline and diesel vehicles. Onroad emissions decrease as older, more polluting vehicles are retired and newer, cleaner vehicles are phased into the fleet. Some of the year-to-year variability in the NO_x emission trends are due to updated models and methodologies for estimating nonpoint and onroad emissions. For example, a more accurate methodology for commercial/institutional fuel combustions led to a slight increase in nonpoint NO_x in 2014; however, even with this methodology change, New Jersey continued to trend downward in the following years.

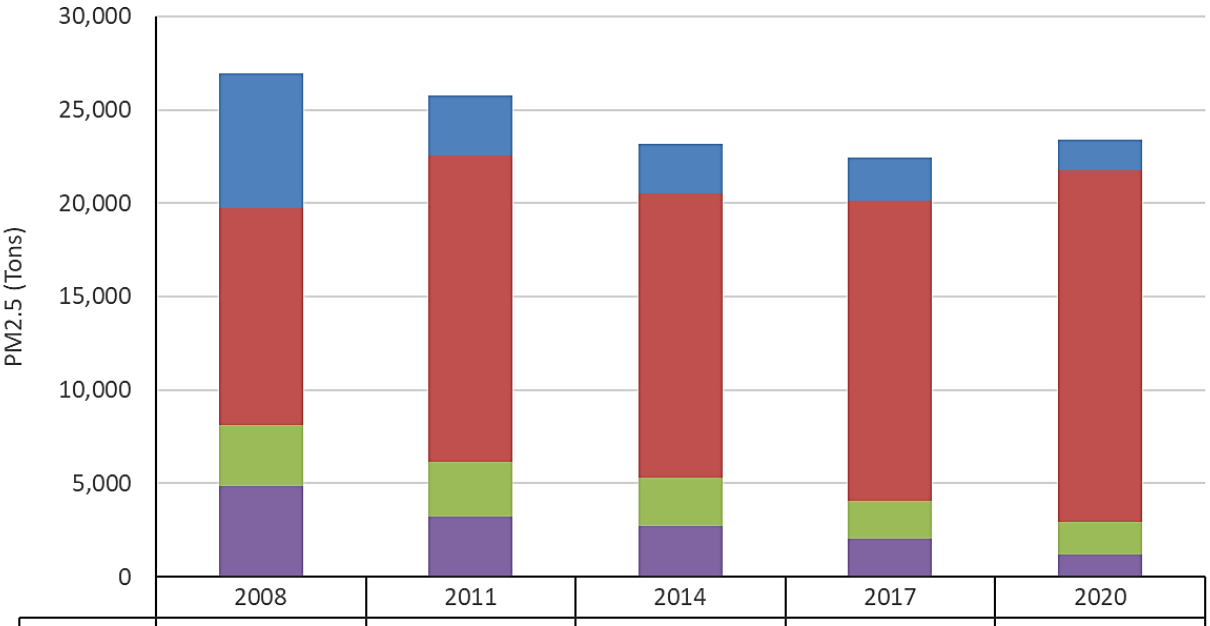
Point source NO_x emissions have also declined due to the permanent and enforceable measures described earlier in Chapters 1 and 2 as well as other state and federal programs aimed at maintaining the ozone National Ambient Air Quality Standards (NAAQS). Reductions in point emissions are due primarily to the NO_x budget program for power plants, power plant and refinery consent decrees and New Jersey's High Electric Demand Day (HEDD) and multi-pollutant power plant rules, as well as the Cross-State Air Pollution Rule (CSAPR) and state of the art controls on EGU units in New Jersey including peaking units. Sources of NO_x emissions in New Jersey that report to EPA's AMPD programs showed additional significant declines in emissions from 2014 to 2017 due to New Jersey's HEDD rule Phase II and EGU standards that became effective in 2014 and 2015, showing a significant decrease in EGU emissions after these dates. In addition, major stationary point sources in New Jersey are declining more than shown in this evaluation because the point source sector in this evaluation includes airports and aircraft. The increase in emissions in 2017 is due to aircraft emissions, not major stationary sources. New Jersey's aircraft emissions have been very erratic, with a 110 percent increase from the 2014 NEI to the 2017 NEI, and a 70 percent decrease from the 2017 NEI to the 2020 NEI (due to COVID). It is anticipated that the 2023 NEI will increase again when compared to COVID's impact in 2020. These emissions are not reflective of New Jersey major stationary source trends, which are decreasing significantly from 2008 to 2020. Also note, non-AMPD

emissions include railroad switch yards, which may also alter the trend evaluation as methodologies have changed over the years. Figure 4-4 shows that overall NO_x emissions have declined sharply in MANEVU states.

4.3 Fine Particulate Matter <2.5 Microns

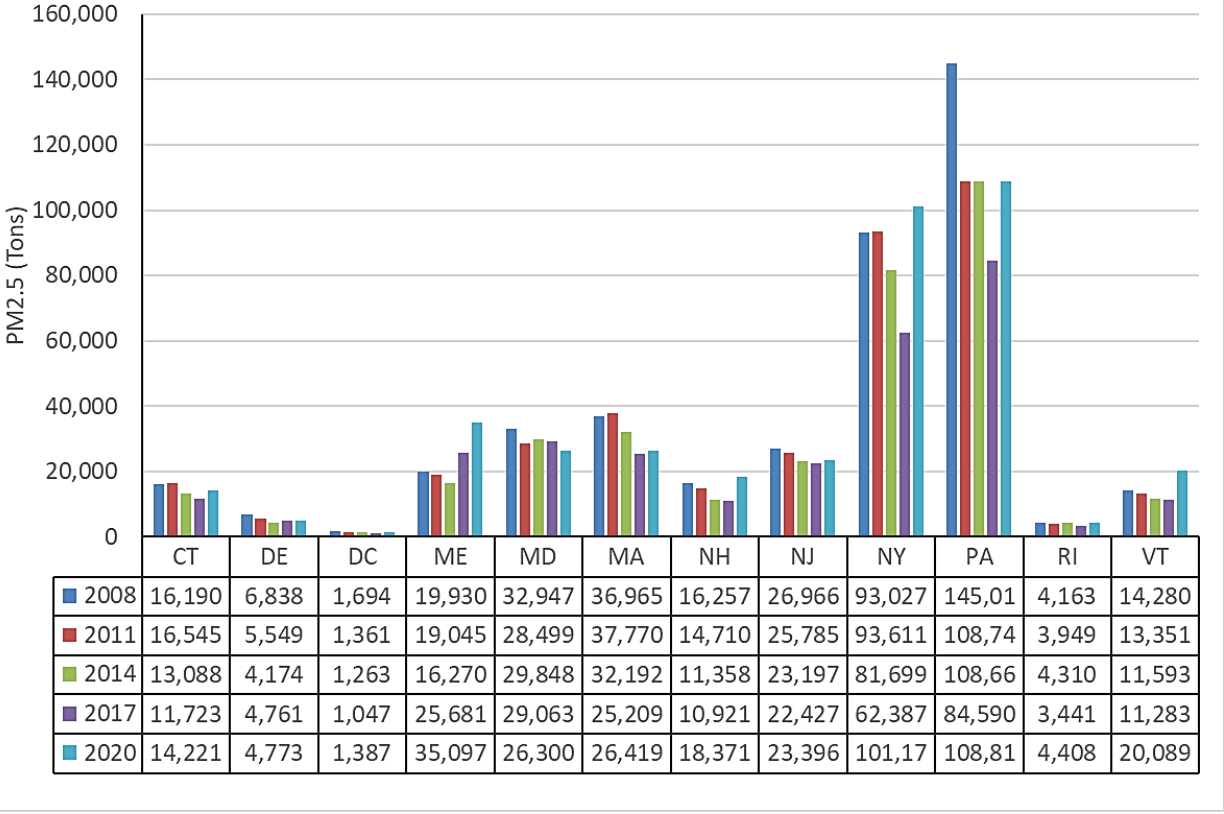
Figures 4-5 and 4-6 show fine particulate matter (PM2.5) emissions for New Jersey and for MANEVU, respectively.

Figure 4-5: 2008 to 2020 PM2.5 Emissions for New Jersey (Tons)



	2008	2011	2014	2017	2020
Point	7,212	3,229	2,695	2,277	1,643
Nonpoint	11,607	16,419	15,196	16,096	18,837
Nonroad	3,284	2,917	2,571	1,999	1,726
Onroad	4,863	3,220	2,735	2,055	1,190

Figure 4-6: 2008 to 2020 PM2.5 Emissions for MANEVU (Tons)



	CT	DE	DC	ME	MD	MA	NH	NJ	NY	PA	RI	VT
2008	16,190	6,838	1,694	19,930	32,947	36,965	16,257	26,966	93,027	145,01	4,163	14,280
2011	16,545	5,549	1,361	19,045	28,499	37,770	14,710	25,785	93,611	108,74	3,949	13,351
2014	13,088	4,174	1,263	16,270	29,848	32,192	11,358	23,197	81,699	108,66	4,310	11,593
2017	11,723	4,761	1,047	25,681	29,063	25,209	10,921	22,427	62,387	84,590	3,441	11,283
2020	14,221	4,773	1,387	35,097	26,300	26,419	18,371	23,396	101,17	108,81	4,408	20,089

The PM2.5 emissions in New Jersey are largely dominated by the nonpoint category. Primary nonpoint contributors to PM2.5 emissions include residential wood combustion, paved and unpaved road dust, commercial cooking, agricultural tilling and construction dust.

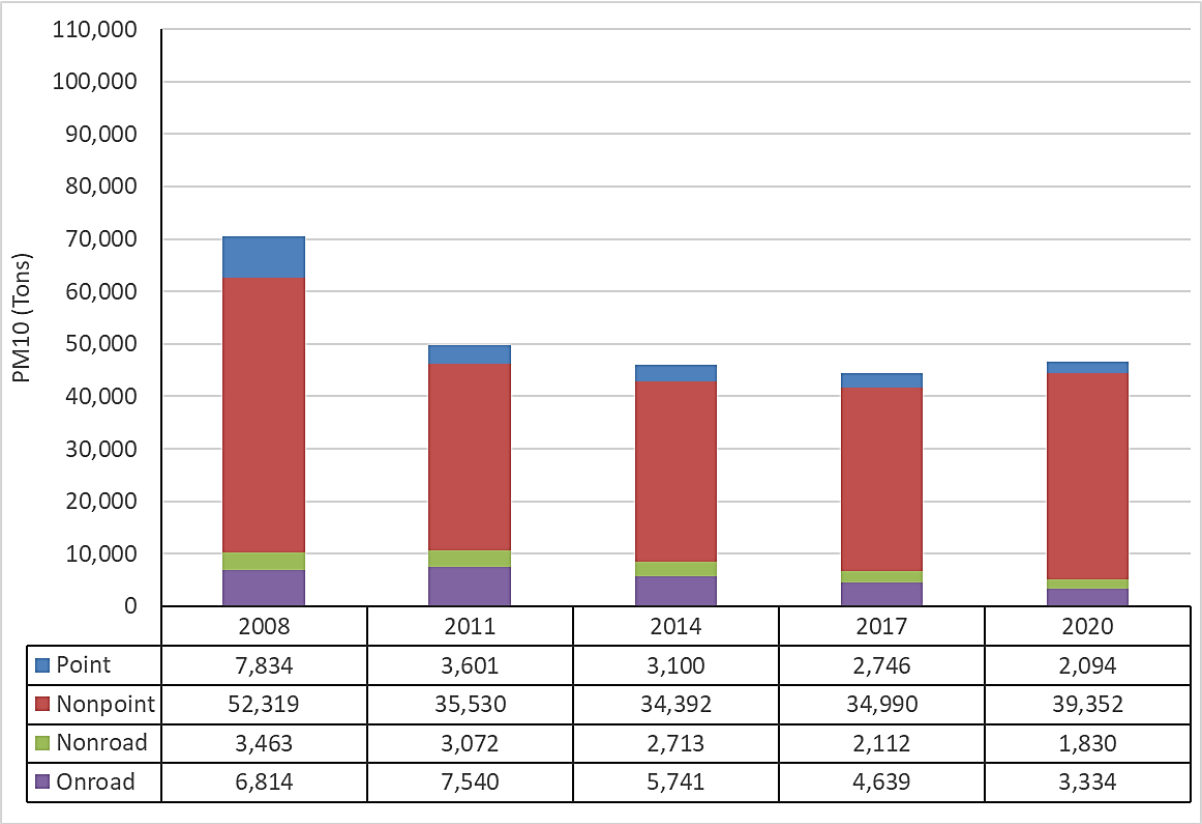
Figures 4-5 and 4-6 show that PM2.5 emissions have trended downward in New Jersey and many MANEVU states since 2008 but increased in some states in 2020. Point source emissions show a steady decreasing trend due to New Jersey power plant and refinery consent decrees and regulations. PM2.5 emissions steadily decreased in the nonroad category because of Federal new engine standards for nonroad vehicles and equipment. Additionally, there is an overall decrease in onroad emissions due to Federal and State regulations. In New Jersey and possibly other states, the increase in 2020 is due to a USEPA methodology change for commercial cooking that increased emissions significantly and increased fire activity. There were also methodology changes to the unpaved road dust and residential wood combustion categories.

The 2020 NEI Nonpoint emissions for PM2.5 and PM10 contained an error related to excess emissions for paved road dust in NJ. These emissions have been corrected in this report.

4.4 Coarse Particulate Matter <10 Microns

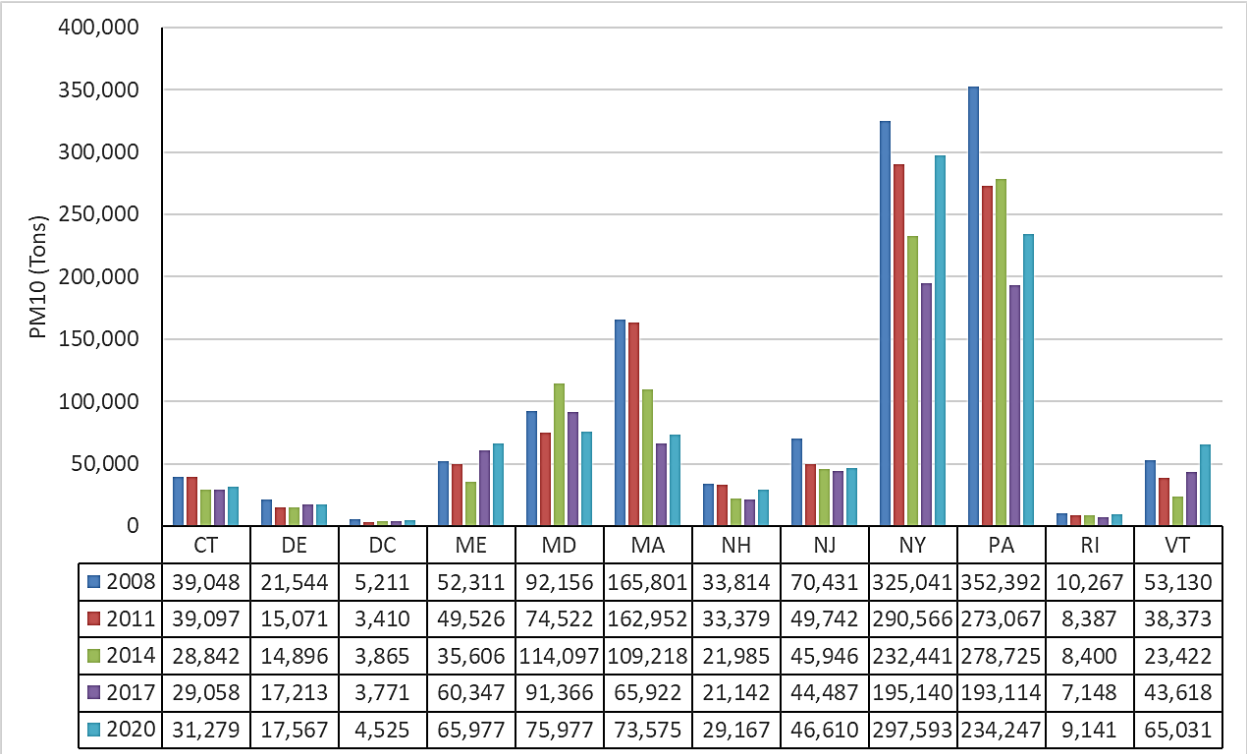
The coarse particulate matter (PM10) emissions for New Jersey and for the MANEVU region are shown in Figures 4-7 and 4-8, respectively.

Figure 4-7: 2008 to 2020 PM10 Emissions for New Jersey (Tons)



	2008	2011	2014	2017	2020
Point	7,834	3,601	3,100	2,746	2,094
Nonpoint	52,319	35,530	34,392	34,990	39,352
Nonroad	3,463	3,072	2,713	2,112	1,830
Onroad	6,814	7,540	5,741	4,639	3,334

Figure 4-8: 2008 to 2020 PM10 Emissions for MANEVU (Tons)



	CT	DE	DC	ME	MD	MA	NH	NJ	NY	PA	RI	VT
2008	39,048	21,544	5,211	52,311	92,156	165,801	33,814	70,431	325,041	352,392	10,267	53,130
2011	39,097	15,071	3,410	49,526	74,522	162,952	33,379	49,742	290,566	273,067	8,387	38,373
2014	28,842	14,896	3,865	35,606	114,097	109,218	21,985	45,946	232,441	278,725	8,400	23,422
2017	29,058	17,213	3,771	60,347	91,366	65,922	21,142	44,487	195,140	193,114	7,148	43,618
2020	31,279	17,567	4,525	65,977	75,977	73,575	29,167	46,610	297,593	234,247	9,141	65,031

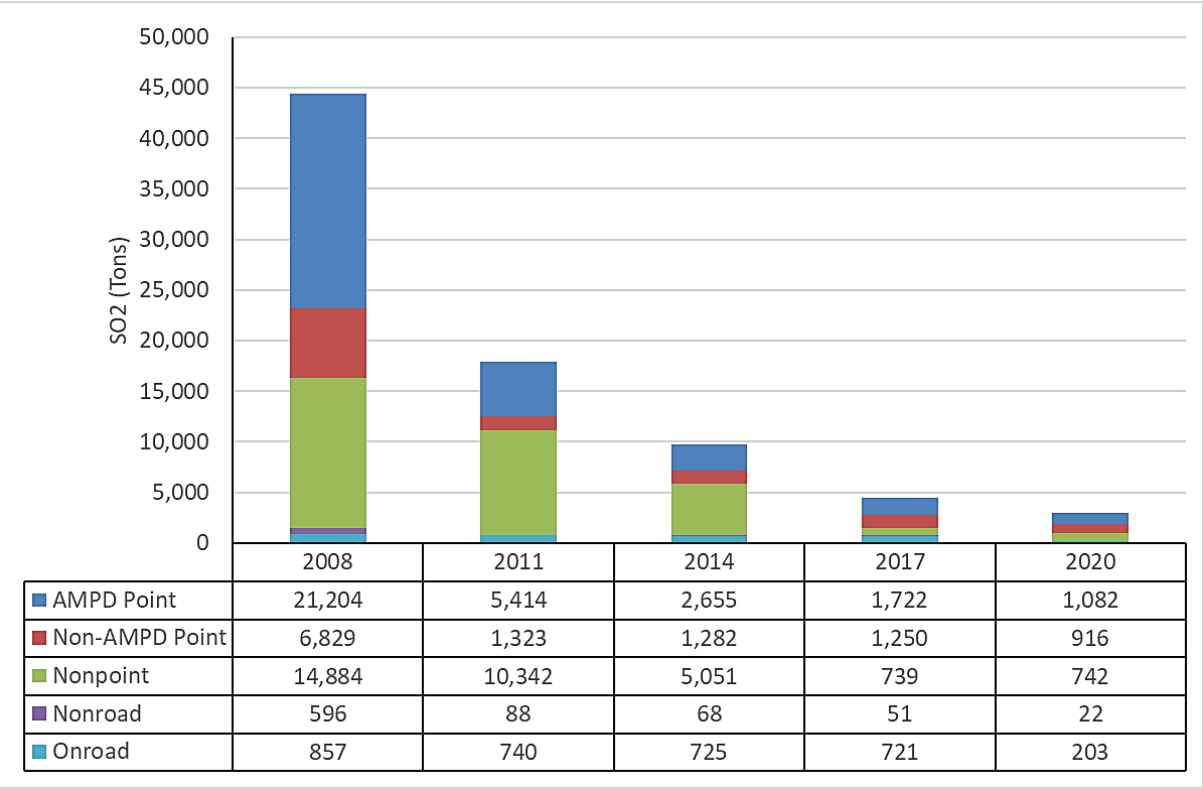
The emissions patterns and trends for PM10 are similar to those described above for PM2.5. As with PM2.5, PM10 emissions are dominated by the nonpoint category. In general, PM10 emissions have trended downwards for New Jersey and other states in MANEVU since 2008 but many MANEVU states, including New Jersey, had an increase in PM10 emissions in 2020. As discussed above regarding PM2.5, the increases are due to methodology changes and fires.

The 2020 NEI Nonpoint emissions for PM2.5 and PM10 contained an error related to excess emissions for paved road dust in NJ. These emissions have been corrected in this report.

4.5 Sulfur Dioxide (SO_2)

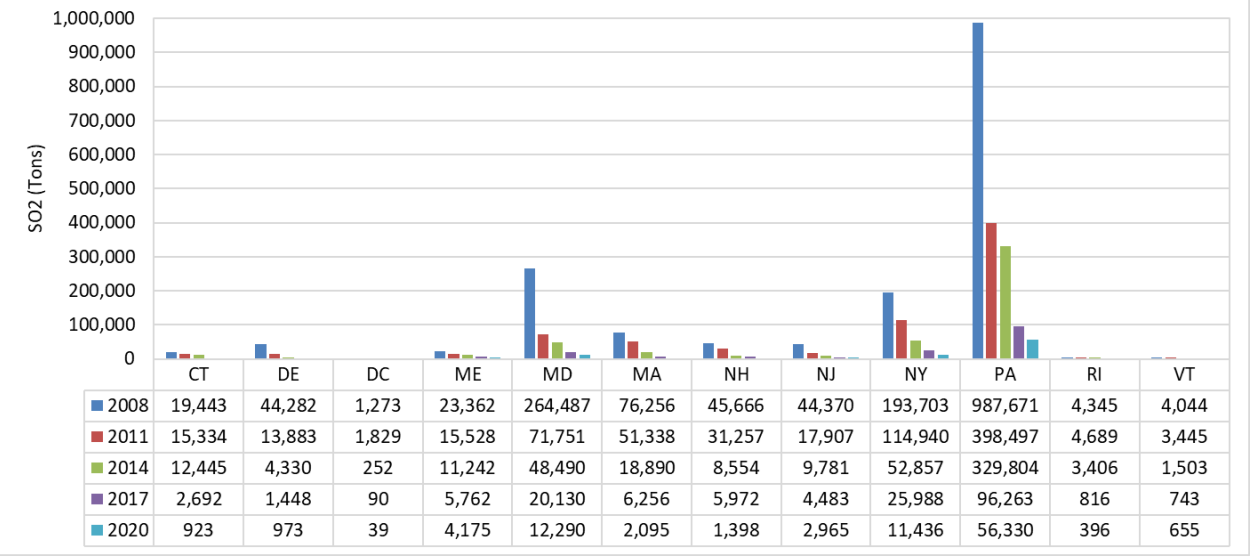
The SO_2 emissions for New Jersey and for MANEVU are shown in Figures 4-9 and 4-10, respectively. Similar to NO_x, point source SO_2 emissions are further broken down in Figure 4-9 into the AMPD and non-AMPD categories.

Figure 4-9: 2008 to 2020 SO_2 Emissions for New Jersey (Tons)



	2008	2011	2014	2017	2020
AMPD Point	21,204	5,414	2,655	1,722	1,082
Non-AMPD Point	6,829	1,323	1,282	1,250	916
Nonpoint	14,884	10,342	5,051	739	742
Nonroad	596	88	68	51	22
Onroad	857	740	725	721	203

Figure 4-10: 2008 to 2020 SO_2 Emissions for MANEVU (Tons)



	CT	DE	DC	ME	MD	MA	NH	NJ	NY	PA	RI	VT
2008	19,443	44,282	1,273	23,362	264,487	76,256	45,666	44,370	193,703	987,671	4,345	4,044
2011	15,334	13,883	1,829	15,528	71,751	51,338	31,257	17,907	114,940	398,497	4,689	3,445
2014	12,445	4,330	252	11,242	48,490	18,890	8,554	9,781	52,857	329,804	3,406	1,503
2017	2,692	1,448	90	5,762	20,130	6,256	5,972	4,483	25,988	96,263	816	743
2020	923	973	39	4,175	12,290	2,095	1,398	2,965	11,436	56,330	396	655

As shown in Figure 4-9, the major source of SO_2 emissions prior to 2011 in New Jersey were point sources, particularly the AMPD sources. The nonpoint category also made a significant contribution to SO_2 emissions due to heating with distillate fuel, but as discussed above, the nonpoint category also includes emissions from commercial marine vessels and underway rail mobile sources. In general, nonroad and onroad sources are not major contributors to SO_2

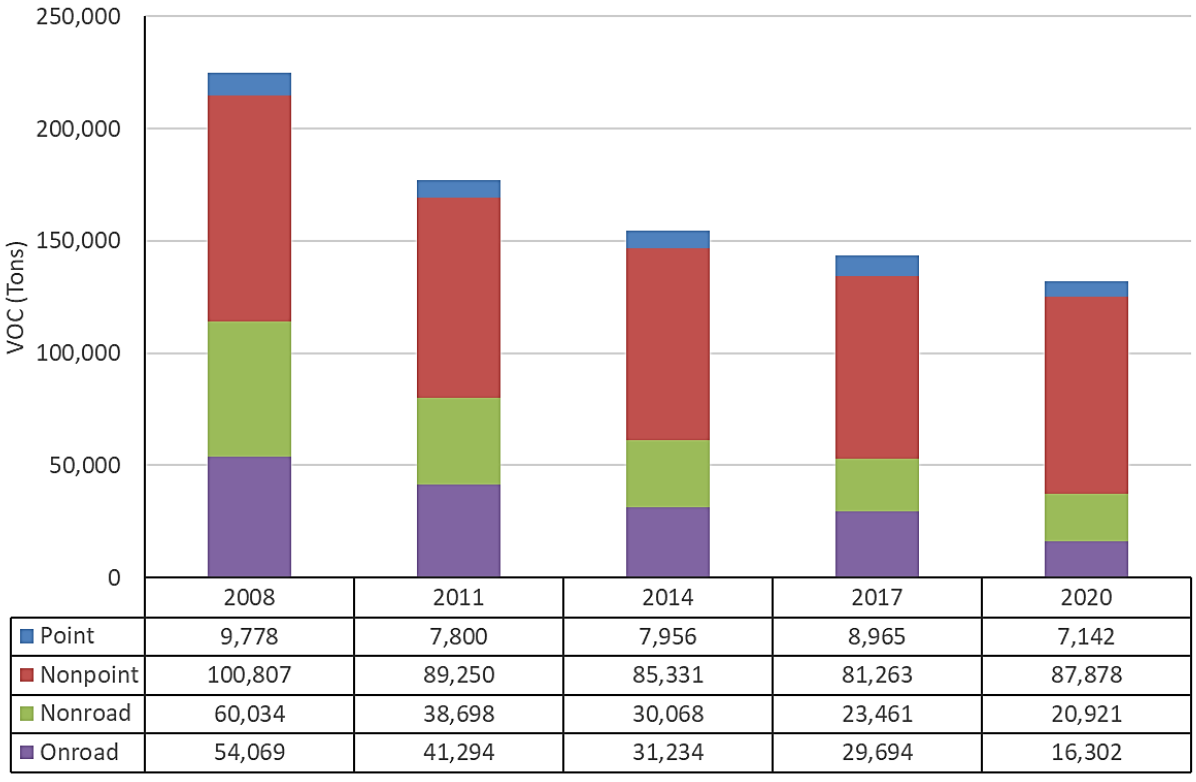
emissions in 2008 and later, due to Federal sulfur in diesel rules. The dramatic decrease in point and nonpoint source SO_2 emissions in New Jersey is due to the extensive control programs that have been implemented to control SO_2 from coal-fired power plants and low sulfur fuel oil.

As shown in Figure 4-10, all of the MANEVU states have seen similar steep declines in SO_2 emissions.

4.6 Volatile Organic Compounds

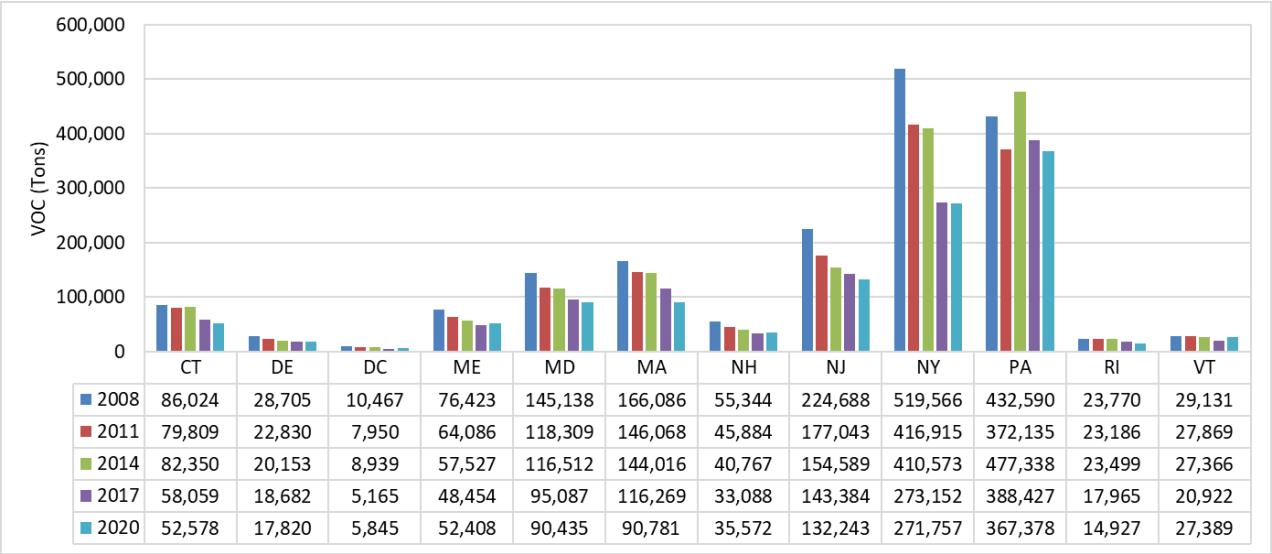
Figures 4-11 and 4-12 show VOC emissions for New Jersey and MANEVU, respectively.

Figure 4-11: 2008 to 2020 VOC Emissions for New Jersey (Tons)



	2008	2011	2014	2017	2020
Point	9,778	7,800	7,956	8,965	7,142
Nonpoint	100,807	89,250	85,331	81,263	87,878
Nonroad	60,034	38,698	30,068	23,461	20,921
Onroad	54,069	41,294	31,234	29,694	16,302

Figure 4-12: 2008 to 2020 VOC Emissions for MANEVU (Tons)



	CT	DE	DC	ME	MD	MA	NH	NJ	NY	PA	RI	VT
2008	86,024	28,705	10,467	76,423	145,138	166,086	55,344	224,688	519,566	432,590	23,770	29,131
2011	79,809	22,830	7,950	64,086	118,309	146,068	45,884	177,043	416,915	372,135	23,186	27,869
2014	82,350	20,153	8,939	57,527	116,512	144,016	40,767	154,589	410,573	477,338	23,499	27,366
2017	58,059	18,682	5,165	48,454	95,087	116,269	33,088	143,384	273,152	388,427	17,965	20,922
2020	52,578	17,820	5,845	52,408	90,435	90,781	35,572	132,243	271,757	367,378	14,927	27,389

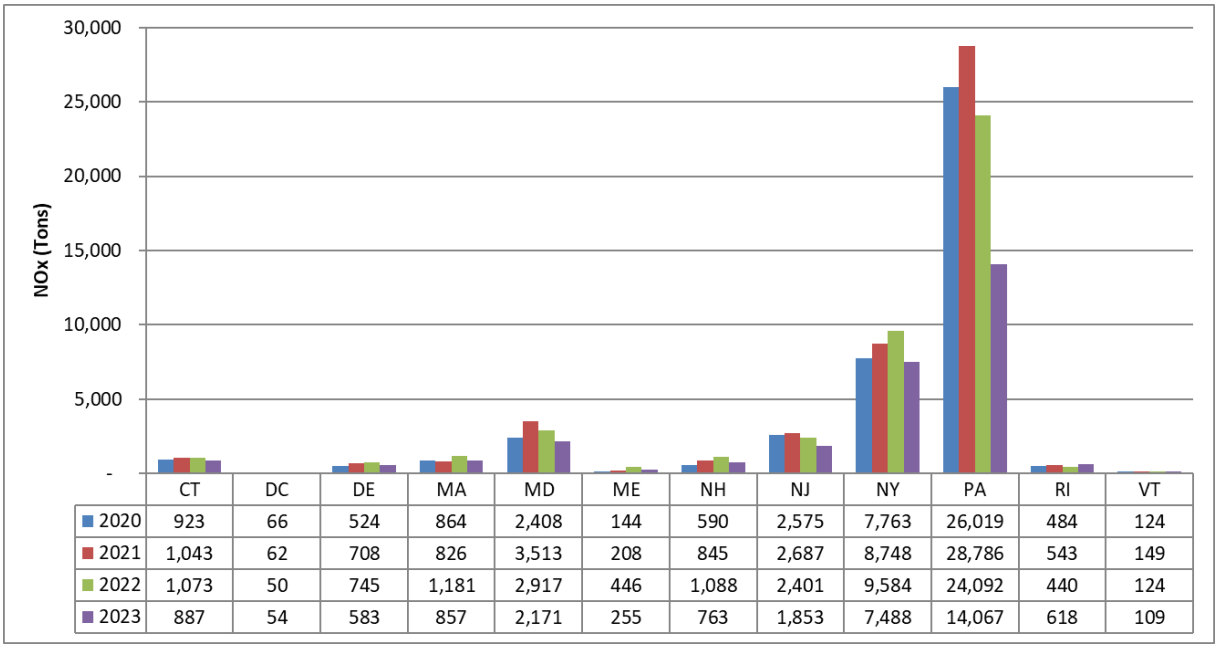
VOC emissions in New Jersey are generally dominated by the nonpoint category, followed by onroad and nonroad categories. Overall, point sources are generally no longer a major contributor to VOC emissions. Figure 4-11 shows that there has been a decline in New Jersey VOC emissions between 2008 and 2020, with a significant decline in point sources emissions. VOC decreases were achieved in all sectors due to Federal new engine standards for onroad and nonroad vehicles and equipment, the National and State low emission vehicle programs, area source rules such as consumer products, portable fuel containers, paints, autobody refinishing, asphalt paving applications, and solvent cleaning operations, and point source controls such as refinery consent decrees and New Jersey's VOC storage tank rule.

Figure 4-12 shows that VOC emissions have declined in most MANEVU states over the 2008 to 2020 period, with some year-to-year variability. Some of the variability is due to changes in emissions estimation methodologies. Significant methodology changes occurred for residential wood emissions in 2017 and solvents in 2020. USEPA started including refueling emissions at gas stations in the onroad sector NEI in 2011, although it is considered a stationary source and was previously in the nonpoint area category.

4.7 Emissions from Sources that Report to a Centralized EPA Database

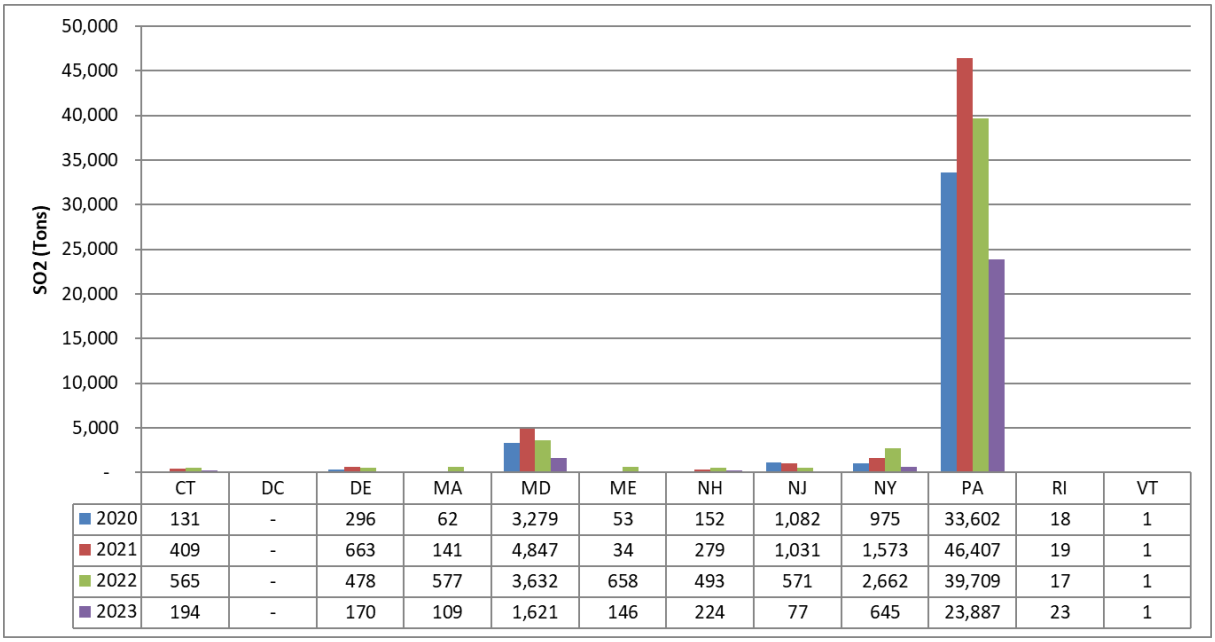
Figures 4-13 and 4-14 show NO_x and SO_2 emissions, respectively, in New Jersey and the other MANEVU states for those sources that report to USEPA's AMPD (primarily EGUs). The source of these emissions is the USEPA CAMD database, not the NEI.

Figure 4-13: NO_x Emissions for AMPD Sources in New Jersey and MANEVU (Tons)



	CT	DC	DE	MA	MD	ME	NH	NJ	NY	PA	RI	VT
2020	923	66	524	864	2,408	144	590	2,575	7,763	26,019	484	124
2021	1,043	62	708	826	3,513	208	845	2,687	8,748	28,786	543	149
2022	1,073	50	745	1,181	2,917	446	1,088	2,401	9,584	24,092	440	124
2023	887	54	583	857	2,171	255	763	1,853	7,488	14,067	618	109

Figure 4-14: SO_2 Emissions for AMPD Sources in New Jersey and MANEVU (Tons)



	CT	DC	DE	MA	MD	ME	NH	NJ	NY	PA	RI	VT
2020	131	-	296	62	3,279	53	152	1,082	975	33,602	18	1
2021	409	-	663	141	4,847	34	279	1,031	1,573	46,407	19	1
2022	565	-	478	577	3,632	658	493	571	2,662	39,709	17	1
2023	194	-	170	109	1,621	146	224	77	645	23,887	23	1

Figures 4-13 and 4-14 show significant declines in NO_x and SO_2 emissions for New Jersey. These are due in large part to New Jersey's significant, enforceable measures such as New Jersey's stringent EGU emission limits, HEDD rule, sulfur in coal rule and low sulfur fuel oil rule as well as measures aimed at maintaining the ozone and SO_2 NAAQS. Declines in NO_x and SO_2 emissions are also evident for most other MANEVU states, with some year-to-year variability. Declines in MANEVU are due to the Federal transport regulations, enforceable measures that MANEVU states have adopted as part of their long-term strategies for making

reasonable progress as well as the measures that states have adopted to maintain the ozone and SO_2 NAAQS. Some of the declines, especially in states without significant major stationary source rules like NJ, are due to market forces and the shift from coal to natural gas for financial reasons.

Chapter 5 ASSESSMENT OF SIGNIFICANT CHANGES IN EMISSIONS

The RHR Paragraph 51.308(g)(5) requires an assessment of any significant changes in anthropogenic emissions within or outside the state since the period addressed in the most recent plan (in this case, the regional haze SIPs for the second planning period), including whether those changes were anticipated in the most recent plan and whether they have limited or impeded in reducing pollutant emissions and improving visibility.

Figures 4-1 through 4-14 in the prior Chapter show that emissions for visibility impairing pollutants have declined for almost every pollutant and for almost every state in MANEVU. The figures also show that, although there is some year-to-year variability, there are no emissions increases in New Jersey or in MANEVU that are unexpected or large enough that they would limit or impede visibility improvement. Also, rather than a true increase in emissions, methodology changes caused many of the apparent increases in emissions seen in the above chapters.

Tables 5-1 through 5-6 below show the difference in emissions for each visibility impairing pollutant in MANEVU states from 2017, the NEI year that was current at the time of the second planning period regional haze SIPs, to 2020, which is the most recently available complete NEI for this progress report.

Table 5-1: 2017 and 2020 Total Ammonia Emissions for New Jersey and MANEVU (Tons)

State	2017	2020	Difference (2017 – 2020)	Percent Difference (2017 – 2020)
CT	5,296	5,930	634	12%
DE	7,353	11,119	3,766	51%
DC	263	236	-27	-10%
ME	5,765	10,795	5,030	87%
MD	6,108	24,822	18,715	306%
MA	14,492	8,477	-6,016	-42%
NH	2,122	4,959	2,837	134%
NJ	6,642	8,875	2,233	34%
NY	43,180	58,297	15,117	35%
PA	67,183	91,288	24,105	36%
RI	873	1,542	669	77%
VT	6,490	8,879	2,388	37%
Total	**165,768**	**235,218**	**69,451**	**42%**

Table 5-2: 2017 and 2020 Total NO_x Emissions for New Jersey and MANEVU (Tons)

State	2017	2020	Difference (2017 – 2020)	Percent Difference (2017 – 2020)
CT	46,575	36,778	-9,797	-21%
DE	22,882	16,532	-6,351	-28%
DC	4,780	3,553	-1,227	-26%
ME	49,890	38,936	-10,955	-22%
MD	96,310	70,228	-26,083	-27%
MA	105,860	66,773	-39,087	-37%
NH	28,533	19,515	-9,018	-32%
NJ	136,961	88,163	-48,798	-36%
NY	240,411	186,182	-54,229	-23%
PA	321,900	280,834	-41,066	-13%
RI	14,865	12,052	-2,812	-19%
VT	15,311	11,854	-3,458	-23%
Total	**1,084,279**	**831,399**	**-252,880**	**-23%**

Table 5-3: 2017 and 2020 Total PM2.5 Emissions for New Jersey and MANEVU (Tons)

State	2017	2020	Difference (2017 – 2020)	Percent Difference (2017 – 2020)
CT	11,723	14,221	2,499	21%
DE	4,761	4,773	12	0%
DC	1,047	1,387	340	32%
ME	25,681	35,097	9,416	37%
MD	29,063	26,300	-2,763	-10%
MA	25,209	26,419	1,210	5%
NH	10,921	18,371	7,449	68%
NJ	22,427	23,396	969	4%
NY	62,387	101,178	38,791	62%
PA	84,590	108,812	24,222	29%
RI	3,441	4,408	967	28%
VT	11,283	20,089	8,806	78%
Total	**292,531**	**384,450**	**91,919**	**31%**

Table 5-4: 2017 and 2020 Total PM10 Emissions for New Jersey and MANEVU (Tons)

State	2017	2020	Difference (2017 – 2020)	Percent Difference (2017 – 2020)
CT	29,058	31,279	2,221	8%
DE	17,213	17,567	354	2%
DC	3,771	4,525	754	20%
ME	60,347	65,977	5,630	9%
MD	91,366	75,977	-15,390	-17%
MA	65,922	73,575	7,654	12%
NH	21,142	29,167	8,024	38%
NJ	44,487	46,610	2,122	5%
NY	195,140	297,593	102,453	53%
PA	193,114	234,247	41,133	21%
RI	7,148	9,141	1,993	28%
VT	43,618	65,031	21,413	49%
Total	**772,327**	**950,689**	**178,362**	**23%**

Table 5-5: 2017 and 2020 Total SO_2 Emissions for New Jersey and MANEVU (Tons)

State	2017	2020	Difference (2017 – 2020)	Percent Difference (2017 – 2020)
CT	2,692	923	-1,769	-66%
DE	1,448	973	-475	-33%
DC	90	39	-51	-56%
ME	5,762	4,175	-1,587	-28%
MD	20,130	12,290	-7,840	-39%
MA	6,256	2,095	-4,161	-67%
NH	5,972	1,398	-4,574	-77%
NJ	4,483	2,965	-1,519	-34%
NY	25,988	11,436	-14,553	-56%
PA	96,263	56,330	-39,934	-41%
RI	816	396	-421	-52%
VT	743	655	-88	-12%
Total	**170,645**	**93,674**	**-76,970**	**-45%**

Table 5-6: 2017 and 2020 Total VOC Emissions for New Jersey and MANEVU (Tons)

State	2017	2020	Difference (2017 – 2020)	Percent Difference (2017 – 2020)
CT	58,059	52,578	-5,482	-9%
DE	18,682	17,820	-862	-5%
DC	5,165	5,845	680	13%
ME	48,454	52,408	3,954	8%
MD	95,087	90,435	-4,652	-5%
MA	116,269	90,781	-25,488	-22%
NH	33,088	35,572	2,484	8%
NJ	143,384	132,243	-11,141	-8%
NY	273,152	271,757	-1,395	-1%
PA	388,427	367,378	-21,049	-5%
RI	17,965	14,927	-3,038	-17%
VT	20,922	27,389	6,467	31%
Total	**1,218,654**	**1,159,134**	**-59,521**	**-5%**

Tables 5-1 to 5-6 show significant decreases in SO_2 and NO_x emissions from 2017 to 2020 for every state in MANEVU. SO_2 had the most dramatic decreases, with an average reduction of 45% for the total MANEVU region. NO_x emissions decreased an average of 23% for the total MANEVU region. Regarding ammonia emissions, there were several methodology changes responsible for the erratic trend and it is not representative of actual emission increases. PM10 and PM2.5 emissions increased for all states except MD. As discussed in Chapter 4, the increases in emission estimates for PM are due to changes in estimation methodologies such as for commercial cooking, paved and unpaved roads, residential wood burning and fire activity. VOC emissions increased in some states and decreased in some states, with an overall decrease of 5%. This is due to USEPA's change in methodologies for area source solvent emissions and residential wood burning. The primary reasons for actual emission reductions are discussed in detail in Chapter 4.

In summary, primary regional haze pollutant emissions for New Jersey and MANEVU have decreased significantly between 2017 and 2020. The increases observed are mostly due to methodology changes and not actual emission increases. These methodology increases are not expected to limit or impede visibility improvement in New Jersey, MANEVU, or any other region that may be influenced by New Jersey's emissions. As 2020 was the year MANEVU experienced COVID, it is expected that future inventories may reflect some increases for sources that experienced a reduction in activity during COVID, such as aircraft emissions and onroad emissions.

Chapter 6 ASSESSMENT OF CURRENT IMPLEMENTATION PLAN ELEMENTS AND STRATEGIES

RHR paragraph 51.308(g)(6) requires an assessment of whether current plan elements and strategies are sufficient to enable the state, or states with Class I areas affected by emissions from the state, to meet all established RPGs for the period covered by the most recent plan. New Jersey affirms that the elements and strategies in its regional haze SIP for the second planning period are sufficient to meet the criteria of 51.308(g)(6). New Jersey makes this affirmation based on the following assessment of the information and data presented in this progress report:

- There has been no change in the implementation of New Jersey measures deemed necessary in New Jersey's second planning period regional haze SIP for making reasonable progress at its own Class I area (Brigantine Wilderness Area) or Class I areas that may be affected by New Jersey's emissions. Please see Chapter 1 above. In addition, there have been verifiable emissions reductions from these measures since the time of the second planning period regional haze SIP; please see Chapter 2.

- Current haze indexes for New Jersey's Class I area and all the MANEVU Class I areas are lower than those for the time of the second planning period regional haze SIPs, and significantly lower than baseline, for the 20% Most Impaired and 20% Clearest days. Please see Chapter 3. These trends are indicative that all MANEVU Class I areas are on track to meeting the RPGs established in the second planning period regional haze SIPs.

- Emissions for the primary visibility impairing pollutants of SO_2 and NO_x have trended downward for New Jersey and for other states in MANEVU and are lower than those at the time of the second planning regional haze SIPs. There was some year to year and state to state variability in data for ammonia, PM and VOCs due to changes in NEI methodologies and mostly not due actual emission increases except for fire activity which cannot be controlled.

6.1 Assessment of Smoke Management Plan

40 CFR 51.308(g)(8) requires an assessment of the State’s smoke management plan only under the following conditions. The State must have a long-term strategy in the SIP that includes a permanent and federally enforceable smoke management plan with a periodic assessment.

In New Jersey’s Regional Haze SIP, Section 4.6.7.4 addresses agricultural and forestry smoke management.[33] However, there is no periodic assessment, so this assessment is not applicable for New Jersey.

[33] final_rh_2025_progress_report_requirements_document_7-30-2024.pdf

Chapter 7 DETERMINATION OF ADEQUACY OF THE EXISTING PLAN

RHR Paragraph 51.308(h) requires the state to take one of the following actions:

- The state may declare that no further revision of the existing plan is needed at this time. This is commonly referred to as a "negative declaration".
- If the plan is or may be inadequate to ensure reasonable progress due to emissions from another state, or states, which participated in a regional planning process, the state must notify EPA and the applicable state(s). The state must collaborate with the state(s) through the regional planning process to develop additional strategies for addressing the plan's deficiencies.
- If the plan is or may be inadequate to ensure reasonable progress due to emissions from another country, the state must notify the EPA and provide any available relevant information.
- If the plan is or may be inadequate to ensure reasonable progress due to emissions from within the state, then that state must revise its plan within one year to address the deficiencies.

Based on the information and data presented in this progress report, New Jersey declares that no further revision of the existing plan is needed at this time.

Chapter 8 FLM COORDINATION AND PUBLIC COMMENT

Per RHR paragraph 51.308(i), the opportunity for Federal Land Manager (FLM) consultation on a progress report must be provided no less than 60 days prior to the public hearing or public comment opportunity on the progress report. The consultation must include the opportunity for the FLM to discuss their:

i. Assessment of visibility impairment in the Class I area
ii. Recommendations on the development and implementation of strategies to address visibility impairment

Prior to the public comment period, New Jersey consulted with the US Fish and Wildlife Service, US Forest Service, and US National Park Service. Table 8-1 below provides a summary of the specific consultation activities that were held. New Jersey received minor editorial and clarification comments from US Forest Service and US National Park Service and incorporated the suggested edits into the document.

Per RHR 51.308(g), progress reports must be made available for public inspection and comment for at least 30 days prior to submission to USEPA and all comments received from the public must be submitted to USEPA along with the subsequent progress report, and an explanation of any changes to the progress report made in response to these comments. This progress report is not a SIP revision and a public hearing was not required. The public comment period was open for 30 days, beginning on May 21, 2025 and concluded on June 20, 2025. No public comments were received. Documentation of the FLM review and public comment period are provided in Attachment B.

Table 8-1: Summary of New Jersey's Consultation with the FLM

Date	Summary of Activity
March 18, 2025	Draft copy of New Jersey's second round progress report shared with US Fish and Wildlife Service, US Forest Service, and US National Park Service
May 18, 2025	FLM review ends

Chapter 9 SUMMARY AND CONCLUSIONS

As described above in Chapter 7, New Jersey declares that no further revision of its second planning period regional haze SIP is required at this time. The status of implemented measures, as described in Chapter 1, are such that New Jersey's Class I area (Brigantine Wilderness Area) and Class I areas affected by New Jersey's emissions will continue to make reasonable progress towards the ultimate RHR goal of natural visibility conditions by 2064. This is evidenced by the improvements in visibility described in Chapter 3 and Attachment A and further evidenced by the emissions reductions outlined in Chapter 4 and 5. New Jersey made a robust assessment of its current plan elements and strategies (Chapter 6), consulted with the affected FLM, and made this progress report available for public review and comment (Chapter 8 and Attachment B). Based on this information, and the data provided throughout this document and its attachments, New Jersey affirms that this progress report satisfies the requirements of RHR 40 CFR 51.308(g), (h), and (i).