Proposed

Delaware Second Limited Maintenance Plan Under the 2006 24-hr $PM_{2.5}$ National Ambient Air Quality Standard

State Implementation Plan

For the New Castle County Portion of the

Philadelphia-Wilmington, PA-NJ-DE Nonattainment Area for Fine Particles

Submitted To
U.S Environmental Protection Agency

By
Delaware Department of Natural Resources and Environmental Control

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Acronym List

AQ	-	Air Quality
CAA	-	Federal Clean Air Act
CDV	-	Critical Design Value
CFR	-	Code of Federal Regulations (of the United States)
AQ	-	DNREC Division of Air Quality
DelDOT	-	Delaware Department of Transportation
DNREC	-	Delaware Department of Natural Resources and Environmental Control
EGU	-	Electric Generating Unit
EPA	-	United States Environmental Protection Agency
FHWA	-	Federal Highway Administration
FR	-	United States Federal Register
FRM	-	Federal Reference Method
FTA	-	Federal Transit Authority
LMP	-	Limited Maintenance Plan
LRTP	-	Long Range Transportation Plan
MAR	-	Marine vessels, aircraft and locomotive
MLK	-	Martin Luther King Blvd. monitor in Wilmington, Delaware
MOVES	-	Motor Vehicle Emission Simulator
MPO	-	Metropolitan Planning Organization
MVEB	-	Motor Vehicle Emission Budget
NAA	-	Non-Attainment Area
NAAQS	-	National Ambient Air Quality Standard
NOx	-	Oxides of Nitrogen
$PM_{2.5}$	-	Particulate Matter with an aerodynamic diameter of 2.5 microns or less
SIP	-	State Implementation Plan
SAFETEA-LU	-	Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for Users
SO_2	-	Sulfur Dioxide
TIP	-	Transportation Improvement Program
tpy	-	Tons per Year
USC	-	United States Code
VMT	-	Vehicle Miles Traveled
WILMAPCO	-	Wilmington Area Planning Council

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1 Introduction

This second 10-year Maintenance Plan is a State Implementation Plan (SIP) revision for the Delaware portion[1] of the Philadelphia-Wilmington, PA-NJ-DE fine particulate matter ($PM_{2.5}$) nonattainment area (Philadelphia NAA).

Delaware is requesting that Environmental Protection Agency (EPA) approve, as a revision to the Delaware SIP, the Section 175A maintenance plan. This maintenance plan ensures that good $PM_{2.5}$ air quality will be maintained through 2035. This plan contains contingency measures that will be implemented in the unlikely event that the area experiences an exceedance of the 2006 24-hr $PM_{2.5}$ National Ambient Air Quality Standards (NAAQS) of 35 micrograms per cubic meter ($\mu g/m^3$).

1.1 Philadelphia-Wilmington, PA-NJ-DE Nonattainment Area Designation

Following promulgation of a new or revised NAAQS, EPA is required by the Clean Air Act (CAA) to designate areas throughout the United States as attaining or not attaining the NAAQS; this designation process is described in Section 107(d)(1) of the CAA. On October 17, 2006, EPA promulgated a 24-hour standard of 35 $\mu g/m^3$ based on a 3-year average of the 98th percentile of 24-hour concentrations (71 FR 61144)[2], also known as the 2006 24-hr NAAQS.

On November 13, 2009, EPA published the area designations for the 2006 24-hour NAAQS (74 FR 58687)[3]. That action, effective on December 14, 2009, designated the Philadelphia Area as nonattainment for the 2006 24-hour NAAQS, based on 2006-2008 monitoring data. The Philadelphia Area includes New Castle County in Delaware; Burlington, Camden, and Gloucester Counties in New Jersey; and Bucks, Chester, Delaware, Montgomery, and Philadelphia Counties in Pennsylvania (see Figure 1-1).

[1] Pennsylvania and New Jersey Departments of Environmental Protection are responsible for developing similar plans for their portion of the Philadelphia NAA.

[2] National Ambient Air Quality Standards for Particulate Matter; EPA Final rule. 71 FR 61144. October 17, 2006. https://www3.epa.gov/ttnamti1/files/ambient/pm25/pt5006.pdf.

[3] Air Quality Designations for the 2006 24-Hour Fine Particle ($PM_{2.5}$) National Ambient Air Quality Standards. EPA Final Rule. 74 FR 58687. November 13, 2009. https://www.govinfo.gov/content/pkg/FR-2009-11-13/pdf/E9-25711.pdf.

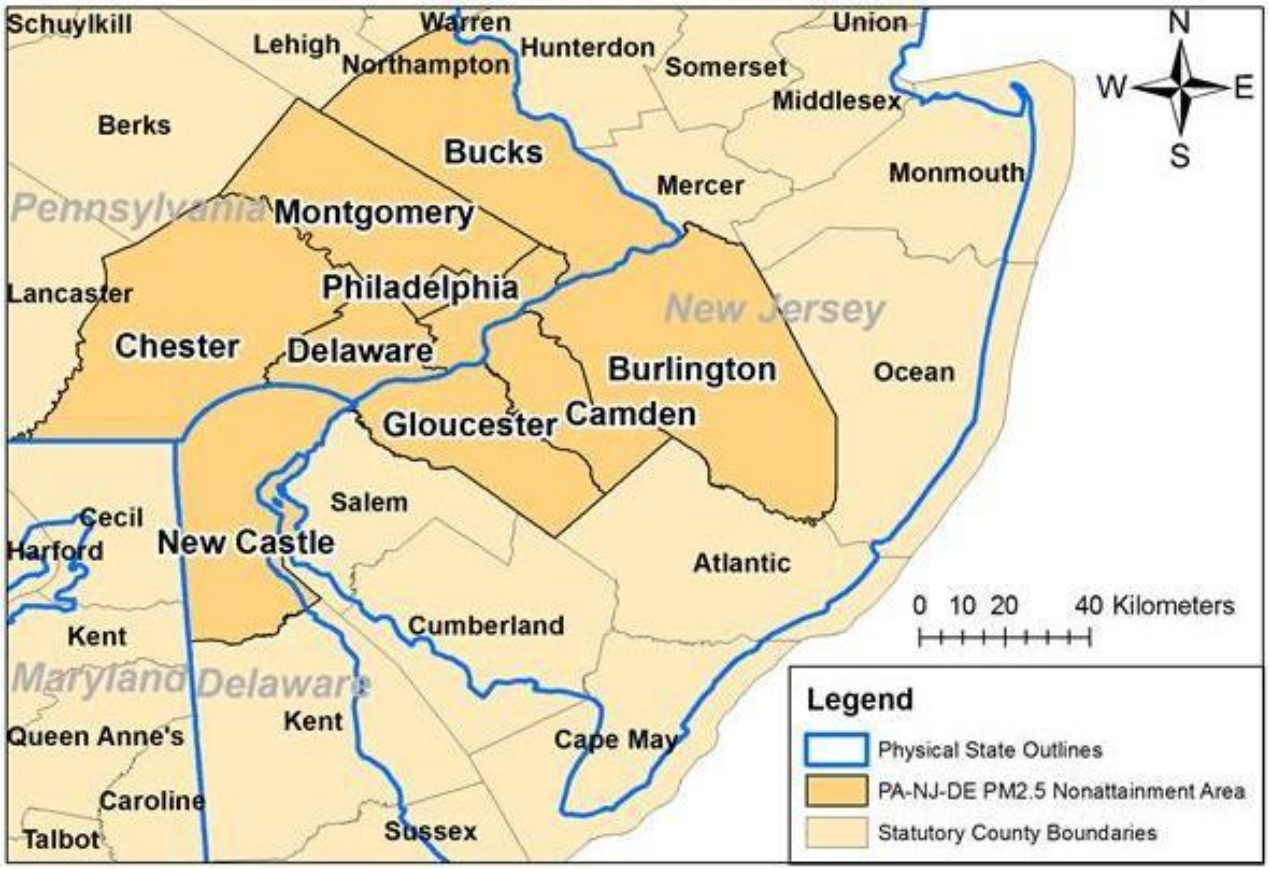

Figure 1-1 Philadelphia Nonattainment Area Boundaries - 2006 24-hr $PM_{2.5}$ NAAQS

Initially, EPA did not assign classifications for $PM_{2.5}$ for the 2006 24-hour NAAQS (e.g. marginal, moderate, etc.). Subsequently, on January 4, 2013, the Court of Appeals for the District of Columbia remanded the EPA's implementation rule as a result of Natural Resources Defense Council v. EPA, 706 F.3d 428 (D.C. Cir. 2013) [4], regarding the failure of EPA to assign classifications for $PM_{2.5}$ for the 2006 24-hour NAAQS. The Court concluded that the EPA had improperly based the 2007 implementation rule for the 2006 24-hour $PM_{2.5}$ NAAQS solely upon the requirements of part D, subpart 1 of the Clean Air Act, and had failed to address the requirements of part D, subpart 4. In response to the court decision, EPA subsequently assigned classifications to the applicable areas. On April 25, 2014, EPA finalized a rule identifying the classification of all $PM_{2.5}$ areas currently designated nonattainment for the 2006 24-hour $PM_{2.5}$ NAAQS as ‘‘Moderate,’’[5].

[4] Natural Resources Defense Council (NRDC) v. EPA, the D.C. Circuit remanded to EPA the “Final Clean Air Fine Particle Implementation Rule" (72 FR 20586, April 25, 2007) and the “Implementation of the New Source Review (NSR) Program for Particulate Matter Less than 2.5 Micrometers ($PM_{2.5}$)" final rule (73 FR 28321, May 16, 2008) (collectively, “1997 $PM_{2.5}$ Implementation Rule"). 706 F.3d 428 (D.C. Cir. 2013).

[5] Identification of Nonattainment Classification and Deadlines for Submission of State Implementation Plan (SIP) Provisions for the 1997 Fine Particle ($PM_{2.5}$) National Ambient Air Quality Standard (NAAQS) and 2006 $PM_{2.5}$

1.2 EPA Redesignation

On November 27, 2012, the State of Delaware submitted the first 10-year plan for the Philadelphia-Wilmington, PA-NJ-DE nonattainment area through 2025 and requested that EPA redesignate the moderate area to attainment for the 2006 24-hr $PM_{2.5}$ NAAQS. On August 5, 2014, the EPA approved the Maintenance Plan and concurrently redesignated the area to attainment for the $PM_{2.5}$ NAAQS, effective September 4, 2014 (79 FR 45350) [6].

Section 175A of the CAA requires maintenance plans to include control measures to ensure maintenance. It also requires maintenance plans to have contingency provisions, to assure that the State will promptly correct any violation of the standard which occurs after the redesignation of the area as an attainment area. The control measures and contingency measures from the First Maintenance Plan are still in place, as required by CAA 175A. These contingency measures are located in Section 2.5.1 of the first maintenance plan. Revisions to the approved maintenance plan can only be made if the revisions meet the requirements of CAA section 110(l) – anti-backsliding[7].

1.3 Historical Sources of $PM_{2.5}$

To develop strategies to reduce $PM_{2.5}$ emissions within the Philadelphia NAA, in 2005, Delaware commissioned Clarkson University to complete an analysis of $PM_{2.5}$ speciation: *Analysis of Speciation Trends Network Data Measured at the State of Delaware* (January 2005) (Appendix A). The objectives of this study were to identify $PM_{2.5}$ sources and estimate their contributions to $PM_{2.5}$ mass concentrations by analysis of the data measured at the EPA Speciation Trends Networks sites in the State of Delaware (Wilmington and Dover).

Based upon receptor modeling for Delaware's rural and urban Speciated Trends Network monitors, the study found that secondary sulfate, secondary nitrate and gasoline vehicles were the most significant source of $PM_{2.5}$ for Delaware (Table 1-1 and Table 1-2) (Excerpts from Appendix A; Tables 6 and 7).

NAAQS. EPA Final Rule. June 2, 2014. https://www.govinfo.gov/content/pkg/FR-2014-06-02/pdf/2014-10395.pdf#page=2.

[6] Approval and Promulgation of Air Quality Implementation Plans; Delaware; Redesignation Requests, Associated Maintenance Plans, and Motor Vehicle Emissions Budgets for the Delaware Portion of the Philadelphia-Wilmington, PA–NJ–DE Nonattainment Area for the 1997 Annual and 2006 24-Hour Fine Particulate Matter Standards, and the 2007 Comprehensive Emissions Inventory for the 2006 24-Hour Fine Particulate Matter Standard. EPA Final Rule. 79 FR 45350.August 5,2014. https://www.govinfo.gov/content/pkg/FR-2014-08-05/pdf/2014-18205.pdf#page=1.

[7] Fine Particulate Matter National Ambient Air Quality Standards: State Implementation Plan Requirements. EPA Final Rule. 81 FR 58010. August 24, 2016. https://www.govinfo.gov/content/pkg/FR-2016-08-24/pdf/2016-18768.pdf.

Table 1-1 Average source contributions to $PM_{2.5}$ mass concentration at Wilmington, DE

Sources	Average source contribution (standard error)	
	Mass concentration (µg/m^3)	Percentile (%)
Secondary sulfate	6.97 (0.72)	37.9 (3.9)
Secondary nitrate	3.12 (0.28)	17.0 (1.5)
Gasoline vehicle	2.18 (0.17)	11.9 (0.9)
Oil combustion	1.52 (0.11)	8.3 (0.6)
Railroad	1.10 (0.08)	6.0 (0.4)
Airborne soil	1.09 (0.11)	6.0 (0.5)
Aged sea salt	1.03 (0.11)	5.6 (0.6)
Bus depot	0.79 (0.09)	4.3 (0.5)
Diesel emissions	0.57 (0.06)	3.1 (0.3)

Table 1-2 Average source contributions to $PM_{2.5}$ mass concentrations at Dover, DE

Sources	Average source contribution (standard error)	
	Mass concentration (µg/m^3)	Percentile (%)
Secondary sulfate	7.50 (1.45)	49.6 (9.6)
Gasoline vehicle	2.38 (0.35)	15.8 (2.3)
Secondary nitrate	1.50 (0.30)	9.9 (2.0)
Aged sea salt	1.44 (0.27)	9.5 (1.8)
Diesel emissions	1.19 (0.20)	7.9 (1.3)
Airborne soil	1.11 (0.21)	7.3 (1.4)

2 Philadelphia NAA $PM_{2.5}$ Limited Maintenance Plan

Under the provisions in the CAA Section 175A (United States Code (USC) Title 42 Section 7505(b), States are required to submit a revision to the first 10-year Maintenance Plan 8 years after the EPA approves the original re-designation. The state of Delaware submitted its first 10-year maintenance plan on November 27, 2012.

Section 107(d)(3)(E) of the CAA requires a maintenance plan to meet the requirements of Section 175A. States must submit a SIP revision eight years after the original redesignation request is approved to provide for maintenance of the NAAQS for an additional 10 years following the first 10-year period.

The maintenance plan constitutes a SIP revision and must provide for maintenance of the relevant NAAQS in the area for at least 10 years after redesignation, including contingency measures to ensure prompt correction of any violation of the NAAQS. Section 175A further states that the plan shall contain such additional measures, if any, as may be necessary to ensure such maintenance. Mobile vehicle emission budgets for transportation conformity purposes are also established within the maintenance plans.

Delaware's second Maintenance Plan was due September 4, 2022, eight years after the area was redesignated attainment for the 2006 24-hr $PM_{2.5}$ NAAQS. Initially, Delaware planned to submit its second plan using a Limited Maintenance Plan (LMP) guidance developed for PM_{10}, per EPA's recommendation. On April 12, 2022, in a monthly consultation call, EPA Region 3 staff informed Delaware of a hold on the submittal of all $PM_{2.5}$ LMPs, because EPA intended to develop an LMP guidance specific to $PM_{2.5}$.

On October 27, 2022, the EPA released *Guidance on the Limited Maintenance Plan Option for Moderate $PM_{2.5}$ Nonattainment Areas and $PM_{2.5}$ Maintenance Areas* (Appendix B) ($PM_{2.5}$ LMP Guidance)[8]. The $PM2_{.5}$ LMP Guidance applies the EPA's 2001 *Limited Maintenance Plan Option for Moderate PM_{10} Nonattainment Areas Guidance*[9] (PM_{10} LMP Guidance) for $PM_{2.5}$ LMP submissions.

[8] Guidance on the Limited Maintenance Plan Option for moderate $PM_{2.5}$ Nonattainment Areas and $PM_{2.5}$ Maintenance Areas. EPA. October 27, 2022. https://www.epa.gov/system/files/documents/2022-10/420b22044.pdf.

[9] Limited Maintenance Plan Option for Moderate PM_{10} Nonattainment Areas Guidance. EPA. August 9, 2001. https://www.epa.gov/state-and-local-transportation/2001-limited-maintenance-plan-moderate-pm10-and-attachment.

The PM_{10} LMP Guidance gave States with low design values[10] and limited growth[11] in on-road motor vehicle PM_{10} emissions, the option of submitting a Limited Maintenance Plan. See Section 2.4 of this document for Delaware's design value and motor vehicle growth analyses. These plans are more streamlined than would ordinarily be allowed; for example, states are not required to submit a future year emissions inventory and is based on an analysis of current and historical air quality data, rather than modeling or emissions projections.

This maintenance plan has been developed according to the EPA's October 27, 2022 $PM_{2.5}$ LMP Guidance, applicable provisions of the CAA, additional guidance received from EPA's Region 3 Office of Air Program Planning, and the requirements of Section 175A of the CAA.

This maintenance plan addresses the following elements:

- attainment inventory,
- maintenance demonstration,
- control plan,
- monitoring network,
- verification of continued attainment, and
- contingency plan.

2.1 Attainment Inventory

The State of Delaware must develop an attainment year emissions inventory to identify the level of emissions sufficient to achieve the NAAQS. This inventory should be consistent with EPA's most recent guidance on emission inventories for nonattainment areas available at the time and should include emissions during the time period associated with the monitoring data showing attainment of the 2006 $PM_{2.5}$ NAAQS. Where a state has made an adequate demonstration that air quality has improved as a result of their SIP, the attainment inventory will generally be the actual inventory during the time period the area attained the standard. The inventory should be based on emissions of SO_2, NO_X, and primary $PM_{2.5}$ in units of tons per year (tpy) during the attainment year. Delaware selected 2008 as the Attainment Year Inventory for its first 2006 24-hr $PM_{2.5}$ NAAQS maintenance plan, as detailed below in Section 2.2.

[10] EPA's PM_{10} Limited Maintenance Plan Guidance defines "low design values" as average design values that fell below 98 g/m^3 for the 24-hr PM10 NAAQS and 40 g/m^3 for the annual PM_{10} NAAQS.

[11] EPA's PM_{10} Limited Maintenance Plan Guidance defines "limited growth" as passing a motor vehicle regional emissions analysis demonstration (MVA demonstration). The MVA demonstration determines whether increased emissions from on-road mobile sources could increase concentrations in the area and threaten the assumption of maintenance that underlies the LMP policy. The analysis is detailed in Attachment B of the Guidance.

2.2 2008 Attainment Year Inventory

Delaware's Redesignation Request and first 10-year Maintenance Plan included a comprehensive emissions "attainment" inventory for New Castle County (which represents Delaware's portion of the Philadelphia NAA), including point, area, and on-road and off-road mobile sources for primary $PM_{2.5}$ as well as precursors of $PM_{2.5}$ (NOx and SO_2) for the year 2008. EPA guidance[12] requires the "attainment year" fall within the 3-year period (2008-2010) which demonstrates monitored attainment.

On October 2, 2012, Delaware submitted to EPA a 2008 inventory of $PM_{2.5}$, SO_2, and NOx for New Castle County for all sources including the following four major source sectors:

- Point:
  Includes emissions estimates for larger sources that are located at a fixed, stationary location. Point sources in the National Emissions Inventory (NEI) include large industrial facilities and electric power plants, and smaller industrial, non-industrial and commercial facilities. The emissions potential of each facility determines whether that facility should be reported as a point source, according to emissions thresholds set in the Air Emissions Reporting Rule (AERR).

- Non-point:
  Includes emissions estimates for sources which individually are too small in magnitude to report as point sources. Examples include residential heating, commercial combustion, asphalt paving, and commercial and consumer solvent use.

- On-road:
  Includes emissions from on-road vehicles that use gasoline, diesel, and other fuels. These sources include light duty and heavy duty vehicle emissions from operation on roads, highway ramps, and during idling.

- Non-road:
  Includes non-road mobile sources that use gasoline, diesel, and other fuels. Non-Road mobile sources represent a large and diverse set of off-road vehicles and non-stationary equipment.

[12] Implementation Guidance for the 2006 24-Hour Fine Particulate ($PM_{2.5}$) National Ambient Air Quality Standards (NAAQS). EPA. Memorandum to EPA regional directors. March 2, 2012. https://www3.epa.gov/ttn/naaqs/aqmguide/collection/cp2/20120302_page_implement_guidance_2006-24-hr_pm2.5_naaqs.pdf. Subsequently, in a June 6, 2013, memorandum, EPA withdrew the guidance in response to the January 4, 2013, U.S. Court of Appeals for the District of Columbia Circuit decision that EPA incorrectly interpreted the CAA with respect to statutory requirements for the implementation of the 1997 $PM_{2.5}$.

The inventory was based on actual activity levels and was developed in-house by Delaware's Inventory Program staff. Point source information was collected from Delaware industrial, commercial and institutional sources. Details of the 2008 emissions inventory can be found in "*2008 Attainment Year State Implementation Plan Emissions Inventory for $PM_{2.5}$, SO_2, and NO_x"* (Appendix C).

Non-point (area) source emissions were calculated using the most recently available methodologies and emissions factors from EPA along with activity data (typically population, employment, fuel use, etc.) specific to 2008. On-road mobile source emissions were calculated using EPA's Motor Vehicle Emission Simulator (MOVES) 2010a model with 2008 vehicle miles traveled (VMT) data provided by the Delaware Department of Transportation (DelDOT). Off-road mobile source exhaust emissions, such as those from lawn and garden equipment, agricultural equipment, and construction equipment were calculated for 2008 using the EPA's NONROAD emissions model. Emissions sources such as commercial marine vessels, aircraft and locomotives (MAR) are not modeled by NONROAD and thus were calculated separately. Table 2-1 summarizes the 2008 emissions estimates for New Castle County.

Table 2-1 2008 New Castle County Emissions (tpy)

2008			
Sector	**NOx**	**$PM_{2.5}$**	**SO_2**
Point	5,657	1,109	10,576
Non-point	1,287	1,191	402
On-road	9,311	282	94
Non-road	4,317	312	1,067
All Sectors	20,572	2,894	12,139

Note: Sum of emissions may not match the total due to independent rounding.

2.3 2017 Emissions Inventory

Delaware has developed emission inventories that meet the criterion of CAA 182(a)(1) and 172(c)(3) every three years since 1990. Delaware's latest comprehensive, accurate inventory of actual emissions from all sources of NO_X, $PM_{2.5}$ and SO_2 in the calendar year 2017.

Table 2-2 shows a summary of the 2008 "attainment year" emissions inventory and the Delaware's 2017 emissions inventory by source category, as well as the percentage decrease/increase in emissions.

Table 2-2 New Castle County Emission Inventories for 2008 Compared to 2017

Source	2008 Annual (tpy)			2017 Annual (tpy)			Percent Decrease/Increase		
Sector	**NOx**	**$PM_{2.5}$**	**SO2**	**NOx**	**$PM_{2.5}$**	**SO2**	**NOx**	**$PM_{2.5}$**	**SO2**
Point	5,657	1,109	10,576	2,582	566	551	-54%	-49%	-95%
Nonpoint	1,287	1,191	402	1,443	1,500	41	+12%	+26%	-90%
Nonroad	9,311	282	94	3,074	162	44	-67%	-43%	-53%
Onroad	4,317	312	1,067	5,136	150	23	+19%	-52%	-98%
All Sectors	20,572	2,894	12,139	12,235	2,378	659	-41%	-18%	-95%

Note: Sum of emissions may not match the total due to independent rounding

2.4 Maintenance Demonstration

As stated earlier in this document Delaware is following the October 27, 2022 guidance, *Limited Maintenance Plan Option for Moderate $PM_{2.5}$ Nonattainment Areas.* The EPA developed this guidance for areas that have been meeting the $PM_{2.5}$ NAAQS for 5 years or more, have a 'moderate' designation, and have already been redesignated to attainment and are submitting a second maintenance plan under the CAA section 175A(b) and if air quality concentrations in the area have been relatively stable during the first 10-year maintenance period, indicating that emissions growth is unlikely. This policy was designed to allow both the states and the EPA to timely redesignate areas that are at little risk of $PM_{2.5}$ violations. Delaware submitted its redesignation request and maintenance plan on November 27, 2012. Subsequently, Delaware was redesignated attainment on September 4, 2014. As described in Section 2.3 of this maintenance plan, Delaware's emissions have remained well below the 2006 24-hr $PM_{2.5}$ NAAQS.

2.4.1 $PM_{2.5}$ LMP Criteria

To qualify for the limited maintenance plan option, an area has to meet the following general applicability criteria:

1) Design values are below the identified threshold level and
2) Future growth in the area does not exceed the motor vehicle regional emissions analysis test requirements.

EPA $PM_{2.5}$ guidance allows NAAs to follow a LMP if their average design values (ADV) for each site in the area, are below the identified threshold level or below the critical design value (CDV) for New Castle County and the area also can demonstrate limited growth in on-road motor vehicle emissions (including fugitive dust) and pass a motor vehicle regional emissions analysis test (See Subsection 2.4.4, Table 2-6).

Subsections 2.4.2 -2.4.4 below demonstrate that the local $PM_{2.5}$ design values are below the New Castle County CDV (Subsection 2.4.3) and that future growth in the area does not exceed the motor vehicle regional emissions analysis test requirements (Subsection 2.4.4).

2.4.2 Annual Design Values

The local annual design values for New Castle County are based on averaging five consecutive 3-year averages of monitoring data from 2014 to 2020. To qualify for a LMP the design value must be below the CDV. Delaware has provided data for five consecutive 3-year averages to further demonstrate compliance (Table 2-3). Using the monitored values, local design values have been calculated for New Castle County, which is a statistic that describes the air quality relative to the level of the NAAQS. The design value is calculated over the most recent five consecutive 3-year intervals for the 2006 24-hour NAAQS[13]. The 5-year average design value from 2014-2020 for each New Castle $PM_{2.5}$ monitor are shown in in Table 2-4.

Table 2-3 Delaware's $PM_{2.5}$ 24-hr NAAQS 3-year Average Monitoring Results (µg/m^3) for New Castle County from the Past 5 Years

3 Year Average	Bellefonte I	MLK	RT 9	Newark	Lums Pond
2014-2016	22*	23	23*	23	19*
2015-2017	21*	21	18*	22*	18*
2016-2018	18*	19	16*	18*	16*
2017-2019	19	20	17	19*	18
2018-2020	17*	19	17	17*	17

* Fails to meet $PM_{2.5}$- design value data completeness rules[14].

Table 2-4 Delaware's $PM_{2.5}$ 24-hr NAAQS Averages (ug/m^3) for New Castle County Monitoring Sites (2014-2020)

Bellefonte I	MLK	RT 9	Newark	Lums Pond
19	20	18	20	18

Table 2-5 shows the technical and operational issues that contributed to downtime of PM monitors within a given year, for 2014-2020. If a monitor does not meet the completeness requirement for a given year, it will affected the "design value completeness" for a number of three-year periods. Manual $PM_{2.5}$ samplers were shut down in Delaware from March 1-July 1, 2020, because of COVID restrictions/issues.

[13] "2018-2020" design values were the most recent design values available at the time Delaware was developing the 2006 24-hr $PM_{2.5}$ LMP.

[14] In accordance with 40 CFR Part 50, Appendix A, each quarter of a three-year period must be > 75% complete for the entire three-year Design Value to be considered > 75% complete.

In addition, Delaware is in the process of transitioning from manual to continuous monitors, which is expected to reduce monitor downtime due to technical/mechanical issues. The MLK monitoring station was able to meet EPA's $PM_{2.5}$ design value data completeness rules for 2014-2020, because the EPA rules allows the collocated FEM to fill in when the primary monitor is down. Data from these monitors are measured using EPA approved either the federal reference methods (FRM or the federal equivalent methods (FEM).

Table 2-5 Delaware's $PM_{2.5}$ 24-hr NAAQS Monitor Downtime Issues from 2014-2020

Year	Bellefonte I	MLK	RT 9	Newark	Lums Pond
2014	Malfunction/Improper Cyclone	–	–	–	–
2015	–	–	Down for Repairs	–	–
2016	Weighing Lab Issue	–	Down for Repairs	–	Weighing Lab Issue
2017	–	–	–	Down for Repairs	–
2018	–	–	–	–	–
2019	–	–	–	–	–
2020	COVID	–	–	COVID	–

2.4.3 Critical Design Value

As described above, the EPA has given states the option to use the New Castle County CDV as an indication of the "likelihood of future violations of the NAAQS given the current average design value and its variability" and applies it to areas that have a minimum of five years of valid data. The State of Delaware utilizes monitoring data to calculate the CDV. The process for developing a CDV is outlined in the $PM_{2.5}$ LMP Guidance (Appendix B).

The equation to calculate a CDV is as follows:

CDV = NAAQS/(1+tc*CV)

Where:

CDV	=	Critical Design Value
NAAQS	=	National Ambient Air Quality Standard
tc	=	Critical t-value corresponding to a probability of exceeding the NAAQS in the future and the degree of freedom in the estimate of the coefficient of variation.
CV	=	Coefficient of variation (CV) of the annual design value, calculated as the ratio of the standard deviation and average design values in the past.

Delaware has provided at least five years of data for calculating the critical design value, as required by the EPA. Delaware's data includes the years 2014 through 2020, which represents five 3-year periods of design 3-5 values, beginning with the 2014-2016 design value and ending with the 2018-2020 design value (Table 2-3). The design value for each three-year period was calculated by averaging the three annual average values for the periods.

The CDV is calculated, as detailed below, as the standard deviation of the five design values divided by the average of the five design values. The critical t-value was derived by assuming a one-tailed distribution with a tolerable risk factor of 10 percent probability of a NAAQS violation, which matches the method used by EPA to demonstrate a CDV.

Calculated CDV

CDV = NAAQS/1+(tc*CV)

CDV = 35 µg/m^3/1+(1.533*0.1023) = 30.3 µg/m^{3*}

* rounded to one decimal place, per EPA LMP Guidance

The parameter values used for the above calculations are as follows:

NAAQS	= 35 µg/m^3
tc	= 1.5333
Standard deviation of design values (2014-2020)	= 1.95 µg/m^3
Average of design values (2014-2020)	= 19 µg/m^3
Coefficient of Variation [CV= StDev/Average]	= 0.1023

The average of design value of 19.00 µg/m^3 is based on monitored data from 2014 through 2020 for New Castle County, as shown in Table 2-4, is below the calculated CDV of 30.3 µg/m^3 for Delaware. Therefore, Delaware has met the first criteria to qualify for an LMP.

2.4.4 Motor Vehicle Analysis

To qualify for the LMP option, an area must expect only limited growth in on-road motor vehicle $PM_{2.5}$ emissions (including fugitive dust). This is accomplished by demonstrating that the motor vehicle growth value is below the CDV for the area[15]. When adjusted for future on-road mobile emissions, New Castle County passes a motor vehicle emissions analysis test with design values of 19.00 $\mu g/m^3$ for the annual analysis. These results are less than the CDV of 30.3μ/m^3 used as the margin of safety in the LMP guidance for the annual NAAQS.

The motor vehicle analysis equation for New Castle County is:

$$DV + (VMTpi * DVmv) \leq MOS$$

Where:

DV = 5-year $PM_{2.5}$ average annual design value (Five 3-year averages spanning 2014-2020), ($\mu g/m^3$)

VMT_{pi} = Projected increase in vehicle miles traveled (VMT) over the 10-year maintenance period (2025-2035), (%)

DV_{mv} = Product of the design value and the fraction of the inventory represented by on-road mobile sources in the attainment year ($\mu g/m^3$); and

MOS = Margin of safety for $PM_{2.5}$. In agreement with EPA Region 3, Delaware is using the CDV for New Castle County = 30.3 $\mu g/m^3$ for the MOS, as calculated above.

Delaware is using 2017 Emissions Inventory data, the year for which the most recent New Castle NAA emissions inventory was prepared[16]. The projected VMTpi for the ten-year Maintenance Period (2017-2035), is based on VMT data provided by the Delaware Department of Transportation from 2014 through 2018 and projected to 2035 by the Delaware Division of Air Quality using EPA's Motor Vehicle Emission Simulator (MOVES), version 3.0. The inputs to the model runs are shown below in Table 2-6.

Table 2-6 – MOVES Model Run Inputs for VMT Projection

Model Version	MOVES 3.0
Scale Type	National Scale Model
Pollutants	$PM_{2.5}$ – all sources
VMT Year	2017

[15] Ibid. 8

[16] The 2017 Emissions Inventory was the most recent inventory available at the time Delaware was developing the 2006 24-hr $PM_{2.5}$ LMP.

The annual $PM_{2.5}$ design values were derived from the $PM_{2.5}$ monitoring data collected for New Castle County. Details of the calculations are shown below in Table 2-7. The parameter values used for the calculations are as follows:

Calculated MVA

$MVA = [DV + (VMTpi * DVmv)]$ ($\mu g/m^3$)

MVA = 19.00 $\mu g/m^3$+(0.065*6.60) = 19.43 $\mu g/m^3$

Table 2-7 – Regional Motor Vehicle Analysis (MVA) Parameters

Parameter	Annual
DV ($\mu g/m^3$)	19.00
VMT_{pi} (2025-2035)	0.065
% of the 2017 Inventory from on-road mobile sources	35%
DV_{mv} ($\mu g/m^3$)	6.60

To qualify for an LMP, the MVA must be less than the CDV. As shown, the calculated motor vehicle analysis value for New Castle County **(19.43 $\mu g/m^3$)** is less than the CDV or MOS of **30.3 $\mu g/m^3$**. Therefore, the area passes the motor vehicle analysis.

2.4.5 LMP Criteria Summary

Since local design values and motor vehicle analysis values are both below the CDV, as shown in Table 2-8, New Castle County qualifies for the LMP option from these analyses by following the pathway established in the $PM_{2.5}$ LMP Guidance.

Table 2-8 – LMP Parameter Comparisons

Parameter	Value ($\mu g/m^3$)
Local Design Value - DV	19.00
Motor Vehicle Analysis - MVA	19.43
Critical Design Value	30.3

Consistent with the $PM_{2.5}$ LMP Guidance, Delaware will periodically progress tracking by recalculating the ADV (average of 5 consecutive 3-year design values) for all the sites with complete data in the area when monitoring data for a given calendar year has been validated, to determine if the ADV is still less than the CDV for each site. If the Division of Air Quality determines that the local design value is not less than the CDV for all sites, it will work with EPA Regional staff to identify approaches to address the air quality trend and prevent a violation of the NAAQS.

2.5 Control Measures for Maintenance of Good Air Quality

The sections below describe the four major source control measures, for NOx, $PM_{2.5}$ and SO_2. EPA has approved these measures into the Delaware SIP. The State of Delaware commits to the continuation of these measures, to include compliance and enforcement mechanisms as appropriate to ensure reductions.

2.5.1 Delaware-specific NOx, $PM_{2.5}$ or SO_2 Control Measures for Point Sources

- 7 **DE Admin. Code** 1146, EGUs, *Electric Generating Unit (EGU) Multi-Pollutant Regulation*, SO_2 and NO_X emission control; *State-wide*; amendments effective September 11, 2008; approved into Delaware's SIP on August 11, 2010 (75 FR 48566)[17].

- 7 **DE Admin. Code** 1142, Section 2, *Control of NO_X Emissions from Industrial Boilers and Process Heaters at Petroleum Refineries*, NO_X emission control; *Delaware City Refinery, New Castle County*; amendments effective April 11, 2011; approved into Delaware's SIP May 15, 2012 (77 FR 28489)[18].

- 7 **DE Admin. Code** 1148, *Control of Stationary Combustion Turbine Electric Generating Unit Emissions*, NOx emission control; *State-wide*; amendments effective September 11, 2008; approved into Delaware's SIP on and August 11, 2010 (75 FR 48566)[19].

- 7 **DE Admin. Code** 1108, *Sulfur Dioxide Emissions from Fuel Burning Equipment*, SO_2 control; *State-wide*; amendments effective September 11, 2008; approved into Delaware's SIP on August 11, 2010 (75 FR 48566)[20].

- 7 **DE Admin. Code** 1144, *Control of Stationary Generator Emissions*, SO_2, PM, and NOx emission control; *State-wide;* amendments effective September 11, 2008; approved into Delaware's SIP on August 11, 2010 (75 FR 48566)[21].

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[17] Approval and Promulgation of Air Quality Implementation Plans; Delaware; Administrative and Non-Substantive Amendments to Existing Delaware SIP Regulations. EPA Final Rule. 75 FR 48566. August 8, 2010. https://www.govinfo.gov/content/pkg/FR-2010-08-11/pdf/2010-19571.pdf.

[18] Approval and Promulgation of Air Quality Implementation Plans; Delaware; Amendments to the Control of Nitrogen Oxides Emissions From Industrial Boilers and Process Heaters at Petroleum Refineries. EPA Final Rule. 77 FR 28489. May 15, 2012. https://www.govinfo.gov/content/pkg/FR-2012-05-15/pdf/2012-11656.pdf.

[19] Ibid. 17

[20] Ibid. 17

[21] Ibid. 17

2.5.2 Delaware-specific NOx, $PM_{2.5}$ or SO_2 Control Measures for Non-Point Sources

- 7 **DE Admin. Code** 1108, *Sulfur Dioxide Emissions from Fuel Burning Equipment*, SO_2 control; *State-wide*; amendments effective September 11, 2008; approved into Delaware's SIP on August 11, 2010 (75 FR 48566)[22].

- 7 **DE Admin. Code** 1144, *Control of Stationary Generator Emissions*, SO_2, PM, and NOx emission control; *State-wide;* amendments effective September 11, 2008; approved into Delaware's SIP on August 11, 2010 (75 FR 48566)[23].

2.5.3 Delaware-specific NOx, $PM_{2.5}$ or SO_2 Control Measures for On-road Sources

- 7 **DE Admin. Code** 1131, *Low Enhanced Inspection and Maintenance Program*, SO_2, PM, and NOx emission control; *State-wide*; amendments effective October 11, 2001; approved into Delaware's SIP on November 26, 2003 (68 FR 66343)[24].

- 7 **DE Admin. Code** 1132, *Transportation Conformity Regulation*, SO_2, PM, and NOx emission control; *State-wide;* amendments effective September 11, 2008; approved into Delaware's SIP August 11, 2010 (75 FR 48566)[25].

- 7 **DE Admin. Code** 1140, *Low Emission Vehicle Program*, SO_2, PM, and NOx emission control; *State-wide*; amendments effective December 11, 2013; approved into Delaware's SIP October 14, 2015 (80 FR 61752)[26].

- 7 **DE Admin. Code** 1145, *Excessive Idling of Heavy Duty Vehicles*, SO_2, PM, and NOx emission control; *State-wide*; amendments effective September 11, 2008; approved into Delaware's SIP on August 11, 2010 (75 FR 48566)[27].

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[22] Ibid. 17

[23] Ibid. 17

[24] Approval and Promulgation of Air Quality Implementation Plans; Delaware; Revisions to Delaware's Motor Vehicle Emissions Inspection Program and Low Enhanced Inspection and Maintenance Program. EPA Direct Final Rule. 68 FR 66343. November 26, 2003. https://www.govinfo.gov/content/pkg/FR-2003-11-26/pdf/03-29427.pdf.

[25] Ibid. 17

[26] Approval and Promulgation of Air Quality Implementation Plans; Delaware; Low Emission Vehicle Program. EPA Direct Final Rule. 80 FR 61752. October 14, 2015. https://www.govinfo.gov/content/pkg/FR-2015-10-14/pdf/2015-25954.pdf.Effective December 11, 2023, Delaware adopted the Advanced Clean Car II (ACC II) program, which aims to reduce pollution from light- and medium-duty vehicles. The regulatory amendments to 7 **DE Admin. Code** 1140 are pending submittal to EPA, to be included in Delaware's SIP.

[27] Ibid. 17

2.5.4 Delaware-specific NOx, $PM_{2.5}$ or SO_2 Control Measures for Non-road Sources

- 7 **DE Admin. Code** 1108, *Sulfur Dioxide Emissions from Fuel Burning Equipment*, SO_2, PM, and NOx emission control; *State-wide*; amendments effective September 11, 2008; approved into Delaware's SIP on August 11, 2010 (75 FR 48566)[28].

2.5.5 Controls to Remain in Effect

Delaware will maintain all the control measures listed in this Section to ensure maintenance of the 2006 24-hr $PM_{2.5}$ NAAQS. Revisions to the approved maintenance plan can only be made if the revisions meet the requirements of CAA section 110(l) – anti-backsliding [29]. Any revisions to the control measures included as part of the Maintenance Plan will be submitted as a SIP revision to EPA for approval, and will be accompanied by a showing that such changes will not interfere with maintenance of the NAAQS. Delaware has the necessary resources to enforce any violations of its regulations or permit provisions. Delaware will continue to enforce all statewide and facility specific regulations that relate to the emissions of primary $PM_{2.5}$ and precursors to secondary $PM_{2.5}$ which may impact New Castle County ambient $PM_{2.5}$ concentrations.

Although Delaware believes that control of organic compounds and ammonia may help improve PM air quality, we have not relied on the control of organics or ammonia for the purposes of this LMP, consistent with the $PM_{2.5}$ Implementation Rule. Estimated ammonia emissions in New Castle County from the 2017 NEI were relatively low, 832 TPY, as compared to other attainment inventory pollutants in 2017. For comparison, NOx emissions for New Castle County in 2017 were 12,235 TPY and for $PM_{2.5}$ 2,378 TPY (See Section 2.3, Table 2-2 in of this report). Therefore, Delaware's control measures related to the 2006 24-hr $PM_{2.5}$ NAAQS have been focused on NOx and $PM_{2.5}$ emission reductions.

[28] Ibid. 17

[29] Fine Particulate Matter National Ambient Air Quality Standards: State Implementation Plan Requirements. EPA Final Rule. 81 FR 58010. August 24, 2016. https://www.govinfo.gov/content/pkg/FR-2016-08-24/pdf/2016-18768.pdf.

2.6 Monitoring Network

Delaware began official $PM_{2.5}$ monitoring in 1999. Delaware's $PM_{2.5}$ network consists of eight (8) monitoring sites. There are five (5) sites in New Castle County, two (2) in Kent County and one (1) in Sussex County (see Figure 2-1).

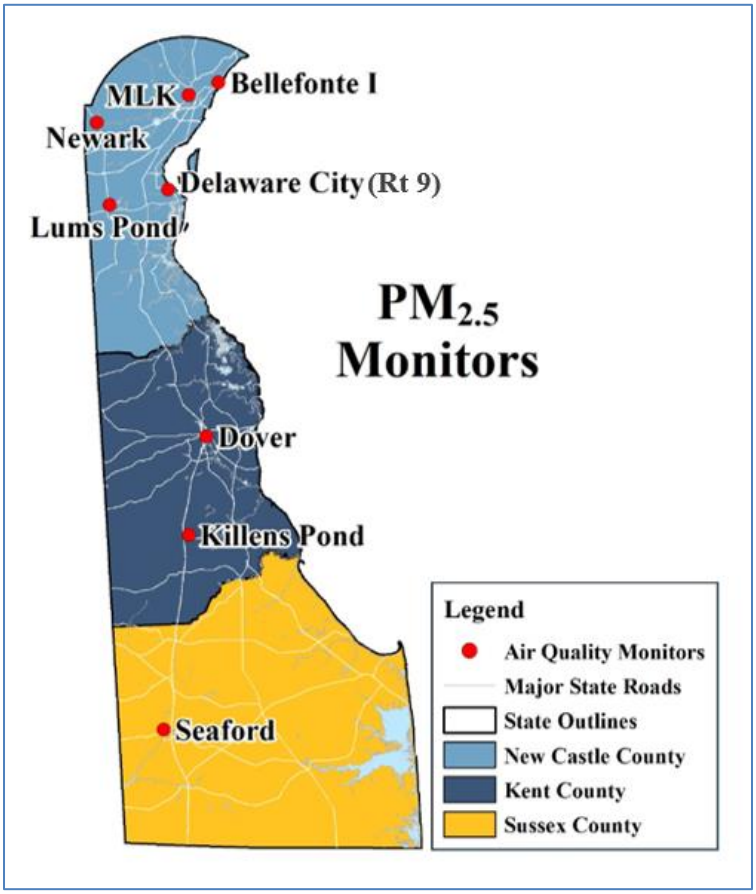

Figure 2-1 Delaware's $PM_{2.5}$ Monitoring Site Locations

All data from these monitors are measured using EPA approved methods. These are designated at either federal reference methods (FRM) or federal equivalent methods (FEM). All $PM_{2.5}$ monitoring sites are located appropriately and are eligible for comparison to the 24-hr $PM_{2.5}$ NAAQS.

2.7 Verification of Continued Attainment

States must ensure that they have the legal authority to implement and enforce all measures necessary to attain and maintain the NAAQS. Sections 110(a)(2)(B) and (F) of the CAA states that one such measure is the acquisition of ambient air quality data and emission inventory data to demonstrate attainment and maintenance.

In addition to maintaining key elements of its regulatory measures in place in Delaware's SIP, Delaware will continue to collect ambient air monitoring and source emission data to track attainment and maintenance. Delaware will also track the progress of the maintenance demonstration by periodically updating the emissions inventory as required by the Air Emissions Reporting Requirements Rule, or as required by federal regulation during the maintenance plan period. This includes developing annual inventories for major point sources, as required by 7 **DE Admin. Code** 1117, Section 7.3.[30] and a comprehensive periodic inventory covering all source categories every three years. Tracking will include annual and periodic evaluations for any significant emission increases above the 2008 attainment year levels.

2.8 Contingency Plan

Section 175A of the CAA specifies the requirements for Maintenance Plans, including provisions for contingency measures[31] that will be implemented if violations of the 2006 24-hr $PM_{2.5}$ NAAQS are measured after redesignation to attainment. A list of potential contingency measures that would be implemented in such an event should also be included in the Maintenance Plan.

Contingency measures are intended to provide further emissions reductions if violations of the 2006 24-hr $PM_{2.5}$ NAAQS occur after redesignation to attainment. While these measures do not need to be fully adopted by the State of Delaware prior to the occurrence of NAAQS violations, the contingency plan should ensure that the contingency measures are adopted expeditiously once they are triggered. The Maintenance Plan must identify the triggers that determine when contingency measures will be adopted, and the measures that the state will consider. It should also include a schedule and procedures for adoption and implementation, and a specific time limit for action. Specific triggers that would put the plan into motion must be identified. This plan is an enforceable part of the SIP and should ensure that the contingency measures are adopted explicitly once they are triggered.

Tracking

The tracking plan for the New Castle County will continue to include monitoring and analyzing $PM_{2.5}$ concentrations. In accordance with 40 CFR Part 58, Delaware will continue to operate its ambient air monitors in accordance with the federal requirements.

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[30] 7 **DE Admin. Code** 1117, Section 7.3. Source Monitoring, Record Keeping and Reporting. Emission Statement: "Annual emissions statements are due on April 30 for the preceding calendar year beginning with April 30, 1993 for calendar year 1992." https://regulations.delaware.gov/AdminCode/title7/1000/1100/1117.pdf.

[31] CAA Section 107(d)(3)(E)(v).

Trigger and Response

Consistent with this plan, Delaware agrees to adopt and implement the necessary corrective actions if violations of the 2006 24-hr $PM_{2.5}$ NAAQS occur within New Castle County. Pennsylvania and New Jersey Departments of Environmental Protection are also responsible for developing similar plans for their portion of the Philadelphia NAA. The initial 2006 24-hr $PM_{2.5}$ NAAQS Maintenance Plans for both New Jersey[32] and Pennsylvania[33] have been approved and have been incorporated into 40 CFR 52.

As described in Section 5 of this report, EPA and Delaware have adopted and are continuing to implement a range of control measures that will greatly reduce precursor emissions - locally, statewide, and nationwide. Delaware commits to continue to implement the identified statewide and local control measures. Delaware anticipates that emissions reductions will be sufficient to mitigate exceedances or violations of the 2006 24-hr $PM_{2.5}$ NAAQS that may occur in the coming years without further regulatory action. However, in the event of a future violation or exceedance of the 2006 24-hr $PM_{2.5}$ NAAQS, Delaware will use the following triggers (determination of when to start an action) and perform the following actions in accordance with the described schedule, as its contingency plan:

1. Warning Level Response (one or both of the following events occur)

    a. A warning level response shall be prompted whenever the 98th percentile 24-hour $PM_{2.5}$ concentration of 35.5 $\mu g/m^3$ [34] or greater occurs in a single calendar year within New Castle County.

    b. The New Castle County, Delaware maintenance area total $PM_{2.5}$, NOx and SO_2 emissions increase more than 10% above the levels in the 2008 attainment year emissions inventory.

2. Action Level Response

An action level response shall be prompted whenever a three-year average of the 98th percentile 24-hour $PM_{2.5}$ concentration of 35.5 $\mu g/m^3$ or greater occurs within New Castle County. A violation of the standard (three-year average of the 98th percentile of 35.5 $\mu g/m^3$ or greater), shall also prompt an action level response.

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[32] 40 CFR Part 52, Subpart FF- New Jersey, Section 52.1602(g). *Control Strategy and Regulations: $PM_{2.5}$.* https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-52/subpart-FF.

[33] 40 CFR Part 52, Subpart NN- Pennsylvania, Section 52.2059(h). *Control Strategy: Particulate Matter.* https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-52/subpart-NN.

[34] 40 CFR Appendix N to part 50, Section 3.0(c). Requirements for Data Use and Data Reporting for Comparisons With the NAAQS for $PM_{2.5}$. https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-50#p-Appendix-N-to-Part-50(3.0)(c).

3. Timing of contingency measure implementation

A timeline for the development of NO_X, $PM_{2.5}$ and/or SO_2 regulations or permit conditions follows. This schedule initiates with certification of ambient air quality monitoring data indicating a violation of the 2006 24-hr $PM_{2.5}$ NAAQS:

a. Warning Level Response

Should a warning level response be triggered, measures that can be implemented in a short time will be selected in order to be in place within 30 months from the close of the calendar year that prompted the warning level (See Table 2-8).

b. Action Level Response

Should an action level response be triggered, implementation of necessary control measures will take place as expeditiously as possible, but in no event later than 30 months after the Delaware makes a determination, based on quality-assured ambient data, that a violation of the NAAQS has occurred (See Table 2-8).

Table 2-9 Schedule for Permit Revisions or Rule Revisions for Contingency Measures[35]

Identify and quantify the emissions reductions expected to result in the future from existing and future state and federal regulatory measures.	3 months
Use the best available air quality modeling to evaluate the air quality improvement expected to result in New Castle County from the measures and emissions reductions identified in step 5 below.	6 months
Draft any needed permit conditions or SIP regulations.	9 months
Complete rulemaking or permit revision process and submit to EPA.	12 months
Completion no later than	**30 months**

[35] This schedule initiates with certification of ambient air quality monitoring data indicating a violation of the 2006 24-hour $PM_{2.5}$ NAAQS.

List of Potential Contingency Measures:

- Working with the local metropolitan planning organizations (MPO) to implement transportation control measures such as: traffic flow improvements, transit improvements, trip reduction measures, arterial and signal improvement projects, bicycle projects, or other new transportation measures.
- Vehicle inspection and maintenance measures enhancements (Heavy Duty Inspection and Maintenance Program that would include vehicles over 14,000 pounds, etc.).
- Alternative fuel and additional diesel retrofit programs for fleet vehicle operations.
- Require NOx or SO_2 emission offsets for new and modified major sources.
- Increase the ratio of emission offsets required for new sources.
- Require NOx or SO_2 controls on new minor sources (less than 100 tons).
- Require increased recovery efficiency at sulfur recovery plants.

2.8.1 Conformity

CAA Section 176(c) was established under the CAA to address conformity. Conformity plays an important role in helping states and tribal regions improve air quality in those areas that do not meet the NAAQS. Under the separate general and transportation conformity rules, federal agencies must work with state, tribal, and local governments in nonattainment and maintenance areas to ensure that federal actions, including highway and transit projects, conform to the initiatives established in the applicable state or tribal implementation plan.

Transportation Conformity

Transportation conformity is a provision in the CAA Section 176(c), which requires that a conformity demonstration be performed by either Federal Highway Administration (FHWA) or Federal Transit Administration (FTA) demonstrating that transportation-related highway construction will not cause new air quality violations, worsen existing violations, or delay timely attainment of the NAAQS.

The conformity rule generally requires a demonstration that emissions from the Regional Transportation Plan (RTP) and the Transportation Improvement Program (TIP) are consistent with the motor vehicle emissions budget (MVEB) contained in the control strategy SIP revision or maintenance plan (40 CFR 93.101, 93.118, and 93.124). Generally, maintenance plans developed for NAAQS establish emissions limits, or "budgets" for transportation conformity by means of a MVEB. A MVEB is defined as "that portion of the total allowable emissions defined in the submitted or approved control strategy implementation plan revision or maintenance plan for a certain date for the purpose of meeting reasonable further progress milestones or demonstrating attainment or maintenance of the NAAQS, for any criteria pollutant or its precursors, allocated to highway and transit vehicle use and emissions (40 CFR 93.101).

EPA's conformity rule at 40 CFR part 93 requires that transportation plans, programs and conform to SIPs and establish the criteria and procedures for determining whether they conform. Maintenance areas following maintenance plans must demonstrate conformity by remaining below MVEBs for the area. The concept of transportation conformity was introduced in the Clean Air Act of 1977, but the requirements became substantially more rigorous in the Amendments of 1990. The CAA and the Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU)[36] define the framework for effective integration of transportation and air quality planning. In addition, EPA amended the Transportation Conformity rule in 2012. This rule also allows $PM_{2.5}$ areas with clean air quality data to take advantage of conformity flexibilities that are currently available only to ozone areas [37].

Transportation conformity is a process by which it is determined that on-road mobile (highway) source emissions evaluated from the TIP and/or Long Range Transportation Plan (LRTP) will not adversely impact air quality in a determined area of nonattainment. Federal funding and approval are given to transportation activities that are consistent with air quality goals.

Under either conformity rule one means of demonstrating conformity of Federal actions is to indicate that expected emissions from planned actions are consistent with the emissions budget for the area. Emissions budgets in LMP areas may be treated as essentially not constraining for the length of the maintenance period because it is unreasonable to expect that an area satisfying the LMP criteria will experience so much growth during that period such that a violation of the $PM_{2.5}$ NAAQS would result.

While EPA's LMP policy does not exempt an area from the need to affirm conformity, it does allow the area to demonstrate conformity without undertaking certain requirements of these rules. For transportation conformity purposes, EPA would be concluding that emissions in these areas need not be capped for the maintenance period, and, therefore, a regional emissions analysis would not be required (40 CFR 93.109(e)). Similarly, Federal actions subject to the general conformity rule could be considered to satisfy the "budget test" specified in section 93.158 (a)(5)(i)(A) of the rule, for the same reasons that the budgets are essentially considered to be unlimited.

[36] The Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for Users. January 4, 2005. https://www.fhwa.dot.gov/safetealu/legis.htm.

[37] Transportation Conformity Rule Restructuring Amendments. EPA Final Rule. 77 FR 14979. March 14, 2012. https://www.govinfo.gov/content/pkg/FR-2012-03-14/pdf/2012-6207.pdf.

The transportation conformity interagency consultation process must also be used to discuss the development of any LMP submission.[38] Delaware initiated consultation with the Wilmington Area Planning Council (WILMAPCO) on January 5, 2022. WILMAPCO is the regional transportation planning agency for New Castle County, Delaware and Cecil County, Maryland. As the federally designated MPO, WILMAPCO is charged with planning and coordinating transportation investments for the region based on federal policy, local input, technical analysis, and best practices.

Delaware's SIP contains provisions that are consistent with the Section 176(c) conformity requirements. In Delaware's SIP, general conformity requirements are contained in 7 **DE Admin. Code** 1135, Conformity of General Federal Actions to the State Implementation Plans (Regulation for General Conformity) which was approved into the Delaware SIP by EPA on August 11, 2010 (75 FR 48566)[39]. Transportation conformity requirements are contained in 7 **DE Admin. Code** 1132, Transportation Conformity which was approved into the Delaware SIP by EPA on August 11, 2010, (75 FR 48566)[40].

General Conformity

On November 30, 1993, EPA promulgated a set of regulations, known as the General Conformity Regulations, which apply to non-transportation projects (i.e., projects not adding or expanding highways and transit). These regulations ensured that these types of federal actions also conformed to the SIPs (58 FR 63214)[41]. The General Conformity Rule was revised on April 5, 2010 (75 FR 17254)[42]. The purpose of the General Conformity Rule is to:

- Ensure that federal activities do not interfere with the mobile emissions budgets (MVEB) in the SIPs;
- Ensure the attainment and maintenance of the NAAQS; and
- Ensure that actions do not cause or contribute to new violations of a NAAQS.

General conformity must be met for any federal action, defined as an activity engaged in by a department or agency of the federal government, or supported in any way by the federal government (including via financial assistance, licenses, permits, or approvals). The Federal Agency must make a determination that the activity conforms to the applicable State Implementation Plan before commencing the activity.

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[38] 40 CFR 93.105(b)

[39] Ibid. 17

[40] Ibid. 17

[41] Approval and Promulgation of Air Quality Implementation Plans; Delaware; Determining Conformity of General Federal Actions to State or Federal Implementation Plans. EPA Final Rule. 58 FR 63214. November 30, 1993. https://www.epa.gov/sites/default/files/2016-03/documents/58fr63214.pdf.

[42] Revisions to the General Conformity Regulations. EPA Final Rule. 75 FR 17254. April 5, 2010. https://www.govinfo.gov/content/pkg/FR-2010-04-05/pdf/2010-7047.pdf.

A conformity analysis must be conducted by the lead Federal Agency if a federal action would result in the generation of air emissions that would exceed conformity threshold levels of pollutants for which an air basin that is designated as a nonattainment or maintenance area under the NAAQS, or if emissions from the action are deemed regionally significant. A conformity analysis must demonstrate that the project emissions would conform, and thus would not degrade air quality in the impacted air basin. Conformity can be demonstrated via emission offsets, SIP provisions, or air quality modeling. The EPA is responsible for reviewing and approving SIPs, which are prepared and submitted to EPA by state environmental agencies.

Delaware consulted with EPA Region 3 on December 12, 2022, regarding mobile budgets for this LMP. EPA Region 3 confirmed that mobile budgets do not need to be re-calculated for this 2nd Maintenance Plan, since it is a Limited Maintenance Plan.

2.9 Public Participation

In accordance with Section 110(a)(2) of the CAA, Delaware is required to have a public comment period and provide the opportunity for a public hearing on the Maintenance Plan prior to adoption. Public participation in the Delaware SIP process is required by Delaware law[43] as follows:

- Notice of availability of the SIP document and the time and date of the public hearing are published as a Legal Notice in the News Journal and Delaware State News, 30 days prior to the hearing, and is submitted along with this redesignation request and maintenance plan.

- The legal notice for the public hearing will also be posted on the DNREC "Public Hearing" website, the DNREC public meeting calendar, and the State of Delaware public meeting calendar.

- A public hearing is required for all Delaware State Implementation Plans and Regulations, and will be held on January 23, 2024.

- 30-day public comment period is open before the public hearing to receive comments on the Maintenance Plan. An additional 15-day public comment period occurs after the public hearing is held. A summary of any comments received, and Delaware's responses is included with this SIP submittal to the EPA.

- The Legal Notices, Public Comments and other documentation as required by EPA and Delaware Law and DNREC policies will also be submitted to the EPA.

[43] TITLE 29, General Regulations for State Agencies, Chapter 101, Administrative Procedures Subchapter II, Agency Regulations.