



APPENDIX C

Executive Summary of the Documentation of the Conformity Finding

Full documentation of the conformity finding is accessible at www.dvrpc.org/AirQuality/Conformity.



Executive Summary

Overview

Transportation conformity is the process by which metropolitan planning organizations (MPOs) or departments of transportation (DOTs) demonstrate that transportation projects included in a region's Long-Range Plan (Plan) or Transportation Improvement Programs (TIPs) do not cause new air quality violations, worsen existing violations, or delay timely attainment of the National Ambient Air Quality Standards (NAAQS). The transportation conformity process is required in areas that have been designated by the U.S. Environmental Protection Agency (US EPA) as not having met one or more of the NAAQS. These areas are called "nonattainment areas" if they currently do not meet air quality standards, or "maintenance areas" if they have previously violated air quality standards but currently meet them and have an approved Clean Air Act (CAA) section 175(a) maintenance plan. The transportation conformity requirements are still applicable for up to 20 years after a nonattainment area is redesignated to ensure that the region continues to meet the NAAQS.

A transportation conformity demonstration is required at least once every four years or when an MPO: (1) adopts a new Plan or TIP; or (2) amends, adds, or deletes a regionally significant, nonexempt project in a Plan or TIP. This conformity demonstration is required due to the adoption of a new *Connections 2045* Long-Range Plan, a new Fiscal Year (FY) 2018 TIP for New Jersey and the addition of regionally significant and nonexempt projects being amended to the FY 2017 TIP for Pennsylvania.

The (DVRPC) region includes a complex combination of nonattainment and maintenance areas for three of the NAAQS (ozone, fine particulate matter [$PM_{2.5}$], and carbon monoxide [CO]). The region's ozone nonattainment area encompasses the entire nine-county DVRPC region, while the $PM_{2.5}$ and CO maintenance areas encompass various portions of the region. The region is required to demonstrate transportation conformity for each of these standards in each of the appropriate geographic areas covered by the nonattainment and maintenance areas.

This transportation conformity demonstration shows that the *Connections 2045* Long-Range Plan and region's TIPs are following, or "conforming to," the respective State Implementation Plans (SIPs) to meet the NAAQS.

This Executive Summary highlights DVRPC's conformity demonstration for:

- **Volatile Organic Compounds (VOCs) and Nitrogen Oxides (NO_x) meeting the 2008 Eight-Hour Ozone NAAQS requirements in:**
 - the DVRPC portion of the Philadelphia–Wilmington–Atlantic City Ozone Nonattainment Area;
- **Direct $PM_{2.5}$ and precursor NO_x meeting the 1997 Annual, 2006 24-Hour, and 2012 Annual $PM_{2.5}$ NAAQS requirements in:**
 - the DVRPC portion of the Philadelphia–Wilmington, Pennsylvania–New Jersey–Delaware (PA–NJ–DE) Annual $PM_{2.5}$ Maintenance Area;
 - the DVRPC portion of the Philadelphia–Wilmington, PA–NJ–DE 24-Hour $PM_{2.5}$ Maintenance Area;
 - the DVRPC portion of the New York–Northern New Jersey–Long Island, (NY–NJ–CT) Annual $PM_{2.5}$ Maintenance Area;

- the DVRPC portion of the New York–Northern New Jersey–Long Island, NY–NJ–CT 24-Hour PM_{2.5} Maintenance Area; and
- the Delaware County, PA Annual PM_{2.5} Nonattainment Area;
- **CO meeting the 1971 CO NAAQS requirements in:**
 - the Philadelphia–Camden CO Maintenance Area;
 - the City of Burlington in Burlington County, New Jersey, CO Maintenance Area; and
 - the City of Trenton in Mercer County, New Jersey, CO Maintenance Area.

This summary serves as an inclusive document that demonstrates the transportation conformity of the DVRPC Plan and TIPs with all applicable SIPs and NAAQS requirements for the above pollutants within the noted areas. The full conformity determination document is available at

www.dvrpc.org/airquality/conformity.

Analysis Approach

Regional Emissions Analysis of Plan and TIP Projects

The federal Final Conformity Guidance (Final Rule, 40 Code of Federal Regulations [CFR] 93) stipulates that the emissions analysis of transportation plans and programs must model all regionally significant, nonexempt projects. Each project in the Plan and TIPs has an associated alphanumeric air quality (AQ) code to identify which projects are coded into the DVRPC’s Travel Demand Model (TDM) to be included in the transportation conformity analysis. The code also identifies the first year for which those projects are analyzed. In addition, the AQ code identifies projects that are exempt from conformity analysis.

Pennsylvania and New Jersey have implemented SIPs that contain motor vehicle emissions budgets (MVEBs). The MVEB sets a regional emissions amount that functions as a threshold against which conformity is tested. The federal Final Rule stipulates that each SIP is sovereign and that for a multistate MPO such as DVRPC, conformity applies separately to individual state portions of its planning area.

DVRPC will be using the Motor Vehicle Emissions Simulator 2014a (MOVES 2014a) emissions model to demonstrate transportation conformity. MOVES 2014a is the latest US EPA emissions model and includes updates to fuel tables and improved emissions estimates from brake wear from the MOVES 2014 model. MOVES 2014a does not significantly change the criteria pollutant emissions results of MOVES 2014, and therefore is not considered a new model for SIP and transportation conformity purposes

Conformity Test

Pennsylvania and New Jersey have approved SIP MVEBs for the 1997 Eight-Hour Ozone Standard. The Final Rule requires that regions with existing MVEBs for a standard of the same pollutant (i.e., 1997 Eight-Hour Ozone and 2008 Eight-Hour Ozone), must utilize the approved budget test to demonstrate conformity for the new standard. Therefore, DVRPC will utilize the 1997 Eight-Hour Ozone MVEBs in Pennsylvania and New Jersey to demonstrate conformity to the 2008 Eight-Hour Ozone Standard.

The region also has approved SIP budgets for the 1997 Annual and 2006 24-Hour PM_{2.5} standards in both Pennsylvania and New Jersey. In Pennsylvania, the Transportation Conformity Interagency Consultation Group (TCICG) has determined that since the Pennsylvania PM_{2.5} SIP budgets were developed with individual county emissions inventories, the MVEB portion of the SIP budgets for the 1997 and 2007 PM_{2.5} Standards attributed to Delaware County, could serve as a SIP budget for the 2012 Annual PM_{2.5} standard conformity demonstration.

The region is a limited maintenance area for CO and no emissions analysis is required.

Analysis Years

For this conformity demonstration, the mobile source emissions analysis years are identified in Table 1.

Table 1: Mobile Source Analysis Years

Year	Ozone	PM _{2.5}	Note
2017 (Pennsylvania only)	√	√	PM _{2.5} SIP budget year in Pennsylvania
2020	√	√	2012 PM _{2.5} Std. attainment date and near-term year
2025	√	√	PA and NJ PM _{2.5} SIP budget year
2035	√	√	Year within 10 years of previous analysis
2045	√	√	DVRPC Plan Horizon year

Source: DVRPC, 2017.

VOCs and NO_x, which are heat-sensitive ozone precursors, are estimated for a typical summer week workday. To demonstrate conformity for ozone in the Philadelphia–Wilmington–Atlantic City Ozone Nonattainment Area, projected VOC and NO_x emissions in all analysis years must not exceed the established MVEBs in prior years. Therefore, estimated VOC and NO_x emissions must be below the 2008 (in Pennsylvania) and 2009 (in New Jersey) SIP MVEBs in the respective states for the given analysis years.

To demonstrate conformity for the PM_{2.5} NAAQS, emissions are estimated for direct PM_{2.5} and the PM_{2.5} precursor chemical NO_x. The SIP budgets for PM_{2.5} in both states are expressed in terms of annual emissions; therefore, conformity analyses are conducted for annual PM_{2.5} emissions. In the New York–Northern New Jersey–Long Island, NY–NJ–CT PM_{2.5} Maintenance Area; Philadelphia–Wilmington, PA–NJ–DE PM_{2.5} Maintenance Area; and the Delaware County PM_{2.5} Nonattainment Area, the analysis years are 2020, 2025, 2035, and 2045. In the Pennsylvania counties, 2017 is also an analysis year because that is an additional SIP budget year in Pennsylvania.

To demonstrate conformity in New Jersey, projected PM_{2.5} emissions in the analysis years must not exceed the 2009 (for analysis years before 2025) and 2025 (for analysis years 2025 and later) budgeted emissions in the New Jersey portion of the Philadelphia–Wilmington, PA–NJ–DE PM_{2.5} Maintenance Area and Mercer County in the New York–Northern New Jersey–Long Island, NY–NJ–CT PM_{2.5} Maintenance Area. To demonstrate conformity in Pennsylvania, projected PM_{2.5} emissions in analysis years must not exceed the 2017 (for analysis years before 2025) and 2025 (for analysis years 2025 and later) budgeted emissions in the Pennsylvania portion of the Philadelphia–Wilmington, PA–NJ–DE PM_{2.5} Maintenance Area and Delaware County in the Delaware County PM_{2.5} Nonattainment Area.

Both New Jersey and Pennsylvania have approved limited maintenance plans for CO, and regional emissions analysis for CO is no longer required to demonstrate conformity.

Findings

The DVRPC Plan and the TIPs are found to be in conformity with the current Pennsylvania and New Jersey SIPs under the CAA. The forecasted emissions levels of VOCs, NO_x, and PM_{2.5} do not

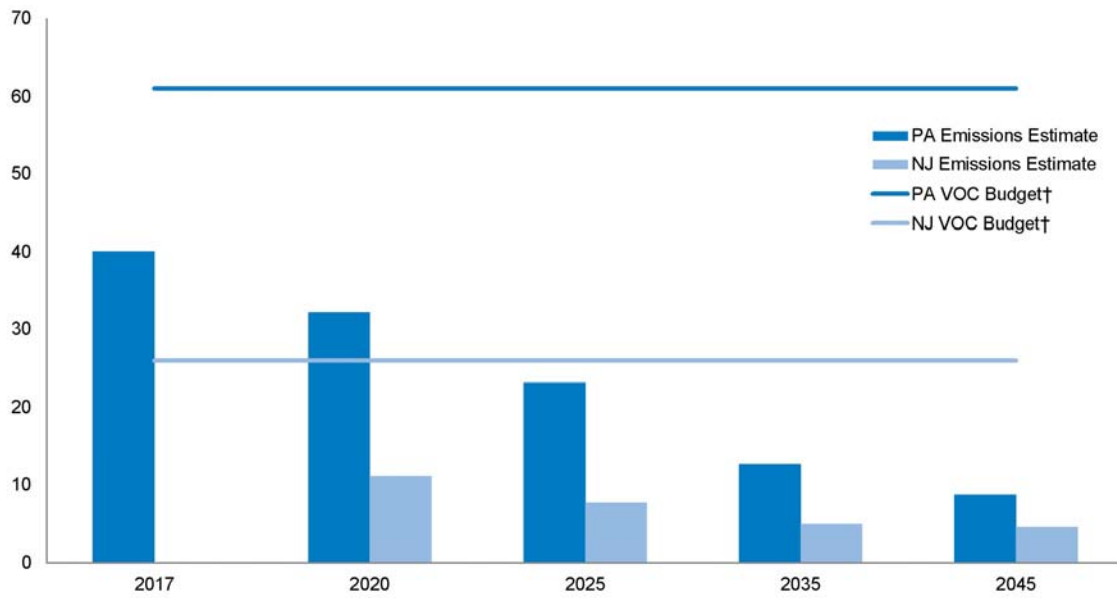
exceed the respective budgets established by the state departments of environmental protection (state DEPs) in accordance with the Final Rule under the current NAAQS governing applicable pollutants.

The transportation conformity analysis meets all applicable conformity criteria, including, but not limited to, the following:

- that the Plan and the TIPs are fiscally constrained [40 CFR 93.108];
- that this determination is based on the latest planning assumptions [40 CFR 93.110];
- that this determination is based on the latest emissions estimation model available [40 CFR 93.111];
- that DVRPC has made the determination according to the applicable consultation procedures [40 CFR 93.112];
- that the Plan and the TIPs do not interfere with the timely implementation of transportation control measures (TCMs) [40 CFR 93.113]; and
- that the Plan and the TIPs are consistent with the MVEBs in the applicable implementation plans [40 CFR 93.118].

Figures 1 through 6 detail the emissions analysis results for transportation projects included in the Plan and TIPs for Pennsylvania and New Jersey. The data for these figures is detailed in Tables 9 through 13, found on pages 26–28. These estimates of emissions results confirm that the transportation projects in the Plan and TIPs conform to the respective SIP and Final Rule conformity requirements.

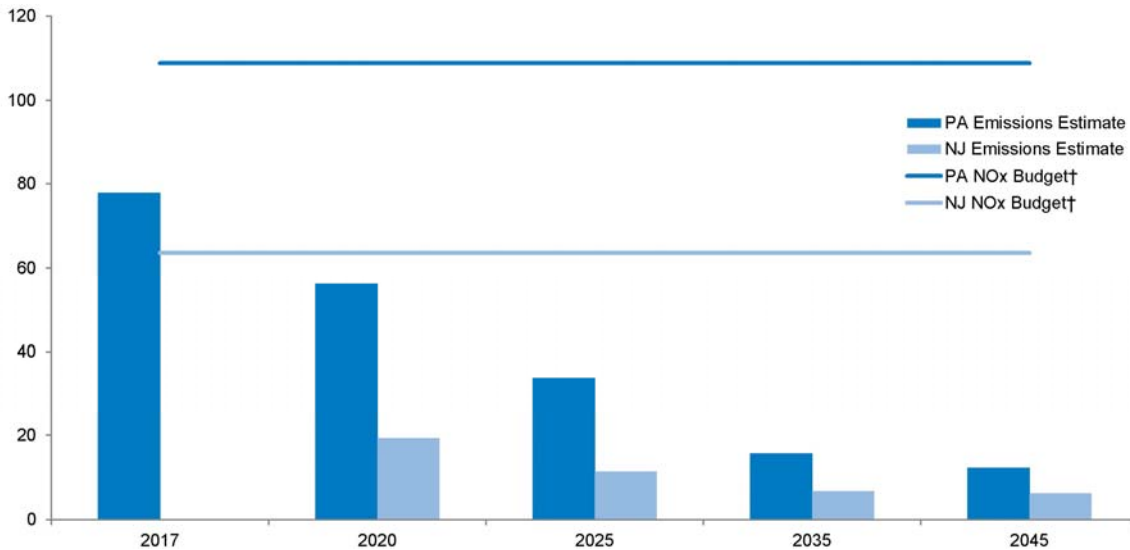
Figure 1: VOCs Emissions Analysis Results (Tons/Day)



Source: DVRPC, 2017.

Note :†The most recent Eight-Hour Ozone SIP MVEBs (2008 in Pennsylvania or 2009 in New Jersey) will apply to all future analysis years.

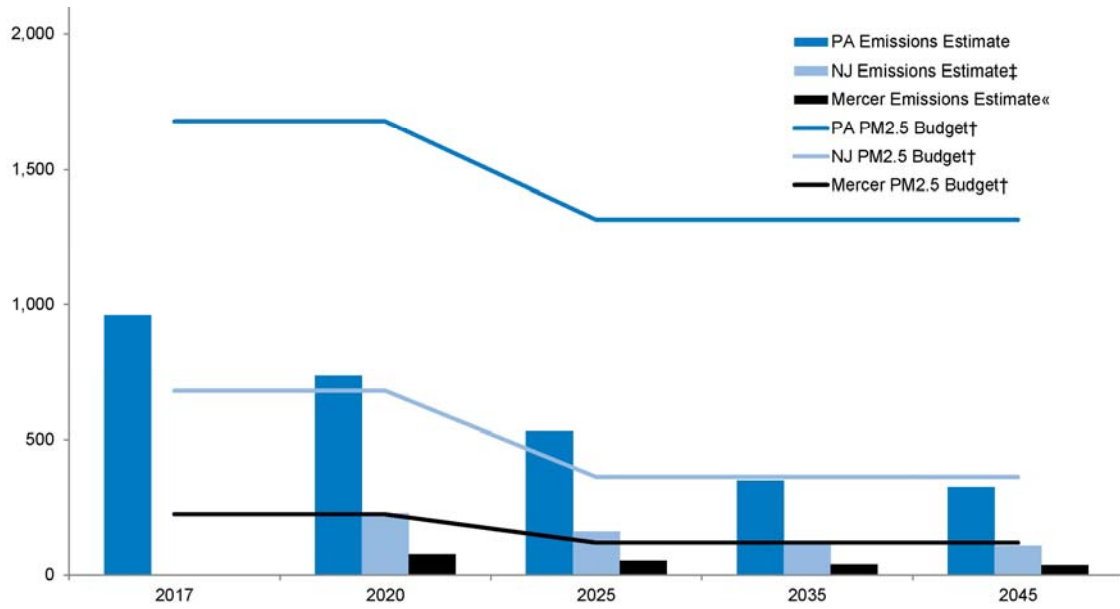
Figure 2: NO_x Emissions Analysis Results (Tons/Day)



Source: DVRPC, 2017.

Note :†The most recent Eight-Hour Ozone SIP MVEBs (2008 in Pennsylvania or 2009 in New Jersey) will apply to all future analysis years.

Figure 3: Annual and 24-Hour Direct PM_{2.5} Emissions Analysis Results (Tons/Year)



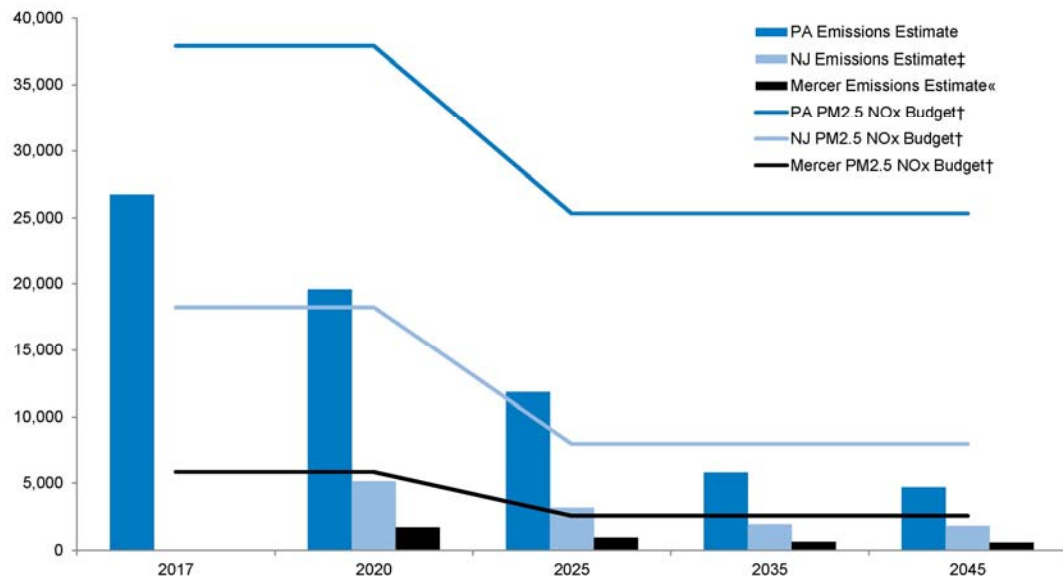
Source: DVRPC, 2017.

Note: † Associated MVEBs apply to all future analysis years.

‡ Results are only for Burlington, Camden, and Gloucester counties, which are the New Jersey portion of the Philadelphia–Wilmington, PA–NJ–DE PM_{2.5} Nonattainment Area.

« Results are only for Mercer County, which is the DVRPC New Jersey portion of the New York–Northern New Jersey–Long Island, NY–NJ–CT PM_{2.5} Nonattainment Area.

Figure 4: Annual and 24-Hour NO_x Precursor Emissions Analysis Results (Tons/Year)



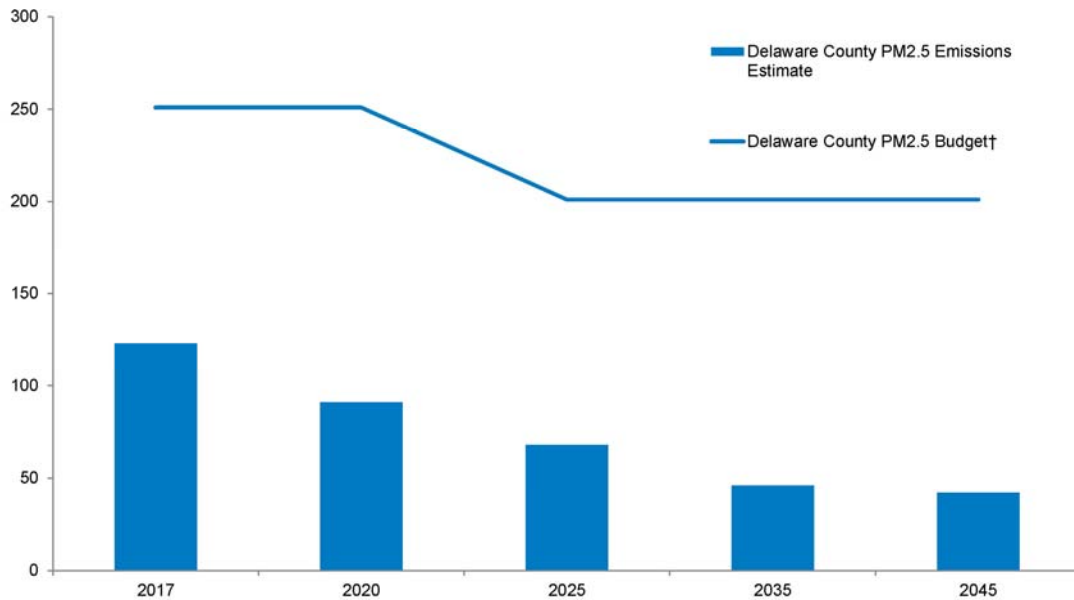
Source: DVRPC, 2017.

Note: † Associated MVEBs apply to all future analysis years.

‡ Results are only for Burlington, Camden, and Gloucester counties, which are the New Jersey portion of the Philadelphia–Wilmington, PA–NJ–DE PM_{2.5} Nonattainment Area.

« Results are only for Mercer County, which is the DVRPC New Jersey portion of the New York–Northern New Jersey–Long Island, NY–NJ–CT PM_{2.5} Nonattainment Area.

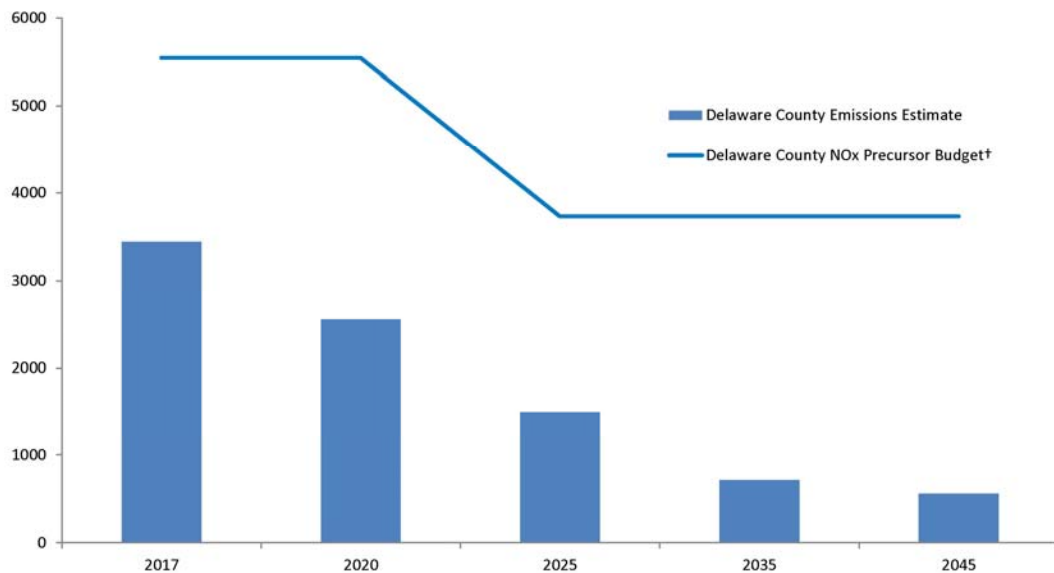
Figure 5: Delaware County Annual Direct PM_{2.5} Emissions Analysis Results (Tons/Year)



Source: DVRPC, 2017.

Note: † Associated MVEBs apply to all future analysis years.

Figure 6: Delaware County Annual NO_x Precursor Emissions Analysis Results (Tons/Year)



Source: DVRPC, 2017.

Note: † Associated MVEBs apply to all future analysis years.

These findings demonstrate transportation conformity of the DVRPC *Connections 2045* Long-Range Plan, FY2017 Pennsylvania TIP, and FY2018 New Jersey TIP with the corresponding state SIPs and the Final Rule requirements under CAA, including:

- the 2008 Eight-Hour Ozone NAAQS in the Philadelphia–Wilmington–Atlantic City Ozone Nonattainment Area;
- the 1997 Annual and 2006 24-Hour PM_{2.5} NAAQS in the Philadelphia–Wilmington, PA–NJ–DE PM_{2.5} Maintenance Area;
- the 1997 Annual and 2006 24-Hour PM_{2.5} NAAQS in the DVRPC portion of the New York–Northern New Jersey–Long Island, NY–NJ–CT PM_{2.5} Maintenance Area;
- the 2012 Annual PM_{2.5} Delaware County Nonattainment Area; and
- the 1971 Eight-Hour CO NAAQS in the Philadelphia–Camden CO Maintenance Area; in the City of Burlington in Burlington County, New Jersey; and in the City of Trenton in Mercer County, New Jersey.