

# Executive Summary

## Where is Transportation Conformity required?

### Nonattainment

**Areas:** a region that currently does not meet the NAAQS.

**Maintenance Areas:** a region that **previously** violated air quality standards but currently meets them and has an approved Clean Air Act (CAA) section 175(a) maintenance plan.

## 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 Program (TIP) do not cause new air quality violations, worsen existing violations, or delay timely attainment of the National Ambient Air Quality Standards (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 an updated *Connections 2050* Long-Range Plan, a new Fiscal Year (FY) 2022 TIP for New Jersey, and the addition of regionally significant and nonexempt projects to the FY2021 TIP for Pennsylvania.

The Delaware Valley Regional Planning Commission (DVRPC) region includes a complex combination of nonattainment and maintenance areas for ozone and fine particulate matter (PM<sub>2.5</sub>). The region's ozone nonattainment area encompasses the entire nine-county DVRPC region, while the PM<sub>2.5</sub> 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 2050* Long-Range Plan, FY2021–2024 Pennsylvania TIP, and FY2022–2025 New Jersey TIP are following, or “conforming to,” the State Implementation Plans (SIP) to meet the NAAQS.

This Executive Summary highlights DVRPC's conformity demonstration for:

### Volatile Organic Compounds (VOCs) and Nitrogen Oxides (NO<sub>x</sub>) meeting the 1997, 2008, and 2015 Eight-Hour Ozone NAAQS requirements in:

- the DVRPC portion of the Philadelphia–Wilmington–Atlantic City, PA–NJ–MD–DE Ozone Nonattainment Area; and

### Direct PM<sub>2.5</sub> and precursor NO<sub>x</sub> meeting the 1997 Annual, 2006 24-Hour, and 2012 Annual PM<sub>2.5</sub> NAAQS requirements in:

- the DVRPC portion of the Philadelphia–Wilmington, PA–NJ–DE Annual and 24-Hour PM<sub>2.5</sub> Maintenance Area,
- the DVRPC portion of the New York–Northern New Jersey–Long Island, NY–NJ–CT Annual and 24-Hour PM<sub>2.5</sub> Maintenance Area, and
- the Delaware County, PA Annual PM<sub>2.5</sub> Maintenance Area.

This summary serves as an inclusive document that demonstrates the transportation conformity of the DVRPC Plan and New Jersey and Pennsylvania 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](http://www.dvrpc.org/airquality/conformity).

## Analysis Approach

### Regional Emissions Analysis of Plan and TIP Projects

The federal Final Conformity Rule (Final Rule) requires that all regionally significant and nonexempt projects that are funded in the Plan and TIP must be included in the regional Travel Demand Model (TDM). Emissions from those modeled projects are then quantified using the latest U.S. Environmental Protection Agency (US EPA)-approved emissions modelling system. DVRPC uses the Motor Vehicle Emissions Simulator 2014b (MOVES 2014b) emissions model to demonstrate transportation conformity in order to meet this requirement.

### Conformity Test

Modeled emissions results from the projects in the Plan and TIPs are then compared to Motor Vehicle Emissions Budgets (MVEBs) contained in the SIPs to meet the NAAQS. When modeled emissions are less than the SIP budgets, the transportation conformity requirements have been met. This process is referred to as the “budget test.”

New Jersey and Pennsylvania have approved SIP MVEBs for the 1997 Eight-Hour Ozone Standard, 1997 and 2012 Annual PM<sub>2.5</sub> standards, and 2006 24-Hour PM<sub>2.5</sub> standards in both states. These budgets are used to demonstrate conformity for all of the current NAAQS requirements.

### Analysis Years

When performing the budget test, DVRPC identifies a series of analysis years. Analysis years are benchmarks for the projects that are included in the TDM and emissions analysis. All projects that are expected to be open to traffic by the beginning of that analysis year are included in that year’s emissions analysis. The Final Rule includes guidance on the selection of analysis years. Analysis years must include SIP budget years, the final year of the Plan, and interim analysis years that are no more than 10 years apart.

MVEBs are established in each state’s SIP for specific years. The MVEBs set the emissions limits moving forward until the next SIP budget year. For example, the 2017 PM<sub>2.5</sub> SIP budgets in Pennsylvania establish emissions limits for all projects that are open to traffic after 2017 but before the new SIP budget year of 2025. The 2025 PM<sub>2.5</sub> SIP budgets establish emissions limits for all projects that are open to traffic after 2025 and until such time as a new SIP budget is approved by the US EPA.

To demonstrate conformity for the ozone NAAQS, projected VOC and NO<sub>x</sub> emissions in all analysis years must be below the SIP MVEBs for the given analysis years. VOCs and NO<sub>x</sub>, which are heat-sensitive ozone precursors, are estimated for a typical summer week workday.

To demonstrate conformity for the PM<sub>2.5</sub> NAAQS, emissions are estimated for direct PM<sub>2.5</sub> and the PM<sub>2.5</sub> precursor chemical NO<sub>x</sub>. The SIP budgets for PM<sub>2.5</sub> are expressed in terms of annual emissions; therefore, conformity analyses are conducted for annual PM<sub>2.5</sub> emissions.

In the DVRPC region, the analysis years are 2025, 2035, 2045, and 2050. Delaware County has additional SIP budget analysis years for annual PM<sub>2.5</sub> and the PM<sub>2.5</sub> precursor chemical NO<sub>x</sub>. The additional Delaware County PM<sub>2.5</sub> analysis years are 2022 and 2030.

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

**Table 1: Mobile Source Analysis Years**

Year	Ozone	PM <sub>2.5</sub>	Note
2022		√	PM <sub>2.5</sub> SIP budget year (Delaware County only)
2025	√	√	Interim Year and PM <sub>2.5</sub> SIP budget year
2030		√	PM <sub>2.5</sub> SIP budget year (Delaware County only)
2035	√	√	Year within 10 years of previous analysis
2045	√	√	Year within 10 years of previous analysis
2050	√	√	DVRPC Plan horizon year

Source: DVRPC, 2021.

## Findings

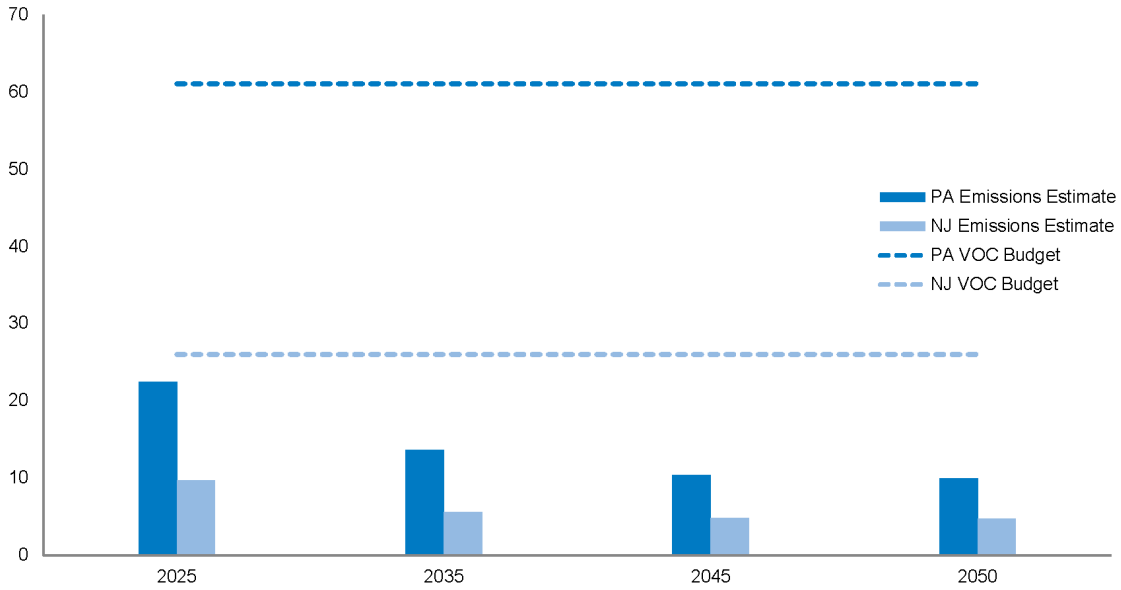
The DVRPC Plan and the TIPs are found to be in conformity with the current New Jersey and Pennsylvania SIPs under the CAA. The forecasted emissions levels of VOCs, NO<sub>x</sub>, and PM<sub>2.5</sub> do not exceed the respective budgets established by the state departments of environmental protection (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 SIPs [40 CFR 93.118].

Figures 1 through 6 detail the emissions analysis results for transportation projects included in the Plan and TIPs for New Jersey and Pennsylvania. The data for these figures is detailed beginning on page 25 of the full conformity document. 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.

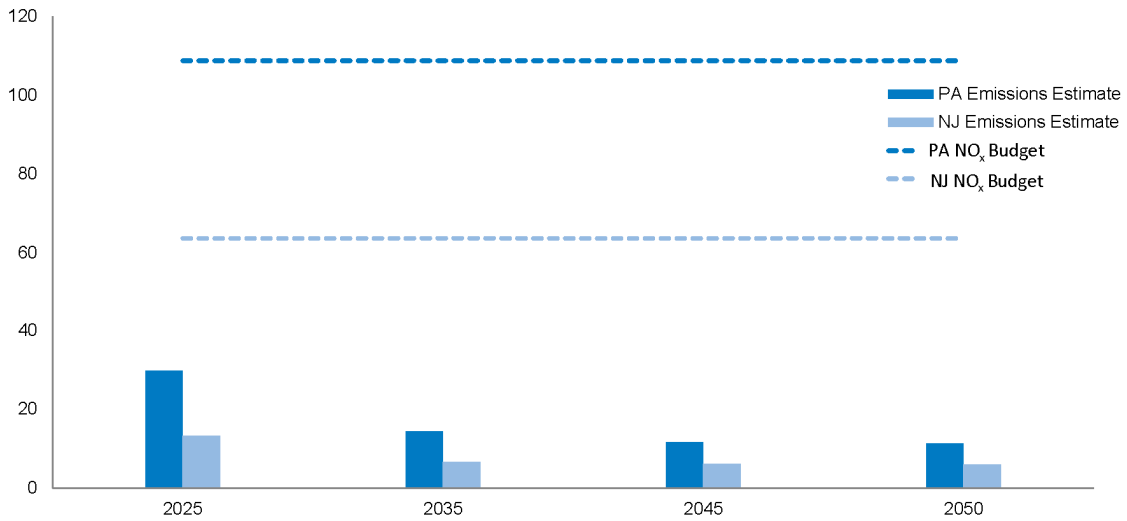
**Figure 1: VOCs Emissions Analysis Results (Tons/Day)**



Source: DVRPC, 2021.

The most recent Eight-Hour Ozone SIP MVEBs will apply to all future analysis years.

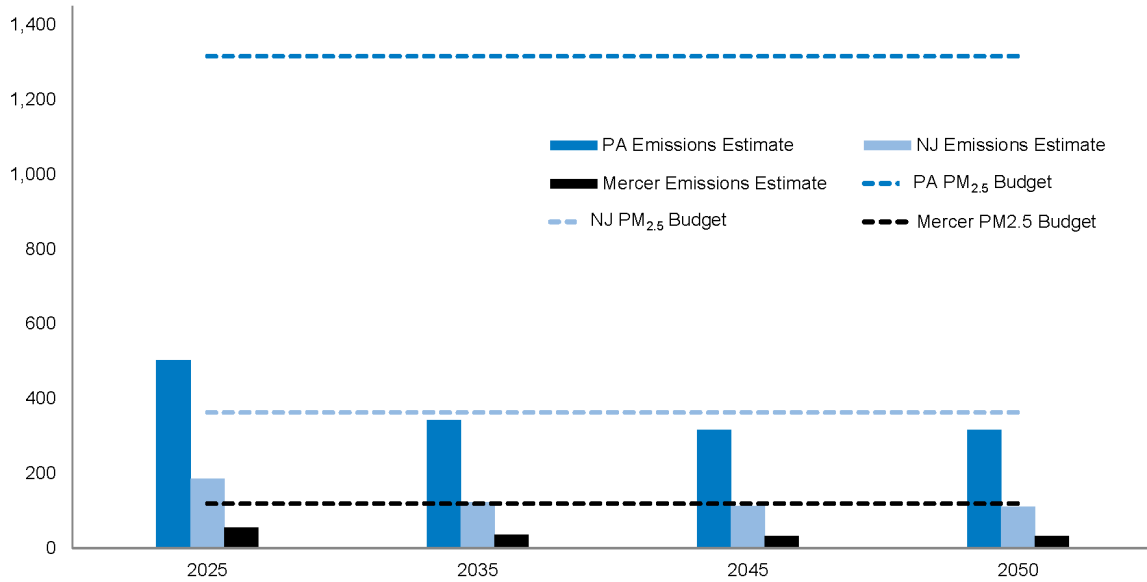
**Figure 2: NO<sub>x</sub> Emissions Analysis Results (Tons/Day)**



Source: DVRPC, 2021.

The most recent Eight-Hour Ozone SIP MVEBs will apply to all future analysis years.

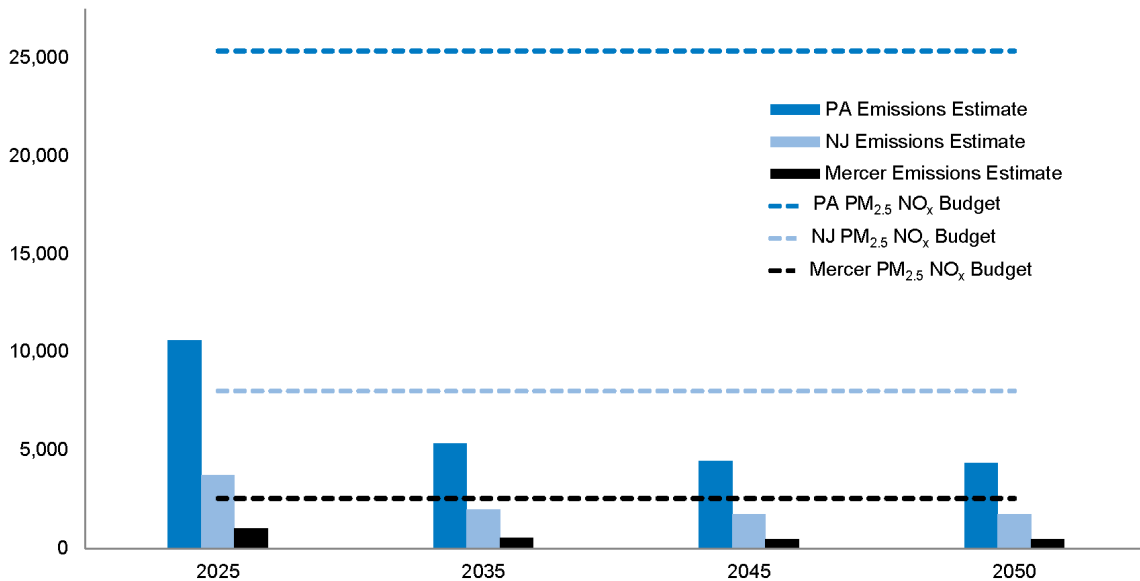
**Figure 3: Annual and 24-Hour Direct PM<sub>2.5</sub> Emissions Analysis Results (Tons/Year)**



Source: DVRPC, 2021.

The most recent MVEBs apply to all future analysis years.

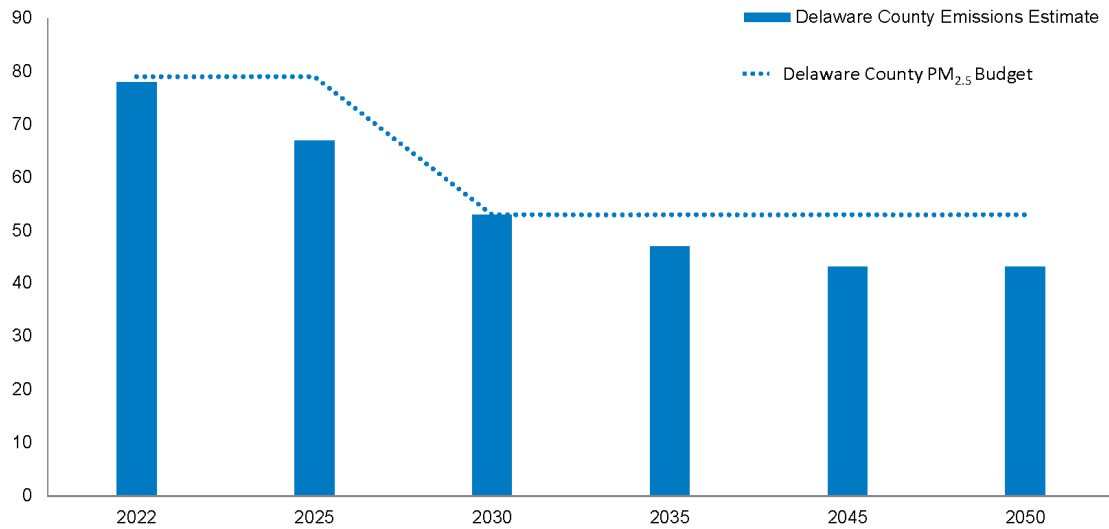
**Figure 4: Annual and 24-Hour NO<sub>x</sub> Precursor Emissions Analysis Results (Tons/Year)**



Source: DVRPC, 2021.

The most recent MVEBs apply to all future analysis years.

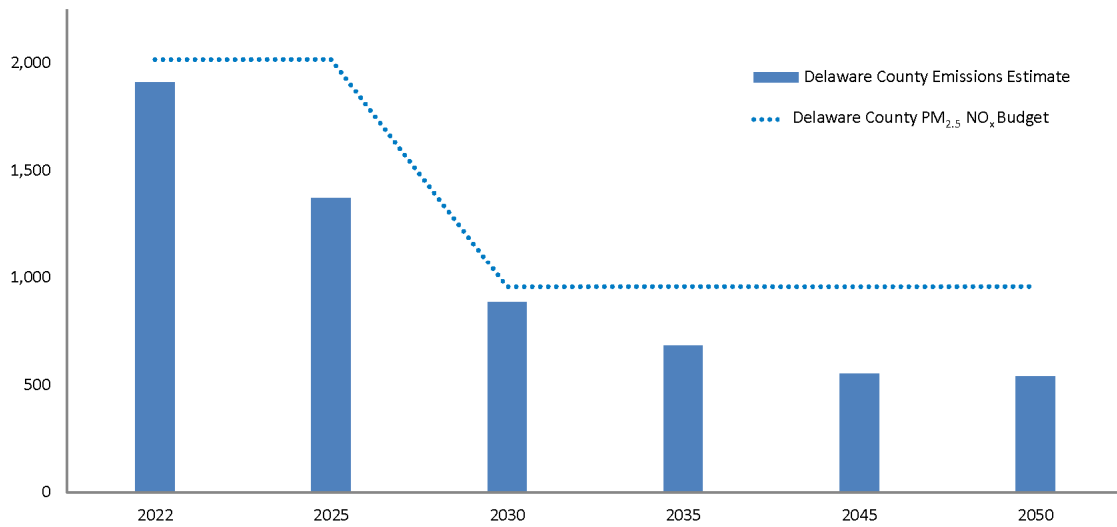
**Figure 5:** Delaware County Annual Direct PM<sub>2.5</sub> Emissions Analysis Results (Tons/Year)



Source: DVRPC, 2021.

*The most recent MVEBs apply to all future analysis years.*

**Figure 6:** Delaware County Annual NO<sub>x</sub> Precursor Emissions Analysis Results (Tons/Year)



Source: DVRPC, 2021.

*The most recent MVEBs apply to all future analysis years.*

These findings demonstrate transportation conformity of the DVRPC *Connections 2050* Long-Range Plan, FY2021 Pennsylvania TIP, and FY2022 New Jersey TIP with the state SIPs and the Final Rule requirements under CAA, including:

- the 1997, 2008, and 2015 Eight-Hour Ozone NAAQS in the Philadelphia–Wilmington–Atlantic City, PA–NJ–MD–DE Ozone Nonattainment Area;
- the 1997 Annual and 2006 24-Hour PM<sub>2.5</sub> NAAQS in the Philadelphia–Wilmington, PA–NJ–DE PM<sub>2.5</sub> Maintenance Area;
- the 1997 Annual and 2006 24-Hour PM<sub>2.5</sub> NAAQS in the DVRPC portion of the New York–Northern New Jersey–Long Island, NY–NJ–CT PM<sub>2.5</sub> Maintenance Area; and
- the 2012 Annual PM<sub>2.5</sub> Delaware County, Maintenance Area.