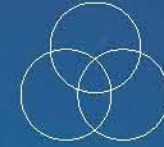




Delaware Valley Regional Planning Commission
May 2007

Conformity Findings



Demonstrations of
Transportation Conformity of the
DVRPC FY 2007 PA and FY 2008 NJ
Transportation Improvement Programs
and the *Destination 2030* Long Range Plan

CONFORMITY FINDINGS

Demonstrations of Transportation Conformity of
the DVRPC FY 2007 PA and FY 2008 NJ
Transportation Improvement Programs
and the *Destination 2030* Long Range Plan



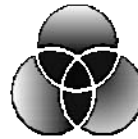
May 2007



Delaware Valley
Regional Planning
Commission

CONFORMITY FINDINGS

Demonstrations of Transportation Conformity of the DVRPC FY 2007 PA and FY 2008 NJ Transportation Improvement Programs and the *Destination 2030* Long Range Plan



Delaware Valley Regional Planning Commission
The ACP Building, 8th Floor
190 North Independence Mall West
Philadelphia, PA 19106-1520

www.dvrpc.org

May 2007

Created in 1965, the Delaware Valley Regional Planning Commission [DVRPC] is an interstate, intercounty, and intermunicipal agency that provides continuing, comprehensive, and coordinated planning to shape a vision for the future growth of the Delaware Valley region. The region includes Bucks, Chester, Delaware, and Montgomery counties, as well as the City of Philadelphia, in Pennsylvania; and Burlington, Camden, Gloucester, and Mercer counties in New Jersey. DVRPC provides technical assistance and services; conducts high priority studies that respond to the requests and demands of member state and local governments; fosters cooperation among various constituents to forge a consensus on diverse regional issues; determines and meets the needs of the private sector; and practices public outreach efforts to promote two-way communication and public awareness of regional issues and the Commission.



The DVRPC logo is adapted from the official seal of the Commission, and is designed as a stylized image of the Delaware Valley. The outer ring symbolizes the region as a whole, while the diagonal bar signifies the Delaware River. The two adjoining crescents represent the Commonwealth of Pennsylvania and the State of New Jersey.

DVRPC is funded by a variety of funding sources including federal grants from the United States Department of Transportation's Federal Highway Administration [FHWA] and Federal Transit Administration [FTA], the Pennsylvania and New Jersey departments of transportation, as well as by DVRPC's state and local member governments. The author(s), however, are solely responsible for its findings and conclusions, which may not represent the official views or policies of the funding agencies.

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GLOSSARY OF ACRONYMS AND TERMS

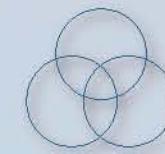
AQS	Air Quality Subcommittee (WILMAPCO)	CAA	Clean Air Act as amended
CFR	Code of Federal Regulations	Plan	DVRPC <i>Destination 2030</i> Long Range Plan
CMAQ	Congestion Management/Air Quality	PM_{2.5}	Fine Particulate Matter
CO	Carbon Monoxide	ppm	parts per million
DVRPC	Delaware Valley Regional Planning Commission	SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for Users
FHWA	Federal Highway Administration	SEPTA	Southeastern Pennsylvania Transportation Authority
Final Rule	Current conformity guidance under CAA	SIPs	State Implementation Plans
FR	Federal Register	State DEPs	State Departments of Environmental Protection
FTA	Federal Transit Administration	State DOTs	State Departments of Transportation
I/M	Inspection and Maintenance	TAZ	Traffic Analysis Zone
Maintenance Area	Area that previously did not meet NAAQS	TCICG	Transportation Conformity Interagency Consultation Group (DVRPC)
MPO	Metropolitan Planning Organization	TIPs	DVRPC FY 2007 Transportation Improvement Programs
MVEB	Motor Vehicle Emissions Budget	U.S.C.	United States Code
NAAQS	National Ambient Air Quality Standards	US DOT	United States Department of Transportation
NJAQ-ONE	New Jersey Air Quality Off-Network Estimator	US EPA	United States Environmental Protection Agency
NJ DOT	New Jersey State Department of Transportation	VMT	Vehicle-Miles-Traveled
NJ Transit	New Jersey Transit	VOCs	Volatile Organic Compounds
Non-attainment Area	Area currently not meeting NAAQS	WILMAPCO	Wilmington Area Planning Council
NO_x	Nitrogen Oxides		
PAQ-ONE	Pennsylvania Air Quality Off-Network Estimator		
PennDOT	Pennsylvania State Department of Transportation		

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Delaware Valley Regional Planning Commission
May 2007

Section A



Executive Summary

CONFORMITY FINDINGS

EXECUTIVE SUMMARY

*Demonstrations of Transportation Conformity of
the DVRPC FY 2007 PA and FY 2008 NJ Transportation
Improvement Programs and the Destination 2030 Long Range Plan
with the State Air Quality Implementation Plans of Pennsylvania and New Jersey
and with Applicable National Ambient Air Quality Standards Requirements*



OVERVIEW

This summary documents the demonstration of transportation conformity of the DVRPC *Destination 2030* Long Range Plan (*Plan*) and the FY 2007 Pennsylvania and FY 2008 New Jersey Transportation Improvement Programs (*TIPs*) with the respective State Air Quality Implementation Plans (*SIPs*) and applicable National Ambient Air Quality Standards (NAAQS) requirements under the Clean Air Act (CAA). The three interlocking circles appearing throughout this report represent the unity of these conformity components: the *Plan*, the *TIPs* and the *SIPs*.

This conformity determination was conducted under the guidance of the Transportation Conformity Inter-Agency Consultation Group (TCICG). The TCICG is comprised of representatives of local, state and federal transportation, environmental and planning agencies and reviews the planning assumptions, model parameters and project analyses and oversees the conformity process to insure that the various stakeholders and regulatory agencies are communicating through-out the conformity determination.

Transportation conformity documented in this report is specifically for the following pollutants within the stated designation areas. They are:

- ▷ Volatile Organic Compounds (VOCs) meeting the 8-hour ozone NAAQS requirements in:
 - the DVRPC portion of the Philadelphia-Wilmington-Atlantic City Ozone Non-attainment Area;
- ▷ Nitrogen Oxides (NO_x) meeting the 8-hour ozone NAAQS requirements in:
 - the DVRPC portion of the Philadelphia-Wilmington-Atlantic City Ozone Non-attainment Area;
- ▷ Carbon Monoxide (CO) meeting the CO NAAQS requirements in:
 - the Philadelphia – Camden CO Maintenance Area;
 - the City of Burlington in Burlington County, NJ;
 - the City of Trenton in Mercer County, NJ;
- ▷ Fine Particulate Matter (PM_{2.5}) meeting the PM_{2.5} NAAQS requirements in:

- the DVRPC portion of the Philadelphia-Wilmington, PA-NJ-DE PM_{2.5} Non-attainment Area; and
- the DVRPC portion of the New York-Northern New Jersey-Long Island, NY-NJ-CT PM_{2.5} Non-attainment Area.

This summary serves as an inclusive document that demonstrates transportation conformity of the DVRPC *TIPs* and the *Plan* 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.

ANALYSIS APPROACH

There are two categories of projects in the *TIPs* and the *Plan*:

REGIONALLY SIGNIFICANT PROJECT: a non-exempt highway or transit project on a facility which, regardless of its length, serves regional needs and is normally included in the regional model.

EXEMPT PROJECT: a project listed in table 2 or 3 of the Final Rule (40 CFR 93) that primarily enhances safety or aesthetics, maintains mass transit, continues current levels of ridesharing, or builds bicycle and pedestrian facilities.

The *Final Rule* stipulates that the emission analysis of transportation plans and programs must model all regionally significant, non-exempt projects. Each project has an associated alphanumeric air quality code for the conformity determination and exempt eligibility identification purposes.

For the area with an implemented *SIP*, the motor vehicle emissions budget (MVEB) prescribed in the *SIP* sets a regional emissions amount that functions as a threshold against which conformity is tested. This process is commonly known as the “budget” test. The *Final Rule* stipulates that each *SIP* is sovereign and that, for a multi-state metropolitan planning organization (MPO), such as DVRPC, conformity applies separately to individual state portions of its planning area under respective *SIPs*.

In the absence of an implemented *SIP*, areas must perform what is known as the “interim” emissions test. The *Final Rule* dictates that only certain interim test types and methodologies are allowed in a given non-attainment area, that they must be applied uniformly throughout the area and that the US DOT determination on transportation conformity must be on the entire non-attainment area. The *Final Rule* further requires that all affected MPOs in the non-attainment area must work together to demonstrate conformity jointly until respective *SIPs* are implemented.

Within the DVRPC region, the NAAQS requirements for ozone, CO and PM_{2.5} must be met. In the nine-county DVRPC planning area, governing *SIPs* are in place for ozone and CO in the Pennsylvania and New Jersey sub-regions. For these criteria pollutants, DVRPC utilizes the budget test to demonstrate conformity using applicable *SIP* MVEBs. In 2006, New Jersey has implemented a PM_{2.5} *SIP* for selected portions of the state. Those areas in New Jersey with effective *SIP* PM_{2.5} MVEBs now include Mercer County within the DVRPC planning area. Therefore, in Mercer, the budget test is also employed to demonstrate PM_{2.5} conformity.

Otherwise, for the DVRPC portion within the Philadelphia-Wilmington, PA-NJ-DE PM_{2.5} Non-attainment Area, DVRPC coordinates its conformity efforts with WILMAPCO, and the two MPOs demonstrate conformity collectively for the entire non-attainment area. For this iteration of the conformity demonstration, DVRPC and WILMAPCO have jointly decided to use the “no-greater-than-2002-baseline” interim test. Also, the two MPOs have jointly decided to use the four-season annual inventory method. This annual inventory method is applied to all PM_{2.5} emissions analyses in the DVRPC (except Mercer) and WILMAPCO planning areas.

The mobile source ozone emissions analysis years for VOCs and NO_x are 2010 (8-hour ozone standard attainment year), 2020 (the *interim* year selected to keep all analysis years no more than ten years apart) and 2030 (the *horizon* year of the *Plan*). VOCs and NO_x, which are heat-sensitive ozone precursors, are estimated for a July day. The current ozone MVEB year governing the DVRPC region is 2005 in both Pennsylvania and New Jersey. All emissions estimates are tested against these budgets.

CO emissions are also calculated for 2010, 2020 and 2030. Additionally, CO emission factors are estimated for years that CO MVEBs have been established in respective *SIPs*, the MVEB years of which are 2013 and 2017 in the Pennsylvania sub-region. New Jersey now has EPA-approved limited maintenance plans in place for CO in Burlington, Camden and Mercer Counties and is no longer required to perform regional emissions analysis for CO in the New Jersey sub-region. CO is estimated for a January day since its effects are more prevalent during the winter months.

In the PM_{2.5} demonstration, analysis years vary due to the different emissions tests being applied by area. The current analysis years in the Philadelphia-Wilmington, PA-NJ-DE PM_{2.5} Non-attainment Area are 2010, 2020 and 2030. These years are a required part of the interim test and will be used until applicable PM_{2.5} *SIPs* are implemented in the non-attainment area. For the New York-Northern New Jersey-Long Island, NY-NJ-CT PM_{2.5} Non-attainment Area, the year 2009 is analyzed instead. 2009 is a PM_{2.5} MVEB budget year for Mercer County. To demonstrate conformity, projected PM_{2.5} emissions in all analysis years must not exceed 1) the 2002 baseline emissions results in the Philadelphia-Wilmington, PA-NJ-DE PM_{2.5} Non-attainment Area; and, 2) the 2009 budgeted emissions in the New York-Northern New Jersey-Long Island, NY-NJ-CT PM_{2.5} Non-attainment Area.

PLANNING ASSUMPTIONS

All planning assumptions utilized in this demonstration are the latest and most current as of March 26, 2007, which is the start date of the DVRPC conformity analysis. The DVRPC Transportation Conformity Interagency Consultation Group (TCICG) has reviewed and concurred on all latest planning assumptions utilized.

DVRPC uses a multi-step, multi-source methodology to produce long-range population and employment estimates at the county-level. These estimates, in turn, become the control totals for municipal-level and traffic analysis zone (TAZ) level estimates.

Population forecasting at the regional level involves review and analysis of six major components: births, deaths, domestic in-migration, domestic out-migration, international immigration, and changes in group-quarter populations (e.g. dormitories, military barracks, prisons and nursing homes).

DVRPC uses both the cohort survival concept and a modified Markov transition probability model, based on the US Census 2000 and the Current Population Survey research, to age individuals and determine the flow of people. DVRPC also relies on member counties to provide information on any known, expected and/or forecasted changes in group-quarter populations. Current and future population estimates for the DVRPC planning area were adopted by the DVRPC Board in February 2005.

Employment estimates are influenced by political and socioeconomic factors at local, national and global levels. The Bureau of Economic Analysis (BEA) provides the most complete and consistent time-series data on county sectoral employment and is DVRPC's primary data source for employment forecasts. The OBERS (formerly the Offices of Business Economics and of Economic Research Services) shift-share model in combination with the Woods and Poole Economics' sectoral forecasts also provides the basis for DVRPC's employment forecasts. As in the population forecasts, county-level totals are used as control totals for municipal and TAZ-level sector distribution forecasts. These forecasts incorporate various supplemental data from public and private sectors including data from the US Census, BEA, Dun & Bradstreet, Bureau of Labor Statistics, Occupational Privilege Tax database, Woods & Poole Economics Complete Economic and Demographic Data Source, and other public and private sector statistics, and are also reviewed by member counties for final adjustments based on local knowledge. Current and future employment estimates were adopted by the DVRPC Board in February 2005.

As part of the latest planning assumptions, current transit operations policies and other road toll structures are also considered. All fares entering the transit network are "blended" by operating entity. For each operator, different existing fare types (e.g. cash, token, transfer charge, daily, weekly, and monthly passes) are blended into a single fare policy based on the percentage of each fare type and use in the 2000 fare structure. Then, the future fare for each operator is held constant in current dollars. All current operating plans, ridership and service levels of transit systems are built into the transit network and are incorporated into the future year networks as well. Future year transit networks are also augmented with any new services identified in the corresponding DVRPC *TIPs* and the *Plan*.

Other transportation related costs such as automobile operating costs, gasoline costs, parking costs, and road/bridge tolls are also based on current and available data, and are held constant in current dollars into the future analysis years.

TRAVEL SIMULATION

Regional emissions analysis begins with travel simulations. The enhanced DVRPC travel simulation, validated in 2005 using the US Census 2000 information, home interview survey and traffic count data, is a classic four-step transportation modeling application that operates within an iterative (Evans algorithm) structure with respect to highway travel time, and is disaggregated into separate peak, mid-day and evening time periods. In the four-step modeling process, trip generation is based on constant trip rates imbedded in a cross-classification structure. Trip distribution uses a doubly constrained gravity model, stratified into three person (home-based work, home-based non-work, and non-home-based) and four vehicle trip purposes. Modal split employs a binary probit-like formulation stratified by trip purpose, transit submode, and auto ownership. The highway assignment component is based

on the equilibrium method using minimum travel-time path. Free flow highway speeds are stratified by functional class and density of development.

Then, the Evans algorithm re-executes the trip distribution and the modal split highway components. This process is based on updated speeds after each iteration of the highway assignment and determines a weight value upon each performed iteration. This weight is then used to prepare a convex combination of the link volumes and trip tables for the current iteration and a running weighted average of the previous iterations. This algorithm converges rapidly to an equilibrium solution on highway travel speeds and congestion levels. When the equilibrium is attained, the model assigns the weighted average transit trip tables to the transit networks and produces link and route passenger volumes. Transit assignment is unrestrained and uses minimum paths based on the modal split model definition of impedance. The methodology and detailed TAZ level estimates are further explained in the DVRPC report: *2000 Travel Simulation for the Delaware Valley Region* (in preparation). The iterative DVRPC travel demand simulation process has been reviewed and approved by the TCICG.

Due to the project scale, scope or governing characteristics, certain non-exempt, regionally significant projects (such as park & ride facilities or bikeway improvements) cannot be represented and evaluated by the travel demand model properly. Therefore, travel impacts and emissions analyses of such projects are performed using off-network analysis tools, which are a set of travel impact and emissions analysis methodologies. The Pennsylvania Air Quality Off-Network Estimator (PAQ-ONE) and the New Jersey Air Quality Off-Network Estimator (NJAQ-ONE) are a set of such off-network methodologies developed for the Pennsylvania and New Jersey State Departments of Transportation (PennDOT and NJ DOT, respectively). Both PAQ-ONE and NJAQ-ONE contain independent MOBILE6.2 modules to determine emissions estimates. Once the characteristic changes in travel are calculated, the transportation results are fed to the emissions module to create emissions factors based on the county-level data and local assumptions. Final off-network emissions estimate outputs show the changes in VOCs, NO_x, CO and PM_{2.5} in both kg/July-day and tons/July-day for individual projects. Because of their summer settings, however, PAQ-ONE and NJAQ-ONE outputs are not suitable for winter analyses.

EMISSIONS ESTIMATION

The calculated travel impact changes from the travel simulation process are passed through the post-processor routine and are prepared for an emissions estimate model.

In demonstrating conformity, use of the newest version of the MOBILE emissions estimate model is required under the *Final Rule*. MOBILE6.2 is the latest version of the family of MOBILE mobile-source emissions estimate models developed by US EPA and reflects many cumulative technological enhancements, emissions control updates and trend shifts introduced since 1996. These changes include expanded vehicle type categories and state inspection and maintenance program specification options; more detailed vehicle activity information and fuel program definition; and revised base emissions rates.

Taking advantage of these updated changes, the input parameters to the MOBILE6.2 model specify best available local data to accurately reflect the local conditions. Local temperature and humidity

data are particularly important, because MOBILE6.2 relies on these values to estimate A/C usage. Other settings accept the US EPA’s default values, which represent “the worst-case conditions.” Collectively, these local and default settings generate dependable regional emissions estimates suitable for demonstrating transportation conformity in the DVRPC region. As for specific parameter values, inputs for individual pollutants can and will vary.

As noted earlier, both PAQ-ONE and NJAQ-ONE also contain independent MOBILE6.2 modules to determine emissions estimates. Final off-network emissions estimate outputs from these off-network tools show the daily changes in VOCs, NO_x, CO and PM_{2.5} for the project sets included in the *TIPs* and the *Plan*.

FINDINGS

The DVRPC *TIPs* and the *Plan* 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, CO and PM_{2.5} do not exceed the respective budgets and baseline established by 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 TCMs [40 CFR 93.113]; and
- that the *Plan* and the *TIPs* are consistent with the motor vehicle emissions budgets in the applicable implementation plans [40 CFR 93.118].

Table E-1. VOCs Emission Analysis Results (Tons/July Day) †

	2005	2010	2020	2030
	<i>SIP</i> MVEB	Estimated	Estimated	Estimated
PA	79.69	51.42	24.56	22.01
NJ	42.99	21.18	12.03	11.30

Source: DVRPC, 2007

Note: † The 1-hour ozone *SIP*MVEB applies to all future analysis years. All emissions are rounded off to the nearest hundredth. Off-network adjustments have been made.

Table E-2. NO_x Emission Analysis Results (Tons/July Day) †

	2005	2010	2020	2030
	<i>SIP</i> MVEB	Estimated	Estimated	Estimated
PA	144.73	82.13	26.53	16.20
NJ	63.44	44.79	12.97	8.52

Source: DVRPC, 2007

Note: † The 1-hour ozone *SIP* MVEB applies to all future analysis years. All emissions are rounded off to the nearest hundredth. Off-network adjustments have been made.**Table E-3. CO Emission Analysis Results (Tons/January Day) †**

	2007	2010	2013		2017		2020	2030
	<i>SIP</i> MVEB	Estimated	<i>SIP</i> MVEB	Estimated	<i>SIP</i> MVEB	Estimated	Estimated	Estimated
Philadelphia	331.25	236.74	278.23	207.25	260.97	185.15	177.77	171.63

Source: DVRPC, 2007

Note: † All CO budgets are based on MOBILE6.2. All emissions are rounded off to the nearest hundredth.

Table E-4. Direct PM_{2.5} and NO_x Emission Analysis Results (Tons/Year) †

		2002	2009	Estimated	2010	2020	2030
		Baseline	<i>SIP</i> MVEB »		Estimated	Estimated	Estimated
Direct PM _{2.5}	PA	998.2	-	-	596.0	423.7	413.6
	NJ; except Mercer ‡	486.7	-	-	263.7	183.1	176.4
	DE (WILMAPCO) §	208.6	-	-	97.8	89.3	96.6
	Mercer only »	-	89	86	80	55	54
PM _{2.5} Precursor (NO _x)	PA	59,346.0	-	-	29,293.9	9,263.1	5,561.1
	NJ; except Mercer ‡	30,499.9	-	-	12,050.3	3,484.3	2,298.4
	DE (WILMAPCO) §	11799.1	-	-	4,687.0	1,805.0	1,507.0
	Mercer only »	-	4,328	4,072	3,645	1,048	697

Source: DVRPC, 2007

Note: † Associated 2002 Baseline or 2009 MVEBs apply to all future analysis years. All emissions are rounded off to the nearest tenth except for those in Mercer. See note on » below.

‡ Results are for Burlington, Camden and Gloucester Counties only, which are the New Jersey portion of the Philadelphia-Wilmington, PA-NJ-DE PM_{2.5} Non-attainment Area.§ Results are for New Castle County in Delaware only, and are provided by WILMAPCO. It is the Delaware portion of the Philadelphia-Wilmington, PA-NJ-DE PM_{2.5} Non-attainment Area.» NJ *SIP* MVEBs and the emissions results are for Mercer County only, which is the DVRPC portion of the New York-Northern New Jersey-Long Island, NJ-NJ-CT PM_{2.5} Non-attainment Area. Emissions results are rounded off to the nearest integer in accordance with the *SIP*.

Therefore, hereby demonstrated is transportation conformity of:

- ▷ the DVRPC *DESTINATION 2030* Long Range Plan;
- ▷ the FY 2007 Pennsylvania *TIP*; and
- ▷ the FY 2008 New Jersey *TIP*

with the corresponding state *SIPs* and the *Final Rule* requirements under CAA including:

- the 8-hour ozone NAAQS in the DVRPC portion of the Philadelphia-Wilmington-Atlantic City Ozone Non-attainment Area;

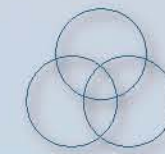
- the 8-hour CO NAAQS in the Philadelphia CO Maintenance Area, in the City of Burlington in Burlington County, NJ and in the City of Trenton in Mercer County, NJ;
- the PM_{2.5} NAAQS in the Philadelphia-Wilmington, PA-NJ-DE PM_{2.5} Non-attainment Area; and
- the PM_{2.5} NAAQS in the DVRPC portion of the New York-Northern New Jersey-Long Island, NY-NJ-CT PM_{2.5} Non-attainment Area.





Delaware Valley Regional Planning Commission
May 2007

Section B



**DVRPC Conformity
Demonstration**

CONFORMITY FINDINGS

*A Demonstration of Transportation Conformity of the
DVRPC FY 2007 PA and FY 2008 NJ Transportation Improvement Programs
and the Destination 2030 Long Range Plan
with the State Air Quality Implementation Plans of Pennsylvania and New Jersey
and with Applicable National Ambient Air Quality Standards Requirements*



1 INTRODUCTION

1.1 OVERVIEW

This report documents the demonstration of transportation conformity of the DVRPC *Destination 2030* Long Range Plan (*Plan*) and the FY 2007 Pennsylvania and FY 2008 New Jersey Transportation Improvement Programs (*TIPs*) with the respective State Air Quality Implementation Plans (*SIPs*) and applicable National Ambient Air Quality Standards (NAAQS) requirements under the Clean Air Act as amended (CAA). The three interlocking circles appearing throughout this report represent the unity of these conformity components: the *Plan*, the *TIPs* and the *SIPs*.

Transportation conformity documented in this report is specifically for the following pollutants within the stated designation areas. They are:

- ▷ Volatile Organic Compounds (VOCs) meeting the 8-hour ozone NAAQS requirements in:
 - the DVRPC portion of the Philadelphia-Wilmington-Atlantic City Ozone Non-attainment Area;
- ▷ Nitrogen Oxides (NO_x) meeting the 8-hour ozone NAAQS requirements in:
 - the DVRPC portion of the Philadelphia-Wilmington-Atlantic City Ozone Non-attainment Area;
- ▷ Carbon Monoxide (CO) meeting the CO NAAQS requirements in:
 - the Philadelphia – Camden CO Maintenance Area;

- the City of Burlington in Burlington County, NJ;
 - the City of Trenton in Mercer County, NJ;
- ▷ Fine Particulate Matter (PM_{2.5}) meeting the PM_{2.5} NAAQS requirements in:
- the DVRPC portion of the Philadelphia-Wilmington, PA-NJ-DE PM_{2.5} Non-attainment Area; and
 - the DVRPC portion of the New York-Northern New Jersey-Long-Island, NY-NJ-CT PM_{2.5} Non-attainment Area.

This report serves as an inclusive document that demonstrates transportation conformity of the DVRPC *TIPs* and the *Plan* with all applicable *SIPs* and NAAQS requirements for the above pollutants within the noted areas.

1.2 TRANSPORTATION CONFORMITY

CAA section 176(c) (42 U.S.C. 7506(c)) requires that federally supported highway and transit project activities must “conform to” state air quality goals found in SIPs. The process that preserves this consistency is called transportation conformity. This process ensures that transportation and air quality agencies are consulting with one another to look for strategies to relieve traffic congestion, improve air quality and provide communities with a safe and efficient transportation system.

The transportation conformity process is required in areas that have been designated by the United States Environmental Protection Agency (US EPA) as not having met one or more of the NAAQS. These areas are called “non-attainment 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 CAA section 175(a) maintenance plan.¹

Transportation conformity is demonstrated when highway and transit activities that receive federal funds or approval are determined not to cause new air quality violations, worsen existing violations, or delay timely attainment of NAAQS. The Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) jointly make conformity determinations within air quality non-attainment and maintenance areas to ensure that federal actions are consistent with the purpose of the corresponding SIPs. The United States Department of Transportation (US DOT) cannot fund, authorize or approve

¹ US EPA also may designate an area as attainment/unclassifiable, if: 1) it has monitored air quality data show that area is has not violated the governing standard over a certain period; or, 2) there is not enough information to determine the air quality in the area.

federal actions to support programs or projects that are not found to conform to the CAA requirements governing the current NAAQS for transportation conformity.

This iteration of the conformity demonstration is based on the current, final conformity guidance (“*Final Rule*”) under CAA, including 40 CFR Part 93 as revised, and is for the criteria air pollutants addressed therein, among which are ozone, carbon monoxide (CO) and particulate matter (PM). The *Final Rule* dictates that conformity findings within the DVRPC planning area must be based on the applicable *SIP* budgets in all target analysis years. For those pollutants with no existing *SIP* budgets, specific interim testing procedures are followed. The demonstration process estimates emissions that will result from the region’s transportation system, and determines that those emissions are within the limits outlined in respective *SIPs* and other applicable NAAQS requirements.

This demonstration also represents DVRPC’s firm commitment to adhere to the statutory requirements for planning and environmental reviews prescribed in the Safe, Accountable, Flexible, Efficient Transportation Equity Act: a Legacy for Users (SAFETEA-LU) of 2005.²

² SAFETEA-LU compliance is required by July 2007.

1.3 NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS)

The CAA, first enacted in 1963 and last amended in 1990, currently mandates US EPA to set national air quality standards for air pollutants that are considered harmful to public health and the environment. The CAA also requires the agency to periodically review the standards to ensure that it provides adequate health and environmental protection and to update those standards as necessary. These standards are set at the level required to provide an ample margin of safety to protect the public health.

In compliance, US EPA has set NAAQS for several principal air pollutants, which are called "criteria" pollutants. These NAAQS criteria pollutants include ozone, CO, coarse and fine particulate matters (PM₁₀ and PM_{2.5}, respectively), sulfur dioxide (SO₂), and lead (Pb).

At the state level, the *SIP* represents the state’s air quality goals and strategies to meet those goals. For an area with an implemented *SIP*, the motor vehicle emissions budget (MVEB) prescribed in the *SIP* sets a regional emissions amount that functions as a threshold against which conformity is tested. This process is commonly known as the “budget” test. The *Final Rule* stipulates that each *SIP* is sovereign and that, for a multi-state metropolitan planning organization (MPO), such as DVRPC, conformity applies separately to individual state portions of its planning area under respective *SIPs*.

In the absence of an implemented *SIP*, areas must perform what is known as the “interim” emissions test. The *Final Rule* dictates that only certain interim test types and methodologies in a given non-attainment area are allowed, that they must be applied uniformly

throughout the area and that the US DOT determination on transportation conformity must be on the entire non-attainment area. The *Final Rule* further instructs that all affected MPOs in the non-attainment area must work together to demonstrate conformity jointly until respective *SIPs* are implemented. The CAAA requires state departments of environmental protection (state DEPs) to develop and implement *SIPs* within 3 years of initial designation.

Within the DVRPC region, the NAAQS requirements for ozone, CO and PM_{2.5} must be met.

Ozone is a photochemical oxidant and a major component of smog. Ozone is not emitted directly into the air, but is formed through complex chemical reactions between precursor emissions of VOCs and NO_x in the presence of sunlight. While ozone in the upper atmosphere shields and protects the earth from harmful radiation from the sun, high concentrations of ozone at ground level are a serious health and environmental concern. Even at low levels, ozone can damage lung tissue, reduce lung function and sensitize the respiratory system to other irritants. Additionally, scientific evidence has indicated that ambient levels of ozone not only affect people with pulmonary conditions, such as asthmatics, but also normal, healthy adults and children as well.

Recognizing these harmful effects, US EPA has finalized ground-level ozone designations under the 8-hour ozone NAAQS. In this designation, the entire nine-county planning area of DVRPC falls within the Philadelphia-Wilmington-Atlantic City Moderate Ozone Non-attainment Area, which includes multiple jurisdictions in four

states, five MPOs and 18 counties. For DVRPC, attainment of the 8-hour ozone NAAQS is required by June 2010.³

Upon the 8-hour ozone NAAQS designation in June 2004, the 1-hour ozone NAAQS (issued in November 1990) has been revoked.⁴ State DEPs are currently developing new *SIPs* reflecting the 8-hour ozone NAAQS. The 8-hour ozone *SIPs* are required by June 2007.

Figure 1 details the ozone non-attainment area that affects the DVRPC region.

Carbon Monoxide (CO) is a colorless, odorless, yet poisonous gas produced by incomplete burning of carbon in fuels. When CO enters the bloodstream, it reduces the delivery of oxygen to the body's organs and tissues. Health threats are most serious for those who suffer from cardiovascular disease. Exposure to elevated CO levels can cause impairment of visual perception, manual dexterity, learning ability and performance of complex tasks.

In 1996, the DVRPC planning area met the CO standard, and has attained the CO NAAQS.⁵ Following the attainment status, portions of 4 counties in the region were designated as separate CO maintenance areas. The Philadelphia-Camden CO Maintenance Area is comprised of Camden and Philadelphia counties. Portions of Burlington (i.e. City of Burlington) and Mercer (i.e. City of Trenton) counties are also part of individual CO maintenance areas

³ To be in attainment, the area must continuously carry out air quality monitoring, and the monitored ozone values measured over an 8-hr period must not exceed 0.08 parts per million (ppm) for three consecutive years.

⁴ Previously, the DVRPC planning area was classified as a Severe-15 Non-attainment Area under the less-stringent, 1-hr ozone NAAQS, which for DVRPC had an attainment year of 2005 and a governing 1-hr ozone *SIPs*/MVEBs.

⁵ To attain the CO NAAQS, an 8-hr non-overlapping average of CO level for the region must not exceed 9 ppm more than once a year and the region must carry out air quality monitoring during the entire time.

within the region. In 2006, US EPA approved revisions to the New Jersey SIP which included limited maintenance plans for CO in Burlington, Camden and Mercer Counties. Due to EPA's approval of New Jersey's CO limited maintenance plans, CO emissions analysis are no longer required for the conformity demonstration in those counties⁶.

Particulate matter (PM) includes both solid particles and liquid droplets found in air. Many manmade and natural sources emit PM directly or emit other pollutants that react in the atmosphere to form PM. These solid and liquid particles come in a wide range of sizes. The "coarse" particles less than 10 micrometers (μm) in diameter (PM_{10}) pose a health concern, since they can be inhaled into and can accumulate in the respiratory system. The "fine" particles less than 2.5 μm in diameter ($\text{PM}_{2.5}$) are believed to pose even greater health risks. Because of their small size, these fine particles can lodge deeply into the lungs. Individuals particularly sensitive to $\text{PM}_{2.5}$ exposure include older adults, people with heart and lung disease and children. Health studies have shown a significant association between exposure to $\text{PM}_{2.5}$ and premature mortality.

Additionally, $\text{PM}_{2.5}$ can be emitted directly from combustion engines or be chemically formed in the atmosphere when certain gases are present. Direct $\text{PM}_{2.5}$ emissions can result from particles in exhaust fumes, from brake and tire wear, from road dust kicked up by vehicles and from highway and transit construction. Indirect $\text{PM}_{2.5}$ emissions can result from one or more of several exhaust components, including VOCs, NO_x , sulfur oxides (SO_x) and ammonia (NH_3). US EPA has instituted the PM_{10} NAAQS in July 1987 and has recently promulgated the $\text{PM}_{2.5}$ NAAQS in July 1997.

⁶ US EPA has determined the New Jersey SIP revision and the limited maintenance plans for CO for Burlington, Camden and Mercer counties – adequate for transportation conformity purposes, and has published the adequacy finding in the Federal Register on July 10, 2006 (71 FR 38770).

Non-attainment areas were required to demonstrate the initial $\text{PM}_{2.5}$ conformity by April 2006. US EPA has required state DEPs to implement $\text{PM}_{2.5}$ SIPs by April 2008.

The $\text{PM}_{2.5}$ NAAQS include an annual standard set at 15 $\mu\text{g}/\text{m}^3$, based on a 3-year average of the annual mean $\text{PM}_{2.5}$ concentrations and a 24-hr standard of 65 $\mu\text{g}/\text{m}^3$, based on a 3-year average of the 98th percentile of 24-hr concentrations. Areas need to meet both standards to be considered in attainment of $\text{PM}_{2.5}$ NAAQS.⁷

On April 5, 2005, US EPA designations under the $\text{PM}_{2.5}$ standards became effective, under which the area consisting of Bucks, Chester, Delaware, Montgomery and Philadelphia Counties in Pennsylvania, Burlington, Camden, and Gloucester Counties in New Jersey, and New Castle County in Delaware are collectively designated as a non-attainment area. This geographic area, termed as the Philadelphia-Wilmington, PA-NJ-DE $\text{PM}_{2.5}$ Non-attainment Area, covers three states, two MPOs and 9 counties. Mercer County is part of another non-attainment area titled the New York-Northern New Jersey-Long Island, NY-NJ-CT $\text{PM}_{2.5}$ Non-attainment Area that covers 3 states, 9 MPOs and 21 counties. Largely due to the current Metropolitan Statistical Area definitions in the US Census 2000, the DVRPC planning area is split between the said two non-attainment areas for $\text{PM}_{2.5}$, both of which are shown in Figure 2. These areas do satisfy the existing 24-hour standards, but portions of the area currently violate the annual standards. DVRPC must demonstrate conformity for each non-attainment area separately and must attain the $\text{PM}_{2.5}$ NAAQS by April 2010.

⁷ On September 21, 2006, US EPA has announced that it would tighten the 24-hour daily standards from the existing 65 $\mu\text{g}/\text{m}^3$ to 35 $\mu\text{g}/\text{m}^3$. The new standards are expected to become effective in 2010.

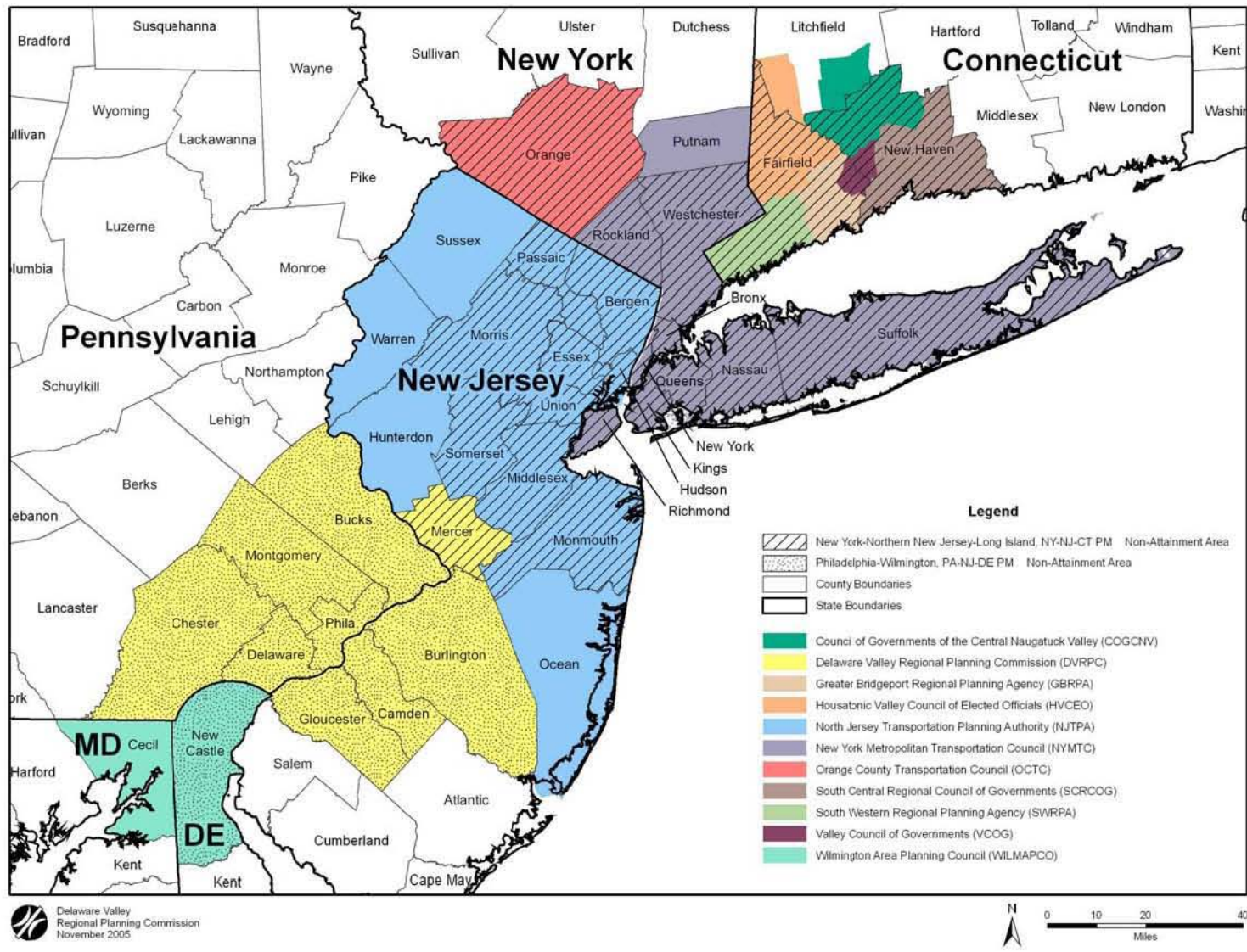


Figure 2. Pertinent PM_{2.5} Non-attainment Areas Affecting the DVRPC Planning Area

1.4 DVRPC *TIP*S AND THE *PLAN*

The DVRPC FY 2007 Pennsylvania and FY 2008 New Jersey *TIP*s are staged, multi-year, intermodal programs of transportation projects covering the respective five Pennsylvania and four New Jersey counties in the DVRPC planning area. The DVRPC *TIP*s are consistent with the *Plan* and are developed, pursuant to 23 CFR Part 450, meeting the federal requirement of being financially constrained to a funding level that is available to the region, as established in the financial guidance provided by the respective states. All *TIP* projects have been reviewed and approved by the TCICG for appropriate air quality code and analysis year.

The *Destination 2030* Long Range Plan, adopted in June 2005, provides a broad planning framework for the region. The transportation component of the *Plan* articulates a vision and a comprehensive long-range transportation blueprint for the DVRPC planning area. As adopted, the *Destination 2030 Plan* includes over \$57 billion from traditional sources for regional transportation improvements, the *Plan* is fiscally constrained while recommending over 110 major regional transportation improvement projects to achieve the goals and objectives therein. It also advances and supports the region's land use plans and policies and proposes strategies to carry out those policies.

The *Plan* has been updated to adhere to the statutory requirements for planning and environmental reviews prescribed in SAFETEA-LU legislation of 2005. The *Plan's* financial component has been updated to reflect actual SAFETEA-LU authorization levels. Projected costs for future *Plan* projects have been adjusted to account for inflation and reflect year of expenditure as required by the FHWA/FTW *Final Rule on Statewide and Metropolitan*

*Transportation Planning and Programming*⁸. All *Plan* projects have also been reviewed and approved by the TCICG for appropriate air quality code and analysis year.

⁸ See 23 CFR 450.216(f), 23CFR 450.322(f) (10) (iv) and 23 CFR 450.23(h).

2 EMISSIONS ANALYSIS APPROACH

2.1 PROJECT CATEGORY

There are two categories of projects in the *Plan* and the *TIP*:

- 1) regionally significant projects and;
- 2) projects exempted from the conformity analysis.

These terms are defined as follows:

REGIONALLY SIGNIFICANT PROJECT⁹: *a non-exempt highway or transit project on a facility which, regardless of its length, serves regional needs and is normally included in the regional model.*

EXEMPT PROJECT: *a project listed in table 2 or 3 of the Final Rule (40 CFR 93) that primarily enhances safety or aesthetics, maintains mass transit, continues current levels of ridesharing, or builds bicycle and pedestrian facilities.*

The *Final Rule* provides that the regional emissions analysis conducted to demonstrate conformity of the *Plan* and the *TIP* includes all “regionally significant, non-exempt” projects on principal arterials and higher classifications – that is, those which can impact regional air quality. The project set includes all those in the *Plan*, those in the current *TIP*s, and those which have been introduced in previous *TIP*s that are not yet completed. The *Final*

Rule stipulates that the emission analysis of transportation plans and programs must model all regionally significant and non-exempt projects. Each categorized project is classified by the first year it is included in the analysis, commonly referred to as the “analysis year” in this document.

Certain projects that cannot be analyzed within the travel demand model are categorized as “off-network,” and are evaluated using trip estimate techniques outside the DVRPC travel demand model. The Pennsylvania Air Quality Off-Network Estimator (PAQ-ONE) and the New Jersey Air Quality Off-Network Estimator (NJAQ-ONE) are a set of travel impact and emissions analysis methodologies developed for the Pennsylvania and New Jersey State Departments of Transportation (state DOTs) used for off-network analyses in their respective states.¹⁰ However, due to their embedded settings, such off-network analyses are suitable only for summer conditions and are not used in the winter CO analyses.

⁹ This applied definition of a regionally significant project is derived from the *Final Rule*, in which 40 CFR 93.101 states that a “regionally significant project means a transportation project (other than an exempt project) that is on a facility which serves regional transportation needs (such as access to and from the area outside of the region, major activity centers in the region, major planned developments such as new retail malls, sports complexes, etc., or transportation terminals as well as most terminals themselves) and would normally be included in the modeling of a metropolitan area’s transportation network, including at a minimum all principal arterial highways and all fixed guideway transit facilities that offer an alternative to regional highway travel.”

¹⁰ State DOTs in the region are also independently referred to as PennDOT (for Pennsylvania) and NJ DOT (for New Jersey).

2.2 EMISSIONS TEST

Within the DVRPC region, the NAAQS requirements for ozone, CO and PM_{2.5} must be met. In the nine-county DVRPC planning area, governing *SIPs* are in place for ozone and CO in the Pennsylvania and New Jersey sub-regions. For these criteria pollutants, DVRPC utilizes the budget test to demonstrate conformity using applicable *SIP* MVEBs.

For ozone, there currently exist no 8-hour ozone *SIPs* in the DVRPC region. However, the *Final Rule* allows the previous 1-hour ozone *SIP* MVEBs to be utilized for the conformity determination until new 8-hour ozone *SIPs* are implemented. Therefore, in this iteration, the ozone conformity findings within the DVRPC planning area will be based on the existing 1-hour *SIP* MVEBs established for 2005 VOCs and NO_x in both Pennsylvania and New Jersey. All ozone MVEBs have been established in cooperation with the state DEPs using MOBILE6.2.

Pennsylvania has established a CO maintenance MVEB for conformity purposes. CO budgets have been established for 2007, 2013 and 2017 for Philadelphia County. In New Jersey, US EPA has approved limited maintenance plans for CO in the *SIP* in Burlington, Mercer and Camden Counties and no further emissions analysis are required for the conformity determination.

Since PM_{2.5} is a recently designated criteria air pollutant, PM_{2.5} *SIPs* have not yet been developed in most areas. In such areas, the *Final Rule* provides state DEPs with a 3-year grace period to develop and implement respective *SIPs* from the time of initial designation or by April 2008. Until governing *SIPs* are in place, meanwhile, the *Final Rule* dictates that MPOs in non-attainment areas utilize one of the two interim emissions testing methods prescribed by US EPA. The

first, the “build/no-build” interim test, requires that, for each future analysis year, emissions from the “build” scenario must be no greater than that from the “no-build” scenario. The second, the “no-greater-than-2002-baseline” interim test, requires that emissions projected for each future analysis year must be no greater than that in 2002 (i.e. the “baseline” year). US EPA instructs that the employed interim emissions test must be applied uniformly over the entire non-attainment area regardless of MPO boundaries.

For the regional analysis of direct PM_{2.5} emissions, both exhaust and brake/tire wear must be included. US EPA has further ruled that regional emissions analyses for direct PM_{2.5} should include road dust if road dust is found to be a significant contributor to PM_{2.5} by either the US EPA Regional Administrator or state DEPs. For both non-attainment areas that DVRPC is part of, road dust has not been found to be a significant PM_{2.5} contributor. US EPA has also required that regional direct PM_{2.5} analyses include fugitive dust from construction of transportation projects if a governing PM_{2.5} *SIP* identifies these emissions as significant contributors to the regional PM_{2.5} problem. In the absence of any PM_{2.5} *SIPs*, no construction-related dust will be considered. Thus, the only components of direct PM_{2.5} emissions in this DVRPC conformity iteration are tailpipe exhaust and brake/tire wear.

For the indirect PM_{2.5} emissions (also called PM_{2.5} precursors), US EPA has identified four potential transportation-related PM_{2.5} precursors: VOCs, NO_x, SO_x, and NH₃. Once a *SIP* is implemented, any precursors identified in the *SIP* will be required in the analysis of indirect PM_{2.5} emissions. Until a *SIP* is established, US EPA has ruled that indirect PM_{2.5} emissions must be analyzed for NO_x, unless US EPA and the state determine that NO_x is insignificant. US EPA also instructed that VOCs, SO_x, and NH₃ must be analyzed as well if the US EPA or the state DEPs determine that one or more of these precursors are significant

contributors. There have been no findings of significance for any of the precursors (also, no findings of insignificance for NO_x). Thus, the only indirect PM_{2.5} component considered in this conformity iteration is NO_x.

Furthermore, PM_{2.5} NAAQS have both annual and daily standards, while MOBILE6.2 emissions results are daily estimates. Therefore, a guidance document from US EPA presents the technique to estimate annual emissions from the MOBILE6.2 daily emissions results. This technique is termed an “annual inventory method.” There are four methods allowed for developing an annual inventory: single run; two-season runs; four-season runs; and, twelve monthly runs.¹¹ For the areas using the interim test, all MPOs must use the same annual inventory method. For the areas with MVEBs, the emissions analysis must be performed using the same annual inventory method used to develop the governing *SIP*.

In 2006, New Jersey has implemented a PM_{2.5} *SIP* for selected portions of the state.¹² Those areas in New Jersey with effective *SIP* PM_{2.5} MVEBs now include Mercer County within the DVRPC planning area. Therefore, in Mercer, the budget test is employed to demonstrate PM_{2.5} conformity. It should be noted that the implemented NJ PM_{2.5} *SIP* has been developed using the 12-month annual inventory method and that DVRPC’s emissions analysis for Mercer will be based on the same.

Otherwise, for the DVRPC portion within the Philadelphia-Wilmington, PA-NJ-DE PM_{2.5} Non-attainment Area, DVRPC

continues to coordinate its conformity efforts with WILMAPCO, and the two MPOs demonstrate conformity collectively for the entire non-attainment area.

For this iteration of the conformity demonstration, DVRPC and WILMAPCO have jointly decided to use the “no-greater-than-2002-baseline” interim test. Also, DVRPC and WILMAPCO have jointly decided to use the four-season annual inventory method. This annual inventory method is applied to all PM_{2.5} emissions analyses in the DVRPC and WILMAPCO planning areas except Mercer County in New Jersey.

Table 1 shows governing MVEBs and other applicable NAAQS requirements to be utilized in this iteration of conformity demonstration.

¹¹ For more information, see *Guidance for Creating Annual On-road Mobile Source Emission Inventories for PM_{2.5} Non-attainment Areas for Use in SIPs and Conformity*. US EPA: Office of Transportation and Air Quality. EPA420-B-05-008. August 2005.

¹² US EPA has determined the New Jersey *SIP* revision and the imbedded PM_{2.5} MVEBs for Mercer County (i.e. the DVRPC portion of the New York-Northern New Jersey-Long Island, NY-NJ-CT PM_{2.5} Non-attainment Area) – adequate for transportation conformity purposes and has published the adequacy finding in the Federal Register on June 8, 2006 (71 FR 33305).

Table 1. Emissions Budgets (Tons/Day) and Baseline (Tons/Year) †

Pollutant	Budget/ Baseline	<i>Pennsylvania Sub-region</i>		<i>New Jersey Sub-region</i>	
VOCs	2005 Budget	79.69	(all counties)	42.99	(all counties)
NO _x	2005 Budget	144.73	(all counties)	63.44	(all counties)
CO	2007 Budget	331.25	(Philadelphia)	-	-
	2013 Budget	278.23	(Philadelphia)	-	-
	2017 Budget	260.97	(Philadelphia)	-	-
Direct PM _{2.5}	2002 Baseline/	998.2	(all counties)	486.7	(Burlington, Camden & Gloucester)
	2009 Budget ‡				89 (Mercer)
NO _x		59,346.0	(all counties)	30,499.9	(Burlington, Camden & Gloucester)
					4,328 (Mercer)

Source: DVRPC, 2007

Note: † All MVEBs are rounded off to the nearest hundredth ton/day, except PM_{2.5} budgets in Mercer, which are rounded off to the nearest integer in accordance with the respective *SIP*. Interim emissions test baseline is rounded off to the nearest tenth ton/year.

‡ 2009 budget applies only to Mercer County. 2002 baseline is for the DVRPC portion of the Philadelphia-Wilmington, PA-NJ PM_{2.5} Non-attainment Area. The WILMAPCO portion of the non-attainment area includes New Castle County in Delaware, and its 2002 baselines for Direct PM_{2.5} and NO_x are 208.6 tons/day and 11,799.1 tons/day, respectively.

2.3 ANALYSIS YEAR

For this iteration of conformity demonstration, the mobile source ozone emissions analysis years for VOCs and NO_x are 2010 (8-hour ozone standard attainment year), 2020 (the *interim* year selected to keep all analysis years no more than ten years apart) and 2030 (the *horizon* year of the *Plan*). VOCs and NO_x, which are heat-related ozone precursors, are concerns during the summer months, and are estimated for a July day. For these analysis years, ozone emissions analyses are performed. To demonstrate conformity, projected ozone emissions in all analysis years must not exceed the established MVEBs.

CO emissions are also calculated for 2010, 2020, and 2030. Additionally, CO emission factors are estimated for years that CO MVEBs have been established in the PA *SIP*. Those additional years are 2013 and 2017 in the Pennsylvania sub-region. CO is estimated for a January day since its effects are more prevalent during the winter months. Regional emissions are also tested for these budget years according to the *Final Rule*. To demonstrate conformity, projected CO emissions in all analysis years must not exceed the established MVEBs in prior years.

In the PM_{2.5} conformity demonstration, analysis years vary by area due to the different emissions tests being applied. In the

Philadelphia-Wilmington, PA-NJ-DE PM_{2.5} Non-attainment Area, PM_{2.5} analysis years are 2010, 2020 and 2030. For the New York-Northern New Jersey-Long Island, NY-NJ-CT PM_{2.5} Non-attainment Area, the year 2009 is analyzed instead. 2009 is a PM_{2.5} MVEB budget year for Mercer County. To demonstrate conformity, projected PM_{2.5} emissions in all analysis years must not exceed 1) the 2002 baseline emissions results in the Philadelphia-Wilmington, PA-NJ-DE PM_{2.5} Non-attainment Area; and 2) the 2009 budgeted emissions in the New York-Northern New Jersey-Long Island, NY-NJ-CT PM_{2.5} Non-attainment Area.

Table 2 describes the project sets that are considered in each future year analysis. All analysis years, projects, and activities identified in Table 2 have been reviewed and approved by TCICG for the conformity demonstration.

Table 2. Projects and Activities Included in the Regional Emissions Analysis

<i>Analysis Year</i>	<i>Project Set</i>
2002 (PM _{2.5} baseline)	All regionally significant highway and transit facilities, services and activities in place by 2002; for PM _{2.5} analysis only
2007 (CO Budget)	CO budget year, included to compare against 2010 CO emissions analysis (Philadelphia County only)
2009 (PM _{2.5} budget)	<ul style="list-style-type: none"> ① All regionally significant highway and transit facilities, services and activities currently in place + ② All regionally significant highway and transit projects that are scheduled to open by 2009†; for PM_{2.5} analysis only (specifically for Mercer County, NJ)
2010 (<i>Near-term horizon and 8-hour ozone attainment year</i>)	<ul style="list-style-type: none"> ① All regionally significant highway and transit facilities, services and activities currently in place + ② All regionally significant highway and transit projects that are scheduled to open by 2010
2013 (CO Budget)	Per 40 CFR 93 Section 118(d)(2), the travel network results are interpolated for this budget year; for CO analysis only (Philadelphia County only)
2017 (CO Budget)	Per 40 CFR 93 Section 118(d)(2), the travel network results are interpolated for this budget year; for CO analysis only (Philadelphia County only)
2020 (<i>Interim horizon</i>)	<ul style="list-style-type: none"> ① + ② + ③ Additional highway and transit projects that are scheduled to open between 2010 and 2020
2030 (<i>DV/ RPC Plan horizon</i>)	<ul style="list-style-type: none"> ① + ② + ③ + ④ Additional highway and transit projects that are scheduled to open between 2020 and 2030

Source: DVRPC, 2007

Note: † Currently, neither the *TIP*s nor the *Plan* identifies any projects that are scheduled to open specifically between 2009 and 2010. Therefore, given the close proximity of the two analysis years, the TCICG has agreed to keep the 2009 network identical to the 2010 network for this iteration of conformity demonstration.

2.4 DVRPC AIR QUALITY CODE

For all *Plan* and *TIP* projects, an alphanumeric air quality (AQ) coding scheme has been developed and is applied by DVRPC for the conformity determination and exempt eligibility identification purposes.

All regionally significant, non-exempt projects are assigned five-character alphanumeric AQ codes that begin with a four-digit analysis year followed by either the letter “M” (model) or “O” (off-network). For instance, a *Plan* or *TIP* project may have an AQ code of 2010O, in which case, the project is identified as a regionally significant, non-exempt project, the emissions estimates of which are 1) included in the 2010 and all subsequent future analysis years and 2) performed using an off-network analysis technique.

DVRPC has also developed an internal coding scheme to identify each exempt project type based on those defined in the *Final Rule*. Table 3 shows the exempt project categories in the *Final Rule* and their corresponding DVRPC AQ codes. In cases where multiple codes can apply to a project, the most representative code is assigned. The air quality code for each project is shown in the respective Long Range *Plan* and *TIP* documents.

Projects under the Study and Development category are those that are still in conceptual phase and are not yet part of the current *TIPs*. However, they are likely to be included in future *TIPs*, and DVRPC assigns AQ codes that begin with “SD.” These projects will be further scrutinized when they advance to be included in *TIPs*.

Projects that have been determined not to be regionally significant as defined in the *Final Rule* and do not fit into an exempt category are labeled as “NRS.”

The TCICG has reviewed all projects and concurred on all associated AQ codes in the *Plan* and the *TIP*.

Table 3. AQ Codes for Projects in the *TIPs* and the *Plan*

	<i>Exempt Project Category¹</i>	<i>DVRPC AQ Code</i>
Safety Projects	Railroad/highway crossing	S1
	Hazard elimination program	S2
	Safer non-Federal-aid system roads	S3
	Shoulder improvements	S4
	Increasing sight distance	S5
	Safety improvement program	S6
	Traffic control device and operating assistance other than signalization projects	S7
	Railroad/highway crossing warning devices	S8
	Guardrails, median barriers, crash cushions	S9
	Pavement resurfacing and/or rehabilitation	S10
	Pavement marking demonstration	S11
	Emergency relief (23 U.S.C. 125)	S12
	Fencing	S13
	Skid treatments	S14
	Safety roadside rest areas	S15
	Adding medians	S16
	Truck climbing lanes outside the urbanized area	S17
	Lighting improvements	S18
	Widening narrow pavements or reconstructing bridges (no additional travel lanes)	S19
	Emergency truck pullovers	S20

Source: DVRPC, 2007

	<i>Exempt Project Category¹</i>	<i>DVRPC AQ Code</i>
Mass Transit Projects	Operating assistance to transit agencies	M1
	Purchase of support vehicles	M2
	Rehabilitation of transit vehicles ²	M3
	Purchase of office, shop and operating equipment for existing facilities	M4
	Purchase of operating equipment for vehicles (e.g., radios, fareboxes, lifts, etc.)	M5
	Construction or renovation of power, signal, and communications systems	M6
	Construction of small passenger shelters and information kiosks	M7
	Reconstruction or renovation of transit buildings and structures	M8
	Rehabilitation or reconstruction of track structures, track, and trackbed in existing rights-of-way	M9
	Purchase of new buses and rail cars to replace existing vehicles or for minor expansions of the fleet	M10
	Construction of new bus or rail storage/maintenance facilities categorically excluded in 23 CFR part 771	M11

Source: DVRPC, 2007

Note: ¹ 40 CFR 93 Sections 126 and 127.

² In PM₁₀ non-attainment or maintenance areas, such projects are exempt only if they are in compliance with control measures in the applicable implementation plan.

Table 3. AQ Codes for Projects in the *TIPs* and the *Plan* (continued)

	<i>Exempt Project Category¹</i>	<i>DVRPC AQ Code</i>
Air Quality Projects	Continuation of ride-sharing and van-pooling promotion activities at current levels	A1
	Bicycle and pedestrian facilities	A2
Others	Specific activities which do not involve or lead directly to construction, such as: Planning and technical studies	X1
	Grants for training and research programs	X2
	Planning activities conducted pursuant to title 23 and 49 U.S.C.	X3
	Federal-aid systems revisions	X4
	Engineering to assess social, economic, and environmental effects of the proposed action or alternatives to that action	X5
	Noise attenuation	X6
	Advance land acquisitions (23 CFR 712 or 23 CFR 771)	X7
	Acquisition of scenic easements	X8
	Plantings, landscaping, etc.	X9
	Sign removal	X10
	Directional and informational signs	X11
	Transportation enhancement activities (except rehabilitation and operation of historic transportation buildings, structures or facilities)	X12
	Repair of damage caused by natural disasters, civil unrest, or terrorist acts, except projects involving substantial functional, locational or capacity changes	X13

Source: DVRPC, 2007

	<i>Exempt Project Category¹</i>	<i>DVRPC AQ Code</i>
No Regional Emissions Analysis Required	Intersection channelization projects	R1
	Intersection signalization projects at individual intersections	R2
	Interchange reconfiguration projects	R3
	Changes in vertical and horizontal alignment	R4
	Truck size and weight inspection stations	R5
	Bus terminals and transfer points	R6

Source: DVRPC, 2007

	<i>Study & Development Project Category</i>	<i>DVRPC AQ Code</i>
Study & Dev't Projects	Resulting project of which is likely to be an exempt kind	SDX
	Resulting project of which is likely to be a non-exempt kind	SDN

Source: DVRPC, 2007

	<i>Not Regionally Significant Project Category³</i>	<i>DVRPC AQ Code</i>
Non Regionally Significant Projects	Projects determined to be “Not Regionally Significant” and do not fit into an exempt category	NRS

Source: DVRPC, 2007

Note: ¹ 40 CFR 93 Sections 126 and 127.

² In PM₁₀ non-attainment or maintenance areas, such projects are exempt only if they are in compliance with control measures in the applicable implementation plan.

³ 40 CFR 93.101 as amended by 62 FR 43780, 438303

3 LATEST PLANNING ASSUMPTION

3.1 POPULATION & EMPLOYMENT ESTIMATES

All planning assumptions utilized in this demonstration are the latest and most current as of March 26, 2007, which is the start date of the DVRPC conformity analysis. The DVRPC TCICG has reviewed and concurred on all latest planning assumptions utilized.

DVRPC uses a multi-step, multi-source methodology to produce long-range population and employment estimates at the county-level. These estimates, in turn, become the control totals for municipal-level and traffic analysis zone (TAZ) level estimates.

Population forecasting at the regional level involves review and analysis of six major components: births, deaths, domestic in-migration, domestic out-migration, international immigration and changes in group-quarter populations (e.g. dormitories, military barracks, prisons and nursing homes). DVRPC uses both the cohort survival concept and a modified Markov transition probability model – based on the US Census 2000 and the Current Population Survey research – to age individuals and determine the flow of people. DVRPC also relies on member counties to provide information on any known, expected, and/or forecasted changes in group-quarter populations. Current and future population estimates for the DVRPC planning area, adopted by the DVRPC Board in February 2005, are shown in Table 4.

Table 4. Population Estimates

<i>County</i>	<i>2000</i>	<i>2005</i>	<i>2010</i>	<i>2015</i>	<i>2020</i>	<i>2025</i>	<i>2030</i>
Bucks	597,635	625,050	652,800	678,650	709,150	737,230	762,455
Chester	433,501	459,400	483,500	505,800	528,000	550,160	571,800
Delaware	551,974	551,530	550,970	546,570	546,972	547,784	547,890
Montgomery	750,097	776,340	797,990	818,220	838,700	857,030	878,440
Philadelphia	1,517,550	1,500,010	1,484,990	1,505,010	1,515,010	1,510,000	1,505,000
Burlington	423,394	452,776	470,427	483,448	497,960	514,950	532,850
Camden	508,932	511,770	512,710	512,790	514,760	513,530	515,425
Gloucester	254,673	265,500	278,960	292,940	308,330	322,520	337,090
Mercer	350,761	362,090	373,530	379,582	385,558	391,946	398,389
PA Total	3,850,757	3,912,330	3,970,250	4,054,250	4,137,833	4,202,204	4,265,585
NJ Total	1,537,760	1,592,136	1,635,627	1,668,760	1,706,608	1,742,946	1,783,754
Regional	5,388,517	5,504,466	5,605,877	5,723,010	5,844,441	5,945,150	6,049,339

Source: DVRPC, 2005

Employment estimates are influenced by political and socioeconomic factors at local, national and global levels. The Bureau of Economic Analysis (BEA) provides the most complete and consistent time-series data on county sectoral employment and is DVRPC's primary data source for employment forecasts. Employment sectors include mining, agriculture, construction, manufacturing, transportation, wholesale, retail, service, finance/insurance/ real-estates (FIRE), government and military. The OBERS (formerly the Offices of Business Economics and of Economic Research Services) shift-share model in combination with the Woods and Poole Economics' sectoral forecasts also provides the basis for DVRPC's employment forecasts. As in the population forecasts, county-level totals are used as control totals

for municipal and TAZ-level sector distribution forecasts. These forecasts incorporate various supplemental data from public and private sectors including data from the US Census, BEA, Dun & Bradstreet, Bureau of Labor Statistics, Occupational Privilege Tax database, Woods & Poole Economics Complete Economic and Demographic Data Source (CEDDS), and other public and private sector statistics and are also reviewed by member counties for final adjustments based on local knowledge. Current and future employment estimates for the DVRPC planning area are shown in Table 5. These estimates, adopted by the DVRPC Board in February 2005, have also been reviewed and approved by the TCICG for the transportation conformity process.

Table 5. Employment Estimates

<i>County</i>	<i>2000</i>	<i>2005</i>	<i>2010</i>	<i>2015</i>	<i>2020</i>	<i>2025</i>	<i>2030</i>
Bucks	267,124	274,603	292,453	307,075	320,280	335,973	352,772
Chester	238,641	248,187	270,523	289,731	305,086	324,002	345,062
Delaware	238,164	242,213	251,901	258,958	265,787	269,370	273,411
Montgomery	492,677	504,009	531,225	547,162	563,029	579,920	597,300
Philadelphia	741,397	726,569	726,205	733,468	748,136	755,621	763,176
Burlington	202,535	207,598	216,940	223,882	230,375	240,051	249,653
Camden	216,931	217,083	220,339	226,509	230,586	233,122	235,453
Gloucester	99,467	104,142	114,452	119,124	123,485	129,168	135,627
Mercer	209,758	214,833	226,991	237,743	244,876	253,066	258,818
PA Total	1,978,003	1,995,581	2,072,307	2,136,394	2,202,318	2,264,886	2,331,721
NJ Total	728,691	743,656	778,722	807,258	829,322	855,407	879,551
Regional	2,706,694	2,739,237	2,851,029	2,943,652	3,031,640	3,120,293	3,211,272

Source: DVRPC, 2005

3.2 TRANSIT AND ROAD TOLL POLICIES

As part of the latest planning assumptions, current transit operations policies and other road toll structures are also considered. The transit person trips produced by the modal split component of the DVRPC travel demand model are considered “linked” in a sense that they do not include any transfers which may have occurred either between transit trips or between auto-approaches and transit lines. Therefore, the transit assignment procedure accomplishes two major tasks. First, the transit trips are “unlinked” to include transfers and second, these “unlinked” transit trips are associated with specific transit facilities to produce link, line and station volumes. These tasks are performed simultaneously within the transit assignment model, which assigns the transit trip matrix to minimum impedance paths built through the transit network, which is not capacity constrained. The DVRPC travel demand model, including its transit segment, is further explained in section 4.1.

All fares entering the transit network are “blended” by operating entity. For each operator, different existing fare types (e.g. cash, token, transfer charge, daily, weekly and monthly passes) are blended into a single fare policy based on the percentage of each fare type and use in the 2000 fare structure. Then, the future fare for each operator is held constant in current dollars. All current operating plans, ridership and service levels of transit systems are built into the transit network and are incorporated into the future year networks as well. Future year transit networks are also augmented with any new services identified in the corresponding DVRPC *TIPs* and the *Plan*. Table 6 details all transit operators included in the transit network and their operational assumptions, respectively.

Other transportation related costs such as automobile operating costs, gasoline costs, parking costs, and road/bridge tolls are also based on current and available data and are held constant in current dollars into the future analysis years.

Table 6. Transit Operation Assumptions

<i>Transit Companies</i>	<i>Fares</i>	<i>Operating Plan/Service Level</i>
SEPTA City Transit Division		
SEPTA Suburban Victory Division	Specified in the transit network by operator and by analysis year; held constant in current dollars using an inflation rate	Specified in the transit networks by operator and by analysis year
SEPTA Suburban Frontier Division		
SEPTA Regional Rail Division		
NJ Transit Mercer Division		
NJ Transit Southern Division		
NJ Transit Railroad Division		
PATCO High-speed Line (DRPA)		
Pottstown Urban Transit		
KrapFs Coaches		

Source: DVRPC, 2007

3.3 LAND USE ASSUMPTIONS

The land use component of the travel simulation used for the transportation conformity determination employs a system of area type codes for each internal TAZ. The area type codes serve as an indicator of the intensity of travel activity occurring in a zone. This intensity of activity is measured by computing the area type factor, α (defined below) for each zone, whereas an employment coefficient of 2.37 is empirically derived.

$$\alpha = \frac{[(\text{Zonal Population}) + 2.37 \times (\text{Zonal Employment})]}{(\text{Zonal Land Area, in acres})}$$

Calculated area type codes are subjected to a reasonableness determination process, in which the TAZs corresponding to census water tracts, urban open space and other variations are accounted for and area codes for them are adjusted accordingly. Table 7 shows the six area types utilized in the DVRPC travel simulation process as land use inputs and the range of factor values for each area type shown.

Table 7. Area Type and Corresponding Range of Area Type Factor Values

<i>Area Type Code in the Model</i>	<i>Area Type Category</i>	<i>Factor Range</i>
1	Central Business District [CBD]	$200 < \alpha$
2	Fringe of CBD	$120 < \alpha \leq 200$
3	Urban	$25 < \alpha \leq 120$
4	Suburban	$4 < \alpha \leq 25$
5	Rural	$0.5 < \alpha \leq 4$
6	Open Rural	$0 \leq \alpha \leq 0.5$

Source: DVRPC, 2007

3.4 TIP AND PLAN AMENDMENTS

Transportation conformity of the DVRPC FY 2007 *TIPs* has been initially demonstrated in June 2006 and amended in December 2006 and FHWA/FTA jointly approved its finding in December 2006. A new iteration of conformity is triggered for a new *FY 2008 – 2011 New Jersey TIP*, updates to the *FY 2007 - 2010 PA TIP* and revision of the *Destination 2030 Plan* to bring the *Plan* into compliance with the provisions of SAFTEA-LU legislation. The *Final Rule* requires MPOs to demonstrate conformity when any non-exempt, regionally significant projects in the *TIPs* or the *Plan* are altered substantially to change regional travel patterns. This conformity iteration reflects all such changes proposed to the *TIPs* and the *Plan* since last demonstration.

4 TRAVEL SIMULATION

4.1 TRAVEL DEMAND MODEL

To satisfy the requirements of SAFETEA-LU, CAA and other relevant federal conformity rules, a series of enhancements and modifications have been implemented to the travel demand model. Some of the new components recently added to the model include nested modal split and time-of-day modeling features.

The enhanced DVRPC travel simulation – validated in 2005 using the US Census 2000 information, home interview survey and traffic count data – is a classic four-step transportation modeling application that operates within an iterative (Evans algorithm) structure with respect to highway travel time and is disaggregated into separate peak, mid-day and evening time periods. In the four-step modeling process, trip generation is based on constant trip rates imbedded in a cross-classification structure. Trip distribution uses a doubly constrained gravity model, stratified into three person (home-based work, home-based non-work and non-home-based) and four vehicle trip purposes. Modal split employs a binary probit-like formulation stratified by trip purpose, transit submode and auto ownership. The highway assignment component is based on the equilibrium method using minimum travel-time path. Free flow highway speeds are stratified by functional class and density of development.

The Evans algorithm re-executes the trip distribution and the modal split highway components. This process is based on updated speeds after each iteration of the highway assignment and

determines a weight value (λ) upon each performed iteration. This weight is then used to prepare a convex combination of the link volumes and trip tables for the current iteration and a running weighted average of the previous iterations. This algorithm converges rapidly to an equilibrium solution on highway travel speeds and congestion levels. When the equilibrium is attained, the model assigns the weighted average transit trip tables to the transit networks and produces link and route passenger volumes. Transit assignment is unrestrained and uses minimum paths based on the modal split model definition of impedance.

The model relies on TAZs to estimate travel patterns. The demographic inputs to the travel simulation process are prepared for each TAZ based on the adopted forecasts and population and employment are assigned to these geographic areas. Trips between each pair of zones are determined and assigned to either the highway or transit networks.

The iterative DVRPC travel demand simulation process, detailed in Figure 3, has been reviewed and approved by the TCICG. The methodology and detailed TAZ level estimates are further explained in the DVRPC report: *2000 Travel Simulation for the Delaware Valley Region* (in preparation).

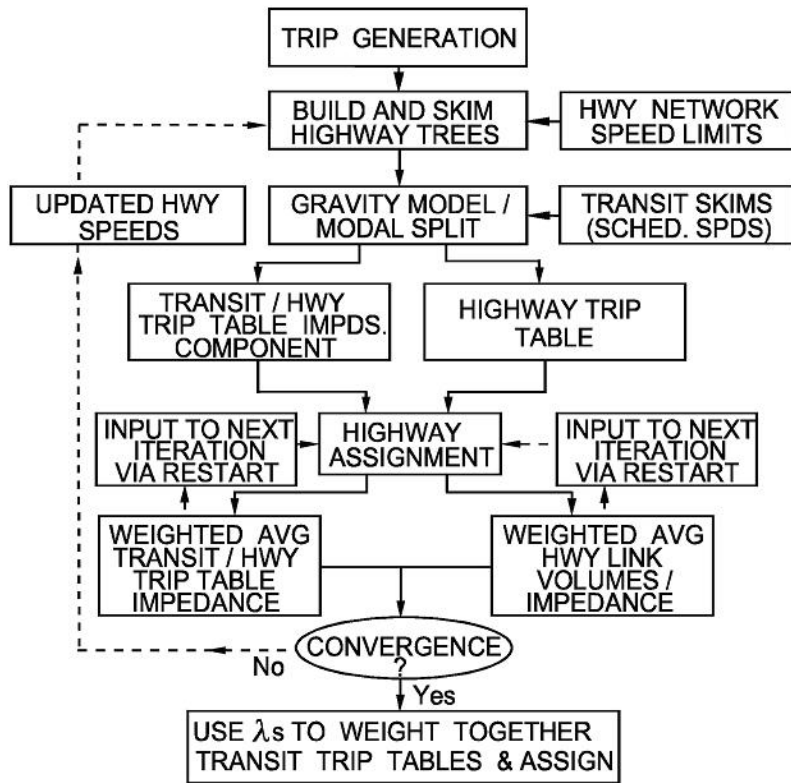


Figure 3. Travel Demand Simulation Process

4.2 OFF-NETWORK METHODOLOGY

Due to the project scale, scope or governing characteristics, some non-exempt, regionally significant projects, such as park & ride facilities or bikeway improvements, cannot be represented and evaluated by the travel demand model properly. As previously noted, therefore, travel impacts and emissions analyses of such projects are performed using PAQ-ONE and NJAQ-ONE. These off-network analysis tools are a set of travel impact and emissions analysis methodologies, and are configured for summer conditions only. These methodologies were initially developed for state DOT's to assist in the analysis and ranking of congestion mitigation/air quality (CMAQ) funded projects.¹³

Currently, there are 33 PAQ-ONE and NJAQ-ONE travel impact methodologies available, all of which have three steps in common: 1) data collection; 2) calculation of changes in travel characteristics; and 3) computation of the emissions impacts associated with the changes in travel characteristics. In steps 1) and 2), each of the off-network methodologies calculates the estimated travel impacts of individual projects based on a combination of project-level, county-level and national data, and then, it assesses the resulting changes on the transportation system. Outputs are typically measured in the change in vehicle-miles-traveled (VMT), in vehicle trips, in total vehicle time spent in idling, and in speed. In step 3), the travel changes are fed into an emission estimate module to produce the air quality impacts.

Both PAQ-ONE and NJAQ-ONE contain independent MOBILE6.2 modules to determine emissions estimates. Once the characteristic changes in travel are calculated, the transportation

¹³ CMAQ is a federal funding category for projects specifically designed to contribute to the attainment of the NAAQS in ozone non-attainment areas.

results are fed to the emissions module to create emissions factors based on the county-level data and local assumptions. The input parameters for the MOBILE6.2 component, prepared by the travel impact module of the off-network methodologies, vary by each off-network project's own scope, scale and characteristics, but include the average speed and VMT mixes broken down for each county by area type, facility type, time of day and/or inspection & maintenance programs implemented. Final off-network emissions estimate outputs show the changes in VOCs, NO_x, CO and PM_{2.5} in both kg/July-day and tons/July-day for individual projects. Therefore, PAQ-ONE and NJAQ-ONE outputs are not suitable for winter analyses. The emissions estimation process using MOBILE6.2 is further described in section 5.1.

In this iteration of conformity demonstration, there are ten projects, whose emissions estimates are generated using the off-network methodology. These off-network projects are identified in Table 8.

Table 8. Non-Exempt, Off-Network Projects in the *TIPs* and the *Plan*

MPMS #	County/ Agency	Project/Facility	First Year of Analysis
14842	Delaware	Baldwin Station and P&R Lot	2020
17830	Philadelphia	West Phila. Congestion Mitigation	2010
60540	SEPTA	Rail Stations and Parking Program	2020
60574	SEPTA	Paoli Transportation Center	2020
60629	SEPTA	Job Access and Reverse Commute	2010
60655	SEPTA	Intermodal Facility Improvement (B)	2020
73214	SEPTA	Ardmore Transit Center	2010
74799	Delaware	Upper Darby Parking Facility	2020
T199	NJ Transit	Job Access and Reverse Commute	2010
G (Plan)	SEPTA	Rt 23/Rt 56 Light Rail Vehicle Purchase	2020

Source: DVRPC, 2007

5 EMISSIONS ESTIMATION

5.1 MOBILE6.2

The calculated travel impact changes from the travel simulation process are passed through the post-processor routine and are prepared for an emissions estimate model.

In demonstrating conformity, use of the newest version of the MOBILE emissions estimate model is required under the *Final Rule*. MOBILE6.2 is the latest version of the family of MOBILE mobile-source emissions estimate models developed by US EPA and reflects many cumulative technological enhancements, emissions control updates and trend shifts introduced since 1996. These changes include expanded vehicle type categories and state inspection and maintenance (I/M) program specification options, more detailed vehicle activity information and fuel program definitions, and revised base emissions rates.

Taking advantage of these updated changes, the input parameters to the MOBILE6.2 model specify available fuel types, composition mix of vehicle fleets and meteorological conditions, among other choices. Also, recent vehicle registration data is used to specify vehicle fleet parameters. A general flow of the emissions calculation process is shown in Figure 4.

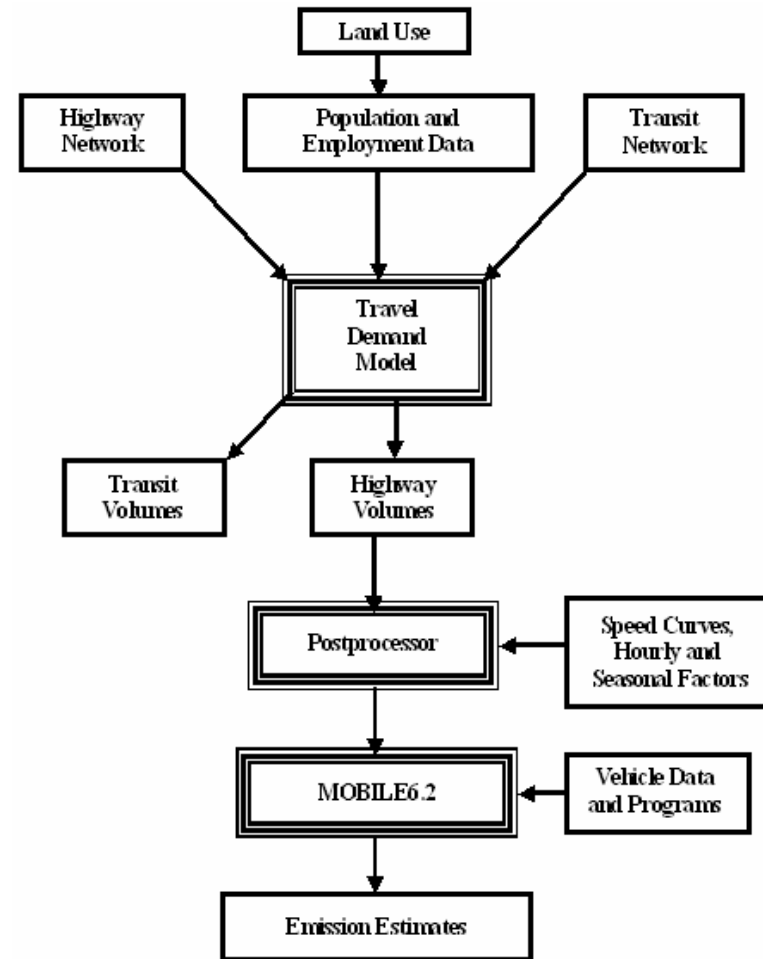


Figure 4. Emissions Calculation Process with MOBILE6.2

5.2 MOBILE6.2 INPUTS

DVRPC utilizes best available local data for applicable input settings in MOBILE6.2 to accurately reflect the local conditions. These settings include, among other parameters, MIN/MAX TEMP, ABSOLUTE HUMIDITY, REG DISTRIBUTION, DIESEL FRACTIONS, VMT FRACTIONS, VMT BY FACILITY, VMT BY HOUR, SPEED VMT, FUEL RVP, ALTITUDE, and individual I/M program information. Local temperature and humidity data are particularly important, because MOBILE6.2 relies on these values to estimate air conditioner usage. As for specific parameter values, inputs for individual pollutants can differ.

Using ozone settings as an example, MOBILE6.2 takes the minimum/maximum daily temperatures and humidity values that are based on conditions from the ten days with the highest ozone concentrations during a three-year period. These settings facilitate the model output to cater to real-life driving patterns including air conditioner usage, various state and local emissions control provisions, and changing meteorological conditions. Applicable I/M program settings are also part of the MOBILE6.2 inputs. All gasoline fueled cars and trucks in both Pennsylvania and New Jersey are subject to emissions tests. Depending on the vehicle type and age, each vehicle is subject to an on-board diagnostics test, a dynamometer test or an idle test under the respective state emissions requirements and I/M programs. These services are fundamentally similar in nature and are performed in a largely decentralized fashion where private garages both conduct the emissions test and make necessary vehicle repairs. However, New Jersey has some centralized test-only locations in addition to the private garages. The emissions tests include a check of the vehicle's evaporative control system and the integrity of the vehicle's

emissions control equipment, and are performed annually in Pennsylvania and biennially in New Jersey. MOBILE6.2 also utilizes vehicle registration data to generate emissions estimates. The base year for the vehicle registration information is 2002 for Pennsylvania and 2005 for New Jersey.

Particularly applicable to the CO analysis, US EPA recommends that MPOs set the MOBILE6.2 RFG setting for winter months manually, to which the DVRPC practice adheres. DVRPC enters the wintertime RFG parameters individually in MOBILE6.2 using the FUEL PROGRAM/4 (user-specified sulfur levels), OXYGENATED FUELS, and FUEL RVP commands. Summer RFG setting takes the Northern Region RFG input parameters.

As for the low emission vehicle technology, the New Jersey Legislature, in January 2004, enacted N.J.S.A. 26:2C-8.5 et seq. requiring the NJ DEP to promulgate rules adopting the California Low Emission Vehicle Program (CA LEV II). Subsequently, the New Jersey Low Emission Vehicle (NJ LEV) program and the DVRPC emissions estimate thereof, reflected this change.

Additionally, the Pennsylvania Clean Vehicles Program, adopted in 1998, incorporated the CA LEV II by reference. However, it also allowed automakers to comply with the National Low Emission Vehicle (NLEV) program as an alternative to the Pennsylvania program until a later model year (MY). The Pennsylvania Clean Vehicles Program had initially targeted MY 2006 for implementation, but PA DEP has recently passed a regulation that postpones compliance with the Pennsylvania program until MY 2008.¹⁴ Also, the Pennsylvania program was analyzed using US EPA's recommended analysis approach, and the methodology and

¹⁴ The final rule can be viewed at <http://www.pabulletin.com/secure/data/vol36/36-49/2406.html>. The regulation was published in the Pennsylvania Bulletin on December 9, 2006. Webpage last accessed on March 29, 2007.

data files therein were revised to phase in CA LEV II after MY 2008 as well.¹⁵ In this conformity iteration, DVRPC has incorporated the Pennsylvania Clean Vehicles program into its emissions estimates.

Other settings including CLOUD COVER, PEAK SUN, SUNRISE/SUNSET, STARTS PER DAY, START DIST, SOAK DISTRIBUTION, HOT SOAK ACTIVITY and DIURN SOAK ACTIVITY parameters currently accept the US EPA's default values, which represent "the worst-case conditions."¹⁶ Collectively, these local and default settings generate dependable regional emissions estimates suitable for demonstrating transportation conformity in the DVRPC region.

Table 9 shows selected MOBILE6.2 settings used for the ozone and CO conformity determination processes.

As for the PM_{2.5} analysis, MOBILE6.2 input settings may vary slightly from those in the ozone and CO analyses. Such variances are inevitable due to the annual inventory process detailed in section 2.2.

For the Philadelphia-Wilmington, PA-NJ-DE PM_{2.5} Non-attainment Area, the conformity determination is based on the four-season annual inventory methodology, requiring four sets of seasonal input conditions, one for each of the four seasons. Since MOBILE6.2 has only two input options for evaluation month (i.e. January for winter and July for summer), July input parameters are entered for a spring inventory and January of the following year is

used for a fall inventory. Fuel parameters and VMT inputs are seasonally apportioned as well. The total annual PM_{2.5} inventory for the DVRPC portion of the non-attainment area is the sum of these four seasonal inventories.

For the New York-Northern New Jersey-Long Island, NY-NJ-CT PM_{2.5} Non-attainment Area, MOBILE6.2 must be configured to produce a monthly run, because the governing PM_{2.5} SIP is developed using a 12-month inventory methodology. Therefore, the input settings such as temperature and humidity data are adjusted for each month accordingly. The sum of these monthly inventories is, then, tested against the SIP budget in Mercer County to determine conformity.

All PM_{2.5} adjustments detailed herein fully comply with the current US EPA guidance on developing annual inventories for the transportation conformity purposes.

5.3 OFF-NETWORK METHODOLOGY

Both PAQ-ONE and NJAQ-ONE contain independent MOBILE6.2 modules to determine emissions estimates. Final off-network emissions estimate outputs show the changes in VOCs, NO_x, CO and PM_{2.5} in both kg/July-day and tons/July-day for the project sets included in the TIPs and the Plan. As noted earlier, these results are not suitable for wintertime analysis.

¹⁵ The US EPA recommended analysis approach is documented in the June 2002 guidance, *Modeling Alternative NLEV Implementation and Adoption of California Standards in MOBILE6*.

¹⁶ Dolce, Gary. 2001. "MOBILE6 Input and Modeling Guidance: SIP and Conformity Policy." Presentation at the North American Vehicle Emission Control Conference. US EPA, Office of Transportation and Air Quality. Available online at <http://www.epa.gov/otaq/models/mobile6/m6sippol.pdf>. Last accessed on December 28, 2005.

Table 9. Selected Ozone and CO MOBILE6.2 Parameter Settings

<i>MOBILE6.2 Parameter</i>	<i>Pennsylvania</i>		<i>New Jersey</i>	
	<i>Summer†</i>	<i>Winter‡</i>	<i>Summer†</i>	<i>Winter‡</i>
Minimum/Maximum Temperatures	70.7 F / 93.4 F	30.8 F / 53.7 F	73.2 F / 96.1 F	32.0 F / 51.0 F
Absolute Humidity	72.6 grains/lb.	20.0 grains/lb.	76.2 grains/lb.	20.0 grains/lb.
Cloud Cover	0.0 (default)		0.0 (default)	
Peak Sun	10 am to 4 pm (default)		10 am to 4 pm (default)	
Sun Rise / Sun Set	6 am and 9 pm (default)		6 am and 9 pm (default)	
Fuel Reid Vapour Pressure (RVP)	6.80 psi	13.47 psi	6.80 psi	15.00 psi
Engine Starts per day				
<i>Cars (wkdy/wkend)</i>	7.28 / 5.41 (default)		7.28 / 5.41 (default)	
<i>Trucks (wkdy/wkend)</i>	8.06 / 5.68 (default)		8.06 / 5.68 (default)	
Daily Distribution of Starts	Default Values		Default Values	
Trip Length Distribution	Default Values		Default Values	
Diesel Fractions	2002 Data		2003 Data	
Altitude	Low		Low	
Stage II Refuelling	N/A §		Applied	
Fuel Program (RFG)	RFG, Northern Region	Manual settings	RFG, Northern Region	Manual settings
Low Emission Vehicle Technology	PA LEV Program ¶		NJ LEV Program *	
Vehicle Registration Data Base Year	2005		2005	
I/M Program				
<i>Program Length</i>	Annual		Biennial	
<i>Centralized/Decentralized</i>	100 % Decentralized		70 % Centralized / 30 % Decentralized	
<i>Credit for Decentralized Program</i>	100 %		80 %	
<i>On-Board-Diagnosis (OBD)</i>	1996 Model Year or Later		1996 Model Year or Later	
<i>ASM5015</i>	1981 to 1995 Model Years		1981 to 1995 Model Years	
<i>Anti-Tampering Program</i>	Light-duty Vehicles Only		Light- and Heavy-duty Vehicles	
<i>Gas Cap Evaporative Check</i>	1975 Model Year or Later		1970 Model Year or Later	
<i>OBD Evaporative Check</i>	1996 Model Year or Later		1996 Model Year or Later	
<i>Pre-1981 Models Stringency</i>	20 %		30 %	
<i>Waiver Rate</i>	3 %		3 %	
<i>Compliance Rate</i>	96 %		98 %	

Source: DVRPC, 2007

Note: † Summer settings are for a July day and are for both VOCs and NO_x estimates.

‡ Winter settings are for a January day and are for CO estimates.

§ In Pennsylvania, although the Stage II refuelling program is not part of the mobile source section of the SIP, the control is under the area source section and is in place.

¶ Includes Tier I for vehicles of 1996~1999 MYs, NLEV (OTC) for 2000~2003 MY vehicles, Tier II for 2004~2007 MYs, and CA LEV II for 2008 MY and beyond.

* In January 2004, the New Jersey Legislature enacted NJSA 26:2C-8.5 et seq. requiring NJ DEP to promulgate rules adopting the CA LEV II program.

6 CONFORMITY DETERMINATION

6.1 TRAVEL SIMULATION RESULTS

Travel simulation work began on March 26, 2007, and other relevant quantitative analyses for this iteration of transportation conformity determination subsequently ensued. All planning assumptions utilized in this demonstration are

the latest and most current as of that date. Tables 10 and 11 present selected VMT results from these simulations. Table 10 shows the estimates based on the four-season approach utilized in PM_{2.5} analysis. Table 11 includes the VMT estimates that are based on the two-season approach used in ozone and CO analysis.

Table 10. Simulated Daily Travel Impacts (For PM_{2.5} Analysis)

Analysis Year	DVRPC Area	Avg Winter Daily VMT†			Avg Spring Daily VMT†			Avg Summer Daily VMT†			Avg Fall Daily VMT†		
		Dec §	Jan §	Feb §	Mar §	Apr §	May §	Jun §	Jul §	Aug §	Sep §	Oct §	Nov §
2002	PA Sub-region	62,773,700			67,036,500			69,734,700			67,638,600		
	NJ Sub-region ‡	28,879,000			30,817,100			32,129,500			31,146,200		
2009	Mercer Only §	9,345,800	8,631,900	9,024,500	9,339,200	9,635,600	9,902,700	9,997,000	10,065,100	10,039,700	9,907,600	9,680,400	9,512,900
2010	PA Sub-region	70,858,800			75,671,000			78,722,300			76,351,600		
	NJ Sub-region ‡	30,079,100			32,098,300			33,467,500			32,443,800		
	Mercer Only §	9,450,500	8,728,700	9,124,800	9,443,000	9,744,100	10,013,700	10,109,600	10,178,300	10,152,900	10,018,600	9,788,600	9,618,900
2020	PA Sub-region	76,304,400			81,482,700			84,775,400			82,219,000		
	NJ Sub-region ‡	32,166,100			34,326,100			35,794,000			34,700,800		
	Mercer Only §	10,010,000	9,243,900	9,666,500	10,003,300	10,320,400	10,607,100	10,707,800	10,780,600	10,753,400	10,611,700	10,368,400	10,189,000
2030	PA Sub-region	79,557,000			84,954,700			88,389,100			85,726,300		
	NJ Sub-region ‡	33,457,600			35,706,400			37,233,900			36,097,500		
	Mercer Only §	10,495,700	9,690,900	10,136,600	10,489,600	10,820,900	11,122,600	11,227,400	11,303,700	11,275,100	11,126,600	10,871,600	10,683,700

Source: DVRPC, 2007

Note: † Except for the monthly estimates for Mercer, VMT shown are seasonal averages, and may not represent a single month. For more information, contact DVRPC.
 ‡ Burlington, Camden and Gloucester counties only.
 § Monthly VMT estimates apply to Mercer County only.

Table 11. Simulated Daily Travel Impacts (For Ozone and CO Analyses) †

<i>Analysis Year</i>	<i>DVRPC Area</i>	<i>Winter Condition (January Day)</i>		<i>Summer Condition (July Day)</i>	
		<i>Avg VMT</i>	<i>Avg Travel Speed (mph)</i>	<i>Avg VMT</i>	<i>Avg Travel Speed (mph)</i>
2010	Entire PA Sub-region	-	-	82,973,200	29.9
	Philadelphia	15,557,500	24.7	-	-
	Entire NJ Sub-region	-	-	45,931,500	33.7
2013	Philadelphia	15,670,600	24.7	-	-
2017	Philadelphia	15,793,600	24.7	-	-
2020	Entire PA Sub-region	-	-	89,361,200	30.0
	Philadelphia	16,078,900	24.8	-	-
	Entire NJ Sub-region	-	-	49,010,000	33.6
2030	Entire PA Sub-region	-	-	93,169,500	29.8
	Philadelphia	16,455,100	24.6	-	-
	Entire NJ Sub-region	-	-	51,071,000	33.3

Source: DVRPC, 2007

Note: † Winter day travel impacts for CO emissions are calculated for applicable CO maintenance areas only. For more information, contact DVRPC.

6.2 EMISSIONS ESTIMATE RESULTS

Mobile source emissions estimates are obtained by using MOBILE6.2 emission factors to convert link-level VMT and speed from the simulation assignments. The regional emissions analysis must meet all conformity tests in the *Final Rule*. Specifically, emissions of VOCs, NO_x, CO and PM_{2.5} in Mercer County must be less than the MVEBs established by the states. Having no budgets, PM_{2.5} emissions levels in the Philadelphia-Wilmington, PA-NJ-DE PM_{2.5} Non-attainment Area must meet the “no-greater-than-the-2002-baseline” interim test.

For ozone precursors, the conformity demonstration is performed using the established 1-hour ozone *SIP* MVEBs. These budgets will be in force until the 8-hour ozone *SIP*s are established. Tables 12 and 13 present the results of these calculations for the transportation conformity simulation for the critical ozone precursors of VOCs and NO_x. Analysis years for ozone are 2010, 2020 and 2030. These results are compared with the budgets to demonstrate conformity.

In addition, the region must maintain the CO standard, and the CO emissions must be shown to be less than the established budgets within Philadelphia County. Table 14 shows the emissions of carbon monoxide. CO is analyzed under winter conditions, as opposed to VOCs and NO_x, which are analyzed under summer conditions. Analysis years for CO include 2013 and 2017, which are the maintenance budget years for Philadelphia County. These years are tested in addition to 2010, 2020 and 2030. The CO emissions for 2010 are tested against the CO budget year of 2007. All results are noted against applicable budgets in respective areas.

Furthermore, DVRPC must make conformity determination for PM_{2.5} in two different non-attainment areas with two different emissions tests. Table 15 provides the PM_{2.5} emissions estimate results.

In the DVRPC portion of the New York-Northern New Jersey-Long Island, NY-NJ-CT PM_{2.5} Non-attainment Area, a governing *SIP* MVEB exists and PM_{2.5} conformity therein is demonstrated against this budget, which is established for 2009. All applicable direct PM_{2.5} sources and precursors are tested for the 2010, 2020 and 2030 PM_{2.5} emissions estimates.

In the Philadelphia-Wilmington, PA-NJ-DE PM_{2.5} Non-attainment Area, there are no PM_{2.5} *SIP*s, and DVRPC and WILMAPCO have opted to utilize the “no-greater-than-2002-baseline” interim emissions test. All analysis results are considered against the 2002 baseline for the interim test.

Collectively, these tables show that the estimated emissions of VOCs, NO_x, CO, and PM_{2.5} do not exceed the respective MVEBs included in the *SIP*s established by the corresponding states or the appropriate baseline established for the interim emissions test.

Table 12. VOCs Emission Analysis Results (Tons/July Day) †

		2005 <i>SIP</i> MVEB	2010	2020	2030
PA	Emissions from MOBILE6.2	-	51.42	24.57	22.02
	Adjustments from Off-Network Calculation ‡	-	0.00	-0.01	-0.01
	Estimated Total Emissions	79.69	51.42	24.56	22.01
NJ	Emissions from MOBILE6.2	-	21.18	12.03	11.30
	Adjustments from Off-Network Calculation ‡	-	0.00	0.00	0.00
	Estimated Total Emissions	42.99	21.18	12.03	11.30

Source: DVRPC, 2007

Note: † The 1-hour ozone *SIP* MVEB applies to all future analysis years. All emissions are rounded off to the nearest hundredth.
‡ Emissions adjustments calculated using off-network methodology could become zero when rounded off.

Table 13. NOx Emission Analysis Results (Tons/July Day) †

		2005 <i>SIP</i> MVEB	2010	2020	2030
PA	Emissions from MOBILE6.2	-	82.13	26.59	16.23
	Adjustments from Off-Network Calculation ‡	-	0.00	-0.06	-0.03
	Estimated Total Emissions	144.73	82.13	26.53	16.20
NJ	Emissions from MOBILE6.2	-	44.79	12.97	8.52
	Adjustments from Off-Network Calculation ‡	-	0.00	0.00	0.00
	Estimated Total Emissions	63.44	44.79	12.97	8.52

Source: DVRPC, 2007

Note: † The 1-hour ozone *SIP* MVEB applies to all future analysis years. All emissions are rounded off to the nearest hundredth.
‡ Emissions adjustments calculated using off-network methodology could become zero when rounded off.

Table 14. CO Emission Analysis Results (Tons/January Day) †

	2007	2010	2013		2017		2020	2030
	<i>SIP</i> MVEB	Estimated	<i>SIP</i> MVEB	Estimated	<i>SIP</i> MVEB	Estimated	Estimated	Estimated
Philadelphia	331.25	236.74	278.23	207.25	260.97	185.15	177.77	171.63

Source: DVRPC, 2007

Note: † All CO budgets are based on MOBILE6.2. All emissions are rounded off to the nearest hundredth.

Table 15. Direct PM_{2.5} and NO_x Emission Analysis Results (Tons/Year) †

		2002	2009		2010	2020	2030
		Baseline	SIP MVEB »	Estimated Emissions	Estimated Emissions	Estimated Emissions	Estimated Emissions
Direct PM _{2.5}	DVRPC - PA	998.2	-	-	596.0	423.7	413.6
	DVRPC - NJ; except Mercer ‡	486.7	-	-	263.7	183.1	176.4
	WILMAPCO - DE §	208.6	-	-	97.8	89.3	96.6
	Mercer County, NJ »	-	89	86	80	55	54
PM _{2.5} Precursor (NO _x)	DVRPC - PA	59,346.0	-	-	29,293.9	9,263.1	5,561.1
	DVRPC - NJ; except Mercer ‡	30,499.9	-	-	12,050.3	3,484.6	2,298.4
	WILMAPCO - DE §	11,799.1	-	-	4,687.0	1,805.0	1,507.0
	Mercer County, NJ »	-	4,328	4,072	3,665	1,048	697

Source: DVRPC, 2007

Note: † Associated 2002 Baseline or 2009 MVEBs apply to all future analysis years. All emissions are rounded off to the nearest tenth except for those in Mercer. See note on » below.

‡ Results are for Burlington, Camden and Gloucester Counties only, which are the New Jersey portion of the Philadelphia-Wilmington, PA-NJ-DE PM_{2.5} Non-attainment Area.

§ Results are for New Castle County in Delaware only and are provided by WILMAPCO. It is the Delaware portion of the Philadelphia-Wilmington, PA-NJ-DE PM_{2.5} Non-attainment Area.

» NJ SIP MVEBs and the emissions results are for Mercer County, which is the DVRPC portion of the New York-Northern New Jersey-Long Island, NJ-NJ-CT PM_{2.5} Non-attainment Area. Emissions results are rounded off to the nearest integer in accordance with the SIP.

6.3 MEETING THE CONFORMITY CRITERIA

Tables 12 through 15 in section 6.2 cumulatively demonstrate that the *Plan* and the *TIPs* conform to the *SIPs* with respect to the established motor vehicle emissions budgets in the corresponding implementation year. The *Plan* and the *TIPs* meet all requirements under the governing ozone, CO and PM_{2.5} for all analysis years tested. The *Plan* and the *TIPs* also conform to the CAA provisions whereas there are no *SIPs* as specified in the *Final Rule*. The *Plan* and the *TIPs* are shown to meet the prescribed interim emissions test for all years analyzed.

In addition, the transportation conformity process must also meet all the applicable criteria that are consistent with the requirements

for non-attainment areas and maintenance areas under the CAA. Specifically, the finding must be shown, among other items, to:

- be on fiscally constrained *TIPs* and the *Plan* [40 CFR 93.108];
- be based on the latest planning assumptions [40 CFR 93.110];
- be based on the latest emissions estimation model available [40 CFR 93.111];
- include consultation procedures consistent with those described in the *Final Rule* [40 CFR 93.112];
- not interfere with the timely implementation of TCMs [40 CFR 93.113]; and
- be consistent with the motor vehicle emissions budgets in the applicable implementation plans [40 CFR 93.118].

All identified conformity evaluation criteria in the *Final Rule*, and subsequent responses from DVRPC are detailed in Table 16.

Table 16. Evaluation of the Conformity Determination Criteria

<i>Corresponding 40 CFR Part 93 Section(s)</i>	<i>Evaluation Criteria</i>	<i>DVRPC's Response</i>
§93.106(a) (1)	Are the transportation plan horizon years correct?	Yes. The analysis years of 2010, 2020, and 2030 correspond to the 8-hour ozone attainment and near-term year, an interim year within a ten-year frame, and the current <i>Plan</i> horizon years of WILMAPCO and DVRPC. CO is analyzed for 2013 and 2017 (Philadelphia only). In Mercer County, PM _{2.5} is analyzed for 2009, which is its budget year.
§93.106(a) (2)(i)	Does the plan quantify and document the demographic and employment factors influencing transportation demand?	Yes. The <i>Destination 2030</i> Long Range Plan does quantify and document demographic and employment factors influencing transportation demand.
§93.106(a) (2)(ii)	Is the highway and transit system adequately described in terms of regionally significant additions or modifications to the existing transportation network which the transportation plan envisions to be operational in horizon years?	Yes. The regionally significant additions and modifications to the network utilized in this conformity analysis are listed and described. Detailed information regarding each project can be found in the respective <i>Plan</i> and <i>TIP</i> documents.
§93.108	Are the transportation improvement program and the transportation plan fiscally constrained?	Yes. The <i>Plan</i> and the <i>TIPs</i> are constrained to reasonably anticipated financial resources.
§93.109(a)	Has the MPO demonstrated that all applicable criteria and procedures for conformity are complied and satisfied?	Yes. As part of the response, this table itemizing criteria and responses is presented. <p style="text-align: right;"><<continued>></p>

Table 16. Evaluation of the Conformity Determination Criteria (*continued*)

<i>Corresponding 40 CFR Part 93 Section(s)</i>	<i>Evaluation Criteria</i>	<i>DVRPC's Response</i>
§93.109(e) §93.109(f)	Are all budget tests for VOCs, NO _x and CO satisfied as required by §93.118 and §93.119 for conformity determination?	Yes. MOBILE6.2 VOCs and NO _x MVEBs and CO Maintenance MVEBs for both Pennsylvania and New Jersey have been approved by US EPA. DVRPC performs budget tests to demonstrate the ozone and CO conformity of the <i>Plan</i> and the <i>TIP</i> . PM _{2.5} is tested using area-appropriate budget and interim tests.
§93.110	<p>Are the conformity determinations based upon the latest planning assumptions?</p> <p>(a) Is the conformity determination, with respect to all other applicable criteria in §93.111-§93.119, based upon the most recent planning assumptions in force at the time the conformity determination began?</p> <p>(b) Are the assumptions derived from the estimates of current and future population, employment, travel and congestion most recently developed by the MPO or other designated agency? Is the conformity determination based upon the latest assumptions about current and future background concentrations?</p> <p>(c) Are any changes in the transit operating policies (including fares and service levels) and assumed transit ridership discussed in the determination?</p> <p>(d) The conformity determination must include reasonable assumptions about transit service and increases in transit fares and road and bridge tolls over time.</p> <p>(e) The conformity determination must use the latest existing information regarding the effectiveness of the transportation control measures [TCMs] and other implementation plan measures that have already been implemented.</p> <p>(f) Key assumptions shall be specified and included in the draft documents and supporting materials used for the interagency and public consultation required by §93.105.</p>	<p>Yes.</p> <p>(a) Yes. This conformity determination utilizes the most recent planning assumptions as of the start date of this conformity determination process, March 26, 2007.</p> <p>(b) Yes. This conformity determination utilizes the most recent demographic and employment data adopted by the DVRPC Board in February 2005 and shown in this conformity determination document. Also, planning assumptions and other travel data from as recent as 2005 are utilized. These assumptions are derived from the most current information available to DVRPC.</p> <p>(c) Yes. Applicable transit operating policies and transit ridership are discussed in section 3.2 of this document.</p> <p>(d) Key transit and toll assumptions are outlined in section 3.2 of this document.</p> <p>(e) Currently, there are no adopted TCMs in the corresponding <i>SIPs</i>.</p> <p>(f) Key assumptions are specified and other supporting documents are included in this conformity determination document, which is available to the public and TCICG.</p>

<<continued>>

Table 16. Evaluation of the Conformity Determination Criteria (*continued*)

<i>Corresponding 40 CFR Part 93 Section(s)</i>	<i>Evaluation Criteria</i>	<i>DVRPC's Response</i>
§93.111	Is the conformity determination based upon the latest emissions model?	Yes. The transportation conformity determination for the <i>Plan</i> and the <i>TIP</i> is based on MOBILE 6.2.
§93.112	Did the MPO make the conformity determination according to the consultation procedures of the <i>Final Rule</i> or the state's conformity <i>SIP</i> ?	Yes. Three interagency consultation meetings have been held according to the consultation procedures consistent with the requirements of all applicable regulations including §93.105 (a) and (e) to consider input assumptions and to review findings regarding the transportation conformity. In compliance with 23 CFR 450, two public meeting were held to receive comments regarding transportation conformity of the <i>Plan</i> and the <i>TIPs</i> under all governing NAAQS.
§93.113(b) §93.113(c)	Are TCMs being implemented in a timely manner?	There are currently no adopted transportation control measures in the <i>SIPs</i> .
§93.114	Are there a currently conforming transportation plan and a currently conforming TIP at the time of project approval?	Yes. The <i>Plan</i> and the <i>TIPs</i> supplant the <i>Destination 2030 Plan</i> and FY 2007 Pennsylvania and New Jersey <i>TIPs</i> , which are currently conforming plan and <i>TIPs</i> , respectively. This conformity demonstration reflects a new FY 2008 NJ <i>TIP</i> , updated FY 2007 PA <i>TIP</i> and revision of the <i>Plan</i> .
§93.115	Are the projects from a conforming Plan and TIP?	Yes. The projects are from the currently conforming <i>TIPs</i> and the <i>Plan</i> . The <i>TIPs</i> are consistent with the <i>Plan</i> .
§93.118	For areas with SIP Budgets: is the Transportation Plan, TIP or Project consistent with the established motor vehicle emissions budget(s) in the applicable SIP?	Yes. <i>TIPs</i> and the <i>Plan</i> result in fewer emissions than the established budgets for all applicable pollutants in each analysis year. <i><<continued>></i>

Table 16. Evaluation of the Conformity Determination Criteria (*continued*)

<i>Corresponding 40 CFR Part 93 Section(s)</i>	<i>Evaluation Criteria</i>	<i>DVRPC's Response</i>
§93.119	For areas without SIP Budgets: does the Transportation Plan, TIP or Project satisfy the prescribed interim emissions test?	Yes. For the Philadelphia-Wilmington, PA-NJ-DE PM _{2.5} Non-attainment Area, the <i>TIPs</i> and the <i>Plan</i> result in less emissions than the 2002 baseline result for PM _{2.5} in each analysis year.
§93.122(a) (1)	Does the conformity analysis include all regionally significant projects?	Yes. The project sets for <i>TIPs</i> and the <i>Plan</i> include all regionally significant projects.
§93.122(a) (6) §93.122(a) (7)	Are reasonable methods and factors used for the regional emissions analysis consistent with those used to establish the emissions budget in the applicable implementation plan?	Yes. The ambient temperatures and other factors used in the analysis, including the methods for off-network VMT and speed have been reviewed by the TCICG, and have been deemed reasonable.
§93.122(b)	Is there a network-based travel model of reasonable methods to estimate traffic speed and delays for the purpose of transportation-related emissions estimates?	Yes. DVRPC uses a network-based model that runs iteratively using the Evans algorithm to obtain convergence on input/output highway and transit travel speed. It is sensitive to travel time, costs, and other factors affecting travel choices.

Source: DVRPC, 2007

7 STAKEHOLDER PARTICIPATION

7.1 INTERAGENCY CONSULTATION

DVRPC hosted a series of TCICG correspondence for this iteration of the transportation conformity demonstration of the *Plan* and the *TIPs* amendments. Three TCICG conference call meetings were held. The first meeting was held on March 19, 2007, to assess the transportation conformity process, to advise on timeline and to determine the latest planning assumptions utilized. The second conference call meeting was held on March 27, 2007 to review draft TIP and Plan project sets and associated AQ codes. The third conference call meeting was held on April 11, 2007, to review the draft conformity document before it was released for public comment.

Represented federal, state, and local partners on the TCICG included US EPA Region II and III Offices, FHWA Pennsylvania and New Jersey Division Offices, FTA Region II and III Offices, NJ DEP, NJ DOT, NJ Transit, PA DEP, PennDOT, SEPTA and the Air Management Services of the City of Philadelphia. The consultant firm of Michael Baker Jr., Inc. also participated in the TCICG process for its extensive involvement and expertise in the transportation conformity processes in both Pennsylvania and New Jersey. For PM_{2.5} demonstration, DVRPC also consulted with the WILMAPCO Air Quality Subcommittee (AQS).

7.2 PUBLIC INVOLVEMENT

DVRPC opened a mandated public comment period on April 20, 2007, to receive comment on the draft conformity findings. The announcement for the public comment period for the conformity determination of the *Plan* and the *TIPs* appeared in five major newspapers throughout the region on April 20, 2007. A direct mailing of the public comment notice and accompanying materials was mailed to over 2,000 public and private sector representatives and citizens, also. Additionally, a media release was sent to local television, radio and print media.

The draft conformity document was distributed to various libraries throughout the region and made available online at www.dvrpc.org. Written comments were to be received by fax at (215) 592-9125 and online at tip-plan-comments@dvrpc.org. Two public hearings were held on May 2, 2007, in Cherry Hill, New Jersey and May 9, 2007 in Philadelphia, Pennsylvania. The comment period closed on May 21, 2007, at 5 pm.

DVRPC did not receive any public comments on the draft conformity document during the public comment period.

8 CONCLUSION

The DVRPC *TIPs* and the *Plan* 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, CO and PM_{2.5} do not exceed the respective budgets and baseline established by the states 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 *TIP* 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 *TIP* do not interfere with the timely implementation of TCMs [40 CFR 93.113]; and
- that the *Plan* and the *TIP* are consistent with the motor vehicle emissions budgets in the applicable implementation plans [40 CFR 93.118].

Hereby demonstrated is transportation conformity of:

- ▷ the DVRPC *Destination 2030 Long Range Plan*;
- ▷ the FY 2007 Pennsylvania *TIP*; and
- ▷ the FY 2008 New Jersey *TIP*

with the corresponding state *SIPs* and the *Final Rule* requirements under CAA including:

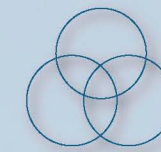
- the 8-hour ozone NAAQS in the Philadelphia-Wilmington-Atlantic City Ozone Non-attainment Area;
- the 8-hour CO NAAQS in the Philadelphia CO Maintenance Area, in the City of Burlington in Burlington County, NJ and in the City of Trenton in Mercer County, NJ;
- the PM_{2.5} NAAQS in the Philadelphia-Wilmington, PA-NJ-DE PM_{2.5} Non-attainment Area; and
- the PM_{2.5} NAAQS in the New York-Northern New Jersey-Long Island, NY-NJ-CT PM_{2.5} Non-attainment Area.





Delaware Valley Regional Planning Commission
May 2007

Section C



PM_{2.5}
Non-Attainment
Area Conformity
Demonstration

By submitting below, DVRPC and WILMAPCO jointly demonstrate their collective PM_{2.5} conformity in the Philadelphia-Wilmington, PA-NJ-DE PM_{2.5} Non-attainment Area. This common document is for both DVRPC and WILMAPCO and is a required part of the non-attainment area-wide conformity demonstration. For DVRPC, this document is formatted as a self-contained, supplementary section of its conformity finding.

**A DEMONSTRATION
OF
TRANSPORTATION CONFORMITY
FOR PM_{2.5}
IN THE PHILADELPHIA-WILMINGTON,
PA-NJ-DE PM_{2.5} NON-ATTAINMENT AREA**

MAY 2007

Overview

Transportation conformity is a process to ensure that federal funding and approval goes to those transportation activities that are consistent with air quality goals. Transportation conformity applies to long range transportation plans (Plans), transportation improvement programs (TIPs) and other projects funded or approved by the Federal Highway Administration (FHWA) or the Federal Transit Administration (FTA) in areas that do not meet or previously have not met air quality standards for identified pollutants such as ozone, carbon monoxide, particulate matter and sulfur dioxides. These areas are known as "non-attainment areas" or "maintenance areas," respectively. FHWA and FTA jointly make conformity determinations within air quality non-attainment and maintenance areas to ensure that federal actions conform to the purpose of the corresponding state implementation plans. The United States Department of Transportation (US DOT) cannot fund, authorize, or approve federal actions to support programs or projects that are not found to conform to the Clean Air Act requirements governing the current National Ambient Air Quality Standards (NAAQS).

In January 2005, the United States Environmental Protection Agency (US EPA) finalized fine particulate matter (PM_{2.5}) designations under the NAAQS. Under this designation, the area consisting of Burlington, Camden, and Gloucester Counties in New Jersey, Bucks, Chester, Delaware, Montgomery and Philadelphia Counties in Pennsylvania, and New Castle County in Delaware have been designated as non-attainment for PM_{2.5}. This geographic area is termed as the Philadelphia-Wilmington, PA-NJ-DE PM_{2.5} Non-attainment Area.

The two Metropolitan Planning Organizations (MPOs) within the Philadelphia-Wilmington, PA-NJ-DE PM_{2.5} Non-attainment Area – Delaware Valley Regional Planning Commission (DVRPC) and Wilmington Area Planning Council (WILMAPCO) – have determined that their respective Plans and TIPs conform to the transportation conformity rules for PM_{2.5}. The MPOs have passed the required interim emissions test for PM_{2.5}, both individually and collectively.

This PM_{2.5} conformity determination has been required due to a change in the *TIPs/Plan* for DVRPC. The *Final Rule* mandates that, during the interim emissions testing period, all MPOs within a non-attainment area must re-demonstrate conformity any time any of the MPOs make changes to their *Plans* and/or *TIPs*. The emission results for DVRPC and WILMAPCO are included in this document, although only DVRPC results are updated. WILMAPCO relies on the previous analysis provision per 40 CFR 93.122(g), and reaffirms its March 2007 results.

Background on PM_{2.5}

Fine particulate matter, noted as PM_{2.5} hereafter, is a mixture of microscopic solids and liquid droplets suspended in air, where the size of the particles is less than 2.5 μm . Fine particles can be emitted directly (such as smoke from a fire, or as a component of automobile exhaust) or be formed indirectly in the air from power plant, industrial and mobile source emissions of gases such as sulfur dioxide (SO₂) and nitrogen oxides (NO_x).

US EPA reports that the health effects associated with exposure to PM_{2.5} are significant. Scientific studies have shown significant associations between elevated PM_{2.5} levels and premature death. Effects associated with PM_{2.5} exposure include aggravation of respiratory and cardiovascular disease (as

indicated by increased hospital admissions, emergency room visits, absences from school or work and restricted activity days), lung disease, decreased lung function, asthma attacks and certain cardiovascular problems such as heart attacks and cardiac arrhythmia. While PM_{2.5} are unhealthy for anyone to breathe, people with heart or lung disease, asthmatics, older adults, and children are especially at risk.

PM_{2.5} National Ambient Air Quality Standards and Non-attainment

In July 1997, US EPA issued NAAQS for PM_{2.5}, designed to protect the public from exposure to PM_{2.5} at levels that may cause health problems. The standards include an annual standard set at 15 µg/m³, based on a 3-year average of the annual mean PM_{2.5} concentrations and a 24-hr standard of 65 µg/m³, based on a 3-year average of the 98th percentile of 24-hr concentrations.¹⁷ Areas need to meet both standards to be considered in attainment of PM_{2.5} NAAQS.

Meeting the PM_{2.5} standards nationwide is estimated to prevent at least 15,000 premature deaths; 75,000 cases of chronic bronchitis; 10,000 hospital admissions for respiratory/cardiovascular disease; hundreds of thousands of occurrences of aggravated asthma; and 3.1 million days when people miss work because they are suffering from symptoms related to particle pollution exposure.

On April 5, 2005, US EPA designations under the PM_{2.5} NAAQS became effective. Designated areas have had or have contributed to PM_{2.5} levels higher than allowed under the two

¹⁷ On September 21, 2006, US EPA revised - and made it more stringent - the 24-hour daily standard from 65 µg/m³ to 35 µg/m³. Non-attainment designations based on the new daily standard are expected in 2009. The new daily standards will take effect in 2010.

PM_{2.5} standards. These areas not meeting either standard are called PM_{2.5} non-attainment areas (NAAs). All PM_{2.5} NAAs must demonstrate transportation conformity of the PM_{2.5} requirements under the final transportation conformity rule (*Final Rule*). Upon meeting the transportation conformity requirements, the NAAs are mandated to meet the PM_{2.5} NAAQS ("reach attainment") as soon as possible, but no later than 2010. US EPA may grant attainment date extensions of up to five years in areas with more severe PM_{2.5} problems and where emissions control measures are not available or feasible.

States with designated non-attainment areas must submit plans that outline how they will meet the PM_{2.5} standards. Those plans are known as State Implementation Plans (SIPs). States must submit their PM_{2.5} SIPs to US EPA by April 5, 2008.

The Philadelphia-Wilmington, PA-NJ-DE PM_{2.5} Non-attainment Area

The Philadelphia-Wilmington, PA-NJ-DE PM_{2.5} NAA is designated by US EPA as in non-attainment because the region fails to meet the annual PM_{2.5} NAAQS (no portions of the NAA were found to violate the daily PM_{2.5} NAAQS). This NAA includes the following counties:

- Delaware: New Castle
- New Jersey: Burlington, Camden, and Gloucester
- Pennsylvania: Bucks, Chester, Delaware, Montgomery, and Philadelphia

Transportation conformity must be demonstrated for the entire NAA as a whole. Figure U-1 below shows the NAAs affecting the planning areas of the two MPOs in the NAA and the boundaries of other involved MPOs.

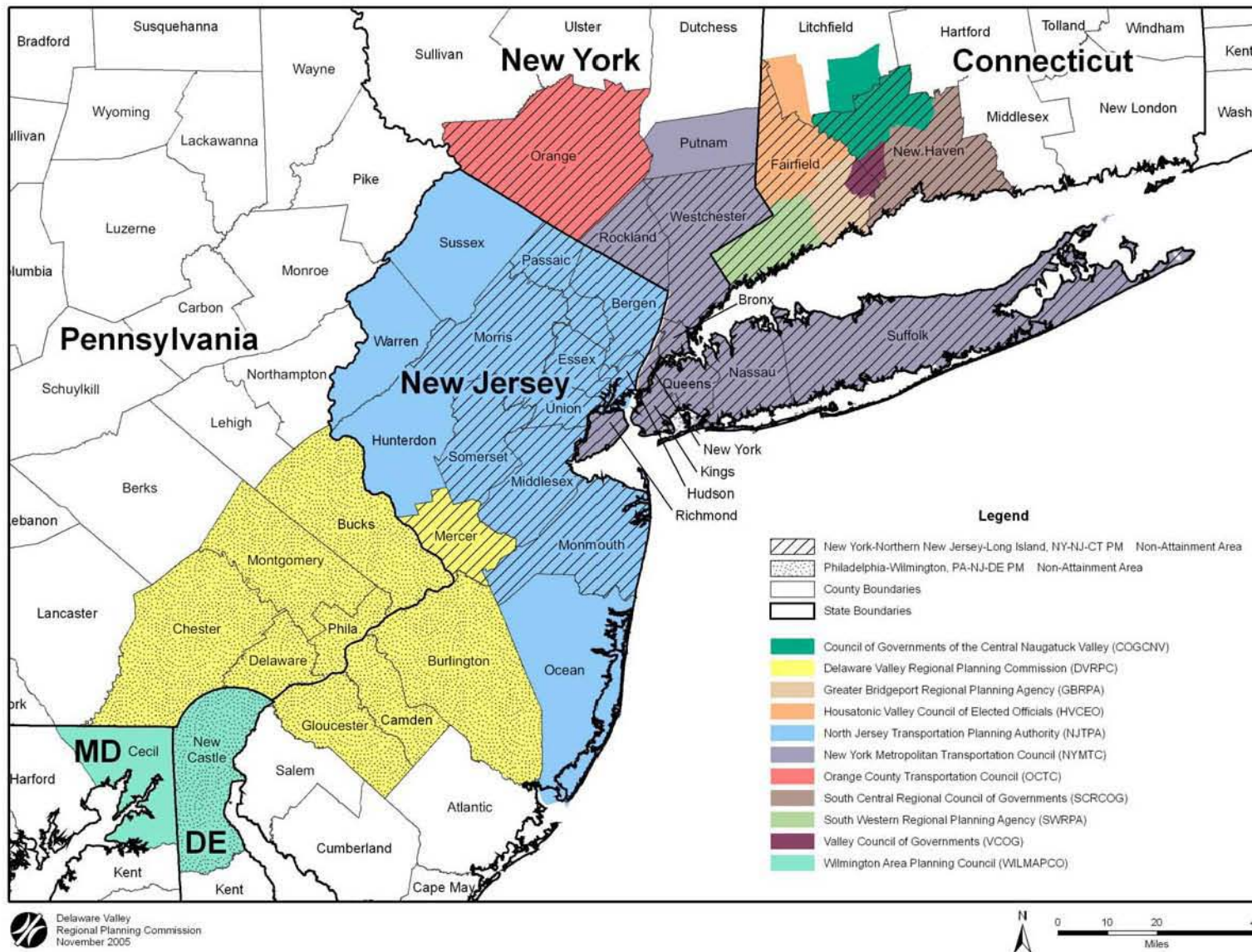


Figure U-1. Fine Particulate Matter (PM_{2.5}) NAAs and Affected MPOs

Multi-State Interagency Consultation

As required by the federal transportation conformity rule, the conformity process includes a significant level of cooperative interaction among the many regional, state, and federal agencies. For PM_{2.5} conformity determinations, this interagency consultation process occurs at both the entire NAA level and at individual state and MPO levels. This process is termed as the Multi-state Interagency Consultation Process, referred to as TCICG/AOS herein.¹⁸

TCICG/AOS for the conformity demonstration purpose consists of, but is not limited to, representatives from the following agencies:

- US DOT, FHWA - PA, NJ and DE Division Offices
- US DOT, FTA - Region II and Region III Offices
- US EPA - Region II and Region III Offices
- Delaware Department of Transportation (Del DOT)
- Delaware Department of Natural Resources & Environmental Control (DE DNREC)
- Delaware Transit Corporation (DART)
- Delaware River Port Authority (DRPA)
- New Jersey Department of Transportation (NJ DOT)
- New Jersey Department of Environmental Protection (NJ DEP)
- New Jersey Turnpike Authority
- New Jersey Transit (NJ Transit)
- Pennsylvania Department of Transportation (Penn DOT)

¹⁸ DVRPC has an existing conformity interagency group named Transportation Conformity Interagency Consultation Group or TCICG. WILMAPCO has its own named Air Quality Subcommittee (AOS). The two groups are combined to form the multi-state interagency group.

- Pennsylvania Department of Environmental Protection (PA DEP)
- Pennsylvania Turnpike Commission
- Southeastern Pennsylvania Transportation Authority (SEPTA)
- City of Philadelphia, Air Management Services (AMS)
- Delaware Valley Regional Planning Commission (DVRPC)
- Wilmington Area Planning Council (WILMAPCO)

TCICG/AOS is consulted several times throughout the conformity determination process to review, discuss and approve planning assumptions and to provide guidance on other related conformity issues.

Annual Inventories for PM_{2.5}

A four-season approach was chosen to develop the annual emissions estimates for the NAA.

Because this NAA does not meet the annual PM_{2.5} standard, the emissions analysis for PM_{2.5} must consider annual emissions. However, the emissions model that US EPA requires for conformity analysis, MOBILE 6.2, is only designed to produce daily emissions. The technique used to estimate annual emissions from the daily MOBILE 6.2 emissions is termed an “annual inventory method.” Guidance from US EPA presents four possible options for developing an annual inventory before a SIP is developed: using a single MOBILE 6.2 output to represent daily emissions for the entire year; running MOBILE 6.2 to represent two seasons; running MOBILE 6.2 to represent four seasons; or running MOBILE 6.2 to represent twelve

individual months.¹⁹ However, various sensitivity analyses show that there are not enough differences among the two-season, four-season and the twelve-month approaches, so TCICG/AOS decided to use the four-season annual inventory method. The same annual inventory method is used for all emissions analyses conducted within the NAA.

PM_{2.5} Regional Emissions Tests

The “no-greater-than-2002” baseline test was chosen for the NAA.

As stated above, states must submit *SIPs* by April 5, 2008. Once *SIPs* have been established, each MPO will have a budget for $PM_{2.5}$ emissions with which to compare projected future emissions resulting from implementation of *Plans* and *TIPs*. However, until that time, EPA requires that one of two interim emission tests be used to demonstrate $PM_{2.5}$ conformity: either the baseline year test, or the build/no-build test. The baseline year test requires that emissions projected for each future analysis year is no greater than emissions in 2002 (the baseline year). The build/no-build test requires that, for each future analysis year, emissions from the “build” scenario be no greater than emissions from the “no-build” scenario. The selected interim emission test must be used for the entire non-attainment area. Within the Philadelphia-Wilmington, PA-NJ-DE $PM_{2.5}$ NAA, the baseline year test has been selected as the interim emissions test. This has been selected through the interagency consultation process.

¹⁹ Guidance for Creating Annual On-road Mobile Source Emission Inventories for $PM_{2.5}$ Non-attainment Areas for Use in *SIPs* and Conformity. US EPA: Office of Transportation and Air Quality. EPA420-B-05-008. August 2005.

Analysis Years

The following four analysis years were chosen for the NAA:

- 2002 (baseline year for the interim test);
- 2010 (near-term year within the 5 years of analysis);
- 2020 (interim year to keep analysis years less than 10 years apart); and
- 2030 (DVRPC and WILMAPCO Plan horizon year).

US EPA regulations require that emissions analysis be conducted for specific analysis years. Section 93.119(g) of the *Final Rule* states that these analysis years must include a near-term year (one to five years in the future), the last year of the long range plan, and an intermediate year or years such that analysis years are no more than 10 years apart.

For this NAA, a near-term year has been selected as 2010 by TCICG/AOS. Furthermore, because there are multiple MPOs, the last year of all of the MPOs’ *Plans* must be included as analysis years. An intermediate year of 2020 has also been selected so that no two analysis years are more than 10 years apart.

Components of PM_{2.5} Regional Emissions Analyses

The following $PM_{2.5}$ pollutants and precursors were tested:

- Direct $PM_{2.5}$ source: tailpipe exhaust, brake and tire wear; and
- $PM_{2.5}$ Precursor: NO_x .

$PM_{2.5}$ can result from both direct and indirect sources. Gasoline and diesel on-road vehicles emit both direct $PM_{2.5}$ and other gases that react in the air to form $PM_{2.5}$. Transportation-related direct $PM_{2.5}$ emissions can result from particles in exhaust fumes,

from brake and tire wear, from road dust kicked up by vehicles, and from highway and transit construction. Transportation-related indirect PM_{2.5} emissions can result from one or more of several exhaust components, including NO_x, VOCs, sulfur oxides (SO_x) and ammonia (NH₃).

For the regional analysis of direct PM_{2.5} emissions, US EPA has ruled that both exhaust and brake/tire wear must be included. However, US EPA has ruled that regional emissions analyses for direct PM_{2.5} should include road dust only if road dust is found to be a significant contributor to PM_{2.5} by either the US EPA Regional Administrator or a state air agency. For this NAA, neither the US EPA Regional Administrators nor any of the three state air agencies have found that road dust is a significant PM_{2.5} contributor. US EPA has also ruled that regional direct PM_{2.5} analyses only need to include fugitive dust from construction of transportation projects if the SIP identifies these emissions as significant contributors to the regional PM_{2.5} problem. Because no PM_{2.5} SIP has been established, construction-related dust does not need to be considered. Thus, the only components of direct PM_{2.5} emissions to be considered in the NAA are tailpipe exhaust and brake/tire wear.

For the regional analysis of indirect PM_{2.5} emissions (also called PM_{2.5} precursors), US EPA has identified four potential transportation-related PM_{2.5} precursors: NO_x, VOCs, SO_x, and NH₃. Once a SIP is established, any precursors identified in the SIP will be required in the analysis of indirect PM_{2.5} emissions. Until a SIP is established, US EPA has ruled that indirect PM_{2.5} emissions must be analyzed for NO_x, unless US EPA and the state determine that NO_x is insignificant; and must be analyzed for VOCs, SO_x and NH₃ only if the US EPA or the state determine that one or more of these precursors are significant. There have been no findings of significance (or insignificance

in the case of NO_x). Thus, the only indirect PM_{2.5} component that needs to be considered in the NAA is NO_x.

Analysis Results

Emissions analyses for the NAA began on March 26, 2007. The results are presented in Tables U-1 and U-2. Also presented in the tables are individual emissions analysis results from the MPOs. Both MPOs met applicable requirements individually, and the NAA passed the interim emissions test collectively.

Table U-1. Direct PM_{2.5} Interim Emissions Test Results (Tons/Year)

	2002	2010	2020	2030
DVRPC-PA	998.2	596.0	423.7	413.6
DVRPC-NJ	486.7	263.7	183.1	176.4
WILMAPCO-NCC†	208.6	97.8	89.3	96.6
NAA Total:	1,693.5	957.5	696.1	686.6
Conclusion	Baseline	Pass	Pass	Pass

Source: DVRPC, 2007

Note: † NCC denotes New Castle County.

Table U-2. PM_{2.5} Precursor (NO_x) Interim Emissions Test Results (Tons/Year)

	2002	2010	2020	2030
DVRPC-PA	59,346.0	29,293.9	9,263.1	5,561.1
DVRPC-NJ	30,499.9	12,050.3	3,484.6	2,298.4
WILMAPCO-NCC†	11,799.1	4,687.0	1,805.0	1,507.0
NAA Total:	101,645.0	46,031.3	14,552.7	9,366.5
Conclusion	Baseline	Pass	Pass	Pass

Source: DVRPC, 2007

Note: † NCC denotes New Castle County.

Public Involvement Process

DVRPC and WILMAPCO coordinated their public involvement processes and each opened a minimum 30-day public comment period to receive comments on the draft conformity findings for the entire NAA. The comment period for both MPOs ran from April 20, 2007, to May 21, 2007. Two public meetings were held in the NAA. The public meetings were on:

- Wednesday, May 2, 2007 (hosted by DVRPC)
 - at Cherry Hill Library, Cherry Hill, NJ; from 4:00 pm to 6:00 pm
- Wednesday, May 9, 2007 (hosted by DVRPC)
 - at DVRPC offices, Philadelphia, PA; from 4:00 pm to 6:00 pm

Neither DVRPC nor WILMAPCO received any public comments on the draft conformity document during the public comment period.

Conclusion

Respective *TIPs* and the *Plans* of DVRPC and WILMAPCO are found to be in conformity with all current regulations and requirements under the Clean Air Act as amended. The forecasted emissions levels of PM_{2.5} in the NAA do not exceed the corresponding baselines established in accordance with the *Final Rule*.

The Philadelphia-Wilmington, PA-NJ-DE PM_{2.5} NAA has hereby demonstrated transportation conformity with the PM_{2.5}

standards. This demonstration has utilized the baseline (i.e. “no-greater-than-2002”) interim emissions test under the *Final Rule*.

The region is steadily working toward improving air quality and toward fully attaining all applicable NAAQS. This conformity finding reflects positively carrying forward the vision of the various partners in the NAA and their broad regional goals for improved natural and built environments, a growing economy, and an effective, interconnected, safe and reliable transportation system coordinated with land use.

For Additional Information:

For more detailed information on this demonstration, contact the MPO responsible for your region.

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DELAWARE VALLEY REGIONAL PLANNING COMMISSION

Publication Abstract

Title of Report:

Conformity Findings: Transportation Conformity of
the DVRPC FY 2007 PA Transportation Improvement Program,
FY 2008 NJ Transportation Improvement Program and
the *Destination 2030* Long Range Plan

Date Published: May 2007
Publication Number: 07018

Geographic Area Covered:

The nine-county DVRPC Planning Area, which covers the counties of Bucks, Chester, Delaware, Montgomery, and Philadelphia in Pennsylvania; and Burlington, Camden, Gloucester, and Mercer in New Jersey. Per PM_{2.5}, it also addresses New Castle County in Delaware.

Key Words:

Transportation Conformity, Air Quality, National Ambient Air Quality Standards, Ozone, Volatile Organic Compounds (VOCs), Nitrogen Oxides (NO_x), Carbon Monoxide (CO), Fine Particulate Matter (PM_{2.5}), Non-attainment Area, Maintenance Area, Multi-jurisdictional Non-attainment Area, *Destination 2030* Long Range Transportation Plan, Transportation Improvement Program (TIP), State Implementation Plan (SIP), Wilmington Area Planning Council (WILMAPCO).

Abstract:

DVRPC demonstrates transportation conformity of its FY 2007 PA TIP, FY 2008 NJ TIP and the 2030 long range plan. This conformity finding of the DVRPC Transportation Improvement Programs and the long range plan shows that they meet the National Ambient Air Quality Standards (NAAQS) requirements governing ozone, carbon monoxide and fine particulate matter. This conformity finding reflects all amendments to the TIPs and the long range plan adopted through April 2007.

Title VI Statement:

DVRPC fully complies with Title VI of the Civil Rights Act of 1964 and related statutes and regulations in all programs and activities. DVRPC public meetings are always held in ADA-accessible facilities and in transit-accessible locations when possible. Auxiliary services can be provided to individuals who submit a request at least seven days prior to a meeting. For more information, please call 215.238.2871.



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