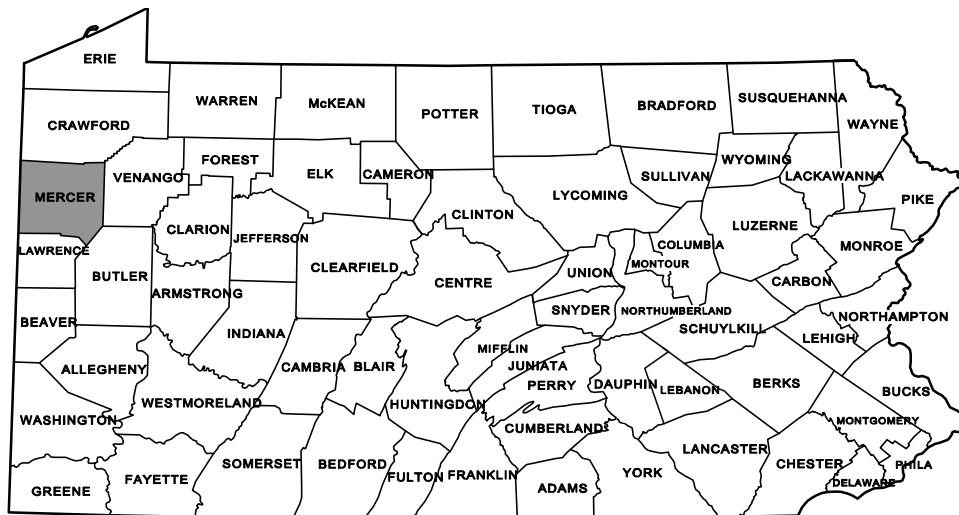


**AIR QUALITY  
CONFORMITY ANALYSIS REPORT  
FOR THE MERCER COUNTY PORTION OF THE  
YOUNGSTOWN-WARREN-SHARON, OH-PA OZONE MAINTENANCE AREA  
(8-hour Ozone NAAQS)**

**VOLUME II – TECHNICAL ANALYSIS**

**FFY 2011-2014 TIP and 2030 LRTP**



Prepared by:  
Pennsylvania Department of Transportation

**DRAFT**

PUBLIC REVIEW:

PLANNING PARTNER APPROVAL:

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OZONE CONFORMITY**

**2015 TIP  
Summer Weekday Emission Summary  
SHENANGO VALLEY MPO**

	Vehicle Mile of Travel (VMT)	Vehicle Hours of Travel (VHT)	Average Speed (mph)	VOC Emissions (kg/day)	NOX Emissions (kg/day)
<b>Rural</b>					
Interstate	1,581,096	24,358	64.91	626.80	2,496.50
Other Prin. Art.	181,481	3,265	55.58	79.60	137.10
Minor Arterials	437,086	9,847	44.39	199.30	297.60
Major Collectors	357,573	8,484	42.15	164.80	241.50
Minor Collectors	99,738	2,506	39.80	46.50	66.40
Local	412,641	13,019	31.70	309.60	298.60
<b>Small Urban</b>					
Interstate	1,827	30	60.90	0.70	3.40
Expressway					
Other Prin. Art.	25,181	682	36.92	11.90	17.10
Minor Arterials	163,758	5,239	31.26	80.50	114.70
Collector	45,129	1,321	34.16	21.90	29.60
Local	28,493	863	33.02	21.40	18.20
<b>Urban</b>					
Interstate	218,176	3,647	59.82	82.90	409.50
Expressway	106,326	1,948	54.58	47.70	73.10
Other Prin. Art.	249,450	7,446	33.50	122.40	153.00
Minor Arterials	224,482	9,231	24.32	120.40	138.00
Collector	123,773	6,297	19.66	71.30	78.80
Local	120,997	5,923	20.43	90.70	90.50
<b>Off Network Emission Benefits</b>				0.00	0.00
<b>COUNTY TOTAL</b>	<b>4,377,207</b>	<b>104,106</b>	<b>42.05</b>	<b>2,098.40</b>	<b>4,663.60</b>

**2018 TIP  
Summer Weekday Emission Summary  
SHENANGO VALLEY MPO**

	Vehicle Mile of Travel (VMT)	Vehicle Hours of Travel (VHT)	Average Speed (mph)	VOC Emissions (kg/day)	NOX Emissions (kg/day)
<b>Rural</b>					
Interstate	1,656,195	25,526	64.88	553.70	1,814.70
Other Prin. Art.	179,249	3,224	55.60	65.90	102.90
Minor Arterials	431,711	9,705	44.48	165.10	225.40
Major Collectors	353,170	8,378	42.15	136.70	182.70
Minor Collectors	98,539	2,476	39.80	38.70	50.30
Local	407,726	12,864	31.70	264.40	224.70
<b>Small Urban</b>					
Interstate	1,909	32	59.66	0.60	2.40
Expressway					
Other Prin. Art.	25,452	690	36.89	10.10	13.20
Minor Arterials	165,525	5,305	31.20	68.80	88.20
Collector	45,608	1,336	34.14	18.60	23.00
Local	28,639	868	32.99	18.60	14.00
<b>Urban</b>					
Interstate	227,993	3,814	59.78	73.20	292.60
Expressway	111,110	2,036	54.57	41.80	59.00
Other Prin. Art.	252,170	7,491	33.66	104.10	120.50
Minor Arterials	226,976	9,354	24.27	103.10	109.20
Collector	125,105	6,393	19.57	61.30	62.50
Local	122,303	5,990	20.42	79.30	69.10
<b>Off Network Emission Benefits</b>				0.00	0.00
<b>COUNTY TOTAL</b>	<b>4,459,380</b>	<b>105,482</b>	<b>42.28</b>	<b>1,804.00</b>	<b>3,454.40</b>

**2025 LRP  
Summer Weekday Emission Summary  
SHENANGO VALLEY MPO**

	Vehicle Mile of Travel (VMT)	Vehicle Hours of Travel (VHT)	Average Speed (mph)	VOC Emissions (kg/day)	NOX Emissions (kg/day)
<b>Rural</b>					
Interstate	1,875,079	28,959	64.75	483.90	1,119.50
Other Prin. Art.	174,162	3,130	55.64	49.50	69.60
Minor Arterials	419,503	9,422	44.52	124.80	155.70
Major Collectors	343,128	8,138	42.16	103.60	126.30
Minor Collectors	95,680	2,403	39.82	29.30	34.70
Local	396,287	12,501	31.70	213.70	149.80
<b>Small Urban</b>					
Interstate	2,070	35	59.14	0.50	1.40
Expressway					
Other Prin. Art.	25,366	688	36.87	7.90	9.20
Minor Arterials	164,990	5,285	31.22	54.10	61.40
Collector	45,450	1,331	34.15	14.60	16.40
Local	28,576	866	33.00	15.50	10.20
<b>Urban</b>					
Interstate	247,264	4,147	59.62	61.20	164.40
Expressway	120,497	2,209	54.55	35.20	46.40
Other Prin. Art.	251,309	7,458	33.70	81.70	88.70
Minor Arterials	226,318	9,319	24.29	81.90	81.20
Collector	124,685	6,363	19.60	49.10	46.70
Local	121,917	5,969	20.43	65.70	46.70
<b>Off Network Emission Benefits</b>				0.00	0.00
<b>COUNTY TOTAL</b>	<b>4,662,281</b>	<b>108,223</b>	<b>43.08</b>	<b>1,472.20</b>	<b>2,228.30</b>

**2030 LRP**  
**Summer Weekday Emission Summary**  
**SHENANGO VALLEY MPO**

	Vehicle Mile of Travel (VMT)	Vehicle Hours of Travel (VHT)	Average Speed (mph)	VOC Emissions (kg/day)	NOX Emissions (kg/day)
<b>Rural</b>					
Interstate	2,058,128	31,877	64.56	519.00	950.50
Other Prin. Art.	170,624	3,065	55.67	47.60	61.20
Minor Arterials	410,968	9,224	44.55	120.00	138.20
Major Collectors	336,162	7,972	42.17	99.60	112.20
Minor Collectors	93,788	2,356	39.81	28.20	30.90
Local	388,112	12,243	31.70	206.10	130.80
<b>Small Urban</b>					
Interstate	2,180	36	60.56	0.50	1.10
Expressway					
Other Prin. Art.	25,100	680	36.91	7.70	8.30
Minor Arterials	163,264	5,220	31.28	52.50	54.50
Collector	45,007	1,318	34.15	14.20	14.80
Local	28,368	859	33.02	15.10	9.30
<b>Urban</b>					
Interstate	260,387	4,377	59.49	62.90	128.80
Expressway	126,892	2,326	54.55	36.30	44.70
Other Prin. Art.	248,698	7,361	33.79	79.40	81.00
Minor Arterials	224,019	9,203	24.34	79.70	74.40
Collector	123,374	6,269	19.68	47.80	42.90
Local	120,630	5,904	20.43	64.00	40.90
<b>Off Network Emission Benefits</b>				0.00	0.00
<b>COUNTY TOTAL</b>	<b>4,825,701</b>	<b>110,290</b>	<b>43.75</b>	<b>1,480.60</b>	<b>1,924.50</b>

# **APPENDICES**

**APPENDIX A1**

**MERCER COUNTY  
LONG RANGE PLAN/  
TRANSPORTATION IMPROVEMENT PROGRAM  
FOR HIGHWAYS**

**APPENDIX A2**

**MERCER COUNTY  
LONG RANGE PLAN/  
TRANSPORTATION IMPROVEMENT PROGRAM  
FOR TRANSIT**

**APPENDIX B**

**MERCER COUNTY  
MOBILE6.2 PROGRAM PARAMETERS**

**APPENDIX B1**

**MOBILE6.2 PROGRAM SETUP FILES**  
**For**  
**Ozone Conformity Analysis**

**MOBILE6.2 INPUT FILE SETTINGS**  
**Mercer County**

---

MOBILE6.2 INPUT FILE  
REPORT FILE : M6OUTPUT.OUT REPLACE  
DATABASE OUTPUT :  
WITH FIELDNAMES :  
EMISSIONS TABLE : M6OUTPUT.TB1 REPLACE  
POLLUTANTS : HC CO NOX  
AGGREGATED OUTPUT :

***(Runs are Repeated for Urban, Small Urban, and Rural)***

RUN DATA : 0001  
EXPRESS HC AS VOC :  
EXPAND EXHAUST :  
EXPAND EVAPORATIVE :  
NO REFUELING :  
FUEL RVP : 8.7  
MIN/MAX TEMPERATURE: 62.1 88.3  
94+ LDG IMP : NLEVNE.D  
T2 EXH PHASE-IN : pal2exh.08 }  
T2 EVAP PHASE-IN : pal2evp.08 } ***CALLEVII Phase-In Files***  
T2 CERT : leviistd.d }  
REG DISTRIBUTION : MERC05ag.dat ***(2005 ages used for all future years)***

***(Gascap and ATP Programs Only Apply to 2004 and Later Analysis Years)***

I/M PROGRAM : 1 2004 2050 1 TRC GC  
I/M MODEL YEARS : 1 1975 2050  
I/M VEHICLES : 1 22222 11111111 1  
I/M COMPLIANCE : 1 96.0  
I/M WAIVER RATES : 1 3.0 3.0  
I/M EFFECTIVENESS : 1.00 1.00 1.00  
ANTI-TAMP PROGRAM : 04 75 95 22222 11111111 1 11 096. 22212222

***(Scenarios are Repeated for Each Functional Class)***

SCENARIO RECORD :  
CALENDAR YEAR : 2009 ***(Analysis year depends on year being run)***  
EVALUATION MONTH : 7  
ABSOLUTE HUMIDITY : 42.2  
SEASON : 1  
VMT FRACTIONS : ***(VMT mix varies for each year, run/scenario combination)***  
.333874 .074180 .247058 .076106 .035010 .073550 .007209 .005883  
.004557 .016505 .019344 .021061 .075289 .003800 .001717 .004857

***(Speed, hourly, and facility distributions prepared by PPSUITE post processor for each Run/Scenario combination)***

VMT BY FACILITY : V000101F.def  
VMT BY HOUR : V000101H.def  
SPEED VMT : V000101S.def

***(Assumption of 10% (3.5% by volume) ethanol in Pennsylvania fuel)***

OXYGENATED FUELS : 0.000 1.000 0.000 0.035 1

**ATTACHMENT: 1**  
**Mercer County Vehicle Age Distributions Input to MOBILE6.2**

**2005 Age Distribution:**

REG	DIST									
1	0.0339	0.0645	0.0728	0.0789	0.0706	0.0872	0.0770	0.0745	0.0645	0.0604
	0.0616	0.0509	0.0418	0.0350	0.0291	0.0241	0.0190	0.0137	0.0099	0.0077
	0.0059	0.0048	0.0021	0.0012	0.0086					
2	0.0372	0.0655	0.0681	0.0602	0.0630	0.0743	0.0676	0.0597	0.0615	0.0446
	0.0568	0.0514	0.0370	0.0320	0.0307	0.0270	0.0299	0.0277	0.0174	0.0146
	0.0130	0.0094	0.0050	0.0048	0.0415					
3	0.0372	0.0655	0.0681	0.0602	0.0630	0.0743	0.0676	0.0597	0.0615	0.0446
	0.0568	0.0514	0.0370	0.0320	0.0307	0.0270	0.0299	0.0277	0.0174	0.0146
	0.0130	0.0094	0.0050	0.0048	0.0415					
4	0.0380	0.0966	0.0832	0.0736	0.0735	0.0686	0.0679	0.0541	0.0702	0.0444
	0.0563	0.0398	0.0311	0.0261	0.0219	0.0214	0.0194	0.0196	0.0141	0.0137
	0.0123	0.0081	0.0055	0.0033	0.0374					
5	0.0380	0.0966	0.0832	0.0736	0.0735	0.0686	0.0679	0.0541	0.0702	0.0444
	0.0563	0.0398	0.0311	0.0261	0.0219	0.0214	0.0194	0.0196	0.0141	0.0137
	0.0123	0.0081	0.0055	0.0033	0.0374					
16	0.0609	0.0735	0.0915	0.0699	0.0757	0.0599	0.0474	0.0403	0.0351	0.0293
	0.0226	0.0209	0.0155	0.0161	0.0132	0.0145	0.0132	0.0193	0.0119	0.0235
	0.0322	0.0174	0.0261	0.0383	0.1315					

**(Truck Age Distributions Assume MOBILE6.2 National Defaults)**

## APPENDIX B2

### INSPECTION AND MAINTENANCE MODELING PARAMETERS FOR LRTP/TIP CONFORMITY ANALYSIS

#### Pennsylvania I/M Program

The Pennsylvania inspection and maintenance (I/M) program was upgraded and expanded throughout the state with a phase-in period starting in September 2003 and fully implemented by June 2004. The program test requirements vary by region and include on-board diagnostics (OBD) technology that uses the vehicle's computer for model years 1996 and newer to download potential engine problems that could effect emissions. The program, named PAOBDII, is implemented in the Philadelphia, Pittsburgh, and South Central and Lehigh Valley Regions. The Northern Region receives gas cap and visual inspections and the other 42 counties in the Commonwealth receive a visual inspection. For all of projected analysis years beyond 2004, the upgraded I/M program was modeled.

Vehicles subject to the program include 1975 and newer model year gasoline cars and light duty trucks up to 9,000 pounds GVW. New model years are exempt for the first year. The county of registration determines which inspections are required. Details of the program by region are provided below.

##### Philadelphia 5-County Area

The five counties include Bucks, Chester, Delaware, Montgomery and Philadelphia. The previous PA97 program with ASM was upgraded in final ASM cutpoints in September 2003 and OBD implemented in between April and June 2004. The program parameters for Philadelphia include:

Model Years	Program Parameters
1996 & newer	PAOBDII Gas Cap
1981-1995 (LDGV) 1984-1995 (LDGT)	ASM Gas Cap ATP
1975-1980 (LDGV) 1975-1983 (LDGT)	Idle Test Gas Cap ATP

##### Pittsburgh 4-County Area

The four counties include Allegheny, Beaver, Washington and Westmoreland. The previous PA97 program was upgraded to OBD between January and March 2004. The program parameters include:

Model Years	Program Parameters
1996 & newer	PAOBDII Gas Cap
1975-1995	2-speed Idle Gas Cap ATP

### **South Central and Lehigh Valley Region**

The eight counties in the region include Berks, Cumberland, Dauphin, Lancaster, Lebanon, Lehigh, Northampton, and York. The new program expanded to these counties during December 2003 to February 2004. There was not prior inspection program. The program parameters include:

<b>Model Years</b>	<b>Program Parameters</b>
1996 & newer	PAOBDII Gas Cap
1975-1995	Gas Cap ATP

### **Northern Region**

The eight counties in the region include Blair, Cambria, Centre, Erie, Lackawanna, Luzerne, Lycoming, and Mercer. The new program expanded to these counties during January and March 2004, which did not have a prior program. The program parameters include:

<b>Model Years</b>	<b>Program Parameters</b>
1975 & newer	Gas Cap ATP

### **42-County Region**

The remaining 42 counties in the Commonwealth will receive an anti-tampering program for all 1975 and newer subject vehicles as part of their Safety Inspection starting in December 2003. The program consists of seven visual inspections of key emissions control components. They include: air pump system, catalytic converter, fuel inlet restrictor, EGR, evaporative system, PCV system, and gas cap. The seven inspections are the same for all areas for vehicles receiving the ATP inspection.

## APPENDIX B3

### MOBILE6.2 OZONE Summer Weekday Temperature and Humidity Inputs

<b>MOBILE6 Summer Daily Temperatures and Humidity</b>			
<b>Air Quality District</b>	<b>Maximum</b>	<b>Minimum</b>	<b>Absolute Humidity</b>
1. Bucks, Chester, Delaware, Montgomery, Philadelphia	93.1	68.7	52.2
2. Berks	94.4	68.8	75.0
3. Lancaster	94.0	66.7	57.2
4. Carbon, Lehigh, Northampton	92.0	62.8	59.2
5. Adams, Franklin, York	94.0	66.7	57.2
6. Cumberland, Dauphin, Lebanon, Perry	94.0	66.7	57.2
7. Columbia, Lackawanna, Luzerne, Schuylkill, Susquehanna, Wayne, Wyoming	89.4	62.5	42.1
8. Bedford, Blair, Fulton, Huntingdon, Juniata, Mifflin	88.3	62.1	42.3
9. Cameron, Centre, Clearfield, Clinton	88.3	62.1	42.3
10. Bradford, Lycoming, Potter, Sullivan, Tioga	89.4	62.5	42.1
11. Allegheny, Armstrong, Beaver, Butler, Fayette, Greene, Washington, Westmoreland	89.4*	68.8*	78.0*
12. Clarion, Lawrence, Mercer, Venango	88.3	62.1	42.3
13. Crawford, Elk, Erie, Forest, McKean, Warren	87.7	69.5	61.3
14. Cambria, Indiana, Somerset	88.3	62.1	42.3

*\* Temperatures based on 10 highest ozone exceedence days from 2000-2002 consistent with their respective maintenance plans.*

## APPENDIX B4

### MOBILE6.2 OZONE Summer Weekday Fuel Volatility Inputs

<b>MVMA Fuel Volatility Survey Results</b>				
Nonattainment Area	MVMA Surveyed City	RVP		
		1990	2002	Beyond 2002
Allentown-Bethlehem-Easton	Philadelphia	8.4	8.7	8.7
Altoona	Philadelphia	8.4	8.7	8.7
Erie	Cleveland	9.7	8.7	8.7
Harrisburg-Lebanon-Carlisle	Philadelphia	8.4	8.7	8.7
Johnstown	Philadelphia	8.4	8.7	8.7
Lancaster	Philadelphia	8.4	8.7	8.7
Philadelphia-Wilmington-Trenton	Philadelphia	8.4	8.7	8.7
Pittsburgh-Beaver Valley	Philadelphia	8.4	7.8	7.8
Reading	Philadelphia	8.4	8.7	8.7
Scranton-Wilkes Barre	Philadelphia	8.4	8.7	8.7
York	Philadelphia	8.4	8.7	8.7
Youngstown-Warren-Sharon	Cleveland	9.7	8.7	8.7

**APPENDIX C**

**MERCER COUNTY  
PUBLIC PARTICIPATION**

**APPENDIX D**

**CLEAN AIR ACRONYMS**

# ACRONYMS

## ACRONYMS

AADT	Annual Average Daily Traffic (July 1 and seasonally adjusted)
AASHTO	American Association of State and Highway Transportation Officials
ACT	Alternative Control Technique Documents
ADA	Americans with Disabilities Act of 1990
ADT	Average Daily Traffic
ADTT	Average Daily Truck Traffic
AFV	Alternative Fuel Vehicle
AIRS	Aerometric Information Retrieval Systems
APCA	Air Pollution Control Act of 1992 (Pennsylvania)
APO	Average Passenger Occupancy
AQ	Air Quality
AQP	Air Quality Program
AQTF	Air Quality Task Force
AQRV	Air Quality Related Values
AVI	Automatic Vehicle Identification
AVO	Average Vehicle Occupancy
AVR	Average Vehicle Ridership
BEQ	Bureau of Environmental Quality (PENNDOT)
BMS	Bridge Management System
BMV	Bureau of Motor Vehicles
CAA70	Clean Air Act of 1970
CAA77	Clean Air Act Amendments of 1977
CAA90	Clean Air Act Amendments of 1990
CAAA	Clean Air Act Amendments of 1990
CARB	California Air Resources Board
CBD	Central Business District
CE	Categorical Exclusion
CEE	Categorical Exclusion Evaluation
CFF	Clean Fuel Fleet
CFFV	Clean Fuel Fleets Vehicles
CFR	Code of Federal Regulations
CFV	Clean Fuel Vehicle
CMAQ	Congestion Mitigation and Air Quality
CMP	Congestion Management Plan
CMS	Congestion Management System OR Contract Management System
CMSA	Consolidated Metropolitan Statistical Area
CNG	Compressed Natural Gas
CO	Carbon Monoxide (ppm) OR Central Office
CO <sub>2</sub>	Carbon Dioxide (ppm)
CPI	Consumer Price Index
CTG	Control Technique Guidance
CV	Conventional Vehicle
DEIS	Draft Environmental Impact Statement
DEP	Department of Environmental Protection
DOI	Department of Interior
DOT	Department of Transportation
DVMT	Daily Vehicle Miles of Travel
DVRPC	Delaware Valley Regional Planning Commission
EA	Environmental Assessment
ECO	Employee Commute Option

ECONS	Energy Conservation and Safety
EDD	Economic Development District
E I/M	Enhanced Inspection/Maintenance
EIS	Environmental Impact Statement
EKMA	Empirical Kinetic Measurement Assessment
EPA	Environmental Protection Agency (United States)
EPACT	Energy Policy Act of 1992
EPS	Emissions Pre-Processor Systems
EQB	Environmental Quality Board (PA)
ERC	Emission Reduction Credit
ETC	Employer Trip Coordinator OR Employee Transportation Coordination
ETRP	Employer Trip Reduction Program
ETTM	Electronic Toll and Traffic Management
FEIS	Final Environmental Impact Statement
FFY	Federal Fiscal Year
FHWA	Federal Highway Administration
FIP	Federal Implementation Plan
FIPS	Federal Information Processor Systems
FONSI	Finding of No Significant Impact
FTA	Federal Transit Administration
FTP	Federal Test Procedure
GM/BHP-HR	Grams per Brake Horsepower Hour
GIS	Geographic Information System
GVWR	Gross Vehicle Weight Rating
HBW	Home-Based Work
HC	Hydrocarbons (Kg/day, Tons/yr)
HCM	Highway Capacity Manual
HDDV	Heavy Duty Diesel Vehicle
HDBGV	Heavy Duty Gasoline Vehicle
HDV	Heavy Duty Vehicle
HOV	High Occupancy Vehicle
HPMS	Highway Performance Monitoring System
HP&R	Highway Planning and Research Funds (Federal)
ILEV	Inherently Low Emission Vehicles
I/M	Inspection/Maintenance
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
ITE	Institute of Transportation Engineers
IVHS	Intelligent Vehicle Highway Systems
LAER	Lowest Achievable Emission Rate
LDD	Local Development District
LDDT	Light Duty Diesel Truck
LDDV	Light Duty Diesel Vehicle
LDGT	Light Duty Gasoline Truck
LDGV	Light Duty Gasoline Vehicle
LDT	Light Duty Truck
LDV	Light Duty Vehicle
LEV	Low Emission Vehicle
LOS	Level of Service
LPG	Liquid Petroleum Gas
LPO	Lead Planning Organization
MACT	Maximum Achievable Control Technology
MOBILE	EPA's computer program used to run conformity -- latest version is number 5A
MPO	Metropolitan Planning Organization
MPH	Miles Per Hour
MSA	Metropolitan Statistical Area
NAAQS	National Ambient Air Quality Standards

NARC	National Association of Regional Councils
NCHRP	National Cooperative Highway Research Program
NEPA	National Environmental Policy Act of 1969, as amended
NHB	Non-Home Based
NHS	National Highway System
NH <sub>3</sub>	Ammonia
NO <sub>2</sub>	Nitrogen Dioxide
No <sub>x</sub>	Nitrogen Oxides
NO <sub>x</sub> RACT	Nitrous Oxides Reasonable Available Control Technology
NPRM	Notice of Proposed Rulemaking
NSPS	New Source Performance Standards
NSR	New Source Review
O <sub>3</sub>	Ozone (ppm)
OEM	Original Equipment Manufacturer
OMB	Office of Management and Budget (US)
OTC	Ozone Transport Commission
OTR	Ozone Transport Region
PADEP	Pennsylvania Department of Environmental Protection
PENNDOT	Pennsylvania Department of Transportation
PAMPTA	Pennsylvania Association of Mass Transit Authorities
P&R	Park and Ride
PERC	Perchloroethylene
PHF	Peak Hour Factor
PI&E	Public Information and Education
PL	Metropolitan Planning Funds
PM <sub>2.5</sub>	Fine Particulate Matter (ug/m <sup>3</sup> )
PM <sub>10</sub>	Particulate Matter (ug/m <sup>3</sup> )
PMS	Pavement Management System OR Project Management System
PPAQ	Post Processor for Air Quality
PPM	Parts Per Million
RACT	Reasonable Available Control Technology
RFA	Regulatory Flexibility Analysis
RFG	Reformulated Federal Gasoline
RFP	Reasonable Further Progress
RMS	Roadway Management System
RMSE	Route Mean Square Error
ROD	Record of Decision
ROG	Reactive Organic Gases
RTIP	Regional Transportation Improvement Program
RTP	Regional Transportation Plan
RVP	Reid Vapor Pressure
SAMI	Safety and Mobility Initiative (PENNDOT)
SIP	State Implementation Plan
SMA	Statistical Metropolitan Area
SO <sub>x</sub>	Sulfates
SO <sub>2</sub>	Sulfur Dioxide
SOL	Strike-Off-Letter (PENNDOT)
SOV	Single Occupancy Vehicle
SOVCAP	Single Occupancy Vehicle Capacity Adding Project
SPRPC	Southwestern Pennsylvania Regional Planning Commission
STAMPP	Systematic Technique to Analyze & Manage Pennsylvania's Pavement (PENNDOT)
STC	State Transportation Commission
STEP	Short-range Transportation Evaluation Program
STIP	Statewide Transportation Improvement Plan
STP	Surface Transportation Program
TAC	Technical Advisory Committee

TAZ	Traffic Analysis Zone
TCM	Transportation Control Measure
TCP	Traffic Control Plan
TDM	Travel Demand Management
TDR	Travel Demand Reduction
TIP	Transportation Improvement Program
TLEV	Transitional Low Emission Vehicle
TMA	Transportation Management Association OR Transportation Management Area
TODF	Time of Day Factor
TPD	Tons Per Day
TPY	Tons Per Year
TR	Traffic Route
TRB	Transportation Research Board
TRO	Trip Reduction Ordinance
TSM	Transportation System Management
TYP	Twelve-Year Program (PADOT)
UAM	Urban Air Shed Model
UG/M <sup>3</sup>	Micrograms per Cubic Meter
ULEV	Ultra Low Emission Vehicles
UMTA	Urban Mass Transportation Administration (renamed FTA--Federal Transit Administration)
USC	United States Code
VHT	Vehicle Hours Travelled
VMT	Vehicle Miles Travelled
VOC	Volatile Organic Compounds
VPH	Vehicles Per Hour
ZEV	Zero Emission Vehicles