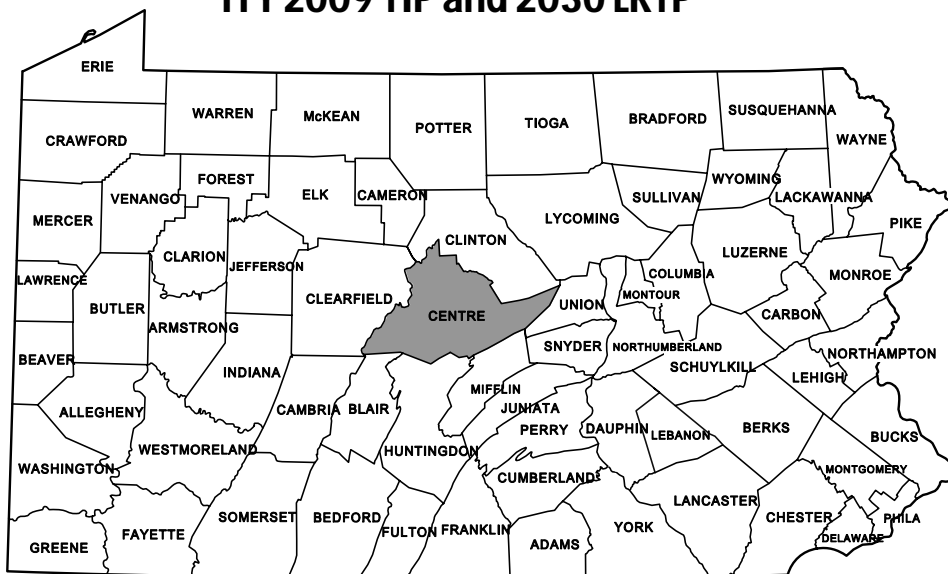


**AIR QUALITY
CONFORMITY ANALYSIS REPORT
FOR THE STATE COLLEGE, PA OZONE MAINTENANCE AREA
(8-hour Ozone NAAQS)**

VOLUME II – TECHNICAL ANALYSIS

FFY 2009 TIP and 2030 LRTP



Prepared by:
Pennsylvania Department of Transportation

DRAFT

PUBLIC REVIEW:

PLANNING PARTNER APPROVAL:

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OZONE CONFORMITY**

2002
Summer Weekday Emission Summary
CENTRE COUNTY

	Vehicle Mile of Travel (VMT)	Vehicle Hours of Travel (VHT)	Average Speed (mph)	VOC Emissions (kg/day)	NOX Emissions (kg/day)
Rural					
Interstate	908,469	14,208	63.94	1,053.70	7,428.50
Other Prin. Art.	942,428	18,951	49.73	1,309.20	2,755.80
Minor Arterials	490,679	10,710	45.82	701.50	1,292.50
Major Collectors	253,695	5,983	42.40	376.30	579.40
Minor Collectors	73,925	1,856	39.83	111.40	166.70
Local	628,966	19,741	31.86	1,574.50	1,612.40
Small Urban					
Interstate					
Expressway					
Other Prin. Art.	41,260	1,149	35.91	64.60	80.90
Minor Arterials	3,903	87	44.86	5.80	8.20
Collector	53,025	2,479	21.39	98.60	108.90
Local	9,496	550	17.27	23.40	25.50
Urban					
Interstate					
Expressway	215,421	3,917	55.00	299.80	652.00
Other Prin. Art.	479,990	13,624	35.23	751.60	1,065.80
Minor Arterials	190,334	6,004	31.70	309.50	373.20
Collector	250,485	7,511	33.35	403.40	470.70
Local	125,034	4,123	30.33	311.50	351.70
Off Network Emission Benefits				0.00	0.00
COUNTY TOTAL	4,667,110	110,893	42.09	7,394.80	16,972.20

**2009 TIP
Summer Weekday Emission Summary
CENTRE COUNTY**

	Vehicle Mile of Travel (VMT)	Vehicle Hours of Travel (VHT)	Average Speed (mph)	VOC Emissions (kg/day)	NOX Emissions (kg/day)
Rural					
Interstate	1,083,136	16,680	64.94	661.50	4,561.40
Other Prin. Art.	772,831	14,931	51.76	552.90	1,228.80
Minor Arterials	455,445	9,780	46.57	336.80	624.90
Major Collectors	235,076	5,429	43.30	179.30	282.10
Minor Collectors	62,875	1,583	39.72	48.90	74.20
Local	659,129	19,931	33.07	813.80	920.30
Small Urban					
Interstate					
Expressway					
Other Prin. Art.	202,682	5,358	37.83	158.80	245.10
Minor Arterials	19,172	644	29.77	15.80	26.10
Collector	82,407	3,664	22.49	75.20	94.80
Local	16,261	630	25.81	20.20	17.30
Urban					
Interstate					
Expressway	337,243	6,134	54.98	242.70	538.70
Other Prin. Art.	547,143	13,892	39.39	428.10	621.30
Minor Arterials	264,703	9,603	27.56	228.40	278.90
Collector	271,013	7,734	35.04	221.40	261.40
Local	210,679	7,066	29.82	261.20	260.90
Off Network Emission Benefits				-0.47	-2.17
COUNTY TOTAL	5,219,795	123,059	42.42	4,244.53	10,034.03

**2018 TIP
Summer Weekday Emission Summary
CENTRE COUNTY**

	Vehicle Mile of Travel (VMT)	Vehicle Hours of Travel (VHT)	Average Speed (mph)	VOC Emissions (kg/day)	NOX Emissions (kg/day)
Rural					
Interstate	1,401,268	21,622	64.81	478.00	1,858.30
Other Prin. Art.	791,335	15,334	51.61	311.50	504.10
Minor Arterials	464,475	9,978	46.55	187.90	266.80
Major Collectors	239,686	5,537	43.29	99.80	127.00
Minor Collectors	64,088	1,614	39.71	27.20	33.50
Local	673,325	20,360	33.07	463.20	392.30
Small Urban					
Interstate					
Expressway					
Other Prin. Art.	263,400	7,194	36.61	113.50	139.90
Minor Arterials	24,920	879	28.35	11.40	14.20
Collector	107,091	7,044	15.20	62.70	58.60
Local	21,137	835	25.31	14.60	10.50
Urban					
Interstate					
Expressway	449,023	8,178	54.91	178.00	289.00
Other Prin. Art.	711,079	19,359	36.73	309.70	365.10
Minor Arterials	344,001	19,278	17.84	191.80	179.00
Collector	352,256	10,636	33.12	159.70	166.10
Local	273,726	9,863	27.75	188.90	148.20
Off Network Emission Benefits				-1.30	1.94
COUNTY TOTAL	6,180,810	157,711	39.19	2,796.60	4,554.54

**2025 LRP
Summer Weekday Emission Summary
CENTRE COUNTY**

	Vehicle Mile of Travel (VMT)	Vehicle Hours of Travel (VHT)	Average Speed (mph)	VOC Emissions (kg/day)	NOX Emissions (kg/day)
Rural					
Interstate	1,720,363	26,709	64.41	457.80	1,223.90
Other Prin. Art.	801,892	15,581	51.47	248.00	343.00
Minor Arterials	469,196	10,083	46.53	149.40	186.50
Major Collectors	242,131	5,594	43.28	79.50	92.00
Minor Collectors	64,776	1,631	39.72	21.80	24.20
Local	678,945	20,531	33.07	390.60	269.70
Small Urban					
Interstate					
Expressway					
Other Prin. Art.	307,851	8,954	34.38	107.30	117.10
Minor Arterials	29,125	1,076	27.07	10.80	11.60
Collector	125,167	10,749	11.64	71.90	51.90
Local	24,700	992	24.90	14.30	9.00
Urban					
Interstate					
Expressway	540,184	9,870	54.73	168.30	234.40
Other Prin. Art.	831,093	26,399	31.48	300.50	313.50
Minor Arterials	402,053	17,393	23.12	172.40	151.20
Collector	411,680	13,163	31.28	152.00	147.40
Local	319,899	13,622	23.48	184.80	122.00
Off Network Emission Benefits				-0.89	3.00
COUNTY TOTAL	6,969,055	182,347	38.22	2,528.51	3,300.40

**2030 LRP
Summer Weekday Emission Summary
CENTRE COUNTY**

	Vehicle Mile of Travel (VMT)	Vehicle Hours of Travel (VHT)	Average Speed (mph)	VOC Emissions (kg/day)	NOX Emissions (kg/day)
Rural					
Interstate	1,994,392	31,345	63.63	517.40	1,077.90
Other Prin. Art.	808,407	15,744	51.35	245.00	304.60
Minor Arterials	471,929	10,143	46.53	147.30	167.90
Major Collectors	243,604	5,628	43.28	78.50	84.30
Minor Collectors	65,175	1,641	39.72	21.50	22.30
Local	682,957	20,652	33.07	386.50	241.50
Small Urban					
Interstate					
Expressway					
Other Prin. Art.	339,899	10,782	31.52	119.20	118.50
Minor Arterials	32,153	1,237	25.99	11.90	11.50
Collector	138,198	12,932	10.69	81.60	53.50
Local	27,272	1,113	24.50	15.60	9.20
Urban					
Interstate					
Expressway	610,284	11,209	54.45	186.40	233.80
Other Prin. Art.	917,583	34,115	26.90	345.70	322.30
Minor Arterials	443,899	21,483	20.66	202.60	157.00
Collector	454,535	15,448	29.42	168.70	152.80
Local	353,300	17,261	20.47	201.00	121.90
Off Network Emission Benefits				-0.62	3.62
COUNTY TOTAL	7,583,587	210,733	35.99	2,728.28	3,082.62

APPENDICES

APPENDIX A1

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

APPENDIX A2

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

APPENDIX B

**CENTRE COUNTY
MOBILE6.2 PROGRAM PARAMETERS**

APPENDIX B1

MOBILE6.2 PROGRAM SETUP FILES
For
Ozone Conformity Analysis

MOBILE6.2 INPUT FILE SETTINGS

Centre 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
T2 CERT : leviistd.d } ***CALLEVII Phase-In Files***
REG DISTRIBUTION : CENT05ag.dat ***(2002 for base year; 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

NGV FRACTION : ngvfr100.d

(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

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

2005 Age Distribution:

REG	DIST									
1	0.0391	0.0701	0.0745	0.0816	0.0779	0.0860	0.0741	0.0693	0.0696	0.0574
	0.0588	0.0454	0.0402	0.0326	0.0290	0.0221	0.0194	0.0145	0.0107	0.0077
	0.0055	0.0042	0.0021	0.0012	0.0069					
2	0.0345	0.0736	0.0657	0.0604	0.0642	0.0690	0.0633	0.0501	0.0592	0.0406
	0.0556	0.0561	0.0365	0.0326	0.0298	0.0299	0.0330	0.0322	0.0232	0.0184
	0.0133	0.0108	0.0061	0.0053	0.0366					
3	0.0345	0.0736	0.0657	0.0604	0.0642	0.0690	0.0633	0.0501	0.0592	0.0406
	0.0556	0.0561	0.0365	0.0326	0.0298	0.0299	0.0330	0.0322	0.0232	0.0184
	0.0133	0.0108	0.0061	0.0053	0.0366					
4	0.0381	0.1094	0.0836	0.0798	0.0805	0.0708	0.0656	0.0493	0.0666	0.0384
	0.0557	0.0421	0.0292	0.0231	0.0181	0.0220	0.0222	0.0170	0.0145	0.0155
	0.0123	0.0106	0.0046	0.0037	0.0273					
5	0.0381	0.1094	0.0836	0.0798	0.0805	0.0708	0.0656	0.0493	0.0666	0.0384
	0.0557	0.0421	0.0292	0.0231	0.0181	0.0220	0.0222	0.0170	0.0145	0.0155
	0.0123	0.0106	0.0046	0.0037	0.0273					
16	0.0686	0.0827	0.1048	0.0823	0.0668	0.0640	0.0489	0.0338	0.0327	0.0317
	0.0288	0.0208	0.0186	0.0148	0.0120	0.0102	0.0158	0.0162	0.0162	0.0264
	0.0285	0.0172	0.0183	0.0348	0.1052					

(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:

Model Years	Program Parameters
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:

Model Years	Program Parameters
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

MOBILE6 Summer Daily Temperatures and Humidity			
Air Quality District	Maximum	Minimum	Absolute Humidity
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

MVMA Fuel Volatility Survey Results				
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

**CENTRE 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 ₂	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 Break 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
HDGV	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 ₃	Ammonia
NO ₂	Nitrogen Dioxide
No _x	Nitrogen Oxides
NO _x RACT	Nitrous Oxides Reasonable Available Control Technology
NPRM	Notice of Proposed Rulemaking
NSPS	New Source Performance Standards
NSR	New Source Review
O ₃	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 _{2.5}	Fine Particulate Matter (ug/m ³)
PM ₁₀	Particulate Matter (ug/m ³)
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 _x	Sulfates
SO ₂	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 ³	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