OhioEPA

State of Ohio Environmental Protection Agency
Division of Air Pollution Control

Cleveland-Akron-Lorain, OH

[Ashtabula, Cuyahoga, Geauga, Lake, Lorain, Median, Portage, Summit]

Eight-Hour Ozone Attainment Demonstration

State Implementation Plan

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Division of Air Pollution Control

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Section One

Background

This document is the eight-hour ozone state implementation plan (SIP) for the Cleveland-Akron-Lorain, OH, area which includes Ashtabula, Cuyahoga, Geauga, Lake, Lorain, Medina, Portage and Summit counties. The Northeast Ohio Areawide Coordinating Agency (NOACA) is the metropolitan planning organization (MPO) that covers the five counties of Cuyahoga, Geauga, Lake, Lorain and Medina. The Akron Metropolitan Area Transportation Study (AMATS) is the MPO that covers Summit and Portage counties. For air quality efforts, NOACA acts as the designated local agency under § 174 of the federal Clean Air Act and, as such, is the lead organization for its five counties, AMATS two counties and Ashtabula County. Ashtabula County falls within the Cleveland Combined Metropolitan Statistical Area (CMSA) and is included for air quality analyses and plans. All discussions and data presented in this plan apply to all eight counties. Figure 1 shows the eight-county nonattainment area and the monitoring network.

The Clean Air Act Amendments of 1990 (CAAA) define five ozone nonattainment classifications for areas that exceed the National Ambient Air Quality Standard (NAAQS) based on the severity of the ozone levels. They are, in order of increasing severity: marginal, moderate, serious, severe, and extreme. Attainment dates and plan submission requirements depend on the classification designation for each area. To determine the level of the problem, the causes and solution, the state needs to; summarize the air quality data, identify the sources of emissions, identify control strategies, and demonstrate that the control strategies are sufficient to attain the eight-hour ozone standard.

In 1997, the United States Environmental Protection Agency (U.S. EPA) revised the NAAQS for ozone replacing the 1979 one-hour ozone standard with an eight-hour ozone standard set at 0.08 parts per million (ppm). The standard was challenged legally and upheld by the U.S. Supreme Court in February 2001.

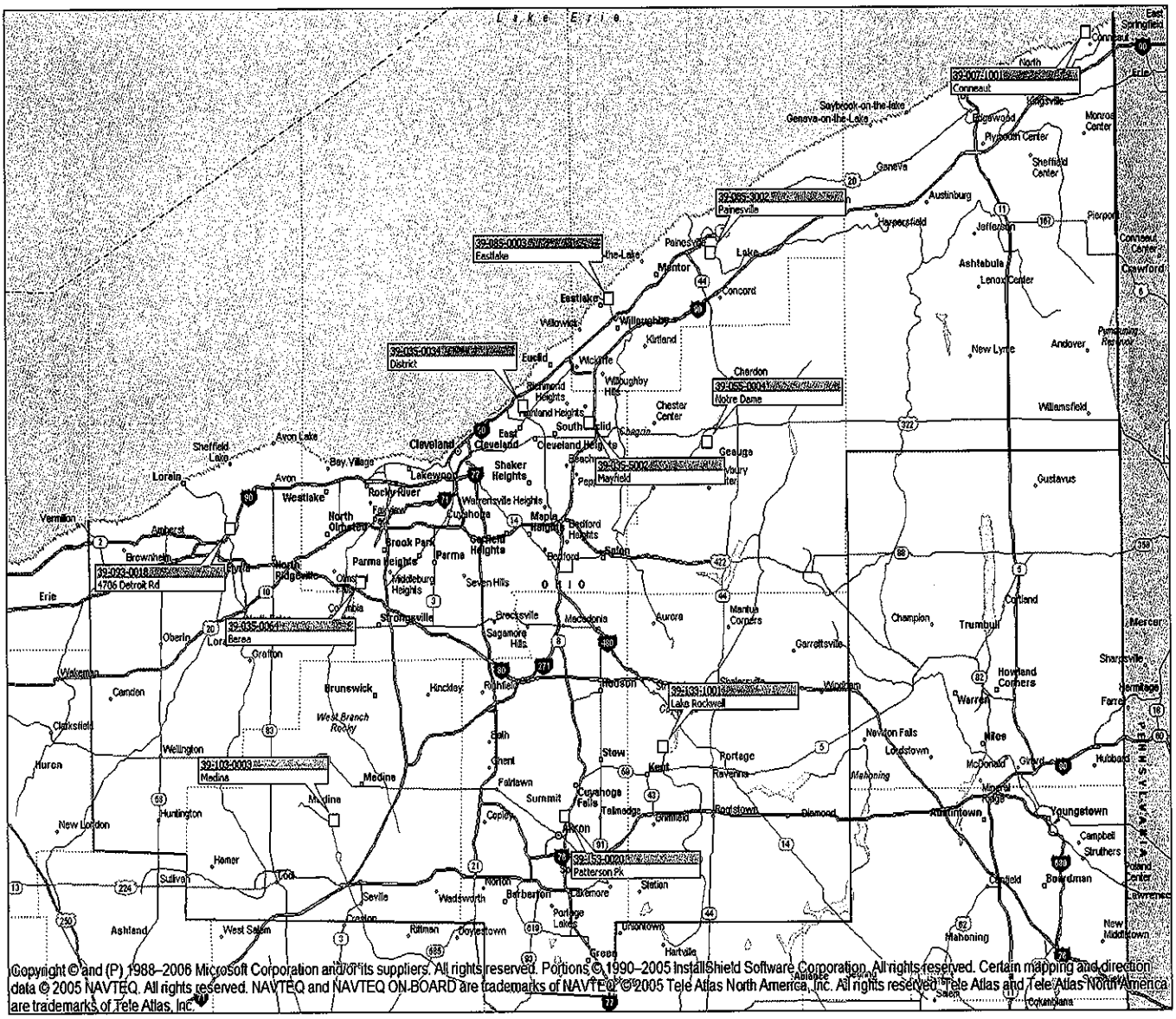
On April 15, 2004, U.S. EPA designated 134 nonattainment areas for the eight-hour ozone standard across the country. The Cleveland-Akron-Lorain, OH area is designated as a moderate ozone nonattainment area under this standard. The CAAA requires states with moderate ozone nonattainment areas to submit a plan by June 15, 2007 detailing how the eight-hour ozone standard will be attained by June 15, 2010. As part of this requirement, the state submitted a 15 percent Rate of Progress (ROP) Plan on June 15, 2007 as part of the interim attainment demonstration.

The NAAQS are air quality standards for pollutants that pose public health risks. The Cleveland-Akron-Lorain, OH area exceeds the eight-hour ozone NAAQS. High levels of ozone can harm the respiratory system and cause breathing problems, throat irritation, coughing, chest pains, and greater susceptibility to respiratory infection. Ozone is generally not directly emitted to the atmosphere, but is formed in the atmosphere by a chemical reaction between volatile organic compounds (VOC), oxides of nitrogen (NOx)

and carbon monoxide (CO) in the presence of sunlight. Because CO is only marginally reactive on producing ozone, the CO component of the 2005 base year inventory does not figure into the attainment demonstration. Therefore, only VOC and NOx components of the 2005 base year inventory are included.

Consequently, in order to reduce eight-hour ozone concentrations, the CAAA requires specific amounts of reductions in VOC and NOx emissions over a period of years until the eight-hour ozone standard is met. The first increment in this reduction process is the requirement to reduce VOC emissions by 15 percent by June 15, 2009.

Figure 1: The Cleveland-Akron-Lorain eight-hour ozone nonattainment area monitoring network



Section Two

Ambient Air Quality Data

In accordance with the CAAA, three complete years of ozone monitoring data are required to demonstrate attainment at a monitoring site. The eight-hour primary and secondary ozone ambient air quality standards are met at an ambient air quality monitoring site when the three-year average of the annual fourth-highest daily maximum eight-hour average ozone concentration is less than or equal to 0.08 ppm. When this occurs, the area is said to be in attainment. Three significant digits must be carried in the computations. Because the third decimal digit, in ppm, is rounded, 0.084 ppm is the largest concentration that is less than or equal to 0.08 ppm. Therefore, for the purposes of this plan, the eight-hour ozone standard is considered to be 0.085 ppm. Values below 0.085 ppm meet the standard, values equal to or greater than 0.085 ppm exceed the standard. These data handling procedures are applied on an individual basis at each monitor in the area. An area is in compliance with the eight-hour ozone NAAQS if, and only if, every monitoring site in the area meets the NAAQS. An individual site's 3-year average of the annual fourth highest daily maximum eight-hour average ozone concentration is also called the site's design value. The air quality design value for the area is the highest design value among all sites in the area. [*Source: "U.S. EPA-454/R-98-017, "Guideline on Data Handling Conventions for the eight-hour Ozone National Ambient Air Quality Standard" December 1998*]

Table 1 shows the Cleveland-Akron-Lorain, OH area monitoring data for 2005 – 2007. This data was retrieved from the U.S. EPA Air Quality System (AQS) database. The AQS contains ambient air pollution data collected by U.S. EPA, state, local and tribal air pollution control agencies from thousands of monitoring stations. Data from the AQS is used to assess air quality, assist in attainment/nonattainment designations, evaluate state implementation plans for nonattainment areas, perform modeling for permit review analysis, and manage other air quality management functions.

The AQS database is updated monthly by states and local environmental agencies that operate the monitoring stations. States provide the monitoring data to U.S. EPA as required by the CAAA. See Appendix E for the AQS database reports used for Table 1.

Table 1: 2004-2006 Monitoring Data for the Cleveland-Akron-Lorain, OH area

Site Area County	Year	Value			
		1	2	3	4
39-007-1001	2004	88	88	85	81
Conneaut	2005	104	95	94	93
Ashtabula Co.	2006	99	99	90	86
	Avg				**86.7**
39-035-0034	2004	64	62	62	57
Cleveland	2005	98	77	77	75
Cuyahoga Co.	2006	79	77	77	74
	Avg				**68.7**
39-035-0064	2004	67	65	65	63
Cleveland	2005	87	84	79	79
Cuyahoga Co.	2006	72	71	71	68
	Avg				**70.0**
39-035-5002	2004	86	79	79	78
Cleveland	2005	87	81	79	78
Cuyahoga Co.	2006	90	85	83	81
	Avg				**79.0**
39-055-0004	2004	87	84	76	75
Cleveland	2005	91	90	89	88
Geauga Co.	2006	76	72	71	70
	Avg				**77.7**
39-085-0003	2004	82	80	80	79
Cleveland	2005	118	104	99	97
Lake Co.	2006	88	84	83	83
	Avg				**86.3**
39-085-3002	2004	79	76	76	76
Cleveland	2005	104	96	90	89
Lake Co.	2006	80	76	75	75
	Avg				**80.0**
39-093-0017	2004	83	79	74	74
Elyria	2005	99	87	85	81
Lorain Co.	2006	77	72	69	69
39-093-0018	**Avg**				**74.7**
39-103-0003	2004	85	82	77	77
Cleveland	2005	101	94	93	90
Medina Co.	2006	76	75	74	73
	Avg				**80.0**
39-133-1001	2004	86	84	82	81
Cleveland	2005	107	93	92	92
Portage Co.	2006	80	79	74	70
	Avg				**81.0**
39-153-0020	2004	87	87	80	77
Cleveland	2005	96	89	89	89
Summit Co.	2006	82	80	77	77
	Avg				**81.0**

Table 2: 2005-2007 Monitoring Data for the Cleveland-Akron-Lorain, OH area
***2007 data is not certified**

Site Area County	Year	Value			
		1	2	3	4
39-007-1001	2005	104	95	94	93
Conneaut	2006	99	99	90	86
Ashtabula Co.	2007	98	95	92	92
	Avg				**90.3**
39-035-0034	2005	98	77	77	75
Cleveland	2006	79	77	77	74
Cuyahoga Co.	2007	84	84	83	80
	Avg				**76.3**
39-035-0064	2005	87	84	79	79
Cleveland	2006	72	71	71	68
Cuyahoga Co.	2007	103	95	87	83
	Avg				**76.7**
39-035-5002	2005	87	81	79	78
Cleveland	2006	90	85	83	81
Cuyahoga Co.	2007	86	84	82	80
	Avg				**79.7**
39-055-0004	2005	91	90	89	88
Cleveland	2006	76	72	71	70
Geauga Co.	2007	71	69	68	68
	Avg				**75.3**
39-085-0003	2005	118	104	99	97
Cleveland	2006	88	84	83	83
Lake Co.	2007	79	76	75	74
	Avg				**84.7**
39-085-3002	2005	104	96	90	89
Cleveland	2006	80	76	75	75
Lake Co.	2007	93	84	82	79
	Avg				**81.0**
39-093-0018	2005	99	87	85	81
Elyria	2006	77	72	69	69
Lorain Co.	2007	84	82	79	78
	Avg				**76.0**
39-103-0003	2005	101	94	93	90
Cleveland	2006	76	75	74	73
Medina Co.	2007	73	71	70	69
	Avg				**77.3**
39-133-1001	2005	107	93	92	92
Cleveland	2006	80	79	74	70
Portage Co.	2007	90	85	85	84
	Avg				**82.0**
39-153-0020	2005	96	89	89	89
Cleveland	2006	82	80	77	77
Summit Co.	2007	97	92	90	90
	Avg				**85.3**

*** 2007 data is not certified**

Table 3: Comparison of 2006 and 2007 Three-Year Averages of the 4th High for the Cleveland-Akron-Lorain, OH area
***2007 data is not certified**

Site Area County	Year	Value 4 2006	4 2007
39-007-1001	2004	81	93
Conneaut	2005	93	86
Ashtabula Co.	2006	86	92
	Avg	**86.7**	**90.3**
39-035-0034	2004	57	75
Cleveland	2005	75	74
Cuyahoga Co.	2006	74	80
	Avg	**68.7**	**76.3**
39-035-0064	2004	63	79
Cleveland	2005	79	68
Cuyahoga Co.	2006	68	83
	Avg	**70.0**	**76.7**
39-035-5002	2004	78	78
Cleveland	2005	78	81
Cuyahoga Co.	2006	81	80
	Avg	**79.0**	**79.7**
39-055-0004	2004	75	88
Cleveland	2005	88	70
Geauga Co.	2006	70	68
	Avg	**77.7**	**75.3**
39-085-0003	2004	79	97
Cleveland	2005	97	83
Lake Co.	2006	83	74
	Avg	**86.3**	**84.7**
39-085-3002	2004	76	89
Cleveland	2005	89	75
Lake Co.	2006	75	79
	Avg	**80.0**	**81.0**
39-093-0017	2004	74	81
Elyria	2005	81	69
Lorain Co.	2006	69	78
39-093-0018	**Avg**	**74.7**	**76.0**
39-103-0003	2004	77	90
Cleveland	2005	90	73
Medina Co.	2006	73	69
	Avg	**80.0**	**77.3**
39-133-1001	2004	81	92
Cleveland	2005	92	70
Portage Co.	2006	70	84
	Avg	**81.0**	**82.0**
39-153-0020	2004	77	89
Cleveland	2005	89	77
Summit Co.	2006	77	90
	Avg	**81.0**	**85.3**

Section Three

Emissions Inventory

Due to the length of this section, below is a summary of its subsections.

- Background
- Mobile source emission estimations and budgets
- Growth and control

Background

U.S. EPA's guidance requires the submittal of a comprehensive inventory of ozone precursor emissions (VOC and NO_x) representative of the currently identified base year, 2005 which meets the criteria set under the Phase I Eight-Hour Ozone Implementation Rule. Ohio also must demonstrate that the improvement in air quality between the year that violations occurred and the year that attainment is forecast based on permanent and enforceable emission reductions.

While a non-insignificant component of ozone and its precursors are transported into this region from outside areas this information does provide some indication of the impact from Ohio sources near the nonattainment area (Appendix A). The emissions are decreasing substantially in response to regional and national programs affecting many EGUs such as the Acid Rain program and the NO_x SIP Call. Other sectors of the inventory also impact ozone formation, but large regional sources such as EGUs have a substantial impact on the formation of ozone due to their high NO_x emissions.

Ohio EPA prepared a comprehensive inventory for the Cleveland-Akron-Lorain, OH area including area, mobile, and point sources for precursors of ozone (VOCs and NO_x) for base year 2005. The information below describes the procedures Ohio EPA used to generate the 2005 base inventories. These inventories were provided to the Midwest Regional Planning Organization (Midwest RPO) and have been processed to develop summer day emissions for use in the air quality analyses.

- Area sources were taken from the Ohio 2005 periodic inventory submitted to U.S. EPA. These projections were made from the U.S. Department of Commerce Bureau of Economic Analysis (BEA) growth factors, with some updated local information.

- Mobile source emissions were calculated from MOBILE6.2 produced emission factors by MPOs and the Ohio Department of Transportation (ODOT).

- Point source information was compiled from Ohio EPA's 2005 annual emissions inventory database and the 2005 U.S. EPA Air Markets acid rain database[1].

[1] http://www.epa.gov/airmarkets/acidrain

- Biogenic emissions are not included in these summaries, but were included in the ambient air quality modeling.

- Non-road emissions were generated using U.S. EPA's National Mobile Inventory Model (NMIM) 2005 application. To address concerns about the accuracy of some of the categories in U.S. EPA's non-road emissions model, Midwest RPO contracted with two companies to review the base data and make recommendations. One of the contractors also estimated emissions for three non-road categories not included in U.S. EPA's non-road model. Emissions were estimated for aircraft, commercial marine vessels and railroads. Recreational motorboat population and spatial surrogates (used to assign emissions to each county) were significantly updated. The populations for the construction equipment category were reviewed and updated based upon surveys completed in the Midwest and the temporal allocation for agricultural sources also was updated.

On-Road Emission Estimations

NOACA and AMATS in coordination with Ohio DOT utilize regional travel demand forecast models to simulate traffic in the area and to forecast traffic flows for given growth expectations. The models are primarily used as a long range planning tool to evaluate the transportation system including determination of locations where additional travel capacity may be needed and to determine the infrastructure requirements necessary to meet that need. They are also used as a tool for air quality purposes to estimate the total emissions of pollution caused by vehicles in the area. The travel demand forecasting models are used to predict the total daily vehicle miles traveled (VMT) and a U.S. EPA computer program called MOBILE6.2 is used to calculate emissions per mile. The product of these is the total amount of pollution emitted by the on-road vehicles for the particular analyzed area. In areas outside the regional travel demand model, traffic counts and statewide traffic growth rates are used for the VMT estimates.

MOBILE6.2 Overview

Broadly described, MOBILE6.2 is used to generate "emission factors", which are the average emissions per mile (grams/mile) for ozone precursors, NO_x and VOC. The MOBILE6.2 model includes a number of variables that affect the emission factors. These variables have national default values, some of which require modification to reasonably reflect local conditions. Some of these variables are discussed here. The vehicle fleet (vehicles on the road) age and the vehicle type have a major effect on the emission factors. The vehicle types are traveling on facility types (MOBILE6.2 facility types are Freeway, Arterial, Local and Ramp) and the vehicle speeds also affect the emission factor values. Meteorological conditions such as air temperature and humidity have a significant affect on emission factors. Emission factors produced by MOBILE6.2 can also include the effect of emission reduction strategies such as vehicle inspection and maintenance programs, regulation of fuels, etc. MOBILE6.2 inputs are estimated using the best available data. These inputs are reviewed and agreed to by U.S. EPA and transportation agencies in a formal interagency consultation process.

There are a number of ways emission factors from MOBILE6.2 can be used with the travel demand model information. Each have their own advantages and disadvantages. One of the simplest methods is to input extensive vehicle fleet, area-specific speed and facility type information MOBILE6.2 to generate a single emission factor that represents the average for all vehicles and facility types in the modeled area. This method only requires multiplying this emission factor by the total VMT of the analyzed area to get the total emissions for the area.

Another method is to create multi-dimensional emission factor "look-up" tables that describe the emission factors by speed, temperature, and facility type. This requires more extensive processing, but the resulting total emissions of this method are more sensitive to even minor changes in the roadway system. Tables of emission factors are created using MOBILE6.2 for each facility type, temperature, and speed given the vehicle fleet on that facility. Then, the travel model provides information on each segment of road (or "link") regarding traffic volumes and facility type which is then "looked-up" in the appropriate emission factor table. It should be noted that speed is estimated as a post process to the travel demand model. Speeds are not taken directly from the travel demand model. Total emissions are calculated by multiplying link VMT by their appropriate emission factor. Both NOACA and AMATS use this method; however, the post process utilized by AMATS uses hour of day. It should be noted that each year analyzed will have different emission factors, volumes, speeds and roadway networks.

Some of the assumptions built into MOBILE6.2 are: older vehicles have much higher emission factors than newer vehicles, diesel vehicles have much higher NO_x emission factors and lower VOC emission factors than gasoline vehicles, and higher average speeds have lower emission factors except for diesel vehicles which have higher NO_x at higher speeds.

Best Available Data

Ohio EPA provides Ohio DOT with the most current vehicle age distribution data, temperature data, and fuel properties. Ohio DOT uses this data for generating emission factors for AMATS and Ashtabula County. NOACA generates its own emission factors using the same inputs. Likewise, the most current transportation planning data available from NOACA and AMATS is used for the emissions estimates.

Analysis Years

Analysis years in this submittal include 2005 and 2009. The travel demand model presents the transportation system conditions for each of these years. Model runs for each future analysis year contain the road network NOACA and AMATS expect to exist at the beginning of that year with corresponding socioeconomic forecasts for that year.

Local Road VMT

Most local roads such as subdivision streets are not explicitly modeled in a travel demand model. Local road VMT is included by using traffic loaded on zonal centroid connectors. In addition, some local road traffic is captured as intra-zonal trips which travel demand models usually do not assign to roadway segments. Ohio DOT post process includes these trips as local road VMT.

Mobile Source Emission Inventory and Budgets

The following tables 4 through 7 contain the results of the VOC and NO_x on-road mobile sources emissions analysis for the Cleveland-Akron-Lorain, OH area. The analyses were performed in a cooperative effort by NOACA and Ohio DOT Office of Technical Services.

Table 4: 2005 Base Year Inventory VOC and NO_x Emission Estimations for On-Road Mobile Sources in the Cleveland-Akron-Lorain, OH area in tons per day (tpd)

2005 Base Year Inventory (Tons/Day)

County	Hydrocarbons	Nitrous Oxides
Ashtabula	4.37	7.53
Cuyahoga	31.72	74.77
Geauga	2.72	5.77
Lake	6.02	14.87
Lorain	7.00	17.07
Medina	5.68	14.05
Portage	4.21	12.71
Summit	14.45	41.10
Total	**76.17**	**187.87**

Table 5 shows the 2008 15 percent Reasonable Further Progress Inventory for VOC and NO_x on-road mobile sources emissions for the Cleveland-Akron-Lorain, OH area.

Table 5: 2008 15 percent Reasonable Further Progress Inventory for VOC and NO_x Emission Estimations for On-Road Mobile Sources in the Cleveland-Akron-Lorain area in tons per day (tpd)

2008 15% Reasonable Further Progress Inventory (Tons/Day)

County	Hydrocarbons	Nitrous Oxides
Ashtabula	3.71	6.40
Cuyahoga	26.96	63.55
Geauga	2.31	4.90
Lake	5.12	12.64
Lorain	5.95	14.51
Medina	4.83	11.94
Portage	3.58	10.80
Summit	12.28	34.94
Total	**64.74**	**159.69**

Table 6 contains the results of the 2009 VOC and NO_x on-road mobile sources emissions analysis for the Cleveland-Akron-Lorain, OH area.

Table 6: Combined VOC and NO_x Emission Estimations for On-Road Mobile Sources for the Cleveland-Akron-Lorain area in tons per day (tpd)

2009 Attaiment Year Inventory (Tons/Day)

County	Hydrocarbons	Nitrous Oxides
Ashtabula	3.27	5.70
Cuyahoga	20.85	49.41
Geauga	1.83	3.89
Lake	4.02	9.98
Lorain	4.66	11.44
Medina	3.88	9.75
Portage	2.74	8.77
Summit	11.70	28.21
Total	**52.95**	**127.15**

Motor Vehicle Emission Budget (MVEB)

The MVEB is the total of all motor vehicle emissions identified in the SIP that an area can produce and still achieve the SIP's purpose of demonstrating attainment or maintenance of the air quality standards. The development of the MVEB is based upon the emissions inventory in the SIP. Motor vehicle emissions inventories are based upon the number of vehicles in the region, vehicle age, the rate of fleet turnover to newer and cleaner vehicles, seasonal temperatures in the area and other factors. The MVEB acts as a ceiling on transportation plan and transportation improvement program emissions.

Ohio EPA works closely with the MPOs, as well as the Ohio DOT to assure that mobile source budgets are consistent with our air quality attainment demonstrations and are also based on the latest travel demand model assumptions. The mobile source budgets identified in this submittal reflect the projected 2009 emissions loads for the Cleveland-Akron-Lorain, OH area with an added cushion of three percent to account for the potential variation in future network emissions projections due merely to model changes or other non-VMT related changes or those associated with the future project under review. In other words, changes that could occur even if there were no change in the actual network parameters. Ohio EPA believes that this is a reasonable request and asks that these budgets be approved.

In support of the requested cushion, Ohio EPA and other Midwest RPO participants requested a sensitivity run by Midwest RPO in which on-road mobile source emissions were increased by ten percent throughout the five-state Midwest RPO region (Appendix C). The results of this model run indicates increases in future year design values which still demonstrate attainment of the ozone air quality standard throughout the state. While this model demonstration would justify a ten percent cushion, for the technical reasons noted above, Ohio EPA believes that three percent is appropriate. Table 7 below contains the motor vehicle emissions budgets for the Cleveland-Akron-Lorain, OH area.

Table 7: Mobile Vehicle Emissions Budgets for the Cleveland-Akron-Lorain, OH area (tpd)

2009 Attainment Year Mobile Source Budgets (Tons/Day)

County	Hydrocarbons	Nitrous Oxides
Ashtabula	3.37	5.87
Cuyahoga	21.48	50.89
Geauga	1.88	4.01
Lake	4.14	10.28
Lorain	4.80	11.78
Medina	4.00	10.04
Portage	2.82	9.03
Summit	12.05	29.06
Total	**54.54**	**130.96**

3 percent included in totals

This budget is the emission estimate calculated for 2009 and is based on 3 percent growth from the 2009 inventory. The emission estimates are derived from the most recent travel demand model and MOBILE6.2.

All methodologies, latest planning assumptions were determined through the interagency consultation process described in the Transportation Conformity Memorandums of Understanding (MOU) for NOACA and AMATS.

Ohio DOT performed emission projections for the AMATS area and Ashtabula County while NOACA performed its own projections, both using the following approaches.

- Mobile source emission projections are based on the U.S. EPA MOBILE6.2 model. All projections were made in accordance with "Procedures for Preparing Emissions Projections" U.S. EPA-45/4-91-019.

- Emissions inventories are required to be projected to future dates to assess the influence growth and future controls will have. Midwest RPO has developed growth and control files for point, area, and non-road categories. These files were used to develop the future year emissions estimates used in this document (Appendix C). This was done so the inventories used for the attainment demonstration are consistent with modeling performed in the future.

The 2005 base year inventory includes the categories of EGU point, Non-EGU, Area, Non-road and On-road. VOC, and NO_x are the ozone precursor emissions reported for each category in the 2005 base year inventory in this submittal. The results of Ohio's 2005 base year and 2009 attainment year inventory are shown in table 8 and 9 for VOC and NOx emissions from this area's eight counties of Ashtabula, Cuyahoga, Geauga, Lake, Lorain, Medina, Portage and Summit. The values in all of the tables are reported in tons per summer day (tpd). The peak ozone season for Ohio is defined as June 1 through August 31.

The data sources for all values are provided by the Midwest RPO and can be viewed at: http://64.27.125.175/tech/emis/r5/round5_reports.htm

The following tables include the sector categories of: Electrical Generating Unit (EGU-Point), Non-Electrical Generating Unit (Non-EGU), Non-road Mobile (includes Marine, Aircraft, and Rail (MAR)), Area, On-road Mobile (On-road).

Table 8: Cleveland-Akron-Lorain, OH Area 2005 and 2009 Total VOC and NO_x Emissions Comparison tons per summer day (tpd)

	2005	2009	Projected Decrease
VOC	366.87	254.85	112.02
NOx	401.14	300.17	100.97

Growth and Control

2009 Projected Level of VOC Emissions

The 2009 projected level of VOC emissions is the maximum amount of anthropogenic (human-caused) VOC emissions allowed in 2009 under the ROP requirement. In Ohio, this is the maximum amount of anthropogenic VOC emissions that are allowed in the Cleveland-Akron-Lorain, OH area in 2009. Ohio calculates its 2009 Projected Level to be 254.85 tpd of VOC emissions.

2009 Growth Factors and the 2009 Current Control Projection Inventory

In order to determine the total amount of VOC emissions reductions required by 1996, future emissions levels must be estimated. For this purpose, 2009 growth factors are developed for the various source categories of emissions based on economic indicators. The 2005 baseline emissions are multiplied by these growth factors, and the resulting inventory is called the 2009 Current Control Projection Inventory (CCPI). The 2009 CCPI is an estimation of the amount of VOC emissions that will occur in 2009 if no new emission control measures are implemented between 2005 and 2009.

The difference between the 2009 CCPI and the 2009 projected level of emissions is the total amount of emissions that the state must plan to reduce in order to meet the 15 percent VOC reduction requirement. This section contains a discussion of how the total VOC emissions reduction requirement is determined.

The 2009 CCPI of VOC's for the Cleveland-Akron-Lorain, OH area is summarized in Table 9 below. Also included for comparison purposes in this table is the 2005 baseline inventory.

Table 9: Summary of 2009 CCPI VOC Emissions for the Cleveland-Akron-Lorain, OH Eight-Hour Ozone Nonattainment Area (tpd)

	2005	2009
EGU	49.42	0.73
Non-EGU	11.23	11.85
Non-road	110.93	91.65
Area	117.18	97.52
MAR	1.93	0.14
On-road	76.17	52.95

The EGU Point, Non-EGU, Non-Road source portions of the 2009 Current Control Projection Inventory are essentially created by multiplying 2005 baseline emissions values by the appropriate growth factors. The on-road mobile source emissions are projected by multiplying emission factors generated using the MOBILE6.2 software by projected 2009 vehicle miles traveled (VMT).

Conclusion

Ohio EPA believes that the air quality modeling using the 2005 base year information provides a more accurate prediction of 2009 air quality resulting from controls that will be in place and the growth assumptions that have been made and documented. The modeling results as well as the previously submitted weight of evidence information supports the conclusion that Cleveland-Akron-Lorain, OH area should attain the eight-hour ozone standard on time.

In spite of this evidence, Ohio EPA is developing additional emission reduction options. Ohio EPA recognizes that the ozone standard is currently under review and a final revision to the standard will most likely result in a revised standard that will require additional emission reductions above those necessary to achieve the existing standards. Ohio EPA is currently in discussions with U.S. EPA and local stakeholders assessing the options available to meet the future standard, including the use of a lower Reid-Vapor Pressure gasoline. Ohio, along with many other states supports the possibility that U.S. EPA will require a cleaner fuel for all portions of the Midwest which will provide additional air quality improvements and will save the states the significant task of pursuing and receiving a fuel waiver from U.S. EPA. This one control option is the largest single VOC emission control option available to states.