REQUEST FOR REDESIGNATION AND MAINTENANCE PLAN FOR OZONE ATTAINMENT IN THE 8-HOUR OZONE BASIC NONATTAINMENT AREA

Allen County, Indiana

Developed By:
The Indiana Department of Environmental Management

May 30, 2006

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REQUEST FOR REDESIGNATION AND MAINTENANCE PLAN FOR OZONE ATTAINMENT IN THE 8-HOUR OZONE BASIC NONATTAINMENT AREA

ALLEN COUNTY, INDIANA

1.0 INTRODUCTION

This document supports Indiana's request that Allen County, in Northeast Indiana, be redesignated from nonattainment to attainment of the 8-hour ozone standard. This county has recorded three (3) years of complete, quality assured ambient air quality monitoring data for 2003-2005 demonstrating attainment with the 8-hour standard.

Section 107 of the Clean Air Act (CAA) establishes specific requirements to be met in order for an area to be considered for redesignation including:

(a) A determination that the area has attained the 8-hour ozone standard;
(b) An approved State Implementation Plan (SIP) for the area under Section 110(k);
(c) A determination that the improvement in air quality is due to permanent and enforceable reductions in emissions resulting from implementation of the SIP and other federal requirements.
(d) A fully approved maintenance plan under Section 175(A);
(e) A determination that all Section 110 and Part D requirements have been met.

This document addresses each of those requirements. It also provides additional information to support continued compliance with the 8-hour ozone standard.

1.1 Background

The Clean Air Act Amendments of 1990 (CAAA) required areas failing to meet the National Ambient Air Quality Standard (NAAQS) for ozone to develop SIPs to expeditiously attain and maintain the standard. In 1997, the United States Environmental Protection Agency (U.S. EPA) revised the air quality standards for ozone replacing the 1979 one-hour standard with an 8-hour standard set at 0.08 parts per million (ppm). The standard was challenged legally and upheld by the U.S. Supreme Court in February of 2001. The U.S. EPA designated areas under the 8-hour ozone standard on April 15, 2004 as attainment, nonattainment, or unclassifiable.

Allen County was designated as attainment for the one-hour ozone standard pursuant to the 1990 CAAA and, therefore, has never previously been subject to nonattainment area rule-makings. As a result of the 2004 ozone designations, U.S. EPA designated Allen County Basic nonattainment and subject to the 8-hour ozone requirements, including development of a plan to reduce volatile organic compounds (VOCs) and oxides of nitrogen (NO_x) emissions and a demonstration that the area will meet the federal 8-hour air quality standard for ozone by June 2009.

1.2 Geographical Description

Allen County is located in northeastern Indiana and contains the city of Ft. Wayne. Allen County is bordered by the Indiana counties of Noble and DeKalb to the north, Whitley and Huntington to the west, and Wells and Adams to the south. The Ohio counties of Defiance, Paulding, and Van Wert border Allen County to the east. This area is shown on Figure 3.1.

1.3 Status of Air Quality

Ozone monitoring data for the most recent three (3) years, 2003 through 2005, demonstrates that air quality has met the NAAQS for ozone in this Basic nonattainment area. This fact, accompanied by the decreases in emission levels discussed in Section 4.0, justifies a redesignation to attainment for the subject area based on Section 107(d) (3) (E) of the CAAA.

2.0 REQUIREMENTS FOR REDESIGNATION

2.1 General

Section 110 and Part D of the CAAA lists a number of requirements that must be met by moderate nonattainment areas prior to consideration for redesignation to attainment. In addition, U.S. EPA has published detailed guidance in a document entitled *Procedures for Processing Requests to Redesignate Areas to Attainment*, issued September 4, 1992, to Regional Air Directors. This document is hereafter referred to as "Redesignation Guidance". This Request for Redesignation and Maintenance Plan is based on the Redesignation Guidance, supplemented with additional guidance received from staff of the Regulation Development Section of U.S. EPA Region V.

The subsections below refer in greater detail to the requirements listed in Section 1.0 of this document. Each subsection describes how the requirement has been met. The pertinent sections of the CAAA are referenced where appropriate.

2.2 Ozone Monitoring 107(d)(3)(E)(i)

1) A demonstration that the NAAQS for ozone, as published in 40 CFR 50.10, have been attained. Ozone monitoring data must show that violations of the ambient standard are no longer occurring.

2) Ambient monitoring data quality assured in accordance with 40 CFR 58.10, recorded in the U.S. EPA Air Quality System (AQS) data base, and available for public view.

3) A showing that the three-year average of the fourth highest values, based on data from all monitoring sites in the area or its affected downwind environs, are below

0.085 parts per million (ppm). This showing must rely on three (3) complete, consecutive calendar years of quality assured data.

4) A commitment that, once redesignated, the State will continue to operate an appropriate monitoring network to verify the maintenance of the attainment status.

2.3 Emission Inventory 107(d)(3)(E)(iii)

1) A comprehensive emission inventory of the precursors of ozone completed for the base year.

2) A projection of the emission inventory to a year at least 10 years following redesignation.

3) A demonstration that the projected level of emissions is sufficient to maintain the ozone standard.

4) A demonstration that improvement in air quality between the year violations occurred and attainment was achieved is based on permanent and enforceable emission reductions and not on temporary adverse economic conditions or unusually favorable meteorology.

5) Provisions for future annual updates of the inventory to enable tracking of the emission levels including an annual emission statement from major sources.

2.4 Modeling Demonstration

While no modeling is required for redesignating ozone nonattainment areas, the Indiana Department of Environmental Management (IDEM) has incorporated photochemical modeling information as part of this document to further support its request for Allen County to be redesignated to attainment.

2.5 Controls and Regulations 107(d)(3)(E)(ii) & 107(d)(3)(E)(v)

1) A U.S. EPA approved SIP control strategy that includes Reasonably Available Control Technology (RACT) requirements for existing stationary sources covered by Control Technology Guidelines (CTG) and non-CTG RACT for all major sources.

2) Evidence that control measures required in past ozone SIP revisions have been fully implemented.

3) Acceptable provisions to provide for new source review.

4) Assurances that existing controls will remain in effect after redesignation, unless the State demonstrates through photochemical modeling that the standard can be maintained without one (1) or more controls.

5) If appropriate, a commitment to adopt a requirement that all transportation plans conform with, and are consistent with, the SIP.

2.6 Corrective Actions for Potential Future Violations of the Standard

1) A commitment to submit a revised plan eight (8) years after redesignation.

2) A commitment to expeditiously enact and implement additional contingency control measures in response to exceeding specified predetermined levels (triggers) or in the event that future violations of the ambient standards occur.

3) A list of potential contingency measures that would be implemented in such an event.

4) A list of VOC and NO_x sources potentially subject to future controls.

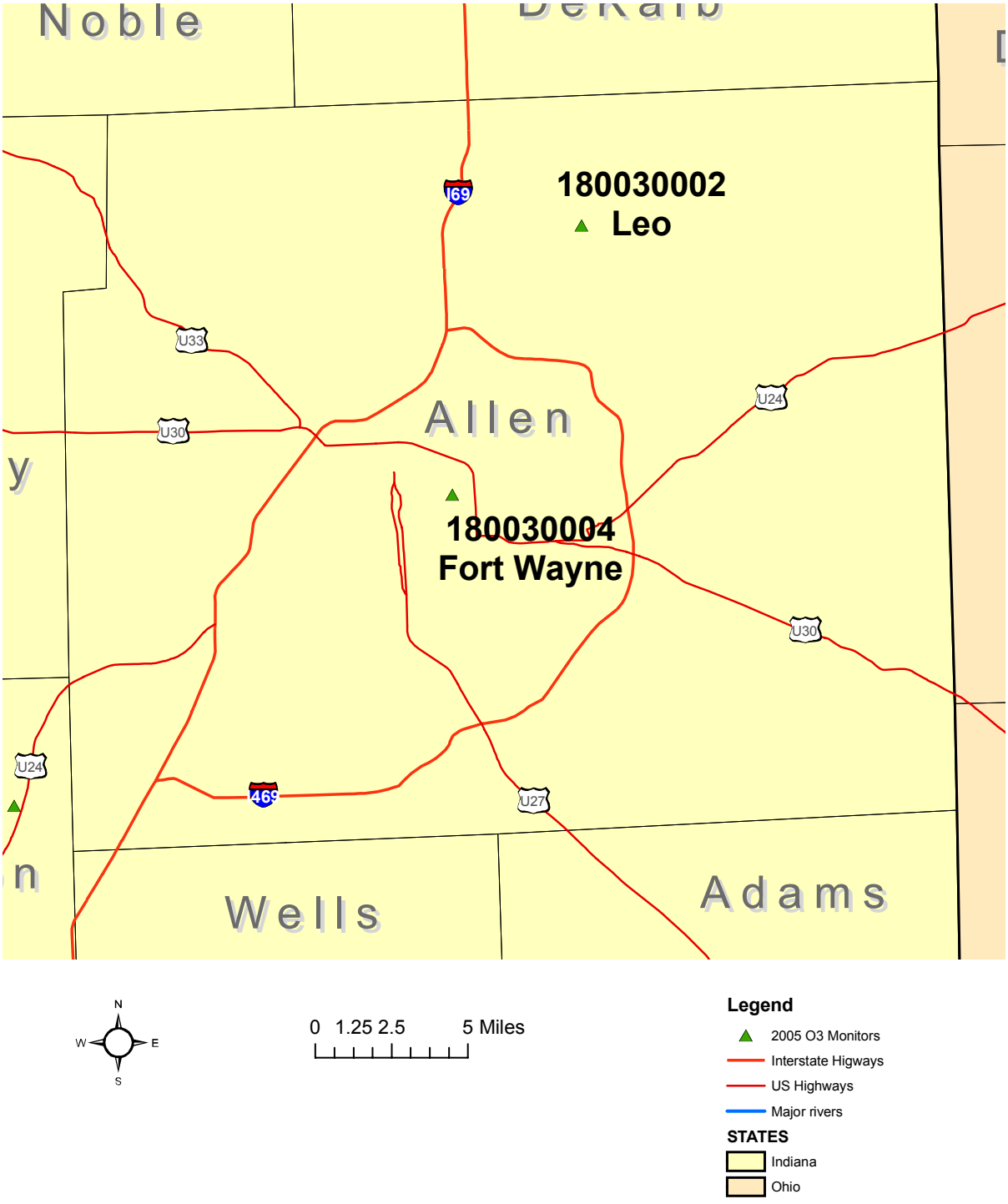
3.0 OZONE MONITORING

3.1 Ozone Monitoring Network

There are currently two (2) monitors measuring ozone concentrations in this nonattainment area. The locations of the monitoring sites for the Allen County basic nonattainment area are shown on Figure 3.1. Both of the monitors are operated by IDEM's Office of Air Quality (OAQ). A listing of the sites with the four (4) highest readings from 2003 through 2005 is shown in Table 3.1 and was retrieved from the U.S. EPA's AQS.

Figure 3.1

Allen County Basic Nonattainment Area



3.2 Ambient Ozone Monitoring Data

The following information is taken from U.S. EPA's "Guideline on Data Handling Conventions for the 8-Hour Ozone National Ambient Air Quality Standard (NAAQS)," EPA-454/R-98-017, December 1998.

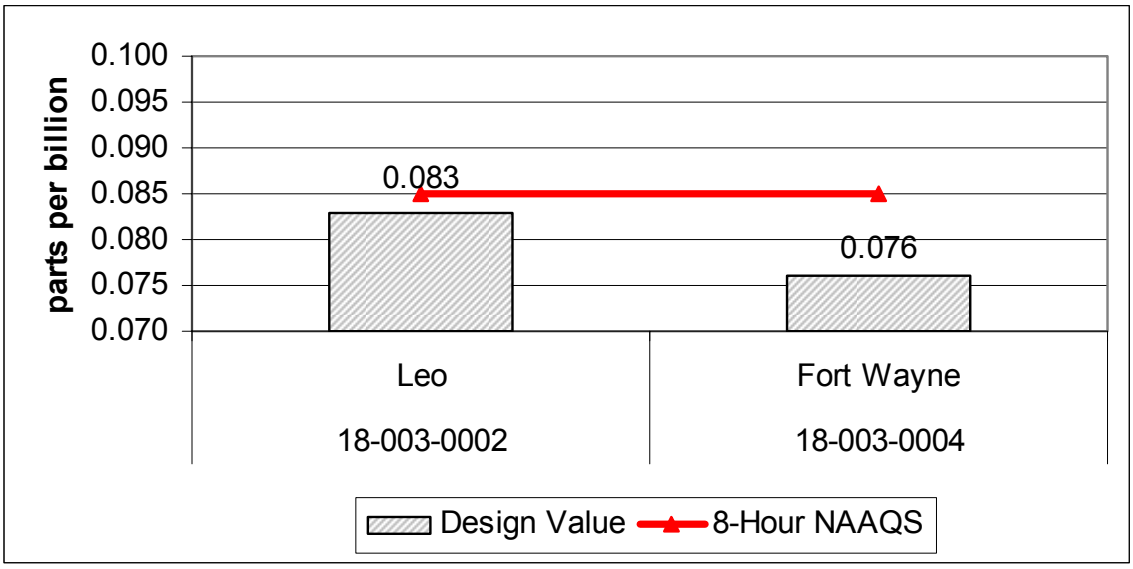
Three (3) complete years of ozone monitoring data are required to demonstrate attainment at a monitoring site. The 8-hour primary and secondary ozone ambient air quality standards are met at an ambient air quality monitoring site when the three-year average of the annual fourth-highest daily maximum 8-hour average ozone concentration is less than or equal to 0.08 ppm. When this occurs, the site is said to be in attainment. Three (3) 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 request, the 8-hour 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 8-hour ozone NAAQS if, and only if, every monitoring site in the area meets the NAAQS. An individual site's three (3) year average of the annual fourth highest daily maximum 8-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. Table 3.1 shows the monitoring data for the three most recent years, 2003 - 2005, at the two nonattainment area sites.

Table 3.1: Monitoring Data for Allen County 2003 – 2005

SITE ID	COUNTY	ADDRESS	YEAR	%OBS	1ST 8-HR	2ND 8-HR	3RD 8-HR	4TH 8-HR	2003-2005 AVERAGE
18-003-0002	ALLEN	LEO	2003	99	**0.104**	**0.097**	0.092	0.090	
18-003-0002	ALLEN	LEO	2004	100	0.084	0.080	0.074	0.073	0.083
18-003-0002	ALLEN	LEO	2005	95	0.091	0.087	0.087	0.086	
18-003-0004	ALLEN	FT WAYNE	2003	98	**0.101**	**0.085**	0.085	0.084	
18-003-0004	ALLEN	FT WAYNE	2004	100	0.078	0.074	0.074	0.069	0.076
18-003-0004	ALLEN	FT WAYNE	2005	99	0.084	0.077	0.077	0.076	

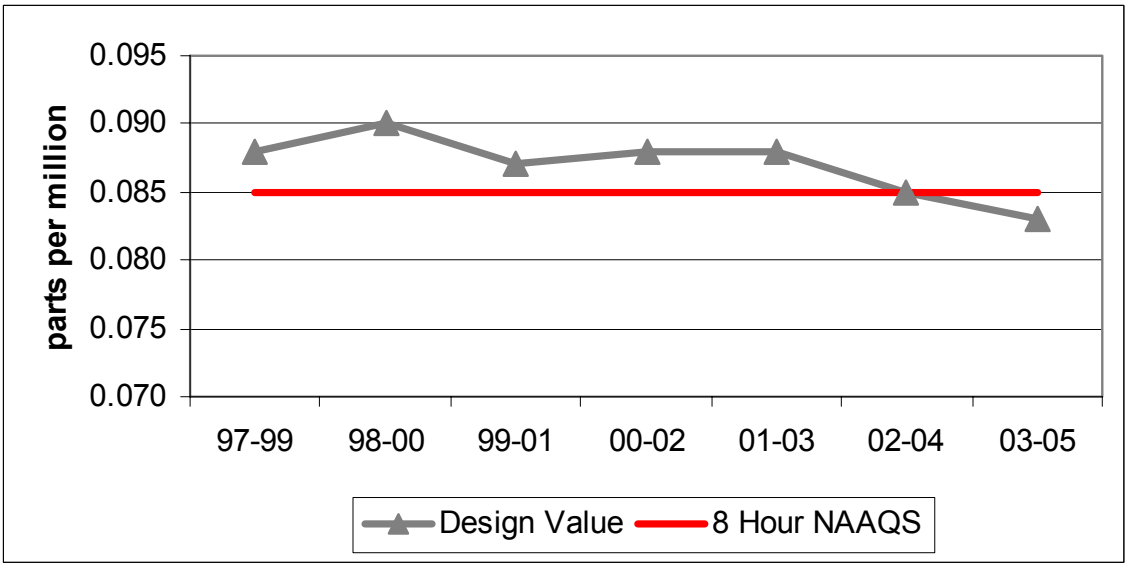
Graph 3.1 visually demonstrates the design values for this nonattainment area.

Graph 3.1 2003-2005 Design Values for Allen County Nonattainment Area



The design values calculated for the Allen County nonattainment area demonstrate that the NAAQS for ozone has been attained.

Graph 3.2 Trends in Allen County 8-Hour Design Values
1997 through 2005



The above graph shows the trend in design values for the region over the past several years. A comprehensive list of the individual sites' design values over this time period is in Appendix A. The area's design value has trended downward as emissions have declined due to such factors as the Acid Rain Program and cleaner automobiles and fuels both regionally and locally. U.S.

EPA's rule to control nitrogen oxides from specific source categories (40 CFR Parts 51, 72, 75 and 96, published on October 17, 1998 and referred to as the "NO_x SIP Call") has significantly reduced emissions from large electric generating units (EGUs), industrial boilers, and cement kilns. Indiana's NO_x Rule was approved on June 6, 2001 (326 IAC 10-3 and 10-4). An analysis of meteorological conditions and monitoring values is in Section 7.0 and supports the conclusion that attainment of the standard as of 2005 is not the result of unusually favorable meteorological conditions. It is expected that this downward trend will continue as the above programs continue and the U.S. EPA Clean Air Interstate Rule is implemented.

3.3 Quality Assurance

IDEM has quality assured all data shown in Appendix A in accordance with 40 CFR 58.10 and the Indiana Quality Assurance Manual. IDEM has recorded the data in the AQS database and, thus, the data are available to the public.

3.4 Continued Monitoring

Indiana commits to continue monitoring ozone levels at the sites indicated in Table 3.1 and Appendix A. IDEM will consult with U.S. EPA Region V staff prior to making changes to the existing monitoring network, should changes become necessary in the future. IDEM will continue to quality assure the monitoring data to meet the requirements of 40 CFR 58. Connection to a central station and updates to the IDEM website[1] will provide real time availability of the data and knowledge of any exceedances. IDEM will enter all data into AQS on a timely basis in accordance with federal guidelines.

4.0 EMISSION INVENTORY

U.S. EPA's Redesignation Guidance requires the submittal of a comprehensive inventory of ozone precursor emissions (VOC and NO_x) representative of the year when the area achieves attainment of the ozone air quality standard. Indiana must also demonstrate that the improvement in air quality between the year that violations occurred and the year that attainment was achieved is based on permanent and enforceable emission reductions. Other emissions inventory related requirements include a projection of the emission inventory to a year at least ten (10) years following redesignation; a demonstration that the projected level of emissions is sufficient to maintain the ozone standard; and a commitment to provide future updates of the inventory to enable tracking of emission levels during the ten (10) year maintenance period.

The following subsections address each of these requirements.

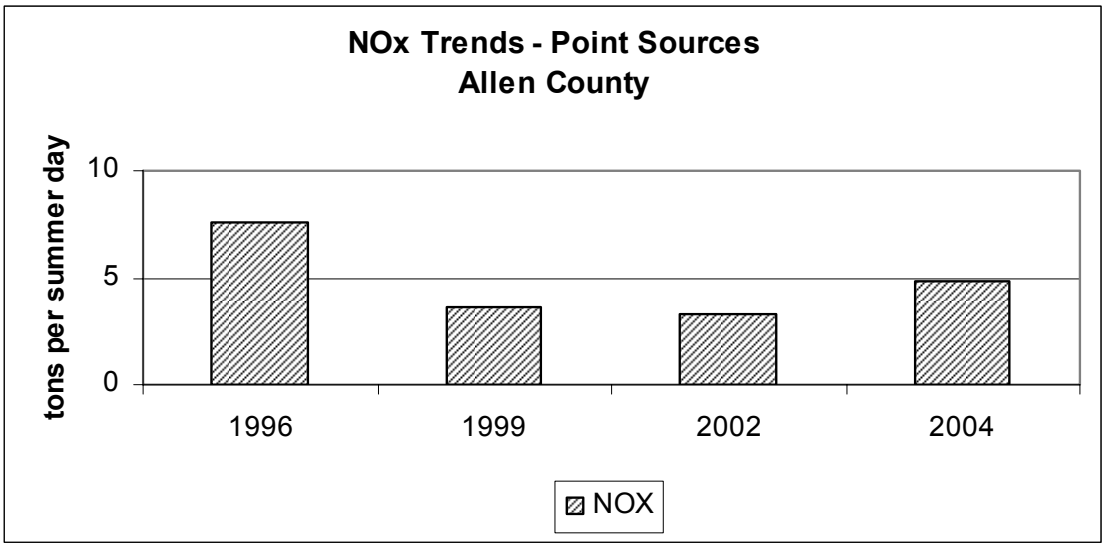
[1] www.in.gov/idem/air

4.1 Emission Trends

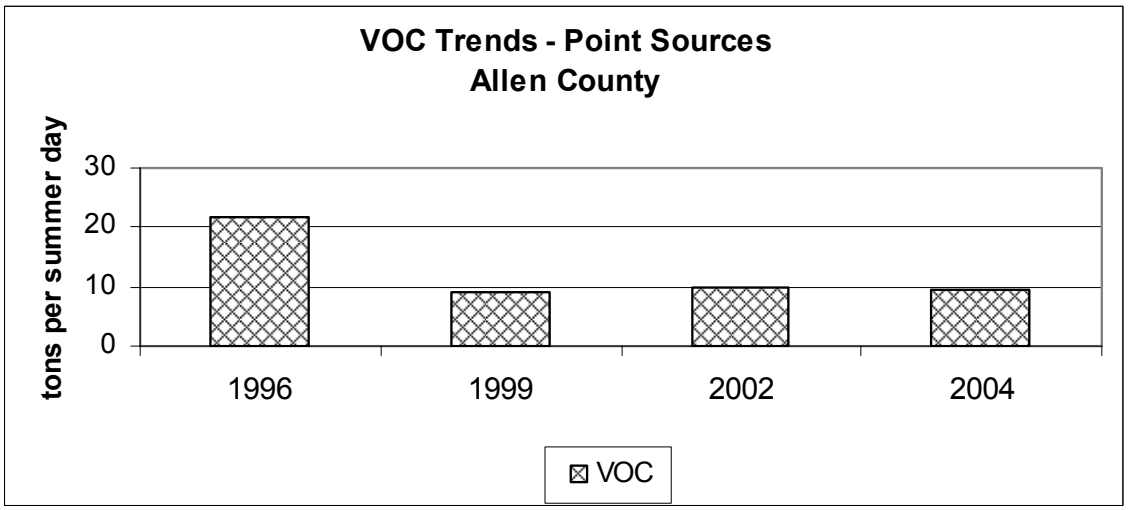
Point Sources

Graphs 4.1 and 4.2 show the trend in point source emissions of NO_x and VOC respectively that correspond to the years of monitored values used in this report. The point source data are taken from Indiana's annual emissions reporting program.

Graph 4.1 Allen County NO_x Point Source Emissions 1996 – 2004



Graph 4.2 Allen County VOC Point Source Emissions 1996 – 2004



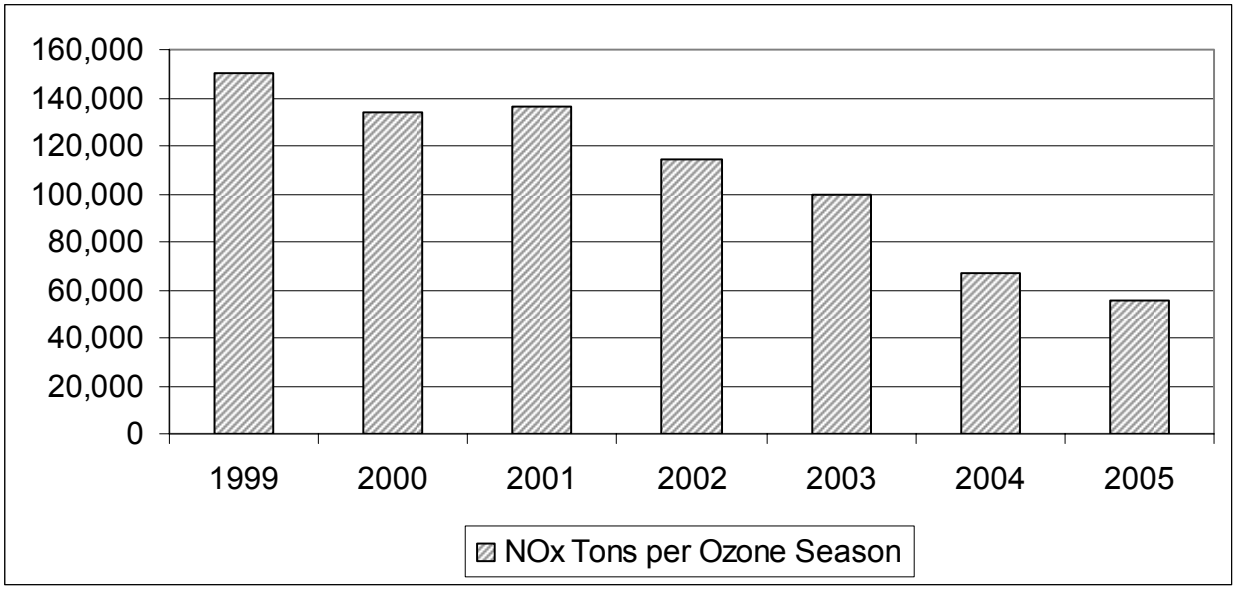
EGU Sources

Graph 4.3 shows the trends in NO_x emissions from Indiana EGUs. While ozone and its precursors are transported into this region from outside areas, this information does provide some indication of the impact from Indiana sources on the nonattainment area. The emissions are decreasing substantially in response to national programs affecting all 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.

These data were taken from U.S. EPA's Clean Air Markets database[2]. Data are available sooner for these units than other point sources in the inventory because of the NOx SIP Call budget and trading requirements. Information from 2003 is significant because some EGUs started operation of their NO_x SIP Call controls in order to generate Early Reduction Credits for their future year NO_x budgets. The first season of the SIP Call budget period began May 31, 2004.

As part of the NO_x SIP Call, the states were required to adopt into their rules a budget for all large EGUs. Indiana's budget is adopted at 326 IAC 10-4. The budget represents a state-wide cap on NO_x emissions. Although each unit is allocated emissions based upon historic heat input, utilities can meet this budget by over-controlling certain units or purchasing credits from the market to account for overages at other units. To summarize, NO_x emissions have dramatically decreased over the years represented on these graphs. These emissions, capped by the state rule, should remain at least this low through the maintenance period covered by this request.

Graph 4.3 NO_x Emissions from Indiana Electric Generating Units 1999-2005

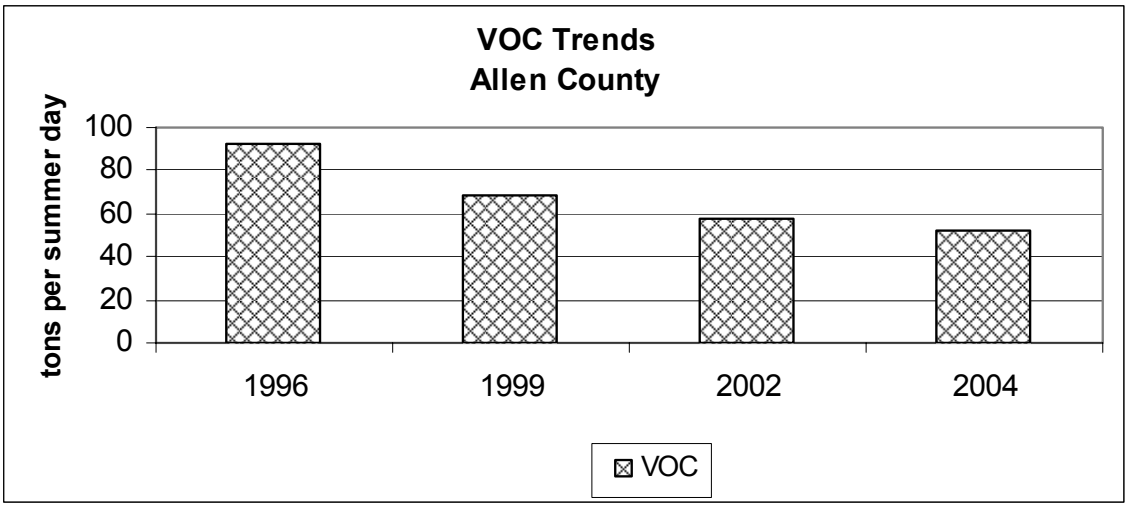


[2] http://www.epa.gov/airmarkets

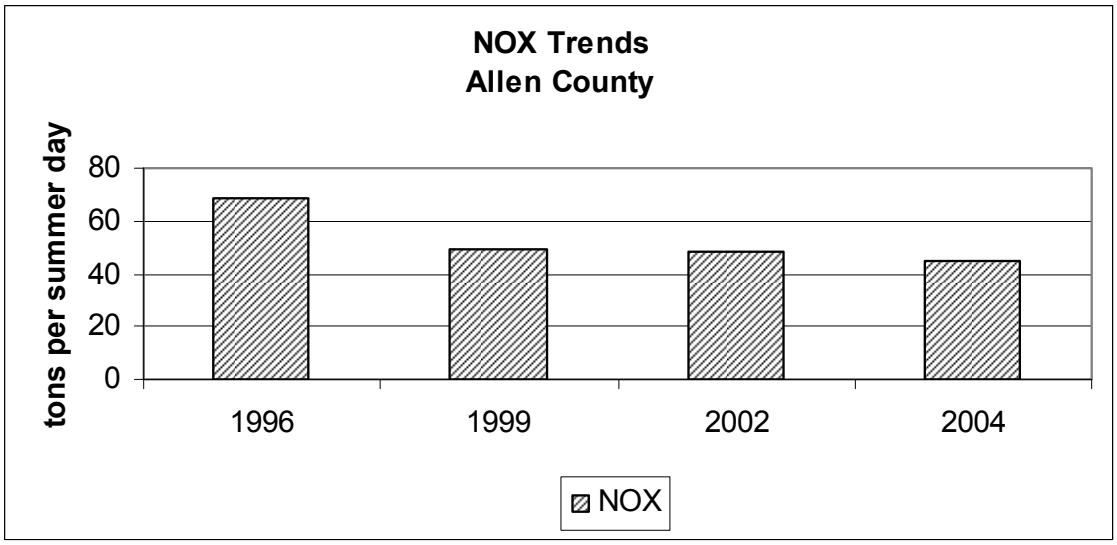
All Anthropogenic Sources

Periodic inventories, which include emissions from all sectors - mobile, area, non-road, and point sources - were prepared for 1996, 1999, 2002, and 2004. Graphs 4.4 and 4.5 show the trends for the total emissions for all anthropogenic source categories in these years, which also roughly follow the years of monitored trends discussed in Section 3. Graphs and data tables of emissions from each source category are available in Appendix B.

Graph 4.4 VOC Emissions Trends, 1996 - 2004, All Sources in Allen County



Graph 4.5 NO_x Emissions Trends, 1996 - 2004, All Sources in Allen County



4.2 Base Year Inventory

IDEM prepared a comprehensive inventory for Allen County, including area, mobile, and point sources for precursors of ozone (volatile organic compounds and nitrogen oxides) for base year 2004.

- Area sources were grown from the Indiana 2002 periodic inventory submitted to U.S. EPA.
- Mobile source emissions were calculated from MOBILE6 produced emission factors and data extracted from the region's travel-demand model.
- Point source information was compiled from IDEM's 2004 annual emissions statement database and the 2005 U.S. EPA Air Markets acid rain database[3].
- Biogenic emissions are not included in these summaries.
- Nonroad emissions were grown from the 2002 National Emissions Inventory (NEI). To address concerns about the accuracy of some of the categories in U.S. EPA's nonroad emissions model, the Lake Michigan Air Directors' Consortium (LADCO) (Midwest Regional Planning Organization), contracted with two (2) companies to review the base data and make recommendations. One of the contractors also estimated emissions for two (2) nonroad categories not included in U.S. EPA's nonroad model. Emissions were estimated for 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 was also updated. A new nonroad estimation model was provided by U.S. EPA for the 2002 analysis.

Appendix B contains data tables and graphs of all these emissions.

4.3 Emission Projections

In consultation with the U.S. EPA and other stakeholders, IDEM selected the year 2020 as the maintenance year for this redesignation request. This document contains projected emissions inventories for 2010 and 2020 for Allen County.

IDEM performed emission projections for Allen County using the following approaches.

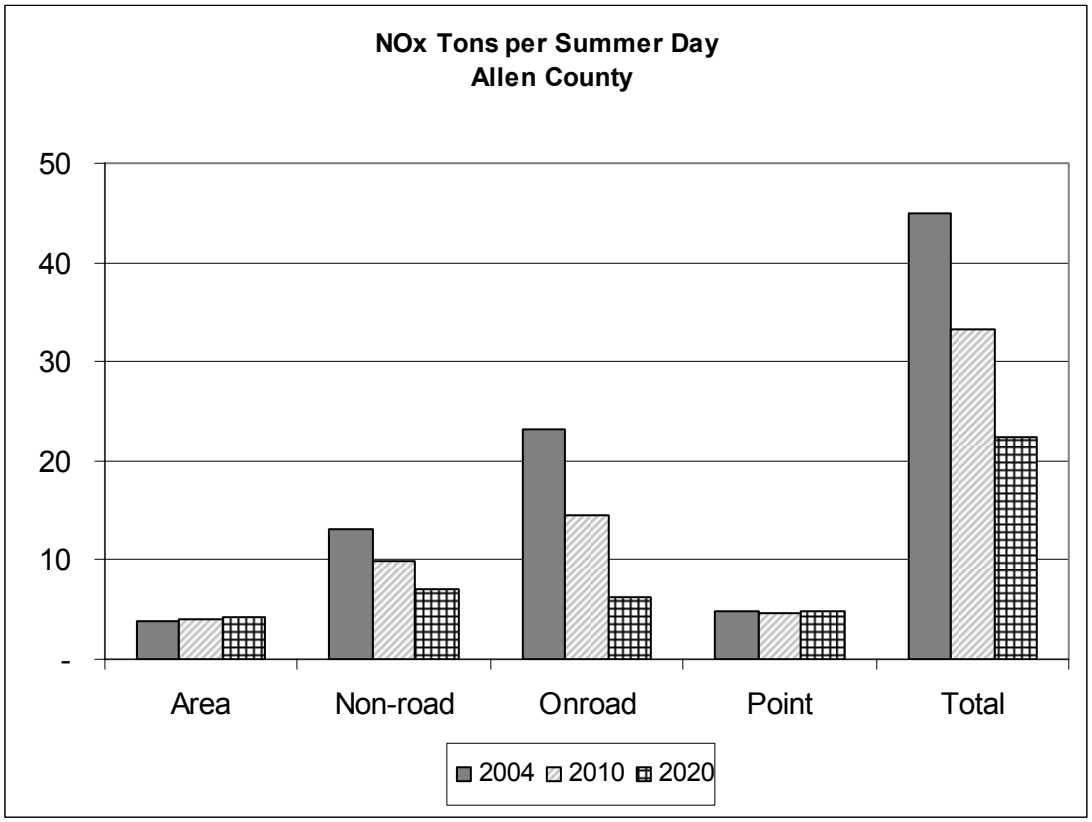
- Mobile source emission projections are based on the U.S. EPA MOBILE6 model. The analysis is described in more detail in Section 5.0. All projections were made in accordance with "Procedures for Preparing Emissions Projections", U.S. EPA-45/4-91-019.
- Emissions inventories are required to be projected to future dates to assess the influence growth and future controls will have. The Midwest Regional Planning Organization has developed growth and control files for point, area, and nonroad categories. These files were used to develop the future year emissions estimates used in this document. This was done so

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

that the inventories used for redesignation are consistent with modeling performed in the future.

The detailed inventory information for Allen County for 2010 and 2020 is in Appendix B. Emission trends are an important gauge for continued compliance with the ozone standard. Therefore, IDEM performed an initial comparison of the inventories for the base year and maintenance years for Allen County. Graphs 4.6 and 4.7 visually compare the 2004 estimated emissions with the 2010 and 2020 projected emission for Allen County. Mobile source emission inventories are described in Section 5. In addition to the Midwest RPO's estimates, point source emissions were projected based upon the state-wide EGU NO_x budgets from the Indiana NO_x rule.

Graph 4.6 Comparison of 2004 Estimated and 2010 and 2020 Projected NO_x Emissions for Allen County



Graph 4.7 Comparison of 2004 Estimated and 2010 and 2020 Projected VOC Emissions for Allen County

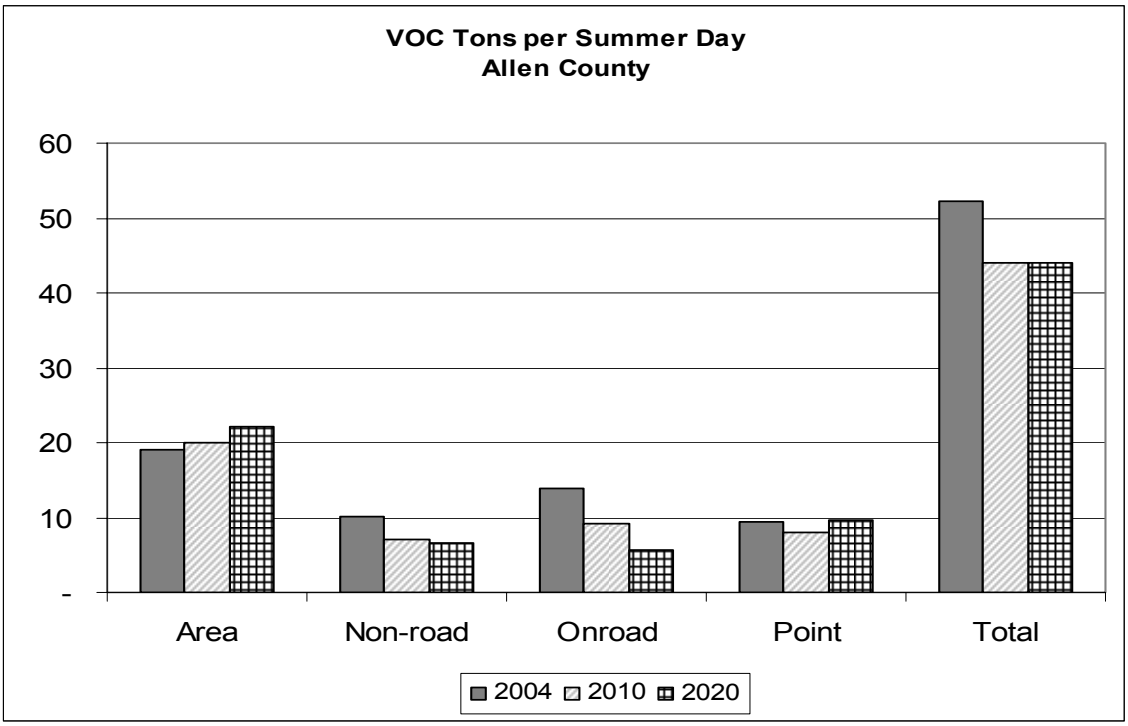


TABLE 4.1 Comparison of 2004 estimated and 2020 projected emission estimates in tons per summer day Allen County, Indiana

	2004	2020	Change
NO_x	44.94	22.28	-22.66 (-50.4%)
VOC	52.28	44.05	-8.23 (-15.7%)

As shown in Table 4.1, NO_x emissions within the area are projected to decrease by 50.4% between 2004 and 2020. The majority of the NO_x reductions are attributable to the onroad and nonroad sectors due to the Tier II Motor Vehicle Emissions Standards and Gasoline Sulfur Control Requirements[4], Highway Heavy-Duty Engine Rule[5] and Non-Road Diesel Engine Rule[6]. Further, due to implementation of the NO_x SIP Call across the eastern United States, NOx and ozone levels entering this area will also be decreased. The Clean Air Interstate Rule (CAIR), issued in March 2005 and to be implemented in late 2006, will reduce regional EGU NOx emissions by approximately another 15% in 2015.

4 http://www.epa.gov/fedrgstr/EPA-AIR/2000/February/Day-10/a19a.htm
5 http://www.epa.gov/fedrgstr/EPA-AIR/1997/October/Day-21/a27494.htm
6 http://www.epa.gov/fedrgstr/EPA-AIR/1998/October/Day-23/a24836.htm

VOC emissions in Allen County are projected to decline by 15.7% between 2004 and 2020. Area source emissions and, to a lesser extent, point sources, show a modest increase due to expectations that the population will grow in this area. However, cleaner vehicles and fuels are expected to be in place in 2010 and 2020 and result in an overall decrease in VOC emissions.

4.4 Demonstration of Maintenance

Ambient air quality data from both monitoring sites indicate that air quality met the NAAQS for ozone in 2005. U.S. EPA's Redesignation Guidance (Page 9) states, "A state may generally demonstrate maintenance of the NAAQS by either showing that future emissions of a pollutant or its precursors will not exceed the level of the attainment inventory, or by modeling to show that the future mix of sources and emissions rates will not cause a violation of the NAAQS." NO_x emissions in Allen County will be substantially reduced while VOC emissions will be slightly reduced. Section 7.0 further discusses the implications of these emissions trends and provides an analysis to support these conclusions. Therefore, air quality should meet the NAAQS ozone standard through the projected year 2020.

In Indiana, major point sources in all counties are required to submit air emissions information once every three (3) years or annually if VOC potential to emit is greater than 250 tons or NO_x potential to emit is greater than 2500 tons, in accordance with the Emission Statement Rule, 326 IAC 2-6. IDEM prepares a new periodic inventory for all ozone precursor emission sectors every three (3) years. These ozone precursor inventories will be prepared for 2005, 2008, and 2011 as necessary to comply with the inventory reporting requirements established in the CAAA. Emissions information will be compared to the 2004 base year and the 2020 projected maintenance year inventories to assess emission trends, as necessary, to assure continued compliance with the ozone standard.

4.5 Permanent and Enforceable Emissions Reductions

Permanent and enforceable reductions of volatile organic compounds and oxides of nitrogen have contributed to the attainment of the 8-hour ozone standard. Some of these reductions were due to the application of tighter federal standards on new vehicles. Also, Title IV of the Clean Air Act and the NO_x SIP Call required the reduction of oxides of nitrogen from utility sources. Section 6.0 identifies these reductions along with an explanation of their status.

4.6 Provisions for Future Updates

As required by Section 175A(b) of the CAAA, Indiana commits to submit to the Administrator, eight (8) years after redesignation, an additional revision of this SIP. The revision will contain Indiana's plan for maintaining the national primary ozone air quality standard for ten (10) years beyond the first ten (10) year period after redesignation.

5.0 TRANSPORTATION CONFORMITY BUDGETS

5.1 On-Road Emission Estimations

The Northeastern Indiana Regional Coordinating Council (NIRCC) is the Metropolitan Planning Organization (MPO) for the Allen County area. This organization has a travel demand forecast model that is used to simulate the traffic in the area and is used to predict what that traffic is likely to be in future years given growth expectations. The model is used mostly for determining locations where additional travel capacity will be needed and to determine the infrastructure requirements necessary to meet that need. It is also used as a tool for air quality purposes to determine the total emissions of pollution caused by vehicles in the area. The travel demand forecast model is used to predict the total daily vehicle miles traveled (VMT) and a U.S.EPA software program called MOBILE6 is used to calculate the emissions per mile. The product of these is the total amount of pollution emitted by the on-road vehicles for the particular area of analysis.

5.2 Overview

Broadly described, MOBILE6 is used to determine "emission factors", which are the average emissions per mile (grams/mile) for ozone precursors: NO_x and VOC. There are numerous variables that can affect the emission factors. The vehicle-fleet (vehicles on the road) age and the vehicle-types have a major effect on the emission factors. The facility-type the vehicles are traveling on (MOBILE6 facility-types are Freeway, Arterial, Local and Ramp) and the vehicle speeds also affect the emission factor values. Meteorological factors such as air temperature and humidity also affect the emission factors and the type and success of the Inspection/Maintenance program(s), if any, in the area will also affect emissions. These data are estimated using the *best available data* (see Section 5.3) to create emission factors for the appropriate ozone precursors, NO_x and VOCs. After emission factors are determined, they must be multiplied by the vehicle-miles-traveled (VMT) to ultimately determine the quantity of vehicle-related emissions.

There are a number of ways emission factors from MOBILE6 can be used with the travel demand model output. Extensive vehicle fleet, area-specific speed and facility-type information can be input into MOBILE6 to the extent that MOBILE6 provides a single emission factor that represents the average for all vehicles and facility-types in the modeled area. This simply 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 "cross-reference" tables that describe the emission factors for each speed on each facility type. This requires a much more extensive post-processing, but much less effort in preparing MOBILE6 input data. Tables of emission factors are created using MOBILE6 for each facility-type and speed given the vehicle fleet on that facility. Then, the travel model provides information on each segment of road (or "link") regarding speed and facility-type which is then "cross-referenced" in the appropriate emission factor table. This emission factor is multiplied by the link's traffic-volume and length (VMT) to get the emissions from that link. The sum of all these link-emissions represents the total for the area of analysis. These two methods are generally described as "link-by-link" methods, in that

each link will have its own specific emission factor, although in the single-emission-factor method, MOBILE6 weighs and sums these internally.

The MOBILE6 input and output data files can all be found in Appendix C.

5.3 Best Available Data

Depending on the details of the travel demand model, some of the MOBILE6 input data for emission factor computation can be found in the model, but some must come from other sources. Most models do not describe their facility-types and vehicle-types in the same way as MOBILE6, so the data need to be translated from model categories into MOBILE6 categories. The MOBILE6 inputs that describe the vehicle fleet are the vehicle age distribution (also called the *registration distribution*) and VMT fraction (also called the *VMT mix*).

Vehicle Age Distribution

MOBILE6 has 16 different vehicle-type categories differentiated by weight. The first 5 are generally passenger vehicles, i.e. cars, vans and SUVs. The others are different sized trucks and buses and the last is motorcycles. The MOBILE6 vehicle age distribution describes what fraction of each of the 16 vehicle-types is one year old, two years old and so on, up to the 25-and-older category. MOBILE6 has a default age profile of each vehicle-type taken from national surveys.

The Allen County area is a through-traffic area for an enormous amount of freight transportation due to its geographic location. National default age profiles are logical to use for freight vehicles, but for passenger vehicles, local data existed and was used for the age distribution for these first 5 MOBILE6 vehicle-types.

Vehicle Identification Numbers (VIN) provided by the Indiana Bureau of Motor Vehicles (BMV) for the year 2003 for Allen County were decoded and split into the first 5 MOBILE6 vehicle-types. These age distributions are not expected to change much over time, so they do not change for the different analysis years.

HPMS to MOBILE6 Facility-Type

As noted earlier, the 12 HPMS facility-types must be translated into the four facility-types defined by MOBILE6 such that MOBILE6 can provide representative emission factors. Table 5.1 describes how this occurs. The MOBILE6 definitions are defined to adjust emission factors to the driving patterns, with regard to stopping, braking, accelerating and idling, that occurs on the different facility-types. These were the recommendations by the FHWA Resource group.

Table 5.1 – HPMS Facility-type cross-referenced to the MOBILE6 Facility-type

HPMS Facility-type (Rural)	MOBILE6 Facility-types	Capacity	FF speeds
Rural Interstate	Freeway w/ 3% ramp	2200	70
Other Principal Arterial	Freeway (non-ramp)	1003	55
Minor Arterial	Arterial	920	50
Major Collector	Arterial	836	40
Minor Collector	Arterial	669	35
Local	Arterial	502	30
(Urban)			
Urban Interstate	Freeway w/ 8% ramp	2200	70
Other Freeways and Expressways	Freeway w/ 8% ramp	2100	65
Other Principal Arterial	Arterial	878	45
Other Minor Arterial	Arterial	805	40
Collector	Arterial	732	30
Local	Local	439	30

Speeds

Speeds can be an input to MOBILE6 for the different facility-types, however, MOBILE6 assumes Local and Ramp facility-types have fixed speeds of 12.9 and 34.6 mph, respectively. This cannot be changed; only Arterial and Freeway speeds can be input to MOBILE6. These can be input to MOBILE6 in two different ways. There is an Average Speed command that allows the average Freeway or Arterial speeds to be input. This is used extensively when building "cross-reference" tables for the emission factor "cross-reference" method mentioned previously. The most accurate and thorough MOBILE6 speed input method is to input speeds via a speed table (containing both Freeway and Arterial speeds) which contains the fraction of VMT for each hour of the day that occurs in 14 speed-bins: 0-2.5 mph, 2.5-7.5 mph…up to >62.5 mph. MOBILE6 does contain national average default speeds that are useful for comparison purposes

NIRCC uses the former Average Speed method of inputting speeds. The travel model data are used to calculate these average speeds. Each link of roadway has a speed calculated using the formulas shown below. The link volume, length, posted speed, number of lanes and capacity are used to determine the VMT fraction to place into the proper speed bin in the speed tables.

The Texas Transportation Institute Congested Speed Formula is used as follows:

Congested Speed = 60/[(60/Free Flow Speed) + Delay]
Delay is the congested delay in minutes/mile
Delay = Min [A $e^{B(V/C)}$, M]

A, B are constants which control the speed function
M = Maximum minutes of delay per mile
Min = whichever is smaller
A = .015 for high capacity facilities > 3400 vehicles/hour, .050 otherwise.
B = 3.5 for high capacity facilities > 3400 vehicles/hour, 3.0 otherwise.
M = 5 for high capacity facilities > 3400 vehicles/hour, 10 otherwise.

The Allen County analysis was done with only the low capacity numbers.
For each HPMS facility-type, the annual average daily travel was divided by the total lane miles of that facility-type to get the average volume described in units of VMT/hour/lane. Each of these facility-types has a capacity and a free flow speed as shown in table 5.1. These values create an aggregated single county-wide average speed for the particular facility-type.

Socioeconomic Data

Travel demand models contain hundreds of Travel Analysis Zones (TAZs) that have zone-specific information regarding population, employment, destinations and expected growth, among other things. These data are commonly referred to as the "socioeconomic data". These data are updated most accurately when new census data comes out. This model was updated in 2003 based on 2000 census data. The traffic analyses of future years are then based on growth projections. These growth projects are then put into the TAZs where the growth (or decline) is expected to occur.

5.4 Analysis Years

The travel demand model also contains the road network, thus, the information is time specific. NIRCC has modeled the years 2004, 2010 and 2020. This Redesignation Petition reflects emission inventory estimates for 2004, 2010 and 2020 as well. Each year modeled contains the road network NIRCC staff expects to exist at the beginning of that year with the concomitant socioeconomic growth projections expected.

5.5 Local Road VMT

It is worth noting that not all local roads are represented in the network due to their insignificant impact on traffic projections.

5.6 Emission Estimations

Table 5.2 contains the results of the emissions analysis for the appropriate years.

Table 5.2 - Emission Estimations for On-Road Mobile Sources

Allen County	2004	2010	2020
VMT (miles/day)	9,394,476	10,245,546	11,833,451
VOC (tons/day)	13.86	9.14	5.57
NOx (tons/day)	23.17	14.57	6.19

5.7 Motor Vehicle Emission Budget

Table 5.3 contains the motor vehicle emissions budget for the Allen County area for the year 2020.

Table 5.3 – Mobile Vehicle Emission Budgets

	2020
VOC (tons/day	6.5
NOx (tons/day)	7.0

This budget includes the emission estimates calculated for 2020 and a reasonable margin of safety. The emission estimates are derived from the NIRCC travel demand model and MOBILE6 as described above. The margins of safety include 0.93 tons/day for VOC and 0.81 tons/day for NO_x. Margins of safety are used to accommodate the wide array of assumptions that are factored into the calculation process. Since assumptions change over time, the incorporation of a margin of safety will accommodate the impact of refined assumptions in the process. The NIRCC conducted a "worst case" modeling exercise to project 2020 emissions if growth were to occur faster than currently expected and no congestion-relieving projects were to proceed. The results of this exercise indicate that adjustments to assumptions can impact emission projects by as much as thirty to forty percent. The margins of safety provided in the budgets listed above are less than seventeen percent. This budget does result in the 2020 emissions, for both VOC and NO_x, still being below the base year emissions shown in Graphs 4.6 and 4.7.

All methodologies, latest planning assumptions and the margins of safety were determined through the interagency consultation process.

6.0 CONTROL MEASURES AND REGULATIONS

This section provides specific information on the control measures implemented in Allen County, including CAAA requirements and additional state or local measures implemented beyond CAAA requirements.

6.1 Reasonably Available Control Technology (RACT)

As required by Section 172 of the CAAA, Indiana in the mid-1990s promulgated rules requiring RACT for emissions of VOCs. There were no specific rules required by the CAA such as RACT for existing sources beyond state-wide rules. State-wide RACT rules have applied to all new sources locating in Indiana since that time. The Indiana rules are found in 326 IAC 8. The following is a listing of applicable rules:

326 IAC 8-1-6 BACT for Non-Specific Sources
326 IAC 8-2 Surface Coating Emission Limitations
326 IAC 8-3 Solvent Degreasing Operations
326 IAC 8-4 Petroleum Sources
326 IAC 8-5 Miscellaneous Operations
326 IAC 8-6 Organic Solvent Emission Limitations

6.2 Implementation of Past SIP Revisions

This nonattainment area was not required to develop an Attainment Demonstration SIP for the 1-hour NAAQS. Similarly, since the area was only recently designated non-attainment for ozone and the area has now attained the standard; no Attainment Demonstration SIP is required to bring the area into attainment for the 8-hour NAAQS. Emissions of VOCs are regulated by applicable statewide provisions of 326 IAC 8.

6.3 Nitrogen Oxides (NO_x) Rule

The U.S. EPA NO_x SIP Call required twenty-two (22) states to pass rules that would result in significant emission reductions from large EGUs, industrial boilers, and cement kilns in the eastern United States. Indiana adopted this rule in 2001. Beginning in 2004, this rule will account for a reduction of approximately thirty-one percent (31%) of all NO_x emissions state-wide compared to previous uncontrolled years.

The other 21 states have also adopted these rules. The result is that significant reductions will occur upwind of the Allen County nonattainment area because of the number of affected units within the region. U.S. EPA and IDEM performed modeling that indicated this area would attain the 8-hour ozone standard with the implementation of the NO_x SIP Call. Controls for EGUs formally commenced May 31, 2004. From Graph 4.3 it can be seen that emissions covered by this program have been generally trending downward since 1998. Table 6.1, compiled from data taken from the U.S. EPA Clean Air Markets website, quantifies the gradual NO_x reductions that have occurred in Indiana as a result of Title IV of the Clean Air Act Amendments and the beginning of the NO_x SIP Call Rule. This cap will stay in place through 2008, at which time the CAIR program will supersede it.

Further, U.S. EPA has recently published Phase II of the NO_x SIP Call that establishes a budget for large (greater than 1 ton per day emissions) stationary internal combustion engines. This rule will decrease emissions state-wide from natural compressor stations by 4,263 tons during the

ozone season. This rule has been adopted in Indiana and became effective February 26, 2006. Implementation of this rule will be in 2007.

TABLE 6.1 Trends in EGU Ozone Season NO_x Emissions Statewide in Indiana

Statewide Trends	
Year	**NOx Emissions - tons/ozone season**
1997	152,834
1998	159,931
1999	149,827
2000	133,881
2001	136,052
2002	113,996
2003	99,283
2004	66,568
2005	55,486
Cap 2004-2015	43,654
2015 and Beyond	39,273

6.4 Measures Beyond Clean Air Act Requirements

Reductions in ozone precursor emissions have occurred, or are anticipated to occur, as a result of local and federal control programs. These additional control measures include:

Tier II Emission Standards for Vehicles and Gasoline Sulfur Standards

In February 2000, U.S. EPA finalized a federal rule to significantly reduce emissions from cars and light trucks, including sport utility vehicles (SUVs). Under this proposal, automakers will be required to sell cleaner cars, and refineries will be required to make cleaner, lower sulfur gasoline. This rule will apply nationwide. The federal rules will phase in between 2004 and 2009. U.S. EPA has estimated that NO_x emission reductions will be approximately seventy-seven percent (77%) for passenger cars, eighty-six percent (86%) for smaller SUVs, light trucks, and minivans, and sixty-five to ninety-five percent (65-95%) reductions for larger SUVs, vans, and heavier trucks. VOC emission reductions will be approximately twelve percent (12%) for passenger cars, eighteen percent (18%) for smaller SUVs, light trucks, and minivans, and fifteen percent (15%) for larger SUVs, vans, and heavier trucks.

Heavy-Duty Diesel Engines

In July 2000, U.S. EPA issued a final rule for Highway Heavy Duty Engines, a program which includes low-sulfur diesel fuel standards, which will be phased in from 2004 through 2007. This rule applies to heavy-duty gasoline and diesel trucks and buses. This rule will result in a forty percent (40%) reduction in NO_x from diesel trucks and buses, a large sector of the mobile sources' NO_x inventory.

Clean Air Nonroad Diesel Rule

In May 2004, U.S. EPA issued the Clean Air Nonroad Diesel Rule. This rule applies to diesel engines used in industries such as construction, agriculture, and mining. It also contains a cleaner fuel standard similar to the highway diesel program. The new standards will cut emissions from nonroad diesel engines by over ninety percent (90%). Nonroad diesel equipment, as described in this rule, currently accounts for forty-seven percent (47%) of diesel particulate matter (PM) and twenty-five percent (25%) of nitrogen oxides (NO_x) from mobile sources nationwide. Sulfur levels will be reduced in nonroad diesel fuel by ninety-nine percent (99%) from current levels, from approximately three-thousand (3,000) ppm now to (fifteen) 15 ppm in 2010. New engine standards take effect, based on engine horsepower, starting in 2008.

Together, these rules will substantially reduce local and regional sources of ozone precursors. The modeling analyses discussed in Section 7.0 include these rules and show the ozone concentrations expected to result from the implementation of these rules.

6.5 Controls to Remain in Effect

Indiana commits to maintaining the aforementioned control measures after redesignation. Indiana hereby commits that any changes to its rules or emission limits applicable to VOC and/or NO_x sources, as required for maintenance of the ozone standard in Allen County, will be submitted to U.S. EPA for approval as a SIP revision.

Indiana, through IDEM's Office of Air Quality and its Office of Enforcement, has the legal authority and necessary resources to actively enforce any violations of its rules or permit provisions. After redesignation, it intends to continue enforcing all rules that relate to the emission of ozone precursors in Allen County.

6.6 New Source Review Provisions

Indiana has a long standing and fully implemented New Source Review (NSR) program. This is addressed in rule 326 IAC 2. The rule includes provisions for the Prevention of Significant Deterioration (PSD) permitting program in 326 IAC 2-2. Indiana's PSD program was conditionally approved on March 3, 2003 (68 FR 9892) and received final approval on May 20, 2004 (69 FR 29071) by U.S. EPA as part of the SIP. Once the area is redesignated, OAQ will implement NSR through the PSD program, which requires an air quality analysis to evaluate whether the new source will threaten the NAAQS.

7.0 MODELING

Although U.S. EPA's redesignation guidance does not require modeling for ozone nonattainment areas seeking redesignation, extensive modeling has been performed covering the Northeast Indiana region to determine the effect of national emission control strategies on ozone levels. These modeling analyses determined that Allen County is significantly impacted by ozone and ozone precursor transport, and regional NO_x reductions are an effective way to attain the 8-hour

standard in this area. Future year modeled ozone concentrations are expected to be reduced by 10% to 15% from baseline design values. Examples of these modeling analyses are listed below.

7.1 Summary of Modeling Results for National Emission Control Strategies in Final Rulemakings

U.S. EPA Modeling Analysis for HDE Final Rulemaking

U.S. EPA conducted modeling for Tier II vehicles and low-sulfur fuels. This analysis was performed in 2000 to support final rulemaking for the Heavy Duty Engine (HDE) and Vehicle Standards and Highway Diesel Fuel and its expected impact on ozone levels. "Technical Support Document for the Heavy Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements: Air Quality Modeling Analyses" (EPA420-R-00-028) was referenced for support of this ozone redesignation for Allen County. Base year emissions from 1996 were modeled for three ozone episodes: June 12-24, 1995; July 5-15, 1995; and August 7-21, 1995. Results of this modeling show that ozone impacts from these fuel emission control measures, as well as the NO_x SIP call, would be substantial in Allen County. Relative Reduction Factors (RRF) were calculated for both monitors in Allen County for future years 2007 and 2020. These RRFs were applied to the three-year (2001-2003) design values of 0.088 ppm at the Leo ozone monitor and 0.088 ppm at the Fort Wayne ozone monitor. The resulting future year design values for 2007 and 2020 were calculated and are shown below in Table 7.1. The modeled future year design values for both monitors in Allen County were reduced by 10% to 14% of the 2001-2003 design values and will attain the 8-hour ozone NAAQS of 0.085 ppm.

Table 7.1 - Modeling Results from U.S. EPA HDE Rulemaking for Allen County

Monitor ID	Monitor Name	County	Design Value 2001-2003	Modeled Relative Reduction Factor (RRFs)	Future Design Value	Modeled Relative Reduction Factor (RRFs)	Future Design Value
				2007 Base	2007	2020 Base	2020
180030002	Leo	Allen	0.0880	0.8919	0.0785	0.8557	0.0756
180030004	Fort Wayne	Allen	0.0883	0.8954	0.0791	0.8602	0.0760

U.S. EPA Modeling for Clean Air Interstate Rule (CAIR), 2005

On March 10, 2005, the U.S. EPA finalized the Clean Air Interstate Rule (CAIR). NO_x emissions from power plants will be cut by 1.7 million tons by 2009 and emissions will be reduced by 1.3 million tons in 2015 in 28 eastern states and the District of Columbia. Indiana will reduce NOx emissions by 113 thousand tons by 2009 and 149 thousand tons by 2015.

U.S. EPA performed modeling to support the associated emission reductions. The modeling was based on 1999 – 2003 design values. Future year modeling was conducted for Allen County and the future year design values for 2010 and 2015 were evaluated for attainment of the 8-hour ozone NAAQS, as shown below in Table 7.2. Results of the CAIR modeling show that Allen County will continue to attain the 8-hour ozone NAAQS in 2010 with modeled concentrations

reduced by 13 % and remain well below 0.085 ppm. With further reductions projected in CAIR for 2015, all design values continue to decrease by 18% and continue to attain the 8-hour ozone NAAQS.

Table 7.2 Modeling Results from U.S. EPA for the Clean Air Interstate Rule

County	MSA/CMSA	Design Value (ppm)	Future Design Value	Future Design Value
		1999-2003	2010 with CAIR	2015 with CAIR
Allen	Fort Wayne	0.0877	0.0764	0.0720

LADCO's Round 4 modeling for Clean Air Interstate Rule (CAIR)

LADCO conducted modeling to determine the impact of CAIR in the Midwest. The modeling was based on 2000-2004 design values. Future year modeling for 2009 and 2012 was conducted and the future year design values were determined, as shown below in Table 7.3. Future year modeled ozone concentrations for 2009 will be 12% lower than baseline ozone design values and 14% lower in 2012. Results of the CAIR modeling show Allen County will continue to attain the 8-hour ozone NAAQS.

Table 7.3 LADCO's Round 4 Modeling Results for the Clean Air Interstate Rule

Monitor ID	Monitor Name	County	Design Value 2000-2004	Basecase with CAIR - 2009	Basecase with CAIR - 2012
			(ppm)	(ppm)	(ppm)
180030002	Leo	Allen	0.087	0.0768	0.0748
180030004	Fort Wayne	Allen	0.084	0.0741	0.0722

7.2 Summary of Existing Modeling Results

U.S. EPA and LADCO modeling for future year design values have consistently shown that existing national emission control measures will bring Allen County into attainment of the 8-hour ozone NAAQS. Rulemakings to be implemented in the next several years will provide even greater assurance that air quality will continue to meet the standard into the future. Modeling support for the NO_x SIP Call, Heavy Duty Engine and Highway Diesel Fuel and Tier II/Low Sulfur Fuel and Clean Air Interstate Rule has shown that future year design values for Allen County will attain the ozone standard with modeled future year design values well below 0.085 ppm. U.S. EPA has modeled base case future years with existing emission controls only and shown that Allen County will attain the 8-hour ozone NAAQS without proposed additional national emission control strategies. However, future national and local emission control strategies would ensure that the county's attainment will be maintained with an increasing margin of safety over time.

7.3 Temperature Analysis for Allen County

Meteorological conditions are one of the most important factors that influence ozone development and transport. A temperature analysis has been conducted to determine how the temperatures during the ozone conducive months of May, June, July, August and September compare to normal temperatures for the Northeast Indiana area for the years 1971 through 2000. Meteorological data was taken from the Fort Wayne National Weather Service station, located at the Fort Wayne International Airport. Available normal maximum temperatures by summer months from 1971-2000 for Fort Wayne, Allen County area are as follows:

May – 71.6° F
June – 80.6° F
July – 84.3° F
August – 81.8° F
September – 75.4° F
May - September – 78.7° F

Fort Wayne's monthly maximum temperatures for the previous 8 years (1998 – 2005) during the summer months are compared to normal summer month temperatures in Table 7.4. Overall, the maximum temperatures during the 1998, 1999, 2002 and 2005 summer months of May, June, July, August, and September were 1% to 3% higher while maximum temperatures during the 2000, 2001, 2003 and 2004 summer months were 1% to 3% lower than the normal maximum temperatures. Table 7.4 shows the average temperatures in Northeast Indiana for each of the past eight years and the percent difference from normal for each year.

Table 7.4 Analysis of Maximum Temperatures for Allen County

(Percent Change from Maximum Temperature (°F) Normals (1971 – 2000))

	Normal	1998		1999		2000		2001	
	Max	Max	%	Max	%	Max	%	Max	%
May	71.6	78.8	+10	74.3	+4	72.2	+1	73.1	+2
June	80.6	79.5	-1	81.5	+1	78.1	-3	78.4	-3
July	84.3	82.1	-3	89.9	+7	81.4	-3	83.1	-1
August	81.8	82.1	0	80.9	-1	81.0	-1	82.7	+1
September	75.4	80.6	+7	79.2	+5	73.8	-2	73.5	-3
AVE. May-Sept.	**78.7**	**80.6**	**+2**	**81.2**	**+3**	**77.3**	**-2**	**78.2**	**-1**

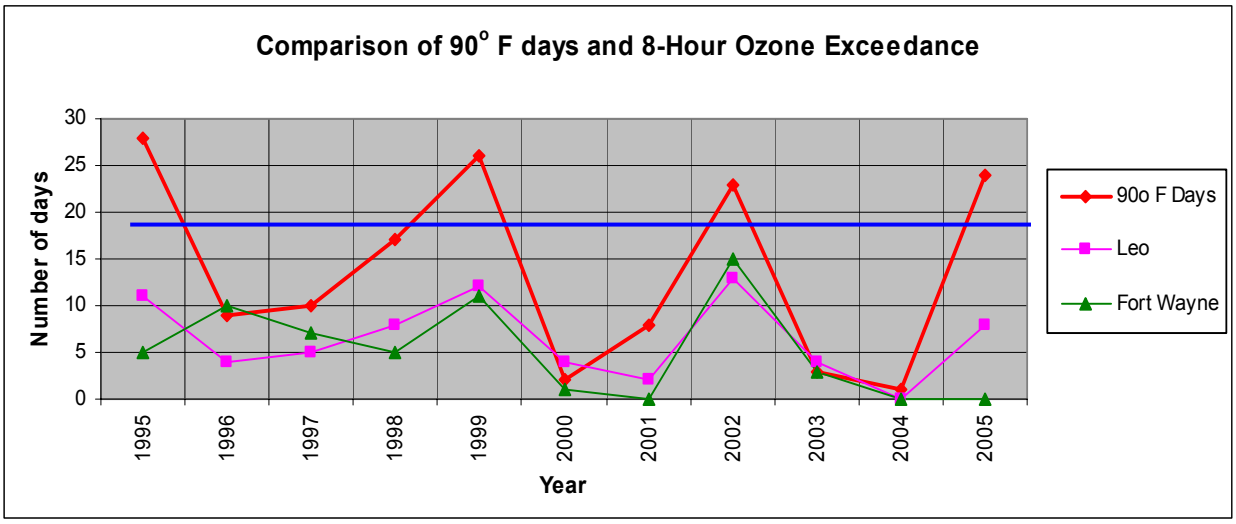
	Normal	2002		2003		2004		2005	
	Max	Max	%	Max	%	Max	%	Max	%
May	71.6	67.1	-6	67.4	-6	73.9	+3	69.0	-4
June	80.6	82.1	+2	76.6	-5	77.9	-3	84.7	+5
July	84.3	87.9	+4	82.0	-3	80.8	-4	86.6	+3
August	81.8	82.6	+1	82.8	+1	76.8	-6	83.9	+3
September	75.4	80.0	+6	72.1	-4	77.9	+3	80.9	+7
AVE. May-Sept.	**78.7**	**79.9**	**+2**	**76.2**	**-3**	**77.5**	**-2**	**81.0**	**+3**

The number of days with temperatures of 90° F and higher was taken from National Weather Service data from the Fort Wayne International Airport and compared to the normal number of days from 1971 through 2000 as well as the number of 8-hour ozone exceedance days. Table 7.5 shows a comparison of 8-hour ozone exceedances and temperatures while Graph 7.1 shows the correlation graphically.

Table 7.5 - Comparison of Days with 90° F and 8-Hour Ozone Exceedance Days

Number of Days with Temperatures of 90° F and higher												
	Average	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
# of 90° F days	**15.4**	**28**	**9**	**10**	**17**	**26**	**2**	**8**	**23**	**3**	**1**	**24**
Number of 8-Hour Exceedance Days at Allen and Huntington County ozone monitors												
Monitor	**County**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Leo	Allen	**11**	**4**	**5**	**8**	**12**	**4**	**2**	**13**	**4**	**0**	**8**
Fort Wayne	Allen	**5**	**10**	**7**	**5**	**11**	**1**	**0**	**15**	**3**	**0**	**0**

Graph 7.1 - Comparison of Days with 90° F and 8-Hour Ozone Exceedance Days



As can be seen, a greater number of ozone exceedance days per year correlate with a greater number of 90° F days per year. The effects of national control measures appear to have an impact on the number of ozone exceedance days per year. This is evident in that 2005 had a similar number of days with temperatures of 90° F or more as in 1999 and 2002 but the number of 8-hour exceedance days was lower. While other meteorological factors may have influenced this to some degree, it appears that the lower emissions helped to keep 8-hour ozone exceedance days lower during the ozone-conducive conditions of 2005.

7.4 Summary of Meteorological Conditions

The analysis of the departure from normal of the maximum temperatures and the number of 90° F days during the summer months shows variation as illustrated in Table 7.5. The analysis shows that 20 or more days with temperatures of 90° F and higher occurred in 1995, 1999, 2002 and 2005. The number of 8-hour ozone exceedance days for those years shows a greater correlation to the number of higher temperature days. However, the years with a lesser number of 90° F days still yielded 8-hour ozone exceedance days. For example, 1996 and 1997 temperatures were cooler than normal and there were fewer 90° F days in those years. However,

there were still a significant number of 8-hour ozone exceedances for those years. In comparison, 2003 was also a cooler year, but due to lower emissions than in 1997, there were fewer ozone exceedances. Ozone formation in the future will be influenced less by meteorological conditions. Lower ozone values correspond to lowered local and regional ozone precursor emissions. This is why U.S. EPA developed the 8-hour standard as a 4th high ozone value averaged over 3 years to account for variations in temperature. Despite such variations, ozone values in Allen County have steadily decreased since 1995.

8.0 CORRECTIVE ACTIONS

8.1 Commitment to Revise Plan

As noted in Section 4.6 above, Indiana hereby commits to review its Maintenance Plan eight (8) years after redesignation, as required by Section 175(A) of the CAAA.

8.2 Commitment for Contingency Measures

Indiana hereby commits to adopt and implement expeditiously necessary corrective actions in the following circumstances:

Warning Level Response:
A Warning Level Response shall be prompted whenever an annual (1-year) fourth high monitored value of 0.089 ppm occurs in a single ozone season, or a two (2)-year average fourth high monitored value of 0.085 ppm or greater occurs within the maintenance area. A Warning Level Response will consist of a study to determine whether the ozone value indicates a trend toward higher ozone values or whether emissions appear to be increasing. The study will evaluate whether the trend, if any, is likely to continue and, if so, the control measures necessary to reverse the trend taking into consideration ease and timing for implementation, as well as economic and social considerations.
Implementation of necessary controls in response to a Warning Level Response trigger will take place as expeditiously as possible, but in no event later than twelve (12) months from the conclusion of the most recent ozone season (September 30).
Should it be determined through the Warning Level study that action is necessary to reverse the noted trend, the procedures for control selection and implementation outlined under "Action Level Response" shall be followed.

Action Level Response

An Action Level Response shall be prompted whenever a three (3)-year average fourth high monitored value of 0.085 ppm or greater occurs within the maintenance area. In the event that the Action Level is triggered and is not found to be due to an exceptional event, malfunction, or noncompliance with a permit condition or rule requirement, IDEM will determine additional control measures needed to assure future attainment of NAAQS for ozone. In this case, measures that can be implemented in a short time will be selected

in order to be in place within eighteen (18) months from the close of the ozone season that prompted the Action Level.

Control Measure Selection and Implementation

Adoption of any additional control measures is subject to the necessary administrative and legal process. This process will include publication of notices, an opportunity for public hearing, and other measures required by Indiana law for rulemaking by state environmental boards.

If a new measure/control is already promulgated and scheduled to be implemented at the federal or state level, and that measure/control is determined to be sufficient to address the upward trend in air quality, additional local measures may be unnecessary. Furthermore, Indiana will submit to U.S. EPA an analysis to demonstrate the proposed measures are adequate to return the area to attainment.

8.3 Contingency Measures

Contingency measures to be considered will be selected from a comprehensive list of measures deemed appropriate and effective at the time the selection is made. Listed below are example measures that may be considered. The selection of measures will be based upon cost-effectiveness, emission reduction potential, economic and social considerations or other factors that IDEM deems appropriate. IDEM will solicit input from all interested and affected persons in the maintenance area prior to selecting appropriate contingency measures. All of the listed contingency measures are potentially effective or proven methods of obtaining significant reductions of ozone precursor emissions. Because it is not possible at this time to determine what control measure will be appropriate at an unspecified time in the future, the list of contingency measures outlined below is not comprehensive. Indiana anticipates that only a few of these measures would be required in the event that a future exceedance or violation would occur.

1) Lower Reid Vapor Pressure gasoline program.
2) Broader geographic applicability of existing measures.
3) Tighten RACT on existing sources covered by U.S. EPA Control Technique Guidelines issued in response to the 1990 CAAA.
4) Apply RACT to smaller existing sources.
5) A modern vehicle inspection/maintenance program.
6) One or more transportation control measures sufficient to achieve at least half a percent (0.5%) reduction in actual area wide VOC emissions. Transportation measures will be selected from the following, based upon the factors listed above after consultation with affected local governments:
    a) Trip reduction programs, including, but not limited to, employer-based transportation management plans, area wide rideshare programs, work schedule changes, and telecommuting.
    b) Transit improvements.

c) Traffic flow improvements.
d) Other new or innovative transportation measures not yet in widespread use that affect state and local governments deemed appropriate.

7) Alternative fuel and diesel retrofit programs for fleet vehicle operations.
8) Controls on consumer products consistent with those adopted elsewhere in the United States.
9) Require VOC or NO_x emission offsets for new and modified major sources.
10) Require VOC or NO_x emission offsets for new and modified minor sources.
11) Increase the ratio of emission offsets required for new sources.
12) Require VOC or NO_x controls on new minor sources (less than 100 tons).

No contingency measure shall be implemented without providing the opportunity for full public participation during which the relative costs and benefits of individual measures, at the time they are under consideration, can be fully evaluated.

9.0 PUBLIC PARTICIPATION

In accordance with Section 100 (a) (2) of the CAAA, notice of availability of the ozone redesignation documents and the time and date of the public hearing was published in the *Indianapolis Star* and in the *Fort Wayne Journal Gazette* for the Allen County nonattainment area on March 18, 2006.

The public hearing to receive comments on the redesignation request was held on April 18, 2006, at the City County Building in Omni Room 250, located at East Main Street, in Fort Wayne, Indiana. The public comment period closed on April 24, 2006. A summary of the comments received and IDEM's responses thereto are included in Appendix D as part of the submittal to the US EPA. Appendix D also includes a copy of the public notice, certifications of publication, and the transcript from the public hearing.

10.0 CONCLUSIONS

The Allen County basic nonattainment area has attained the NAAQS standard for ozone. This petition demonstrates that Allen County has complied with the applicable provisions of the 1990 Amendments to the Clean Air Act regarding redesignations of basic ozone nonattainment areas. Documentation to that effect is contained herein. IDEM has prepared a State Implementation and Maintenance Plan that meets the requirement of Section 110 (a)(1) of the 1990 Clean Air Act.

Indiana has performed an analysis that shows the air quality improvements are due to permanent and enforceable measures and that additional significant regional NO_x reductions following implementation of Phase II NO_x and CAIR will ensure continued compliance (maintenance) with the standard. Based on this presentation, the Allen County ozone basic nonattainment area meets the requirements for redesignation under the CAA and U.S. EPA guidance. Furthermore,

because this area is subject to significant transport of pollutants, significant regional NO_x reductions will ensure continued compliance (maintenance) with the standards with an increasing margin of safety.

Consistent with the authority granted to the U.S. EPA, the State of Indiana hereby requests that the Allen County ozone basic nonattainment area be redesignated to attainment simultaneously with U.S. EPA approval of the Indiana State Implementation and Maintenance Plan provisions contained herein.

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APPENDIX A

AEROMETRIC INFORMATION RETRIEVAL SYSTEM (AIRS) DATA

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AIR QUALITY SYSTEM
QUICK LOOK REPORT (AMP450)

Dec. 28, 2005

EXCEPTIONAL DATA TYPES

EDT	DESCRIPTION
0	NO EVENTS
1	EVENTS EXCLUDED
2	EVENTS INCLUDED
3	EXCEPTIONAL EVENTS EXCLUDED
4	NATURAL EVENTS EXCLUDED
5	EVENTS WITH CONCURRENCE EXCLUDED
6	EXCEPTIONAL EVENTS WITH CONCURRENCE EXCLUDED
7	NATURAL EVENTS WITH CONCURRENCE EXCLUDED

Note: The * indicates that the mean does not satisfy summary criteria.

Ozone (44201) Indiana PPM (007)

8-HOUR

SITE ID	POC	REP ORG	CITY	COUNTY	ADDRESS	YEAR	METH	%OBS	VALID DAYS MEAS	NUM DAYS REQ	1ST MAX 8-HR	2ND MAX 8-HR	3RD MAX 8-HR	4TH MAX 8-HR	DAY MAX>/= 0.085	CERT	EDT
18-003-0002	1	520	Not in a city*	Allen	14600 AMSTUTZ RD.,	2003	47	99	182	183	0.104	0.097	0.092	0.09	4	Y	0
18-003-0002	1	520	Not in a city	Allen	14600 AMSTUTZ RD.,	2004	47	100	183	183	0.084	0.08	0.074	0.073	0		0
18-003-0002	1	520	Not in a city	Allen	14600 AMSTUTZ RD.,	2005	47	95	174	183	0.091	0.087	0.087	0.086	8		0
18-003-0004	1	520	Fort Wayne	Allen	2022 NORTH BEACON	2003	47	98	179	183	0.101	0.096	0.085	0.084	3	Y	0
18-003-0004	1	520	Fort Wayne	Allen	2022 NORTH BEACON	2004	47	100	183	183	0.078	0.078	0.074	0.069	0		0
18-003-0004	1	520	Fort Wayne	Allen	2022 NORTH BEACON	2005	47	99	181	183	0.084	0.077	0.077	0.076	0		0

* Referred to in this document as LEO

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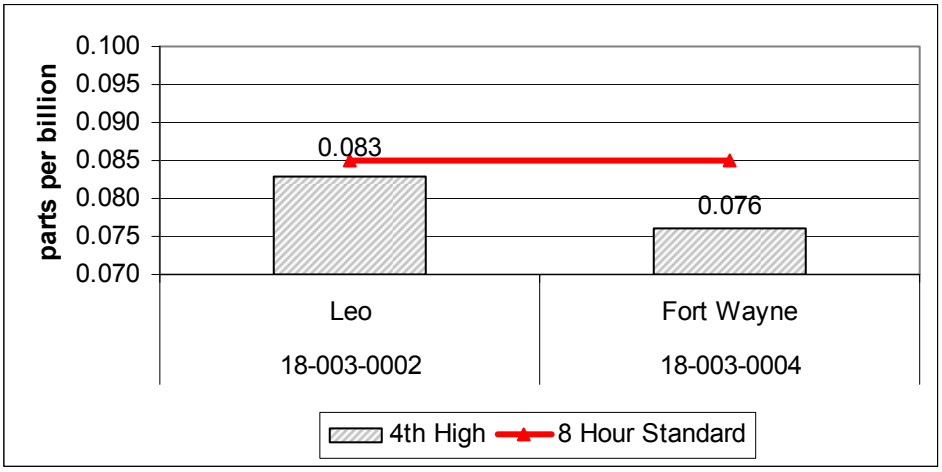
Monitoring Site		2001-2003	2002-2004	2003-2005
Leo	Leo High School	0.088	0.085	0.083
Ft. Wayne	Beacon Street	0.085	0.083	0.076



SITE ID	COUNTY	ADDRESS	YEAR	%OBS	1ST 8-HR	2ND 8-HR	3RD 8-HR	4TH 8-HR	2003-2005 AVERAGE
18-003-0002	ALLEN	LEO	2003	99	0.104	0.097	0.092	0.090	
18-003-0002	ALLEN	LEO	2004	100	0.084	0.080	0.074	0.073	
18-003-0002	ALLEN	LEO	2005	95	0.091	0.087	0.087	0.086	0.083
18-003-0004	ALLEN	FT.WAYNE	2003	98	0.101	0.096	0.085	0.084	
18-003-0004	ALLEN	FT.WAYNE	2004	100	0.078	0.078	0.074	0.069	
18-003-0004	ALLEN	FT.WAYNE	2005	99	0.084	0.077	0.077	0.076	0.076

Annual 4th High

City	Site Name	1995	1996	1997	1998	1999	2000	2001	2002*	2003	2004	2005
Leo	Leo HS	0.097	0.087	0.086	0.089	0.09	0.091	0.082	0.093	0.09	0.073	0.086
Fort Wayne	Beacon Street	0.09	0.094	0.087	0.089	0.088	0.081	0.074	0.097	0.084	0.069	0.076

Design Values

City	Site Name	95-97	96-98	97-99	98-00	99-01	00-02	01-03	02-04	03-05
Leo	Leo HS	0.090	0.087	0.088	0.090	0.087	0.088	0.088	0.085	0.083
Fort Wayne	Beacon Street	0.090	0.090	0.088	0.086	0.081	0.084	0.085	0.083	0.076

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APPENDIX B

HISTORIC AND PROJECTED EMISSION INVENTORIES

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Allen County NOx Point Source Emissions 1996 – 2004

ALLEN	
Year	NOX
1996	7.57
1999	3.58
2002	3.33
2004	4.88

Allen County VOC Point Source Emissions 1996 – 2004

ALLEN	
Year	VOC
1996	21.88
1999	9.24
2002	9.73
2004	9.33

NO_x Emissions from Indiana Electric Generating Units 1999-2005

Year	NOx Tons per Ozone Season
1999	149827
2000	133881
2001	136052
2002	113996
2003	99283
2004	66568
2005	55486

NOx and VOC Emissions Trends 1996-2004 for All Sources in Allen County

NOx	1996	1999	2002	2004
Area	5.50	6.73	3.87	3.88
Nonroad	24.11	9.68	13.10	13.01
Onroad	31.67	28.88	28.45	23.17
Point	7.57	3.58	3.33	4.88
Total	68.85	48.87	48.75	44.94

VOC	1996	1999	2002	2004
Area	33.43	31.85	18.75	18.99
Nonroad	10.65	7.01	11.18	10.10
Onroad	26.12	20.56	17.50	13.86
Point	21.88	9.24	9.73	9.33
Total	92.08	68.65	57.16	52.28

2004 and Projected NOx and VOC Emissions Trends for All Sources in Allen County

Sector	2004 VOC	2010 VOC	2020 VOC
Area	18.99	20.00	22.17
Non-road	10.10	7.02	6.57
Mobile	13.86	9.14	5.57
Point	9.33	7.91	9.74
Total	52.28	44.07	44.05

Sector	2004 NOx	2010 NOx	2020 NOx
Area	3.89	4.09	4.33
Non-road	13.01	9.84	6.98
Mobile	23.17	14.57	6.19
Point	4.88	4.69	4.78
Total	44.94	33.19	22.28

APPENDIX C

DETAILED DESCRIPTION OF THE MOBILE SOURCE EMISSIONS ANALYSIS METHOD

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Generic Files (used for all analysis years)

Vehicle Age Distribution

Reg02.d

```
REG DIST
*
* This file contains the default MOBILE6 values for the distribution of
* vehicles by age for July of any calendar year.  There are sixteeen (16)
* sets of values representing 16 combined gasoline/diesel vehicle class
* distributions.  These distributions are split for gasoline and diesel
* using the separate input (or default) values for diesel sales fractions.
* Each distribution contains 25 values which represent the fraction of
* all vehicles in that class (gasoline and diesel) of that age in July.
* The first number is for age 1 (calendar year minus model year plus one)
* and the last number is for age 25.  The last age includes all vehicles
* of age 25 or older.  The first number in each distribution is an integer
* which indicates which of the 16 vehicle classes are represented by the
* distribution.  The sixteen vehicle classes are:
*
*  1  LDV    Light-Duty Vehicles (Passenger Cars)
*  2  LDT1   Light-Duty Trucks 1 (0-6,000 lbs. GVWR, 0-3750 lbs. LVW)
*  3  LDT2   Light Duty Trucks 2 (0-6,001 lbs. GVWR, 3751-5750 lbs. LVW)
*  4  LDT3   Light Duty Trucks 3 (6,001-8500 lbs. GVWR, 0-3750 lbs. LVW)
*  5  LDT4   Light Duty Trucks 4 (6,001-8500 lbs. GVWR, 3751-5750 lbs. LVW)
*  6  HDV2B  Class 2b Heavy Duty Vehicles (8501-10,000 lbs. GVWR)
*  7  HDV3   Class 3 Heavy Duty Vehicles (10,001-14,000 lbs. GVWR)
*  8  HDV4   Class 4 Heavy Duty Vehicles (14,001-16,000 lbs. GVWR)
*  9  HDV5   Class 5 Heavy Duty Vehicles (16,001-19,500 lbs. GVWR)
* 10  HDV6   Class 6 Heavy Duty Vehicles (19,501-26,000 lbs. GVWR)
* 11  HDV7   Class 7 Heavy Duty Vehicles (26,001-33,000 lbs. GVWR)
* 12  HDV8A  Class 8a Heavy Duty Vehicles (33,001-60,000 lbs. GVWR)
* 13  HDV8B  Class 8b Heavy Duty Vehicles (>60,000 lbs. GVWR)
* 14  HDBS   School Busses
* 15  HDBT   Transit and Urban Busses
* 16  MC     Motorcycles (All)
*
* The 25 age values are arranged in two rows of 10 values followed by a row
* with the last 5 values.  Comments (such as this one) are indicated by
* an asterisk in the first column. Empty rows are ignored.  Values are
* read "free format," meaning any number may appear in any row with as
* many characters as needed (including a decimal) as long as 25 values
* follow the initial integer value separated by a space.
*
* If all 28 vehicle classes do not need to be altered from the default
* values, then only the vehicle classes that need to be changed need to
* be included in this file.  The order in which the vehicle classes are
* read does not matter, however each vehicle class set must contain 25
* values and be in the proper age order.
*
* LDV
```

1 0.0405 0.0541 0.0540 0.0559 0.0671 0.0682 0.0599 0.0660 0.0593 0.0677
0.0571 0.0550 0.0528 0.0457 0.0399 0.0382 0.0293 0.0220 0.0178 0.0129
0.0091 0.0044 0.0028 0.0023 0.0181
* LDT1
2 0.0398 0.0531 0.0530 0.0329 0.0286 0.0223 0.0330 0.0248 0.0506 0.0548
0.0686 0.0546 0.0466 0.0645 0.0503 0.0661 0.0569 0.0605 0.0445 0.0347
0.0196 0.0095 0.0083 0.0066 0.0160
* LDT2
3 0.0552 0.0736 0.0734 0.0717 0.0963 0.0908 0.0995 0.0892 0.0639 0.0574
0.0530 0.0443 0.0343 0.0241 0.0169 0.0151 0.0167 0.0048 0.0052 0.0042
0.0038 0.0024 0.0011 0.0008 0.0061
* LDT3
4 0.0449 0.0598 0.0597 0.0559 0.0759 0.0939 0.0571 0.0593 0.0552 0.0671
0.0568 0.0473 0.0336 0.0225 0.0280 0.0291 0.0281 0.0222 0.0171 0.0152
0.0121 0.0070 0.0042 0.0025 0.0455
* LDT4
5 0.0679 0.0905 0.0903 0.0863 0.0917 0.1214 0.0892 0.0734 0.0509 0.0521
0.0560 0.0169 0.0167 0.0058 0.0098 0.0043 0.0074 0.0040 0.0064 0.0066
0.0037 0.0015 0.0009 0.0002 0.0460

MOBILE6 Command Files

2004

2004F.in

```
* INPUT FILE:  2004F.in
*
*       1        2        3        4        5        6
*2345678901234567890123456789012345678901234567890123456789012345678901234567890
********************* Header Section      *********************
MOBILE6 INPUT FILE :

> MOBILE6.2 For Ft. Wayne, Indiana,
> 2004 VMT Run - SPEED VMT Command for Allen County

POLLUTANTS        : hc NOX
RUN DATA          :

********************* Run Section         *********************
* Use the Min/Max Temperature for FT. WAYNE, IN for July
MIN/MAX TEMP      : 62.5 84.3
FUEL RVP          : 9.0
ABSOLUTE HUMIDITY  : 85.7
CLOUD COVER       : 0.25
SUNRISE/SUNSET    : 5 8
NO REFUELING      :
REG DIST          : REG02.D

********************* Scenario Section    *********************
SCENARIO RECORD   : Rural Interstate
CALENDAR YEAR     : 2004
EVALUATION MONTH  : 7
```

AVERAGE SPEED : 60.60 FREEWAY 97.0 0.0 0.0 3.0
* Rely on the National Default VMT BY FACILITY
SCENARIO RECORD : Rural Other Prin Art
CALENDAR YEAR : 2004
EVALUATION MONTH : 7
AVERAGE SPEED : 43.63 FREEWAY NON RAMP
* Rely on the National Default VMT BY FACILITY
SCENARIO RECORD : Rural Min Art
CALENDAR YEAR : 2004
EVALUATION MONTH : 7
AVERAGE SPEED : 37.22 ARTERIAL
* Rely on the National Default VMT BY FACILITY
SCENARIO RECORD : Rural Major Col
CALENDAR YEAR : 2004
EVALUATION MONTH : 7
AVERAGE SPEED : 38.00 ARTERIAL
* Rely on the National Default VMT BY FACILITY
SCENARIO RECORD : Rural Min Col
CALENDAR YEAR : 2004
EVALUATION MONTH : 7
AVERAGE SPEED : 33.78 ARTERIAL
* Rely on the National Default VMT BY FACILITY
SCENARIO RECORD : Rural Local
CALENDAR YEAR : 2004
EVALUATION MONTH : 7
AVERAGE SPEED : 29.16 ARTERIAL
* Rely on the National Default VMT BY FACILITY
SCENARIO RECORD : Urban Interstate
CALENDAR YEAR : 2004
EVALUATION MONTH : 7
AVERAGE SPEED : 54.70 FREEWAY 92.0 0.0 0.0 8.0
* Rely on the National Default VMT BY FACILITY
SCENARIO RECORD : Other Freeway/Exp
CALENDAR YEAR : 2004
EVALUATION MONTH : 7
AVERAGE SPEED : 52.30 FREEWAY 92.0 0.0 0.0 8.0
* Rely on the National Default VMT BY FACILITY
SCENARIO RECORD : Urban Other Prin Art
CALENDAR YEAR : 2004
EVALUATION MONTH : 7
AVERAGE SPEED : 23.21 ARTERIAL
* Rely on the National Default VMT BY FACILITY
SCENARIO RECORD : Urban Minor Art
CALENDAR YEAR : 2004
EVALUATION MONTH : 7
AVERAGE SPEED : 32.52 ARTERIAL
* Rely on the National Default VMT BY FACILITY
SCENARIO RECORD : Urban Col
CALENDAR YEAR : 2004
EVALUATION MONTH : 7
AVERAGE SPEED : 28.29 ARTERIAL
* Rely on the National Default VMT BY FACILITY
SCENARIO RECORD : Locals
CALENDAR YEAR : 2004

EVALUATION MONTH : 7
AVERAGE SPEED : 12.90 LOCAL
* Rely on the National Default VMT BY FACILITY

********** End of Run **********
END OF RUN :

2010

2010F.in

```
* INPUT FILE:  2010F.in
*
*       1       2       3       4       5       6
*2345678901234567890123456789012345678901234567890123456789012345678901234567890
********** Header Section **********
MOBILE6 INPUT FILE :

> MOBILE6.2 For Ft. Wayne, Indiana,
> 2010 VMT Run - SPEED VMT Command for Allen County

POLLUTANTS : hc NOX
RUN DATA :

********** Run Section **********
* Use the Min/Max Temperature for FT. WAYNE, IN for July
MIN/MAX TEMP : 62.5 84.3
FUEL RVP : 9.0
ABSOLUTE HUMIDITY : 85.7
CLOUD COVER : 0.25
SUNRISE/SUNSET : 5 8
NO REFUELING :
REG DIST : REG02.D

********** Scenario Section **********
SCENARIO RECORD : Rural Interstate
CALENDAR YEAR : 2010
EVALUATION MONTH : 7
AVERAGE SPEED : 59.89 FREEWAY 97.0 0.0 0.0 3.0
* Rely on the National Default VMT BY FACILITY
SCENARIO RECORD : Rural Other Prin Art
CALENDAR YEAR : 2010
EVALUATION MONTH : 7
AVERAGE SPEED : 41.95 FREEWAY NON RAMP
* Rely on the National Default VMT BY FACILITY
SCENARIO RECORD : Rural Min Art
CALENDAR YEAR : 2010
EVALUATION MONTH : 7
AVERAGE SPEED : 34.66 ARTERIAL
* Rely on the National Default VMT BY FACILITY
SCENARIO RECORD : Rural Major Col
CALENDAR YEAR : 2010
EVALUATION MONTH : 7
AVERAGE SPEED : 37.88 ARTERIAL
* Rely on the National Default VMT BY FACILITY
```

SCENARIO RECORD : Rural Min Col
CALENDAR YEAR : 2010
EVALUATION MONTH : 7
AVERAGE SPEED : 33.72 ARTERIAL
* Rely on the National Default VMT BY FACILITY
SCENARIO RECORD : Rural Local
CALENDAR YEAR : 2010
EVALUATION MONTH : 7
AVERAGE SPEED : 29.14 ARTERIAL
* Rely on the National Default VMT BY FACILITY
SCENARIO RECORD : Urban Interstate
CALENDAR YEAR : 2010
EVALUATION MONTH : 7
AVERAGE SPEED : 53.10 FREEWAY 92.0 0.0 0.0 8.0
* Rely on the National Default VMT BY FACILITY
SCENARIO RECORD : Other Freeway/Exp
CALENDAR YEAR : 2010
EVALUATION MONTH : 7
AVERAGE SPEED : 51.40 FREEWAY 92.0 0.0 0.0 8.0
* Rely on the National Default VMT BY FACILITY
SCENARIO RECORD : Urban Other Prin Art
CALENDAR YEAR : 2010
EVALUATION MONTH : 7
AVERAGE SPEED : 21.52 ARTERIAL
* Rely on the National Default VMT BY FACILITY
SCENARIO RECORD : Urban Minor Art
CALENDAR YEAR : 2010
EVALUATION MONTH : 7
AVERAGE SPEED : 32.03 ARTERIAL
* Rely on the National Default VMT BY FACILITY
SCENARIO RECORD : Urban Col
CALENDAR YEAR : 2010
EVALUATION MONTH : 7
AVERAGE SPEED : 28.15 ARTERIAL
* Rely on the National Default VMT BY FACILITY
SCENARIO RECORD : Locals
CALENDAR YEAR : 2010
EVALUATION MONTH : 7
AVERAGE SPEED : 12.90 LOCAL
* Rely on the National Default VMT BY FACILITY

********** End of Run **********
END OF RUN :

2020

* INPUT FILE: 2020F.in
*
* 1 2 3 4 5 6
*23456789012345678901234567890123456789012345678901234567890
********** Header Section **********
MOBILE6 INPUT FILE :

> MOBILE6.2 For Ft. Wayne, Indiana,

> 2020 VMT Run - SPEED VMT Command for Allen County

POLLUTANTS : hc NOX
RUN DATA :

********** Run Section **********
* Use the Min/Max Temperature for FT. WAYNE, IN for July
MIN/MAX TEMP : 62.5 84.3
FUEL RVP : 9.0
ABSOLUTE HUMIDITY : 85.7
CLOUD COVER : 0.25
SUNRISE/SUNSET : 5 8
NO REFUELING :
REG DIST : REG02.D

********** Scenario Section **********
SCENARIO RECORD : Rural Interstate
CALENDAR YEAR : 2020
EVALUATION MONTH : 7
AVERAGE SPEED : 58.27 FREEWAY 97.0 0.0 0.0 3.0
* Rely on the National Default VMT BY FACILITY
SCENARIO RECORD : Rural Other Prin Art
CALENDAR YEAR : 2020
EVALUATION MONTH : 7
AVERAGE SPEED : 38.28 FREEWAY NON RAMP
* Rely on the National Default VMT BY FACILITY
SCENARIO RECORD : Rural Min Art
CALENDAR YEAR : 2020
EVALUATION MONTH : 7
AVERAGE SPEED : 31.57 ARTERIAL
* Rely on the National Default VMT BY FACILITY
SCENARIO RECORD : Rural Major Col
CALENDAR YEAR : 2020
EVALUATION MONTH : 7
AVERAGE SPEED : 37.63 ARTERIAL
* Rely on the National Default VMT BY FACILITY
SCENARIO RECORD : Rural Min Col
CALENDAR YEAR : 2020
EVALUATION MONTH : 7
AVERAGE SPEED : 33.65 ARTERIAL
* Rely on the National Default VMT BY FACILITY
SCENARIO RECORD : Rural Local
CALENDAR YEAR : 2020
EVALUATION MONTH : 7
AVERAGE SPEED : 29.12 ARTERIAL
* Rely on the National Default VMT BY FACILITY
SCENARIO RECORD : Urban Interstate
CALENDAR YEAR : 2020
EVALUATION MONTH : 7
AVERAGE SPEED : 49.80 FREEWAY 92.0 0.0 0.0 8.0
* Rely on the National Default VMT BY FACILITY
SCENARIO RECORD : Other Freeway/Exp
CALENDAR YEAR : 2020
EVALUATION MONTH : 7

AVERAGE SPEED : 50.30 FREEWAY 92.0 0.0 0.0 8.0
* Rely on the National Default VMT BY FACILITY
SCENARIO RECORD : Urban Other Prin Art
CALENDAR YEAR : 2020
EVALUATION MONTH : 7
AVERAGE SPEED : 19.26 ARTERIAL
* Rely on the National Default VMT BY FACILITY
SCENARIO RECORD : Urban Minor Art
CALENDAR YEAR : 2020
EVALUATION MONTH : 7
AVERAGE SPEED : 30.31 ARTERIAL
* Rely on the National Default VMT BY FACILITY
SCENARIO RECORD : Urban Col
CALENDAR YEAR : 2020
EVALUATION MONTH : 7
AVERAGE SPEED : 28.08 ARTERIAL
* Rely on the National Default VMT BY FACILITY
SCENARIO RECORD : Locals
CALENDAR YEAR : 2020
EVALUATION MONTH : 7
AVERAGE SPEED : 12.90 LOCAL
* Rely on the National Default VMT BY FACILITY

********** End of Run **********
END OF RUN :

MOBILE6 Emission Factor Output Files

A box has been placed around the used in calculating the emissions. The composite emission factors are multiplied by the total daily VMT for that facility-type to determine the emissions for the entire analyzed area from that facility-type. These facility-type subtotals are summed to get the total daily emissions total for Allen County.

2004

2004F.txt

```
*****************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                                *
* Input file: N:\JEFF\MOBILE6\MOBILE6\RUN\2004F.IN (file 1, run 1).         *
*****************************************************************************
 M617 Comment:
          User supplied alternate AC input: Cloud Cover Fraction set to 0.25.
 M618 Comment:
          User supplied alternate AC input: Sunrise at  5 AM, Sunset at  8 PM.
 M603 Comment:
          User has disabled the calculation of REFUELING emissions.


* Reading Registration Distributions from the following external
* data file: REG02.D
 M 49 Warning:
            1.00     MYR sum not = 1. (will normalize)
 M 49 Warning:
            1.00     MYR sum not = 1. (will normalize)
 M 49 Warning:
            1.00     MYR sum not = 1. (will normalize)
 M 49 Warning:
            1.00     MYR sum not = 1. (will normalize)

* ##########################
* Rural Interstate
* File 1, Run 1, Scenario 1.
* ##########################
 M582 Warning:
        The user supplied freeway average speed of 60.6
        will be used for all hours of the day. 100% of VMT
        has been assigned to a fixed combination of freeways
        and freeway ramps for all hours of the day and all
         vehicle types.
 M 48 Warning:
          there are no sales for vehicle class HDGV8b

              Calendar Year:  2004
                    Month:  July
                 Altitude:  Low
          Minimum Temperature:  62.5 (F)
          Maximum Temperature:  84.3 (F)
           Absolute Humidity:   86. grains/lb
```

Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.8 psi
Fuel Sulfur Content: 121. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.4130	0.3325	0.1241		0.0365	0.0006	0.0019	0.0855	0.0059	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	1.214	0.998	1.233	1.061	1.016	0.525	0.524	0.373	2.30	1.070
Composite NOX :	1.114	1.293	1.554	1.364	5.437	2.219	1.977	18.787	1.58	2.903

* ##########################
* Rural Other Prin Art
* File 1, Run 1, Scenario 2.
* ##########################
M582 Warning:
The user supplied freeway average speed of 43.6
will be used for all hours of the day. 100% of VMT
has been assigned to a fixed combination of freeways
and freeway ramps for all hours of the day and all
vehicle types.
M 48 Warning:
there are no sales for vehicle class HDGV8b

Calendar Year: 2004
Month: July
Altitude: Low
Minimum Temperature: 62.5 (F)
Maximum Temperature: 84.3 (F)
Absolute Humidity: 86. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.8 psi
Fuel Sulfur Content: 121. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.4130	0.3325	0.1241		0.0365	0.0006	0.0019	0.0855	0.0059	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	1.345	1.112	1.363	1.180	1.165	0.562	0.571	0.430	1.91	1.186

```
  Composite NOX :     1.067    1.230    1.491    1.301    4.825    1.396    1.232   12.394     1.19     2.281
 ---------------------------------------------------------------------------------------------------------------

* ##########################
* Rural Min Art
* File 1, Run 1, Scenario 3.
* ##########################
 M583 Warning:
        The user supplied arterial average speed of 37.2
        will be used for all hours of the day.  100% of VMT
        has been assigned to the arterial/collector roadway
        type for all hours of the day and all vehicle types.
 M 48 Warning:
         there are no sales for vehicle class HDGV8b

             Calendar Year:  2004
                   Month:  July
                Altitude:  Low
           Minimum Temperature:  62.5 (F)
           Maximum Temperature:  84.3 (F)
            Absolute Humidity:   86. grains/lb
             Nominal Fuel RVP:   9.0 psi
               Weathered RVP:   8.8 psi
           Fuel Sulfur Content:  121. ppm

           Exhaust I/M Program:  No
             Evap I/M Program:  No
                ATP Program:  No
             Reformulated Gas:  No

    Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
         GVWR:           <6000     >6000     (All)
                ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
 VMT Distribution:    0.4130    0.3325    0.1241            0.0365    0.0006    0.0019    0.0855    0.0059    1.0000
 ---------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
   Composite VOC :     1.391    1.144    1.400    1.214    1.292    0.598    0.616    0.487     1.99    1.231
   Composite NOX :     1.031    1.184    1.443    1.255    4.597    1.313    1.157   10.142     1.16    2.044
 ---------------------------------------------------------------------------------------------------------------

* ##########################
* Rural Major Col
* File 1, Run 1, Scenario 4.
* ##########################
 M583 Warning:
        The user supplied arterial average speed of 38.0
        will be used for all hours of the day.  100% of VMT
        has been assigned to the arterial/collector roadway
        type for all hours of the day and all vehicle types.
 M 48 Warning:
         there are no sales for vehicle class HDGV8b

             Calendar Year:  2004
                   Month:  July
```

```
            Altitude:  Low
  Minimum Temperature:  62.5 (F)
  Maximum Temperature:  84.3 (F)
    Absolute Humidity:   86. grains/lb
     Nominal Fuel RVP:   9.0 psi
        Weathered RVP:   8.8 psi
  Fuel Sulfur Content:  121. ppm

  Exhaust I/M Program:  No
     Evap I/M Program:  No
         ATP Program:  No
    Reformulated Gas:  No

    Vehicle Type:     LDGV    LDGT12   LDGT34     LDGT     HDGV     LDDV     LDDT     HDDV       MC   All Veh
         GVWR:           <6000    >6000    (All)
                ------   ------   ------   ------   ------   ------   ------   ------   ------   ------
 VMT Distribution:   0.4130   0.3325   0.1241           0.0365   0.0006   0.0019   0.0855   0.0059   1.0000
 ---------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
   Composite VOC :     1.383    1.138    1.393    1.208    1.274    0.593    0.609    0.479     1.98    1.223
   Composite NOX :     1.032    1.186    1.445    1.257    4.624    1.318    1.161   10.180     1.16    2.050
 ---------------------------------------------------------------------------------------------------------------------

* ##########################
* Rural Min Col
* File 1, Run 1, Scenario 5.
* ##########################
 M583 Warning:
        The user supplied arterial average speed of 33.8
        will be used for all hours of the day.  100% of VMT
        has been assigned to the arterial/collector roadway
        type for all hours of the day and all vehicle types.
 M 48 Warning:
         there are no sales for vehicle class HDGV8b

            Calendar Year:  2004
                  Month:  July
               Altitude:  Low
  Minimum Temperature:  62.5 (F)
  Maximum Temperature:  84.3 (F)
    Absolute Humidity:   86. grains/lb
     Nominal Fuel RVP:   9.0 psi
        Weathered RVP:   8.8 psi
  Fuel Sulfur Content:  121. ppm

  Exhaust I/M Program:  No
     Evap I/M Program:  No
         ATP Program:  No
    Reformulated Gas:  No

    Vehicle Type:     LDGV    LDGT12   LDGT34     LDGT     HDGV     LDDV     LDDT     HDDV       MC   All Veh
         GVWR:           <6000    >6000    (All)
                ------   ------   ------   ------   ------   ------   ------   ------   ------   ------
 VMT Distribution:   0.4130   0.3325   0.1241           0.0365   0.0006   0.0019   0.0855   0.0059   1.0000
```

Composite Emission Factors (g/mi):

Composite VOC :	1.432	1.177	1.437	1.248	1.389	0.625	0.649	0.528	2.06	1.271
Composite NOX :	1.031	1.181	1.441	1.252	4.476	1.300	1.145	10.044	1.13	2.030

---

* ##########################
* Rural Local
* File 1, Run 1, Scenario 6.
* ##########################

M583 Warning:
The user supplied arterial average speed of 29.2
will be used for all hours of the day. 100% of VMT
has been assigned to the arterial/collector roadway
type for all hours of the day and all vehicle types.

M 48 Warning:
there are no sales for vehicle class HDGV8b

Calendar Year: 2004
Month: July
Altitude: Low
Minimum Temperature: 62.5 (F)
Maximum Temperature: 84.3 (F)
Absolute Humidity: 86. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.8 psi
Fuel Sulfur Content: 121. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.4130	0.3325	0.1241		0.0365	0.0006	0.0019	0.0855	0.0059	1.0000

Composite Emission Factors (g/mi):

Composite VOC :	1.509	1.239	1.513	1.314	1.562	0.670	0.706	0.599	2.18	1.346
Composite NOX :	1.057	1.203	1.465	1.274	4.313	1.317	1.160	10.172	1.09	2.055

---

* ##########################
* Urban Interstate
* File 1, Run 1, Scenario 7.
* ##########################

M582 Warning:
The user supplied freeway average speed of 54.7
will be used for all hours of the day. 100% of VMT
has been assigned to a fixed combination of freeways
and freeway ramps for all hours of the day and all
vehicle types.

M 48 Warning:

there are no sales for vehicle class HDGV8b

Calendar Year: 2004
Month: July
Altitude: Low
Minimum Temperature: 62.5 (F)
Maximum Temperature: 84.3 (F)
Absolute Humidity: 86. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.8 psi
Fuel Sulfur Content: 121. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.4130	0.3325	0.1241		0.0365	0.0006	0.0019	0.0855	0.0059	1.0000

Composite Emission Factors (g/mi):

Composite VOC :	1.256	1.035	1.277	1.101	1.046	0.532	0.533	0.384	2.04	1.106
Composite NOX :	1.107	1.282	1.544	1.353	5.246	1.868	1.659	15.986	1.45	2.647

* ##########################
* Other Freeway/Exp
* File 1, Run 1, Scenario 8.
* ##########################
M582 Warning:
The user supplied freeway average speed of 52.3
will be used for all hours of the day. 100% of VMT
has been assigned to a fixed combination of freeways
and freeway ramps for all hours of the day and all
vehicle types.
M 48 Warning:
there are no sales for vehicle class HDGV8b

Calendar Year: 2004
Month: July
Altitude: Low
Minimum Temperature: 62.5 (F)
Maximum Temperature: 84.3 (F)
Absolute Humidity: 86. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.8 psi
Fuel Sulfur Content: 121. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

```
    Vehicle Type:     LDGV   LDGT12   LDGT34     LDGT     HDGV     LDDV     LDDT     HDDV       MC   All Veh
         GVWR:          <6000    >6000    (All)
                ------   ------   ------   ------   ------   ------   ------   ------   ------   ------
 VMT Distribution:   0.4130   0.3325   0.1241           0.0365   0.0006   0.0019   0.0855   0.0059   1.0000
 ---------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
   Composite VOC :     1.272    1.051    1.294    1.117    1.060    0.535    0.537    0.388     1.90    1.120
   Composite NOX :     1.097    1.270    1.531    1.341    5.150    1.706    1.512   14.755     1.37    2.527
 ---------------------------------------------------------------------------------------------------------------

* ##########################
* Urban Other Prin Art
* File 1, Run 1, Scenario 9.
* ##########################
 M583 Warning:
        The user supplied arterial average speed of 23.2
        will be used for all hours of the day.  100% of VMT
        has been assigned to the arterial/collector roadway
        type for all hours of the day and all vehicle types.
 M 48 Warning:
         there are no sales for vehicle class HDGV8b

             Calendar Year:  2004
                    Month:  July
                 Altitude:  Low
          Minimum Temperature:  62.5 (F)
          Maximum Temperature:  84.3 (F)
            Absolute Humidity:   86. grains/lb
             Nominal Fuel RVP:   9.0 psi
               Weathered RVP:   8.8 psi
          Fuel Sulfur Content:  121. ppm

          Exhaust I/M Program:  No
            Evap I/M Program:  No
               ATP Program:  No
            Reformulated Gas:  No

    Vehicle Type:     LDGV   LDGT12   LDGT34     LDGT     HDGV     LDDV     LDDT     HDDV       MC   All Veh
         GVWR:          <6000    >6000    (All)
                ------   ------   ------   ------   ------   ------   ------   ------   ------   ------
 VMT Distribution:   0.4130   0.3325   0.1241           0.0365   0.0006   0.0019   0.0855   0.0059   1.0000
 ---------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
   Composite VOC :     1.644    1.346    1.637    1.425    1.899    0.750    0.805    0.722     2.38    1.477
   Composite NOX :     1.119    1.264    1.537    1.338    4.109    1.398    1.234   10.787     1.02    2.155
 ---------------------------------------------------------------------------------------------------------------

* ##########################
* Urban Minor Art
* File 1, Run 1, Scenario 10.
* ##########################
 M583 Warning:
        The user supplied arterial average speed of 32.5
```

will be used for all hours of the day. 100% of VMT
has been assigned to the arterial/collector roadway
type for all hours of the day and all vehicle types.
M 48 Warning:
there are no sales for vehicle class HDGV8b

Calendar Year: 2004
Month: July
Altitude: Low
Minimum Temperature: 62.5 (F)
Maximum Temperature: 84.3 (F)
Absolute Humidity: 86. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.8 psi
Fuel Sulfur Content: 121. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.4130	0.3325	0.1241		0.0365	0.0006	0.0019	0.0855	0.0059	1.0000

Composite Emission Factors (g/mi):

Composite VOC :	1.451	1.193	1.457	1.264	1.431	0.636	0.663	0.545	2.09	1.289
Composite NOX :	1.037	1.186	1.446	1.257	4.433	1.303	1.148	10.065	1.12	2.034

* ##########################
* Urban Col
* File 1, Run 1, Scenario 11.
* ##########################
M583 Warning:
The user supplied arterial average speed of 28.3
will be used for all hours of the day. 100% of VMT
has been assigned to the arterial/collector roadway
type for all hours of the day and all vehicle types.
M 48 Warning:
there are no sales for vehicle class HDGV8b

Calendar Year: 2004
Month: July
Altitude: Low
Minimum Temperature: 62.5 (F)
Maximum Temperature: 84.3 (F)
Absolute Humidity: 86. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.8 psi
Fuel Sulfur Content: 121. ppm

Exhaust I/M Program: No

Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:	<6000	>6000	(All)							
VMT Distribution:	0.4130	0.3325	0.1241		0.0365	0.0006	0.0019	0.0855	0.0059	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	1.525	1.252	1.527	1.326	1.603	0.680	0.718	0.614	2.20	1.361
Composite NOX :	1.065	1.210	1.474	1.282	4.285	1.326	1.168	10.240	1.08	2.067

* ##########################
* Locals
* File 1, Run 1, Scenario 12.
* ##########################
M585 Warning:
100% of VMT has been assigned to the local roadway
type for all hours of the day for all vehicle types
with an average speed of 12.9 mph.
M 48 Warning:
there are no sales for vehicle class HDGV8b

Calendar Year: 2004
Month: July
Altitude: Low
Minimum Temperature: 62.5 (F)
Maximum Temperature: 84.3 (F)
Absolute Humidity: 86. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.8 psi
Fuel Sulfur Content: 121. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:	<6000	>6000	(All)							
VMT Distribution:	0.4130	0.3325	0.1241		0.0365	0.0006	0.0019	0.0855	0.0059	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	2.185	1.833	2.181	1.928	3.198	0.984	1.096	1.084	3.09	2.013
Composite NOX :	1.027	1.145	1.402	1.215	3.738	1.737	1.540	12.105	0.92	2.160

2010

2010F.txt

```
*************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                            *
* Input file: N:\JEFF\MOBILE6\MOBILE6\RUN\2010F.IN (file 1, run 1).      *
*************************************************************************
 M617 Comment:
         User supplied alternate AC input: Cloud Cover Fraction set to 0.25.
 M618 Comment:
         User supplied alternate AC input: Sunrise at  5 AM, Sunset at  8 PM.
 M603 Comment:
         User has disabled the calculation of REFUELING emissions.


* Reading Registration Distributions from the following external
* data file: REG02.D
 M 49 Warning:
           1.00     MYR sum not = 1. (will normalize)
 M 49 Warning:
           1.00     MYR sum not = 1. (will normalize)
 M 49 Warning:
           1.00     MYR sum not = 1. (will normalize)
 M 49 Warning:
           1.00     MYR sum not = 1. (will normalize)

* ##########################
* Rural Interstate
* File 1, Run 1, Scenario 1.
* ##########################
 M582 Warning:
        The user supplied freeway average speed of 59.9
        will be used for all hours of the day. 100% of VMT
        has been assigned to a fixed combination of freeways
        and freeway ramps for all hours of the day and all
         vehicle types.
 M 48 Warning:
         there are no sales for vehicle class HDGV8b

              Calendar Year:  2010
                    Month:  July
                 Altitude:  Low
          Minimum Temperature:  62.5 (F)
          Maximum Temperature:  84.3 (F)
            Absolute Humidity:   86. grains/lb
             Nominal Fuel RVP:   9.0 psi
               Weathered RVP:   8.8 psi
          Fuel Sulfur Content:   30. ppm

          Exhaust I/M Program:  No
            Evap I/M Program:  No
               ATP Program:  No
            Reformulated Gas:  No

    Vehicle Type:     LDGV   LDGT12   LDGT34     LDGT     HDGV     LDDV     LDDT     HDDV       MC   All Veh
         GVWR:           <6000    >6000    (All)
               ------   ------   ------   ------   ------   ------   ------   ------   ------   ------
```

```
 VMT Distribution:   0.3334   0.3904   0.1456          0.0362   0.0003   0.0021   0.0865   0.0055   1.0000
 ---------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
   Composite VOC :    0.756    0.615    0.765    0.656    0.595    0.169    0.287    0.253    2.22    0.660
   Composite NOX :    0.659    0.753    1.016    0.824    2.630    0.698    0.927    9.884    1.56    1.622
 ---------------------------------------------------------------------------------------------------------------

* ##########################
* Rural Other Prin Art
* File 1, Run 1, Scenario 2.
* ##########################
 M582 Warning:
        The user supplied freeway average speed of 42.0
        will be used for all hours of the day. 100% of VMT
        has been assigned to a fixed combination of freeways
        and freeway ramps for all hours of the day and all
         vehicle types.
 M 48 Warning:
         there are no sales for vehicle class HDGV8b

             Calendar Year:  2010
                   Month:  July
                Altitude:  Low
          Minimum Temperature:  62.5 (F)
          Maximum Temperature:  84.3 (F)
            Absolute Humidity:   86. grains/lb
             Nominal Fuel RVP:   9.0 psi
               Weathered RVP:   8.8 psi
          Fuel Sulfur Content:   30. ppm

          Exhaust I/M Program:  No
            Evap I/M Program:  No
                ATP Program:  No
            Reformulated Gas:  No

    Vehicle Type:     LDGV   LDGT12   LDGT34     LDGT     HDGV     LDDV     LDDT     HDDV      MC   All Veh
         GVWR:          <6000    >6000    (All)
                ------   ------   ------   ------   ------   ------   ------   ------   ------   ------
 VMT Distribution:   0.3334   0.3904   0.1456          0.0362   0.0003   0.0021   0.0865   0.0055   1.0000
 ---------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
   Composite VOC :    0.839    0.671    0.841    0.717    0.686    0.186    0.319    0.300    1.90    0.726
   Composite NOX :    0.627    0.710    0.969    0.780    2.318    0.442    0.585    6.445    1.18    1.277
 ---------------------------------------------------------------------------------------------------------------

* ##########################
* Rural Min Art
* File 1, Run 1, Scenario 3.
* ##########################
 M583 Warning:
        The user supplied arterial average speed of 34.7
        will be used for all hours of the day.  100% of VMT
        has been assigned to the arterial/collector roadway
        type for all hours of the day and all vehicle types.
```

M 48 Warning:
there are no sales for vehicle class HDGV8b

Calendar Year: 2010
Month: July
Altitude: Low
Minimum Temperature: 62.5 (F)
Maximum Temperature: 84.3 (F)
Absolute Humidity: 86. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.8 psi
Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.3334	0.3904	0.1456		0.0362	0.0003	0.0021	0.0865	0.0055	1.0000

Composite Emission Factors (g/mi):

Composite VOC :	0.877	0.693	0.870	0.741	0.764	0.204	0.353	0.350	2.01	0.760
Composite NOX :	0.608	0.686	0.941	0.756	2.189	0.419	0.554	5.552	1.14	1.175

* ##########################
* Rural Major Col
* File 1, Run 1, Scenario 4.
* ##########################
M583 Warning:
The user supplied arterial average speed of 37.9
will be used for all hours of the day. 100% of VMT
has been assigned to the arterial/collector roadway
type for all hours of the day and all vehicle types.
M 48 Warning:
there are no sales for vehicle class HDGV8b

Calendar Year: 2010
Month: July
Altitude: Low
Minimum Temperature: 62.5 (F)
Maximum Temperature: 84.3 (F)
Absolute Humidity: 86. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.8 psi
Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

```
    Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
         GVWR:            <6000     >6000     (All)
                ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
 VMT Distribution:    0.3334    0.3904    0.1456            0.0362    0.0003    0.0021    0.0865    0.0055    1.0000
 ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
   Composite VOC :      0.856     0.680     0.853     0.727     0.725     0.195     0.336     0.325      1.96     0.741
   Composite NOX :      0.611     0.691     0.946     0.760     2.246     0.425     0.562     5.634      1.16     1.188
 ---------------------------------------------------------------------------------------------------------------------

* ############################
* Rural Min Col
* File 1, Run 1, Scenario 5.
* ############################
 M583 Warning:
        The user supplied arterial average speed of 33.7
        will be used for all hours of the day.  100% of VMT
        has been assigned to the arterial/collector roadway
        type for all hours of the day and all vehicle types.
 M 48 Warning:
         there are no sales for vehicle class HDGV8b

             Calendar Year:  2010
                    Month:  July
                 Altitude:  Low
          Minimum Temperature:  62.5 (F)
          Maximum Temperature:  84.3 (F)
            Absolute Humidity:   86. grains/lb
             Nominal Fuel RVP:   9.0 psi
               Weathered RVP:   8.8 psi
          Fuel Sulfur Content:   30. ppm

          Exhaust I/M Program:  No
            Evap I/M Program:  No
               ATP Program:  No
            Reformulated Gas:  No

    Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
         GVWR:            <6000     >6000     (All)
                ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
 VMT Distribution:    0.3334    0.3904    0.1456            0.0362    0.0003    0.0021    0.0865    0.0055    1.0000
 ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
   Composite VOC :      0.885     0.699     0.878     0.748     0.777     0.207     0.358     0.358      2.03     0.767
   Composite NOX :      0.611     0.688     0.943     0.758     2.175     0.420     0.555     5.560      1.13     1.177
 ---------------------------------------------------------------------------------------------------------------------

* ############################
* Rural Local
* File 1, Run 1, Scenario 6.
* ############################
 M583 Warning:
        The user supplied arterial average speed of 29.1
```

will be used for all hours of the day. 100% of VMT
has been assigned to the arterial/collector roadway
type for all hours of the day and all vehicle types.
M 48 Warning:
there are no sales for vehicle class HDGV8b

Calendar Year: 2010
Month: July
Altitude: Low
Minimum Temperature: 62.5 (F)
Maximum Temperature: 84.3 (F)
Absolute Humidity: 86. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.8 psi
Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.3334	0.3904	0.1456		0.0362	0.0003	0.0021	0.0865	0.0055	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.929	0.731	0.920	0.782	0.855	0.224	0.390	0.406	2.15	0.808
Composite NOX :	0.626	0.701	0.960	0.771	2.097	0.425	0.562	5.634	1.09	1.192

* ##########################
* Urban Interstate
* File 1, Run 1, Scenario 7.
* ##########################
M582 Warning:
The user supplied freeway average speed of 53.1
will be used for all hours of the day. 100% of VMT
has been assigned to a fixed combination of freeways
and freeway ramps for all hours of the day and all
vehicle types.
M 48 Warning:
there are no sales for vehicle class HDGV8b

Calendar Year: 2010
Month: July
Altitude: Low
Minimum Temperature: 62.5 (F)
Maximum Temperature: 84.3 (F)
Absolute Humidity: 86. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.8 psi
Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.3334	0.3904	0.1456		0.0362	0.0003	0.0021	0.0865	0.0055	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.784	0.634	0.792	0.677	0.616	0.172	0.293	0.262	1.91	0.681
Composite NOX :	0.651	0.741	1.003	0.812	2.519	0.569	0.755	8.127	1.40	1.456

* ##########################
* Other Freeway/Exp
* File 1, Run 1, Scenario 8.
* ##########################
M582 Warning:
The user supplied freeway average speed of 51.4
will be used for all hours of the day. 100% of VMT
has been assigned to a fixed combination of freeways
and freeway ramps for all hours of the day and all
vehicle types.
M 48 Warning:
there are no sales for vehicle class HDGV8b

Calendar Year: 2010
Month: July
Altitude: Low
Minimum Temperature: 62.5 (F)
Maximum Temperature: 84.3 (F)
Absolute Humidity: 86. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.8 psi
Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.3334	0.3904	0.1456		0.0362	0.0003	0.0021	0.0865	0.0055	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.792	0.640	0.799	0.683	0.624	0.173	0.296	0.265	1.87	0.686
Composite NOX :	0.647	0.736	0.997	0.807	2.488	0.540	0.716	7.740	1.35	1.417

* ##########################

```
* Urban Other Prin Art
* File 1, Run 1, Scenario 9.
* ##########################
 M583 Warning:
        The user supplied arterial average speed of 21.5
        will be used for all hours of the day.  100% of VMT
        has been assigned to the arterial/collector roadway
        type for all hours of the day and all vehicle types.
 M 48 Warning:
         there are no sales for vehicle class HDGV8b

             Calendar Year:  2010
                   Month:  July
                Altitude:  Low
          Minimum Temperature:  62.5 (F)
          Maximum Temperature:  84.3 (F)
           Absolute Humidity:   86. grains/lb
            Nominal Fuel RVP:   9.0 psi
              Weathered RVP:   8.8 psi
          Fuel Sulfur Content:   30. ppm

          Exhaust I/M Program:  No
            Evap I/M Program:  No
               ATP Program:  No
            Reformulated Gas:  No

    Vehicle Type:     LDGV   LDGT12   LDGT34     LDGT     HDGV     LDDV     LDDT     HDDV       MC   All Veh
         GVWR:             <6000    >6000     (All)
               ------   ------   ------   ------   ------   ------   ------   ------   ------
 VMT Distribution:   0.3334   0.3904   0.1456           0.0362   0.0003   0.0021   0.0865   0.0055   1.0000
 ---------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
   Composite VOC :     1.037    0.812    1.023    0.869    1.062   0.264    0.467    0.520     2.42     0.909
   Composite NOX :     0.677    0.749    1.023    0.824    1.969   0.463    0.613    6.141     1.00     1.277
 ---------------------------------------------------------------------------------------------------------------------

* ##########################
* Urban Minor Art
* File 1, Run 1, Scenario 10.
* ##########################
 M583 Warning:
        The user supplied arterial average speed of 32.0
        will be used for all hours of the day.  100% of VMT
        has been assigned to the arterial/collector roadway
        type for all hours of the day and all vehicle types.
 M 48 Warning:
         there are no sales for vehicle class HDGV8b

             Calendar Year:  2010
                   Month:  July
                Altitude:  Low
          Minimum Temperature:  62.5 (F)
          Maximum Temperature:  84.3 (F)
           Absolute Humidity:   86. grains/lb
```

Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.8 psi
Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.3334	0.3904	0.1456		0.0362	0.0003	0.0021	0.0865	0.0055	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.900	0.710	0.892	0.760	0.803	0.212	0.369	0.374	2.07	0.781
Composite NOX :	0.615	0.692	0.948	0.761	2.147	0.421	0.556	5.576	1.12	1.181

* ##########################
* Urban Col
* File 1, Run 1, Scenario 11.
* ##########################
M583 Warning:
The user supplied arterial average speed of 28.1
will be used for all hours of the day. 100% of VMT
has been assigned to the arterial/collector roadway
type for all hours of the day and all vehicle types.
M 48 Warning:
there are no sales for vehicle class HDGV8b

Calendar Year: 2010
Month: July
Altitude: Low
Minimum Temperature: 62.5 (F)
Maximum Temperature: 84.3 (F)
Absolute Humidity: 86. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.8 psi
Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.3334	0.3904	0.1456		0.0362	0.0003	0.0021	0.0865	0.0055	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.939	0.738	0.929	0.790	0.875	0.228	0.398	0.418	2.18	0.817
Composite NOX :	0.631	0.706	0.966	0.776	2.081	0.428	0.566	5.678	1.08	1.200

---

* ##########################
* Locals
* File 1, Run 1, Scenario 12.
* ##########################
M585 Warning:
100% of VMT has been assigned to the local roadway
type for all hours of the day for all vehicle types
with an average speed of 12.9 mph.
M 48 Warning:
there are no sales for vehicle class HDGV8b

Calendar Year: 2010
Month: July
Altitude: Low
Minimum Temperature: 62.5 (F)
Maximum Temperature: 84.3 (F)
Absolute Humidity: 86. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.8 psi
Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.3334	0.3904	0.1456		0.0362	0.0003	0.0021	0.0865	0.0055	1.0000

Composite Emission Factors (g/mi):

Composite VOC :	1.321	1.057	1.317	1.128	1.594	0.341	0.612	0.735	3.06	1.184
Composite NOX :	0.618	0.687	0.940	0.756	1.817	0.563	0.746	6.999	0.92	1.289

2020

2020F.txt

****
* MOBILE6.2.03 (24-Sep-2003) *
* Input file: N:\JEFF\MOBILE6\MOBILE6\RUN\2020F.IN (file 1, run 1). *
****
M617 Comment:
User supplied alternate AC input: Cloud Cover Fraction set to 0.25.
M618 Comment:
User supplied alternate AC input: Sunrise at 5 AM, Sunset at 8 PM.
M603 Comment:
User has disabled the calculation of REFUELING emissions.

* Reading Registration Distributions from the following external
* data file: REG02.D
 M 49 Warning:
          1.00   MYR sum not = 1. (will normalize)
 M 49 Warning:
          1.00   MYR sum not = 1. (will normalize)
 M 49 Warning:
          1.00   MYR sum not = 1. (will normalize)
 M 49 Warning:
          1.00   MYR sum not = 1. (will normalize)

* ##########################
* Rural Interstate
* File 1, Run 1, Scenario 1.
* ##########################
 M582 Warning:
       The user supplied freeway average speed of 58.3
       will be used for all hours of the day. 100% of VMT
       has been assigned to a fixed combination of freeways
       and freeway ramps for all hours of the day and all
        vehicle types.
 M 48 Warning:
        there are no sales for vehicle class HDGV8b
 M 48 Warning:
        there are no sales for vehicle class LDDT12

            Calendar Year: 2020
                  Month: July
               Altitude: Low
          Minimum Temperature: 62.5 (F)
          Maximum Temperature: 84.3 (F)
            Absolute Humidity: 86. grains/lb
            Nominal Fuel RVP: 9.0 psi
              Weathered RVP: 8.8 psi
          Fuel Sulfur Content: 30. ppm

          Exhaust I/M Program: No
            Evap I/M Program: No
               ATP Program: No
            Reformulated Gas: No

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.2660	0.4384	0.1635		0.0366	0.0002	0.0024	0.0877	0.0051	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.349	0.335	0.440	0.364	0.260	0.056	0.117	0.171	2.12	0.347
Composite NOX :	0.303	0.362	0.503	0.401	0.681	0.096	0.247	2.220	1.51	0.550

* ##########################
* Rural Other Prin Art
* File 1, Run 1, Scenario 2.

```
* ##########################
 M582 Warning:
        The user supplied freeway average speed of 38.3
        will be used for all hours of the day. 100% of VMT
        has been assigned to a fixed combination of freeways
        and freeway ramps for all hours of the day and all
         vehicle types.
 M 48 Warning:
         there are no sales for vehicle class HDGV8b
 M 48 Warning:
         there are no sales for vehicle class LDDT12

             Calendar Year:  2020
                   Month:  July
                Altitude:  Low
          Minimum Temperature:  62.5 (F)
          Maximum Temperature:  84.3 (F)
           Absolute Humidity:   86. grains/lb
            Nominal Fuel RVP:   9.0 psi
              Weathered RVP:   8.8 psi
          Fuel Sulfur Content:   30. ppm

          Exhaust I/M Program:  No
            Evap I/M Program:  No
               ATP Program:  No
            Reformulated Gas:  No

    Vehicle Type:     LDGV   LDGT12  LDGT34     LDGT     HDGV     LDDV     LDDT     HDDV       MC   All Veh
         GVWR:             <6000    >6000     (All)
               ------   ------   ------   ------   ------   ------   ------   ------   ------   ------
 VMT Distribution:   0.2660   0.4384   0.1635           0.0366   0.0002   0.0024   0.0877   0.0051   1.0000
 ---------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
   Composite VOC :    0.391    0.365    0.481    0.396    0.317   0.064    0.135    0.218     1.95    0.384
   Composite NOX :    0.287    0.338    0.475    0.375    0.590   0.063    0.161    1.470     1.16    0.459
 ---------------------------------------------------------------------------------------------------------------------

* ##########################
* Rural Min Art
* File 1, Run 1, Scenario 3.
* ##########################
 M583 Warning:
        The user supplied arterial average speed of 31.6
        will be used for all hours of the day.  100% of VMT
        has been assigned to the arterial/collector roadway
        type for all hours of the day and all vehicle types.
 M 48 Warning:
         there are no sales for vehicle class HDGV8b
 M 48 Warning:
         there are no sales for vehicle class LDDT12

             Calendar Year:  2020
                   Month:  July
                Altitude:  Low
```

Minimum Temperature: 62.5 (F)
Maximum Temperature: 84.3 (F)
Absolute Humidity: 86. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.8 psi
Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:	<6000	>6000	(All)							
VMT Distribution:	0.2660	0.4384	0.1635		0.0366	0.0002	0.0024	0.0877	0.0051	1.0000

Composite Emission Factors (g/mi):

Composite VOC :	0.413	0.381	0.501	0.413	0.359	0.071	0.150	0.257	2.09	0.406
Composite NOX :	0.285	0.334	0.468	0.370	0.560	0.062	0.160	1.351	1.11	0.444

* ##########################
* Rural Major Col
* File 1, Run 1, Scenario 4.
* ##########################
M583 Warning:
The user supplied arterial average speed of 37.6
will be used for all hours of the day. 100% of VMT
has been assigned to the arterial/collector roadway
type for all hours of the day and all vehicle types.
M 48 Warning:
there are no sales for vehicle class HDGV8b
M 48 Warning:
there are no sales for vehicle class LDDT12

Calendar Year: 2020
Month: July
Altitude: Low
Minimum Temperature: 62.5 (F)
Maximum Temperature: 84.3 (F)
Absolute Humidity: 86. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.8 psi
Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:	<6000	>6000	(All)							

```
 VMT Distribution:   0.2660   0.4384   0.1635          0.0366   0.0002   0.0024   0.0877   0.0051   1.0000
 -------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
   Composite VOC :     0.391    0.364    0.479    0.395    0.321    0.065    0.136    0.221    1.96    0.383
   Composite NOX :     0.283    0.333    0.467    0.369    0.587    0.063    0.161    1.363    1.16    0.445
 -------------------------------------------------------------------------------------------------------------

* ##########################
* Rural Min Col
* File 1, Run 1, Scenario 5.
* ##########################
 M583 Warning:
        The user supplied arterial average speed of 33.7
        will be used for all hours of the day.  100% of VMT
        has been assigned to the arterial/collector roadway
        type for all hours of the day and all vehicle types.
 M 48 Warning:
         there are no sales for vehicle class HDGV8b
 M 48 Warning:
         there are no sales for vehicle class LDDT12

             Calendar Year:  2020
                   Month:  July
                Altitude:  Low
          Minimum Temperature:  62.5 (F)
          Maximum Temperature:  84.3 (F)
            Absolute Humidity:   86. grains/lb
             Nominal Fuel RVP:   9.0 psi
               Weathered RVP:   8.8 psi
          Fuel Sulfur Content:   30. ppm

          Exhaust I/M Program:  No
            Evap I/M Program:  No
               ATP Program:  No
            Reformulated Gas:  No

    Vehicle Type:      LDGV   LDGT12   LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV       MC   All Veh
         GVWR:            <6000     >6000     (All)
                ------   ------   ------   ------   ------   ------   ------   ------   ------   ------
 VMT Distribution:   0.2660   0.4384   0.1635          0.0366   0.0002   0.0024   0.0877   0.0051   1.0000
 -------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
   Composite VOC :     0.404    0.373    0.492    0.405    0.344    0.069    0.144    0.243    2.04    0.396
   Composite NOX :     0.283    0.331    0.465    0.368    0.569    0.062    0.159    1.346    1.13    0.442
 -------------------------------------------------------------------------------------------------------------

* ##########################
* Rural Local
* File 1, Run 1, Scenario 6.
* ##########################
 M583 Warning:
        The user supplied arterial average speed of 29.1
        will be used for all hours of the day.  100% of VMT
        has been assigned to the arterial/collector roadway
```

type for all hours of the day and all vehicle types.
M 48 Warning:
there are no sales for vehicle class HDGV8b
M 48 Warning:
there are no sales for vehicle class LDDT12

Calendar Year: 2020
Month: July
Altitude: Low
Minimum Temperature: 62.5 (F)
Maximum Temperature: 84.3 (F)
Absolute Humidity: 86. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.8 psi
Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.2660	0.4384	0.1635		0.0366	0.0002	0.0024	0.0877	0.0051	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.425	0.391	0.514	0.424	0.380	0.075	0.157	0.275	2.15	0.418
Composite NOX :	0.290	0.338	0.474	0.375	0.549	0.063	0.161	1.365	1.09	0.448

* ##########################
* Urban Interstate
* File 1, Run 1, Scenario 7.
* ##########################
M582 Warning:
The user supplied freeway average speed of 49.8
will be used for all hours of the day. 100% of VMT
has been assigned to a fixed combination of freeways
and freeway ramps for all hours of the day and all
vehicle types.
M 48 Warning:
there are no sales for vehicle class HDGV8b
M 48 Warning:
there are no sales for vehicle class LDDT12

Calendar Year: 2020
Month: July
Altitude: Low
Minimum Temperature: 62.5 (F)
Maximum Temperature: 84.3 (F)
Absolute Humidity: 86. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.8 psi

Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.2660	0.4384	0.1635		0.0366	0.0002	0.0024	0.0877	0.0051	1.0000

Composite Emission Factors (g/mi):

Composite VOC :	0.363	0.346	0.456	0.376	0.275	0.058	0.121	0.182	1.87	0.359
Composite NOX :	0.297	0.354	0.494	0.392	0.644	0.076	0.196	1.768	1.30	0.501

* ##########################
* Other Freeway/Exp
* File 1, Run 1, Scenario 8.
* ##########################
M582 Warning:
The user supplied freeway average speed of 50.3
will be used for all hours of the day. 100% of VMT
has been assigned to a fixed combination of freeways
and freeway ramps for all hours of the day and all
vehicle types.
M 48 Warning:
there are no sales for vehicle class HDGV8b
M 48 Warning:
there are no sales for vehicle class LDDT12

Calendar Year: 2020
Month: July
Altitude: Low
Minimum Temperature: 62.5 (F)
Maximum Temperature: 84.3 (F)
Absolute Humidity: 86. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.8 psi
Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.2660	0.4384	0.1635		0.0366	0.0002	0.0024	0.0877	0.0051	1.0000

Composite Emission Factors (g/mi):

Composite VOC :	0.362	0.346	0.455	0.375	0.274	0.058	0.121	0.182	1.87	0.358

```
  Composite NOX :     0.298    0.354    0.495    0.392    0.647   0.077    0.199    1.793     1.32    0.504
 ---------------------------------------------------------------------------------------------------------------

* ##########################
* Urban Other Prin Art
* File 1, Run 1, Scenario 9.
* ##########################
 M583 Warning:
        The user supplied arterial average speed of 19.3
        will be used for all hours of the day.  100% of VMT
        has been assigned to the arterial/collector roadway
        type for all hours of the day and all vehicle types.
 M 48 Warning:
          there are no sales for vehicle class HDGV8b
 M 48 Warning:
          there are no sales for vehicle class LDDT12

              Calendar Year:  2020
                    Month:  July
                 Altitude:  Low
          Minimum Temperature:  62.5 (F)
          Maximum Temperature:  84.3 (F)
            Absolute Humidity:   86. grains/lb
             Nominal Fuel RVP:   9.0 psi
               Weathered RVP:   8.8 psi
          Fuel Sulfur Content:   30. ppm

          Exhaust I/M Program:  No
            Evap I/M Program:  No
               ATP Program:  No
            Reformulated Gas:  No

    Vehicle Type:     LDGV   LDGT12   LDGT34     LDGT     HDGV     LDDV     LDDT     HDDV       MC   All Veh
         GVWR:           <6000    >6000    (All)
               ------   ------   ------   ------   ------   ------   ------   ------   ------   ------
 VMT Distribution:   0.2660   0.4384   0.1635          0.0366   0.0002   0.0024   0.0877   0.0051   1.0000
 ---------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
   Composite VOC :     0.506    0.463    0.602    0.501    0.514   0.094    0.198    0.383     2.53    0.502
   Composite NOX :     0.326    0.373    0.521    0.413    0.505   0.071    0.183    1.552     0.97    0.495
 ---------------------------------------------------------------------------------------------------------------

* ##########################
* Urban Minor Art
* File 1, Run 1, Scenario 10.
* ##########################
 M583 Warning:
        The user supplied arterial average speed of 30.3
        will be used for all hours of the day.  100% of VMT
        has been assigned to the arterial/collector roadway
        type for all hours of the day and all vehicle types.
 M 48 Warning:
          there are no sales for vehicle class HDGV8b
 M 48 Warning:
```

there are no sales for vehicle class LDDT12

Calendar Year: 2020
Month: July
Altitude: Low
Minimum Temperature: 62.5 (F)
Maximum Temperature: 84.3 (F)
Absolute Humidity: 86. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.8 psi
Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.2660	0.4384	0.1635		0.0366	0.0002	0.0024	0.0877	0.0051	1.0000

Composite Emission Factors (g/mi):

Composite VOC :	0.419	0.386	0.508	0.419	0.369	0.073	0.153	0.266	2.12	0.412
Composite NOX :	0.287	0.335	0.470	0.372	0.554	0.062	0.160	1.355	1.10	0.445

* ##########################
* Urban Col
* File 1, Run 1, Scenario 11.
* ##########################
M583 Warning:
The user supplied arterial average speed of 28.1
will be used for all hours of the day. 100% of VMT
has been assigned to the arterial/collector roadway
type for all hours of the day and all vehicle types.
M 48 Warning:
there are no sales for vehicle class HDGV8b
M 48 Warning:
there are no sales for vehicle class LDDT12

Calendar Year: 2020
Month: July
Altitude: Low
Minimum Temperature: 62.5 (F)
Maximum Temperature: 84.3 (F)
Absolute Humidity: 86. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.8 psi
Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No

Reformulated Gas: No

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:	<6000	>6000	(All)							
VMT Distribution:	0.2660	0.4384	0.1635		0.0366	0.0002	0.0024	0.0877	0.0051	1.0000

Composite Emission Factors (g/mi):

Composite VOC :	0.431	0.395	0.519	0.429	0.389	0.076	0.160	0.284	2.18	0.423
Composite NOX :	0.293	0.340	0.477	0.377	0.545	0.063	0.162	1.376	1.08	0.452

* ##########################
* Locals
* File 1, Run 1, Scenario 12.
* ##########################
M585 Warning:
100% of VMT has been assigned to the local roadway
type for all hours of the day for all vehicle types
with an average speed of 12.9 mph.
M 48 Warning:
there are no sales for vehicle class HDGV8b
M 48 Warning:
there are no sales for vehicle class LDDT12

Calendar Year: 2020
Month: July
Altitude: Low
Minimum Temperature: 62.5 (F)
Maximum Temperature: 84.3 (F)
Absolute Humidity: 86. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.8 psi
Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:	<6000	>6000	(All)							
VMT Distribution:	0.2660	0.4384	0.1635		0.0366	0.0002	0.0024	0.0877	0.0051	1.0000

Composite Emission Factors (g/mi):

Composite VOC :	0.632	0.601	0.758	0.643	0.723	0.114	0.243	0.498	3.06	0.642
Composite NOX :	0.296	0.334	0.456	0.367	0.476	0.083	0.213	1.746	0.92	0.476

Emission Totals

2004

Functional Class (Rural)	Vehicle Miles Traveled	VOC Emissions (Tons/Day)	NOx Emissions (Tons/Day)
Rural Interstate	951,794	1.12	3.04
Other Principal Arterial	803,735	1.05	2.02
Minor Arterial	219,968	0.30	0.50
Major Collector	1,077,748	1.45	2.43
Minor Collector	159,880	0.22	0.36
Local	428,646	0.64	0.97
Functional Class (Urban)			
Urban Interstate	845,277	1.03	2.46
Other Freeways and Expressways	72,913	0.09	0.20
Other Principal Arterial	1,552,402	2.53	3.68
Other Minor Arterial	1,806,277	2.56	4.05
Collector	557,275	0.84	1.27
Local	918,560	2.04	2.19
Totals:	**9,394,476**	**13.86**	**23.17**

2010

Functional Class (Rural)	Vehicle Miles Traveled	VOC Emissions (Tons/Day)	NOx Emissions (Tons/Day)
Rural Interstate	1,078,750	0.78	1.93
Other Principal Arterial	885,314	0.71	1.25
Minor Arterial	246,425	0.21	0.32
Major Collector	1,225,812	1.00	1.60
Minor Collector	194,634	0.16	0.25
Local	478,883	0.43	0.63
Functional Class (Urban)			
Urban Interstate	955,066	0.72	1.53
Other Freeways and Expressways	79,678	0.06	0.12
Other Principal Arterial	1,628,961	1.63	2.29
Other Minor Arterial	1,893,179	1.63	2.46
Collector	606,725	0.55	0.80
Local	972,117	1.27	1.38
Totals:	**10,245,546**	**9.14**	**14.57**

2020

Functional Class (Rural)	Vehicle Miles Traveled	VOC Emissions (Tons/Day)	NOx Emissions (Tons/Day)
Rural Interstate	1,407,325	0.54	0.85
Other Principal Arterial	1,023,693	0.43	0.52
Minor Arterial	275,327	0.12	0.13
Major Collector	1,493,897	0.63	0.73
Minor Collector	242,064	0.11	0.12
Local	570,526	0.26	0.28
Functional Class (Urban)			
Urban Interstate	1,139,825	0.45	0.63
Other Freeways and Expressways	85,777	0.03	0.05
Other Principal Arterial	1,728,127	0.96	0.94
Other Minor Arterial	2,155,659	0.98	1.06
Collector	632,802	0.29	0.32
Local	1,078,431	0.76	0.57
Totals:	**11,833,451**	**5.57**	**6.19**

2020 NB Worst Case

Functional Class (Rural)	Vehicle Miles Traveled	VOC Emissions (Tons/Day)	NOx Emissions (Tons/Day)
Rural Interstate	1,676,642	0.65	0.98
Other Principal Arterial	1,275,886	0.57	0.64
Minor Arterial	328,157	0.16	0.17
Major Collector	1,892,393	0.80	0.93
Minor Collector	351,656	0.15	0.17
Local	704,556	0.32	0.35
Functional Class (Urban)			
Urban Interstate	1,343,688	0.54	0.72
Other Freeways and Expressways	103,961	0.04	0.06
Other Principal Arterial	2,122,535	1.69	1.39
Other Minor Arterial	2,655,979	1.29	1.35

Collector	940,542	0.45	0.47
Local	1,344,997	0.95	0.71
Totals:	**14,740,990**	**7.61**	**7.92**

APPENDIX D

PUBLIC PARTICIPATION DOCUMENTATION

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Summary of and Response to Comments Received

Legend:

- Comment
  - IDEM's Response

Dennis Holp and Philip P. Laux, Greater Fort Wayne Chamber of Commerce

- The redesignation of Allen County as an attainment area is important for economic development of Fort Wayne and Allen County, for the creation of new jobs and maintaining a healthy business environment. The redesignation request meets all of the Clean Air Act requirements for EPA consideration. Allen County is on a trend to maintain acceptable levels of ozone in the long term.
  - IDEM agrees.
- Local efforts in Fort Wayne/Allen County include an active Ozone Task Force whose charter is to take steps to improve the ground-level ozone levels in Allen County. The Task Force consists of representatives of IDEM, Public Health, transportation, education, and private industry and business. The task force works to improve community awareness of the impact of ozone and how residents and businesses can take steps to reduce ozone. The Allen County Council recently allocated funds for the Task Force to promote a county-wide public ozone awareness and reduction campaign and to subsidize a gas can exchange program.
  - IDEM recognizes and appreciates the efforts being made by the community.
- Page 2 Section 2.2 Ozone Monitoring, paragraph one (1): "…..ozone, as published in 40CFR **50.**4." Should read "…..ozone, as published in 40CFR **50.10**."
  - IDEM will make the change as suggested.
- Page 15, Section 4.4 Demonstration of Maintenance, paragraph one (1): "…air quality met NAAQS for ozone in **2004**." Should read: "….air quality met NAAQS for ozone in **2005**."
  - IDEM will make the change as suggested.
- Page 17, Section 5.3 Best Available Data, last paragraph heading: "HMPS to MOBILE6 Facility-Type" should read: "**HPMS** to MOBILE6 Facility-Type".
  - IDEM will make the change as suggested.

Chris Walker, Indiana Firefighter Instructor

- Many fire stations have a limited budget and limited free time to properly prepare an acquired structure for training burns per IDEM standards. Lifting the IDEM requirements for properly preparing an acquired structure prior to a training burn would not adversely affect the ozone standard in Allen County. Mr. Walker requests limitations be placed on the number of acquired structures a department can burn per year plus restrictions on the time of day and/or time of year a structure can be burned.

- This request is beyond the scope of this action, however, it will be forwarded to the Office of Air Quality Compliance Branch for consideration.

Graham Richard, Mayor, City of Fort Wayne

- The City continues to implement new and additional local measures to ensure that the environment and economic opportunities will continue to improve. These include 13 hybrid vehicles and 16 ethanol vehicles owned by the city with plans to add more, 300 biodiesel run city vehicles, lower emissions at the City Asphalt Plant due to more efficient practices, cleaner burning methane gas use at the City Water Pollution Control Plant, information imparted to City staff regarding ways they can reduce ozone, garbage trucks implementing ozone friendly equipment and technologies, The Allen County/Fort Wayne Task Force will continue it's efforts to reduce ozone and raise awareness, new and improved Greenway trails.

- IDEM recognizes and appreciates the efforts being made by the City.

- As part of a broad and comprehensive approach to overall air quality and energy efficiency, the Mayor will soon hire a Director of Energy and Environmental Services and has appointed a Green Ribbon Commission of several business and community leaders and has challenged them to provide advice and recommendations on goals and strategies to conserve energy and improve overall air quality, raise awareness of these issues within the community, and encourage citizens and businesses to engage in energy savings and improve air quality practices.

- IDEM recognizes and appreciates the efforts being made by local agencies.

Betsy Kachmar, Citilink, Fort Wayne, IN

- As an active member of the Ozone Task Force we are working with the public and private partners to increase awareness of actions that can reduce ozone (including riding the bus) through our Clean Air Force campaign. Citilink will be using CMAQ funding to help underwrite the cost of free fares on ozone alert days, our transition to bio-diesel fuel, and other service improvements. We hope to purchase hybrid buses in the next few years, funding permitting. We will also provide a free summer downtown lunchtime trolley again this year as well as our $25 youth summer fun pass to encourage people to take the bus rather than drive. Our Joblink program offers an opportunity to sign up to join a carpool and other transportation alternatives. We will soon have an ozone awareness page on our website as part of the Clean Air Force Team. We will continue to do our part to help Fort Wayne attain and maintain acceptable ozone levels and reduce other pollutants by providing safe, courteous, and dependable public transportation at the most reasonable cost to our community.

- IDEM recognizes and appreciates the efforts being made by local agencies.

Marla J. Irving, Linda K. Bloom, F. Nelson Peters, Board of Commissioners of the County of Allen

- The Allen County Commissioners would like to express our sincere support of the Allen County redesignation Petition and Maintenance Plan to be submitted to the Environmental Protection Agency. This request to the EPA is extremely important to future economic development in Allen County. To date there have been multiple instances where our economy has been hurt as a result of non-compliance. We understand that a cleaner environment will help attract new jobs and businesses to our community. This is why we have undertaken many efforts to further educate the citizens of Allen County, in hopes that public education will lead to a better ozone level. Our continued effort to make the public more aware of the effects of non-attainment has been one of our greatest successes. With this said, we pledge to continue the programs that have made us successful thus far and remain committed to the betterment of our ozone attainment level.

- IDEM recognizes and appreciates the efforts being made by local agencies.

Robert B. Young, Fort Wayne-Allen County Economic Development Alliance, Inc.

- Resolution #04132006 Resolution supporting attainment status for Allen County states as follows: Whereas, the mission of the Fort Wayne-Allen County Economic Development Alliance (Alliance) is to create and retain quality jobs by assisting base employers growth and prosperity in the community; and air quality attainment is essential for existing, expanding, new and potential Fort Wayne-Allen County businesses; and at the conclusion of 2005 ozone season, all monitors within Allen County measured air quality that meets the ambient air quality standard for ozone; and City and County and other jurisdictions are continuing to focus and be successful on enhancing air quality beyond the Federal guidelines through successful education with business and residents; and the Indiana Department of Environmental Management (IDEM) has prepared a draft redesignation petition and maintenance plan for Allen County in association with the eight-hour air quality standard for ozone; and the Alliance appreciates the continued interaction and support of IDEM and EPA and looks forward to working with both agencies to balance air quality with economic development; Therefore, the Alliance respectfully requests that IDEM submit the redesignation petition and maintenance plan to the EPA and formally request that Allen County be redesignated to attainment and classified as maintenance under the 8-hour air quality standard for ozone for the reasons set forth herein. Approved by the Alliance Board of Directors April 13, 2006.

- IDEM recognizes and appreciates the efforts being made by the Alliance and appreciates the support.