INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

January 21, 2010

Mr. Bharat Mathur
Acting Regional Administrator
U.S. Environmental Protection Agency
Region 5
77 West Jackson Boulevard
Chicago, IL 60604-3950

Re: Request for Redesignation Petition and Maintenance Plan for Ozone Attainment for the Indiana Portion of the Cincinnati-Hamilton, OH-KY-IN 8-Hour Ozone Nonattainment Area

Dear Mr. Mathur:

With this letter the Indiana Department of Environmental Management (IDEM) submits the final Redesignation Petition and Maintenance Plan for the Indiana portion of the Cincinnati-Hamilton, OH-KY-IN, 8-hour ozone nonattainment area (Lawrenceburg Township in Dearborn County). IDEM conducted a public hearing concerning the Redesignation Petition and Maintenance Plan on January 7, 2010. The public comment period concluded on January 13, 2010 and no comments were received.

The attached document consists of the following:

Redesignation Petition and Maintenance Plan

- A formal request that the Indiana portion of the Cincinnati-Hamilton, OH-KY-IN nonattainment area (Lawrenceburg Township in Dearborn County) be redesignated to attainment and reclassified as "maintenance". It contains and meets the requirements set forth in Section 107 of the Clean Air Act and in U.S. EPA Redesignation Guidance.
- A maintenance year of 2020 is established and 2015 is analyzed as an interim year.
- The appendices of the document contain historic air quality trend data, projected emission inventory data and thorough documentation of the mobile emissions analysis.

Motor Vehicle Emission Budgets

- Contained in the Redesignation Petition is a new Motor Vehicle Emissions Budget for 2015 and 2020. The Ohio Kentucky Indiana (OKI) Regional Council of Governments' travel demand model and MOBILE6.2 were used to determine emissions for the area.
- A conservative margin of safety was applied to the 2015 and 2020 projected emissions.
- The travel demand model was updated with the best available assumptions.
- Vehicle registration data gathered from the Indiana Bureau of Motor Vehicles were used to replace the MOBILE6.2 default vehicle age distribution.

IDEM requests that the U.S. EPA proceed with review and approval of this submittal. If you have any questions or need additional information, please contact Scott Deloney, Chief, Air Programs Branch, at (317) 233-5694.

Sincerely,

Thomas W. Easterly
Commissioner

TWE/sad/skr
Attachments: Request for Redesignation and Maintenance Plan and Appendices

Cc: John Summerhays, U.S. EPA Region 5 (w/ enclosures)
Ed Doty, U.S. EPA Region 5 (w/ enclosures)
Cheryl L. Newton, U.S. EPA Region 5 (no enclosures)
Pat Morris, U.S. EPA Region 5 (no enclosures)
John Mooney, U.S. EPA Region 5 (no enclosures)
Scott Deloney, IDEM-OAQ (no enclosures)
Christine Pedersen, IDEM-OAQ (no enclosures)
Sarah Raymond, IDEM-OAQ (w/ enclosures)

REQUEST FOR REDESIGNATION AND MAINTENANCE PLAN FOR OZONE ATTAINMENT IN THE INDIANA PORTION OF THE CINCINNATI-HAMILTON, OH-KY-IN 8-HOUR OZONE NONATTAINMENT AREA

Dearborn County, Indiana
(Lawrenceburg Township)

Developed By:
The Indiana Department of Environmental Management

January 2010

This page intentionally left blank

TABLE OF CONTENTS

FIGURES

TABLES

GRAPHS

APPENDICES

This page intentionally left blank

REQUEST FOR REDESIGNATION AND MAINTENANCE PLAN FOR OZONE ATTAINMENT IN THE INDIANA PORTION OF THE CINCINNATI-HAMILTON OH-KY-IN 8-HOUR OZONE NONATTAINMENT AREA

DEARBORN COUNTY, INDIANA (LAWRENCEBURG TOWNSHIP)

1.0 INTRODUCTION

This document supports Indiana's request that the Indiana portion (Lawrenceburg Township in Dearborn County, Indiana) of the Cincinnati-Hamilton OH-KY-IN area be redesignated from nonattainment to attainment for the 1997 8-hour ozone standard. In addition, the States of Kentucky and Ohio also intend to submit requests for their portions of the Cincinnati-Hamilton OH-KY-IN basic ozone nonattainment area to be redesignated from nonattainment to attainment for the 8-hour ozone national ambient air quality standard (NAAQS). The Cincinnati-Hamilton OH-KY-IN area has recorded three (3) years of complete, quality-assured ambient air quality monitoring data for the years 2007 through 2009, demonstrating attainment of the 8-hour ozone standard.

Indiana's request is based on Section 107(d)(3)(D) of the Clean Air Act (CAA), which states:

> The Governor of any State may, on the Governor's own motion, submit to the Administrator a revised designation of any area or portion thereof within the State. Within 18 months of receipt of a complete State redesignation submittal, the Administrator shall approve or deny such redesignation. The submission of a redesignation by a Governor shall not affect the effectiveness or enforceability of the applicable implementation plan for the State.

Section 107(d)(3)(E) of the CAA establishes specific requirements to be met in order for an area (or portion of an area) to be considered for redesignation as follows:

> The Administrator may not promulgate a redesignation of a nonattainment area (or portion thereof) to attainment unless--
>
> (i) the Administrator determines that the area has attained the national ambient air quality standard;
> (ii) the Administrator has fully approved the applicable implementation plan for the area under section 110(k);
> (iii) the Administrator determines that the improvement in air quality is due to permanent and enforceable reductions in emissions resulting from implementation of the applicable implementation plan and applicable Federal air pollutant control regulations and other permanent and enforceable reductions;

(iv) the Administrator has fully approved a maintenance plan for the area as meeting the requirements of section 175A; and

(v) the state containing such area has met all requirements applicable to the area under section 110 and part D.

This document addresses each of these requirements, and provides additional information to support continued compliance with the 1997 8-hour ozone standard.

1.1 Background

The Clean Air Act (CAA) requires areas designated nonattainment for the NAAQS for ozone to develop State Implementation Plans (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 1-hour standard with an 8-hour ozone standard set at 0.08 parts per million (ppm). The standard was challenged legally and upheld by the U.S. Supreme Court in February of 2001. The U.S. EPA designated areas under the 8-hour ozone standard on April 15, 2004 as attainment, nonattainment or unclassifiable.

The U.S. EPA designated Lawrenceburg Township in Dearborn County, Indiana as a portion of the Cincinnati-Hamilton OH-KY-IN nonattainment area (40 CFR 81.315) and classified the area "basic" under Subpart 1 of Part D of the CAA. The specific counties and partial counties that comprise the nonattainment area, as defined in 40 CFR 81.315, 40 CFR 81.318 and 40 CFR 81.336, include Lawrenceburg Township in Dearborn County, Indiana; Boone, Campbell and Kenton counties, Kentucky; and Butler, Clermont, Clinton, Hamilton and Warren counties, Ohio. This designation subjected the area to the new 8-hour ozone requirements, including development of a plan to reduce emissions of volatile organic compounds (VOCs) and nitrogen oxides (NO_x) and a demonstration that the area will meet the federal 8-hour air quality standard for ozone by June 15, 2010.

1.2 Geographical Description of Indiana's Portion of the Entire Nonattainment Area

Following is a brief description of the Cincinnati basic nonattainment area.

Lawrenceburg Township, located in Dearborn County in southeast Indiana, Boone, Campbell and Kenton counties located in north central Kentucky and Butler, Clermont, Clinton, Hamilton and Warren counties located in southwestern Ohio are part of the Cincinnati metropolitan statistical area. This area is surrounded by the Indiana counties of Franklin, Ohio, Ripley, Switzerland and Union, the Kentucky counties of Bracken, Gallatin, Grant and Pendleton and the Ohio counties of Brown, Fayette, Greene, Highland, Montgomery and Preble. The Ohio River flows along the borders of Indiana, Kentucky and Ohio and the area lies within the Ohio River Valley. The Cincinnati-Hamilton OH-KY-IN Basic Nonattainment Area is depicted in Figure 3.1.

The Indiana Department of Environmental Management (IDEM), on behalf of the State of Indiana, is requesting redesignation of Lawrenceburg Township, Dearborn County, Indiana. The Kentucky Department for Environmental Protection (KDEP) is responsible for Boone, Campbell

and Kenton counties in Kentucky. The Ohio Environmental Protection Agency (Ohio EPA) is responsible for Butler, Clermont, Clinton, Hamilton and Warren counties in Ohio. KDEP and Ohio EPA are requesting redesignation of their portions of the nonattainment area from U.S. EPA Regions IV and V, concurrently.

1.3 Status of Air Quality

Ozone monitoring data for the most recent three (3) years, 2007 through 2009, demonstrates that air quality has met the NAAQS for ozone throughout the nonattainment area, including Lawrenceburg Township in Dearborn County. This fact, accompanied by the permanent and enforceable decreases in emission levels discussed in Section 4.0, justifies a redesignation to attainment for Indiana's portion of the nonattainment area based on Section 107(d)(3)(E) of the CAA.

2.0 REQUIREMENTS FOR REDESIGNATION

2.1 General

Section 110 and Part D of the CAA list a number of requirements that must be met by 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 Criteria Pollutant Section of U.S. EPA Region V. The specific requirements for redesignation are listed below.

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

1) A demonstration that the NAAQS for ozone, as published in 40 CFR 50.4, has 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, have been recorded in the U.S. EPA Air Quality System (AQS) database, and made 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 85 parts per billion (ppb). 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 CAA Section 107(d)(3)(E)(iii)

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

2) A projection of the emissions 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, IDEM has incorporated photochemical modeling information as part of this document to further support its request for Lawrenceburg Township in Dearborn County, Indiana, to be redesignated to attainment.

2.5 Controls and Regulations CAA Section 107(d)(3)(E)(ii) & CAA Section 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 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.

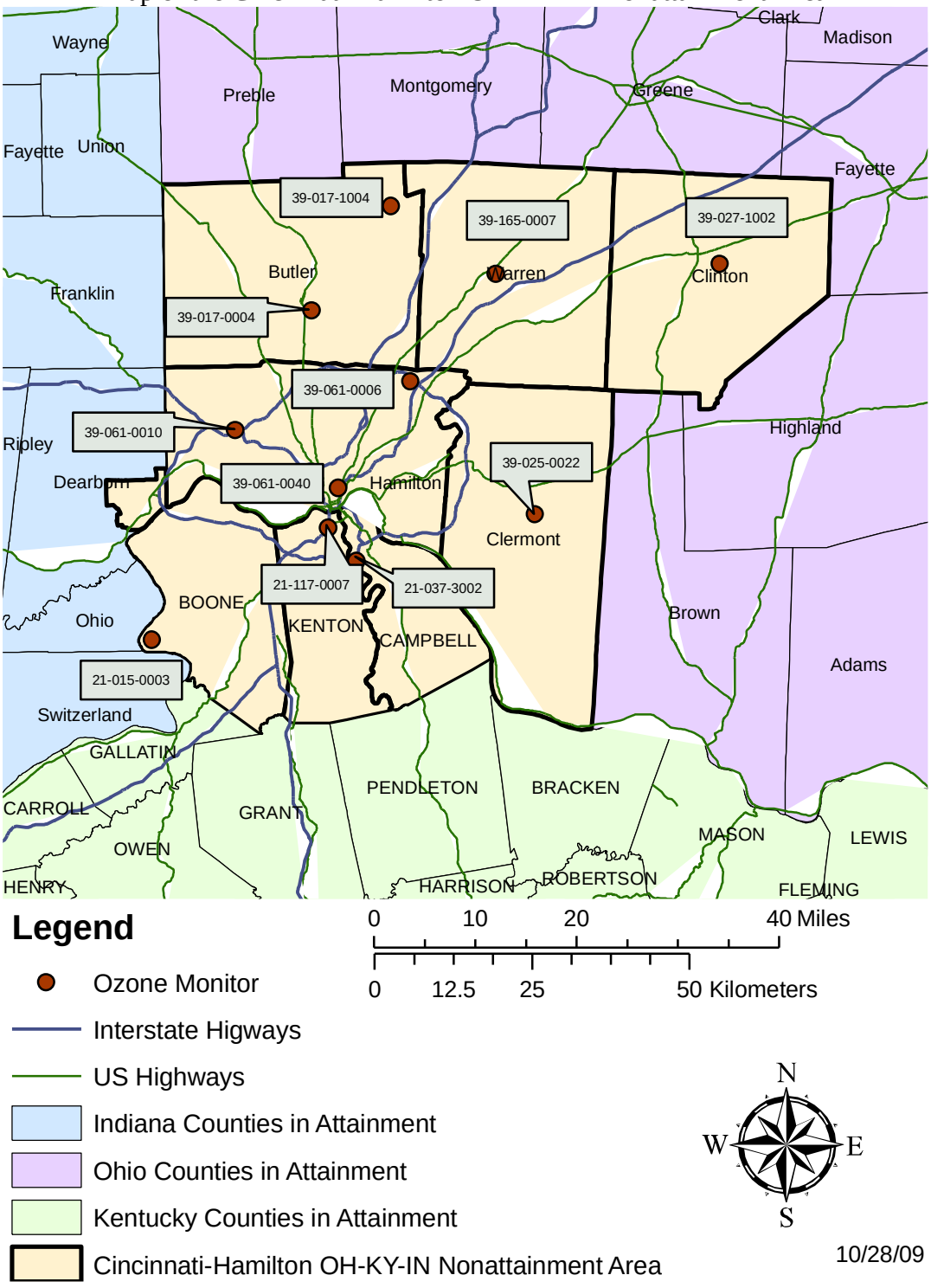
4) A list of VOC and NO_x sources potentially subject to future controls.

3.0 OZONE MONITORING

3.1 Ozone Monitoring Network

There are currently eleven (11) monitors measuring ozone concentrations in the Cincinnati-Hamilton OH-KY-IN nonattainment area. Three monitors are located in Kentucky and eight monitors are located in Ohio. Indiana does not have any ozone monitors located in Lawrenceburg Township in Dearborn County. A listing of the sites along with their annual fourth highest readings from 2007 through 2009 are shown in Table 3.1 and Table 3.2 and were retrieved from U.S. EPA's Air Quality System (AQS) database. The locations of the monitoring sites for this nonattainment area are shown on Figure 3.1.

Figure 3.1
Map of the Cincinnati-Hamilton OH-KY-IN 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.

U.S. EPA requires three (3) complete years of ozone monitoring data 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 parts per million (ppm). When this occurs, the site is deemed to be in attainment. Three (3) significant digits must be carried out 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 complies with the 8-hour ozone NAAQS only if every monitoring site in the area meets the NAAQS. An individual site's three-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 outlines the annual fourth high values and three-year design values for 2004 through 2009 for the three active monitoring sites in Kentucky's portion of the nonattainment area. Table 3.2 outlines the annual fourth high values and three-year design values for 2004 through 2009 for the eight active monitoring sites within Ohio's portion of the nonattainment area. None of the eleven monitors within the Cincinnati-Hamilton OH-KY-IN nonattainment area has a 2007 through 2009 design value greater than 0.082 ppm.

Table 3.1
Monitoring Data for Kentucky's Portion of the Nonattainment Area
(Annual 4th High and Design Values in ppm)

County	Site ID	2004	2005	2006	2007	2008	2009	2004-2006	2005-2007	2006-2008	2007-2009
Boone	21-015-0003	0.070	0.082	0.071	0.078	0.064	0.064	0.074	0.077	0.071	0.069
Campbell	21-037-3002				0.086	0.075	0.068				0.076
Kenton	21-117-0007	0.073	0.084	0.075	0.085	0.073	0.074	0.077	0.081	0.078	0.077

Red text indicates values are ≥ 0.085 ppm

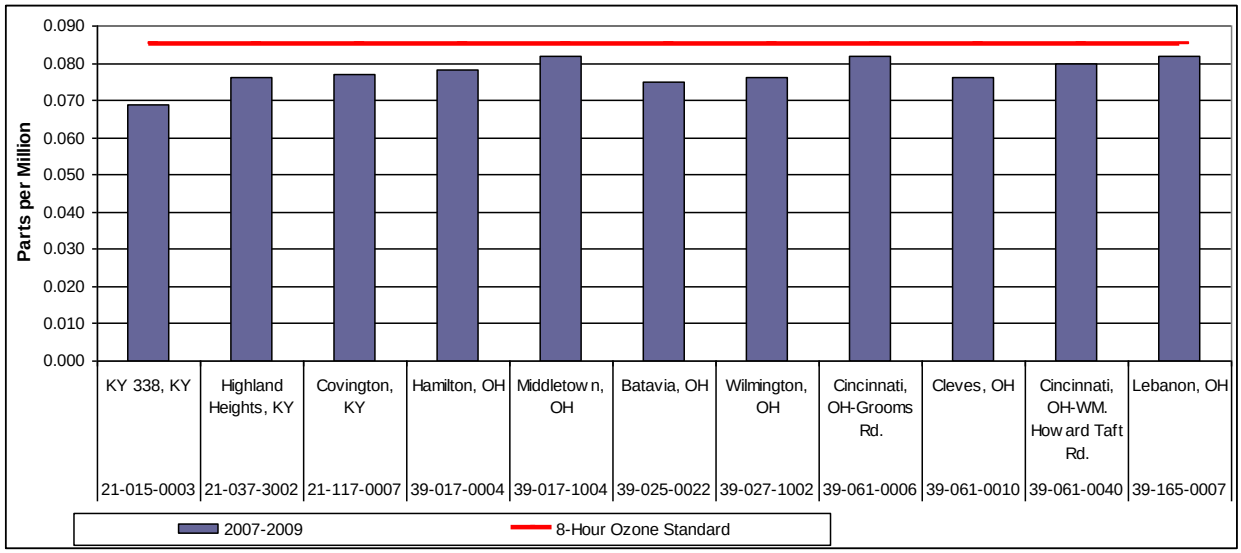
Table 3.2
Monitoring Data for Ohio's Portion of Nonattainment Area
(Annual 4th High and Design Values in ppm)

County	Site ID	2004	2005	2006	2007	2008	2009	2004-2006	2005-2007	2006-2008	2007-2009
Butler	39-017-0004	0.075	0.086	0.079	0.091	0.071	0.073	0.080	0.085	0.080	0.078
Butler	39-017-1004	0.076	0.088	0.076	0.091	0.079	0.076	0.080	0.085	0.082	0.082
Clermont	39-025-0022	0.076	0.083	0.077	0.086	0.071	0.069	0.079	0.082	0.078	0.075
Clinton	39-027-1002	0.078	0.083	0.081	0.082	0.076	0.070	0.081	0.082	0.080	0.076
Hamilton	39-061-0006	0.076	0.089	0.081	0.089	0.086	0.072	0.082	0.086	0.085	0.082
Hamilton	39-061-0010	0.075	0.085	0.081	0.086	0.077	0.065	0.080	0.084	0.081	0.076
Hamilton	39-061-0040	0.076	0.087	0.078	0.086	0.080	0.074	0.080	0.084	0.081	0.080
Warren	39-165-0007	0.081	0.092	0.086	0.088	0.082	0.077	0.086	0.089	0.085	0.082

Red text indicates values are ≥ 0.085 ppm

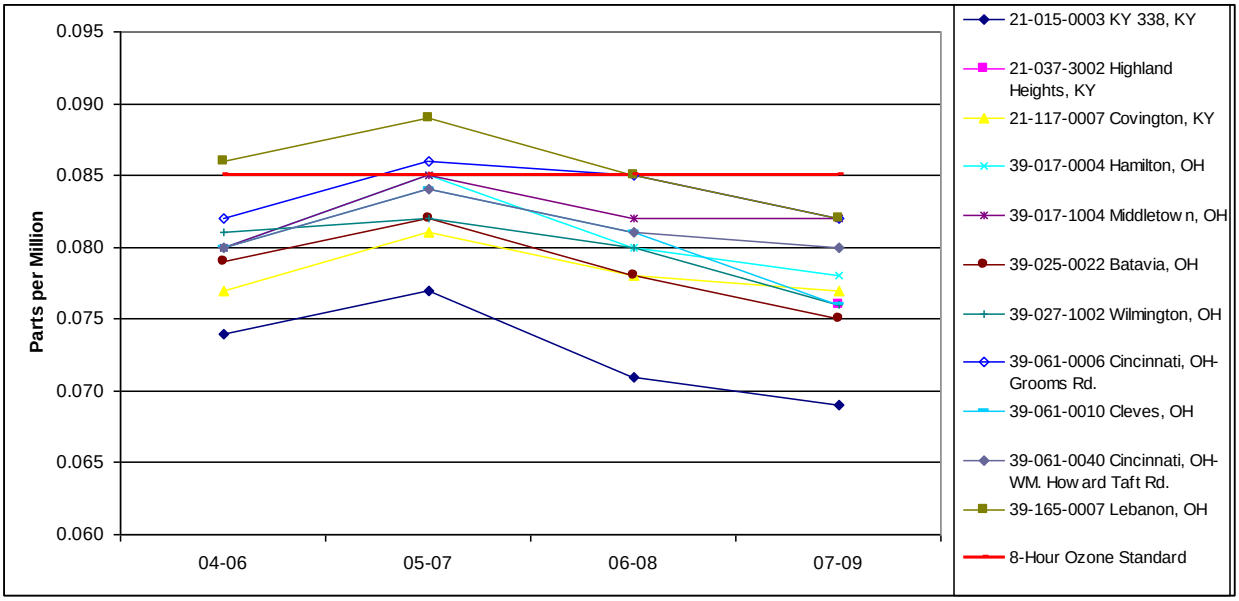
Graph 3.1 below visually demonstrates the design values for this nonattainment area. The highest design value within the nonattainment area is 0.082 ppm. The design values calculated for the Cincinnati-Hamilton OH-KY-IN nonattainment area demonstrate that the NAAQS for ozone has been attained.

Graph 3.1 2007-2009 Design Values for the Cincinnati-Hamilton OH-KY-IN Nonattainment Area



Graph 3.2 illustrates the design value trends for the Cincinnati-Hamilton OH-KY-IN nonattainment area.

Graph 3.2 Design Value Trends in the Cincinnati-Hamilton OH-KY-IN Nonattainment Area, 2004-2009



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 period is in Appendix A. The area's design values have recently trended downward as emissions have declined due to programs such 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). The SIP submittals of other Midwest states were approved in this timeframe as well. An analysis of meteorological conditions and monitoring values is in Section 7.0 and supports the conclusion that attainment of the standard as of 2009 is not the result of unusually favorable meteorological conditions. It is expected that this downward trend will continue as the above programs continue.

3.3 Quality Assurance

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

3.4 Continued Monitoring

Ohio and Kentucky have committed to continue monitoring ozone levels at the sites indicated in Table 3.1 and Appendix A. IDEM will consult with Ohio, Kentucky and the U.S. EPA Region IV and V staff prior to making changes to the existing monitoring network, should changes become necessary in the future. Ohio and Kentucky will continue to quality assure the monitoring data to meet the requirements of 40 CFR 58. Updates to the IDEM website[1] will provide real time availability of the data and knowledge of any exceedances at these monitors. Ohio and Kentucky will enter all data into AQS in a timely manner 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 requirements related to the emissions inventory 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.

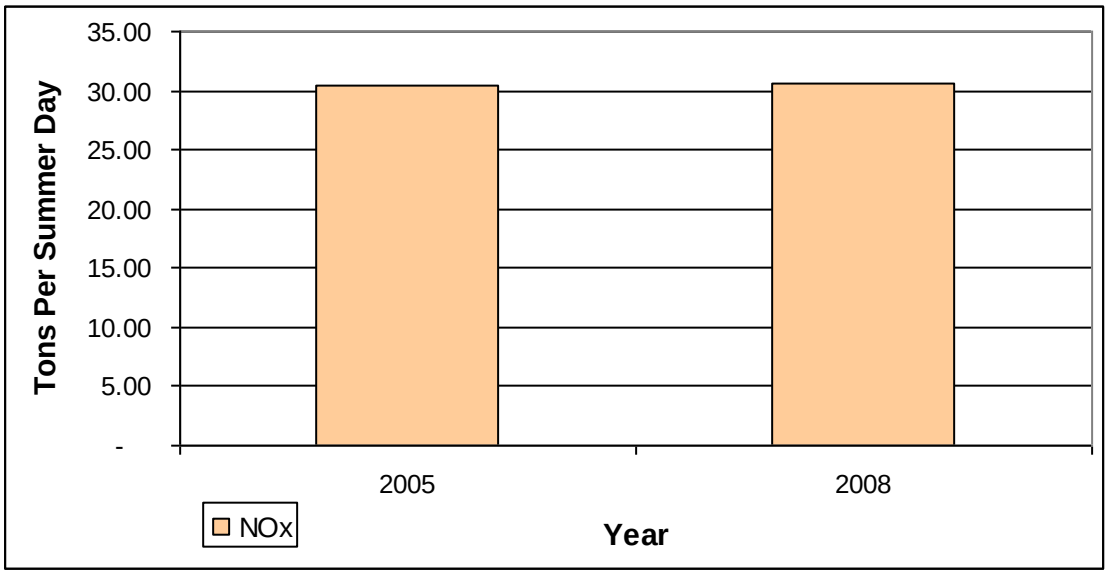
4.1 Emission Trends

Point Sources

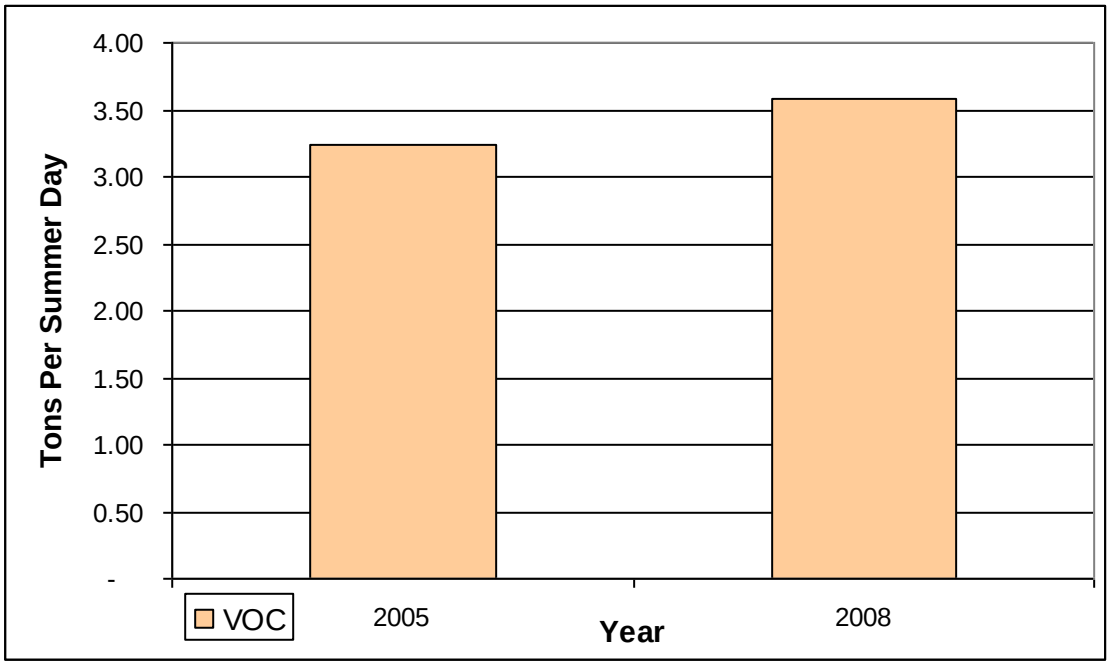
Graphs 4.1 and 4.2 show the trend within Indiana's portion of the Cincinnati-Hamilton OH-KY-IN nonattainment area, in point source emissions of NO_x and VOC, respectively, that generally correspond to the years of monitored values referenced in this plan. The point source data is taken from Indiana's annual emissions reporting program. Graphs and data tables of emissions from each point source in Lawrenceburg Township, Dearborn County, Indiana are available in Appendix B. Although the Indiana data shows a slight increase in the point source emissions for NO_x and VOC, the emissions within Indiana's portion of the Cincinnati-Hamilton OH-KY-IN nonattainment area are insignificant compared to the point source emissions within the entire nonattainment area, as can be seen in Graphs 4.15 and 4.16. Graphs 4.3 and 4.4 show the trend of point source emissions within the entire Cincinnati-Hamilton OH-KY-IN nonattainment area. Although the emissions trend within the entire Cincinnati-Hamilton OH-KY-IN nonattainment area for VOC shows very little change in point source emissions, overall anthropogenic emissions for NO_x and VOC are trending downward, as can be seen in Graphs 4.9 and 4.10.

[1] http://www.in.gov/idem/4670.htm

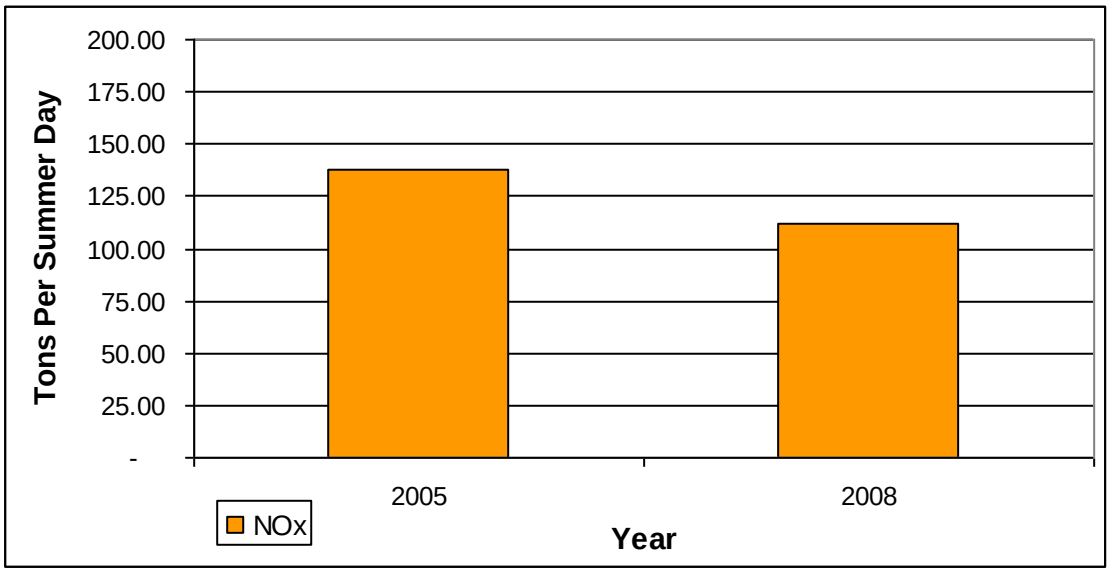
Graph 4.1 NO_x Point Source Emissions, Lawrenceburg Township, Dearborn County, Indiana, 2005 and 2008



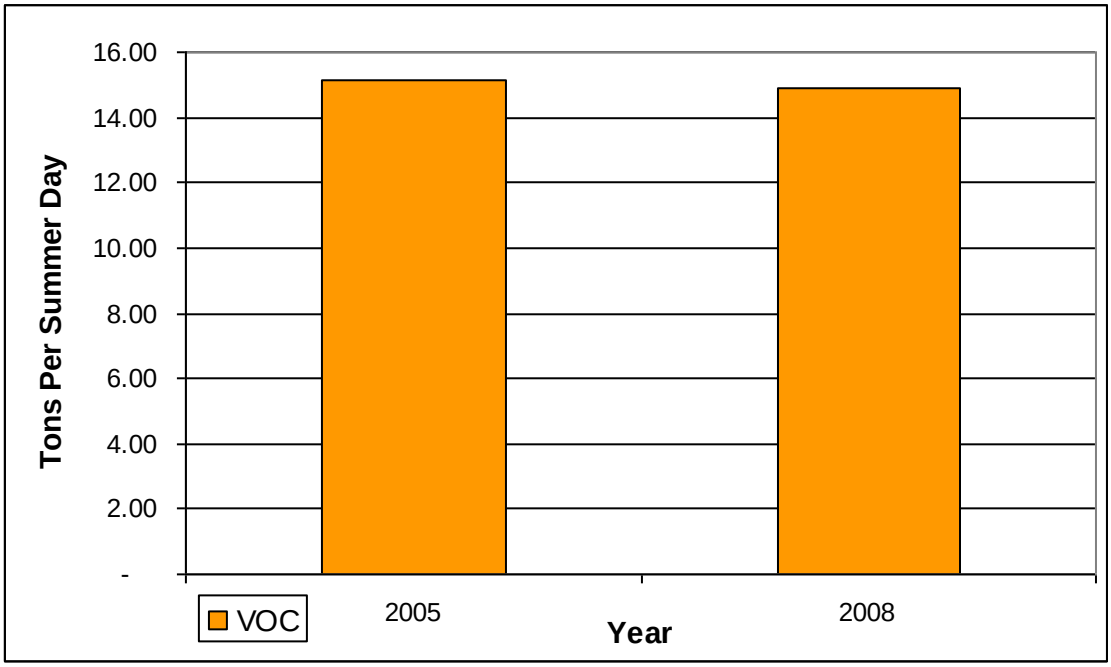
Graph 4.2 VOC Point Source Emissions, Lawrenceburg Township, Dearborn County, Indiana, 2005 and 2008



Graph 4.3 NO_x Point Source Emissions, Entire Nonattainment Area, 2005 and 2008



Graph 4.4 VOC Point Source Emissions, Entire Nonattainment Area, 2005 and 2008



EGU Sources

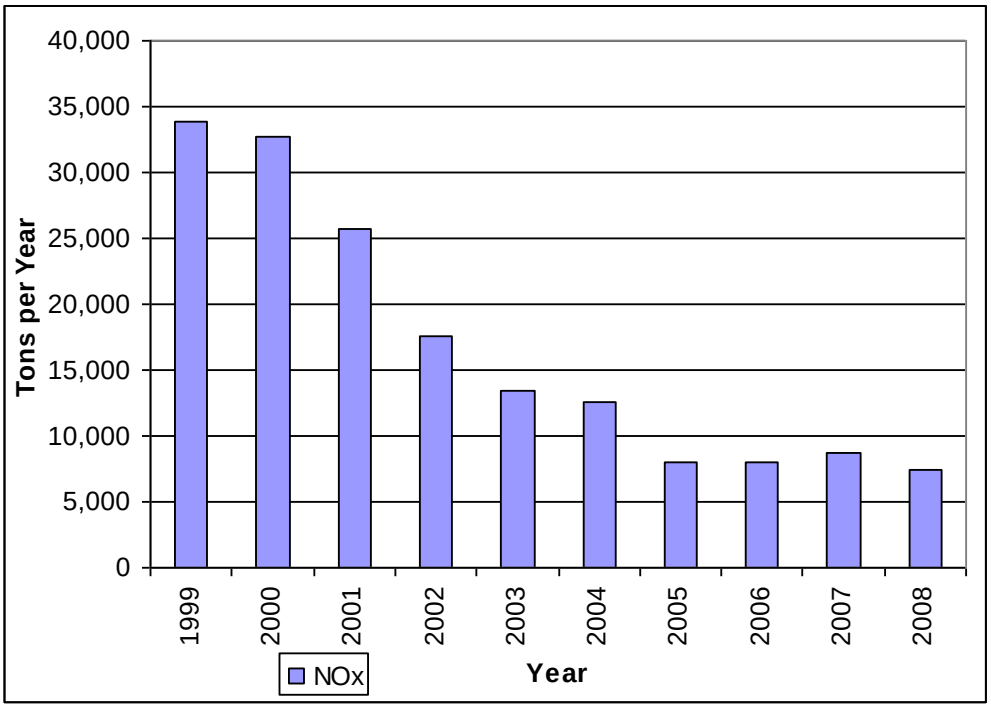
Graph 4.5 shows the trend in NO_x emissions from the American Electric Power (AEP)-Tanners Creek Generating Station in Lawrenceburg Township, Dearborn County, Indiana. Graph 4.6 depicts the trends in NO_x emissions from EGUs for the entire nonattainment area. While ozone and its precursors are also transported into this region from outside areas, this information does provide some indication of the impact that the EGUs located in the nonattainment area may have on the entire 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. Graphs and data tables of emissions from each EGU source are available in Appendix D.

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 NO_x 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 NO_x SIP Call budget period began May 31, 2004.

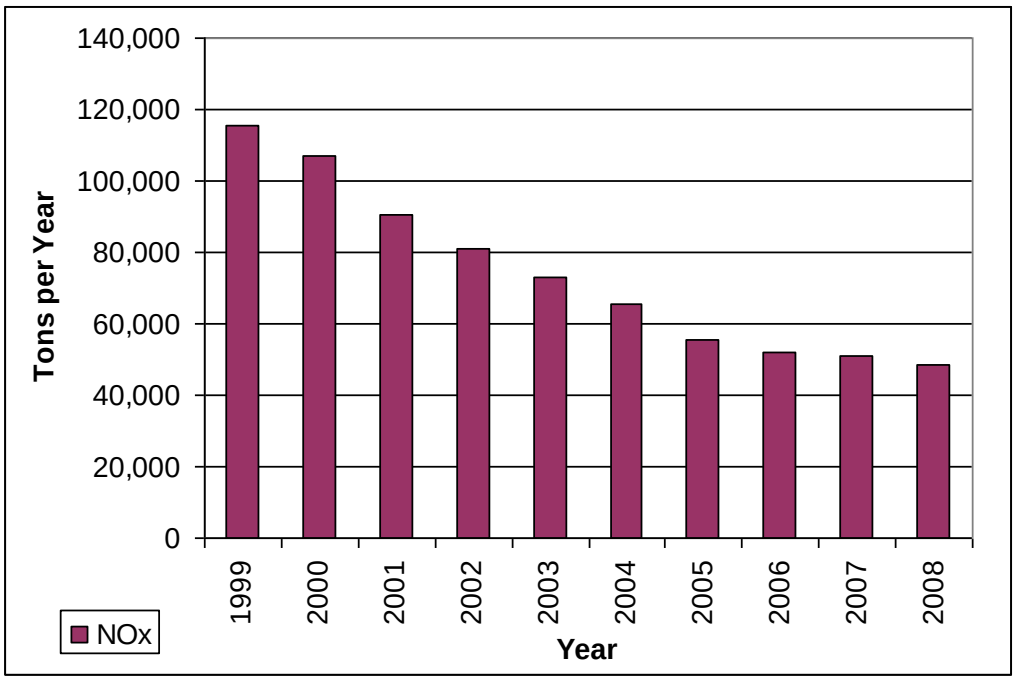
As part of the NO_x SIP Call, the states were required to adopt into their rules a budget for all large EGUs. Indiana's budget is found in Indiana's rules at 326 IAC 10-4. The budget represents a statewide cap on NO_x emissions. Although each unit is allocated emissions based upon historic heat input, 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 as 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.

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

Graph 4.5 NO_x Emissions from Lawrenceburg Township, Dearborn County, Indiana Electric Generating Unit American Electric Power-Tanners Creek Generating Station, 1999-2008



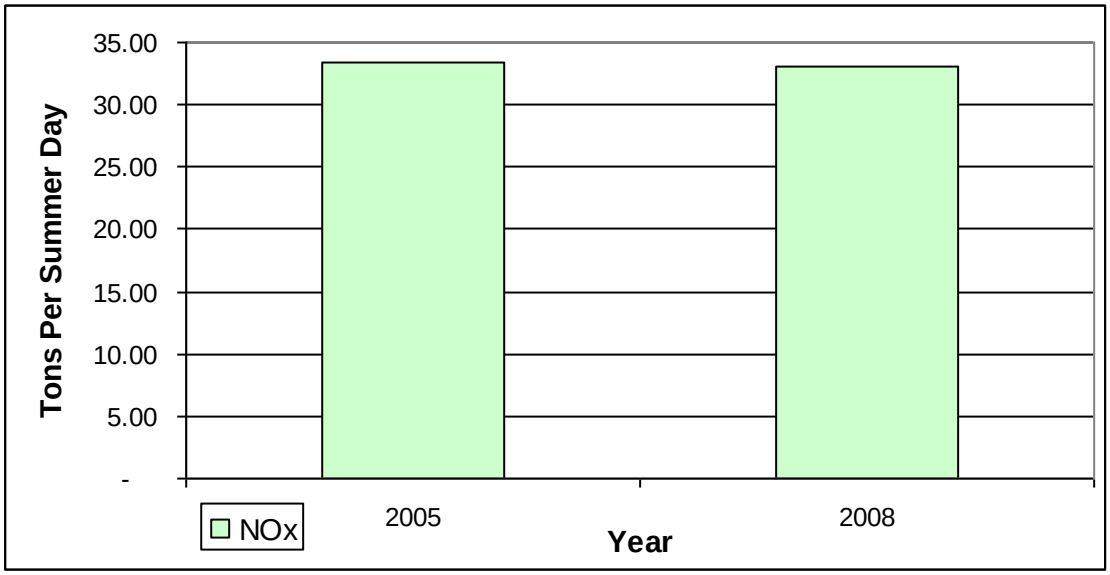
Graph 4.6 NO_x Emissions from Entire Nonattainment Area Electric Generating Units, 1999-2008



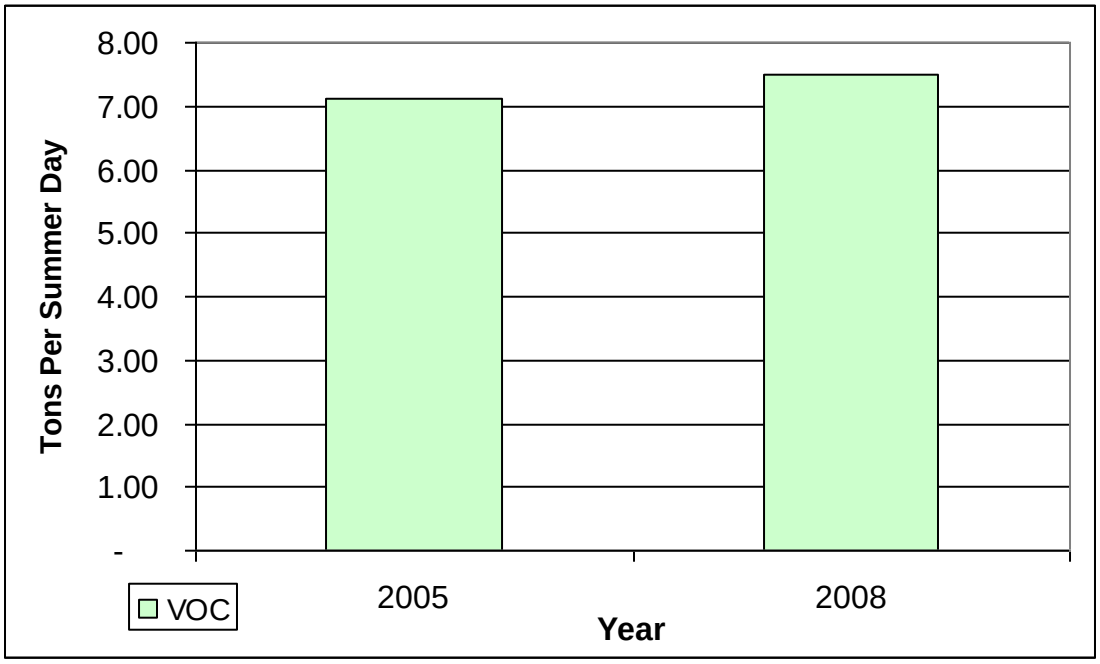
All Anthropogenic Sources

Periodic inventories, which include emissions from all sectors (mobile, area, nonroad and point sources) were prepared for 2005 and will be prepared soon for 2008. The 2008 point source data for Lawrenceburg Township, Dearborn County, Indiana is taken from Indiana's annual emissions reporting program. All other emission sources were extrapolated from Indiana's 2005 periodic inventory submitted to U.S. EPA. Graphs 4.7 and 4.8 show the trends for the total emissions for NO_x and VOC for all anthropogenic source categories within Dearborn County, and Graphs 4.9 and 4.10 show the trends for the entire nonattainment area, which also roughly follow the years of monitored air quality trends discussed in Section 3.0. Although Indiana's portion of the nonattainment area shows an increase in VOC, overall anthropogenic emissions in the entire nonattainment area have decreased as can be seen in Graph 4.10. Graphs and data tables of emissions from each source category are available in Appendix C. IDEM received emissions information for the Ohio and Kentucky portions of the nonattainment area for the years 2005, 2008, 2015 and 2020 from the Ohio EPA and Kentucky Division for Air Quality.

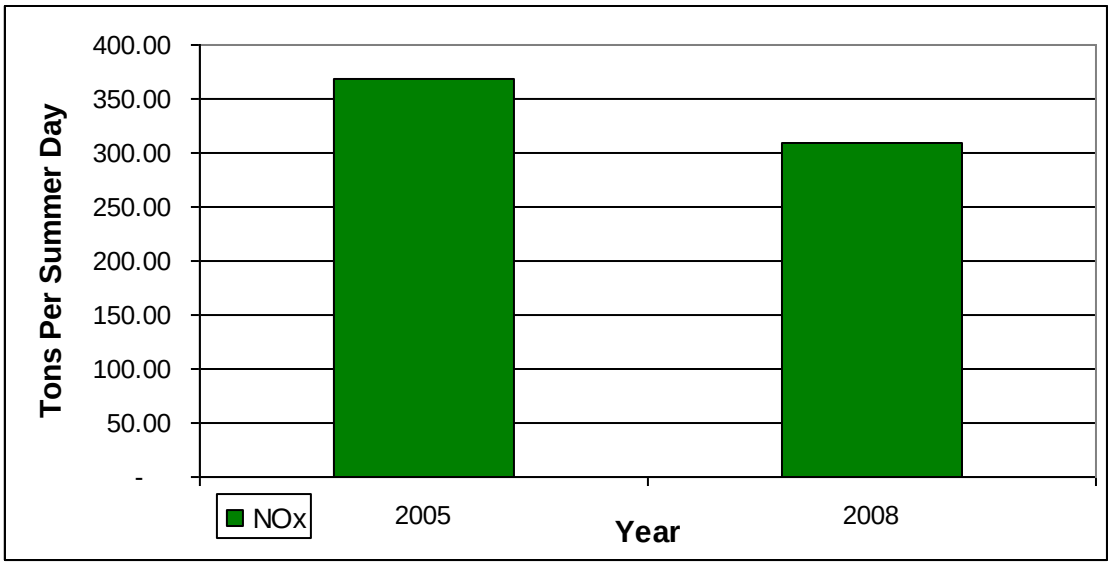
Graph 4.7 NO_x Emissions Trends, 2005 and 2008, All Anthropogenic Sources in Lawrenceburg Township, Dearborn County



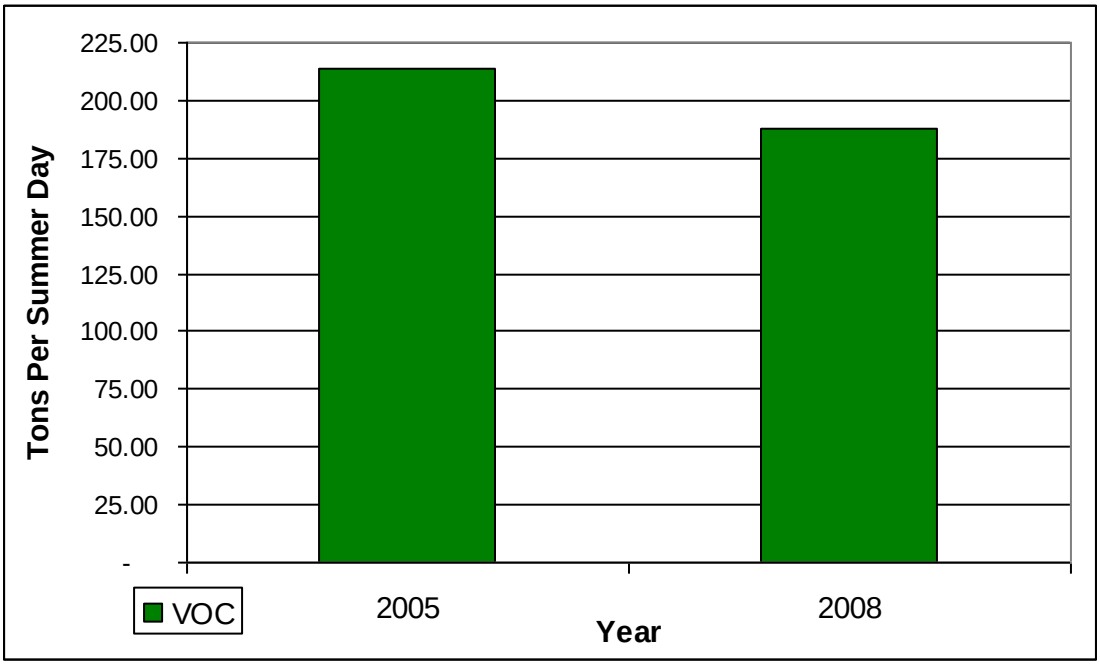
Graph 4.8 VOC Emissions Trends, 2005 and 2008, All Anthropogenic Sources in Lawrenceburg Township, Dearborn County



Graph 4.9 NO_x Emissions Trends, 2005 and 2008, All Anthropogenic Sources-Entire Nonattainment Area



Graph 4.10 VOC Emissions Trends, 2005 and 2008, All Anthropogenic Sources-Entire Nonattainment Area



4.2 Base Year Inventory

IDEM prepared a comprehensive inventory for Lawrenceburg Township, Dearborn County, including area, mobile, nonroad and point sources for precursors of ozone (VOC and NO_x) for the base year 2008.

- Area sources were extrapolated from the Indiana 2005 periodic inventory submitted to U.S. EPA.
- Mobile source emissions were calculated from MOBILE6.2 produced emission factors and data extracted from the region's travel-demand model. Several adjustments were made to the travel demand model and calculation methodology since 1996. As a result, since the 1996, 1999 and 2002 emission inventories were prepared with slightly different methodology, they do not provide a true comparison with the 2004 through 2020 estimates. The fluctuations referenced in the data, particularly 1996 through 2002 NO_x emissions, are due to changes in the calculation methodology, not necessarily actual mobile source emissions.
- Point source information was compiled from IDEM's 2008 annual emissions statement database and the 2008 U.S. EPA Air Markets acid rain database[3].
- Biogenic emissions are not included in these summaries.
- Nonroad emissions for 2008 were extrapolated from the 2005 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),

[3] http://camddataandmaps.epa.gov/gdm/

contracted with two (2) companies to review the base data and make recommendations. One of the contractors also estimated emissions for two (2) categories not included in U.S. EPA's nonroad model and reviewed model inputs for another. 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 by the other contractor. A new nonroad estimation model was provided by U.S. EPA for the 2002 analysis. The 1996 and 1999 nonroad emission estimates were generated by a previous U.S. EPA model, and thus, cannot provide a true comparison. The fluctuations referenced in the data could be due to changes in the model and methodology and do not necessarily reflect changes in emissions.

IDEM received emissions information for the Ohio and Kentucky portions of the nonattainment area for the years 2005, 2008, 2015 and 2020 from the Ohio EPA and Kentucky Division for Air Quality. This inventory was prepared using similar methodologies.

Appendices B, C and E contain 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 NO_x and VOC emissions inventories for 2015[4] and 2020[5].

IDEM, with assistance from LADCO, prepared NO_x and VOC emission projections for 2015 and 2020 for Indiana's portion of the nonattainment area. IDEM received emissions information for Ohio and Kentucky portions of the nonattainment area for the years 2005, 2008, 2015 and 2020 from the Ohio EPA and Kentucky Division for Air Quality.

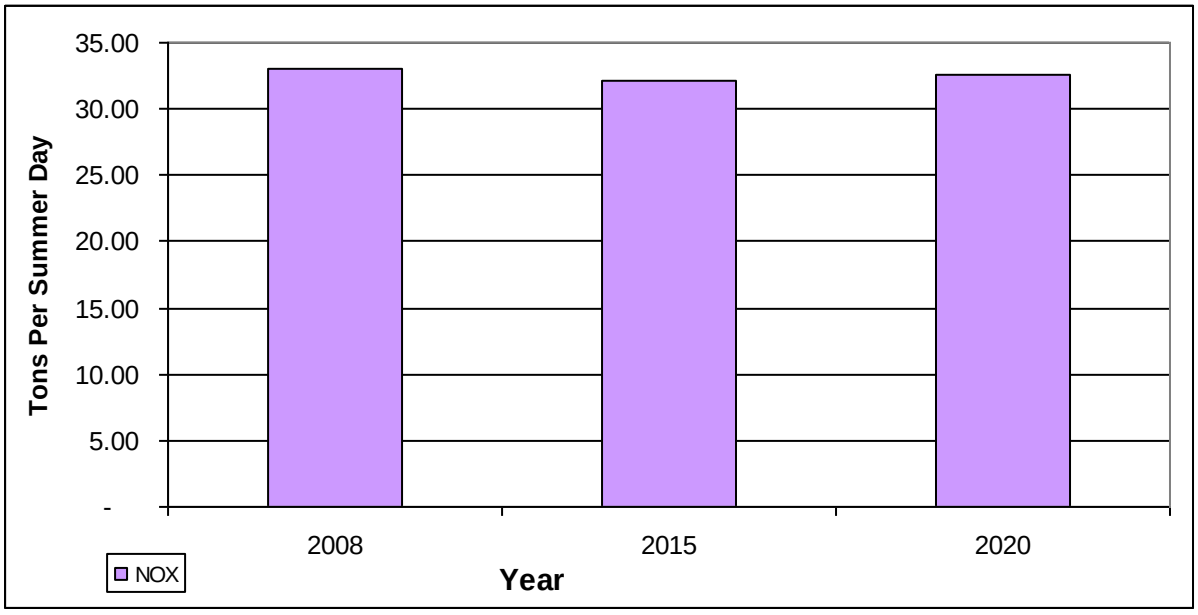
The detailed NO_x and VOC inventory information for the entire nonattainment area for 2015 and 2020 is in Appendix E. NO_x and VOC emission trends are an important gauge for continued compliance with the ozone standard. Therefore, IDEM performed an initial comparison of the NO_x and VOC inventories for the base year (2008), interim year (2015) and maintenance year (2020) for Lawrenceburg Township, Dearborn County. Graphs 4.11 and 4.12 visually compare the 2008 (base year) estimated NO_x and VOC emissions with the 2015 and 2020 projected emissions for Lawrenceburg Township, Dearborn County, and Graphs 4.13 and 4.14 visually compare the 2008 (base year) estimated NO_x and VOC emissions with the 2015 and 2020 projected emissions for the entire nonattainment area. Graphs 4.15 and 4.16 visually compare the 2008 (base year) estimated NO_x and VOC emissions with the 2015 and 2020 projected emissions for Lawrenceburg Township to the Kentucky and Ohio portions of the nonattainment area. Mobile source emission inventories are described in Section 5.0. In addition to LADCO's

[4] In Section 4.3 all emissions projections for area, non-road, and point/EGU emission projections for the year 2015 are based on 2009 emission estimates.

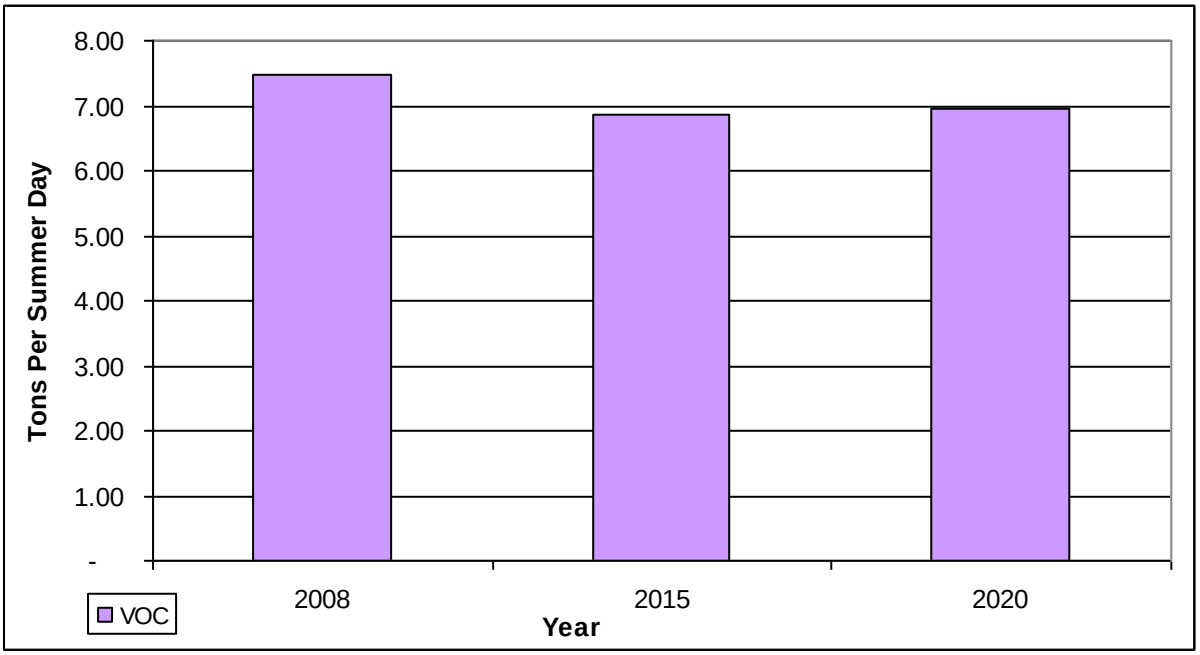
[5] In Section 4.3 all emission projections for area, non-road, and point/EGU emission projections for the year 2020 are based on 2018 emission estimates.

estimates, NO_x emissions were projected based on the statewide EGU NO_x budgets from the Indiana NO_x rule. Although Indiana's portion of the nonattainment area shows a slight increase in emissions from 2015 to 2020 for both NO_x and VOC, overall anthropogenic emissions in the entire nonattainment area have decreased as can be seen in Graph 4.13 and Graph 4.14

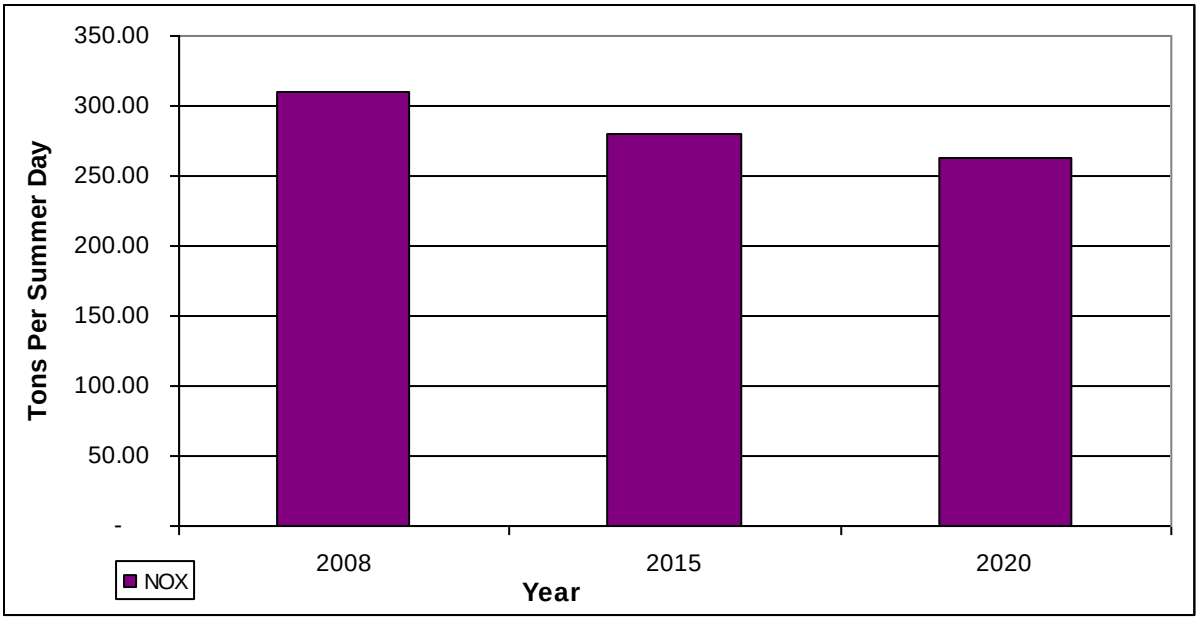
Graph 4.11 Comparison of 2008 Emissions and 2015 and 2020 Projected NO_x Emissions for Lawrenceburg Township, Dearborn County



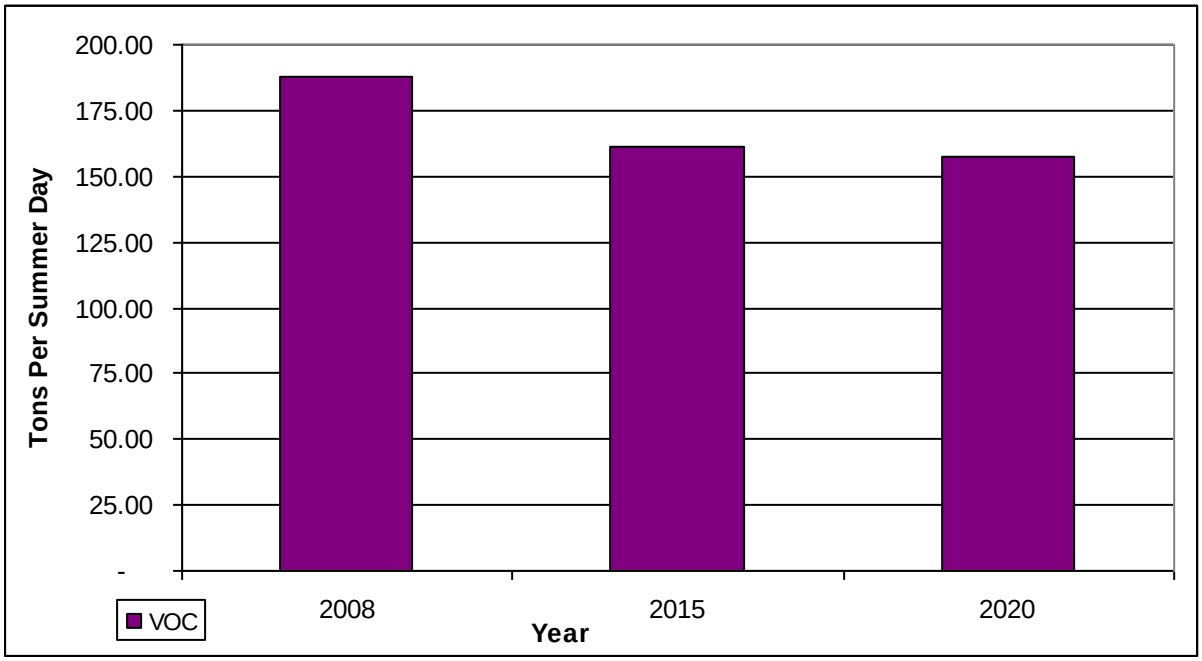
Graph 4.12 Comparison of 2008 Emissions and 2015 and 2020 Projected VOC Emissions for Lawrenceburg Township, Dearborn County



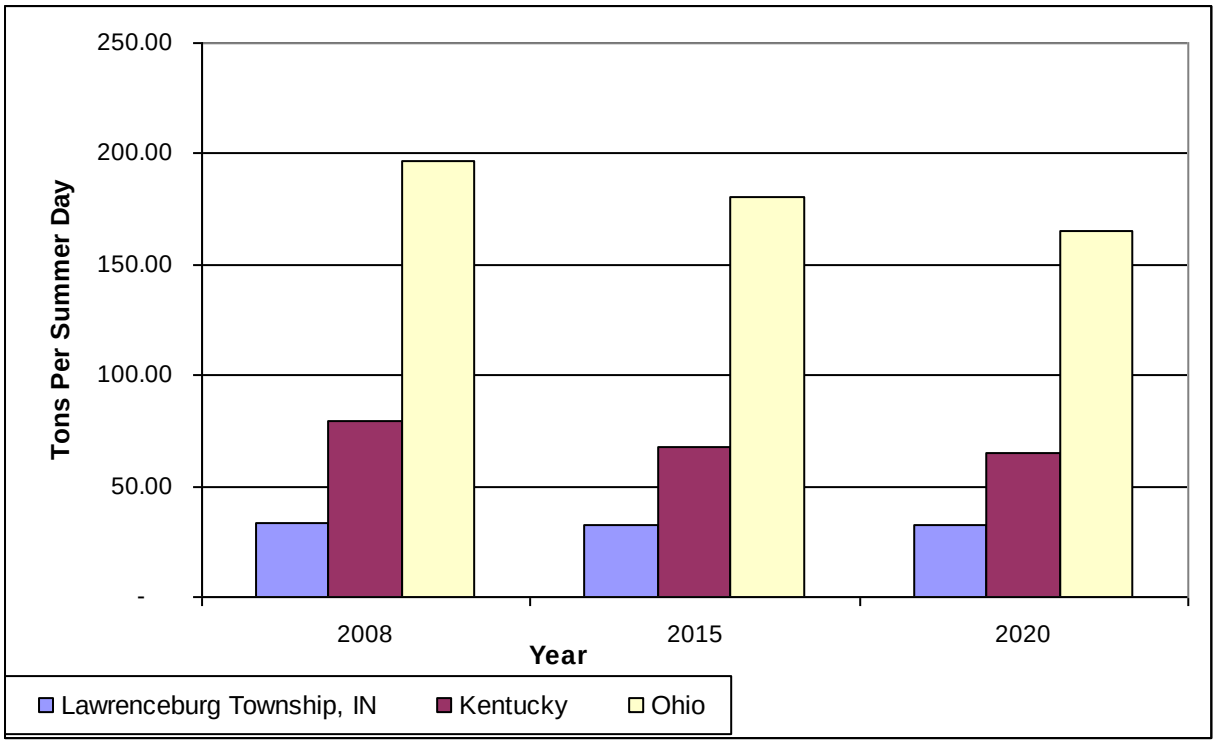
Graph 4.13 Comparison of 2008 Emissions and 2015 and 2020 Projected NO_x Emissions for the Entire Nonattainment Area



Graph 4.14 Comparison of 2008 Emissions and 2015 and 2020 Projected VOC Emissions for the Entire Nonattainment Area



Graph 4.15 Comparison of 2008 Emissions and 2015 and 2020 Projected NO_x Emissions for Lawrenceburg Township, Dearborn County Indiana and Kentucky and Ohio



Graph 4.16 Comparison of 2008 Emissions and 2015 and 2020 Projected VOC Emissions for Lawrenceburg Township, Dearborn County Indiana and Kentucky and Ohio

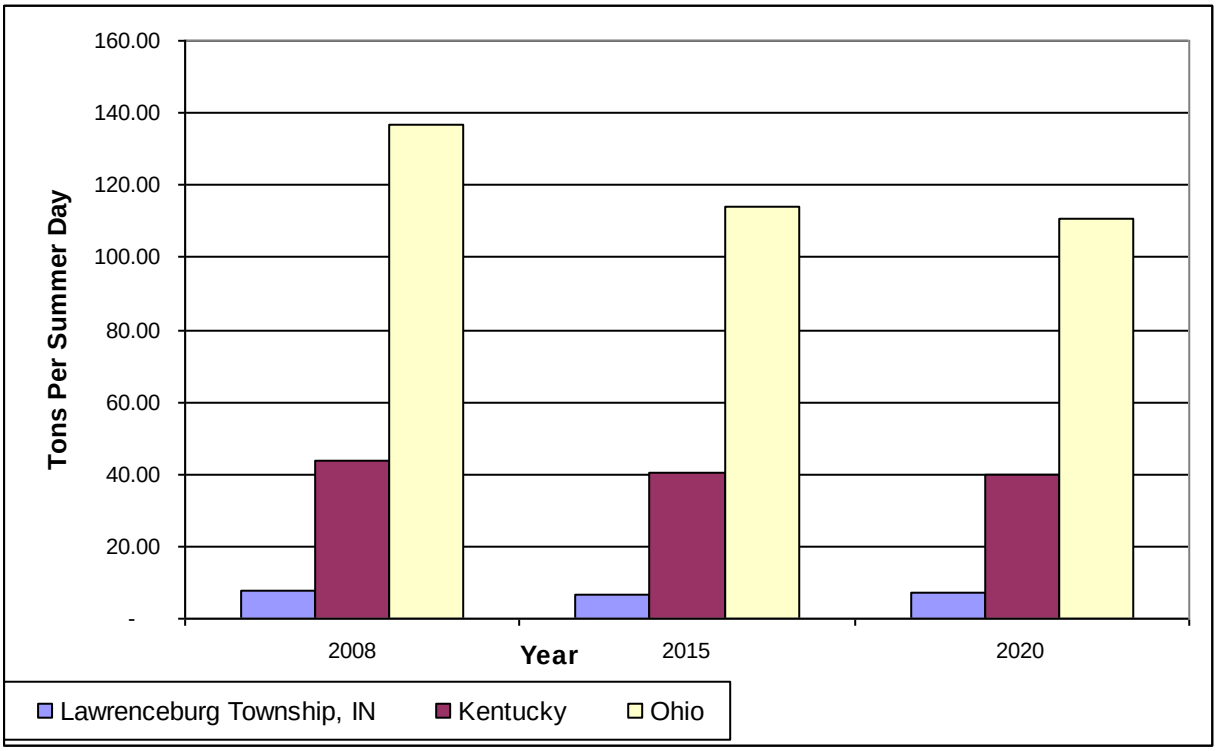


Table 4.1 Comparison of 2008 Emissions and 2020 Projected NO_x and VOC Emission Estimates, All Anthropogenic Sources in Lawrenceburg Township, Dearborn County, Indiana (Tons per Summer Day)

	2008	2020	Change	% Decrease
NO_x	33.09	32.56	-0.53	1.60%
VOC	7.49	6.96	-0.53	7.07%

Table 4.2 Comparison of 2008 Emissions and 2020 Projected NO_x and VOC Emission Estimates, All Anthropogenic Sources in the Entire Nonattainment Area (Tons Per Summer Day)

	2008	2020	Change	% Decrease
NO_x	309.47	262.47	47.00	15.18%
VOC	187.78	157.37	30.41	16.19%

VOC emissions within Lawrenceburg Township, Dearborn County are projected to decline by 7.07% between 2008 and 2020 and by 16.19% in the entire nonattainment area. NO_x emissions within Lawrenceburg Township, Dearborn County are projected to decline by 1.60% between 2008 and 2020 and by 15.18% in the entire nonattainment area. Emission reduction benefits

from U.S. EPA rules covering the NO_x SIP Call, Tier 2 Motor Vehicle Emissions Standards and Gasoline Sulfur Control Requirements[6], Heavy-Duty Highway Engine Rule[7] and Nonroad Diesel Engine Rule[8] are factored into the changes. Further, due to implementation of the NO_x SIP Call across the eastern United States, NO_x and ozone levels entering this area will decrease.

4.4 Demonstration of Maintenance

Ambient air quality data from all monitoring sites indicate that air quality in the entire Cincinnati-Hamilton OH-KY-IN nonattainment area met the NAAQS for ozone in 2009. U.S. EPA's Redesignation Guidance (pg. 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." Emissions projections outlined in Section 4.0 of this document clearly illustrate that VOC and NO_x emissions in Lawrenceburg Township, Dearborn County and the entire nonattainment area will continue to decline between 2008 (base year) and 2020. 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 ozone NAAQS through the projected years of 2015 and 2020.

In Indiana, major point sources in all counties are required to submit air emissions information once every three (3) years or annually if the VOC potential to emit is greater than 250 tons per year or the NO_x potential to emit is greater than 2,500 tons per year, in accordance with Indiana's Emission Statement Rule at 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 2011, 2014 and 2017, as necessary, to comply with the inventory reporting requirements established in the CAA. Emissions information will be compared to the 2008 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 VOCs and NO_x have resulted in attainment of the 8-hour ozone standard. Some of these reductions were due to the application of Reasonably Available Control Technology (RACT) rules and some were due to the application of tighter federal standards on new vehicles. In addition, Title IV of the Clean Air Act and the NO_x SIP Call required the reduction of NO_x from utility sources. Section 6.0 identifies the emission control measures specific to Lawrenceburg Township, Dearborn County, as well as the implementation status of each measure.

---

[6] http://www.epa.gov/fedrgstr/EPA-AIR/2000/February/Day-10/a19a.htm

[7] http://www.epa.gov/fedrgstr/EPA-AIR/1997/October/Day-21/a27494.htm

[8] http://www.epa.gov/fedrgstr/EPA-AIR/1998/October/Day-23/a24836.htm

4.6 Provisions for Future Updates

As required by Section 175A(b) of the CAA, 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 MOBILE SOURCE EMISSION BUDGETS

U.S. EPA requirements outlined in 40 CFR 93.118(e) (4) stipulate that mobile source emissions budgets for VOC and NO_x be established as part of a State Implementation Plan (SIP). The mobile source emissions budgets are necessary to demonstrate conformance of transportation plans and improvement programs with the SIP. The following is a summary of the detailed mobile input and output calculation files located in Appendix F.

5.1 On-Road Emission Estimates

The Ohio-Kentucky-Indiana Regional Council of Governments (OKI) is the Metropolitan Planning Organization (MPO) for the Cincinnati-Hamilton OH-KY-IN area which includes Dearborn County in Indiana; Butler, Clermont, Clinton, Hamilton, and Warren Counties in Ohio; as well as, Boone, Campbell and Kenton Counties in Kentucky. This organization maintains a travel demand forecasting model that is used to simulate the traffic in the area and to predict what traffic would be in future years given growth expectations. The model is used mostly to identify where travel capacity will be needed and to determine the infrastructure requirements necessary to meet that need. It is also used to support the calculation of mobile source emissions. The travel demand forecasting model is used to predict the total daily vehicle miles traveled (VMT) and the U.S. EPA software program referred to as MOBILE6.2 is used to produce emission factors to calculate the emissions per mile. The product of these two outputs, once combined, is the total amount of pollution emitted by on-road vehicles for the particular analyzed area.

5.2 Overview

Broadly described, MOBILE6.2 is used to generate “emission factors”, which are the average emissions per mile (grams/mile) for ozone precursors: NO_x and VOC. 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 affect on the emission factors. The facility-type the vehicles are traveling on (MOBILE6.2 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 affect the emission factors, as does fuel type, such as low RVP gasoline. These data are estimated using the *best available data* to generate emission factors for the appropriate ozone precursors, NO_x and VOC. After emission factors are generated, the emission factor(s) must be multiplied by the VMT to determine the quantity of vehicle-related emissions. This information derives from the travel demand model (TDM).

It should be noted that each year analyzed will have different emission factors, volumes, speeds and likely some additional links. MOBILE6.2 input and output files can all be found in Appendix F.

5.3 Emission Estimations

Table 5.1 outlines the on-road emission estimates for the entire nonattainment area for the years 2005, 2008 (Attainment Year), 2015 (Interim Year) and 2020 (Horizon Year). The following emission estimates are based on the actual TDM network runs for the years 2005, 2008, 2015 and 2020.

Table 5.1
Emission Estimations for On-Road Mobile Sources
for the Cincinnati-Hamilton OH-KY-IN Ozone Nonattainment Area

Cincinnati-Hamilton OH-KY-IN NA Area	**2005**	**2008**	**2015**	**2020**
VOC (tons/day)	69.43	55.47	35.35	32.14
NO_x (tons/day)	136.73	113.45	51.04	38.17
Lawrenceburg Township (Dearborn County Indiana) subtotal				
VOC (tons/day)	1.00	0.75	0.50	0.42
NO_x (tons/day)	1.44	1.14	0.60	0.42
Lawrenceburg Township subtotal %				
VOC (tons/day)	1.44	1.35	1.41	1.31
NO_x (tons/day)	1.05	1.00	1.18	1.10

Table 5.2 contains the 2015 and 2020 regional motor vehicle emissions budgets for the Ohio and Indiana portions of the nonattainment area.

Table 5.2
Motor Vehicle Emission Budgets (MVEB) for the
Ohio and Indiana Portions of the Cincinnati-Hamilton OH-Ky-IN Ozone Nonattainment Area

	2015	**2020**
VOC (tons/day)	31.73	28.82
NO_x (tons/day)	49.00	34.39

This document creates an Interim Year Motor Vehicle Emission Budgets (MVEB) for 2015 and a Horizon Year MVEB for 2020 for the Ohio and Indiana portions of the nonattainment area.

These budgets are based on the 2008 on-road emission inventory used to support photochemical modeling for the same year, and has incorporated a fifteen (15) percent safety margin as described below.

Initial Base M (2005) CAMx modeling results indicated a worst case future design value in the Cincinnati-Hamilton OH-KY-IN nonattainment area of 83 ppb. In an effort to accommodate future variations in TDMs and vehicle miles traveled forecast when no change to the network is planned, Indiana consulted with the interagency consultation group, including U.S. EPA – Region 5, to determine a reasonable approach to address this variation. Based on this discussion, a fifteen (15) percent safety margin was approved and has been added to the MVEB for the Ohio and Indiana portions of this nonattainment area.

A fifteen (15) percent safety margin is appropriate because; 1) there is an acknowledged potential variation in VMT forecast and potential estimated mobile source emissions due to expected modifications to TDM and mobile emissions models; and 2) the total decrease in emissions from all sources is sufficient to accommodate this fifteen (15) percent allocation of safety margin to mobile sources while still continuing to maintain total emissions in the Cincinnati-Hamilton OH-KY-IN area well below the 2008 attainment level of emissions. This fifteen (15) percent safety margin was calculated by adding a straight-line fifteen (15) percent to the mobile source emission estimates for the years 2015 and 2020. Safety margin, as defined by the conformity rule, looks at the total emissions from all sources in the nonattainment area. The actual allocation is less than fifteen (15) percent of the total emission reduction from all sources as can be seen from Tables 4.1 and 4.2.

In summary, for all three states combined, the mobile budget safety margin allocation translates into:

- An allocation of 6.14 tons/day for VOC and 9.39 tons/day for NO_x for 2015; and
- An allocation of 6.76 tons/day for VOC and 9.49 tons/day for NO_x for 2020.

40 CFR 93.101 defines safety margin as the amount by which the total projected emissions from all sources of a given pollutant area less than the total emissions that would satisfy the applicable requirement for reasonable further progress, attainment, or maintenance. When compared to the overall safety margin as defined by 40 CFR 93.101, it is evident this allocation to mobile sources is significantly below the total safety margin for all sources in the Cincinnati-Hamilton OH-KY-IN area as detailed in Tables 4.1 and 4.2.

While Indiana believes that this is sufficient to support the requested increase, Indiana and its partners will be conducting additional air quality modeling which will include the adjusted on-road mobile emissions as well as any additional corrections and modifications that may be necessary due to the constant review and evaluation of the model inputs.

Appendix F of this document provides a detailed description of how the above budgets were established and also documents the consultation and coordination process among the effected environmental and transportation planning agencies in establishing the budgets.

6.0 CONTROL MEASURES AND REGULATIONS

This section provides specific information on the control measures implemented in Lawrenceburg Township, Dearborn County, including CAA requirements and additional state or local measures implemented beyond CAA requirements.

6.1 Reasonably Available Control Technology (RACT)

As required by Section 172 of the CAA, in the mid-1990s, Indiana promulgated rules requiring RACT for emissions of VOCs. There were no specific rules required by the CAA such as RACT for existing sources beyond statewide rules. Statewide 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 Best Available Control Technology-New Facilities
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

Additional rules specifically applicable to Lawrenceburg Township, Dearborn County are summarized in Section 6.4.

6.2 Implementation of Past SIP Revisions

Lawrenceburg Township, Dearborn County was not required to develop an Attainment Demonstration SIP for the 1-hour NAAQS. The area was designated nonattainment for 8-hour ozone NAAQS in April 2004. Indiana previously submitted an Attainment Demonstration for Lawrenceburg Township, Dearborn County on June 13, 2007, but the area has now attained the standard. 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 states to adopt 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 accounts for a reduction of approximately thirty-one percent (31%) of all NO_x emissions statewide compared to the previous uncontrolled years.

Twenty-one other states have also adopted these rules. The result is that significant reductions have occurred regionally and upwind within the nonattainment area because of the number of affected units within the region. Graphs 4.5 and 4.6 show that emissions covered by this program have been trending downward since 1999. 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 (Acid Rain) of the CAA and the NO_x SIP Call Rule.

Further, U.S. EPA more recently published Phase II of the NO_x SIP Call that established a budget for large (greater than 1 ton per day emissions) stationary internal combustion engines. This rule decreases emissions statewide from natural gas compressor stations by 4,263 tons during the ozone season. The Indiana Phase II NO_x SIP Call rule became effective February 26, 2006 and implementation began in 2007.

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

Statewide Indiana NO_x Emissions from EGUs	
Year	**NOx Emissions (Tons per Year)**
1999	347,216.5
2000	334,522.1
2001	315,419.7
2002	281,146.1
2003	260,980.0
2004	224,311.3
2005	207,981.6
2006	202,728.0
2007	196,553.1
2008	196,134.5
Budget 2009-2014	108,935.0

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 2 Emission Standards for Vehicles and Gasoline Sulfur Standards[9]

In February 2000, U.S. EPA finalized a federal rule to significantly reduce emissions from light-duty trucks, including SUVs to meet an average standard of 0.07 grams of NO_x per mile. Implementation began in 2004 and was completed in 2007. The Tier 2 standards also cover passenger vehicles over 8,500 pounds gross vehicle weight rating (large pickup trucks and SUVs), which are not covered by the current Tier 1 standards. For these vehicles, the standards were phased in beginning in 2008, with full compliance in 2009. The new standards require vehicles to be 77% to 95% cleaner than those on the road prior to the new standards. The standards also reduced the sulfur content of gasoline to 30 ppm beginning in January 2006.

Heavy-Duty Diesel Engines[10]

In July 2000, U.S. EPA issued a final rule for Heavy Duty Highway Engines, a program that includes low-sulfur diesel fuel standards that took effect in 2004. A second phase of standards and testing procedures took effect in 2007 that reduced highway diesel fuel

9 http://www.epa.gov/fedrgstr/EPA-AIR/2000/February/Day-10/a19a.htm
10http://www.epa.gov/fedrgstr/EPA-AIR/1997/October/Day-21/a27494.htm

sulfur content to 15 ppm. The total program is expected to achieve a 95% reduction in NO_x from diesel trucks and buses, a large sector of the mobile sources NO_x inventory.

Clean Air Nonroad Diesel Rule[11]

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) parts per million (ppm) now to (fifteen) 15 ppm in 2015. 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 their implementation.

Local Reductions

Several permanent and enforceable reductions in emissions from local point sources have occurred beyond Clean Air Act Requirements.

The American Electric Power (AEP) -Tanner's Creek Generating Station power plant, located in Lawrenceburg Township in Dearborn County, is covered by a consent decree and several, but not all, electric generating units will have to apply controls. Currently, the power plant is controlled by low NO_x burner technology (dry bottom only) and overfire air. AEP-Tanner's Creek Generating Station will be installing selective non-catalytic reduction systems on three of its four electric generating units, with operation to begin in early 2010. This will achieve an additional 30% reduction in NO_x. The reductions from facilities like the AEP-Tanners Creek power plant will help improve air quality in the Cincinnati-Hamilton OH-KY-IN nonattainment area.

6.5 Controls to Remain in Effect

Indiana commits to maintaining the aforementioned control measures after redesignation. Indiana 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 Lawrenceburg Township, Dearborn County, will be submitted to U.S. EPA for approval as a SIP revision.

Indiana, through IDEM's Office of Air Quality (OAQ) and the Office of Legal Counsel 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 Lawrenceburg Township, Dearborn County.

11 http://www.epa.gov/fedrgstr/EPA-AIR/1998/October/Day-23/a24836.htm

6.6 New Source Review Provisions

Indiana has a long standing and fully implemented New Source Review (NSR) program that is outlined in 326 IAC 2. The rule includes 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.

Any facility that is not listed in the 2005 emission inventory, or for the closing of which credit was taken in demonstrating attainment, will not be allowed to construct, reopen, modify, or reconstruct without meeting all applicable permit rule requirements. The review process will be identical to that used for new sources. Once the area is redesignated, Indiana will implement NSR for major sources through the PSD program, which requires an air quality analysis to evaluate whether the new source will threaten the NAAQS.

7.0 MODELING AND METEOROLOGY

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

Although U.S. EPA's Redesignation Guidance does not require modeling for ozone nonattainment areas seeking redesignation, extensive modeling has been performed covering the Cincinnati, Ohio region to determine the effect of national emission control strategies on ozone levels. These modeling analyses determined that the Cincinnati-Hamilton OH-KY-IN 8-hour ozone nonattainment area is significantly impacted by ozone and ozone precursor transport and regional NO_x reductions have helped the area attain the 8-hour standard. These results show that even in the absence of the Clean Air Interstate Rule (CAIR), the area will continue to attain the standard. Modeling results with or without CAIR do not differ significantly because the summertime CAIR program is essentially the same as the NO_x SIP Call, which was already included in the modeling analysis.

7.2 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 the Cincinnati nonattainment area. 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 the Cincinnati-Hamilton OH-KY-IN nonattainment area. Relative Response Factors (RRF) were calculated for each monitor in the Cincinnati-Hamilton OH-KY-IN nonattainment area for future years 2007 and 2020. IDEM has applied these RRFs to the most recent three-year (2007-2009) design values. The resulting future year design values for 2007 and 2020 were calculated and are

shown below in Table 7.1. The 2007 modeled future year design values for all monitors in the Cincinnati-Hamilton OH-KY-IN nonattainment area are in attainment of the 8-hour ozone NAAQS of 0.08 ppm.

Table 7.1
Modeling Results: U.S. EPA HDE Rulemaking for the Cincinnati-Hamilton OH-KY-IN Nonattainment Area

Monitor ID	Monitor Name	County	Design Value 2006-2008	Modeled Relative Response Factor (RRFs)	Future Design Value	Modeled Relative Response Factor (RRFs)	Future Design Value
				2007 Base	2007	2020 Base	2020
390170004	Cincinnati CMSA	Butler	0.080	0.8957	0.072	0.8710	0.074
390171004	Cincinnati CMSA	Butler	0.082	0.8816	0.072	0.8507	0.069
390250020	Cincinnati CMSA	Clermont	0.078	0.8834	0.069	0.8600	0.068
390271002	Cincinnati CMSA	Clinton	0.080	0.8560	0.068	0.8191	0.067
390610006	Cincinnati CMSA	Hamilton	0.085	0.8949	0.076	0.8771	0.074
390610010	Cincinnati CMSA	Hamilton	0.081	0.8826	0.071	0.8749	0.071
390610037	Cincinnati CMSA	Hamilton	0.081	0.9095	0.074	0.8969	0.073
391650006	Cincinnati CMSA	Warren	0.085	0.8851	0.075	0.8576	0.063
210150003	Cincinnati CMSA- KY	Boone	0.071	0.8478	0.060	0.8205	0.071
210371001	Cincinnati CMSA- KY	Campbell	0.081	0.8804	0.073	0.8804	0.067
211170007	Cincinnati CMSA- KY	Kenton	0.078	0.8940	0.069	0.8787	0.074

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

On March 10, 2005, the U.S. EPA finalized 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. Compared to a 2003 baseline, Indiana will reduce NO_x emissions by 113,000 tons by 2009 and 149,000 tons by 2015. To support this rulemaking, U.S. EPA first conducted a base case future year modeling run to show future year concentrations resulting from existing emissions controls and then conducted future year modeling with emission reductions attributed to CAIR. Results in Table 7.2 show what the base case modeled results without CAIR (base) and with CAIR's emission reductions included. The modeling was based on 1999 – 2003 (1999-2001, 2000-2002 and 2001-2003) design values. Future year modeling was conducted, including the Cincinnati-Hamilton OH-KY-IN nonattainment area, and the future year design values for 2010 and 2015 were evaluated for attainment of the 8-hour ozone NAAQS. Results of the base case future year modeling and future year modeling with CAIR show that the area will attain the 8-hour ozone NAAQS in 2010 under both scenarios with modeled concentrations below 0.085 ppm and modeled concentrations decreasing further by 2015. On December 23, 2008, CAIR was remanded without vacatur by the D.C. Circuit Court.

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

County	MSA/CMSA	Design Value (ppm)	Future Design Value (ppm)		Future Design Value (ppm)	
		1999-2003	2010 Base	2010 CAIR	2015 Base	2015 CAIR
Butler	Cincinnati, OH – KY	0.0890	0.0782	0.0780	0.0752	0.0736
Clermont	Cincinnati, OH – KY	0.0900	0.0781	0.0780	0.0751	0.0725
Clinton	Cincinnati, OH – KY	0.0957	0.0817	0.0814	0.0774	0.0757
Hamilton	Cincinnati, OH - KY	0.0893	0.0788	0.0786	0.0758	0.0743
Warren	Cincinnati, OH – KY	0.0920	0.0802	0.0800	0.0766	0.0751
Boone	Cincinnati, OH – KY	0.0853	0.0731	0.0731	0.0710	0.0680
Campbell	Cincinnati, OH – KY	0.0925	0.0816	0.0815	0.0788	0.0768
Kenton	Cincinnati, OH – KY	0.0863	0.0757	0.0756	0.0733	0.0713

7.4 LADCO's Round 5 and Round 6 Modeling for 8-Hour Ozone Standard

LADCO recently performed updated Comprehensive Air Quality Model (CAMx) modeling for ozone, referred to as "Round 5 and Round 6", which used the most recent emissions inventories and model updates. This modeling was performed to support attainment demonstrations for the five-state LADCO region. The photochemical model used by LADCO and Indiana for the 8-hour ozone standard analysis is CAMx, Version 4.5, developed by Environ. This model has been accepted by U.S. EPA as an approved air quality model for regulatory analysis and attainment demonstrations. Requirements of 40 CFR 51.112 as well as the "Guidance on the Use of Models and Other Analyses in Attainment Demonstrations for the 8-Hour Ozone NAAQS" (EPA-454/R-05-002, Oct. 2005) are satisfied with the use of CAMx for attainment demonstrations. Meteorology from 2005, as well as 2005 base year emissions, were used to conduct the modeling. The ozone modeling metrics for bias, error, fractional bias, and fractional error met U.S. EPA modeling guidance performance criteria. The base-year design value for attainment purposes was calculated from the periods 2003 - 2005, 2004 - 2006 and 2005 - 2007.

Round 5 modeling included several scenarios for attaining the ozone NAAQS. One scenario included the implementation of "on-the-books" controls for future years such as U.S. EPA motor vehicle and fuel standards with the inclusion of CAIR. Round 6 modeling included the implementation of "on-the-books" controls, similar to the Round 5 modeling except without the inclusion of CAIR. The future years modeled were 2009, 2012 and 2018. Modeling results, in Table 7.3 and 7.4 below, show ozone concentrations in the Cincinnati-Hamilton OH-KY-IN nonattainment area below the 8-hour ozone standard in 2009.

Table 7.3
Application of Round 5 RRFs (with CAIR) to Most Current Base-Year Design Values

Monitor ID	Site	2003-2007 Base DV	2009 RRF	2009 Future DV	2012 RRF	2012 Future DV	2018 RRF	2018 Future DV
390170004	Butler Co. - OH	**0.0833**	0.947	**0.078**	0.922	**0.076**	0.851	**0.070**
390171004	Butler Co. - OH	**0.0823**	0.95	**0.078**	0.925	**0.076**	0.853	**0.070**
390250022	Clermont Co. - OH	**0.0810**	0.962	**0.077**	0.941	**0.076**	0.877	**0.071**
390271002	Clinton Co. - OH	**0.0823**	0.941	**0.077**	0.910	**0.074**	0.830	**0.068**
390610006	Hamilton Co. - OH	**0.0847**	0.967	**0.081**	0.948	**0.080**	0.881	**0.074**
390610010	Hamilton Co. - OH	**0.0820**	0.955	**0.078**	0.934	**0.076**	0.878	**0.071**
390610040	Hamilton Co. - OH	**0.0817**	0.975	**0.079**	0.958	**0.078**	0.900	**0.073**
391650007	Warren Co. - OH	**0.0877**	0.947	**0.083**	0.921	**0.080**	0.846	**0.074**
210150003	Boone Co. - KY	**0.0753**	0.949	**0.071**	0.919	**0.069**	0.856	**0.064**
210370003	Campbell Co. – KY	**0.0853**	0.978	**0.083**	0.962	**0.082**	0.906	**0.077**
211170007	Kenton Co. - KY	**0.0783**	0.965	**0.075**	0.949	**0.074**	0.898	**0.070**

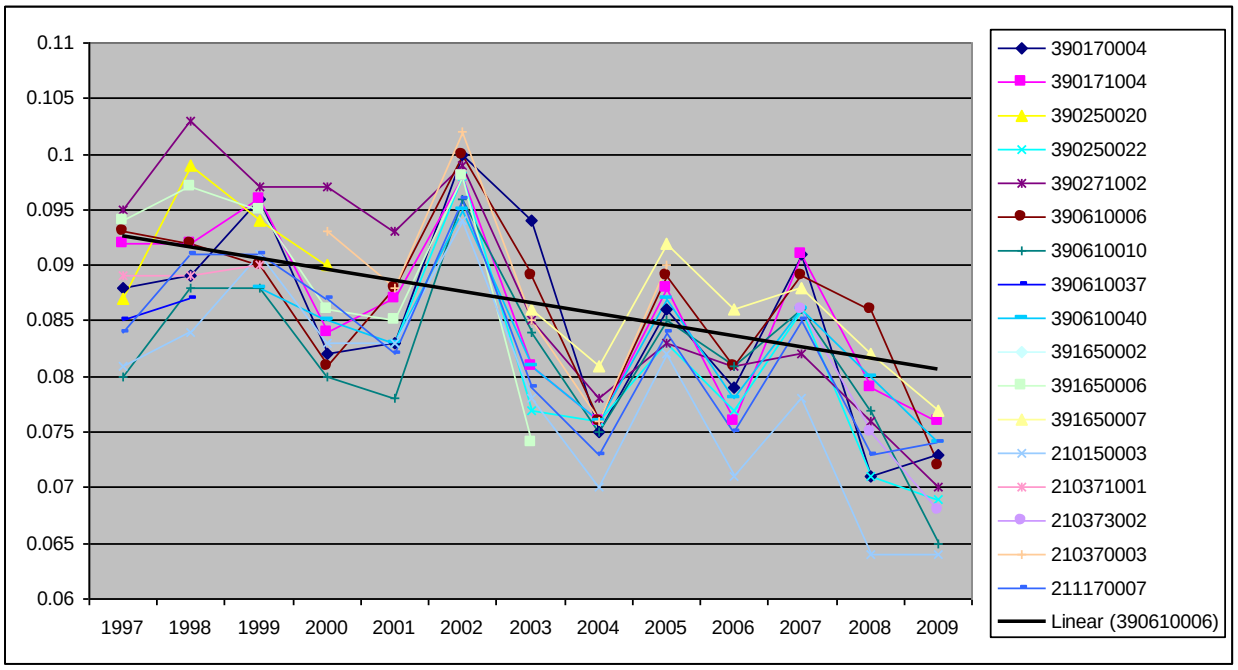
Table 7.4
Application of Round 6 RRFs (without CAIR) to Most Current Base-Year Design Values

Monitor ID	Site	2003-2007 Base DV	2009 RRF	2009 Future DV	2012 RRF	2012 Future DV	2018 RRF	2018 Future DV
390170004	Butler Co. - OH	**0.0833**	0.947	**0.0789**	0.925	**0.0771**	0.868	**0.0723**
390171004	Butler Co. - OH	**0.0823**	0.948	**0.0781**	0.927	**0.0763**	0.868	**0.0715**
390250022	Clermont Co. - OH	**0.0810**	0.955	**0.0774**	0.939	**0.0761**	0.893	**0.0723**
390271002	Clinton Co. - OH	**0.0823**	0.94	**0.0774**	0.913	**0.0752**	0.849	**0.0699**
390610006	Hamilton Co. - OH	**0.0847**	0.962	**0.0814**	0.947	**0.0802**	0.898	**0.0760**
390610010	Hamilton Co. - OH	**0.0820**	0.953	**0.0781**	0.935	**0.0767**	0.892	**0.0731**
390610040	Hamilton Co. - OH	**0.0817**	0.964	**0.0787**	0.952	**0.0777**	0.912	**0.0742**
391650007	Warren Co. - OH	**0.0877**	0.944	**0.0828**	0.92	**0.0807**	0.857	**0.0751**
210150003	Boone Co. - KY	**0.0753**	0.945	**0.0712**	0.925	**0.0697**	0.878	**0.0661**
210370003	Campbell Co. – KY	**0.0853**	0.968	**0.0829**	0.957	**0.0817**	0.920	**0.0785**
211170007	Kenton Co. - KY	**0.0783**	0.961	**0.0753**	0.948	**0.0743**	0.912	**0.0714**

7.5 Summary of Existing Modeling Results

U.S. EPA and LADCO modeling shows that existing national emission control measures have brought counties in the Cincinnati-Hamilton OH-KY-IN nonattainment area 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 CAIR has shown future year design values for counties in the Cincinnati-Hamilton OH-KY-IN nonattainment area will attain the ozone standard with modeled future year design values below 0.085 ppm. Review of the design values of the ozone monitors in the Cincinnati-Hamilton OH-KY-IN nonattainment area show an overall decline in ozone concentrations, as indicated by the trend line for the ozone monitor (390610006) in Hamilton County, Ohio with the highest design value for 2007-2009.

Graph 7.1
Actual Design Values for Cincinnati Nonattainment Area from 1997 through 2009



On December 23, 2008, CAIR was remanded without vacatur by the D.C. Circuit Court. U.S. EPA has modeled base case future years with existing emission controls only and shown that counties in the Cincinnati-Hamilton OH-KY-IN nonattainment area will attain the 8-hour ozone NAAQS without proposed additional national emission control strategies. The application of the most current relative response factors from LADCO's Round 5 and Round 6 modeling demonstrates that the area will continue to attain the standard into the future with or without implementation of CAIR. Future national and local emission control strategies will ensure that each county's attainment will be maintained with an increasing margin of safety over time.

7.6 Temperature Analysis for the Cincinnati, Ohio Area

Meteorological conditions are one of the most important factors that influence ozone development and transport. A temperature analysis was conducted to determine how the temperatures during the ozone conducive months of April, May, June, July, August, September and October compare to normal temperatures for the Cincinnati area for the years 1971 through 2000. Temperature information was taken from the National Weather Service Station at Cincinnati Municipal Airport Lunken Field. Normal maximum temperatures from 1971-2000 for the Cincinnati area are as follows:

May – 74.8° F
June – 82.7° F
July – 86.7° F
August – 85.1° F
September – 78.7° F
May - September – 81.6° F

Monthly maximum temperatures for the previous 10 years (2000 – 2009) during the summer months are compared to normal summer month temperatures in Table 7.5. Overall, the temperatures during the 2002, 2003, 2005 and 2007 summer months of May, June, July, August and September were 1% to 6% above normal while temperatures during the 2000, 2001, 2004, 2006, 2008 and 2009 summer months were at normal to 4% lower than the normal temperatures. Table 7.5 shows the average temperatures in the Cincinnati area for each of the past ten years and the percent difference from normal for each year.

Table 7.5
Analysis of Maximum Temperatures for the Cincinnati, Ohio Area
(Percent Change from Maximum Temperature (^{o}F) Normals (1971 – 2000))

	Normal	2000		2001		2002		2003		2004	
	Max	Max	%	Max	%	Max	%	Max	%	Max	%
May	74.8	75.6	+1	75.1	0	70.5	-6	70.5	-6	76.5	+2
June	82.7	81.2	-2	80.1	-3	83.1	0	83.1	0	80.4	-3
July	86.7	81.9	-6	83.9	-3	89.0	+3	89.0	+3	82.3	-5
August	85.1	81.4	-4	83.8	-2	88.0	+3	88.0	+3	80.2	-6
September	78.7	74.9	-5	74.5	-5	82.8	+5	82.8	+5	79	0
AVE	81.6	79.0	-3	79.5	-3	82.7	+1	82.7	+1	79.7	-2

	Normal	2005		2006		2007		2008		2009	
	Max	Max	%	Max	%	Max	%	Max	%	Max	%
May	74.8	71.6	-4	71.9	-4	79.9	+7	71.1	-5	74.2	-1
June	82.7	85.3	+3	80.1	-3	85.6	+4	83.8	+1	82.1	-1
July	86.7	86.5	0	86.7	0	85.8	-1	84.9	-2	78.7	-9
August	85.1	87.5	+3	87	+2	93.6	+10	85.4	0	81.6	-4
September	78.7	81.6	+4	73.1	-7	85.7	+9	82.4	+5	76.6	-3
AVE.	81.6	82.5	+1	79.8	-2	86.1	+6	81.5	0	78.6	-4

The number of days with temperatures of 90^{o} F and higher were collected from the National Weather Service Station at Cincinnati Municipal Airport Lunken Field and compared to the average number of days from 1999 through 2009 as well as the number of 8-hour ozone exceedance days. Table 7.6 shows this comparison of 8-hour ozone exceedance days and number of 90^{o} F temperature days while Graph 7.2 shows the correlation graphically.

Table 7.6
Comparison of Days with 90º F and 8-Hour Ozone Exceedance Days 1998- 2009

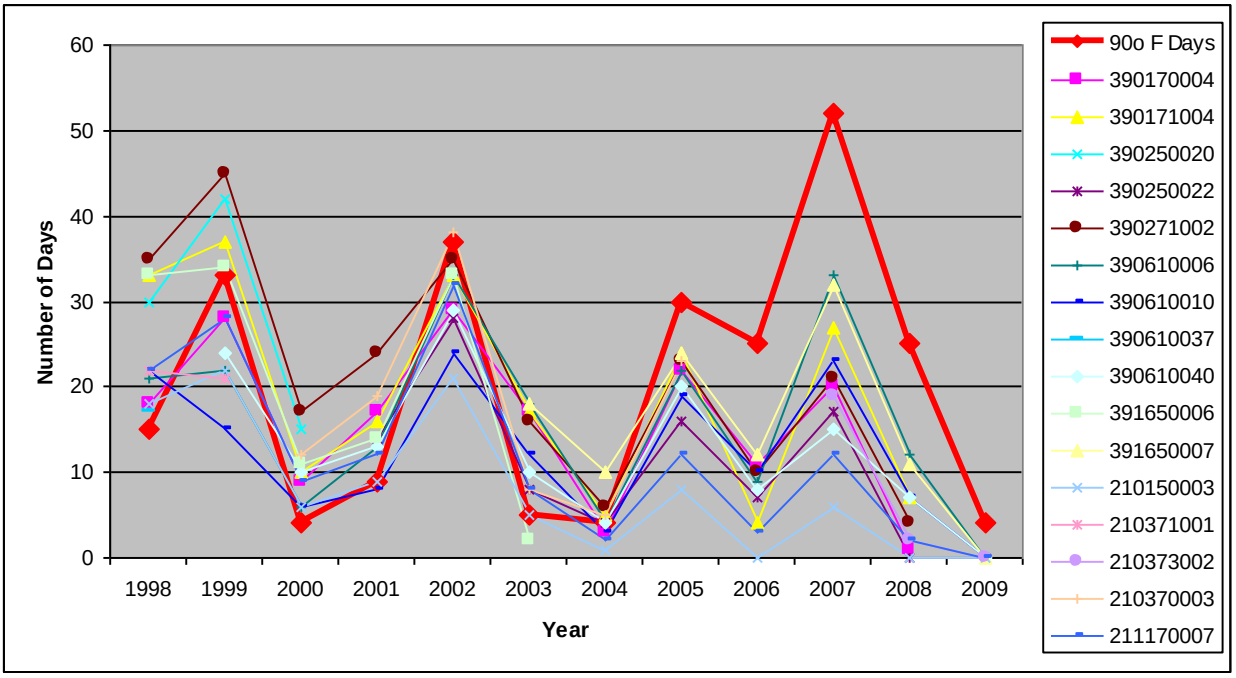
Number of Days with Temperatures of 90º F and higher								
Site	**County**	**Ave. 90º F Days**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**
Cincinnati, OH	Hamilton Co.	21.2	15	33	4	9	37	5
Number of 8-Hour Exceedance Days at Cincinnati Nonattainment area ozone monitors								
Monitor	**County**		**1998**	**1999**	**2000**	**2001**	**2002**	**2003**
390170004	Butler Co		18	28	9	17	29	17
390171004	Butler Co		33	37	10	16	33	17
390250020	Clermont Co		30	42	15	N/O	N/O	N/O
390250022	Clermont Co		N/O	N/O	N/O	14	28	8
390271002	Clinton Co		35	45	17	24	35	16
390610006	Hamilton Co		21	22	6	13	33	18
390610010	Hamilton Co		22	15	6	8	24	12
390610040	Hamilton Co		N/O	24	10	13	29	10
391650006	Warren Co		18	34	11	14	33	2
391650007	Warren Co		N/O	N/O	N/O	N/O	N/O	18
210150003	Boone Co		18	22	6	9	21	5
210371001	Campbell Co		22	21	N/O	N/O	N/O	N/O
210373002	Campbell Co		N/O	N/O	N/O	N/O	N/O	N/O
210370003	Campbell Co		N/O	N/O	12	19	38	8
211170007	Kenton Co		22	28	9	12	32	8

Number of Days with Temperatures of 90º F and higher								
Site	**County**	**Ave. 90º F Days**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
Cincinnati, OH	Hamilton Co.	21.2	4	30	25	52	25	4
Number of 8-Hour Exceedance Days at Cincinnati Nonattainment area ozone monitors								
Monitor	**County**		**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
390170004	Butler Co		3	22	11	20	1	0
390171004	Butler Co		5	24	4	27	7	0
390250020	Clermont Co		N/O	N/O	N/O	N/O	N/O	N/O
390250022	Clermont Co		4	16	7	17	0	0
390271002	Clinton Co		6	23	10	21	4	0
390610006	Hamilton Co		4	22	9	33	12	0
390610010	Hamilton Co		3	19	10	23	7	0
390610040	Hamilton Co		4	20	8	15	7	0
391650006	Warren Co		N/O	N/O	N/O	N/O	N/O	N/O
391650007	Warren Co		10	24	12	32	11	0
210150003	Boone Co		1	8	0	6	0	0
210371001	Campbell Co		N/O	N/O	N/O	N/O	N/O	N/O
210373002	Campbell Co		N/O	N/O	N/O	19	2	0
210370003	Campbell Co		5	23	N/O	N/O	N/O	N/O
211170007	Kenton Co		2	12	3	12	2	0

N/O – Not Operational

Graph 7.2

Comparison of Days with 90º 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 90º 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 greater number of days with temperatures of 90º F or more but the number of 8-hour exceedance days was lower. While other meteorological factors may have influenced this result to some degree, it appears that the lower emissions helped to keep the number of 8-hour ozone exceedance days lower during the ozone-conducive conditions of 2005. In 2007, there were 52 days of 90º F or more and three monitors with the number of 8-hour ozone exceedance days over 25. In 2002 there were 37 days of 90º F or more and nine monitors with the number of 8-hour ozone exceedance days over 25. There were similar meteorological conditions in 2002 and 2007 and less monitors had days over the 8-hour ozone standard in 2007, indicating that emission reductions are decreasing ozone concentrations in the area.

7.7 Summary of Meteorological Conditions

The analysis of the departure from normal of the maximum temperatures during the summer months shows variation as illustrated in Table 7.6 and Graph 7.2. The analysis shows that 15 or more days with temperatures of 90º F and higher occurred in 1998, 1999, 2002, 2005, 2006, 2007 and 2008. 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 90º F days still yielded 8-hour ozone exceedance days. For example, 2000 and 2001 had fewer than the normal amount of 90º F days; however, there were still a significant number of 8-hour ozone exceedances for those years. In comparison, 2004 was a cooler year, but due to

national emission reduction measures in effect, there were fewer ozone exceedances. Lower ozone values correspond to lowered local and regional ozone precursor emissions despite ozone conducive conditions. The 8-hour ozone standard, expressed as a 4th high ozone value averaged over 3 years, accounts for variations in temperature. Despite such variations, ozone values in the Cincinnati nonattainment area have steadily decreased since 1998.

8.0 CORRECTIVE ACTIONS

8.1 Commitment to Revise Plan

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

8.2 Commitment for Contingency Measures

Indiana hereby commits to adopt and expeditiously implement 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 violation of the standard (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 the NAAQS for ozone. In this case, measures that can be implemented in a short time will be selected and 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 and U.S. EPA deem appropriate. IDEM will solicit input from 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 if contingency measures should ever be necessary, it is unlikely that a significant number (i.e., all those listed below) will be required.

1. Installation of a vehicle emissions testing program
2. Asphalt paving (lower VOC formulation)
3. Diesel exhaust retrofits
4. Traffic flow improvements
5. Idle reduction programs
6. Portable fuel container regulation (statewide)
7. Park and ride facilities
8. Rideshare/carpool program
9. VOC cap/trade program for major stationary sources
10. Commercial/consumer solvents (statewide)
11. NO_x Reasonably Available Control Technology

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

Indiana published notification for a public hearing and solicitation for public comment concerning the draft Redesignation Petition and Maintenance Plan in the Journal Press, Lawrenceburg, Indiana on December 7, 2009 and the Indianapolis Star, Indianapolis, Indiana on December 8, 2009.

A public hearing to receive comments concerning the redesignation request was conducted on January 7, 2010 at the Lawrenceburg Public Library in Lawrenceburg, Indiana. The public comment period closed on January 13, 2009, no comments were received by the agency concerning this submission. Appendix J documents the public hearing process and includes a copy of the public notice, certifications of publication, and the transcript from the public hearing.

10.0 CONCLUSIONS

Lawrenceburg Township in Dearborn County, Indiana, along with the remaining portion of the Cincinnati-Hamilton OH-KY-IN nonattainment area, has attained the NAAQS standard for ozone. This petition demonstrates that Lawrenceburg Township in Dearborn County has complied with the applicable provisions of the CAA regarding redesignation of ozone nonattainment areas. IDEM has prepared a Redesignation Request and Maintenance Plan that meets the requirement of Section 110(a)(1) of the Clean Air Act.

Indiana has performed an analysis that shows the air quality improvements are due to permanent and enforceable measures and that significant regional NO_x reductions will ensure continued compliance (maintenance) with the standard. Additionally, Indiana has ensured that all CAA requirements necessary to support redesignation have been met.

In addition to the corrective actions (should they be necessary) outlined in this submittal, Indiana continues to participate in the regional air quality planning efforts sponsored by LADCO. The current goal of the planning process is to establish a regional control strategy that provides for attainment of the ozone and fine particle standards throughout the states of Illinois, Indiana, Michigan, Ohio and Wisconsin. Along with the other LADCO states, Indiana is developing local and statewide emission control measures, where photochemical modeling and culpability analyses demonstrate a clear need and cost effectiveness analyses justify the implementation of such measures. These actions will provide for an even greater margin of safety for the Cincinnati, Ohio area and ensure continued maintenance well into the future.

Based on this presentation, Indiana's portion of the nonattainment area (Lawrenceburg Township in Dearborn County) meets the requirements for redesignation under Section 107(d)(3) of the CAA and U.S. EPA guidance. Furthermore, because this area is subject to transport, additional regional NO_x and VOC reductions will ensure continued compliance (maintenance) with the standards and provide an increased margin of safety.

Consistent with the authority granted to the U.S. EPA under Section 107(d)(3) of the CAA, Indiana requests that Lawrenceburg Township in Dearborn County be redesignated to attainment simultaneously with U.S. EPA approval of the Redesignation Request and Maintenance Plan provisions contained herein.