



## INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We Protect Hoosiers and Our Environment.*

100 N. Senate Avenue • Indianapolis, IN 46204

(800) 451-6027 • (317) 232-8603 • [www.idem.IN.gov](http://www.idem.IN.gov)

Eric J. Holcomb  
Governor

Bruno L. Pigott  
Commissioner

July 10, 2017

Mr. Robert Kaplan  
Acting Regional Administrator  
U.S. EPA, Region 5  
77 West Jackson Boulevard  
Chicago, IL 60604-3950

Re: Request for Redesignation Petition and  
Maintenance Plan for Sulfur Dioxide  
Attainment in the Indianapolis, Indiana  
Partial Marion County 2010 Primary 1-  
Hour Sulfur Dioxide Nonattainment Area  
(Center, Perry, and Wayne Townships)

Dear Mr. Kaplan:

The Indiana Department of Environmental Management (IDEM) submits a Redesignation Petition and Maintenance Plan for the Indianapolis, Indiana Partial Marion County Nonattainment Area (Center, Perry, and Wayne Townships), in reference to the 2010 primary 1-hour sulfur dioxide standard. IDEM scheduled a public hearing concerning the Redesignation Petition and Maintenance Plan on June 14, 2017, and the public comment period concluded on June 20, 2017. No comments were received during the public comment period. Additionally, there was no request for a public hearing during the comment period, thus a hearing was not held.

The attached enclosure consists of the following:

***Redesignation Petition and Maintenance Plan***

- A formal request that the Indianapolis, Indiana Partial Marion County Nonattainment Area for the 2010 primary 1-hour sulfur dioxide standard 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.
- The appendices of the document contain historical air quality trend data and projected emission inventory data.
- A maintenance year of 2030 is established and 2020 is analyzed as an interim year.

Mr. Robert Kaplan  
Page 2 of 2

Throughout the development of these submittals IDEM staff worked with U.S. EPA Region 5 to ensure that any potential concerns regarding this submission were addressed. We would appreciate U.S. EPA's continued efforts to communicate regularly with us as it reviews these submittals.

This request consists of one (1) hardcopy of the required documentation. An electronic version of the submittal in PDF format that is identical to the hard copy has been sent to Doug Aburano, Chief of U.S. EPA Region 5's Attainment Planning and Maintenance Section and Chris Panos of U.S. Region 5.

IDEM requests that U.S. EPA proceed with review and approval of this submittal. If you have any questions or need additional information, please contact Brian Callahan, Chief, Air Quality Standards and Implementation Section, Office of Air Quality at (317) 232-8244 or [bcallaha@idem.IN.gov](mailto:bcallaha@idem.IN.gov).

Sincerely,



Keith Baugues  
Assistant Commissioner  
Office of Air Quality

KB/sad/bc/gf/mlb  
Enclosure:

Request for Redesignation Petition and Maintenance Plan for Sulfur Dioxide Attainment in the Indianapolis, Indiana Partial Marion County 2010 Primary 1-Hour Sulfur Dioxide Nonattainment Area (Center, Perry, and Wayne Townships)

cc: Doug Aburano U.S. EPA Region 5 (no enclosure)  
Chris Panos, U.S. EPA Region 5 (no enclosure)  
John Summerhays, U.S. EPA Region 5 (no enclosure)  
Sara Arra, U.S. EPA Region 5 (no enclosure)  
Carolyn Persoon, U.S. EPA Region 5 (no enclosure)  
Keith Baugues, IDEM-OAQ (no enclosure)  
Scott Deloney, IDEM-OAQ (no enclosure)  
Brian Callahan, IDEM-OAQ (no enclosure)  
Michele Boner, IDEM-OAQ (no enclosure)  
Gale Ferris, IDEM-OAQ (no enclosure)  
File Copy

**REQUEST FOR REDESIGNATION AND  
MAINTENANCE PLAN FOR SULFUR  
DIOXIDE ATTAINMENT IN THE  
INDIANAPOLIS, INDIANA PARTIAL  
MARION COUNTY 2010 PRIMARY 1-  
HOUR SULFUR DIOXIDE  
NONATTAINMENT AREA**

**Center, Perry and Wayne Townships,  
Marion County, Indiana**

Prepared By:  
The Indiana Department of Environmental Management

July 2017

*This page left intentionally blank*

## TABLE OF CONTENTS

1.0 Introduction.....	1
1.1 Sulfur Dioxide.....	2
1.2 National Ambient Air Quality Standards.....	2
1.3 Geographical Description .....	3
1.4 Status of Air Quality .....	4
2.0 Requirements for Redesignation.....	4
2.1 A determination that the area has attained the SO <sub>2</sub> national ambient air quality standard (NAAQS).....	4
2.1.1 Ambient Air Monitoring Data .....	4
2.1.2 Atmospheric Dispersion Modeling .....	5
2.1.3 Monitoring Data Evaluation .....	6
2.2 Approved State Implementation Plan .....	7
2.3 A determination that the improvement in air quality is due to permanent and enforceable reductions in emissions resulting from implementation of the SIP or other federal requirements.....	7
2.4 A maintenance plan under Section 175A of the CAA that is fully approved.....	12
2.5 Determination that Indiana has met all requirements applicable to the area under Section 110 and Part D of the CAA.....	12
2.5.1 Section 110 CAA Requirements .....	12
2.5.2 CAA Part D Plan Requirements for Nonattainment Areas (Section 171 CAA Requirements, et seq.).....	13
Section 172(c) CAA Requirements .....	13
Section 173 CAA Requirements.....	13
Section 176(c) CAA Requirements .....	14
3.0 Indianapolis, Indiana SO <sub>2</sub> Nonattainment Area Maintenance Plan .....	14
3.1 Attainment Inventory .....	15
3.1.1 Attainment –Year Emissions Inventory.....	15
3.1.2 Emission Trends.....	16
3.2 Demonstration of Maintenance.....	17
3.2.1 Emission Projections.....	18
3.3 Monitoring Network .....	20
3.4 Continued Attainment.....	20
3.5 Contingency Plan .....	20
3.5.1 Warning Level Response .....	21
3.5.2 Action Level Response .....	21
3.5.3 Control Measure Selection and Implementation.....	21
3.5.4 Contingency Measures.....	22
4.0 Public Participation.....	22
5.0 Conclusions.....	22

## **FIGURES**

Figure 1.1: Map of the Center, Perry and Wayne Townships, Indianapolis, Indiana 2010 Primary 1-Hour SO <sub>2</sub> Nonattainment Area .....	3
---	---

## **TABLES**

Table 2.1: Monitoring Data for the Indianapolis, IN 1-Hour SO <sub>2</sub> Nonattainment Area (Annual 99 <sup>th</sup> Percentile and Design Values in ppb).....	5
Table 2.2: Comparison of 2011 (Nonattainment-Year) and 2015 (Attainment-Year) SO <sub>2</sub> Emissions, All Sources, Marion County, Indiana (tons per year) .....	8
Table 2.3: Emission Reduction Comparison of 2011 (Nonattainment-Year) and 2015 (Attainment-Year) for SO <sub>2</sub> Emissions, Marion County, Indiana (tons per year) .....	8
Table 2.4: 1-Hour SO <sub>2</sub> Emission Rate Limits for Nonattainment Area in Marion County	9
Table 2.4 (continued): 1-Hour SO <sub>2</sub> Emission Rate Limits for Nonattainment Area in Marion County .....	10
Table 2.4 (continued): 1-Hour SO <sub>2</sub> Emission Rate Limits for Nonattainment Area in Marion County .....	11
Table 3.1: 2015 Attainment-Year SO <sub>2</sub> Emissions Inventory, Marion County, Indiana ...	16
Table 3.2: Comparison of 2015 (Attainment-Year) and 2030 (Maintenance-Year) SO <sub>2</sub> Emissions, All Sources, Marion County, Indiana (tons per year) .....	19

## **GRAPHS**

Graph 2.1: Design Value Trends for the Indianapolis, IN Nonattainment Area, 2011-2016 .....	5
Graph 3.1: SO <sub>2</sub> Emissions from Marion County, Indiana, Electric Generating Units: Georgetown Substation and IPL - Harding Street Station, 2005-2016.....	17
Graph 3.2: Comparison of 2015 (Attainment-Year), 2020 (Interim-Year), and 2030 (Maintenance-Year) SO <sub>2</sub> Emissions, All Sources, Marion County, Indiana .....	18
Graph 3.3: SO <sub>2</sub> Emissions by Category and Year, 2015 (Attainment-Year), 2020 (Interim-Year), and 2030 (Maintenance-Year), All Sources, Marion County, Indiana ...	19

## APPENDICES

- A Air Quality System (AQS) Monitor Data Values for the Indianapolis, Indiana, 2010 Primary 1-Hour SO<sub>2</sub> Nonattainment Area
- B 2011 Nonattainment-Year and 2015 Attainment-Year Emission Inventories for Sulfur Dioxide (SO<sub>2</sub>), All Sources, for the Indianapolis, Indiana 2010 Primary 1-Hour SO<sub>2</sub> Nonattainment Area
- C Sulfur Dioxide (SO<sub>2</sub>) Emissions from Electric Generating Units for the Indianapolis, Indiana 2010 Primary 1-Hour SO<sub>2</sub> Nonattainment Area, 2005 – 2016
- D 2015 Attainment-Year Emissions Inventory and 2020 and 2030 Projected Emission Inventories for Sulfur Dioxide (SO<sub>2</sub>), All Sources, for the Indianapolis, Indiana 2010 Primary 1-Hour SO<sub>2</sub> Nonattainment Area
- E Public Participation Process Documentation

*This page left intentionally blank*

**REQUEST FOR REDESIGNATION AND  
MAINTENANCE PLAN FOR ATTAINMENT  
OF THE INDIANAPOLIS, INDIANA PARTIAL MARION  
COUNTY 2010 PRIMARY 1-HOUR SULFUR DIOXIDE  
NONATTAINMENT AREA**

**CENTER, PERRY & WAYNE TOWNSHIPS,  
MARION COUNTY, INDIANA**

**1.0 Introduction**

This document supports Indiana's request that Center, Perry and Wayne Townships in the Indianapolis, IN Nonattainment Area be redesignated from nonattainment to attainment for the 2010 primary 1-hour sulfur dioxide (SO<sub>2</sub>) standard. The Indianapolis, IN Nonattainment Area has recorded three (3) years of complete, quality-assured ambient air quality monitoring data for the years 2014 – 2016 demonstrating attainment of the 1-hour SO<sub>2</sub> standard.

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

- (D) 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 to be considered for redesignation including:

- (a) A determination that the area has attained the SO<sub>2</sub> national ambient air quality standard (NAAQS).
- (b) A state implementation plan (SIP) for the area under Section 110(k) of the CAA that is fully approved.
- (c) A determination that the improvement in air quality is due to permanent and enforceable reductions in emissions resulting from implementation of the SIP or other federal requirements.
- (d) A maintenance plan under Section 175A of the CAA that is fully approved.
- (e) A determination that all Section 110 and Part D requirements of the CAA have been met.

Indiana is formally requesting a redesignation of the Center, Perry and Wayne Townships, Indianapolis, IN nonattainment area to attainment.

The requirements for redesignation are addressed in Section 2.0 of this document.

### 1.1 Sulfur Dioxide

SO<sub>2</sub> is part of a group of highly reactive gases known as oxides of sulfur (SO<sub>x</sub>) and is primarily derived from fossil fuel combustion at power plants and other industrial facilities. SO<sub>2</sub> is one of the “six” criteria air pollutants regulated under the federal CAA. SO<sub>2</sub> is considered to be harmful to human health and has been linked with many adverse health effects, particularly within the respiratory system. SO<sub>2</sub> is also a primary contributor to acid rain, which causes acidification of lakes and streams, damages trees at high elevations, and damages sensitive forest soils.

### 1.2 National Ambient Air Quality Standards

SO<sub>2</sub> is one of the six criteria air pollutants that scientists have identified as being particularly harmful to humans and the environment. NAAQS have been developed for these six pollutants and are used as measurements of air quality. The CAA requires United States Environmental Protection Agency (U.S. EPA) to set primary standards at a level judged to be “requisite to protect the public health with an adequate margin of safety” and establish secondary standards that are requisite to protect public welfare from “any known or anticipated effects associated with the pollutant in the ambient air,” including effects on crops, vegetation, wildlife, buildings and national monuments, and visibility.

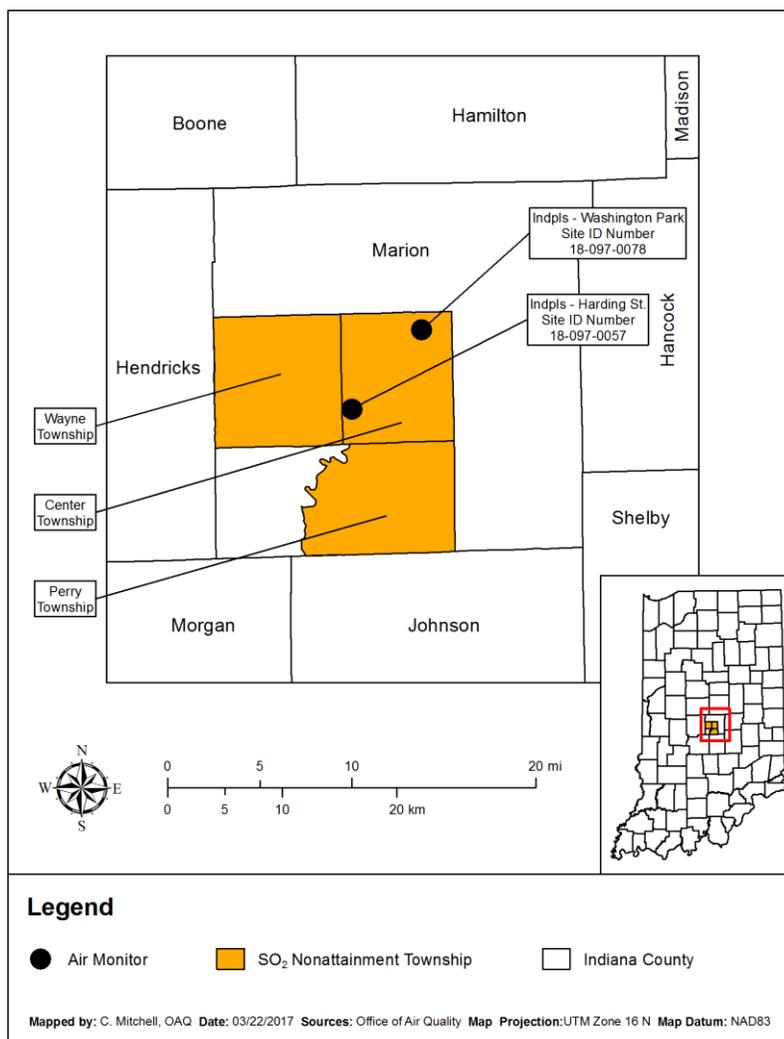
On June 2, 2010, U.S. EPA promulgated a new primary NAAQS for SO<sub>2</sub>, replacing the two primary standards of 140 parts per billion (ppb) evaluated over 24-hours and 30 ppb evaluated over an entire year with a 1-hour standard of 75 ppb. The 2010 primary 1-hour SO<sub>2</sub> NAAQS was published in the June 22, 2010, *Federal Register* (FR), at 75 FR 35520, with an effective date of August 23, 2010. The primary SO<sub>2</sub> NAAQS is met when the 3-year average of the annual 99<sup>th</sup> percentile of the daily maximum 1-hour average concentration at any ambient air quality monitor in an area does not exceed 75 ppb. This three-year average is termed the “design value” for the monitor. The design value for a nonattainment area is the highest monitored design value in the area.

On July 25, 2013, using monitored air quality data measured during 2009, 2010, and 2011, U.S. EPA designated Center, Perry and Wayne Townships in Indianapolis, Indiana, nonattainment under Subpart 1 of Section 107(d)(1) of the CAA (78 FR 47191). These designations became effective on October 4, 2013.

### 1.3 Geographical Description

U.S. EPA designated four nonattainment areas comprised of nine townships in five counties in the State of Indiana for the 2010 primary 1-hour SO<sub>2</sub> NAAQS. As depicted in Figure 1.1, the Indianapolis, IN Nonattainment Area consists of Center, Perry and Wayne Townships in Marion County, Indiana. Marion County is located in central Indiana and is surrounded by the Indiana counties of Boone, Hamilton, Hancock, Hendricks, Johnson, Morgan and Shelby.

**Figure 1.1: Map of the Center, Perry and Wayne Townships, Indianapolis, Indiana 2010 Primary 1-Hour SO<sub>2</sub> Nonattainment Area**



## 1.4 Status of Air Quality

There are currently two monitors measuring SO<sub>2</sub> concentrations in the Indianapolis, IN Nonattainment Area (Indianapolis – Harding Street; Site ID# 18-097-0057 and Indianapolis – Washington Park; Site ID# 18-097-0078). These two monitors are operated by Indiana Department of Environmental Management (IDEM). A listing of the sites, with annual 99<sup>th</sup> percentile daily maximum 1-hour values from 2011 – 2016 and corresponding design values retrieved from U.S. EPA’s Air Quality System (AQS) database, are shown in Table 2.1. The location of the monitoring sites for this nonattainment area is shown in Figure 1.1.

SO<sub>2</sub> monitoring data for the most recent three (3) years, 2014 – 2016, demonstrates that the air quality meets the 2010 primary 1-hour SO<sub>2</sub> standard in the nonattainment area. This fact, accompanied by the permanent and enforceable decreases in emission levels discussed in Section 2.3, justifies a redesignation to attainment for Indiana’s nonattainment area based on Section 107(d)(3)(E) of the CAA.

## **2.0 Requirements for Redesignation**

U.S. EPA has published guidance in the document “Procedures for Processing Requests to Redesignate Areas to Attainment,” issued September 4, 1992, to Regional Air Directors. In addition, U.S. EPA has published guidance specific to SO<sub>2</sub> titled “Guidance for 1-Hour SO<sub>2</sub> Nonattainment Area SIP Submissions,” issued April 23, 2014, to Regional Air Division Directors. This Request for Redesignation and Maintenance Plan is based on the Redesignation Guidance and SO<sub>2</sub> Nonattainment Area SIP Guidance, supplemented with additional guidance received from U.S. EPA Region V staff. The SO<sub>2</sub> guidance, as well as Section 107(d)(3)(E) of the CAA, lists the requirements that must be met by nonattainment areas prior to consideration for redesignation to attainment. The specific requirements for redesignation are discussed below.

### 2.1 A determination that the area has attained the SO<sub>2</sub> national ambient air quality standard (NAAQS).

- 1) A demonstration that the NAAQS for SO<sub>2</sub>, as published in 40 Code of Federal Regulations (CFR) 50.17, has been attained.
- 2) Ambient monitoring data quality-assured in accordance with 40 CFR Part 50, Appendix T have been recorded in the U.S. EPA AQS database and made available for public view.

Attainment of the NAAQS for SO<sub>2</sub> is demonstrated in two ways: ambient air monitoring and atmospheric dispersion modeling.

#### 2.1.1 Ambient Air Monitoring Data

Table 2.1 and Graph 2.1 display the annual 99<sup>th</sup> percentile daily maximum 1-hour values from 2011 – 2016 and corresponding design values for the monitoring sites in the Indianapolis, IN Nonattainment Area demonstrating that the NAAQS for SO<sub>2</sub> has been attained. A

comprehensive list of the annual 99<sup>th</sup> percentile daily maximum 1-hour average SO<sub>2</sub> concentrations over this period is included in Appendix A.

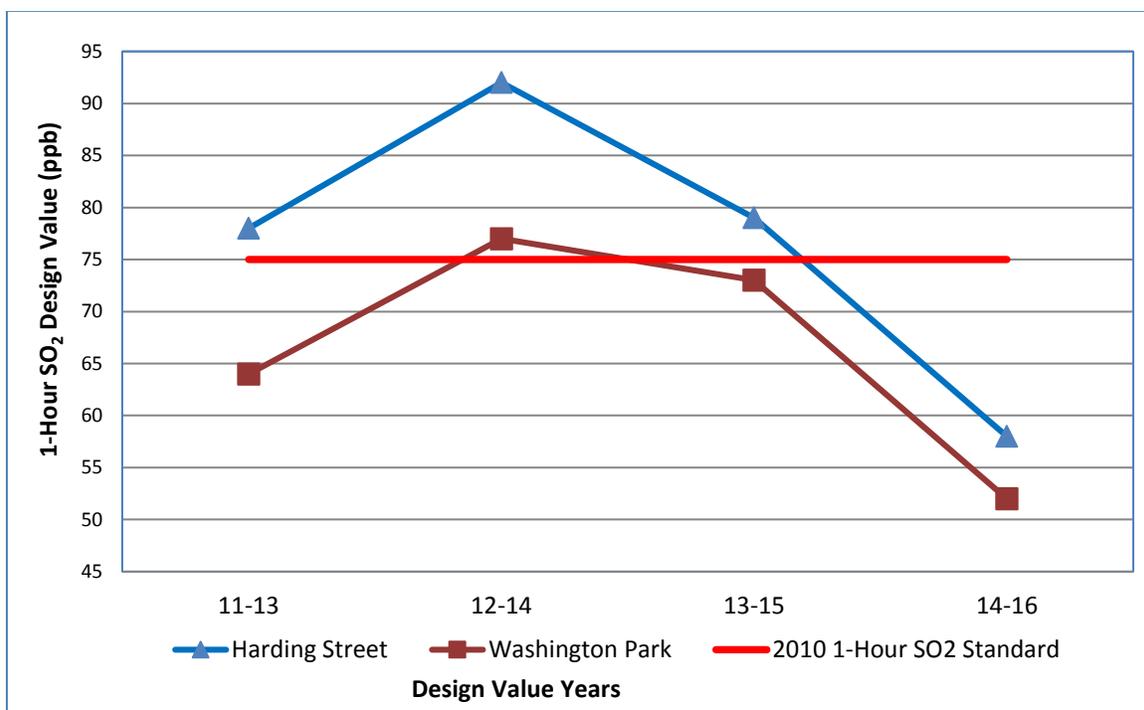
**Table 2.1: Monitoring Data for the Indianapolis, IN 1-Hour SO<sub>2</sub> Nonattainment Area (Annual 99<sup>th</sup> Percentile and Design Values in ppb)**

Site ID	County	Site Name	99 <sup>th</sup> Percentile Values						3-Year Design Values			
			2011	2012	2013	2014	2015	2016	2011-2013	2012-2014	2013-2015	2014-2016
180970057	Marion	Harding Street	63.0	91.5	78.1	105.6	54.3	14.6	78	92	79	58
180970078	Marion	Washington Park	59.7	61.1	69.7	80.0 <sup>a</sup>	50.2	6.4	64	77 <sup>b</sup>	73 <sup>b</sup>	52 <sup>b</sup>

a – Invalid 99<sup>th</sup> Percentile Value.

b - Design values conservatively calculated using highest hourly value for 2014 of 99.8 ppb.

**Graph 2.1: Design Value Trends for the Indianapolis, IN Nonattainment Area, 2011-2016**



### 2.1.2 Atmospheric Dispersion Modeling

IDEM has performed extensive modeling of the Indianapolis, IN Nonattainment Area to determine the effect of local and national emission control strategies on SO<sub>2</sub> and to demonstrate attainment of the SO<sub>2</sub> NAAQS.

The American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD version 14134) was the regulatory air quality model used for the 1-hour SO<sub>2</sub> attainment demonstration modeling for the Indianapolis, IN Nonattainment Area. Five years, 2008 – 2012, of surface meteorological data from the Indianapolis, IN National Weather Service (NWS) site was used in conjunction with five years of concurrent upper-air meteorological data from Lincoln, Illinois.

The modeled concentrations are the highest 4<sup>th</sup> high 1-hour maximum daily SO<sub>2</sub> concentration values averaged across five years for allowable limits established through several federal rulemakings including the Cross State Air Pollution Rule (CSAPR), Mercury and Air Toxics Standards (MATS), National Emission Standards for Hazardous Air Pollutants for Major Sources (NESHAP): Industrial, Commercial, and Institutional Boilers and Process Heaters, and New Source Performance Standards (NSPS) for New Stationary Sources and Emission Guidelines for Existing Sources: Sewage Sludge Incinerator Units. These limits, which were adopted at Indiana 326 Administrative Code (IAC) 7-4-2.1, have been applied to the Belmont Advanced Wastewater Treatment Plant (formerly Indianapolis Sludge Incinerator), Citizens Thermal (formerly Indianapolis Power & Light Company (IPL) Perry K), IPL – Harding Street Generating Station, Quemetco, Rolls Royce Corporation (formerly Allison Gas Turbine Plant 5 and Plant 8), and Vertellus Agriculture and Nutrition Specialties (formerly Reilly Industries and Reilly Tar and Chemical).

The AERMOD modeling results for the Indianapolis, IN Nonattainment Area showed a maximum 1-hour SO<sub>2</sub> concentration of 168.6 micrograms per cubic meter (µg/m<sup>3</sup>). When added to a background concentration value of 22.5 µg/m<sup>3</sup>, a total 1-hour SO<sub>2</sub> concentration of 191.1 µg/m<sup>3</sup> is achieved. This is below the 1-hour SO<sub>2</sub> NAAQS of 75 ppb or 196.2 µg/m<sup>3</sup> and, therefore, demonstrates attainment of the NAAQS for SO<sub>2</sub>. Please refer to “Attachment K: 1-Hour Sulfur Dioxide Attainment Demonstration and Technical Support Document for Central, West Central, and Southwest Indiana Nonattainment Areas”, submitted October 2, 2015, and supplemented May 2, 2016, for additional detail.

### 2.1.3 Monitoring Data Evaluation

As explained in 40 CFR 50, Appendix T, three (3) complete years of SO<sub>2</sub> monitoring data are required to demonstrate attainment at a monitoring site. The 1-hour SO<sub>2</sub> NAAQS is met at an air quality monitoring site when the three-year average of the annual 99<sup>th</sup> percentile daily maximum 1-hour value concentration is less than or equal to 75 ppb. When this occurs, the site is deemed to be in attainment. The 1-hour primary design value is rounded to the nearest whole number or 1 ppb (i.e. decimals 0.5 and greater are rounded up to the nearest whole number, and any decimal lower than 0.5 is rounded down to the nearest whole number). Values equal to or below 75 ppb meet the standard; values greater than 75 ppb exceed the standard. These data handling procedures are applied on an individual basis at each monitor in the area. An individual site's three-year average of the 99<sup>th</sup> percentile daily maximum 1-hour average SO<sub>2</sub> concentration is 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. The data from the SO<sub>2</sub> monitors within the Indianapolis, IN nonattainment area are evaluated according to the procedures outlined in 40 CFR 50 Appendix T.

In 2014, monitoring data for the Washington Park monitor was deemed incomplete. As a result, there was insufficient data to support using the 99<sup>th</sup> percentile concentration from 2014 in design value calculations. Therefore, IDEM conducted an analysis using the first-high concentration value (i.e. 99.8 ppb) for the year 2014 to determine whether the Washington Park monitor attained the standard. Using this conservative approach, 2013-2015 and 2014-2016 design values remained well below the standard (i.e. 73 and 52 ppb).

## 2.2 Approved State Implementation Plan

Section 191(a) of Subpart 5 of Part D, Title 1 of the CAA requires states with SO<sub>2</sub> nonattainment areas to submit a plan (referred to as an “attainment demonstration”) within eighteen months of the effective date of the designations (i.e. by April 4, 2015) detailing how the SO<sub>2</sub> standard will be attained as expeditiously as practicable but no later than five years after the effective date of the designation (i.e. by October 4, 2018). An attainment demonstration for the Indianapolis, Indiana Nonattainment Area was submitted to U.S. EPA on October 2, 2015, and is currently pending review and approval.

## 2.3 A determination that the improvement in air quality is due to permanent and enforceable reductions in emissions resulting from implementation of the SIP or other federal requirements.

A total of six facilities were included in the 1-hour SO<sub>2</sub> attainment demonstration and technical support document for the Indianapolis, IN Nonattainment Area submitted to U.S. EPA for review and approval on October 2, 2015. These facilities include all Marion County sources listed in the original SIP (i.e. dated March 14, 1996) with actual annual SO<sub>2</sub> emissions of greater than 10 tons per year. These facilities include: Belmont Advanced Wastewater Treatment Plant (formerly Indianapolis Sludge Incinerator), Citizens Thermal (formerly Indianapolis Power & Light Company (IPL) Perry K), IPL – Harding Street Generating Station, Quemetco, Rolls Royce Corporation (formerly Allison Gas Turbine Plant 5 and Plant 8), and Vertellus Agriculture and Nutrition Specialties (formerly Reilly Industries and Reilly Tar and Chemical. These facilities were required to comply with several federal rulemakings, including the Cross State Air Pollution Rule (CSAPR), Mercury and Air Toxics Standards (MATS), National Emission Standards for Hazardous Air Pollutants for Major Sources (NESHAP): Industrial, Commercial, and Institutional Boilers and Process Heaters and New Source Performance Standards (NSPS) for New Stationary Sources and Emission Guidelines for Existing Sources: Sewage Sludge Incinerators Units. The controls and operational changes that were made by the six facilities resulted in emission reductions for the nonattainment area between the 2011 nonattainment base year and the 2015 attainment year.

Table 2.2 compares SO<sub>2</sub> emissions for all sources (i.e. EGU sources, non-EGU point sources, non-point sources (area), non-road sources, and on-road sources) for the 2011 nonattainment-year and the 2015 attainment-year for Marion County, Indiana. SO<sub>2</sub> emissions within Marion County declined by 36% between the nonattainment-year (2011) and the attainment-year (2015) illustrating attainment of the 2010 primary 1-hour SO<sub>2</sub> NAAQS.

**Table 2.2: Comparison of 2011 (Nonattainment-Year) and 2015 (Attainment-Year) SO<sub>2</sub> Emissions, All Sources, Marion County, Indiana (tons per year)**

	<b>2011</b>	<b>2015</b>	<b>Change</b>	<b>%Change</b>
<b>SO<sub>2</sub></b>	24,021	15,312	-8,709	-36%

As indicated above these six facilities identified in the attainment plan have reduced their emissions from the 2011 nonattainment year to the 2015 attainment year. Table 2.3 illustrates these reductions that took place from 2011 to 2015.

**Table 2.3: Emission Reduction Comparison of 2011 (Nonattainment-Year) and 2015 (Attainment-Year) for SO<sub>2</sub> Emissions, Marion County, Indiana (tons per year)**

<b>Affected Source</b>	<b>Type of Reduction</b>	<b>Effective Date of Reduction</b>	<b>2011 Emissions (tpy)</b>	<b>2015 Emissions (tpy)</b>	<b>Change (tpy)</b>
Belmont	New Controls (NSPS)	January 1, 2017	24.90	8.72	-16.18
Citizen's Thermal	Fuel Switch	January 1, 2017	4,348.81	1.19	-4,347.62
IPL-Harding	Fuel Switch	January 1, 2017	18,994.21	14,930.01	-4,064.20
Quemetco	New Controls	January 1, 2017	124.4 <sup>a</sup>	3.06 <sup>a</sup>	-121.34
Rolls Royce	Reduced Sulfur Content	January 1, 2017	58.09	23.78	-34.31
Vertellus	Operational Limits	January 1, 2017	14.13	0.43	-13.70

a – Quemetco is a triennial reporter. Emissions shown above are for 2010 and 2016.

IDEM has performed modeling of the nonattainment area to determine the effect of control strategies on SO<sub>2</sub> and to demonstrate attainment of the standard. Modeling results for all six facilities demonstrated Marion County would attain the standard by January 1, 2017. As a result of the permanent and enforceable SO<sub>2</sub> emission limits and operational requirements implemented at each of the identified facilities in 326 IAC 7-4-2.1, as outlined in Table 2.4, SO<sub>2</sub> emissions in the Indianapolis, IN Nonattainment Area have decreased significantly ensuring the area will continue to maintain compliance with the 2010 primary 1-hour SO<sub>2</sub> standard. These facilities are prohibited from reducing or removing emissions controls (anti-backsliding) following the redesignation of the area unless such a change is first approved by U.S. EPA as a revision to Indiana's SIP consistent with Section 110(l) of the CAA.

**Table 2.4: 1-Hour SO<sub>2</sub> Emission Rate Limits for Nonattainment Area in Marion County**

Modeled Source	Emission Unit	lbs/MMBtu	lbs/hr
Belmont Advanced Wastewater Treatment Plant	Incinerator 1	Comply with SO <sub>2</sub> limit in 40 CFR 60 Subpart M MMM	
	Incinerator 2		
	Incinerator 3		
	Incinerator 4		
Citizens Thermal	Boiler 11	0.2	73.6
	Boiler 12	Burn Natural Gas	
	Boiler 13	0.2	80.6
	Boiler 14	0.2	80.6
	Boiler 15	Burn Natural Gas	
	Boiler 16	Burn Natural Gas	
	Boiler 17	0.3	72.6
	Boiler 18	0.3	72.6
IPL - Harding	Boiler 9	Do Not Operate	
	Boiler 10	Do Not Operate	
	Boiler 50	Burn Natural Gas	
	Boiler 60	Burn Natural Gas	
	Boiler 70	Burn Natural Gas	
	Gas Turbine 1	0.1	29.9
	Gas Turbine 2	0.1	29.9
	Gas Turbine 4	0.1	87.5
	Gas Turbine 5	0.1	86.7
	Gas Turbine 6	Burn Natural Gas	
	Emergency Generator		500 Hour Operating Limit
Quemetco	WESP Stack		52.0

**Table 2.4 (continued): 1-Hour SO<sub>2</sub> Emission Rate Limits for Nonattainment Area in Marion County**

<b>Modeled Source</b>	<b>Emission Unit</b>	<b>lbs/MMBtu</b>	<b>lbs/hr</b>
Rolls Royce	Boiler 0070-58	0.0015	0.07
	Boiler 0070-59	0.0015	0.07
	Boiler 0070-62	0.0015	0.37
	Boiler 0070-63	0.0015	0.37
	Boiler 0070-64	Burn Natural Gas or Landfill Gas	
	Boiler 0070-65	Burn Natural Gas or Landfill Gas	
	2 Gas Turbine Engines 0070-66	0.1	
	12 Gas Turbine Engines 0070-67	0.05	
	2 Gas Turbine Engines 0070-68a and 0070-68b	Burn Natural Gas	
	3 Gas Turbine Engines 0070-68c, 0070-68d, and 0070-68e	0.05	
	3 Gas Turbine Engines 0070-69	0.05	
	Three Shack Heaters 0070-70	Burn Natural Gas	
	Generating Turbine 0070-80	Burn Natural Gas or Landfill Gas	
	Rental Generators	0.0015	
	Engine Test Cells (Plant 5)	0.05	
	Engine Tests Cell (Plant 8)	0.1	
	Engine Test Cell N20	18 foot vertical stack	
	Engine Test Cell N21	20 foot vertical stack	
Engine Test Cell N23	30 foot vertical stack		
Engine Test Cell N24	20 foot vertical stack		

**Table 2.4 (continued): 1-Hour SO<sub>2</sub> Emission Rate Limits for Nonattainment Area in Marion County**

<b>Modeled Source</b>	<b>Emission Unit</b>	<b>lbs/MMBtu</b>	<b>lbs/hr</b>
Vertellus	70K Boiler 70-2722W	0.20	18.4
	30K Boiler 30-2726S	0.25	9.8
	28K Boiler 28-186N	0.27	9.9
	Boiler CB-70K	Burn Natural Gas	
	BM Furnace BM2724W	0.05	1.1
	Box Furnace BX2707V	0.05	0.8
	DAB Furnace 732714	0.05	2.8
	Born Heater 722804	0.05	0.34
	Born Heater Furnace BXS2706Q	0.05	0.3
	EP Furnace EP2729Q	0.05	0.15
	CB20 CB600-300 Boiler	0.09	2.3
	50K CN5-400 Boiler	0.09	5.5
	BD Furnace BD2714V	0.05	0.75
	Heater BS2740Q	0.05	0.3
	Heater BT2728S	0.05	0.3
	Furnace HW-925-001	1.25	12.25
	CS Kettle Born Heater	Burn Natural Gas	
	CS Still Born Heater	Burn Natural Gas	
Born Hot Oil Furnace (Process Heater) Unit 2607T	Burn Natural Gas		

Indiana has a longstanding and fully implemented New Source Review (NSR) program. This program is addressed in 326 IAC 2. The rule includes provisions for the Prevention of Significant Deterioration (PSD) in 326 IAC 2-2. Indiana’s PSD program has been approved by U.S. EPA as part of its SIP (69 FR 29071).

Indiana commits to maintain the control measures listed above after redesignation. Further, Indiana commits that any changes to its rules, or emission limits applicable to SO<sub>2</sub> sources, as required for maintenance of the SO<sub>2</sub> standard in the Indianapolis, IN Nonattainment Area, will be submitted to U.S. EPA for approval as a SIP revision. This will include, where appropriate, a demonstration based on modeling that the standard will be maintained.

Indiana does intend, upon redesignation, to apply 326 IAC 2-2 (PSD Requirements) rather than 326 IAC 2-3 (Emission Offset) for permitting any new sources or modifications. Indiana, through IDEM’s Office of Compliance and Enforcement, has the legal authority and necessary resources to actively enforce any violations of its rules or permit provisions. After redesignation, Indiana intends to continue enforcing all rules that relate to the emission of sulfur dioxide in the Indianapolis, IN Nonattainment Area.

## 2.4 A maintenance plan under Section 175A of the CAA that is fully approved

A maintenance plan provides for the continued attainment of the air quality standard for a period of ten years after U.S. EPA has formally redesignated the area to attainment. The plan also provides assurances that if there is a subsequent violation of the air quality standard, measures in the maintenance plan will prevent any future occurrences through contingency measures that would be triggered.

When U.S. EPA approves the Maintenance Plan for the area, found in Section 3.0 of this document, the area will have a fully approved implementation plan under CAA section 110(k).

## 2.5 Determination that Indiana has met all requirements applicable to the area under Section 110 and Part D of the CAA

Prior to redesignation, a state containing a nonattainment area must demonstrate compliance with all requirements applicable to the area under Section 110 and Part D of the CAA. This means the state must meet all requirements that applied to the area prior to, and at the time of, the submission of a complete request for redesignation to attainment.

### 2.5.1 Section 110 CAA Requirements

Section 110(a) of the CAA contains the general requirements for a SIP. Only the Section 110 requirements that are linked with a particular area's designations are the relevant measures to consider in evaluating a redesignation request. Further, Indiana believes that the other Section 110 elements that are not connected with nonattainment plan submissions and not linked with an area's attainment status are also not applicable requirements for purposes of redesignation as a state remains subject to these requirements after an area is redesignated to attainment. The requirements of CAA Section 110(a)(2) that are statewide requirements and that are not linked to the SO<sub>2</sub> attainment status of the Indianapolis, Indiana Nonattainment Area are therefore not applicable requirements for purposes of review of Indiana's redesignation request.

U.S. EPA has approved provisions of Indiana's SIP addressing Section 110 requirements, including provisions addressing SO<sub>2</sub>. On May 22, 2013, Indiana submitted to U.S. EPA an infrastructure SIP for the 2010 revised SO<sub>2</sub> standard further demonstrating compliance with the requirements "applicable to the area" under CAA Section 110. CAA Section 110(a)(2) contains the general requirements or infrastructure elements necessary for U.S. EPA approval of the SIP. These requirements include, but are not limited to, submittal of a SIP that has been adopted by the state after reasonable notice and public hearing. Indiana's infrastructure SIP for the 2010 1-hour SO<sub>2</sub> standard was approved on August 3, 2015 (80 FR 48733).

### 2.5.2 CAA Part D Plan Requirements for Nonattainment Areas (Section 171 CAA Requirements, et seq.)

Part D of the CAA contains requirements applicable to all areas designated nonattainment. SO<sub>2</sub> nonattainment areas must meet the general provisions of Subpart 1 and the specific SO<sub>2</sub> provisions in Subpart 5. The maintenance plan associated with this request for redesignation for the Indianapolis, IN Nonattainment Area is a SIP revision for an area designated as a nonattainment area and meets the applicable requirements of Part D of Title 1 of the CAA.

#### Section 172(c) CAA Requirements

Section 172(c) of the CAA contains general requirements for nonattainment plans. These requirements include reasonable further progress, emission inventories, permitting provisions, and other measures for attainment. These requirements were addressed in the attainment demonstration submitted to U.S. EPA on October 2, 2015.

#### Section 173 CAA Requirements

These provisions outline requirements related to permitting of air pollution sources in nonattainment areas. Stationary sources of air pollution are subject to the applicable regulations of 326 IAC 2. These regulations include:

- Standards of Performance for New Stationary Sources (326 IAC 12) and National Emission Standards for Hazardous Air Pollutants (326 IAC 20) promulgated by U.S. EPA, July 1, 2015 edition of CFR, Indiana Incorporation by Reference effective December 7, 2016 (326 IAC 1-1-3)
- Prevention of Significant Deterioration (PSD) Permitting Requirements (326 IAC 2-2)
- Emission Offset Permitting Program Requirements (326 IAC 2-3)
- Annual Emission Statements and required emission reporting (326 IAC 2-6)

These permitting, stationary source monitoring and reporting, preconstruction review, offset ratios and enforceable emission limitation requirements were adopted to implement the federally mandated requirements in Sections 110, 172, 173, and 182(a) of the CAA.

## Section 176(c) CAA Requirements

Transportation conformity is required under Section 176(c) of the CAA to ensure that federally supported highway and transit project activities are consistent with (i.e. “conform to”) the purpose of the SIP. Indiana’s general conformity rules were approved into Section 176(c) of the CAA on January 14, 1998 (63 FR 2146). Transportation conformity applies to areas that are designated nonattainment and those areas redesignated attainment after 1990 (i.e. “maintenance areas”) with plans developed under Section 175A of the CAA for transportation-related criteria pollutants. Due to the relatively small and decreasing amounts of sulfur in gasoline and on-road diesel fuel, transportation conformity rules do not apply to SO<sub>2</sub> unless transportation conformity budgets have been established for other reasons such as SO<sub>2</sub> is found to be a significant contributor to a fine particles (PM<sub>2.5</sub>) nonattainment area or if the SIP has established an approved or adequate budget for such emissions as part of the reasonable further progress (RFP) attainment or maintenance strategy. Indiana did not create mobile source SO<sub>2</sub> emission budgets for the Indianapolis, IN 1997 Annual Fine Particle Nonattainment Area, which included Marion County, because SO<sub>2</sub> emissions from mobile sources were found to be an insignificant contributor to PM<sub>2.5</sub> in the nonattainment area. IDEM submitted a Redesignation Petition and Maintenance Plan for the Indianapolis, IN Fine Particle Nonattainment Area to U.S. EPA for review and approval on May 31, 2011. The area was redesignated to attainment and classified as maintenance under the 1997 annual PM<sub>2.5</sub> standard on July 11, 2013 (78 FR 41698). As such, transportation conformity is not of concern for the 2010 1-hour SO<sub>2</sub> NAAQS.

### **3.0 Indianapolis, Indiana SO<sub>2</sub> Nonattainment Area Maintenance Plan**

On July 25, 2013, U.S. EPA designated Center, Perry and Wayne Townships in Marion County, Indianapolis, Indiana, as nonattainment under Subpart 1 of Section 107 of the CAA (78 FR 47191). Designations were made based on monitored air quality data measured during 2009, 2010, and 2011. These designations became effective on October 4, 2013. However, based on complete quality-assured monitoring data collected at all monitors within the nonattainment area for the 2014 - 2016 design value period, the Indianapolis, IN nonattainment area has attained the standard in advance of the October 4, 2018, attainment date.

In order for the Indianapolis, IN Nonattainment Area to be redesignated to attainment, Indiana must submit, and U.S. EPA must approve, a SIP showing maintenance of the SO<sub>2</sub> NAAQS within the nonattainment area for at least 10 years after redesignation. The following plan has been developed in support of Indiana’s request for redesignation.

U.S. EPA’s Redesignation Guidance states that the Maintenance Plan must consist of the following items:

- Attainment Inventory
- Demonstration of Maintenance
- Continued Operation of Monitoring Network
- Continued Attainment
- Contingency Plan

### 3.1 Attainment Inventory

U.S. EPA's Redesignation Guidance requires the submittal of a comprehensive inventory of SO<sub>2</sub> emissions representative of the year when the area achieves attainment of the SO<sub>2</sub> air quality standard. To satisfy this requirement, Indiana is submitting an inventory of SO<sub>2</sub> emissions for the year 2015, one of the three years during which attainment was achieved.

IDEM has prepared a comprehensive emissions inventory for Marion County, Indiana, organized by anthropogenic source categories: electric-generating units (EGUs), non-EGUs, non-point (area), non-road, and on-road sources for SO<sub>2</sub> for the attainment-year 2015.

IDEM's Office of Air Quality collects data, calculates, and stores emissions for point sources (i.e. EGU and non-EGUs) on an annual basis in the Emission Inventory Tracking System (EMITS). These point source emissions are uploaded to the National Emissions Inventory (NEI) each year.<sup>1</sup> U.S. EPA has also added other sources such as airport operations, which are now handled as point source emissions. Airport activities fall outside of the required reporting under Indiana Administrative Code 326 IAC 2-6 so therefore the airport operations emissions are obtained through the NEI.

For the 2015 attainment-year inventory, emissions from point sources (i.e. EGU and non-EGUs) represent actual reported emissions. Airport, area, non-road, and on-road emissions were projected as described below.

Airport, area, non-road, and on-road emissions were compiled from the data available on U.S. EPA's Emissions Modeling Clearinghouse website.<sup>2</sup> Using SO<sub>2</sub> NAAQS Emissions Modeling platform (2011v6.1), data were obtained for the 2011 NEI year and the 2017 and 2023 U.S. EPA-projected inventory years. Using those data, airport, area, non-road, and on road emissions for intervening years, including the 2015 attainment-year, were interpolated between 2011 and 2017 and then between 2017 and 2023 for 2020. Beyond 2023, the projected year 2030 was estimated using the TREND function in Microsoft Excel. If the TREND function resulted in a negative value, the emissions were assumed to not change. Biogenic emissions are not included in these summaries.

#### 3.1.1 Attainment –Year Emissions Inventory

The 2015 attainment-year emissions inventory in Table 3.1 represents a comprehensive inventory of SO<sub>2</sub> emissions from all sources in Marion County.

---

<sup>1</sup> <https://www.epa.gov/air-emissions-inventories>

<sup>2</sup> <https://www.epa.gov/air-emissions-modeling/2011-version-62-technical-support-document>

**Table 3.1: 2015 Attainment-Year SO<sub>2</sub> Emissions Inventory, Marion County, Indiana**

<b>Sector</b>	<b>SO<sub>2</sub> Emissions (tons per year)</b>
Area	86.91
Non-road	8.36
On-road	74.30
Non-EGU Point	211.85
EGU-Point	14,930.22
<b>TOTAL</b>	<b>15,312</b>

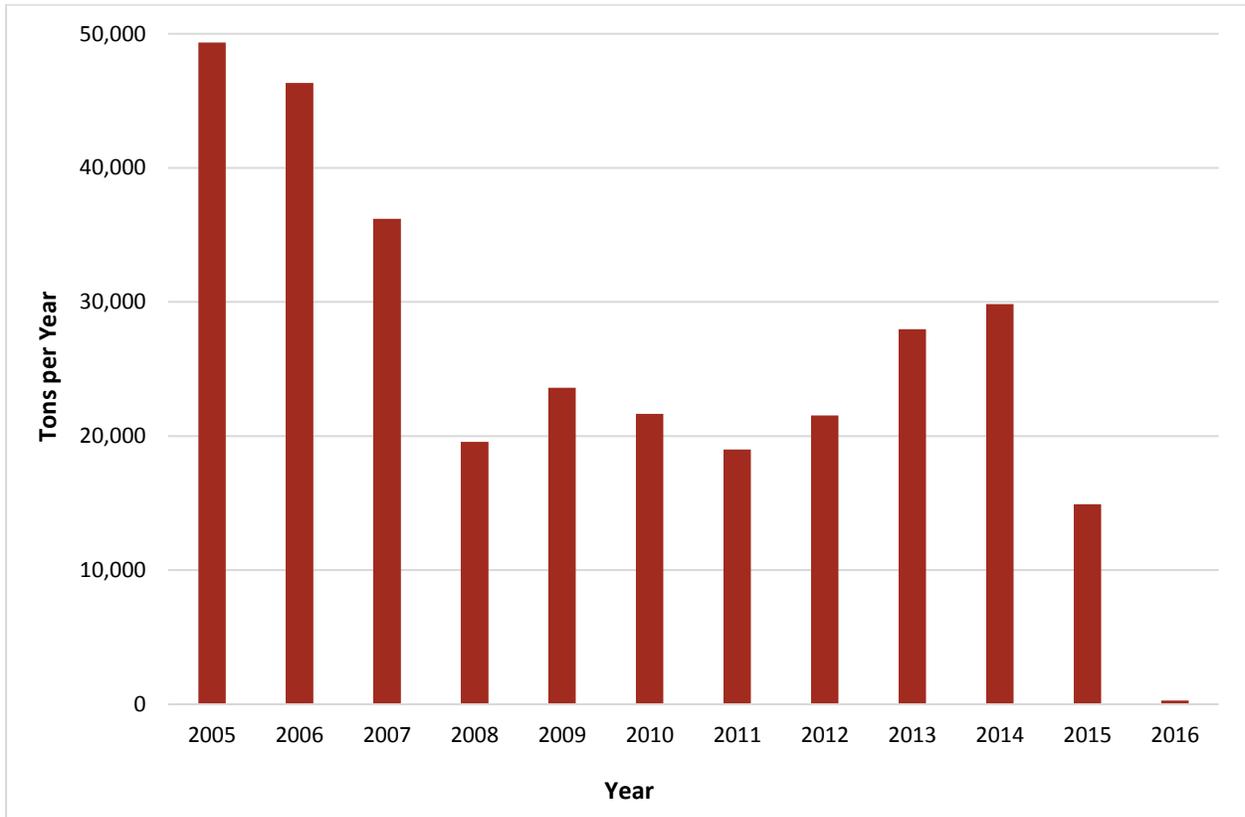
### 3.1.2 Emission Trends

As shown in Table 3.1, the largest source of SO<sub>2</sub> emissions from Marion County are from EGU-point sources. Graph 3.1 shows the trend in SO<sub>2</sub> emissions, as retrieved from U.S. EPA’s Air Markets Database<sup>3</sup>, from EGUs located within Marion County for 2005 – 2016 (Georgetown Substation and IPL – Harding Street Station). SO<sub>2</sub> emissions decreased substantially in response to national programs affecting all EGUs such as the NSPS under Section 111 and 129 of the CAA, the NESHAP under Section 112 of CAA, CAIR, and now CSAPR. Graphs and data tables of emissions for EGU sources are available in Appendix C.

---

<sup>3</sup> <http://www.epa.gov/airmarkets/>

**Graph 3.1: SO<sub>2</sub> Emissions from Marion County, Indiana, Electric Generating Units: Georgetown Substation and IPL - Harding Street Station, 2005-2016**



### 3.2 Demonstration of Maintenance

Ambient air quality data from all monitors within the Indianapolis, IN nonattainment area indicate that the 2010 primary 1-hour SO<sub>2</sub> standard was attained at the end of 2016. According to U.S. EPA Redesignation Guidance, states may generally demonstrate maintenance of the standard “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.”

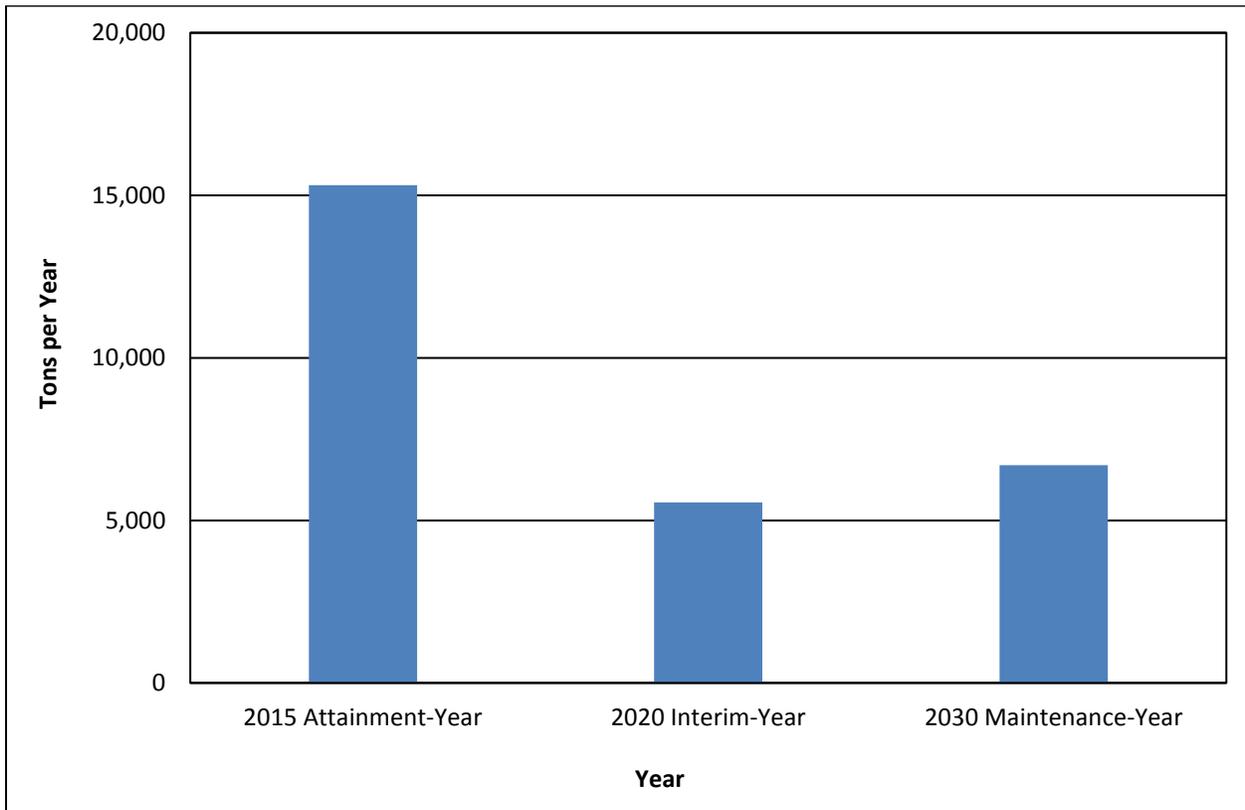
Emission projections outlined below illustrate that SO<sub>2</sub> emissions in the Indianapolis, IN Nonattainment Area will not exceed the emissions from 2015, the attainment-year and 2030, the maintenance-year. The modeling analysis discussed in Section 2.1.2 further discusses the implications of these emission trends and provides an analysis to support these conclusions. Therefore, air quality should continue to attain the 2010 primary 1-hour SO<sub>2</sub> standard through the projected years of 2020 and 2030.

### 3.2.1 Emission Projections

IDEM selected the year 2030 as the maintenance-year for this redesignation request. This document contains projected emission inventories for 2020 and 2030. The detailed SO<sub>2</sub> inventory information for the entire nonattainment area for 2020 and 2030 can be found in Appendix D.

SO<sub>2</sub> emission trends are an important gauge for continued compliance with the 2010 1-hour SO<sub>2</sub> standard. Therefore, IDEM performed a comparison of the SO<sub>2</sub> inventories for the attainment-year (2015), interim-year (2020), and maintenance-year (2030) for Marion County, Indiana. Graph 3.2 compares 2015 (attainment-year) estimated SO<sub>2</sub> emissions with the 2020 and 2030 projected emissions for Marion County, Indiana. Graph 3.3 provides the same comparison and also includes the emissions from each source category.

**Graph 3.2: Comparison of 2015 (Attainment-Year), 2020 (Interim-Year), and 2030 (Maintenance-Year) SO<sub>2</sub> Emissions, All Sources, Marion County, Indiana**



**Graph 3.3: SO<sub>2</sub> Emissions by Category and Year, 2015 (Attainment-Year), 2020 (Interim-Year), and 2030 (Maintenance-Year), All Sources, Marion County, Indiana**

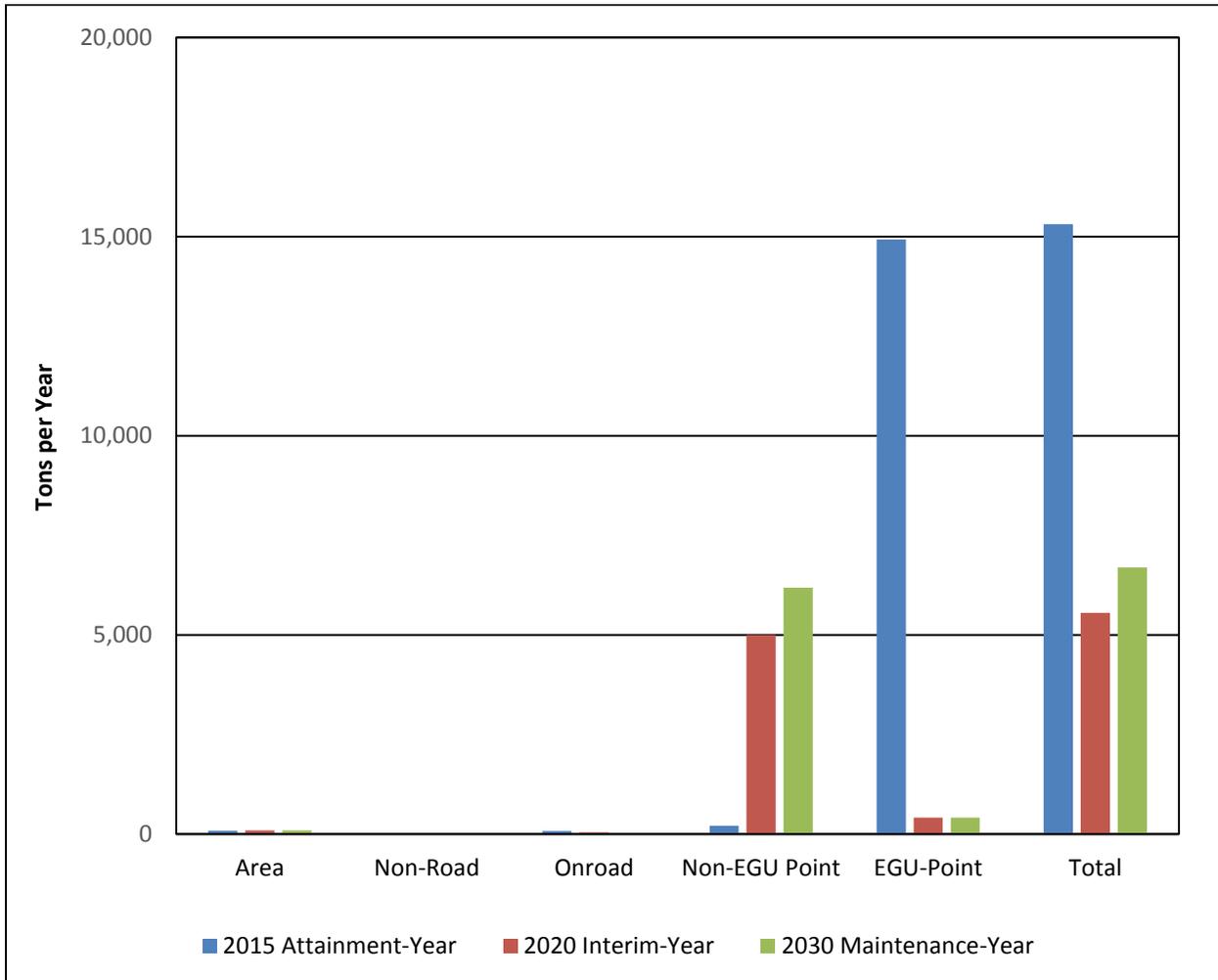


Table 3.2 compares SO<sub>2</sub> emissions for all sources for the 2015 attainment-year and the 2030 maintenance-year for Marion County, Indiana. SO<sub>2</sub> emissions within Marion County are projected to decline by 56% between 2015 and 2030. The decrease in emissions shown between the attainment-year (2015) and the maintenance-year (2030) in Table 3.2 illustrates that continued maintenance of the 2010 1-hour SO<sub>2</sub> NAAQS is expected.

**Table 3.2: Comparison of 2015 (Attainment-Year) and 2030 (Maintenance-Year) SO<sub>2</sub> Emissions, All Sources, Marion County, Indiana (tons per year)**

	2015	2030	Change	%Change
SO <sub>2</sub>	15,312	6,695	-8,617	-56%

### 3.3 Monitoring Network

Indiana has committed to continue monitoring SO<sub>2</sub> levels at the sites indicated in Table 2.1 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. Indiana will continue to quality assure the monitoring data to meet the requirements of 40 CFR 50. Indiana will enter all data into AQS in a timely manner in accordance with federal guidelines.

### 3.4 Continued Attainment

In Indiana, major point sources in all counties are required to submit air emissions information once every three (3) years or annually if the SO<sub>2</sub> potential to emit is greater than 2,500 tpy, in accordance with the Emission Statement Rule, 326 Indiana Administrative Code (IAC) 2-6. IDEM prepares a new periodic inventory for all SO<sub>2</sub> emission sectors every three (3) years. These SO<sub>2</sub> inventories will be prepared for 2017, 2020, and 2023, as necessary, to comply with the inventory reporting requirements established in the CAA. Emissions information will be compared to the 2015 attainment-year and the 2030 projected maintenance-year inventories to assess emission trends, as necessary, to assure continued compliance with the 2010 primary 1-hour SO<sub>2</sub> standard.

There are currently two monitors measuring SO<sub>2</sub> concentrations in the Indianapolis, IN Nonattainment Area: Indianapolis – Harding Street (ID# 18-097-0057) and Indianapolis – Washington Park (ID# 18-097-0078). Indiana has quality-assured all SO<sub>2</sub> data shown in Appendix A in accordance with 40 CFR 50.17 and the Quality Assurance Manual. Indiana has recorded the data in the AQS database and the data are available to the public. Further, according to the applicable requirements of 40 CFR 58.10, Indiana will consult with U.S. EPA through the annual review of Indiana's monitoring network prior to making any changes to the existing monitoring network.

Indiana maintains the legal authority, necessary resources, and structural components of its air quality management program to implement and enforce all measures necessary to maintain the 2010 primary 1-hour NAAQS for SO<sub>2</sub>.

### 3.5 Contingency Plan

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 the SIP. The revision will contain Indiana's plan for maintaining the 2010 primary 1-hour NAAQS for SO<sub>2</sub> for an additional ten (10) years beyond the first ten (10) year maintenance period after redesignation.

Indiana commits to adopt and expeditiously implement necessary corrective actions in response to exceeding specified levels or in the event that future violations of the ambient standard occur. Indiana hereby commits to adopt and implement necessary corrective actions in the following circumstances:

### 3.5.1 Warning Level Response

A Warning Level Response shall be prompted whenever the annual average 99<sup>th</sup> percentile maximum daily 1-hour SO<sub>2</sub> concentration of 79 ppb occurs in a single calendar year within the maintenance area. A Warning Level Response will consist of a study to determine whether the SO<sub>2</sub> value indicates a trend toward higher SO<sub>2</sub> 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 measure(s) necessary to reverse the trend, taking into consideration ease and timing for implementation, as well as economic and social considerations. Implementation of necessary control(s) in response to a Warning Level Response trigger will take place as expeditiously as possible, but in no event later than twelve months from the conclusion of the most recent calendar year.

Should it be determined through the Warning Level study that action is necessary to reverse the noted trend, procedures for control selection and implementation outlined under “Action Level Response” shall be followed.

### 3.5.2 Action Level Response

An Action Level Response shall be prompted whenever a violation of the standard (three-year average of the 99<sup>th</sup> percentile maximum daily 1-hour SO<sub>2</sub> concentration of 75 ppb 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 measure(s) needed to assure future attainment of NAAQS for 1-hour SO<sub>2</sub>. In this case, measure(s) that can be implemented within a short period of time will be selected and be in place within eighteen months from the close of the calendar year that prompted the Action Level. IDEM will also consider the timing of an action level trigger and determine if additional, significant new regulations not currently included as part of the maintenance provisions will be implemented in a timely manner and will constitute an acceptable Action Level response.

### 3.5.3 Control Measure Selection and Implementation

Adoption of any additional control measure(s) is subject to the necessary administrative and legal process. This process will include posting of notices, an opportunity for public hearing, and other measures required by Indiana law for rulemaking by the State of Indiana’s Environmental Rules Board.

If a new measure or control is already promulgated and scheduled to be implemented at the federal or state level and that measure or 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 that the proposed measure(s) are adequate to return the area to attainment.

### 3.5.4 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 SO<sub>2</sub> emissions. Because it is not possible at this time to determine what control measure(s) 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 measure(s) should ever be necessary, it is unlikely that a significant number (i.e., all those listed below) will be required.

1. Require alternative fuel
2. Require SO<sub>2</sub> emissions add-on control technologies for existing emission units.
3. Require reduced operating hours.
4. Require SO<sub>2</sub> emission offsets for new and modified major sources
5. Require SO<sub>2</sub> emission offsets for new and modified minor sources

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.

## **4.0 Public Participation**

In accordance with 40 CFR 51.102, public participation in this request was provided as follows: Notice of availability of the complete document and a request for the opportunity for a public hearing was made available on IDEM's website on May 5, 2017, at <http://www.in.gov/idem/6399.htm>. It remained posted on the site until at least June 20, 2017.

During the public comment period IDEM did not receive any public comments. The deadline during the public comment period to request a hearing was June 5, 2016. There was not a request for a public hearing and therefore the hearing was not required to be held.

A copy of the legal public notice and certification of publication can be found in Appendix E. This section will be finalized upon completion of the public hearing and public comment period.

## **5.0 Conclusions**

The Indianapolis, IN Nonattainment Area, has attained the 2010 primary 1-hour SO<sub>2</sub> standard. This petition demonstrates that the Indianapolis, IN Nonattainment Area has complied with the applicable provisions of the CAA regarding redesignation of SO<sub>2</sub> nonattainment areas. IDEM has prepared a Redesignation Request and Maintenance Plan that meet the requirements of Section 110(a)(1) of the CAA.

Based on this analysis, the Indianapolis, IN Nonattainment Area meets the requirements for redesignation under Section 107(d)(3) of the CAA and U.S. EPA guidance. Indiana has demonstrated that air quality improvements are due to permanent and enforceable measures. As a result of the SO<sub>2</sub> attainment strategies and emission limits implemented at each of the identified facilities, SO<sub>2</sub> emissions in the Indianapolis, IN Nonattainment Area have decreased significantly, ensuring the area will continue to maintain compliance with the 2010 primary 1-hour SO<sub>2</sub> standard. Indiana has ensured that all CAA requirements necessary to support redesignation have been met.

Consistent with the authority granted to U.S. EPA under Section 107(d)(3) of the CAA, Indiana requests that the Indianapolis, IN Nonattainment Area be redesignated from nonattainment to attainment for the 2010 primary 1-hour SO<sub>2</sub> standard simultaneously with U.S. EPA approval of the Redesignation Request and Maintenance Plan provisions contained herein.

*This page left intentionally blank*

# **APPENDIX A**

## **Air Quality System (AQS) Monitor Data Values for the Indianapolis, Indiana 2010 Primary 1- Hour SO<sub>2</sub> Nonattainment Area**

*This page left intentionally blank.*

**AQS Monitoring Data for the Indianapolis, IN  
2010 Primary 1-Hour SO<sub>2</sub> Nonattainment Area**

**Monitoring Data for the Indianapolis, IN 1-Hour SO<sub>2</sub> Nonattainment Area (Annual  
99<sup>th</sup> Percentile and Design Values in ppb)**

Site ID	County	Site Name	99 <sup>th</sup> Percentile Values (ppb)						3-Year Design Values			
			2011	2012	2013	2014	2015	2016	2011-2013	2012-2014	2013-2015	2014-2016
180970057	Marion	Harding Street	63.0	91.5	78.1	105.6	54.3	14.6	78	92	79	58
180970078	Marion	Washington Park	59.7	61.1	69.7	80.0 <sup>a</sup>	50.2	6.4	64	77 <sup>b</sup>	73 <sup>b</sup>	52 <sup>b</sup>

a - Invalid 99<sup>th</sup> Percentile Value

b – Design values conservatively calculated using highest hourly value for 2014 of 99.8 ppb.

**Design Value Trends for the Indianapolis, IN Nonattainment Area, 2011-2016**



*This page left intentionally blank*

# **APPENDIX B**

**2011 Nonattainment-Year and 2015 Attainment-Year Emission Inventories for Sulfur Dioxide (SO<sub>2</sub>), All Sources, for the Indianapolis, Indiana 2010 Primary 1-Hour SO<sub>2</sub> Nonattainment Area**

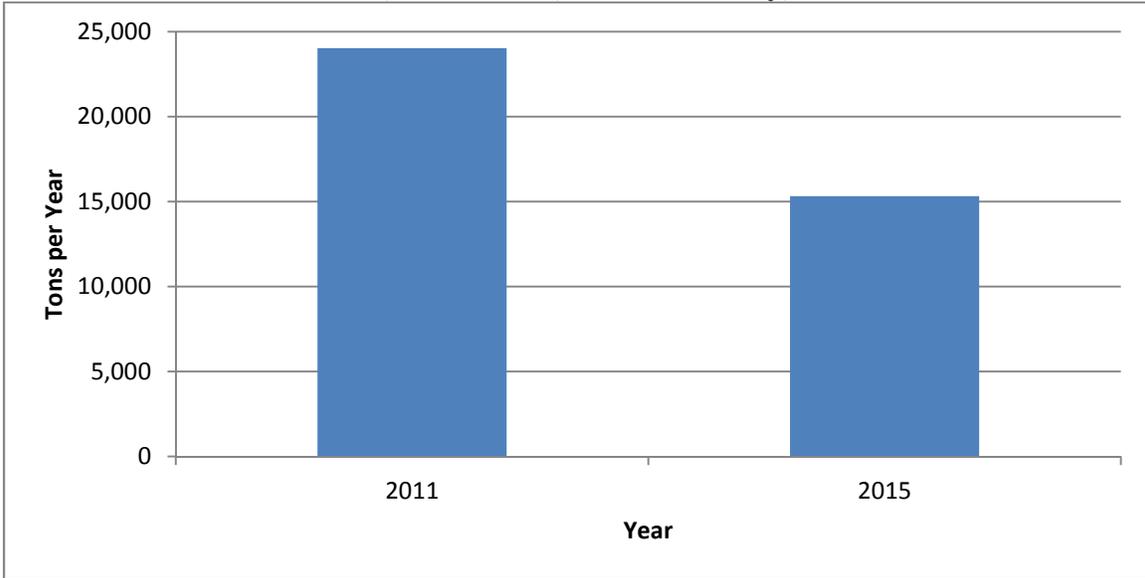
*This page left intentionally blank.*

<b>Marion County, Indiana, Emission Totals, All Sources (Tons per Year)</b>	
<b>Year</b>	<b>SO<sub>2</sub></b>
2011	24,021
2015	15,312
<b>Difference from 2011 to 2015</b>	<b>-8,709</b>

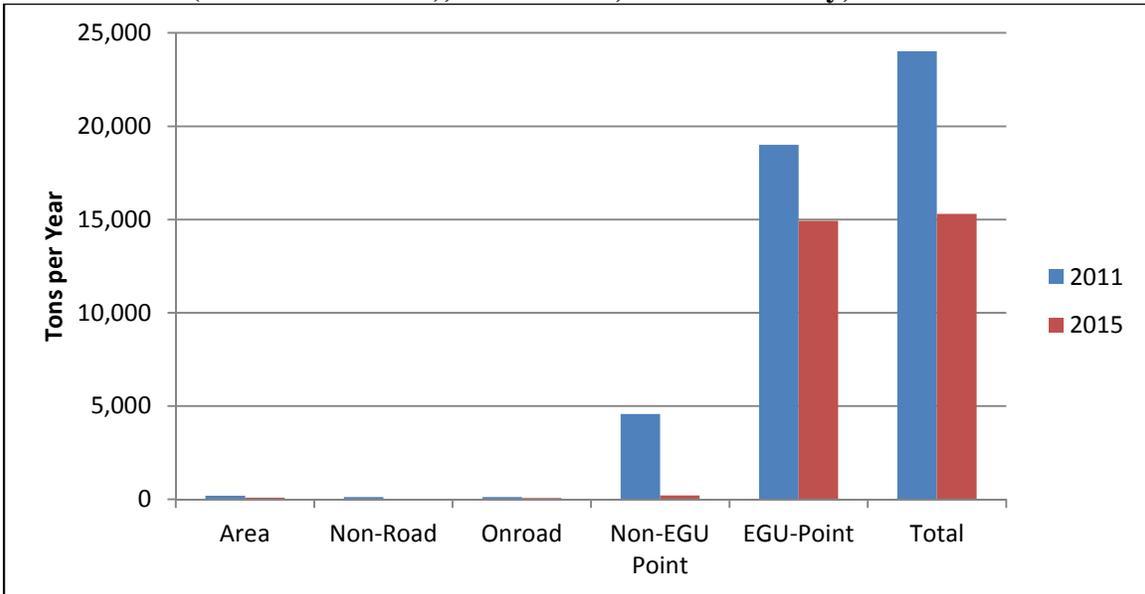
<b>2011 Marion County, Indiana Emission Totals, All Sources (Tons per Year)</b>						
	<b>Area</b>	<b>Nonroad</b>	<b>Onroad</b>	<b>Non-EGU-Point</b>	<b>EGU-Point</b>	<b>Total</b>
<b>SO<sub>2</sub></b>	193.21	125.37	121.88	4,582.46	18,998.02	24,021

<b>2015 Marion County, Indiana Emission Totals, All Sources (Tons per Year)</b>						
	<b>Area</b>	<b>Nonroad</b>	<b>Onroad</b>	<b>Non-EGU-Point</b>	<b>EGU-Point</b>	<b>Total</b>
<b>SO<sub>2</sub></b>	86.91	8.36	74.30	211.85	14,930.22	15,312

**Comparison of 2011 (Nonattainment-Year), and 2015 (Attainment-Year) SO<sub>2</sub> Emissions, All Sources, Marion County, Indiana**



**SO<sub>2</sub> Emissions by Category and Year, 2011 (Nonattainment-Year), and 2015 (Attainment-Year), All Sources, Marion County, Indiana**



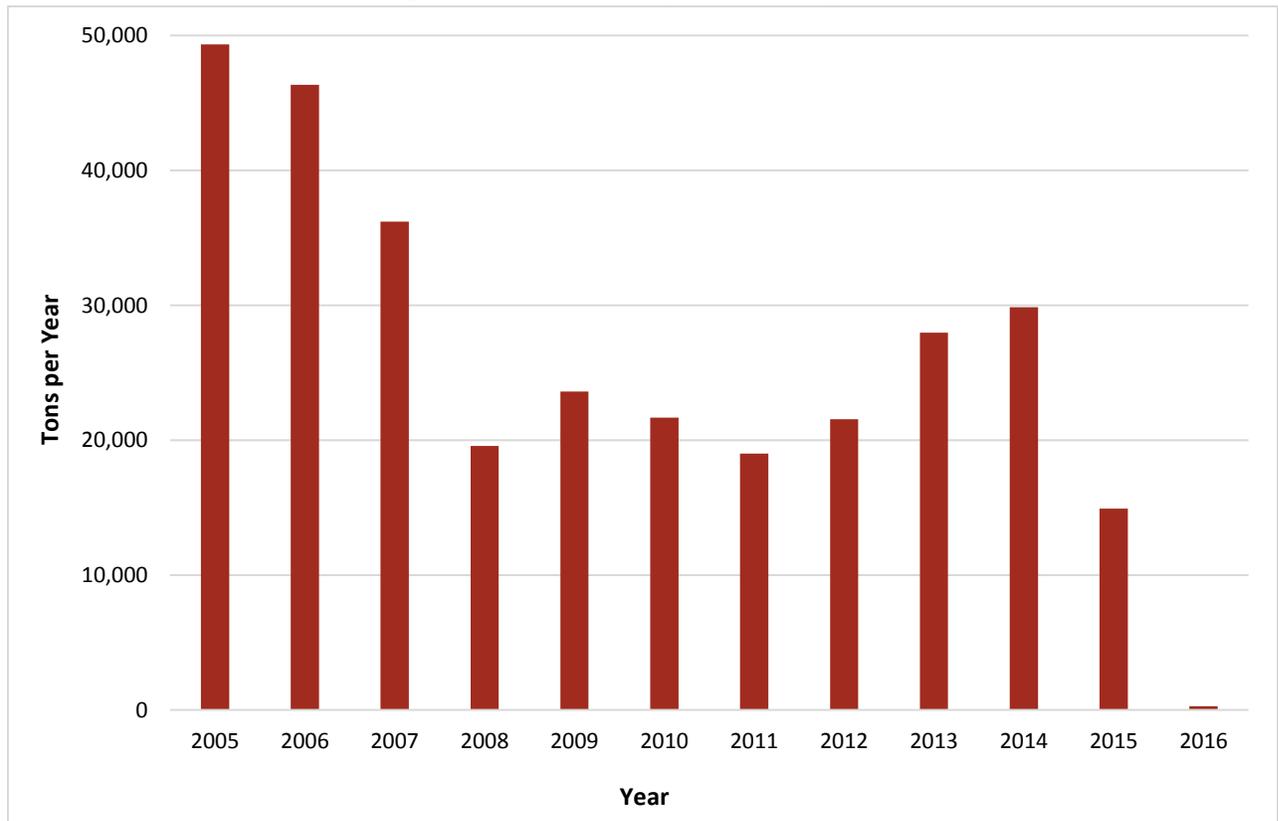
# **APPENDIX C**

**Sulfur Dioxide (SO<sub>2</sub>) Emissions from Electric  
Generating Units for the Indianapolis, Indiana  
2010 Primary 1-Hour SO<sub>2</sub> Nonattainment Area,  
2005 – 2016**

*This page left intentionally blank.*

<b>SO<sub>2</sub> Emissions from Marion County, Indiana, Electric Generating Units, Georgetown Substation, and Indianapolis Power and Light-Harding Street Station, 2005-2016</b>	
<b>Year</b>	<b>Total SO<sub>2</sub> Emissions, Tons per Year</b>
2005	49,351
2006	46,346
2007	36,202
2008	19,573
2009	23,598
2010	21,668
2011	19,006
2012	21,542
2013	27,974
2014	29,855
2015	14,930
2016	276

**SO<sub>2</sub> Emissions from Marion County, Indiana, Electric Generating Units, Georgetown Substation, and Indianapolis Power and Light- Harding Street Station, 2005-2016**



*This page left intentionally blank*

# **APPENDIX D**

**2015 Attainment-Year Emissions Inventory and  
2020 and 2030 Projected Emission Inventories  
for Sulfur Dioxide (SO<sub>2</sub>), All Sources, for the  
Indianapolis, Indiana 2010 Primary 1-Hour  
SO<sub>2</sub> Nonattainment Area**

*This page left intentionally blank.*

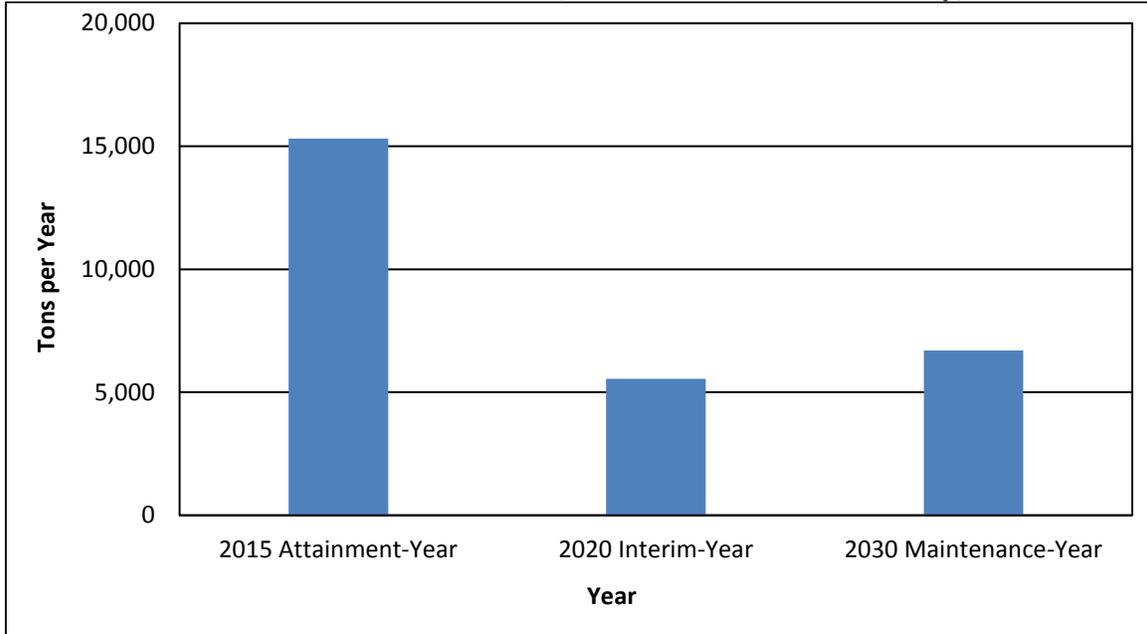
<b>Marion County, Indiana, Emission Totals, All Sources (Tons per Year)</b>	
<b>Year</b>	<b>SO<sub>2</sub></b>
2015	15,312
2020	5,551
2030	6,695
<b>Difference from 2015 to 2030</b>	<b>-8,617</b>

<b>2015 Marion County, Indiana Emission Totals, All Sources (Tons per Year)</b>						
	<b>Area</b>	<b>Nonroad</b>	<b>Onroad</b>	<b>Non-EGU-Point</b>	<b>EGU-Point</b>	<b>Total</b>
<b>SO<sub>2</sub></b>	86.91	8.36	74.30	211.85	14,930.22	15,312

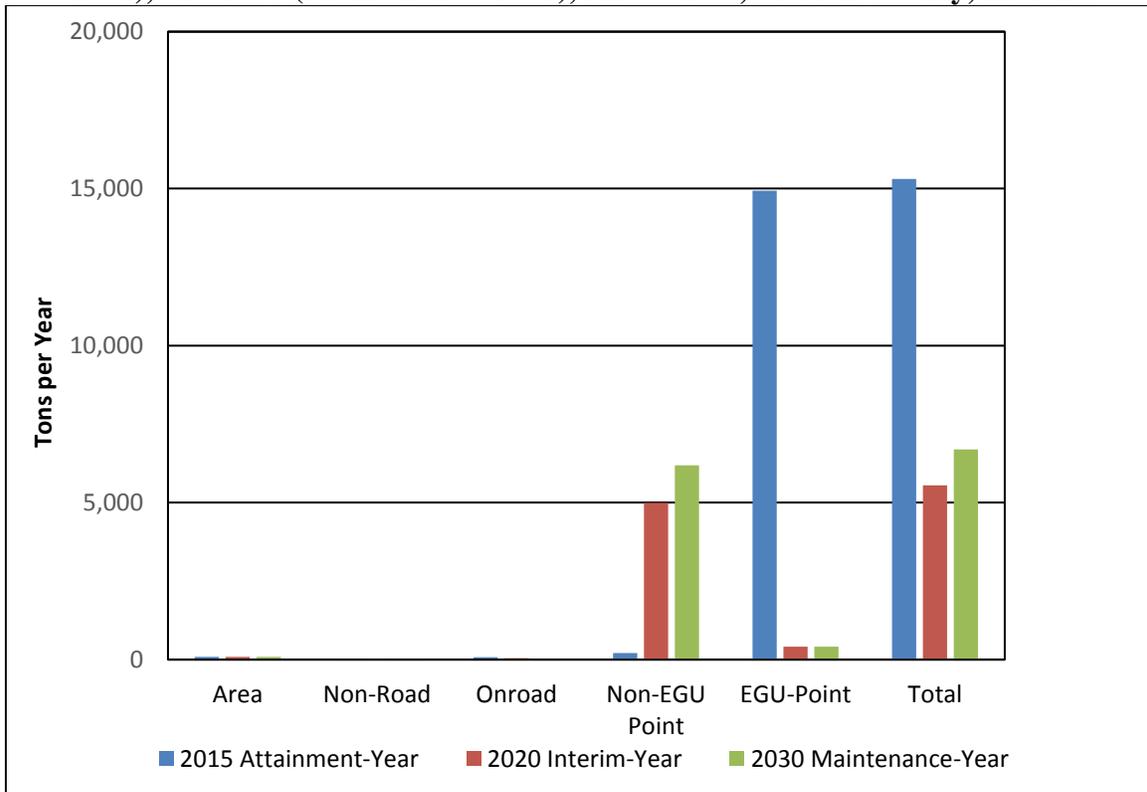
<b>2020 Marion County, Indiana Emission Totals, All Sources (Tons per Year)</b>						
	<b>Area</b>	<b>Nonroad</b>	<b>Onroad</b>	<b>Non-EGU-Point</b>	<b>EGU-Point</b>	<b>Total</b>
<b>SO<sub>2</sub></b>	87.79	5.69	47.82	4,996.50	413.00	5,551

<b>2030 Marion County, Indiana Emission Totals, All Sources (Tons per Year)</b>						
	<b>Area</b>	<b>Nonroad</b>	<b>Onroad</b>	<b>Non-EGU-Point</b>	<b>EGU-Point</b>	<b>Total</b>
<b>SO<sub>2</sub></b>	89.73	1.10	6.64	6,184.68	413.00	6,695

**Comparison of 2015 (Attainment-Year), 2020 (Interim-Year), and 2030 (Maintenance-Year) SO<sub>2</sub> Emissions, All Sources, Marion County, Indiana**



**SO<sub>2</sub> Emissions by Category and Year, 2015 (Attainment-Year), 2020 (Interim-Year), and 2030 (Maintenance-Year), All Sources, Marion County, Indiana**



# **APPENDIX E**

## **Public Participation Process Documentation**

*This page left intentionally blank.*

## **LEGAL NOTICE OF PUBLIC HEARING**

### **Redesignation and Maintenance Plan in association with the 2010 Primary 1-Hour Sulfur Dioxide (SO<sub>2</sub>) Standard for the Indianapolis, IN Partial Marion County Nonattainment Area Center, Perry and Wayne Townships, Marion County, Indiana**

Notice is hereby given under 40 CFR 51.102 that the Indiana Department of Environmental Management (IDEM) is accepting written comment and providing an opportunity for a public hearing regarding the Draft Redesignation Petition and Maintenance Plan in association with the 2010 primary 1-hour SO<sub>2</sub> standard for the Indianapolis, IN partial nonattainment area comprised of Center, Perry and Wayne Townships in Marion County, Indiana. All interested persons are invited and will be given reasonable opportunity to express their views concerning the submittal of the draft Redesignation Petition and Maintenance Plan.

On July 25, 2013, U.S. EPA designated Center, Perry and Wayne Townships in Indianapolis, Indiana, nonattainment under Subpart 1 of Section 107(d)(1) of the CAA (78 FR 47191). These designations became effective on October 4, 2013.

SO<sub>2</sub> monitoring data for the most recent three (3) years, 2014-2016, demonstrates that the air quality meets the 2010 primary 1-hour SO<sub>2</sub> standard in the nonattainment area. This fact, accompanied by the permanent and enforceable decreases in emission levels discussed in Section 2.3, justifies a redesignation to attainment for Indiana's nonattainment area based on Section 107(d)(3)(E) of the CAA.

Copies of the Draft Redesignation Petition and Maintenance Plan will be available on or before May 5, 2017 to any person upon request at the following locations:

- Indiana Department of Environmental Management, Office of Air Quality, Indiana Government Center North, 100 North Senate Avenue, Room N1003, Indianapolis, Indiana
- Marion County Public Library, West Indianapolis Branch, 1216 South Kappes Street, Indianapolis, Indiana

The draft documents will also be available on the following web page:

<http://www.in.gov/idem/airquality/2617.htm>

Any person may submit written comments on the Draft Redesignation Petition and Maintenance Plan in association with the 2010 primary 1-hour SO<sub>2</sub> standard for the Indianapolis, IN partial nonattainment area comprised of Center, Perry and Wayne Townships in Marion County, Indiana. Written comments should be directed to:

Mrs. Michele Boner  
Indiana Department of Environmental Management  
Office of Air Quality, Room 1003  
100 North Senate Avenue  
Indianapolis, Indiana 46204

Comments can also be submitted via fax (317) 233-5967 or e-mail at [mboner@idem.IN.gov](mailto:mboner@idem.IN.gov). Comments must be submitted by June 20, 2017. Interested parties may also present oral or written comments at the public hearing, if held. Oral statements will be heard, but for the accuracy of the record, statements should be submitted in writing. Written statements may be submitted to the attendant designated to receive written comments at the public hearing.

- A public hearing on the Draft Redesignation Petition and Maintenance Plan in association with the 2010 primary 1-hour SO<sub>2</sub> standard for the Indianapolis, IN partial nonattainment area comprised of Center, Perry and Wayne Townships in Marion County, Indiana will be held if a public hearing request is received by June 5, 2017. If a hearing is requested, the hearing will be held on June 14, 2017. The hearing will convene at 6:00 p.m. local time at Marion County Public Library, West Indianapolis Branch, 1216 South Kappes Street, Indianapolis, Indiana 46221. If a request for a public hearing is not received by June 5, 2017, the hearing will be cancelled. Interested parties can check the online IDEM calendar at <http://www.in.gov/activecalendar/EventList.aspx> or contact Mrs. Michele Boner at (317) 233-6844, after June 5, 2017, to see if the hearing has been cancelled or will convene.

A transcript of the hearing and all written submissions provided at the public hearing shall be open to public inspection at IDEM and copies may be made available to any person upon payment of reproduction costs. Any person heard or represented at the hearing or requesting notice shall be given written notice of actions resulting from the hearing.

For additional information contact Mrs. Michele Boner, at the Indiana Department of Environmental Management, Office of Air Quality, Room N1003, Indiana Government Center North, 100 North Senate Avenue, Indianapolis, IN 46204 or call (317) 233-6844 or (800) 451-6027 ext. 3-6844 (in Indiana).

.....

*Speech and hearing impaired callers may contact the agency via the Indiana Relay Service at 1-800-743-3333. Individuals requiring reasonable accommodations for participation in this hearing should contact the IDEM Americans with Disabilities Act (ADA) coordinator at: Attn: ADA Coordinator, Indiana Department of Environmental Management – Mail Code 50-10, 100 North Senate Avenue, Indianapolis, IN 46204-2251, or call (317) 233-1785 (voice) or (317) 233-6565 (TDD). Please provide a minimum of 72 hours notification.*



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We Protect Hoosiers and Our Environment.*

100 N. Senate Avenue • Indianapolis, IN 46204

(800) 451-6027 • (317) 232-8603 • [www.idem.IN.gov](http://www.idem.IN.gov)

**Eric J. Holcomb**  
Governor

**Bruno Pigott**  
Commissioner

May 1, 2017

## CERTIFICATE OF PUBLICATION

This is to certify that the Indiana Department of Environmental Management (IDEM) Notice of the opportunity for a Public Hearing regarding the following:

- Draft Indianapolis, IN Partial Marion County (Center, Perry, and Wayne Townships) 2010 1-Hour Sulfur Dioxide Redesignation Petition and Maintenance Plan

was published on IDEM's web site on May 1, 2017. It is expected that it and the draft documents will remain posted until at least June 20, 2017.

The notice in full was available online at the following web address, under "Central/Marion County".

<http://www.in.gov/idem/5474.htm>

Web publication of the notice was at the request of Scott Deloney, Branch Chief, Programs Branch, Office of Air Quality, IDEM.

By:

Mike Finklestein  
IDEM Webmaster

Attachments:

Copy of web page as published.

*This page left intentionally blank*

Marc Adams School of Woodworking	<a href="#">Water Well Construction for Drinking Water [PDF]</a>	03/08/2017 - 04/09/2017	Yes	Project Manager: Liz Melvin Permit Number: 11658
<b>Madison</b>				
Indiana Municipal Power Agency - Anderson Station	<a href="#">Renewal of a Part 70 Operating Permit [PDF]</a>	04/20/2017 - 05/20/2017	Yes	Permit Number: T095-37513-00051
I-69 ATL Segment C	<a href="#">401 Water Quality Certification Public Notice [PDF]</a>	04/28/2017 - 05/19/2017	Yes	Project Manager: Samantha Groce Applicant Company: INDOT Permit Number: 2017-218-48-SKG-A
Red Gold Inc - Orestes	<a href="#">NPDES Draft Renewal [PDF]</a>	04/19/2017 - 05/19/2017	Yes	Project Manager: Kerian Bunch Permit Number: IN0036587
Edgewood Water Department	<a href="#">Chemical Addition [PDF]</a>	04/18/2017 - 05/18/2017	Yes	Project Manager: Heidi Nassiri Permit Number: 11671
Speedway LLC - Former Speedway #7160	<a href="#">NPDES 15-10 "Termination" General Permit [PDF]</a>	04/19/2017 - 05/08/2017	No	Project Manager: Sheri Jordan Permit Number: ING080313
ELSA Corporation	<a href="#">NPDES Pretreatment Draft Renewal [PDF]</a>	03/17/2017 - 04/17/2017	Yes	Project Manager: Christa Phelps Permit Number: INP000041
<b>Marion</b>				
Draft Indianapolis, IN Partial Marion County (Center, Perry, and Wayne Townships) 2010 1-Hour Sulfur Dioxide Redesignation Petition and Maintenance Plan	<a href="#">Legal Notice and Opportunity for Public Hearing [PDF]</a>	05/05/2017 - 06/05/2017	Yes	Project Manager: Michele Boner Additional information is available on the <a href="#">IDEM Air Quality in Indiana: Redesignations and Maintenance Plans, Marion County</a> page
Nora Corners Shopping Center	<a href="#">Public comment period on a Remediation Work Plan in the Voluntary Remediation Program [DOC]</a>	05/01/2017 - 06/01/2017	Yes	Project Manager: Amanda Foti Applicant Company: MH Nora HG, LLC
Shady Hills Utility Co WWTP	<a href="#">NPDES Final Renewal [PDF]</a>	04/28/2017 - 05/16/2017	No	Project Manager: Lynn Riddle Permit Number: IN0043559
Hope Center Indy (fka Verity Institute) WWTP	<a href="#">NPDES Final Modification [PDF]</a>	04/21/2017 - 05/09/2017	No	Project Manager: Jason House Permit Number: IN0030040
Indianapolis Department of Transportation	<a href="#">Hazardous Waste Corrective Action Completion [PDF]</a>	04/10/2017 - 05/10/2017	Yes	Project Manager: Doug Griffin Permit Number: IND981195480
Farnsworth Metal Recycling, LLC	<a href="#">Renewal of a Minor Source Operating Permit (MSOP) [PDF]</a>	03/25/2017 - 04/24/2017	Yes	Permit Number: M097-38064-00679
Highland Creek Drainage Improvements	<a href="#">401 Water Quality Certification Public Notice [PDF]</a>	03/20/2017 - 04/10/2017	Yes	Project Manager: James Turner

**Date and Time**

Date and Time Additional Clocks

Date:  
Monday, May 01, 2017

Time:  
12:07:25 PM

[Change date and time...](#)

Time zone \_\_\_\_\_  
(UTC-05:00) Eastern Time (US & Canada)

[Change time zone...](#)

Daylight Saving Time ends on Sunday, November 05, 2017 at 2:00 AM. The clock is set to go back 1 hour at that time.

Notify me when the clock changes

[Get more time zone information online](#)  
[How do I set the clock and time zone?](#)

# Indiana Department of Environmental Management



## Air Quality In Indiana Home

- About IDEM
- Air Quality 101
- Compliance
- Monitoring
- Permits
- Reporting
- Public Records
- Rules
- Glossary

Air Quality in Indiana > Resignations and Maintenance Plans > Resignations and Maintenance Plans: Marion County

## Marion County

### Carbon Monoxide (2009)

- [2009 Approval and Promulgation of Carbon Monoxide \(CO\) Limited Maintenance Plan, Marion County, Indiana](#)
- [2009 Cover Letter to U.S. EPA \(January 12, 2009\) \[PDF\]](#)
- [2009 Carbon Monoxide \(CO\) Limited Maintenance Plan Update for Marion County, Indiana \[PDF\]](#)

### Carbon Monoxide (1999)

- [2000 Approval and Promulgation of Carbon Monoxide \(CO\) Request for Redesignation and Limited Maintenance Plan, Marion County, Indiana](#)
- [1999 Cover Letter to U.S. EPA \(December 21, 1999\) \[PDF\]](#)
- [1999 Carbon Monoxide \(CO\) Request for Redesignation and Limited Maintenance Plan for Marion County, Indiana \[PDF\]](#)
- [1999 Carbon Monoxide \(CO\) Request for Redesignation and Limited Maintenance Plan for Marion County, Indiana - Enclosures \[PDF\]](#)

### Sulfur Dioxide (2017)

- [Draft Indianapolis, IN Partial Marion County \(Center, Perry, and Wayne Townships\) 2010 1-Hour Sulfur Dioxide Redesignation Petition and Maintenance Plan \[PDF\]](#)
  - [Appendix A \[PDF\]](#)
  - [Appendix B \[PDF\]](#)
  - [Appendix C \[PDF\]](#)
  - [Appendix D \[PDF\]](#)

## Online Services

- Acronyms List
- Electronic Permitting
- Enforcement Database
- Forms.IN.gov
- Online Air Permit Search
- Real-Time Monitoring
- Smog Watch
- Virtual File Cabinet

[MORE ONLINE SERVICES »](#)  
[SUBSCRIBER CENTER »](#)

### SmogWatch Alerts

Get the latest emails or SMS texts as they happen

Email

Email Address

**IDEM Public Notices**  
Be aware of what's going on in your community

### Top FAQs I Want To...

1. I'm interested in internship/employment opportunities working with environmental issues. How do I apply and what jobs are available?
2. Is a removal site also a Superfund site?
3. Is there a Superfund site near...

Date and Time

Date and Time Additional Clocks

Date: Monday, May 01, 2017

Time: 12:10:07 PM

Time zone: (UTC-05:00) Eastern Time (US & Canada)

Daylight Saving Time ends on Sunday, November 05, 2017 at 2:00 AM. The clock is set to go back 1 hour at that time.

Notify me when the clock changes

[Get more time zone information online](#)  
[How do I set the clock and time zone?](#)

- Quality Assurance
- Resignations and Maintenance Plans
- Regional Haze
- Risk Assessment