



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

Eric J. Holcomb
Governor

Brian C. Rockensuess
Commissioner

April 8, 2022

Mr. John Mooney, Chief
Air Programs Branch
U.S. EPA, Region 5
77 West Jackson Boulevard
Chicago, IL 60604-3950

Re: Supplements to the Technical Addendum to
Section 182(c)(3) Certification of the Enhanced
I/M Program and Request for Redesignation
and Maintenance Plan for Attainment of
Indiana's Portion (Lake and Porter Counties) of
the Chicago-Naperville, IL-IN-WI, 2008 8-Hour
Ozone Nonattainment Area

Dear Mr. Mooney:

The Indiana Department of Environmental Management (IDEM) developed and is providing supplemental information to the Technical Addendum to Section 182(c)(3) Certification of the Enhanced I/M Program and Request for Redesignation and Maintenance Plan for Attainment of Indiana's Portion (Lake and Porter counties) of the Chicago-Naperville, Illinois-Indiana-Wisconsin (IL-IN-WI), 2008 8-Hour Ozone Nonattainment Area. IDEM submitted the technical addendum and request for redesignation and maintenance plan to United States Environmental Protection Agency (U.S. EPA) on January 18, 2022, and December 6, 2021, respectively.

This supplement provides updated onroad emissions data based on the latest MOVES model (MOVES3.0.2) for Lake and Porter counties and supplements the most recent emissions into the technical addendum to the certification of the enhanced inspection and maintenance (I/M) program evaluation as well as the request for redesignation and maintenance plan.

Enclosure 1 contains an updated comparison of NO_x and HC emission reductions from U.S. EPA's model program specified in 40 Code of Federal Regulation (CFR) 51.351(i) and the actual enhanced I/M program in Lake and Porter counties, as it is approved into Indiana's State Implementation Plan for the year 2025 (i.e., six years after the effective date of "serious" nonattainment designation) using MOVES3.02. The differences between the two scenarios using MOVES3.02 are: 0.0012 grams per mile (gpm) for NO_x and 0.00025 gpm for HCs. The original data generated using MOVES2014a and the updated supplemental data generated using MOVES3.02 both

demonstrate that Indiana's current I/M program in Lake and Porter counties meets the applicable enhanced I/M performance requirements in 40 CFR 51.351.

Enclosure 2 contains replacement pages with strike-through text updating IDEM's redesignation request and maintenance plan to include text revisions referencing MOVES3.0.2 and several tables containing onroad emissions data generated using MOVES3.02 for the 2011 (non-attainment), 2019 (attainment), 2030 (interim), and 2035 (maintenance) years for Lake and Porter counties, as well as the entire Chicago-IL-IN-WI nonattainment area. Although the MOVES3.02 results differ slightly from those generated using MOVES2014a, the updated emissions data support the conclusions outlined in the original submittal. IDEM is simply providing this data to include the most recent emissions data available.

A separate email will be sent to Michael Leslie of U.S. EPA Region 5's Control Strategies Section transmitting specific MOVES3.0.2 run files.

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. IDEM would appreciate U.S. EPA's continued efforts to communicate regularly with us as it reviews and processes these submittals.

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

IDEM believes that these supplements to Indiana's technical addendum to the Section 182(c)(3) certification of the enhanced I/M program and request for redesignation and maintenance plan for Lake and Porter counties satisfies Indiana's obligation under Section 107(d)(3) of the Clean Air Act to demonstrate how the area will attain, and maintain, the 2008 8-hour ozone standard.

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

Sincerely,



Matthew Stuckey
Assistant Commissioner
Office of Air Quality

Mr. John Mooney

Page 3 of 3

MS/sd/bc/gf/lf

Enclosure 1: Technical Addendum to Indiana's Section 182(c)(3) Certification of the Enhanced Inspection and Maintenance (I/M) Program for the Indiana Portion (Lake and Porter counties) of the Chicago-Naperville, IL-IN-WI 2008 8-Hour Ozone Nonattainment Area

Enclosure 2: Supplement to the Request for Redesignation and Maintenance Plan for Attainment of Indiana's Portion of the Chicago-Naperville, IL-IN-WI 2008 8-Hour Ozone Nonattainment Area

cc: Doug Aburano, U.S. EPA Region 5 (no enclosures)
Chris Panos, U.S. EPA Region 5 (no enclosures)
Michael Leslie, U.S. EPA Region 5 (no enclosures)
Sarah Arra, U.S. EPA Region 5 (no enclosures)
Katie Mullen, U.S. EPA Region 5 (no enclosures)
Matt Stuckey, IDEM-OAQ (no enclosures)
Scott Deloney, IDEM-OAQ (no enclosures)
Brian Callahan, IDEM-OAQ (no enclosures)
Gale Ferris, IDEM-OAQ (w/ enclosures)
Leslie Ferguson, IDEM-OAQ (w/ enclosures)
File Copy

This page left intentionally blank.

Enclosure 1

Supplement to the Technical Addendum to Indiana's Section 182(c)(3) Certification of the Enhanced Inspection and Maintenance (I/M) Program for the Indiana Portion (Lake and Porter Counties) of the Chicago-Naperville, IL-IN-WI 2008 8-Hour Nonattainment Area

Background

This is a supplement to the January 18, 2022, technical addendum to Indiana's State Implementation Plan (SIP) revision addressing Section 172 and 182 "serious" classification requirements for Indiana's portion of the Chicago-Naperville, Illinois-Indiana-Wisconsin (IL-IN-WI), 2008 8-Hour Ozone Nonattainment Area, which was submitted to United States Environmental Protection Agency (U.S. EPA) on December 29, 2020. This supplement to the technical addendum provides updated onroad emissions data for nitrogen oxides (NO_x) and volatile organic compounds (VOCs/i.e., hydrocarbons (HCs)) based on the latest MOVES model (MOVES3.0.2) for Lake and Porter counties to provide additional support to Indiana's Section 182(c)(3) certification of the enhanced I/M program for Lake and Porter counties.

Introduction

This document provides a mobile source emissions modeling demonstration that Indiana's I/M program meets the requirements of U.S. EPA's *enhanced performance standard for areas designated and classified under the 8-hour ozone standard*, as specified in 40 Code of Federal Regulation (CFR) 51.351(i). This section of the CFR specifies a model program which is to be compared by emissions modeling with the state I/M program being assessed. The requirements for the program being assessed are specified in 40 CFR 51.351(i)(13), as follows:

"Evaluation Date. Enhanced I/M program areas subject to the provisions of this paragraph (i) shall be shown to obtain the same or lower emission levels for HC (hydrocarbon) and NO_x (oxides of nitrogen) as the model program described in this paragraph assuming an evaluation data set 6 years after the effective date of designation and classification under the 8-hour ozone standard (rounded to the nearest July) to within ± 0.02 gpm (grams per mile). Subject programs shall demonstrate through modeling the ability to maintain this percent level of emission reduction (or better) through their applicable attainment date for the 8-hour ozone standard, also rounded to the nearest July."

Since U.S. EPA classified Lake and Porter counties as "serious" under the 2008 ozone National Ambient Air Quality Standards (NAAQS) effective September 23, 2019, the evaluation date under 40 CFR 51.351(i)(13) is six years later rounded to the nearest July (i.e., July 2025). Additional years do not need to be modeled under 40 CFR 51.351(i)(13), since the applicable attainment date, July 20, 2021, is prior to July 2025.

1. Description of the Modeling Demonstration

The Northwest Indiana Regional Planning Commission (NIRPC) conducted this modeling demonstration on behalf of the Indiana Department of Environmental Management (IDEM) using U.S. EPA's Motor Vehicle Emission Simulator (MOVES3) software program. This modeling was conducted in accordance with the following EPA technical guidance:

[Performance Standard Modeling for New and Existing Vehicle Inspection and Maintenance \(I/M\) Programs Using the MOVES Mobile Source Emissions Model](#), EPA-420-B-14-006, January 2014.

The compliance demonstration involves a comparison of emissions reductions from U.S. EPA's model program specified in 40 CFR 51.351(i) and the actual I/M program in Lake and Porter counties, as it is approved into Indiana's State Implementation Plan (SIP). Three separate MOVES3 runs were conducted to support this demonstration:

- 1 - 2025 with no I/M parameters
- 2 - 2025 with I/M parameters for U.S. EPA's model program
- 3 - 2025 with Indiana SIP-approved I/M parameters.

The focal point of this demonstration is on the difference between runs 2 and 3. If the results of these two runs are within 0.02 gpm of each other for both NO_x and HC, Indiana's SIP-approved I/M program demonstrates equivalency to U.S. EPA's performance standards for an enhanced I/M program, thus supporting Indiana's Section 182(b)(4) certification.

The following tables summarize the MOVES3 modeling assumptions.

Table 1: Assumptions, other than I/M Program Parameters, Associated with MOVES3 I/M Performance Standard Modeling

Calendar Year	2025
Month	July
Day Type	Weekday
Age Distribution	2017 Indiana BMV for motorcycles, passenger cars, passenger trucks, and light commercial trucks, MOVES default for all others
Vehicle Miles of Travel	2017 INDOT traffic count data (HPMS and other)
Vehicle Population	NIRPC long-range plan socio-economic forecast
Fuel Inputs	MOVES2014a default for reformulated gasoline
Road Type Distribution	2017 HPMS
Average Speed Distribution	2017 HPMS
Daily Temperature Range	62.5 to 83.4 °F
Daily Humidity Range	50.9% to 100%

Table 2: I/M Program Parameters Associated with MOVES3 I/M Performance Standard Modeling

Category	I/M Program		
	Enhanced I/M Performance Standard	Indiana <u>NO</u> I/M Program	Indiana <u>WITH</u> I/M Program
Evaluation Date	July 2025	N/A	July 2025
Test Type		N/A	
Unloaded Idle Test	MYs 1968 to 2000	N/A	MYs 1976 to 1995
Evaporative System OBD Check	MYs 2001 to 2025	N/A	MYs 1996 to 2021
Exhaust OBD Check	MYs 2001 to 2025	N/A	MYs 1996 to 2021
Test Frequency	Annual	N/A	Biennial
Fuel Types Tested for: Passenger Cars Passenger Trucks Light Commercial Trucks	Gasoline and E-85	N/A	Gasoline and E-85
Waiver Rate	3.00%	N/A	3.00%
Compliance Rate	96.0%	N/A	95.0%
Failure Rate	4.21%	N/A	5.00%
Maximum GVWR Tested for MYs 2006 and Older	8,500 pounds	N/A	8,999 pounds
Maximum GVWR Tested for MYs 2007 and Newer	8,500 pounds	N/A	8,999 pounds

2. Modeling Results

Tables 3 and 4 provide a summary of the modeling results showing NO_x and HC emission rates by vehicle type for Lake and Porter counties. The results verify that NO_x and HC emissions reductions from Indiana's SIP-approved I/M program are within the 0.02 gpm buffer of the emission reductions from U.S EPA's model program under 40 CFR 51.351(i). The difference between the two scenarios are: 0.0012 gpm for NO_x, and 0.00025 gpm for HC. Therefore, Indiana's current I/M program in Lake and Porter counties meets the applicable enhanced I/M performance requirements in 40 CFR 51.3

Table 3: Modeling Results for NO_x

Vehicle Type	Enhanced I/M Base	Indiana I/M SIP-Approved
Motorcycle	0.013515357 0.014726987	0.013515357 0.014726987
Passenger Car	0.019037529 0.041185664	0.018277198 0.039211677
Passenger Truck	0.023654813 0.045408493	0.023332096 0.044700328
Light Commercial Truck	0.010442737 0.015111181	0.010296385 0.014580489
Intercity Bus	0.00369457 0.002738782	0.00369457 0.002738782
Transit Bus	0.001671167 0.001310575	0.001671167 0.001310575
School Bus	0.014358304 0.012885334	0.014358304 0.012885334
Refuse Truck	0.000717864 0.000380673	0.000717864 0.000380673
Single Unit Short-haul Truck	0.01477746 0.011832578	0.01477746 0.011832578
Single Unit Long-haul Truck	0.001462903 0.001156928	0.001462903 0.001156928
Motor Home	0.004500395 0.003965888	0.004500395 0.003965888
Combination Short-haul Truck	0.075530137 0.033072275	0.075530137 0.033072275
Combination Long-haul Truck	0.093440204 0.033280383	0.093440205 0.033280383
Lake and Porter Avg Emission Rate	0.276803438 0.217055741	0.27557404 0.213842896
Difference		0.001229398 0.003212844

Table 4: Modeling Results for HC

Vehicle Type	Enhanced I/M Base	Indiana I/M SIP-Approved
Motorcycle	0.02322992 0.022029792	0.02322992 0.022029792
Passenger Car	0.009693142 0.00937136	0.009733149 0.009029071
Passenger Truck	0.007340773 0.009271563	0.007141988 0.008238821
Light Commercial Truck	0.003670006 0.002791755	0.003574084 0.002444291
Intercity Bus	0.000136768 0.000229249	0.000136768 0.000229249
Transit Bus	0.000107813 0.000117239	0.000107813 0.000117239
School Bus	0.001168748 0.001822834	0.001168748 0.001822834
Refuse Truck	0.000029180 2.52309E-05	0.000029180 2.52309E-05
Single Unit Short-haul Truck	0.001043021 0.001921286	0.001043021 0.001921286
Single Unit Long-haul Truck	6.70238E-05 0.000106073	6.70238E-05 0.000106073
Motor Home	0.000738151 0.000940963	0.000738151 0.000940963
Combination Short-haul Truck	0.002025186 0.002122357	0.002025186 0.002122357
Combination Long-haul Truck	0.001914027 0.001768758	0.001914027 0.001768758
Lake and Porter Avg Emission Rate	0.051163759 0.052518461	0.05090906 0.050795966
Difference		0.000254699 0.001722494

This page left intentionally blank.

Enclosure 2

Supplement to the Request for Redesignation and Maintenance Plan for Attainment of
Indiana's Portion of the Chicago-Naperville, IL-IN-WI, 2008 8-Hour Ozone
Nonattainment Area

This page left intentionally blank.

2.6.2.3.3 Emission Estimates

Table 2.4 outlines the on-road emission estimations for the Lake and Porter ozone nonattainment area for the years 2011, 2019, 2030, and 2035, which are based on the actual travel demand model network runs generating estimated emissions for those years under the Northwest Indiana 2050 Transportation Plan.

Table 2.4: Emission Estimations and Projections for On-Road Mobile Sources - Lake and Porter Counties, Indiana, 2011 (Base-Year), 2019 (Attainment-Year), 2030 (Interim-Year), and 2035 (Maintenance-Year)

Lake and Porter	2011	2019	2030	2035
NO _x , tpsd	24.70 31.55	14.91 9.48	6.62 4.55	5.51 4.77
VOC, tpsd	9.58 7.60	6.80 3.51	3.77 2.03	2.93 1.82

2.6.2.3.4 Motor Vehicle Emission Budget

Table 2.5 contains the motor vehicle emissions budget for the Lake and Porter ozone nonattainment area for the years 2030 and 2035.

Table 2.5: Motor Vehicle Emission Budgets Lake and Porter Ozone Nonattainment Area

Lake and Porter	2030	2035
NO _x , tpsd	7.61 5.23	6.34 5.49
VOC, tpsd	4.34 2.33	3.37 2.09

This budget includes the projected emission estimates for 2030 and 2035 with a 15% margin of safety applied to NO_x and VOC emission estimates for both years. Since assumptions change over time, IDEM determined a 15% margin of safety as described above to be reasonable to account for such changes within the conformity process. The emission estimates derive from the NIRPC travel demand model and MOVES as described above under the Northwest Indiana 2050 Transportation Plan. The emissions calculation methodology, latest planning assumptions, and margin of safety were determined through the interagency consultation process described in the Interagency Consultation Group Conformity Consultation Guidance.¹¹

2.6.2.4 Section 191(a) CAA Requirements

Section 191(a) of the CAA identifies requirements related to nonattainment plan submission and attainment deadlines. Indiana has submitted all required SIP elements for this area in either previous submittals, or as part of this submittal. On December 29, 2020, Indiana submitted the attainment demonstration under the serious classification

¹¹https://d16db69sqbolil.cloudfront.net/mpo-website/downloads/Air-Quality/AirQuality_InteragencyConsultationGroupConformityConsultationGuidance.pdf

for its portion of the Chicago-Naperville, IN-IL-WI, nonattainment area to U.S. EPA.

3.0 MAINTENANCE PLAN

On August 23, 2019, U.S. EPA designated Lake and Porter counties and the entire area as nonattainment and reclassified it as “serious” under Subpart 2 of Part D, Title I of the CAA for failing to attain by the July 20, 2018, attainment date. This designation became effective on September 23, 2019. However, ozone data from all monitors within the Chicago nonattainment area for the 2019-2021 design value period indicate that the 2008 8-hour ozone standard was attained at the end of 2021 ozone monitoring season. For the Chicago nonattainment area to be redesignated to attainment, Indiana, Illinois, and Wisconsin must submit, and U.S. EPA must approve, a SIP showing maintenance of the 2008 8-hour ozone NAAQS within the nonattainment area for at least 10 years after redesignation.

According to U.S. EPA’s *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”. Per U.S. EPA guidance, Indiana is relying on the attainment inventory approach to demonstrate maintenance of the 2008 ozone 8-hour NAAQS. Emission projections outlined in this document clearly illustrate that NO_x and VOC emissions in Lake and Porter counties, Indiana, as well as the entire nonattainment area, will continue to decline between the 2019 attainment-year and the 2035 maintenance-year. 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
- Verification of Continued Attainment
- Contingency Plan

3.1 Emission Inventory

In consultation with U.S. EPA, Illinois, and Wisconsin, a base-year of 2011, an attainment-year of 2019, an interim-year of 2030, and a maintenance-year of 2035 were selected. On-road values for Lake and Porter counties were produced from the ~~MOVES2014~~ **MOVES3.0.2 model** and the NIRPC travel demand model for 2011 but were based on actual travel demand model network runs for 2019, 2030, and 2035 under the Northwest Indiana 2050 Transportation Plan.

The 2011 base-year emissions inventory represents a comprehensive, accurate, and current inventory of actual emissions from all sources of NO_x and VOCs in Lake and Porter counties. The Ozone NAAQS Emissions Modeling platform (2011v6.2) was used to collect data for the 2011 NEI year. Point source, EGU point sources, area, and non-road emissions were compiled from the data available on U.S. EPA's Emissions Modeling Clearinghouse website for the entire Chicago nonattainment area.¹² Biogenic emissions are not included in these summaries.

The 2019 inventory includes point sources, EGU-point sources, area, and non-road emissions compiled from the data available on U.S. EPA's Emission Modeling Platform 2016v2.¹³ The modeling platform provides emission estimates for 2016 and projections to 2023, 2026, and 2032. Daily estimates of emissions by sector and county were provided on the 2016v2 Data File and Summaries site. The estimated tons per summer day were calculated by performing a query to find an average for the days in the summer months.

The projected inventory for 2030 was a straight-line interpolation between the projected modeling inventories for 2023, 2026, and 2032. The interpolations were performed at the sector level. The 2035 projected inventory utilized the FORECAST.LINEAR function in Microsoft Excel with inventory data points from 2016, 2023, 2026, and 2032. This inventory was estimated at the sector level as well. If the FORECAST.LINEAR function resulted in a negative value, the emissions were assumed to not change.

3.2 Attainment Inventory

U.S. EPA's Redesignation Guidance requires states to identify the level of emissions in an affected area that is sufficient to attain and maintain the NAAQS. To satisfy this requirement, Indiana is submitting the inventory shown in Tables 3.1 through Table 3.3. This inventory is a comprehensive inventory of ozone precursor emissions (i.e., NO_x and VOC) representative of the year when the area achieved attainment of the ozone air quality standard.

¹² <https://www.epa.gov/air-emissions-modeling/2011-version-62-technical-support-document>

¹³ <https://www.epa.gov/air-emissions-modeling/2014-2016-version-7-air-emissions-modeling-platforms>

Table 3.1: Lake and Porter Counties, Indiana NO_x Attainment-Year 2019 Emission Inventory (Tons per Summer Day)

Sector	Lake County	Porter County	Total
Area	0.66	0.25	0.91
Non-road	8.68	4.75	13.43
On-road	10.24 6.39	4.67 3.09	14.91 9.48
Point	35.41	24.50	59.91
EGU-Point	1.11	3.18	4.29
Total	56.10 52.25	37.35 35.77	93.45 88.02

Table 3.2: Lake and Porter Counties, Indiana VOC Attainment-Year 2019 Emission Inventory (Tons per Summer Day)

Sector	Lake County	Porter County	Total
Area	11.80	5.20	17.00
Non-road	3.34	2.19	5.53
On-road	4.85 2.48	1.95 1.03	6.80 3.51
Point	9.12	1.71	10.83
EGU-Point	0.35	0.12	0.47
Total	29.46 27.09	11.17 10.25	40.63 37.34

Table 3.3: Entire Chicago Nonattainment Area NO_x and VOC Attainment-Year 2019 Emission Inventory (Tons per Summer Day)

Sector	NO _x Total	VOC Total
Illinois		
Area	34.63	232.00
Non-road	121.63	67.67
On-road	134.38	66.45
Point	47.55	45.35
EGU-Point	35.23	0.97
Total	373.42	412.44
Indiana		
Area	0.91	17.00
Non-road	13.43	5.53
On-road	44.94 9.48	6.80 3.51
Point	59.91	10.83
EGU-Point	4.29	0.47
Total	93.45 88.02	40.63 37.34
Wisconsin		
Area	1.13	3.58
Non-road	1.64	0.70
On-road	1.81	0.89
Point	0.08	0.19
EGU-Point	0.00	0.00
Total	4.66	5.36
Total Nonattainment Area		
Area	36.67	252.58
Non-road	136.70	73.90
On-road	151.10 145.67	74.14 70.85
Point	107.54	56.37
EGU-Point	39.52	1.44
TOTAL	471.53 466.10	458.43 455.14

3.3 Demonstration of Maintenance

As mentioned in Section 3.0, Indiana is relying on the emissions inventory approach to demonstrate maintenance of the 2008 8-hour ozone NAAQS. That is, emissions projected at least ten years following redesignation (i.e., the maintenance year) must not increase above the attainment-year inventory.

3.3.1 Projected Inventory

Maintenance is demonstrated when the future-year (2035) projected NO_x and VOC emission totals are below the 2019 attainment year.

Tables 3.4 and 3.5 illustrate projected anthropogenic NO_x emissions for both Lake and Porter counties, Indiana, and the entire Chicago nonattainment area. Tables 3.6 and 3.7 illustrate projected anthropogenic VOC emissions for both Lake and Porter counties, Indiana and the entire Chicago nonattainment area.

Table 3.4: Lake and Porter Counties, Indiana NO_x Emission Inventory Totals (Tons per Summer Day)

Sector	2011 Base	2019 Attainment	2030 Interim	2035 Maintenance	Safety Margin
Area	9.39	0.91	0.88	0.87	-0.04
Non-road	15.84	13.43	10.25	8.49	-4.94
On-road	24.70 31.55	44.94 9.48	6.62 4.55	5.51 4.77	-9.40 -4.71
Point	70.77	59.91	60.79	61.51	1.60
EGU-Point	24.04	4.29	1.44	0.42	-3.87
Total	144.74 151.59	93.45 88.02	79.98 77.91	76.80 76.06	-16.65 -11.96

Table 3.5: NO_x Emission Inventory Totals for the Illinois, Indiana, and Wisconsin portions of the Chicago Nonattainment Area (Tons per Summer Day)

Sector	2011 Base	2019 Attainment	2030 Interim	2035 Maintenance	Safety Margin
Illinois					
Area	32.03	34.63	34.97	35.04	0.41
Non-road	176.60	121.63	106.80	108.27	-13.36
On-road	285.34	134.38	55.94	48.81	-85.57
Point	52.58	47.55	48.56	49.28	1.73
EGU-Point	67.41	35.23	43.59	40.97	5.74
Total	613.96	373.42	289.86	282.37	-91.05
Indiana					
Area	9.39	0.91	0.88	0.87	-0.04
Non-road	15.84	13.43	10.25	8.49	-4.94
On-road	24.70 31.55	14.91 9.48	6.62 4.55	5.51 4.77	-9.40 -4.71
Point	70.77	59.91	60.79	61.51	1.60
EGU-Point	24.04	4.29	1.44	0.42	-3.87
Total	144.74 151.59	93.45 88.02	79.98 77.91	76.80 76.06	-16.65 -11.96
Wisconsin					
Area	1.20	1.13	0.95	0.96	-0.17
Non-road	2.25	1.64	1.21	1.21	-0.43
On-road	4.82	1.81	0.85	0.75	-1.06
Point	0.09	0.08	0.12	0.12	0.04
EGU-Point	8.71	0.00	0.00	0.00	0.00
Total	17.07	4.66	3.13	3.04	-1.62
Total Nonattainment Area					
Area	42.62	36.67	36.80	36.87	0.20
Non-road	194.69	136.70	118.26	117.97	-18.73
On-road	314.86 321.71	151.10 145.67	63.41 61.34	55.07 54.33	-96.03 -91.34
Point	123.44	107.54	109.47	110.91	3.37
EGU-Point	100.16	39.52	45.03	41.39	1.87
Total	775.77 782.62	471.53 466.10	372.97 370.90	362.21 361.47	-109.32 -104.63

**Table 3.6: Lake and Porter Counties, Indiana VOC Emission Inventory Totals
(Tons per Summer Day)**

Sector	2011 Base	2019 Attainment	2030 Interim	2035 Maintenance	Safety Margin
Area	18.26	17.00	17.58	17.85	0.85
Non-road	21.43	5.53	4.80	4.35	-1.18
On-road	9.58 7.60	6.80 3.51	3.77 2.03	2.93 1.82	-3.87 -1.69
Point	17.22	10.83	10.84	10.90	0.07
EGU-Point	0.54	0.47	0.56	0.67	0.20
Total	67.03 65.05	40.63 37.34	37.55 35.81	36.70 35.59	-3.93 -1.75

**Table 3.7: VOC Emission Inventory Totals for the Illinois, Indiana, and Wisconsin
portions of the Chicago Nonattainment Area (Tons per Summer Day)**

Sector	2011 Base	2019 Attainment	2030 Interim	2035 Maintenance	Safety Margin
Illinois					
Area	215.14	232.00	225.11	225.11	-6.89
Non-road	101.83	67.67	66.41	67.37	-0.30
On-road	72.43	66.45	37.42	34.27	-32.18
Point	47.63	45.35	44.71	44.54	-0.81
EGU-Point	0.62	0.97	2.52	2.80	1.83
Total	437.65	412.44	376.17	374.09	-38.35
Indiana					
Area	18.26	17.00	17.58	17.85	0.85
Non-road	21.43	5.53	4.80	4.35	-1.18
On-road	9.58 7.60	6.80 3.51	3.77 2.03	2.93 1.82	-3.87 -1.69
Point	17.22	10.83	10.84	10.90	0.07
EGU-Point	0.54	0.47	0.56	0.67	0.20
Total	67.03 65.05	40.63 37.34	37.55 35.81	36.70 35.59	-3.93 -1.75
Wisconsin					
Area	4.10	3.58	3.49	3.56	-0.02
Non-road	1.14	0.70	0.63	0.62	-0.08
On-road	1.90	0.89	0.54	0.47	-0.42
Point	0.24	0.19	0.26	0.26	0.07
EGU-Point	0.38	0.00	0.00	0.00	0.00
Total	7.76	5.36	4.92	4.91	-0.45
Total Nonattainment Area					
Area	237.50	252.58	246.18	246.52	-6.06

Non-road	124.40	73.90	71.84	72.34	-1.56
On-road	83.94 81.93	74.14 70.85	41.73 39.99	37.67 36.56	-36.47 -34.29
Point	65.09	56.37	55.81	55.70	-0.67
EGU-Point	1.54	1.44	3.08	3.47	2.03
Total	512.44 510.46	458.43 455.14	418.64 416.90	415.70 414.59	-42.73 -40.55

Overall emissions of NO_x and VOC within Lake and Porter counties, Indiana, as well as the entire Chicago nonattainment area are projected to decrease as shown in Tables 3.8 and 3.9. The overall decrease in NO_x and VOC emissions has helped the area attain the standard and additional projected future emission reductions will ensure the area continues to attain the standard well into the future.

Table 3.8: Lake and Porter Counties, Indiana Comparison of 2019 Attainment Year and 2030 and 2035 Projected Emission Estimates (Tons per Summer Day)

Pollutant	2019	2030	Difference Between 2019 and 2030	2035	Difference Between 2019 and 2035
NO _x	93.45 88.02	79.98 77.91	-13.47 -10.11	76.80 76.06	-16.65 -11.96
VOC	40.63 37.34	37.55 35.81	-3.08 -1.53	36.70 35.59	-3.93 -1.75

Table 3.9: Entire Chicago Nonattainment Area Comparison of 2019 Attainment Year and 2030 and 2035 Projected Emission Estimates (Tons per Summer Day)

Pollutant	2019	2030	Difference Between 2019 and 2030	2035	Difference Between 2019 and 2035
Illinois					
NO _x	373.42	289.86	-83.56	282.37	-91.05
VOC	412.44	376.17	-36.27	374.09	-38.35
Indiana					
NO _x	93.45 88.02	79.98 77.91	-13.47 -10.11	76.80 76.06	-16.65 -11.96
VOC	40.63 37.34	37.55 35.81	-3.08 -1.53	36.70 35.59	-3.93 -1.75
Wisconsin					
NO _x	4.66	3.13	-1.53	3.04	-1.62
VOC	5.36	4.92	-0.44	4.91	-0.45
Total Nonattainment Area					
NO _x	471.53 466.10	372.97 370.90	-98.56 -95.20	362.21 361.47	-109.32 -104.63
VOC	458.43 455.14	418.64 416.90	-39.79 -38.24	415.70 414.59	-42.73 -40.55

As identified in Table 2.5, a 15% margin of safety is being allocated to the 2030 and 2035 motor vehicle emission projections for Lake and Porter counties, Indiana. U.S.

This page left intentionally blank.