



Andy Beshear
GOVERNOR

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

300 Sower Boulevard
Frankfort, Kentucky 406 01
Phone: (502) 564 -2150
Fax: 502-564 -4245

Rebecca Goodman
SECRETARY

Anthony R. Hatton
COMMISSIONER

April 15, 2025

Mr. Kevin J. McOmber, P.E.
Regional Administrator
U.S. EPA, Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, Georgia 30303

RE: Submittal of the Proposed Kentucky State Implementation Plan Revision, Satisfying the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS) Second 10-year Maintenance Plan Requirements for the Cincinnati-Hamilton, OH-KY-IN Area

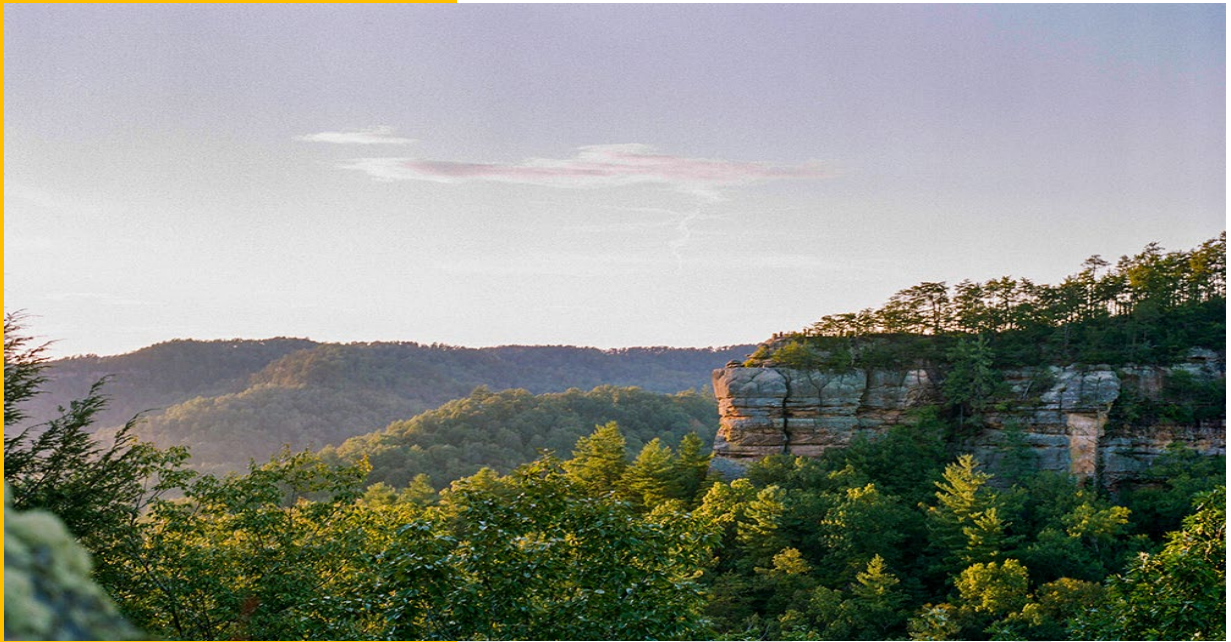
Dear Mr. McOmber:

The Kentucky Division for Air Quality (Division) hereby submits this proposed revision to the Kentucky State Implementation Plan (SIP) demonstrating that the Clean Air Act (CAA) Section 175A requirements for the Cincinnati-Hamilton, OH-KY-IN 2008 8-hour ozone area (Area) have been met. Under Section 175A(b) of the CAA, states must submit a SIP revision eight years after redesignation to attainment, to provide for maintenance of the NAAQS for an additional ten years following the end of the first ten-year period (i.e., July 5, 2037). The Division's second maintenance plan, providing for the continued attainment of the 2008 8-hour ozone NAAQS within the Kentucky portion of the Area for an additional ten years, is included in this proposed revision to Kentucky's SIP.

The draft SIP revision proposes that second maintenance plan for the Kentucky portion of the Area be approved by EPA due to improved air quality and attainment and maintenance of the 2008 8-hour ozone NAAQS. In accordance with 40 CFR 51.102, the proposed SIP revision will be available for public review and comment from April 15, 2025, until May 22, 2025. If you have any questions regarding this matter, please contact Ms. Cassandra Jobe, Environmental Control Manager, in the Division's Program Planning and Administration Branch at (502) 782-6670, or cassandra.jobe@ky.gov.

Sincerely,

Michael Kennedy, P.E.
Division Director



Kentucky State Implementation Plan Revision

**2008 8-Hour Ozone National Ambient Air
Quality Standards Second 10-Year Maintenance
Plan for the Kentucky Counties within the
Cincinnati-Hamilton, OH-KY-IN Maintenance
Area**

Prepared for: U.S. Environmental Protection Agency

Prepared by: Kentucky Energy and Environment Cabinet,
Division for Air Quality

April 2025, Pre-Hearing Review

Publication Information:

This document is available on the Division for Air Quality's website at:

[Air Quality Public Notices - Kentucky Energy and Environment Cabinet](https://eec.ky.gov/Environmental-Protection/Air/Pages/Public-Notices.aspx)¹

Contact Information:

Kentucky Division for Air Quality

300 Sower Blvd., 2nd Floor

Frankfort, KY 40601

Phone: 502-564-3999

ADA Accessibility:

The Division for Air Quality is committed to providing people with disabilities access to information and services by meeting or exceeding the requirements of the Americans with Disabilities Act (ADA), Section 504 and 508 of the Rehabilitation Act.

To request an ADA accommodation, contact Katie Conner, Assistant Director for the Division of Human Resource Management, by phone at 502-782-6397 or email at katie.conner@ky.gov.

¹ <https://eec.ky.gov/Environmental-Protection/Air/Pages/Public-Notices.aspx>.

Table of Contents

I.	Background & Introduction	1
a.	History.....	1
	Figure 1 – Map of the Cincinnati-Hamilton, OH-KY-IN 2008 Ozone Maintenance Area	2
b.	Requirements.....	4
II.	Requirements.....	5
a.	Attainment Inventory	5
	Table 1 – Boone County, Kentucky Emissions Inventory Totals (tpsd)	7
	Table 2 – Campbell County, Kentucky Emissions Inventory Totals (tpsd)	8
	Table 3 – Kenton County, Kentucky Emissions Inventory Totals (tpsd).....	8
	Table 4 – Butler County, Ohio Emissions Inventory Totals (tpsd).....	9
	Table 5 – Clermont County, Ohio Emissions Inventory Totals (tpsd)	9
	Table 6 – Clinton County, Ohio Emissions Inventory Totals (tpsd).....	10
	Table 7 –Hamilton County, Ohio Emissions Inventory Totals (tpsd)	10
	Table 8 – Warren County, Ohio Emissions Inventory Totals (tpsd)	11
	Table 9 – Dearborn County, Indiana Emissions Inventory Totals (tpsd).....	11
	Table 10 – Cincinnati-Hamilton, OH-KY-IN Maintenance Area NO _x and VOC Emissions Inventory Totals (tpsd)	12
	Table 11 - Cincinnati-Hamilton, OH-KY-IN Maintenance Area NO _x and VOC Base Year and Maintenance Year Emissions Estimates (tpsd)	12
b.	Maintenance Demonstration.....	14
	Table 12 – 8-hour Ozone Annual 4th High Maximum Values and Design Value for the Cincinnati-Hamilton, OH-KY-IN Maintenance Area, 2021-2023 (ppm).....	15
	Figure 2 – 8-hour Ozone Design Values for the Kentucky Portion of the Cincinnati-Hamilton, OH-KY-IN Maintenance Area	16
	Figure 3 – 8-hour Ozone Design Values for the Ohio Portion of the Cincinnati Hamilton, OH-KY-IN Maintenance Area.....	17
	Table 13 – 8-hour Ozone 3-Year Design Values from 2008-2014 for the Cincinnati-Hamilton, OH-KY-IN Maintenance Area (ppm)	18
	Table 14 – 8-hour Ozone 3-Year Design Values from 2015-2023 for the Cincinnati-Hamilton, OH-KY-IN Maintenance Area (ppm)	19
c.	Monitoring Network	20
d.	Verification of Continued Attainment	20
e.	Contingency Plan	21

III.	Permanent and Enforceable Improvement in Air Quality (CAA Section 107(d)(3)(E)(iii)).....	23
IV.	Transportation Conformity	23
	Table 15 – Cincinnati-Hamilton, OH-KY-IN Maintenance Area Estimated NO _x and VOC Emissions (tpsd) for On-Road Mobile Sources	25
	Table 16 – Estimated NO _x and VOC Motor Vehicle Emissions Budgets (tpsd) for the Kentucky portion of the Cincinnati-Hamilton, OH-KY-IN Maintenance Area	26
	Table 17 – Estimated NO _x Motor Vehicle Emissions Budget (tpsd) for Cincinnati-Hamilton, OH-KY-IN Maintenance Area.....	26
	Table 18 – Estimated VOC Motor Vehicle Emissions Budgets (tpsd) for Cincinnati-Hamilton, OH-KY-IN Maintenance Area	27
	Table 19 – Cincinnati-Hamilton, OH-KY-IN Maintenance Area Vehicle Miles Traveled (miles/day) Estimations for On-Road Mobile Sources	28
V.	Public Participation	29
VI.	Conclusion.....	29

Appendices

Appendix A – Mobile Source Emissions Technical Support Document
Appendix B – Monitoring Data
Appendix C – Interagency Consultation Group Meeting Transcription
Appendix D – Interagency Consultation Group Concurrence for Kentucky’s 2037 Motor Vehicle Emissions Budgets
Appendix E – Public Notice and Statement of Consideration

I. Background & Introduction

a. History

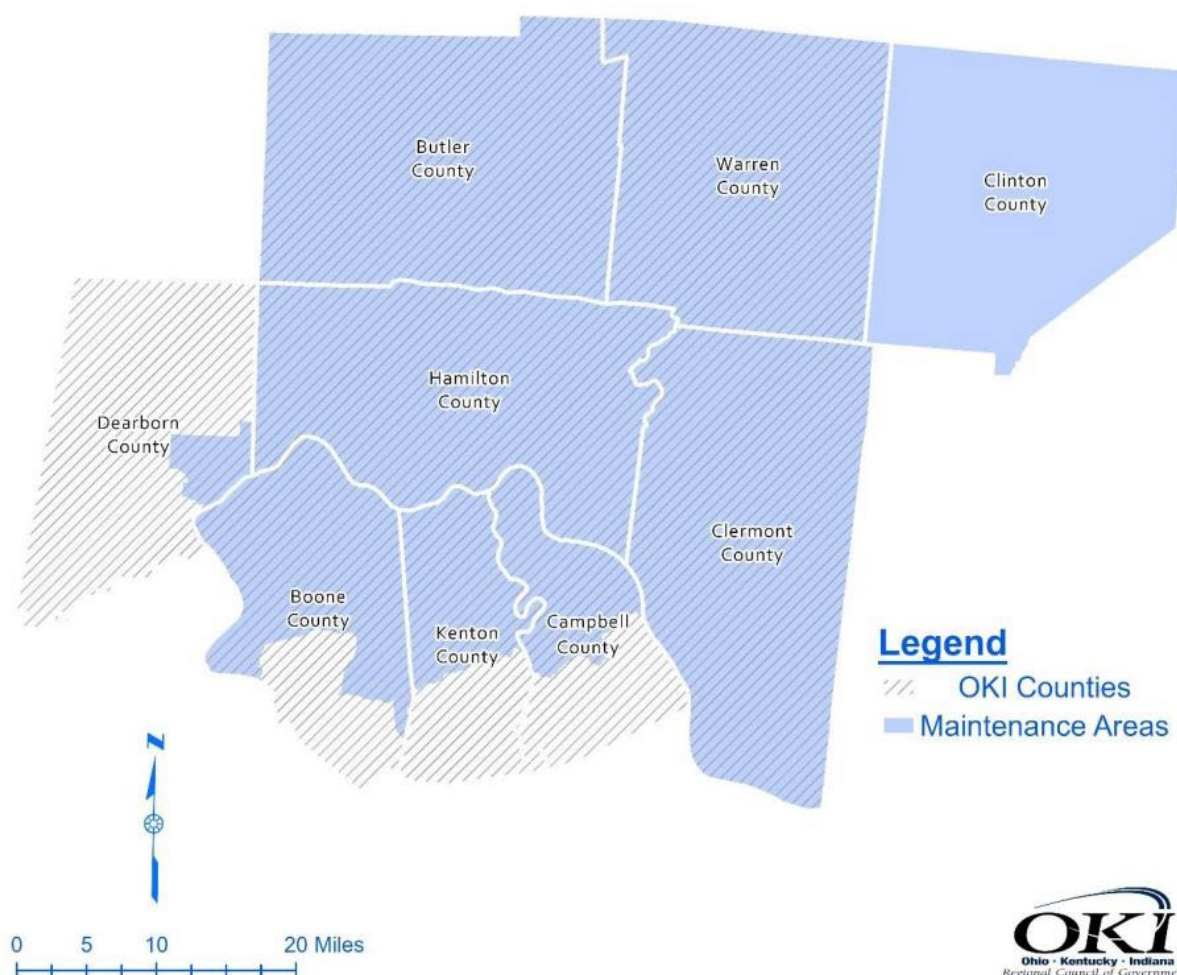
On March 27, 2008, the U.S. Environmental Protection Agency (EPA) promulgated revised National Ambient Air Quality Standards (NAAQS) for the 8-hour ozone standards, lowering the previous primary and secondary standards of 0.08 ppm to 0.075 ppm, which went into effect May 27, 2008.² Final area designations for the 2008 8-hour ozone standards were published on May 21, 2012, and became effective July 20, 2012.³ EPA designated the tri-state Cincinnati-Hamilton, OH-KY-IN area (the Area) as marginal nonattainment for the 2008 8-hour ozone NAAQS and established an attainment date of July 20, 2015, for the Area. The Area consists of Butler, Clermont, Clinton, Hamilton, and Warren counties in Ohio; portions of Boone, Campbell, and Kenton counties in Kentucky; and a portion of Dearborn County in Indiana (see Figure 1).⁴ When the Area was first designated as nonattainment, there were four monitors located in Ohio violating the 2008 8-hour ozone NAAQS. However, EPA determined that emissions from both Indiana and Kentucky were contributing to the monitored violations, which is why the Indiana and Kentucky portions of the Area were also designated as nonattainment.

² 73 FR 16436.

³ 77 FR 30088.

⁴ Boone County (part): the entire county except for 2010 US Census Tracts 706.01 and 706.04. Campbell County (part): the entire county except for 2010 US Census Tracts 520.01 and 520.02. Kenton County (part): the entire county except for 2010 US Census Tracts 637.01 and 637.02.

Figure 1 – Map of the Cincinnati-Hamilton, OH-KY-IN 2008 Ozone Maintenance Area



On February 23, 2016, the Indiana Department of Environmental Management (IDEM) submitted a redesignation request and maintenance plan for the Indiana portion of the Area for the 2008 8-hour ozone NAAQS; IDEM supplemented that submittal with a revised emissions inventory on May 4, 2016.⁵ On April 21, 2016, the Ohio EPA submitted a redesignation request and maintenance plan for the Ohio portion of the Area for the 2008 8-hour ozone NAAQS.⁶

⁵ For Indiana's initial submittal, please see: <https://www.in.gov/idem/sips/redesignation-petitions-and-maintenance-plans/dearborn-county-redesignation-plans/>.

⁶ For Ohio's initial submittal, please see: https://dam.assets.ohio.gov/image/upload/epa.ohio.gov/Portals/27/sip/Cin_2008Ozone_Redesig_Final.pdf.

On August 26, 2016, the Division for Air Quality (Division) submitted a redesignation request and maintenance plan for the Kentucky portion of the Area for the 2008 8-hour ozone NAAQS;⁷ this submittal was revised by the Division on December 27, 2016, after EPA identified discrepancies within seven tables of the Division's August 26, 2016, submission.⁸ The Division's revisions were sent to EPA in an email and provided clarification related to incorrect emissions totals and rounding errors.⁹

On December 16, 2016, the Ohio portion of the Area was redesignated to attainment for the 2008 8-hour ozone NAAQS.¹⁰ On April 7, 2017, the Indiana portion of the Area was redesignated to attainment for the 2008 8-hour ozone NAAQS.¹¹ On July 5, 2017, the Kentucky portion of the Area was redesignated to attainment for the 2008 8-hour ozone NAAQS.¹²

On November 7, 2024, Ohio EPA submitted their second 10-year maintenance plan for the Ohio portion of the Area to EPA.¹³ On April 1, 2025, IDEM submitted their second 10-year maintenance plan for the Indiana portion of the Area to EPA.¹⁴

The second 10-year maintenance plan for the Kentucky portion of the Area is due July 5, 2025, eight years after the initial maintenance plan's effective date.

The following second 10-year maintenance plan for the Kentucky portion of the Area projects that the entirety of the Area will continue to attain the 2008 ozone NAAQS for the duration of the second maintenance period.

⁷ For the Division's initial submittal, please see: <https://eec.ky.gov/Environmental-Protection/Air/Documents/Final%20Submittal%20NKY%202008%208-hour%20O3%20Redesignation%20Request%208-5-2016%20.pdf>.

⁸ Revision to the Division's initial submittal, available at: <https://eec.ky.gov/Environmental-Protection/Air/Documents/Final%202008%20O3%20NKY%20Redesignation%20Request%20Table%20Revisions.pdf>

⁹ The emailed revisions did not warrant a formal revision to the August 26, 2016, redesignation request and maintenance plan submittal.

¹⁰ 81 FR 91035.

¹¹ 82 FR 16940.

¹² 82 FR 30976.

¹³ For Ohio's second maintenance plan, please see: <https://dam.assets.ohio.gov/image/upload/epa.ohio.gov/Portals/27/sip/ozone/Cincinnati-O3-SIP-Main-Document.pdf>.

¹⁴ For Indiana's second maintenance plan, please see: <https://www.in.gov/idem/sips/redesignation-petitions-and-maintenance-plans/dearborn-county-redesignation-plans/>.

b. Requirements

Maintenance Plan Requirements contained in Clean Air Act (CAA) Section 175A include:

- (a) Plan revision
- (b) Subsequent plan revisions
- (c) Nonattainment requirements applicable pending plan approval
- (d) Contingency provisions¹⁵

Pursuant to Section 175A(b) of the CAA, eight years after an area is redesignated attainment, the state must submit a second maintenance plan demonstrating continued attainment for a further ten years after the initial 10-year maintenance period covered by an initial maintenance plan.¹⁶ When EPA set implementation requirements for the 2008 ozone NAAQS on April 5, 2015, it also revoked the 1997 ozone NAAQS, including requirements for subsequent maintenance plans. However, the D.C. Circuit Court issued a decision in *South Coast Air Quality Management District v. EPA* (South Coast II) that struck down EPA's revocation of the standard in certain regards, including reinstating the requirement for subsequent maintenance plans.¹⁷

On September 4, 1992, a memo from EPA Director of the Air Quality Management Division, John Calcagni,¹⁸ "*the Calcagni Memo*", further elaborated on the requirements of CAA Section 175A, specifying five requirements:

- a. Attainment Inventory
- b. Maintenance Demonstration
- c. Monitoring Network
- d. Verification of Continued Attainment
- e. Contingency Plan¹⁹

On November 20, 2018, EPA provided states with the resource guidance document *Resource Document for 1997 Ozone NAAQS Areas: Supporting Information for States Developing Maintenance Plans* (the Resource Document), which contains technical information to consider when developing second 10-year maintenance plans for the 1997 ozone NAAQS.²⁰ The EPA has

¹⁵ 42 USC §7505A.

¹⁶ *Ibid.*

¹⁷ 882 F.3d 1138 (2018).

¹⁸ John Calcagni, Director, Air Quality Management Division, "*Procedures for Processing Requests to Redesignate Areas to Attainment*," (Sep. 4, 1992).

¹⁹ *Ibid.* at 7-13.

²⁰ EPA: Resource Document for 1997 Ozone NAAQS Areas: Supporting Information for States Developing Maintenance Plans, November 20, 2018; available at: https://www.epa.gov/sites/default/files/2018-11/documents/ozone_1997_naaqs_imp_resource_document_nov_20_2018.pdf.

not yet issued similar maintenance plan guidance for the 2008 ozone NAAQS. Therefore, the Division used the Resource Document to prepare this second 10-year maintenance plan.

Notably, the initial maintenance period for the Area is active through 2027 (ten years after the effective date of approval of the initial maintenance plan).²¹ This second 10-year maintenance plan demonstrates continued maintenance through 2037.

II. Requirements

Each requirement of a maintenance plan is addressed in the order laid out in the *Calcagni Memo* below.

a. Attainment Inventory

Air quality designations rely on three complete consecutive calendar years of quality assured and certified air monitoring data. To meet the standard, the 3-year average of the annual fourth highest daily maximum 8-hour average ozone concentration must be equal to or below the standard, in the case of 2008 ozone, this is 75 parts per billion (ppb). The 3-year average is called the design value. The standard may be expressed in ppm or ppb and this second maintenance plan describes all monitored values in ppm. For example, 0.075 ppm is equivalent to 75 ppb.

Ozone is a secondary pollutant, or a pollutant that is not directly emitted from a source, but forms in the atmosphere when other primary pollutants react with each other. In EPA's Maintenance Plan Guidance Document for Certain 8-hour Ozone Areas Under Section 110(a)(1) of the Clean Air Act (the Guidance Document), it is recommended to demonstrate maintenance with the standard by identifying the level of ozone precursor emissions in the area which is sufficient to attain the NAAQS.²² The Guidance Document also states that attainment inventories should be based on actual "typical summer day" emissions of volatile organic compounds (VOCs) and nitrogen oxides (NO_x), known precursors to ozone formation.

The emissions inventory development and emissions projection discussion below, with the exception of the mobile (on-road) emissions inventory and projections, identifies procedures used by the Division, in consultation with IDEM and Ohio EPA regarding emissions from the

²¹ 82 FR 30976.

²² EPA's Maintenance Plan Guidance: Document for Certain 8-hour Ozone Areas Under Section 110(a)(1) of Clean Air Act, May 20, 2005, available at: [https://www3.epa.gov/ttn/naaqs/aqmguide/collection/cp2/20050520_wegman_maintenance_8-hr_ozone_section_110\(a\)\(1\).pdf](https://www3.epa.gov/ttn/naaqs/aqmguide/collection/cp2/20050520_wegman_maintenance_8-hr_ozone_section_110(a)(1).pdf).

Area. Mobile source emissions were developed by the Ohio-Kentucky-Indiana Regional Council of Governments (OKI) in conjunction with the Division, Ohio EPA, and IDEM. Specific emissions data was provided to OKI for all counties in the Area, including those in Ohio, Kentucky and Indiana. For further detail on the methodology behind OKI's developed on-road emissions, see the full technical support document in Appendix A.

Area, non-road, on-road and point source emissions were compiled as follows:

- Area, non-road and point source emissions (EGUs, non-EGUs and airport related emissions (AIR)) were collected at the county level from Emissions Modeling platform (EMP) 2016v2 provided by the EPA's Emissions Modeling Clearinghouse website.²³ The basis of this platform is a combination of the 2014 National Emissions Inventory (NEI) Version 2, and the 2017 NEI including emissions for modeling years 2016, 2023, 2026 and 2032.
- Because all emissions from the above platform are reported as annual totals, tons per summer day (tpsd) emissions were derived according to the EPA guidance document titled *Temporal Allocation of Annual Emissions Using EMCH Temporal Profiles*, dated April 29, 2002, using the temporal allocation references accompanying the 2016v2 modeling inventory files. These files provide source classification code (SCC) specific profiles that allow annual emission totals to be distributed across various temporal periods, as described in the guidance document referenced here.
- Using the above dataset and conversion, Ohio and Indiana emissions for electric generating units (EGU), non-EGUs, area (comprised of air and rail transportation and non-point sources), and non-road are calculated in the following way.
 - Emissions for base year 2016 came directly from the EMP 2016v2 platform.
 - Emissions for maintenance year 2037 were derived using the TREND function in Microsoft Excel to perform a linear extrapolation. If the TREND function resulted in a negative value, the emissions were assumed to not change from 2032 modeling year included in the 2016v2 platform.
- Kentucky emissions were also calculated in the above-described way, except for 2016 emissions from EGU and non-EGU categories. Kentucky EGU and non-EGU values represent actual tons per year (tpy) emissions data from sources for the 2016 base year from the Kentucky Emissions Inventory System (KyEIS) database. Data in tpy were converted to tpsd by multiplying tpy by the ratio of average July day emissions to annual emissions for the point sector from the 2016v2 platform.

²³ EPA's Emissions Modeling Platform 2016v2, available at: <https://gaftp.epa.gov/Air/emismod/2016/v2/>.

- Kentucky area and nonroad emissions for the base year and maintenance year were calculated as described above, for all categories and years, but multiplied by a factor representing the partial maintenance area portions of the Kentucky counties. The partial maintenance percentages were 57% for Boone County, 56% for Campbell, and 54% for Kenton.
- Ohio, Indiana, and Kentucky on-road mobile source emissions for all years were developed in conjunction with OKI and were calculated from emission factors produced by EPA's 2023 Motor Vehicle Emission Simulator (MOVES4) software program and data extracted from the region's travel-demand model.²⁴ Appendix A contains detailed data for mobile source emissions for all years.
- Dearborn County, Indiana emissions for all sectors other than on-road were based upon the entire county data; Dearborn County, Indiana on-road emissions are comprised of emissions from only the partial maintenance area in Dearborn County.
- Biogenic emissions were not included in these summaries.

The emissions inventory, as detailed above, is presented in Tables 1-11.

Table 1 – Boone County, Kentucky Emissions Inventory Totals (tpsd)

Sector	2016 Base Year NO _x Emissions	2037 Maintenance Year NO _x Emissions	2016 Base Year VOC Emissions	2037 Maintenance Year VOC Emissions
EGU	10.51	0.05	0.16	0.03
Non-EGU	0.36	0.29	2.07	0.87
Area	2.22	2.80	9.53	7.18
Non-Road	1.36	0.55	1.53	1.23
On-Road	6.07	0.97	1.47	0.81
Total	20.52	4.66	14.76	10.12

²⁴ According to EPA's *MOVES5 Policy Guidance: Use of MOVES for State Implementation Plan Development, Transportation Conformity, General Conformity, and Other Purposes*, it is permissible to use older versions of MOVES when significant work has been completed prior to the release of a new version; please see: <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockkey=P101CTLB.pdf>.

Table 2 – Campbell County, Kentucky Emissions Inventory Totals (tpsd)

Sector	2016 Base Year NO_x Emissions	2037 Maintenance Year NO_x Emissions	2016 Base Year VOC Emissions	2037 Maintenance Year VOC Emissions
EGU	0.00	0.00	0.00	0.00
Non-EGU	0.30	0.16	0.30	0.23
Area	1.24	0.41	2.43	1.35
Non-Road	0.26	0.15	0.35	0.21
On-Road	2.05	0.26	0.75	0.35
Total	3.85	0.98	3.83	2.14

Table 3 – Kenton County, Kentucky Emissions Inventory Totals (tpsd)

Sector	2016 Base Year NO_x Emissions	2037 Maintenance Year NO_x Emissions	2016 Base Year VOC Emissions	2037 Maintenance Year VOC Emissions
EGU	0.00	0.00	0.00	0.00
Non-EGU	0.26	0.16	0.47	0.35
Area	1.50	0.90	2.35	2.46
Non-Road	0.37	0.20	0.43	0.41
On-Road	5.15	0.76	1.52	0.74
Total	7.28	2.02	4.77	3.96

Table 4 – Butler County, Ohio Emissions Inventory Totals (tpsd)

Sector	2016 Base Year NO_x Emissions	2037 Maintenance Year NO_x Emissions	2016 Base Year VOC Emissions	2037 Maintenance Year VOC Emissions
EGU	1.16	0.67	0.08	0.06
Non-EGU	8.27	8.47	1.69	1.76
Area	4.44	3.27	14.59	15.01
Non-Road	2.54	1.25	2.91	2.23
On-Road	9.84	1.47	5.23	2.00
Total	26.25	15.13	24.50	21.06

Table 5 – Clermont County, Ohio Emissions Inventory Totals (tpsd)

Sector	2016 Base Year NO_x Emissions	2037 Maintenance Year NO_x Emissions	2016 Base Year VOC Emissions	2037 Maintenance Year VOC Emissions
EGU	18.80	5.81	0.17	0.13
Non-EGU	0.03	0.04	0.06	0.06
Area	1.20	0.82	6.65	8.08
Non-Road	1.62	0.84	2.44	1.47
On-Road	6.02	0.89	3.12	1.28
Total	27.67	8.40	12.44	11.02

Table 6 – Clinton County, Ohio Emissions Inventory Totals (tpsd)

Sector	2016 Base Year NO_x Emissions	2037 Maintenance Year NO_x Emissions	2016 Base Year VOC Emissions	2037 Maintenance Year VOC Emissions
EGU	0.00	0.00	0.00	0.00
Non-EGU	0.52	0.57	1.42	1.40
Area	1.37	1.20	7.16	7.27
Non-Road	2.03	0.58	1.87	1.00
On-Road	0.26	0.12	0.30	0.22
Total	4.18	2.47	10.75	9.89

Table 7 –Hamilton County, Ohio Emissions Inventory Totals (tpsd)

Sector	2016 Base Year NO_x Emissions	2037 Maintenance Year NO_x Emissions	2016 Base Year VOC Emissions	2037 Maintenance Year VOC Emissions
EGU	14.47	1.95	0.26	0.24
Non-EGU	3.14	3.55	1.48	1.40
Area	6.79	5.43	36.15	36.22
Non-Road	11.17	4.87	9.63	8.16
On-Road	25.62	3.85	11.36	4.42
Total	61.19	19.65	58.88	50.44

Table 8 – Warren County, Ohio Emissions Inventory Totals (tpsd)

Sector	2016 Base Year NO_x Emissions	2037 Maintenance Year NO_x Emissions	2016 Base Year VOC Emissions	2037 Maintenance Year VOC Emissions
EGU	0.00	0.00	0.00	0.00
Non-EGU	0.57	0.60	2.76	2.76
Area	4.36	3.54	19.39	23.22
Non-Road	3.60	1.51	4.11	2.47
On-Road	9.32	1.68	3.35	1.62
Total	17.85	7.33	29.61	30.07

Table 9 – Dearborn County, Indiana Emissions Inventory Totals (tpsd)

Sector	2016 Base Year NO_x Emissions	2037 Maintenance Year NO_x Emissions	2016 Base Year VOC Emissions	2037 Maintenance Year VOC Emissions
EGU	0.90	0.39	0.01	0.03
Non-EGU	0.85	1.12	6.20	6.21
Area	0.33	0.25	1.38	1.58
Non-Road	0.38	0.17	0.37	0.27
On-Road	0.57	0.09	0.20	0.07
Total	3.03	2.02	8.16	8.16

**Table 10 – Cincinnati-Hamilton, OH-KY-IN Maintenance Area
NO_x and VOC Emissions Inventory Totals (tpsd)**

County	2016 Base Year NO _x Emissions	2037 Maintenance Year NO _x Emissions	2016 Base Year VOC Emissions	2037 Maintenance Year VOC Emissions
Boone County, KY	20.52	4.66	14.76	10.12
Campbell County, KY	3.85	0.98	3.83	2.14
Kenton County, KY	7.28	2.02	4.77	3.96
Butler County, OH	26.25	15.13	24.50	21.02
Clermont County, OH	27.67	8.40	12.44	11.02
Clinton County, OH	4.18	2.47	10.75	9.89
Hamilton County, OH	61.19	19.65	58.88	50.44
Warren County, OH	17.85	7.33	29.61	30.07
Dearborn County, IN	3.03	2.02	8.16	8.16
Totals	171.82	62.66	167.70	146.82

**Table 11 - Cincinnati-Hamilton, OH-KY-IN Maintenance Area NO_x and VOC
Base Year and Maintenance Year Emissions Estimates (tpsd)**

Pollutant	2016	2037	Projected Decrease
NO_x	171.82	62.66	109.16
VOC	167.70	146.82	20.88

Maintenance is demonstrated when the future-year (2037) projected emission totals are below the 2016 attainment base year totals. In general, emissions for all sectors are projected to decline or remain stable.

Emission decreases from EPA rules covering EGUs (NO_x SIP Call, CAIR and CSAPR (and its updates)), Tier 2 Motor Vehicle Emissions Standards and Gasoline Sulfur Control

Requirements,²⁵ Tier 3 Motor Vehicle Emissions Standards,²⁶ Highway Heavy-Duty Engine Rule,²⁷ and the Non-Road Diesel Engine Rule are factored into the changes.²⁸ Total NO_x and VOC emissions are projected to decrease, with the largest decreases in the on-road sector due to the increasing prevalence of cleaner electric vehicles from the EPA standards detailed above.

NO_x emissions for the entire Area from all sectors are projected to decrease by 63.5% (109.16 tpsd) from 2016 to 2037.

Although the overall projected NO_x emissions within the Area are expected to decrease from 2016 to 2037, some sector emissions are expected to increase. Non-EGU point sources are projected to marginally increase NO_x emissions in all Ohio counties and Dearborn County, Indiana by 2037; the largest increase in non-EGU point source NO_x emissions is expected in Hamilton County, Ohio with a projected increase of 0.41 tpsd. Area sector NO_x emissions are projected to increase in Boone County, Kentucky by 0.58 tpsd; however, EGU point source and on-road mobile source NO_x emissions are projected to significantly decrease. Overall, Boone County's total NO_x emissions are expected to decrease by 15.86 tpsd from 2016 to 2037.

VOC emissions for the entire Area from all sectors are projected to decrease by 12.5% (20.88 tpsd) from 2016 to 2037.

Although the overall projected VOC emissions within the Area are expected to decrease from 2016 to 2037, some sector emissions are expected to increase. VOC emissions from area sector sources are projected to increase in all counties within the Area except for Campbell and Boone counties in Kentucky. The largest increase in area sector VOC emissions is expected in Warren County, Ohio with a projected increase of 3.83 tpsd. Dearborn County, Indiana VOC emissions from EGUs and non-EGU point sources are projected to increase slightly by 0.02 tpsd and 0.01 tpsd, respectively. Warren County, Ohio will see an increase in total VOC emissions of 0.46 tpsd, driven entirely by increases in area sector VOC emissions.

Given the overall projected decreases for NO_x and VOC from 2016 to 2037, the Division does not believe these precursors will cause a violation of the 2008 ozone standard in the Area.

²⁵ Final Rule for Control of Air Pollution From New Motor Vehicles: Tier 2 Motor Vehicle Emissions Standards and Gasoline Sulfur Control Requirements, February 10, 2000, available at: <https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-control-air-pollution-new-motor-vehicles-tier>.

²⁶ 79 FR 23414.

²⁷ Final Rule for Control of Air Pollution from Motor Vehicles: Tier 3 Motor Vehicle Emission and Fuel Standards, April 28, 2014, available at: <https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-control-air-pollution-motor-vehicles-tier-3>.

²⁸ EPA Emission Standards for Nonroad Engines and Vehicles, available at: <https://www.epa.gov/emission-standards-reference-guide/epa-emission-standards-nonroad-engines-and-vehicles>.

b. Maintenance Demonstration

According to the *Calcagni Memo*, “[a] A State may generally demonstrate maintenance of the NAAQS by either showing that future emissions of a pollutant or its precursors will not exceed the level of the attainment inventory, or by modeling to show that the future mix of sources and emission rates will not cause a violation of the NAAQS.”²⁹

Table 12 shows monitored fourth high maximum values for each individual monitor in the Area over the past three years, as well as their respective 2021-2023 design values. It should be noted that due to siting issues that could not be resolved, the Boone County monitor (21-015-0003) was relocated to a new site (21-015-0008) in 2022, causing a temporary lapse in monitoring data. The original Boone County monitor (21-015-003) has been permanently discontinued.³⁰ Due to the temporary lapse in monitoring data caused by the relocation, the 2022 monitoring data for Boone County is incomplete and the 2021-2023 design value is invalid. Data between the two monitors has been linked and Boone County data will be referenced by monitor number 21-015-0008. The other monitors in the Area have design values demonstrating that current air quality levels are below the level of the 2008 ozone standard. Monitoring data and design values shown in Table 12, below, can be found in Appendix B.

²⁹ *Calcagni Memo*, supra note 18, at 9.

³⁰ Kentucky Annual Ambient Air Monitoring Network Plan, available at: <https://eec.ky.gov/Environmental-Protection/Air/Air-Monitoring/Pages/default.aspx>.

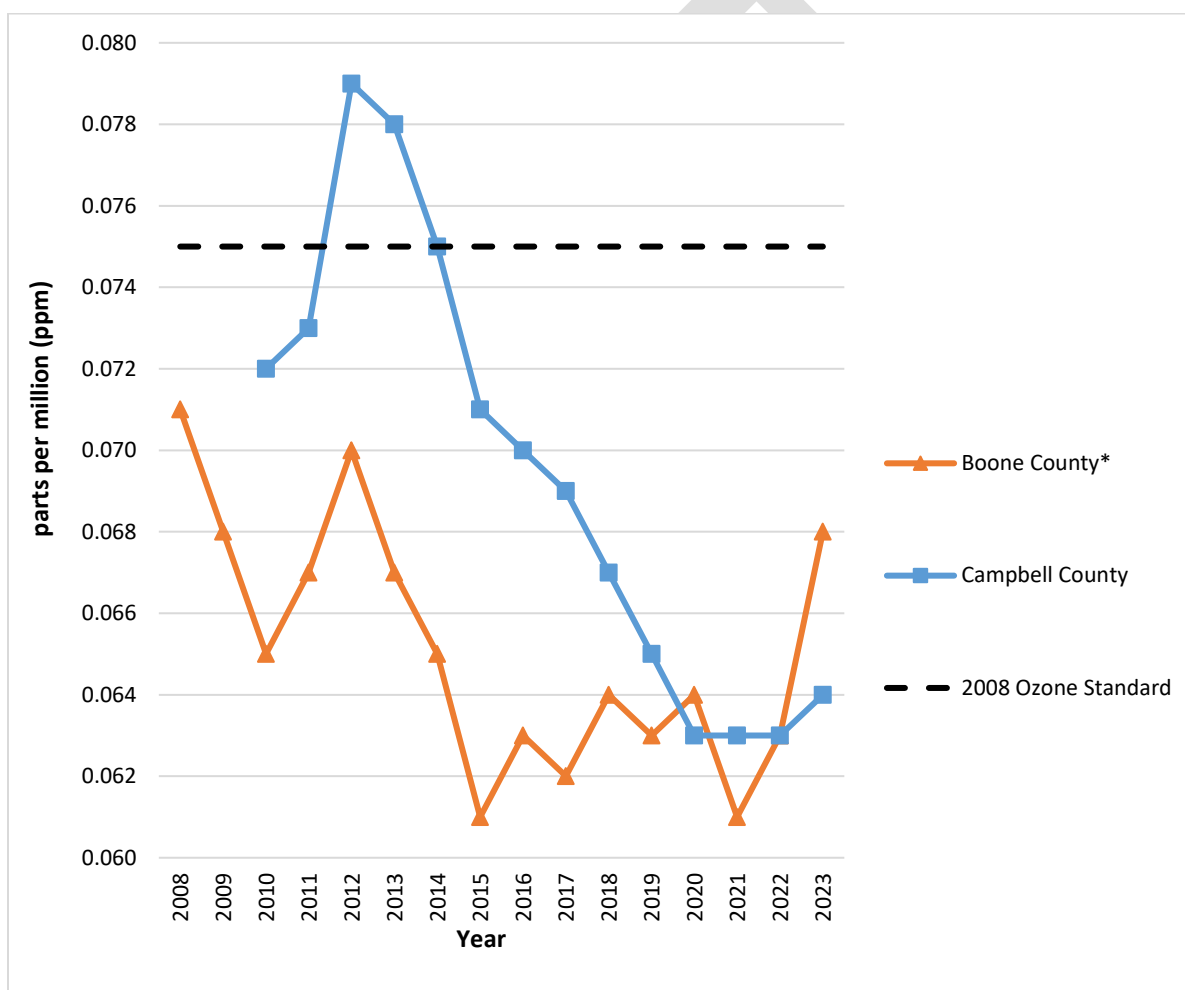
Table 12 – 8-hour Ozone Annual 4th High Maximum Values and Design Value for the Cincinnati-Hamilton, OH-KY-IN Maintenance Area, 2021-2023 (ppm)

Site ID	County	2021 4 th High Max	2022 4 th High Max	2023 4 th High Max	2021-2023 Design Value
21-015-0008	Boone, KY	0.061	0.066	0.077	0.068
21-037-3002	Campbell, KY	0.064	0.062	0.066	0.064
39-017-0018	Butler, OH	0.064	0.067	0.071	0.067
39-017-0023	Butler, OH	0.066	0.070	0.068	0.068
39-017-9991	Butler, OH	0.063	0.066	0.069	0.066
39-025-0022	Clermont, OH	0.065	0.063	0.068	0.065
39-027-1002	Clinton, OH	0.062	0.064	0.074	0.066
39-061-0006	Hamilton, OH	0.070	0.069	0.073	0.070
39-061-0010	Hamilton, OH	0.064	0.068	0.073	0.068
39-061-0040	Hamilton, OH	0.069	0.067	0.075	0.070
39-165-0007	Warren, OH	0.069	0.069	0.074	0.070

The 2023 4th high maximum value of the Boone County monitor experienced a spike which was influenced by Canadian wildfires that impaired air quality for much of the United States. Prior to the Canadian wildfire-affected data, the Area had a stable air quality trend. Even with Canadian wildfire-affected data, the Kentucky portion of the area continues to attain the more stringent 2015 ozone standard. Given these circumstances, the Division does not believe the monitored increase at the Boone County monitor significantly impacts maintenance of the 2008 ozone standard in the Kentucky portion of the Area. If the 2023 data impacted by Canadian wildfires becomes regulatorily significant, the Division will prepare an exceptional event demonstration to ensure maintenance of the 2008 ozone standard.

Figure 2 displays the design values for the Kentucky portion of the Area from 2008 to 2023 in comparison to the 2008 and 2015 ozone NAAQS. It should be noted that complete design value data for the Campbell County monitor (21-037-3002) was not available until 2010 since the monitor was established on August 1, 2007.³¹ For this reason, Campbell County design values are not depicted in Figure 2 until 2010. Design values used to develop Figure 2 can be found in Appendix B.

Figure 2 – 8-hour Ozone Design Values for the Kentucky Portion of the Cincinnati-Hamilton, OH-KY-IN Maintenance Area

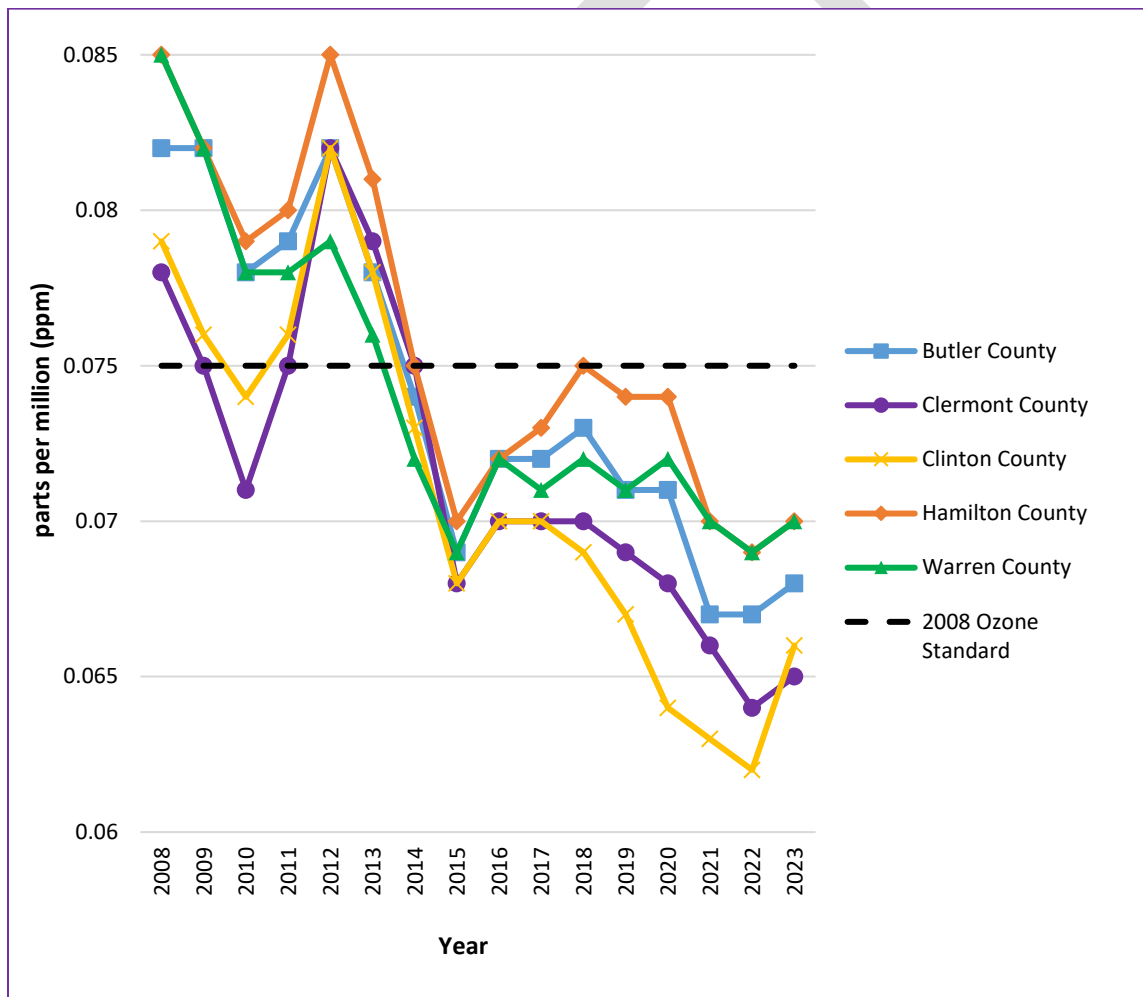


*Boone County's Design Values are invalid for the years 2022 and 2023.

³¹ Kentucky Annual Ambient Air Monitoring Network Plan, available at: <https://eec.ky.gov/Environmental-Protection/Air/Air-Monitoring/Pages/default.aspx>.

Figure 3 displays the design values for the Ohio portion of the Area from 2008 to 2023 in comparison to the 2008 and 2015 ozone NAAQS. It should be noted that the design values displayed in Figure 3 for counties with multiple monitors (Butler and Hamilton) are the maximum design values for each county, i.e., the highest design value for each year. Overall, Figure 3 demonstrates that the Ohio portion of the Area has consistently maintained the 2008 ozone standard. Design values used to develop Figure 3 can be found in Appendix B.

Figure 3 – 8-hour Ozone Design Values for the Ohio Portion of the Cincinnati Hamilton, OH-KY-IN Maintenance Area



Tables 13 and 14 show the design values for the entire Area from 2008 – 2023, which can be found in Appendix B. It should be noted that each design value was calculated by averaging the annual fourth-high maximum values of the 3 most recent years. Overall, Tables 13 and 14 demonstrate a declining trend in the design values for all the monitors in the Area. These trends show continual air quality improvements in the Area; therefore, the Division contends the Area will continue attaining the 2008 ozone NAAQS.

Table 13 – 8-hour Ozone 3-Year Design Values from 2008-2014 for the Cincinnati-Hamilton, OH-KY-IN Maintenance Area (ppm)

Site ID and Location	2008	2009	2010	2011	2012	2013	2014
21-015-0008 (Boone, KY)	0.071	0.068	0.065	0.067	0.070	0.067	0.065
21-037-3002 (Campbell, KY)	0.080*	0.076	0.072	0.073	0.079	0.078	0.075
39-017-0018 (Butler, OH)	0.082	0.082	0.078	0.079	0.082	0.078	0.073
39-017-0023 (Butler, OH)	0.080	0.078	0.073	0.076	0.079	0.076	0.073
39-017-9991 (Butler, OH)	-	-	-	0.079*	0.082*	0.077	0.074
39-025-0022 (Clermont, OH)	0.078	0.075	0.071	0.075	0.082	0.079	0.075
39-027-1002 (Clinton, OH)	0.079	0.076	0.074	0.076	0.082	0.078	0.073
39-061-0006 (Hamilton, OH)	0.085	0.082	0.079	0.080	0.085	0.081	0.075
39-061-0010 (Hamilton, OH)	0.081	0.076	0.073	0.074	0.080	0.075	0.073
39-061-0040 (Hamilton, OH)	0.081	0.080	0.076	0.078	0.080	0.078	0.073
39-165-0007 (Warren, OH)	0.085	0.082	0.078	0.078	0.079	0.076	0.072

* Indicates invalid design value

Table 14 – 8-hour Ozone 3-Year Design Values from 2015-2023 for the Cincinnati-Hamilton, OH-KY-IN Maintenance Area (ppm)

Site ID and Location	2015	2016	2017	2018	2019	2020	2021	2022	2023
21-015-0008 (Boone, KY)	0.061	0.063	0.062	0.064	0.063	0.064	0.061	0.063	0.068
21-037-3002 (Campbell, KY)	0.071	0.070	0.069	0.067	0.065	0.063	0.063	0.063	0.064
39-017-0018 (Butler, OH)	0.069	0.070	0.071	0.073	0.071	0.071	0.067	0.067	0.067
39-017-0023 (Butler, OH)	0.069	0.072	0.072	0.073	0.070	0.069	0.066	0.067	0.068
39-017-9991 (Butler, OH)	0.068	0.069	0.069	0.070	0.068	0.066	0.064	0.064	0.066
39-025-0022 (Clermont, OH)	0.068	0.070	0.070	0.070	0.069	0.068	0.066	0.064	0.065
39-027-1002 (Clinton, OH)	0.068	0.070	0.070	0.069	0.067	0.064	0.063	0.062	0.067
39-061-0006 (Hamilton, OH)	0.070	0.072	0.073	0.075	0.074	0.074	0.070	0.069	0.070
39-061-0010 (Hamilton, OH)	0.069	0.072	0.070	0.072	0.070	0.070	0.067	0.067	0.068
39-061-0040 (Hamilton, OH)	0.069	0.071	0.071	0.072	0.071	0.070	0.069	0.068	0.070
39-165-0007 (Warren, OH)	0.069	0.072	0.071	0.072	0.071	0.072	0.070	0.069	0.070

c. Monitoring Network

According to the *Calcagni Memo*, areas should continue to operate an air quality monitoring network, in accordance with the Code of Federal Regulations (CFR) in 40 CFR Part 58, to verify continued attainment once redesignated. Additionally, the *Calcagni Memo* requires the maintenance plan to “contain provisions for continued operation of air quality monitors that will provide such verification.”³²

The Division will continue to operate an ambient air quality monitoring network consistent with the network plan and assessments required by 40 CFR Part 58.10 and 40 CFR Part 58, Appendix D. Any modification to the network will be conducted in accordance with 40 CFR Part 58.14. As required by 40 CFR Part 58.16, all data collected will be recorded in the Air Quality System (AQS) database and will be available to the public.

d. Verification of Continued Attainment

If a maintenance demonstration is based on projected future inventories, the state submitting a maintenance plan should indicate how it will track progress against this metric to ensure assumptions about growth and other factors are accurate.³³

The Division requires major point sources in all counties to submit air emissions information annually.³⁴ Pursuant to the Air Emissions Reporting Rule (AERR), 40 CFR Part 51 Subpart A, the Division assists in the preparation of new periodic inventories for all sectors every three years for the National Emissions Inventory (NEI). These inventories will be prepared for future years to comply with the inventory reporting requirements established in the CFR. When comparing the 2016 attainment year and the 2037 projected maintenance year inventories, it is evident that emissions are expected to keep decreasing in the Area, which matches recent emissions trends shown in the emissions inventory above. The trends will be monitored through the duration of this second maintenance period to ensure continued compliance with the standard.

The Kentucky portion of the Area currently has two monitors measuring ozone. In accordance with 40 CFR Part 58, the Division is committed to the continued operation of an EPA-approved ambient air quality monitoring network. The ozone-monitoring season for the Area runs from March 1 through October 31. Kentucky’s Annual Monitoring Network Plan provides the

³² *Calcagni Memo*, supra note 18, at 11.

³³ *Ibid.* at 11.

³⁴ 401 KAR 52:020, 401 KAR 52:030.

framework for its air quality surveillance. The monitoring network plan undergoes an annual review process to ensure consistency with the regulation.³⁵

The Division has the legal authority to implement and enforce the maintenance plan requirements for Boone, Campbell, and Kenton counties.³⁶ This includes the right to enforce emission control measures that may be necessary to address future ozone attainment issues. Verification of continued attainment is achieved through operating an ambient ozone monitoring network of which the Division operates and manages.

e. Contingency Plan

Section 175A(d) of the CAA requires maintenance plans to include provisions for the prompt correction of any violation of the NAAQS.³⁷ At a minimum, such contingency measures must include all measures contained in the SIP for the Area prior to redesignation.

In addition to measures to be adopted to correct any violation, the plan should also contain “a schedule and procedure for adoption and implementation, and a specific time limit for action” as well as “specific indicators, or triggers” for action.³⁸

Future reviews of actual emissions for this redesignated Area will be performed using the latest emission factors, models, and methodologies. For these periodic inventories, the Division will review the assumptions made for the purpose of the maintenance demonstration concerning projected growth of activity levels. If any of these assumptions appear to have changed substantially, the Division will re-project emissions. If an annual fourth-high monitored value of 0.076 ppm or greater occurs in a single ozone season, or if periodic emission inventory updates reveal excessive or unanticipated growth greater than 10% in ozone precursor emissions within the maintenance area, the Division will evaluate existing control measures to see if any further emission reduction measures should be implemented at that time. Implementation of necessary controls in response to an initial “indicator” response will take place as expeditiously as possible, but in no event later than twelve months from the conclusion of the most recent ozone season (October 31) in which the annual fourth-high monitored value of 0.076 ppm or greater occurred.

If a three-year average fourth-high monitored value of 0.076 ppm or greater (i.e., a violation of the standard) occurs within the maintenance area, an “action level” response will take effect.

³⁵ 2024 Kentucky Annual Ambient Air Monitoring Network Plan, available at: <https://eec.ky.gov/Environmental-Protection/Air/Division Reports/2024 Kentucky Annual Ambient Air Monitoring Network Plan.pdf>.

³⁶ 40 C.F.R. Part 52 Subpart S – Kentucky.

³⁷ 42 U.S.C. §7505a.(d).

³⁸ *Calcagni Memo*, supra note 18, at 12-13.

An action level response will start with the Division conducting an internal study to identify the cause of the violation and determine if an exceptional event demonstration is appropriate. If it is determined that an exceptional event did not cause the violation, the Division, in conjunction with the Area's metropolitan planning organization or regional council of governments, will determine additional control measures needed to assure future attainment of the NAAQS for ozone. Appropriate contingency measures for an action level response will be selected to be in place within twenty-four months of a triggered violation.

The contingency measures chosen will be selected based on their ability to bring the Area back into attainment. Potential contingency measures currently maintained by the Division are shown in the following list:

- Implementation of a program to require additional emission reductions on stationary sources, including Reasonably Available Control Technology (RACT) for point sources of VOC and NO_x and, specifically, the adoption of new and revised RACT rules based on Groups II, III, and IV control techniques guidelines (CTGs);
- Implementation of a program to enhance inspection of stationary sources;
- Implementation of fuel programs, including incentives for alternative fuels;
- Restriction of certain roads or lanes to, or construction of such roads or lanes for use by, passenger buses or high-occupancy vehicles;
- Trip-reduction ordinances;
- Employer-based transportation management plans, including incentives;
- Programs to limit or restrict vehicle use in a downtown area, or other areas of emission concentration, particularly during periods of peak use;
- Programs for new construction and major reconstructions of paths or tracks for use by pedestrians or by non-motorized vehicles when economically feasible and in the public interest;
- Implementation of a modern vehicle inspection/maintenance program;
- Implementation of diesel retrofit programs, including incentives for performing retrofits for fleet vehicle operations; and/or
- Additional engine idling reduction programs.

The Division reserves the right to implement other contingency measures if new control programs should be developed and deemed more advantageous for the Area. Prior to the implementation of any contingency measure(s) not listed, the Division will solicit input from all interested and affected parties in the Area. The Division may, after consultation with EPA, implement other contingency measures not listed here.

III. Permanent and Enforceable Improvement in Air Quality (CAA Section 107(d)(3)(E)(iii))

Control measures included in the original redesignation request and maintenance plan for the Area are based on a combination of federal and state programs.

Federal programs utilized include Tier II Emission Standards for Vehicles and Gasoline Sulfur Standards, Tier 4 Vehicle Standards, the Clean Air Interstate Rule, Cross-State Air Pollution Rule, National Program for greenhouse gas emissions and fuel economy standards, Utility Mercury Air Toxics Standards (MATS) and New Source Performance Standards (NSPS), and NO_x SIP Call in Surrounding States.

State programs utilized include Kentucky's open burning regulation limiting open burning during ozone season (May-September) and regulations drafted following EPA's NO_x SIP Call controlling emissions of NO_x from EGUs and large stationary combustion sources.³⁹

The measures ensure that attainment was achieved based on permanent and enforceable emission reductions. Federal programs have been updated since the initial redesignation request and maintenance plan and emissions reductions from new programs will continue to support the maintenance of the 2008 ozone NAAQS in the Area. The Division is committed to upholding all state programs detailed in the initial redesignation request and maintenance plan for the Kentucky portion of the Area. For further information regarding permanent and enforceable measures relied upon to ensure the Area maintains attainment, please review the Division's initial submittal.⁴⁰

IV. Transportation Conformity

In accordance with CAA Section 176(c), transportation conformity is required to ensure that transportation plans, transportation improvement programs (TIPs), and federally supported highway transit project activities conform to the purpose of the SIP. This second maintenance plan establishes emissions budgets for the Area; these budgets are intended to allow transportation projects to occur without causing new air quality violations, worsening existing violations, or hindering continued attainment of the 2008 ozone NAAQS.

³⁹ Open burn regulation: 401 KAR 63:005; NO_x SIP call regulations: 401 KAR 51:150 and 401 KAR 51:160.

⁴⁰ *The Division's initial redesignation request and maintenance plan submittal*, supra note 7, at 3.

EPA's *Guidance for Transportation Conformity Implementation in Multi-Jurisdictional Nonattainment and Maintenance Areas* (Transportation Guidance) applies to nonattainment areas with several state agencies involved in the transportation planning process.⁴¹ The use of interagency consultation is required under 40 CFR 93.105.

The interagency consultation group (ICG) for this Area consisted of the Division, Ohio EPA, IDEM, OKI, the Kentucky Transportation Cabinet (KYTC), the Ohio Department of Transportation (ODOT), the Indiana Department of Transportation (INDOT), EPA Region 4, EPA Region 5, Federal Highway Administration Kentucky Division (FHWA-KY), Federal Highway Administration Ohio Division (FHWA-OH) and Federal Highway Administration Indiana Division (FHWA-IN). Pursuant to 40 CFR 93.118 and 93.122, a regional emissions analysis and budget test is required for this Area; OKI completed a regional emissions analysis for the entire Area.⁴²

The transportation conformity regulation, 40 CFR Part 93.124(a), *Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved under Title 23 U.S.C. or the Federal Transit Laws*, requires that mobile source emissions submitted or approved to a state's SIP be used in determining conformity of transportation plans for the area. This regulation also allows the addition of a safety margin to the motor vehicle emissions budgets. Per 40 CFR 93.101, the safety margin is defined as "the amount by which the total projected emissions from all sources of a given pollutant are less than the total emissions that would satisfy the applicable requirement for reasonable further progress, attainment or maintenance." The Division consulted the ICG and determined a 15 percent safety margin was appropriate for the Area. The Division requested concurrence on the safety margin and motor vehicle emissions budgets from all agencies involved in the ICG. On February 24, 2025, the Division held an ICG meeting to discuss Kentucky's motor vehicle emissions budgets; a transcript from the ICG meeting is available in Appendix C. Email correspondence documenting the entire ICG consultation process is available in Appendix D.

Table 15, below, demonstrates the estimated NO_x and VOC emissions totals for on-road mobile sources in each portion of the Area as well as for the entire Area. On-road emissions within the Ohio and Indiana portions of the Area were included to provide greater context for on-road emissions within the entire Area but were not used to determine the motor vehicle emissions budgets for Kentucky.

⁴¹ EPA: *Guidance for Transportation Conformity Implementation in Multi-Jurisdictional Nonattainment and Maintenance Areas*, July 2012.

⁴² OKI 2050 Metropolitan Transportation Plan, available at: <https://2050update.oki.org/air-quality/>.

Table 15 – Cincinnati-Hamilton, OH-KY-IN Maintenance Area Estimated NO_x and VOC Emissions (tpsd) for On-Road Mobile Sources

Area Portion	2016 Base Year NO_x Emissions	2037 Maintenance Year NO_x Emissions	2016 Base Year VOC Emissions	2037 Maintenance Year VOC Emissions
Boone County, KY	6.02	0.97	1.47	0.81
Campbell County, KY	2.05	0.26	0.75	0.35
Kenton County, KY	5.15	0.76	1.52	0.74
KY Totals	13.22	1.99	3.74	1.90
Butler County, OH	9.84	1.47	5.23	1.96
Clermont County, OH	6.02	0.89	3.12	1.28
Clinton County, OH	0.26	0.12	0.30	0.22
Hamilton County, OH	25.62	3.85	11.36	4.42
Warren County, OH	9.35	1.68	3.35	1.62
Dearborn County, IN	0.57	0.09	0.20	0.07
OH/IN Totals	51.63	8.10	23.56	9.57
Full Area Totals	64.85	10.09	27.30	11.47

Table 16 contains the 2037 motor vehicle emissions budgets for on-road mobile NO_x and VOC sources within the Kentucky portion of the Area. Safety margins were derived by increasing the total on-road mobile source emission estimates for the Kentucky portion of the Area by 15 percent. Kentucky chose to accommodate a 15 percent safety margin to allow for potential variation in vehicle miles traveled (VMT) forecast and estimated mobile source emissions.

Table 16 – Estimated NO_x and VOC Motor Vehicle Emissions Budgets (tpsd) for the Kentucky portion of the Cincinnati-Hamilton, OH-KY-IN Maintenance Area

Area Portion	Estimated 2037 Maintenance Year Emissions	2037 Safety Margin Allocation	2037 Motor Vehicle Emissions Budget
KY NO _x	1.99	0.30	2.29
KY VOC	1.90	0.29	2.19

Table 17 contains the 2037 motor vehicle emissions budgets for on-road mobile NO_x sources within each respective portion of the Area. Table 18 contains the 2037 motor vehicle emissions budgets for on-road mobile VOC sources within each respective portion of the Area. The budgets shown in Tables 17 and 18 include safety margins. The Ohio/Indiana budgets as well as the Kentucky budgets include a 15 percent safety margin. Please note that the emissions totals shown in Tables 17 and 18 tables are meant to provide context regarding the emissions entire Area. The Division is only formally adopting its own motor vehicle emissions budget that applies to the Kentucky portion of the Area.

Table 17 – Estimated NO_x Motor Vehicle Emissions Budget (tpsd) for Cincinnati-Hamilton, OH-KY-IN Maintenance Area

Area Portion	Estimated 2037 Maintenance Year Emissions	2037 Safety Margin Allocation	2037 Motor Vehicle Emissions Budget
OH/IN NO _x	8.10	1.22	9.32
KY NO _x	1.99	0.30	2.29
Area NO _x Total	10.09	1.52	11.61

**Table 18 – Estimated VOC Motor Vehicle Emissions Budgets (tpsd) for
Cincinnati-Hamilton, OH-KY-IN Maintenance Area**

Area Portion	Estimated 2037 Maintenance Year Emissions	2037 Safety Margin Allocation	2037 Motor Vehicle Emissions Budget
OH/IN VOC	9.57	1.44	11.01
KY VOC	1.90	0.29	2.19
Area VOC Total	11.47	1.73	13.20

The motor vehicle emissions budgets margin of safety allocation translates into an additional 1.52 tpsd for NO_x and 1.73 tpsd for VOC in the year 2037. EPA’s conformity regulations allow for allocation, through a revision to the SIP, of all or some portion of the overall Area’s safety margin (emission reductions from 2016 to 2037) to the mobile emissions budgets for future conformity. As identified in Tables 17 and 18 above, the motor vehicle emissions budget margin of safety allocation and the total budget is distributed separately between Kentucky (alone) and Ohio/Indiana (combined). The Kentucky portion of the overall 2037 emissions budgets comprises 20% of the NO_x and 17% of the VOC total. These percentages demonstrate that the majority of motor vehicle emissions will not originate within the Kentucky portion of the Area throughout the second maintenance period.

Table 19, below, details the actual 2016 base year VMT and the estimated 2037 maintenance year VMT. Despite increases in VMT, the Area still achieves emission reductions (see Table 10). Thus, the Division concludes that transportation activities will not cause new air quality violations in the Area. Calculations and methodologies for VMT can be viewed in the OKI Technical Document in Appendix A.

**Table 19 – Cincinnati-Hamilton, OH-KY-IN Maintenance Area Vehicle Miles
Traveled (miles/day) Estimations for On-Road Mobile Sources**

Area Portion	2016 Base Year VMT	2037 Maintenance Year VMT
Boone County, KY	4,108,576	5,055,706
Campbell County, KY	1,963,936	2,144,665
Kenton County, KY	3,993,527	4,482,631
KY Totals	10,066,039	11,683,003
Butler County, OH	7,366,094	7,860,333
Clermont County, OH	4,877,897	5,300,998
Clinton County, OH	1,903,974	2,219,284
Hamilton County, OH	21,233,246	22,135,990
Warren County, OH	6,651,621	7,757,371
Dearborn County, IN	357,406	410,467
OH/IN Totals	42,390,237	45,684,442
Area Totals	52,456,276	57,367,445

Lastly, there are pre-existing motor vehicle emissions budgets for NO_x and VOCs in the Kentucky portion of the Area, under the 2008 8-hour ozone NAAQS, that were established in the original maintenance plan for the Area. The pre-existing budgets from the Area's original maintenance plan were for the years 2020 and 2030. Although the 2020 budgets are now in the past, the pre-existing 2030 budgets remain valid for the Kentucky portion of the Area through the end of 2030. Based on the current regional emissions analysis, there is no need to remove the 2020 or 2030 budgets. The Division will continue implementing the pre-existing budgets in the Kentucky portion of the Area for transportation conformity purposes.

V. Public Participation

In accordance with 40 CFR 51.102, this proposed SIP revision, containing a second 10-year maintenance plan for the Kentucky portion of the Area, was available for public review and comment.

This proposed SIP revision was made available on the Division's website during the 37-day comment period from April 15, 2025, until May 22, 2025. A virtual public hearing was scheduled for May 22, 2025, at 10:00 a.m. (EDT). A copy of the public hearing notice is available in Appendix E.

The Division received written comments from X during the public comment period. The Division's response to public comments can be found in Appendix X.

VI. Conclusion

The most recent three years of ozone monitoring data (2021-2023) for the Area demonstrate continued compliance with the 2008 8-hour ozone NAAQS, with current air quality levels below the level of the standard. Excluding data impacted by the Canadian Wildfires that occurred during the summer of 2023, the Kentucky portion of the Area has a stable or improving air quality trend. This maintenance plan shows emissions in the Area continue to remain below the level of the initial attainment inventory and the Division will continue to operate its monitoring network to verify continued attainment in the Kentucky portion of the Area. The contingency plan is in place in the event of a violation of the standard.

The Division therefore requests that this subsequent 10-year maintenance plan for the Kentucky counties of Boone, Campbell, and Kenton located within the Cincinnati-Hamilton, OH-KY-IN 2008 8-hour ozone maintenance area be approved by EPA.