



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

Michael R. Pence
Governor

Carol S. Comer
Commissioner

September 16, 2016

Mr. Robert A. Kaplan
Acting Regional Administrator
U.S. Environmental Protection Agency
Region 5
77 West Jackson Boulevard
Chicago, IL 60604-3608

Re: Recommendations Concerning Air
Quality Designations for the Revised
2015 8-Hour Ozone National Ambient
Air Quality Standard (NAAQS)

Dear Mr. Kaplan:

This letter is in response to U.S. Environmental Protection Agency's (U.S. EPA's) February 25, 2016 guidance memorandum concerning area designations for the 2015 8-hour ozone National Ambient Air Quality Standards. U.S. EPA's February 25, 2016, guidance memorandum states that air quality designations will be proposed in June of 2017 and final designations will be promulgated in October of 2017. The guidance indicates that states must submit their initial air quality designation recommendations to U.S. EPA by October 1, 2016.

The Indiana Department of Environmental Management (IDEM) is submitting Indiana's initial recommendations following a thorough analysis of the five factors identified by U.S. EPA in its guidance memorandum. Air quality data is among the five factors, and U.S. EPA has informed states that they should base recommendations on the most recent complete three consecutive years of quality-assured, certified air quality data available at the time initial recommendations must be submitted. Because quality-assured data from the 2016 ozone season is expected to be certified by May of 2017, U.S. EPA expects to base final air quality designation recommendations on 2014-2016 data. U.S. EPA has also informed states that they may update recommendations once 2016 data has met certification requirements.

Consistent with U.S. EPA guidance, IDEM has based its evaluations on quality-assured, certified ambient air quality data for 2013-2015 and quality-assured data for the 2014-2016 timeframe, both of which show that all monitors in Indiana are meeting the 2015 8-hour ozone NAAQS. Based on air quality data and a thorough examination of the additional factors, including emissions data, meteorology, geography/topography and jurisdictional boundaries, IDEM recommends all of the monitored counties in Indiana be designated attainment and all other counties within Indiana be designated as unclassifiable.

The following documents are enclosed to provide detailed data in support of Indiana's initial recommendations:

- Enclosure 1—List of Indiana counties with recommendations; map containing graphical representation of Indiana's recommendations
- Enclosure 2—Air quality data for all monitors in Indiana
- Enclosure 3—Indiana's assessment/technical support document

An electronic version of this letter in PDF format has been transmitted to Doug Aburano of U.S. EPA Region 5.

Consistent with U.S. EPA's February 2016 guidance, Indiana reserves the right to make necessary updates to its recommendations once 2016 monitoring data becomes certified. I would like to thank you for this opportunity to provide feedback to U.S. EPA regarding initial air quality designations under the 2015 8-hour ozone NAAQS. IDEM looks forward to continued coordination with Region 5 staff as the designation process moves forward. If you have any questions regarding Indiana's initial recommendations, please feel free to contact me at (317) 232-8611 or ccomer@idem.IN.gov, or Keith Baugues, Assistant Commissioner of IDEM's Office of Air Quality, at (317) 232-8222 or kbaugues@idem.IN.gov.

Sincerely,



Carol S. Comer
Commissioner

CSC/kb/sd/bc/gf/as
Enclosures

cc: Chris Panos, U.S. EPA Region 5 (no enclosures)
Steve Rosenthal, U.S. EPA Region 5 (no enclosures)
Doug Aburano, U.S. EPA Region 5 (no enclosures)
Keith Baugues, IDEM-OAQ (no enclosures)
Scott Deloney, IDEM-OAQ (no out enclosures)
Brian Callahan, IDEM-OAQ (no enclosures)
Mark Derf, IDEM-OAQ (no enclosures)
Gale Ferris, IDEM-OAQ (no out enclosures)
Amy Smith, IDEM-OAQ (with enclosures)
File Copy (no enclosures)

Enclosure 1

List of Indiana Counties with Recommendations

As part of Indiana's initial recommendations for designations under the 2015 8-hour ozone NAAQS, IDEM is providing the alphabetical listing of counties and recommendations in Table 1-1 followed by a graphic representation in Figure 1-1.

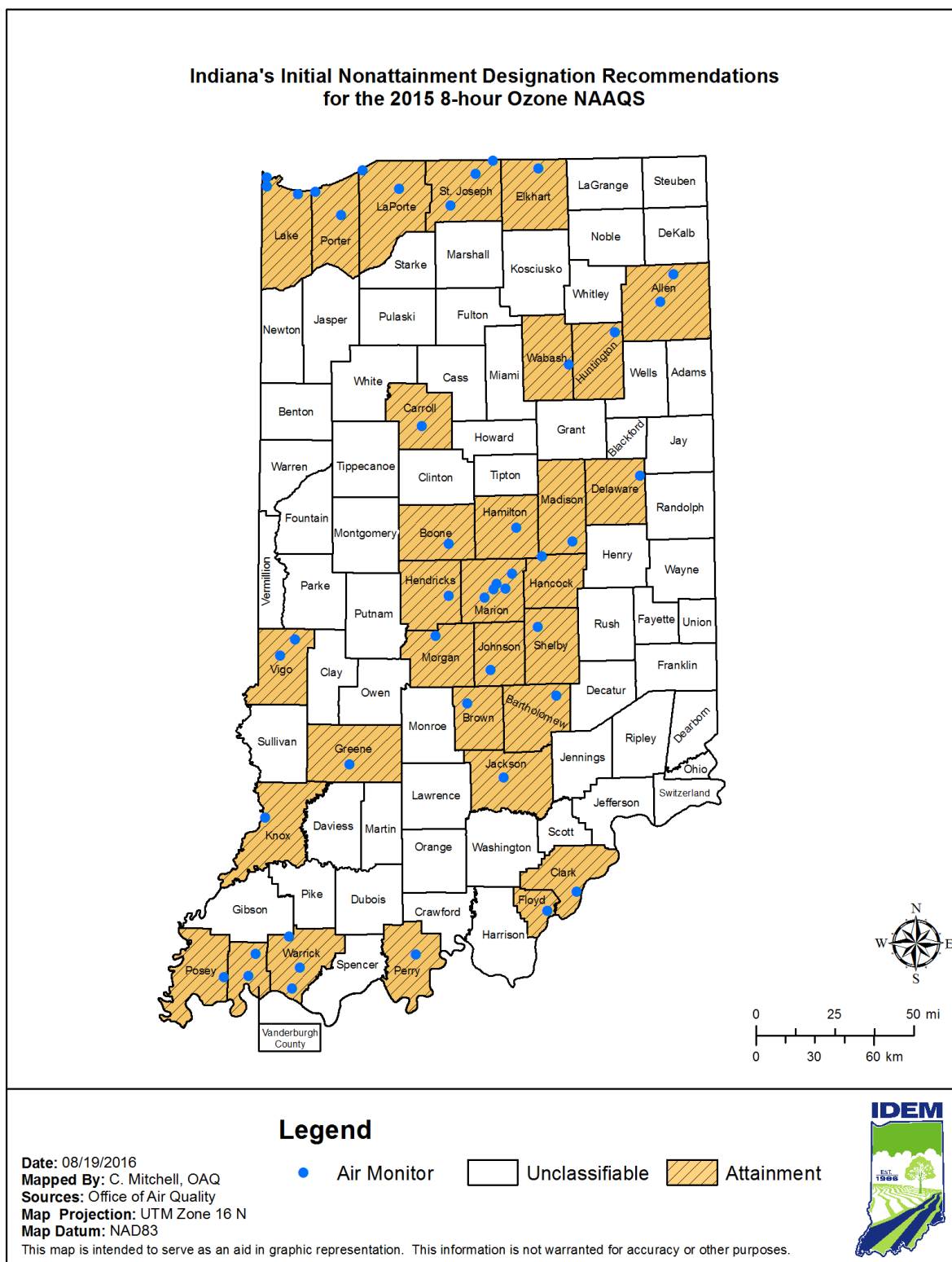
Table 1-1: Alphabetical Listing of Indiana Counties with Initial Recommendations and Reason for Recommendations

County	Initial Recommendation for Designation under the 2015 8-Hour Ozone NAAQS	Reason for Initial Recommendation for Designation under the 2015 8-Hour Ozone NAAQS
Adams	Unclassifiable	No Monitor Data
Allen	Attainment	Monitor Value(s) Below Standard
Bartholomew	Attainment	Monitor Value(s) Below Standard
Benton	Unclassifiable	No Monitor Data
Blackford	Unclassifiable	No Monitor Data
Boone	Attainment	Monitor Value(s) Below Standard
Brown	Attainment	Monitor Value(s) Below Standard
Carroll	Attainment	Monitor Value(s) Below Standard
Cass	Unclassifiable	No Monitor Data
Clark	Attainment	Monitor Value(s) Below Standard
Clay	Unclassifiable	No Monitor Data
Clinton	Unclassifiable	No Monitor Data
Crawford	Unclassifiable	No Monitor Data
Daviess	Unclassifiable	No Monitor Data
Dearborn	Unclassifiable	No Monitor Data/Insignificant Contributor
Decatur	Unclassifiable	No Monitor Data
DeKalb	Unclassifiable	No Monitor Data
Delaware	Attainment	Monitor Value(s) Below Standard
Dubois	Unclassifiable	No Monitor Data
Elkhart	Attainment	Monitor Value(s) Below Standard
Fayette	Unclassifiable	No Monitor Data
Floyd	Attainment	Monitor Value(s) Below Standard
Fountain	Unclassifiable	No Monitor Data
Franklin	Unclassifiable	No Monitor Data
Fulton	Unclassifiable	No Monitor Data

County	Initial Recommendation for Designation under the 2015 8-Hour Ozone NAAQS	Reason for Initial Recommendation for Designation under the 2015 8-Hour Ozone NAAQS
Gibson	Unclassifiable	No Monitor Data
Grant	Unclassifiable	No Monitor Data
Greene	Attainment	Monitor Value(s) Below Standard
Hamilton	Attainment	Monitor Value(s) Below Standard
Hancock	Attainment	Monitor Value(s) Below Standard
Harrison	Unclassifiable	No Monitor Data
Hendricks	Attainment	Monitor Value(s) Below Standard
Henry	Unclassifiable	No Monitor Data
Howard	Unclassifiable	No Monitor Data
Huntington	Attainment	Monitor Value(s) Below Standard
Jackson	Attainment	Monitor Value(s) Below Standard
Jasper	Unclassifiable	No Monitor Data/Insignificant Contributor
Jay	Unclassifiable	No Monitor Data
Jefferson	Unclassifiable	No Monitor Data
Jennings	Unclassifiable	No Monitor Data
Johnson	Attainment	Monitor Value(s) Below Standard
Knox	Attainment	Monitor Value(s) Below Standard
Kosciusko	Unclassifiable	No Monitor Data
LaGrange	Unclassifiable	No Monitor Data
Lake	Attainment	Monitor Value(s) Below Standard
LaPorte	Attainment	Monitor Value(s) Below Standard
Lawrence	Unclassifiable	No Monitor Data
Madison	Attainment	Monitor Value(s) Below Standard
Marion	Attainment	Monitor Value(s) Below Standard
Marshall	Unclassifiable	No Monitor Data
Martin	Unclassifiable	No Monitor Data
Miami	Unclassifiable	No Monitor Data
Monroe	Unclassifiable	No Monitor Data
Montgomery	Unclassifiable	No Monitor Data
Morgan	Attainment	Monitor Value(s) Below Standard
Newton	Unclassifiable	No Monitor Data/Insignificant Contributor
Noble	Unclassifiable	No Monitor Data
Ohio	Unclassifiable	No Monitor Data/Insignificant Contributor
Orange	Unclassifiable	No Monitor Data
Owen	Unclassifiable	No Monitor Data

County	Initial Recommendation for Designation under the 2015 8-Hour Ozone NAAQS	Reason for Initial Recommendation for Designation under the 2015 8-Hour Ozone NAAQS
Parke	Unclassifiable	No Monitor Data
Perry	Attainment	Monitor Value(s) Below Standard
Pike	Unclassifiable	No Monitor Data
Porter	Attainment	Monitor Value(s) Below Standard
Posey	Attainment	Monitor Value(s) Below Standard
Pulaski	Unclassifiable	No Monitor Data
Putnam	Unclassifiable	No Monitor Data
Randolph	Unclassifiable	No Monitor Data
Ripley	Unclassifiable	No Monitor Data
Rush	Unclassifiable	No Monitor Data
St. Joseph	Attainment	Monitor Value(s) Below Standard
Scott	Unclassifiable	No Monitor Data
Shelby	Attainment	Monitor Value(s) Below Standard
Spencer	Unclassifiable	No Monitor Data
Starke	Unclassifiable	No Monitor Data
Steuben	Unclassifiable	No Monitor Data
Sullivan	Unclassifiable	No Monitor Data
Switzerland	Unclassifiable	No Monitor Data
Tippecanoe	Unclassifiable	No Monitor Data
Tipton	Unclassifiable	No Monitor Data
Union	Unclassifiable	No Monitor Data/Insignificant Contributor
Vanderburgh	Attainment	Monitor Value(s) Below Standard
Vermillion	Unclassifiable	No Monitor Data
Vigo	Attainment	Monitor Value(s) Below Standard
Wabash	Attainment	Monitor Value(s) Below Standard
Warren	Unclassifiable	No Monitor Data
Warrick	Attainment	Monitor Value(s) Below Standard
Washington	Unclassifiable	No Monitor Data
Wayne	Unclassifiable	No Monitor Data
Wells	Unclassifiable	No Monitor Data
White	Unclassifiable	No Monitor Data
Whitley	Unclassifiable	No Monitor Data

Figure 1-1: Map Showing Indiana Counties, Air Quality Monitors, and Initial Recommendations for Designations under the 2015 8-Hour Ozone NAAQS



Enclosure 2

Indiana Ozone Monitoring Data Summary

2005 - 2016 ^a

As part of Indiana's initial recommendations for designations under the 2015 8-hour ozone NAAQS, IDEM is providing air quality monitoring data for 2005 through 2016. Under the 2015 8-hour ozone NAAQS, attainment is determined by the average of the 4th highest daily maximum ozone value over a three-year period. This three-year average is called the Design Value. A monitor with a Design Value greater than 0.070 ppm is a violation of the 2015 8-hour ozone NAAQS.

Designations for the 2015 8-hour ozone NAAQS rely on a three-year average of ambient air monitoring data. States should base recommendations on the most recent complete three consecutive years of quality assured, certified air quality data available at the time initial recommendations must be submitted. Because data from the 2016 ozone season is expected to be certified and quality assured by May of 2017, U.S. EPA expects to base final decisions on 2014-2016 data. Indiana's evaluations are based on certified ambient air quality data for 2013-2015 and information for the 2014-2016 timeframe is included to the extent quality assured data for 2016 is available.

County	Site ID #	Site Name	4th Highest Ozone Value (ppm)												Three-Year Design Value (ppm)									
			2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 ^a	05-07	06-08	07-09	08-10	09-11	10-12	11-13	12-14	13-15	14-16 ^a
Allen	180030002	Leo High School	0.086	0.073	0.077	0.066	0.065	0.065	0.070	0.077	0.062	0.063	0.062	0.066	0.078	0.072	0.069	0.065	0.066	0.070	0.069	0.067	0.062	0.063
Allen	180030004	Ft Wayne - Beacon Street	0.076	0.071	0.080	0.069	0.065	0.068	0.072	0.074	0.062	0.063	0.059	0.069	0.075	0.073	0.071	0.067	0.068	0.071	0.069	0.066	0.061	0.063
Bartholomew	180050007	Hope	Started operation June 1, 2013.								0.066 ^b	0.067	0.066	0.071	-----	-----	-----	-----	-----	-----	0.066 ^b	0.066 ^b	0.066 ^b	0.068
Boone	180110001	Whitestown	0.082	0.080	0.083	0.073	0.069	0.072	0.071	0.080	0.068	0.066	0.064	0.070	0.081	0.078	0.075	0.071	0.070	0.074	0.073	0.071	0.066	0.066
Brown	180130001	Helmsburg	Started operation May 14, 2014.									0.058 ^b	0.062	0.063	-----	-----	-----	-----	-----	-----	-----	0.058 ^b	0.060 ^c	0.061
Carroll	180150002	Flora	0.075	0.073	0.078	0.065	0.063	0.072	0.068	0.075	0.065	0.064	0.064	0.066	0.075	0.072	0.068	0.066	0.067	0.071	0.069	0.068	0.064	0.064
Clark	180190008	Charlestown State Park	0.080	0.079	0.090	0.075	0.067	0.077	0.082	0.085	0.067	0.066	0.074	0.072	0.083	0.081	0.077	0.073	0.075	0.081	0.078	0.072	0.069	0.070
Delaware	180350010	Albany	0.081	0.072	0.079	0.062	0.068	0.067	0.070	0.075	0.061	0.054	0.058	0.067	0.077	0.071	0.069	0.065	0.068	0.070	0.068	0.063	0.057	0.059
Elkhart	180390007	Bristol	0.086	0.067	0.082	0.068	0.061	0.065	0.072	0.075	0.055	0.055	0.058	0.072	0.078	0.072	0.070	0.064	0.066	0.070	0.067	0.061	0.056	0.061
Floyd	180431004	New Albany	0.080	0.076	0.082	0.075	0.063	0.072	0.080	0.087	0.068	0.066	0.065	0.073	0.079	0.077	0.073	0.070	0.071	0.079	0.078	0.073	0.066	0.068
Greene	180550001	Plummer	0.079	0.076	0.084	0.072	0.068	0.074	0.080	0.082	0.068	0.064	0.067	0.069	0.079	0.077	0.074	0.071	0.074	0.078	0.076	0.071	0.066	0.066
Hamilton	180570006	Noblesville - 191st Street	0.087	0.077	0.084	0.073	0.071	0.072	0.071	0.076	0.063	0.058	0.063	0.068	0.082	0.078	0.076	0.072	0.071	0.073	0.070	0.065	0.061	0.063
Hancock	180590003	Fortville	0.080	0.075	0.081	0.074	0.068	0.071	0.068	0.063	0.061	0.053	0.062	Disc.	0.078	0.076	0.074	0.071	0.069	0.067	0.064	0.059	0.058	Disc.
Hendricks	180630004	Avon	0.078	0.073	0.079	0.068	0.070	0.067	0.068	0.071	0.057	0.057	0.055	0.068	0.076	0.073	0.072	0.068	0.068	0.068	0.065	0.061	0.056	0.060
Huntington	180690002	Roanoke Elementary School	0.078	0.072	0.078	0.060	0.062	0.062	0.069	0.067	0.059	0.056	0.054	0.066	0.076	0.070	0.066	0.061	0.064	0.066	0.065	0.060	0.056	0.058
Jackson	180710001	Brownstown	0.077	0.075	0.078	0.070	0.063	0.069	0.067	0.065	0.063	0.064	0.064	0.070	0.076	0.074	0.070	0.067	0.066	0.067	0.065	0.064	0.063	0.066
Johnson	180810002	Trafalgar	0.077	0.078	0.080	0.069	0.071	0.070	0.068	0.074	0.062	0.056	0.063	0.062	0.078	0.075	0.073	0.070	0.069	0.070	0.068	0.064	0.060	0.060
Knox	180839991	Vincennes ^c	Started operation April 4, 2011.						0.077	0.079	0.064	0.062	0.063	0.071	-----	-----	-----	-----	0.077 ^b	0.078 ^b	0.073	0.068	0.063	0.065
Lake	180890022	Gary-IITRI	0.089	0.073	0.085	0.062	0.058	0.064	0.066	0.078	0.064	0.067	0.064	0.070	0.082	0.073	0.068	0.061	0.062	0.069	0.069	0.069	0.065	0.067
Lake	180890030	Whiting HS	0.088	0.081	0.088	0.062	0.062	0.069	0.069	0.081	0.062	0.065	0.070	Disc.	0.085	0.077	0.070	0.064	0.066	0.073	0.070	0.069	0.065	Disc.
Lake	180892008	Hammond - 141 st St	0.087	0.075	0.077	0.068	0.065	0.069	0.072	0.077 ^b	0.063	0.067	0.060	0.068	0.079	0.073	0.070	0.067	0.068	0.072 ^b	0.070 ^b	0.069 ^b	0.063	0.065
LaPorte	180910005	Michigan City - W Michigan Blvd	0.084	0.075	0.073	0.059	0.066	0.070	0.080	0.100	0.069	0.070	0.067	0.039	0.077	0.069	0.066	0.065	0.072	0.083	0.083	0.079	0.068	0.058
LaPorte	180910010	LaPorte - E Lincolnway	0.089	0.069	0.078	0.065	0.063	0.067	0.070	0.079	0.064	0.061	0.061	0.068	0.078	0.070	0.068	0.065	0.066	0.072	0.071	0.068	0.062	0.063
Madison	180950010	Emporia	0.078	0.072	0.078	0.065	0.064	0.065	0.071	0.074	0.063	0.054	0.054	0.064	0.076	0.072	0.069	0.064	0.066	0.070	0.069	0.063	0.057	0.057

Enclosure 2

Indiana Ozone Monitoring Data Summary

2005 - 2016 ^a

As part of Indiana's initial recommendations for designations under the 2015 8-hour ozone NAAQS, IDEM is providing air quality monitoring data for 2005 through 2016. Under the 2015 8-hour ozone NAAQS, attainment is determined by the average of the 4th highest daily maximum ozone value over a three-year period. This three-year average is called the Design Value. A monitor with a Design Value greater than 0.070 ppm is a violation of the 2015 8-hour ozone NAAQS.

Designations for the 2015 8-hour ozone NAAQS rely on a three-year average of ambient air monitoring data. States should base recommendations on the most recent complete three consecutive years of quality assured, certified air quality data available at the time initial recommendations must be submitted. Because data from the 2016 ozone season is expected to be certified and quality assured by May of 2017, U.S. EPA expects to base final decisions on 2014-2016 data. Indiana's evaluations are based on certified ambient air quality data for 2013-2015 and information for the 2014-2016 timeframe is included to the extent quality assured data for 2016 is available.

County	Site ID #	Site Name	4th Highest Ozone Value (ppm)												Three-Year Design Value (ppm)											
			2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 ^a	05-07	06-08	07-09	08-10	09-11	10-12	11-13	12-14	13-15	14-16 ^a		
Marion	180970042	Mann Road	0.076	0.074	0.080	Site discontinued.									0.077	Site discontinued.										
Marion	180970050	Indpls - Ft Harrison	0.080	0.076	0.083	0.075	0.073	0.072	0.077	0.075	0.059	0.066	0.069	0.073	0.079	0.078	0.077	0.073	0.074	0.074	0.070	0.066	0.064	0.069		
Marion	180970057	Indpls - Harding St	0.081	0.076	0.076	0.067	0.067	0.068	0.068	0.077	0.062	0.066	0.061	0.069	0.077	0.073	0.070	0.067	0.067	0.071	0.069	0.068	0.063	0.065		
Marion	180970073	Indpls - E 16th St	0.080	0.072	0.080	0.066	0.065	0.066	0.075	0.082	0.067	0.065	0.062	0.068	0.077	0.072	0.070	0.065	0.068	0.074	0.074	0.071	0.064	0.065		
Marion	180970078	Indpls - Washington Park	Started operation April 1, 2009.				0.067	0.064	0.072	0.076	0.069	0.061 ^b	0.067	0.070	-----	-----	0.067 ^b	0.065 ^b	0.067	0.070	0.072	0.068 ^b	0.065 ^b	0.066		
Marion	180970087	Indpls - I-70 E	Started operation May 4, 2014.									0.061	0.064	0.068	-----	-----	-----	-----	-----	-----	-----	0.061 ^b	0.062 ^b	0.064		
Morgan	181090005	Monrovia	0.078	0.077	0.084	0.069	0.069	0.063	0.072	0.073	0.065	0.064	0.063	0.065	0.079	0.076	0.074	0.067	0.068	0.069	0.070	0.067	0.064	0.064		
Perry	181230009	Leopold	0.086	0.079	0.080	0.073	0.065	0.072	0.074	0.081	0.064	0.067	0.067	0.069	0.081	0.077	0.072	0.070	0.070	0.075	0.073	0.070	0.066	0.067		
Porter	181270024	Ogden Dunes	0.090	0.070	0.084	0.069	0.067	0.067	0.068	0.081	0.069	0.071	0.066	0.070	0.081	0.074	0.073	0.067	0.067	0.072	0.072	0.073	0.068	0.069		
Porter	181270026	Valparaiso	0.078	0.071	0.080	0.061	0.064	0.061	0.063	0.067	0.063	0.067	0.060	0.071	0.076	0.070	0.068	0.062	0.062	0.063	0.064	0.065	0.063	0.066		
Posey	181290003	St. Phillips	0.077	0.058	0.080	0.069	0.067	0.069	0.076	0.070	0.065	0.065	0.067	0.067	0.071	0.069	0.072	0.068	0.070	0.071	0.070	0.066	0.065	0.066		
St. Joseph	181410010	Potato Creek State Park	0.078	0.069	0.075	0.063	0.060	0.060	0.064	0.070	0.057	0.059	0.058	0.069	0.074	0.069	0.066	0.061	0.061	0.064	0.063	0.062	0.058	0.062		
St. Joseph	181410015	South Bend - Shields Dr	0.084	0.063	0.067	0.058	0.059	0.061	0.073	0.081	0.065	0.067	0.066	0.072	0.071	0.062	0.061	0.059	0.064	0.071	0.073	0.071	0.066	0.068		
St. Joseph	181411007	Granger	0.086	0.070	0.082	0.069	0.062	0.060	0.071	0.077	Moved to Beckley St.				0.079	0.073	0.071	0.063	0.064	0.069	-----	-----	-----	-----		
St. Joseph	181410016	Granger - Beckley St.	-----	-----	-----	-----	-----	-----	-----	-----	0.059	0.064	0.064	0.071	-----	-----	-----	-----	-----	-----	0.069	0.066	0.062	0.066		
Shelby	181450001	Fairland	0.080	0.073	0.082	0.070	0.075	0.067	0.075	0.084	0.066	0.062	0.059	0.065	0.078	0.075	0.075	0.070	0.072	0.075	0.075	0.070	0.062	0.062		
Vanderburgh	181630021	Evansville - Buena Vista	0.080	0.075	0.085	0.074	0.061	0.064	0.077	0.080	0.066	0.068	0.072	0.072	0.080	0.078	0.073	0.066	0.067	0.073	0.074	0.071	0.068	0.070		
Vanderburgh	181630013	Inglefield	0.056	0.081	0.088	0.072	0.068	0.071	0.072	0.078	0.068	0.070	0.068	0.070	0.075	0.080	0.076	0.070	0.070	0.073	0.072	0.072	0.068	0.069		
Vigo	181670018	Terre Haute - Lafayette Ave	0.064	0.060	0.077	0.059	0.058	0.063	0.067	0.075	0.061	0.062	0.064	0.069	0.067	0.065	0.064	0.060	0.062	0.068	0.067	0.066	0.062	0.065		
Vigo	181670024	Sandcut	0.076	0.072	0.073	0.066	0.061	0.063	0.070	0.067	0.066	0.056	0.062	0.067	0.073	0.070	0.066	0.063	0.064	0.066	0.067	0.063	0.061	0.061		
Wabash	181699991	Salamonie Reservoir ^c	Started operation June 1, 2011.							0.074 ^b	0.079	0.068	0.066	0.068	0.071	-----	-----	-----	-----	0.074 ^b	0.076 ^b	0.073 ^b	0.071	0.067	0.068	
Warrick	181730008	Boonville	0.080	0.078	0.083	0.071	0.064	0.071	0.075	0.073	0.063	0.065	0.069	0.069	0.080	0.077	0.072	0.068	0.070	0.073	0.070	0.067	0.065	0.067		
Warrick	181730009	Lynnville	0.076	0.070	0.080	0.064	0.064	0.070	0.072	0.075	0.061	0.064	0.062	0.072	0.075	0.071	0.069	0.066	0.068	0.072	0.069	0.066	0.062	0.066		
Warrick	181730011	Dayville	0.077	0.078	0.076	0.060	0.057	0.070	0.072	0.081	0.066	0.066	0.065	0.071	0.077	0.071	0.064	0.062	0.066	0.074	0.073	0.071	0.065	0.067		

Enclosure 3

Technical Support Document

**Indiana's Assessment of the
2015 8-Hour Ozone
National Ambient Air Quality Standard (NAAQS)**

October 1, 2016

This page left intentionally blank.

TABLE OF CONTENTS

Overview	1
Background	1
Technical Analysis	2
Analysis for Northwestern Indiana (Jasper, Lake, Newton and Porter Counties)	3
Introduction	3
Geographic Description	3
Designation History	4
Summary of Analysis and Recommendations	4
Five Factor Analysis.....	4
1. Air Quality Monitoring Data	4
2. Emissions and Emissions-Related Data.....	5
a. Emission Sources and Levels.....	5
b. Control of Emission Sources.....	6
c. Population and Degree of Urbanization.....	7
d. Traffic, Commuting Patterns and Vehicle Miles Traveled	9
3. Meteorological Data and Transport Patterns	12
4. Geography/Topography	13
5. Jurisdictional Boundaries.....	13
Conclusion and Recommendations for Northwestern Indiana (Jasper, Lake, Newton and Porter Counties)	13
Analysis for Dearborn, Ohio and Union Counties.....	16
Introduction	16
Geographic Description	16
Designation History	17
Summary of Analysis and Recommendations	17
Five Factor Analysis.....	17
1. Air Quality Monitoring Data.....	17
2. Emissions and Emissions-Related Data.....	18
a. Emission Sources and Levels.....	18
b. Control of Emission Sources.....	19
c. Population and Degree of Urbanization.....	19
d. Traffic, Commuting Patterns and Vehicle Miles Traveled	21
3. Meteorological Data and Transport Patterns	23
4. Geography/Topography	24
5. Jurisdictional Boundaries.....	24
Conclusion and Recommendations for Dearborn, Ohio and Union Counties	24
Analysis and Recommendations for the Remaining Counties in Indiana	26

LIST OF TABLES

<i>Table 1: Northwestern Indiana Three-Year Design Values (2005-2016)</i>	5
<i>Table 2: Northwestern Indiana Emissions Inventories (Tons per Year)</i>	6
<i>Table 3: Northwestern Indiana Population Growth Rates, Patterns and Projections (2000-2025)</i>	8
<i>Table 4: Northwestern Indiana Population Density and Changes (2000-2010)</i>	8
<i>Table 5: Northwestern Indiana Commuting Patterns and Trends (2009-2013)</i>	9
<i>Table 6: Number of Commuters from Lake County into Illinois (2009-2013)</i>	11
<i>Table 7: Daily Vehicle Miles Traveled, Northwestern Indiana (2011, 2014)</i>	11
<i>Table 8: Initial Recommendations for Northwestern Indiana</i>	15
<i>Table 9: Dearborn, Ohio and Union Counties Emissions Inventories (Tons per Year)</i>	18
<i>Table 10: Dearborn, Ohio and Union Counties Population Growth Rates, Patterns and Projections (2000-2015)</i>	20
<i>Table 11: Dearborn, Ohio and Union Counties Population Density and Changes (2000-2010)</i>	20
<i>Table 12: Dearborn, Ohio and Union Counties Commuting Patterns and Trends (2009-2013)</i>	21
<i>Table 13: Number of Commuters from Dearborn County into Ohio (2009-2013)</i>	23
<i>Table 14: Daily Vehicle Miles Traveled, Dearborn, Ohio and Union Counties (2011, 2014)</i> ..	23
<i>Table 15: Initial Recommendations for Dearborn, Ohio and Union Counties</i>	25

LIST OF FIGURES

<i>Figure A: Northwestern Indiana Area Map</i>	3
<i>Figure B: Northwestern Indiana Emissions Comparisons</i>	6
<i>Figure C: Northwestern Indiana Commuting Flows (2014)</i>	10
<i>Figure D: Kenosha, WI Windrose (1996-2016)</i>	12
<i>Figure E: Dearborn, Ohio and Union Counties Area Map</i>	16
<i>Figure F: Dearborn, Ohio and Union Counties Emissions Comparisons</i>	19
<i>Figure G: Dearborn, Ohio and Union Counties Commuting Flows (2014)</i>	22

OVERVIEW

The purpose of this Technical Support Document is to support Indiana's initial recommendations for the designation of areas under the 2015 8-hour ozone National Ambient Air Quality Standard (NAAQS). Please note that because quality-assured, certified data for 2013-2015 show monitor violations in Core Based Statistical Areas (CBSAs) of neighboring states that include Indiana counties, assessments have been done for those areas.

Background

Ground level ozone is one of the six criteria air pollutants that scientists have identified as being particularly harmful to humans and the environment. Adverse health and environmental impacts associated with ground level ozone include respiratory impairment and damage to crops and forests. NAAQS have been developed for six criteria pollutants, including ground level ozone, and are used as measurements of air quality. The federal Clean Air Act (CAA) requires the United States Environmental Protection Agency (U.S. EPA) to set primary NAAQS at a level judged to be "requisite to protect the public health with an adequate margin of safety" and secondary NAAQS 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. U.S. EPA is responsible for conducting periodic reviews and may revise the NAAQS where updates are determined to be appropriate.

On October 1, 2015, U.S. EPA revised the primary and secondary 8-hour ozone NAAQS to 0.070 parts per million (ppm), retaining the annual fourth-highest daily maximum 8-hour concentration averaged over three years as the form of the standard¹. The first step in implementing the 2015 8-hour ozone NAAQS is to designate which areas of the country do not meet the standard. By October 1, 2016, states must provide U.S. EPA with initial recommendations concerning nonattainment areas and boundaries. U.S. EPA intends to promulgate final designations under the 2015 8-hour ozone NAAQS by no later than October 1, 2017.

Ground-level ozone is not emitted directly into the air, but is created by chemical reactions with nitrogen oxides (NO_x) and volatile organic compounds (VOCs) in the presence of sunlight. NO_x is formed from the high-temperature reaction of nitrogen and oxygen during combustion processes in sources such as electric utility boilers, industrial fuel-burning sources and motor vehicles. VOCs include many industrial solvents and coatings as well as the hydrocarbons (HCs) that are emitted by motor vehicles as evaporative losses from gasoline and tailpipe emissions of unburned hydrocarbon. The formation of ozone is promoted by strong sunlight, warm temperatures and light winds. Elevated levels of the pollutant predominantly occur during the hot summer months.

¹ Federal Register, <https://federalregister.gov/a/2015-26594e>.

Due to the fact that ozone is formed in the ambient air, control of ozone focuses upon reducing emissions of the precursors, NO_x and VOCs. Areas where monitors record violations of the 2015 8-hour ozone NAAQS and areas determined to be contributing to recorded violations will both be designated as nonattainment areas. The use of already established air planning boundaries, where possible, will assure continued effective planning and implementation.

Technical Analysis

Indiana initiated its analysis with CBSA boundaries, consistent with historical nonattainment designations in Indiana (for example, the designation of the Michigan City-LaPorte, IN CBSA as a separate nonattainment area under the 1997 8-hour ozone NAAQS and the exclusion of the Michigan City-LaPorte, IN CBSA from the Chicago-Naperville, IL-IN-WI ozone nonattainment area for the 2008 8-hour ozone NAAQS). Analyses are based on the following five factors identified in U.S. EPA's February 25, 2016 memorandum *Area Designations for the 2015 Ozone National Ambient Air Quality Standards*:

1. Air quality monitoring data
2. Emissions and emissions-related data
3. Meteorological data and transport patterns
4. Geography and topography
5. Jurisdictional boundaries

Designations for the 2015 8-hour ozone NAAQS rely on a three-year average of ambient air monitoring data. States should base recommendations on the most recent complete three consecutive years of quality-assured, certified air quality data available at the time initial recommendations must be submitted. Because data from the 2016 ozone season is expected to be quality-assured and certified by May of 2017, U.S. EPA expects to base final decisions on 2014-2016 data. Therefore, the following evaluations are based on certified ambient air quality data for 2013-2015 as well as quality-assured data for the 2014-2016 timeframe. States may update recommendations once 2016 data has met certification requirements². Indiana reserves the right to make necessary updates to its recommendations once 2016 monitoring data becomes certified.

Indiana's technical analysis follows in three sections:

- Northwestern Indiana (Jasper, Lake, Newton and Porter counties)
- Dearborn, Ohio and Union Counties
- All remaining Indiana counties

² U.S. EPA February 25, 2016, guidance memorandum, *Area Designations for the 2015 Ozone National Ambient Air Quality Standards*, <https://www.epa.gov/sites/production/files/2016-02/documents/ozone-designations-guidance-2015.pdf>.

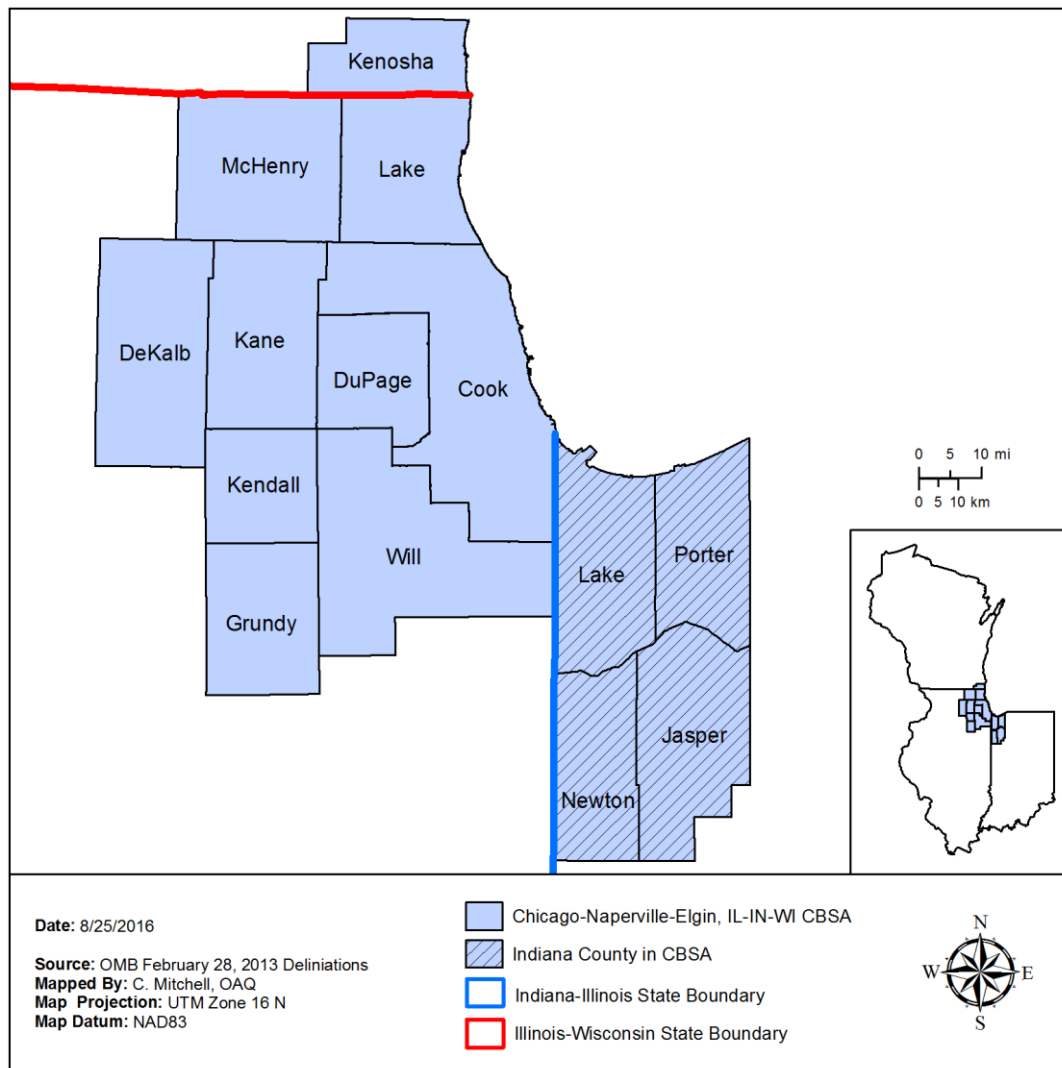
ANALYSIS FOR NORTHWESTERN INDIANA (JASPER, LAKE, NEWTON AND PORTER COUNTIES)

Introduction

Geographic Description

Northwestern Indiana includes Jasper, Lake, Newton and Porter counties. Lake and Porter counties are bordered by Lake Michigan on the north. Jasper and Newton counties are located to the south of Lake and Porter counties. The Chicago metropolitan area is located to the northwest. Jasper, Lake, Newton and Porter counties are part of the Chicago-Naperville-Elgin, IL-IN-WI CBSA along with several counties in Illinois and Wisconsin, as shown in *Figure A: Northwestern Indiana Area Map*.

Figure A: Northwestern Indiana Area Map



Designation History

Under the 1997 8-hour ozone NAAQS, U.S. EPA included Lake and Porter counties in the Chicago-Gary-Lake County, IL-IN nonattainment area due to measured violations throughout the region. Based on subsequent monitoring data showing the entire area's compliance with the NAAQS, U.S. EPA redesignated Lake and Porter counties to attainment on May 11, 2010. The 1997 8-hour ozone NAAQS was revoked, effective July 20, 2013.

U.S. EPA included Lake and Porter counties as part of the Chicago-Naperville, IL-IN-WI nonattainment area under the 2008 8-hour ozone NAAQS. Although three-year design values for monitoring sites in Lake and Porter counties have been meeting the 2008 8-hour NAAQS since the 2007-2009 timeframe, U.S. EPA included this portion of Indiana in the nonattainment area due to assumed contributions to violations in northeastern Illinois.

Summary of Analysis and Recommendations

Indiana is recommending a designation of unclassifiable for both Jasper County and Newton County and attainment for both Lake County and Porter County under the 2015 8-hour ozone NAAQS. The five factor analysis follows.

Five Factor Analysis

1. Air Quality Monitoring Data

Indiana currently operates a total of four ozone monitors in Lake and Porter counties. (A fifth monitor, which was sited at Whiting High School from 2004 through 2015, was determined to be unnecessary and was discontinued beginning with the 2016 monitoring season.) There are no air quality monitors in Jasper or Newton counties. Seventeen ozone monitors are located within the greater Chicago-Naperville-Elgin, IL-IN-WI CBSA, making a total of 21 ozone monitoring sites in the three-state region.

The first step in assessing air quality data is to identify violating monitors. No monitors in the Indiana portion of the CBSA violated the 2015 8-hour ozone NAAQS for the 2013-2015 or, to date, for the 2014-2016 timeframes. Violations of the NAAQS occurred at two monitors near the Illinois/Wisconsin state border for the 2013-2015 timeframe. The violating monitors include the Illinois Beach State Park site (Zion Trailer) in Lake County, Illinois, which had a design value slightly over the standard at 0.071 ppm, and the Chiwaukee Prairie Stateline (Chiwaukee) site in Kenosha County, WI, which had a design value of 0.075 ppm. The 15 remaining monitors in the Illinois portion of the CBSA indicate attainment of the 2015 NAAQS.

Air quality data is provided in *Table 1: Northwestern Indiana Three-Year Design Values (2005-2016)*.

Table 1: Northwestern Indiana Three-Year Design Values (2005-2016)

Site Name	County	Site #	Three Year Design Value				
			2005-2007	2006-2008	2007-2009	2008-2010	2009-2011
Gary – IITRI	Lake	180890022	0.082	0.073	0.068	0.061	0.062
Whiting HS	Lake	180890030	0.085	0.077	0.070	0.064	0.066
Hammond - 141st St.	Lake	180892008	0.079	0.073	0.070	0.067	0.068
Ogden Dunes	Porter	181270024	0.081	0.074	0.073	0.067	0.067
Valparaiso	Porter	181270026	0.076	0.070	0.068	0.062	0.062
Site Name	County	Site #	Three Year Design Value				
			2010-2012	2011-2013	2012-2014	2013-2015	2014-2016*
Gary – IITRI	Lake	180890022	0.069	0.069	0.069	0.065	0.067
Whiting HS	Lake	180890030	0.073	0.070	0.069	0.065	Site Dis-continued
Hammond - 141st St.	Lake	180892008	0.072	0.070 ^a	0.069 ^a	0.063	0.065
Ogden Dunes	Porter	181270024	0.072	0.072	0.073	0.068	0.069
Valparaiso	Porter	181270026	0.063	0.064	0.065	0.063	0.066

* Based on preliminary 2016 quality-assured data.

^a Data considered incomplete.

2. Emissions and Emissions-Related Data

a. Emission Sources and Levels

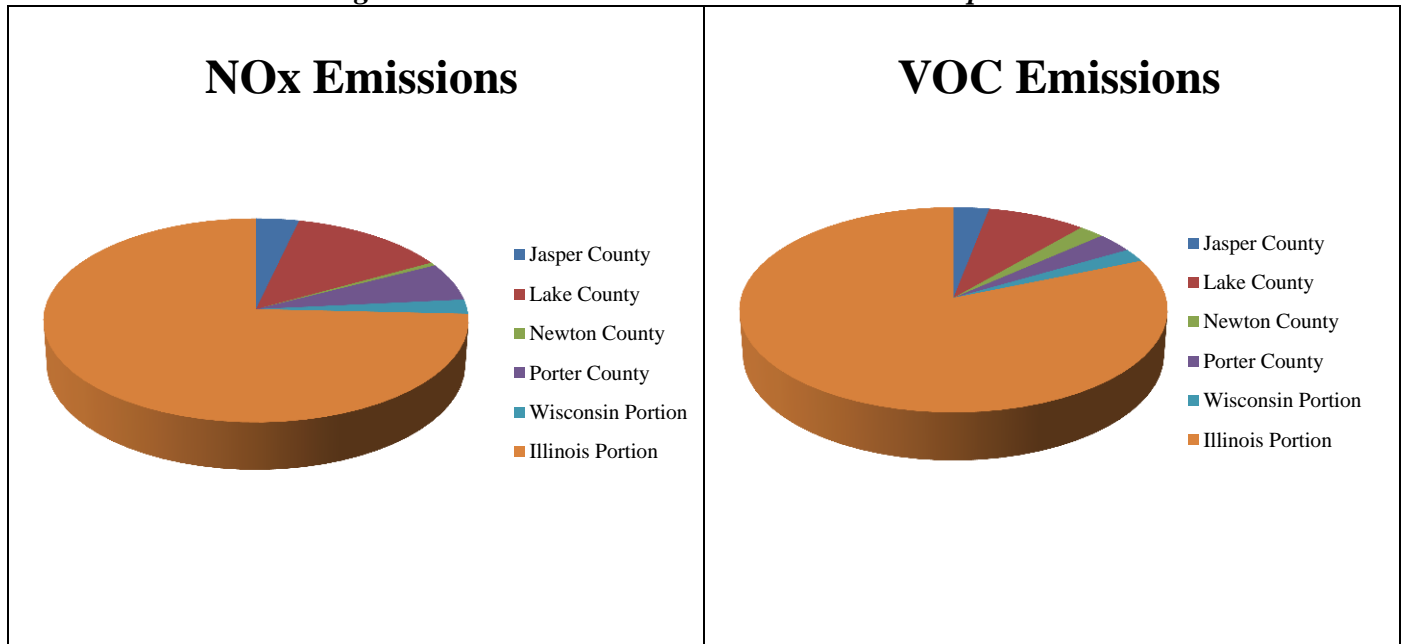
2011 National Emissions Inventory (NEI) version 6.2 ozone precursor emissions data (NO_x and VOCs) for northwestern Indiana counties is provided in *Table 2: Northwestern Indiana Emissions Inventories (Tons per Year)*. Data for the Illinois and Wisconsin portions of the CBSA are included in the table for comparison. Illinois sources contribute 74.3% of the area's NO_x emissions and 81.2% of the area's VOC emissions. The magnitude of emissions from each area within the CBSA is illustrated in *Figure B: Northwestern Indiana Emissions Comparisons*.

In a comparison of northwestern Indiana counties, Lake County accounts for the largest percentages of precursor pollutants (NO_x and VOCs). Jasper County emissions are generated primarily from the operation of the NIPSCO RM Schahfer Generating Station (NIPSCO-Schahfer) in Wheatfield, IN, which is the only major stationary source in the county. NIPSCO-Schahfer is regulated under the NO_x SIP Call and Cross State Air Pollution Rule (CSAPR) and has been determined to not significantly impact monitors in Lake or Porter counties. Under a consent decree agreement with U.S. EPA, NIPSCO-Schahfer has been installing control technology on its four units that will result in an 80% reduction in NO_x emissions and a 90% reduction in SO₂ emissions. Newton County does not have any major stationary sources and does not have a significant impact on air quality within northwestern Indiana.

**Table 2: Northwestern Indiana Emissions Inventories
(Tons per Year)**

Source/Area	NO _x	Percent of CBSA	VOCs	Percent of CBSA
Jasper County	10,614	3.6%	6,125	3.0%
Lake County	38,823	13.3%	16,980	8.4%
Newton County	1,543	0.5%	4,381	2.2%
Porter County	17,531	6.0%	6,373	3.1%
Illinois Portion	216,761	74.3%	165,128	81.2%
Wisconsin Portion	6,608	2.3%	4,263	2.1%
Entire CBSA Totals	291,880	100%	203,250	100%

Figure B: Northwestern Indiana Emissions Comparisons



b. Control of Emission Sources

Effective programs and initiatives are in place to ensure the control of emissions from sources in northwestern Indiana. In fact, Lake and Porter counties are subject to the most stringent group of emission controls within the State of Indiana. Additionally, the permanent and enforceable controls in Lake and Porter counties are equally as stringent and, in some cases, even more stringent than elsewhere within the Chicago metropolitan area. As a result, northwestern Indiana has achieved significant and permanent air quality improvements, as air quality data shows.

Indiana maintains a comprehensive, enhanced vehicle inspection and maintenance program in Lake and Porter counties that reduces on-road emissions from corporate, government, and privately-owned vehicles model years 1976 through 2012 (the four newest model years are exempted).

Northwestern Indiana will continue to see emission reductions from mobile and stationary sources as a result of rules including the NO_x SIP Call, CSAPR, Tier 3 Motor Vehicle Emissions Standards and Gasoline Sulfur Control Requirements, the Highway Heavy-Duty Engine Rule, and the Non-Road Diesel Engine Rule. Most major stationary ozone precursor sources within northwestern Indiana are subject to reductions under the NO_x SIP Call, CSAPR or RACT requirements. Additional significant regional NO_x and VOC emission reductions following the implementation of Phase II NO_x SIP Call and CSAPR and/or its replacement rule or program will ensure northwestern Indiana's compliance with the 2015 8-hour ozone NAAQS.

Indiana actively participates in regional air quality planning efforts sponsored by LADCO, with a shared goal of establishing a regional control strategy that provides for the attainment of the ozone and fine particle standards throughout the states of Illinois, Indiana, Michigan, Minnesota, Ohio and Wisconsin. Along with the other LADCO states, Indiana is developing local and statewide emission control measures where photochemical modeling and culpability analyses demonstrate a clear need. Cost effectiveness analyses justify the implementation of such measures. These actions will provide for an even greater margin of safety for northwestern Indiana and ensure continued maintenance with the standard well into the future. Furthermore, because this area is subject to transport, additional regional NO_x and VOC reductions will ensure northwestern Indiana's compliance with the 2015 8-hour ozone NAAQS.

c. Population and Degree of Urbanization³

The vast majority of residents live in the Illinois portion of the CBSA. Within northwestern Indiana, Lake County has historically had the highest population and remains northwestern Indiana's most populated area; however, Lake County only comprised 5.2% of the entire CBSA population in 2010. Data indicates that a net growth of approximately 362,789 people occurred in the entire CBSA from 2000-2010. The Illinois portion of the CBSA accounted for a growth of 313,841 (87%) people compared with a growth of 32,099 (less than 9%) people in northwestern Indiana.

Population density is also a significant factor in determining degree of urbanization and magnitude of impacts on air quality. A comparison between northwestern Indiana's four counties shows Lake County to be the most concentrated but comparatively less so than other urbanized areas within the CBSA. For example, Cook County, Illinois had a population density more than five times greater than Lake County, Indiana in 2010.

Northwestern Indiana is projected to grow by 41,986 people between the years 2010 and 2025, compared with projected growth of 414,976 people in the Illinois portion of the

³ Population and population density data obtained from U.S. Census Bureau, <https://www.census.gov/>.

CBSA. Population figures for northwestern Indiana counties are provided in *Table 3: Northwestern Indiana Population Growth Rates, Patterns and Projections (2000-2025)*. Data for the Illinois and Wisconsin portions of the CBSA are included in the table for comparison. A complete breakdown of all counties in the CBSA is provided in *Table 4: Northwestern Indiana Population Density and Changes (2000-2010)*.

Table 3: Northwestern Indiana Population Growth Rates, Patterns and Projections (2000-2025)

Area	2000	2010	Percent of CBSA (2010)	2015	2020	2025	Overall Projected Change 2010- 2025
Jasper County	30,043	33,478	0.4%	35,008	36,323	37,536	12.1%
Lake County	484,564	496,005	5.2%	502,228	507,724	512,741	3.4%
Newton County	14,566	14,244	0.2%	14,080	13,854	13,567	-4.8%
Porter County	146,798	164,343	1.7%	172,563	179,751	186,212	13.3%
Illinois portion of the CBSA	8,272,768	8,586,609	90.7%	8,739,031	8,877,916	9,001,585	4.8%
Wisconsin portion of the CBSA	149,577	166,426	1.8%	170,700	181,975	191,635	15.1%
CBSA Total	9,098,316	9,461,105	100%	9,633,610	9,797,543	9,943,276	5.1%

Table 4: Northwestern Indiana Population Density and Changes (2000-2010)

Area	2000		2010		Change in Population Density 2000-2010
	Population	Density	Population	Density	
Indiana Counties					
Jasper	30,043	53.7	33,478	59.8	11.4%
Lake	484,564	975	496,005	994.1	2.0%
Newton	14,566	36.2	14,244	35.5	-1.9%
Porter	146,798	351.1	164,343	393.0	11.9%
Illinois Counties					
Cook	5,376,741	5,685.6	5,194,675	5,495.1	-3.4%
DeKalb	88,969	140.3	105,160	166.6	18.7%
DuPage	904,161	2,710.3	916,924	2,799.8	3.3%
Grundy	37,535	89.4	50,063	119.8	34.0%
Kane	404,119	776.5	515,269	990.8	27.6%
Kendall	54,544	170.1	114,736	358.2	110.6%
Lake	644,356	1,439.7	703,462	1,585.6	10.1%
McHenry	260,077	430.9	308,760	511.9	18.8%
Will	502,266	600.1	677,560	809.6	34.9%
Wisconsin Counties					
Kenosha	149,577	548.2	166,426	611.9	11.6%

d. Traffic, Commuting Patterns and Vehicle Miles Traveled

An examination of labor force data for Illinois⁴, Indiana⁵ and Wisconsin⁶ indicates that northwestern Indiana contributes a small workforce in comparison with the entire CBSA. Illinois counties in the CBSA account for more than 4 million workers and 88.7% of the area's total workforce, as shown in *Table 5: Northwestern Indiana Commuting Patterns and Trends (2009-2013)*.

***Table 5: Northwestern Indiana Commuting Patterns and Trends
(2009-2013)***

Implied Resident Labor Force			Workers Who Live AND work in county		Workers Who Live in/Work Outside the County (Commuters)	
Area	Actual Number	Percent of Entire CBSA	Actual Number	Percent of Implied Resident Labor Force	Actual Number	Percent of Implied Resident Labor Force
Jasper County	21,528	0.5%	16,167	75.1%	5,362	24.9%
Lake County	295,378	6.5%	242,419	82.1%	52,959	17.9%
Newton County	9,344	0.2%	6,155	65.9%	3,189	34.1%
Porter County	107,638	2.4%	77,394	71.9%	30,243	28.1%
Illinois Portion of the CBSA	4,003,155	88.7%	2,976,674	74.4%	1,026,481	25.6%
Wisconsin Portion of the CBSA	78,252	1.7%	42,111	53.8%	36,141	46.2%
Entire CBSA	4,515,295	100%	3,360,920	74.4%	1,154,375	25.6%

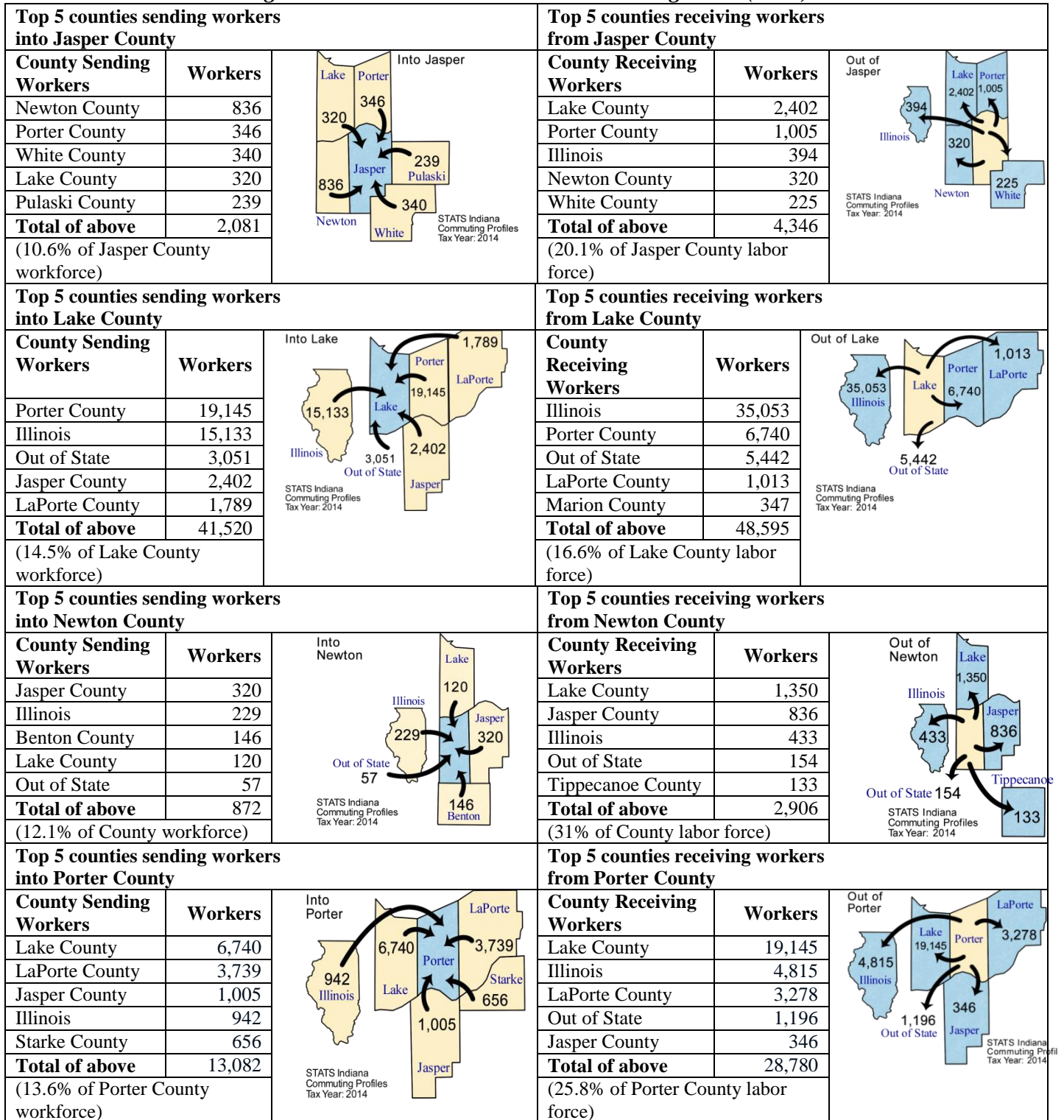
Of the northwestern Indiana counties, Lake County has maintained the largest workforce and volume of traffic flow in and out of its borders. Commuter flow shown in *Figure C: Northwestern Indiana Commuting Flows (2014)* is typical of the flow in recent years.

⁴ Illinois Department of Employment Security,
http://www.ides.illinois.gov/LMI/Pages/Commuting_Patterns.aspx

⁵ STATSIndiana, <http://www.stats.indiana.edu/topic/commuting.asp>

⁶ Wisconsin Department of Workforce Development,
http://worknet.wisconsin.gov/worknet_info/Publications/commuting.pdf

Figure C: Northwestern Indiana CommutingFlows (2014)



Source: STATSIndiana website, <http://www.stats.indiana.edu/dms4/commuting.asp>

Lake County sent an average of 36,734 residents to work in Illinois from 2009-2013, as shown in *Table 6: Number of Commuters from Lake County into Illinois (2009-2013)*. That number amounts to less than 1% of the workforce in the Illinois portion of the CBSA. Based on northwestern Indiana commuting patterns and trends, it is safe to assume that cross-county mobile sources (for example, Porter County to Lake County) have very little to no impact on ozone concentrations in this area.

***Table 6: Number of Commuters from Lake County into Illinois
(2009-2013)***

2009	2010	2011	2012	2013	Average
36,626	36,323	36,542	36,915	37,263	36,734

Vehicle miles traveled data for Illinois⁷, Indiana⁸ and Wisconsin⁹ indicates that much of the area's vehicular traffic occurs in the Illinois portion of the CBSA. Figures are provided in *Table 7, Daily Vehicle Miles Traveled, Northwestern Indiana (2011, 2014)*. Lake County accounted for the largest daily vehicle miles traveled (DVMT) in northwestern Indiana and 8.2% of the entire CBSA in 2014. Porter County was shown to have the next highest DVMT in northwestern Indiana for 2014, totaling about half of the Lake County figure and making up 4.1% of entire CBSA.

***Table 7: Daily Vehicle Miles Traveled, Northwestern Indiana
(2011, 2014)***

County	Year 2011	Percent of CBSA (2011)	Year 2014	Percent of CBSA (2014)	Percent Change 2011-2014
Indiana Portion of the CBSA					
Jasper	2,038,000	1.1%	2,351,900	1.2%	15.4%
Lake	16,226,000	8.5%	15,911,800	8.2%	-1.9%
Newton	662,000	0.3%	754,800	0.4%	14.0%
Porter	5,920,000	3.1%	7,892,800	4.1%	33.3%
Illinois Portion of the CBSA	160,913,472	84.8%	163,618,605	84.2%	1.7%
Wisconsin Portion of the CBSA	4,131,658	2.2%	3,720,750	1.9%	-9.9%
Entire CBSA	189,891,130	100%	194,250,655	100%	2.3%

⁷ Illinois Department of Transportation, <http://www.idot.illinois.gov/transportation-system/Network-Overview/highway-system/illinois-travel-statistics>

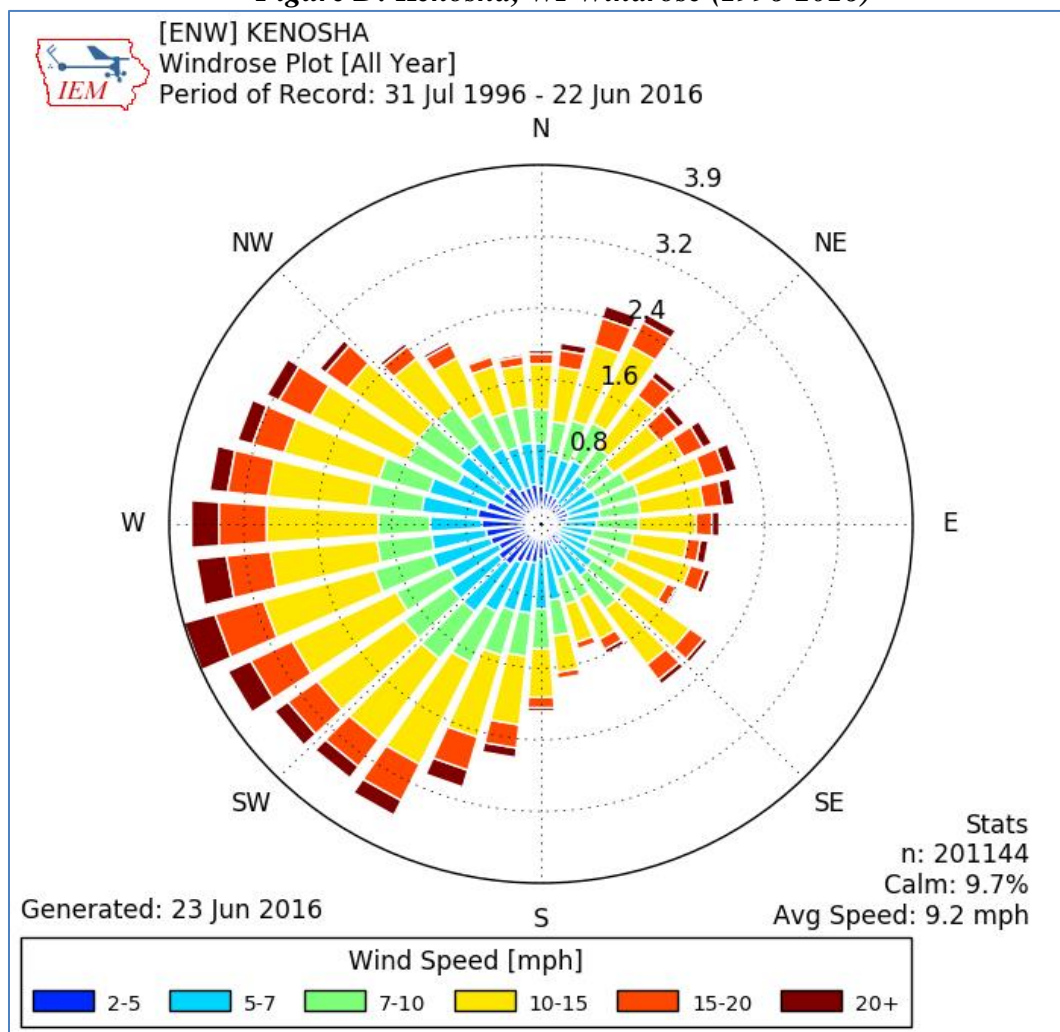
⁸ Indiana Department of Transportation, <http://www.in.gov/indot/2469.htm>

⁹ Wisconsin Department of Transportation, <http://wisconsindot.gov/Pages/projects/data-plan/veh-miles/default.aspx>

3. Meteorological Data and Transport Patterns

Based on quality-assured, certified data for 2013-2015 and preliminary quality-assured data for 2014-2016, monitors in northwestern Indiana attain the 2015 8-hour ozone standard. Ozone monitors located in northwestern Indiana's counties are typically impacted by emissions from Indiana and surrounding areas. Northwestern Indiana counties are prone to lake breezes and synoptic winds that bring Indiana emissions, as well as transported emissions, into the area. *Figure D: Kenosha, WI Windrose (1996-2016)* shows annual average wind directions and speeds recorded over the past 20 years at the Kenosha, WI surface weather observation station. Synoptic winds in this area are more likely to be from the west-southwest, while lake breezes tend to be easterly.

Figure D: Kenosha, WI Windrose (1996-2016)



Lake and Porter counties are located in a southeasterly direction, out of direction of the prevailing winds. Based on their proximity, Illinois and Wisconsin have overwhelming impacts on the Chiwaukee and Zion ozone monitors. Due to the distance Lake and Porter counties are from the Chiwaukee and Zion monitors, Indiana emissions mix with emissions

from other Midwest sources over Lake Michigan and would not likely have a major contribution to the Chiwaukee and Zion ozone monitors. Ozone precursor emissions over Lake Michigan are overwhelmingly dominated by Illinois' mobile sources. Lake and Porter counties in Indiana comprise only a minor fraction of the total emissions that lead to ozone formation over the lake that ultimately impacts shoreline monitors in the CBSA. Indiana does not have the jurisdiction to address the most significant causes of ozone formation within the Chicago CBSA. The largest contributors to the area's nonattainment fall outside of Indiana's jurisdictional boundaries within the states of Illinois and Wisconsin.

4. Geography/Topography

There are no unique geographical or topographical features within the northwestern Indiana region that limit the transport of pollutants. However, meteorological patterns over a large body of water such as Lake Michigan may have unique impacts on the transport of pollutants and ozone formation at shoreline areas. Ozone that forms over Lake Michigan can be transported in all directions based on changes in temperatures, wind speed, and wind direction throughout the day, resulting in "lake effect" impacts at shoreline monitors. Because elevated ozone levels can be isolated and occur with no consistent pattern, violations at shoreline monitors pose a unique challenge from an air quality mitigation perspective. The two violating monitors in the northeastern portion of the CBSA are located on the shoreline and seem to be the only sites impacted severely by lake breezes and transport.

5. Jurisdictional Boundaries

Jasper, Newton, Lake and Porter counties are included in the Chicago-Naperville-Elgin, IL-IN-WI CBSA. However, transportation conformity and SIP planning for Lake and Porter counties are conducted independently due to limitations of jurisdictional authority. The Northwestern Indiana Regional Planning Commission serves as the area planning agency, which includes Lake and Porter counties.

Conclusion and Recommendations for Northwestern Indiana (Jasper, Lake, Newton and Porter Counties)

To provide a basis for Indiana's initial recommendations for northwestern Indiana under the 2015 8-hour ozone NAAQS, IDEM has evaluated the following factors: three complete years of quality-assured certified ambient air monitoring data for 2013-2015 and quality-assured data for 2014-2016; 2011 National Emissions Inventory data; data on population and population density; commuting trends and patterns; daily vehicle miles traveled; meteorology and transport patterns; geography and topography; and jurisdictional boundaries.

A total of 21 ozone air monitors are located in the Illinois, Indiana and Wisconsin portions of the CBSA. Data shows that 15 monitors in the Illinois portion of the CBSA are attaining the standard and two monitors near the Illinois/Wisconsin state border are in violation. No monitors in the Indiana portion of the CBSA violated the 2015 8-hour ozone NAAQS for the 2013-2015 timeframe or the 2014-2016 timeframe, to date.

NEI data from 2011 shows northwestern Indiana counties contribute a small percentage of the total CBSA's emissions in comparison with the large overall impact from the Illinois portion of the CBSA. Newton County does not have any major stationary sources of ozone precursors, nor does it contribute to ozone impacts in northwestern Indiana. Jasper County accounts for only 3.6% of NO_x and 3% of VOC emissions in the CBSA. New technology being installed at the NIPSCO-Schahfer power plant, Jasper County's only major source of ozone precursor emissions, will result in an 80% reduction in NO_x emissions. Lake County, northwestern Indiana's most industrialized county, accounts for 13.3% of NO_x and 8.4% of VOC emissions in the CBSA compared with Illinois' contribution of 74.3% of the area's NO_x emissions and 81.2% of the area's VOC emission. Northwestern Indiana has achieved permanent and significant emissions reductions due to the implementation of regulations and control measures aimed at ensuring compliance under the 1997 and 2008 8-hour ozone NAAQS. Many of these regulations are more stringent than those in other areas of Indiana, other areas of the CBSA, and many areas of the United States. In addition to attaining the current standard, modeling shows that northwestern Indiana will make additional progress as a result of the implementation of CSAPR.

Northwest Indiana has a comparatively small population when compared to the CBSA as a whole; comprising just 7.5% of the population of the CBSA in 2010. Due to its comparatively small population, Northwest Indiana is a minor factor for air quality impacts within the CBSA. While Lake County is the most densely populated county within Indiana's portion of the CBSA, Lake County's population density was still only one-fifth that of Cook County, Illinois. Also, the Indiana portion of the CBSA accounts for a small percentage of the CBSA's workforce (an average of 9.6% from 2009-2013) and vehicular traffic (13.9% in 2014), thus contributing comparatively small impacts to the CBSA.

As mentioned above, violations of the NAAQS occurred at two monitors in the CBSA near the Illinois/Wisconsin state border for the 2013-2015 timeframe. The violating monitors are located at the Illinois Beach State Park site (Zion Trailer) in Lake County, Illinois, which had a design value slightly over the standard at 0.071 ppm, and the Chiwaukee Prairie Stateline (Chiwaukee) site in Kenosha County, WI, which had a design value of 0.075 ppm. While there are no geographical or topographical features in northwestern Indiana to affect the transport of pollutants, these shoreline monitors are subject to unique meteorological contributions attributable to Lake Michigan. Lake Michigan has a large impact on elevated ozone concentrations at the shoreline monitors in the area. The influence from Lake Michigan on ozone development and transport is profound: ozone and ozone precursors tend to collect over the lake as a result of synoptic or off-shore breezes. This can cause photochemical reactions which create ozone, which in turn can be transported onshore when meteorological conditions become conducive for a lake breeze to develop. An analysis of 20 years of data from the Kenosha, WI surface weather observation station indicates synoptic winds in the area are more likely to be west-southwesterly, while lake breezes tend to be easterly. Lake and Porter counties are located in a southeasterly direction from the violating monitors. The violations at the shoreline monitors in northeastern Illinois are generally related to the development of lake breezes. Northwest Indiana, being to the southeast of the violating monitors, has a minimal contribution.

Due to limitations of jurisdictional authority, transportation conformity and the development of State Implementation Plans are addressed independently. The largest contributors of ozone precursors fall outside of Indiana's jurisdictional boundaries within the states of Illinois and Wisconsin. Indiana has and will continue to use its authority to address transportation conformity and SIP planning within state boundaries, ensuring effective coordination and communication between U.S. EPA, IDEM, northwestern Indiana communities, and appropriate officials in affected areas outside of Indiana's jurisdiction. IDEM believes that the Northwestern Indiana Regional Planning Commission, which operates at the local level, demonstrates a commitment to compliance, in coordination with state, federal and local officials. Additionally, IDEM's Office of Air Quality staff works closely with U.S. EPA Region 5 to ensure Indiana meets its commitments and complies with the requirements of the federal Clean Air Act.

The overall impact from the northwestern Indiana counties in the CBSA is dwarfed by the magnitude of impacts from the Illinois portion of the CBSA. Jasper and Newton counties are essentially rural in nature, do not have measured air quality above the 2015 8-hour ozone NAAQS, and are not contributing to ozone in Lake and Porter counties or the Chicago metropolitan area. Lake and Porter counties have achieved significant and permanent improvements in air quality, based on quality-assured certified 2013-2015 data and quality-assured 2014-2016 data showing the area's attainment of the 2015 8-hour ozone NAAQS. Indiana has been and will continue working with federal, state and local entities to ensure the protection of public health and the environment. Indiana believes that nonattainment boundaries should be limited to areas that actually have a three-year design value above the NAAQS. Section 107(d)(4)(A)(iv) of the federal Clean Air Act does not require nonattainment boundaries for areas classified as marginal or moderate to be based on metropolitan statistical boundaries. For these reasons, Indiana is recommending a designation of unclassifiable for Jasper County and Newton County and attainment for Lake County and Porter County under the 2015 8-hour ozone NAAQS as show in *Table 8: Initial Recommendations for Northwestern Indiana*.

Table 8: Initial Recommendations for Northwestern Indiana

Lake County*, Porter County*	Attainment
Jasper County, Newton County	Unclassifiable

**Indicates counties in which Indiana operates one or more ozone monitors.*

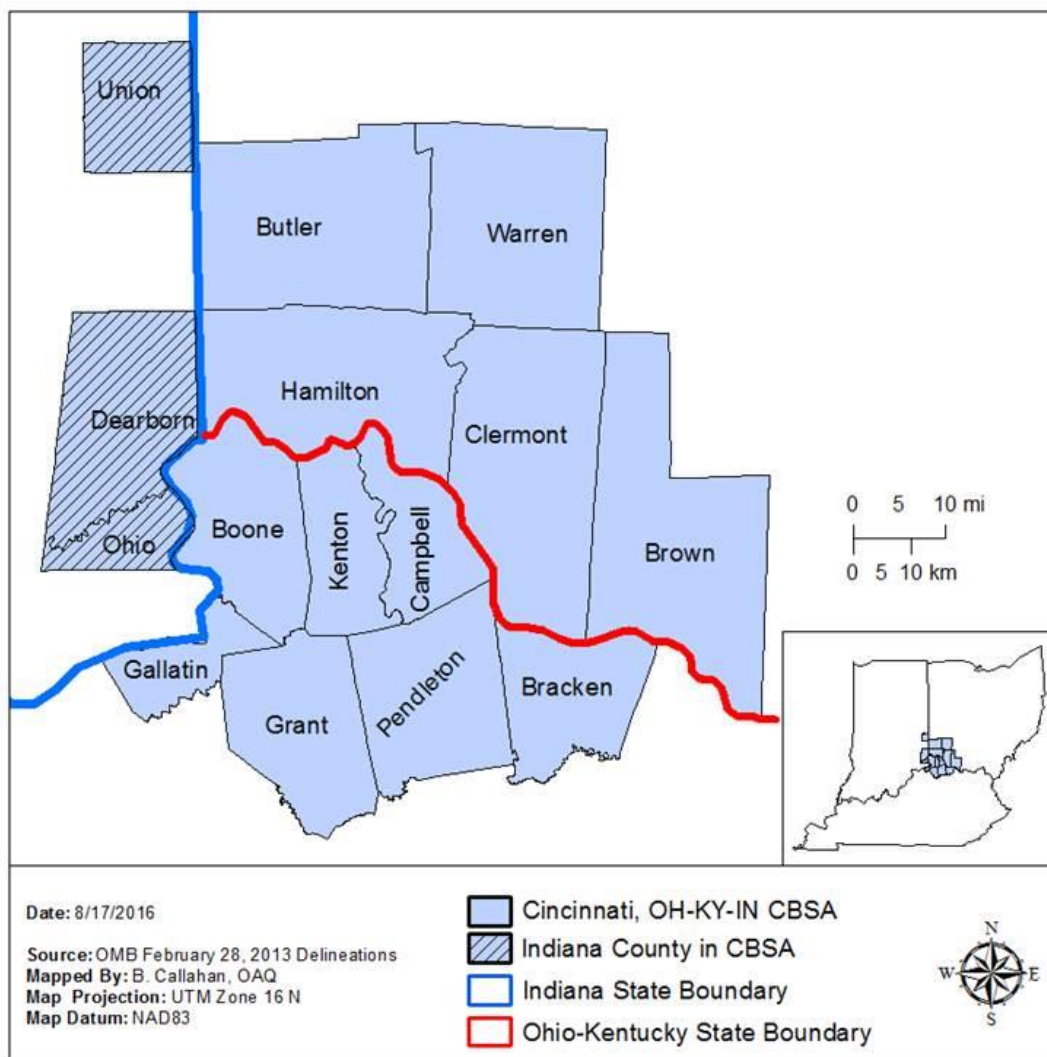
ANALYSIS FOR DEARBORN, OHIO AND UNION COUNTIES

Introduction

Geographic Description

Dearborn and Ohio counties are directly west of Cincinnati, Ohio. Union County is located northwest of Cincinnati, Ohio. Dearborn, Ohio and Union counties are part of the Cincinnati, OH-KY-IN CBSA along with several counties in Ohio and Kentucky, as shown in *Figure E: Dearborn, Ohio and Union Counties Area Map*.

Figure E: Dearborn, Ohio and Union Counties Area Map



Designation History

Under the 1997 8-hour ozone NAAQS, U.S. EPA included the Lawrenceburg Township portion of Dearborn County as part of the Cincinnati-Hamilton, OH-KY-IN nonattainment area based on measured violations in the Ohio portion of the CBSA and assumed contributions to those violations due to emissions of ozone precursors from American Electric Power's (AEP's) Tanners Creek Electric Generating Station (Tanners Creek) located in Lawrenceburg Township. Based on subsequent air quality data from the 2007-2009 ozone seasons that showed the entire area had achieved the standard, U.S. EPA redesignated Lawrenceburg Township to attainment on May 11, 2010.

U.S. EPA included the Lawrenceburg Township portion of Dearborn County as part of the Cincinnati, OH-KY-IN nonattainment area under the 2008 8-hour ozone NAAQS based on measured violations in the Ohio portion of the CBSA and assumed contributions to those violations due to emissions of ozone precursors from Tanners Creek located in Lawrenceburg Township. As a result of a settlement between U.S. EPA and AEP to resolve violations of CAA New Source Review requirements, AEP retired the Tanners Creek Generating Station and all four of the facility's coal-fired units effective June 1, 2015. Based on air quality data from 2012-2014 demonstrating attainment of the NAAQS, Indiana petitioned for the redesignation of Lawrenceburg Township to attainment in February of 2016. U.S. EPA action is pending on the request.

Summary of Analysis and Recommendations

Indiana is recommending a designation of unclassifiable for Dearborn County, Ohio County and Union County under the 2015 8-hour ozone NAAQS. The five factor analysis follows.

Five Factor Analysis

1. Air Quality Monitoring Data

Indiana does not have air quality monitors located within Dearborn, Ohio or Union counties. There are currently 10 air quality monitors measuring ozone concentrations in the Cincinnati, OH-KY-IN CBSA. Two monitors are located in Kentucky and eight monitors are located in Ohio.

The first step in assessing air quality data is to identify violating monitors. A violation of the NAAQS occurred at a monitor in the Kentucky portion of the CBSA for the 2013-2015 timeframe. The violating monitor is located at Northern Kentucky University in Campbell County and had a design value slightly over the standard at 0.071 ppm. The other monitor in Kentucky and all monitors in Ohio are in attainment.

In determining areas that might be contributing to elevated concentrations of ground-level ozone, IDEM notes the closure of the Tanners Creek power plant in Dearborn County effective June 1, 2015. The facility is no longer a source of ozone precursor emissions in

Indiana's portion of the CBSA, and Dearborn, Ohio and Union counties do not contribute to monitored violations in the area.

Because air quality monitors are not located within Dearborn, Ohio and Union counties, a table of air quality data is not included here for Indiana's portion of the CBSA.

2. Emissions and Emissions-Related Data

a. Emission Sources and Levels

2011 National Emissions Inventory version 6.2 ozone precursor emissions data (NO_x and VOCs) for Dearborn, Ohio and Union counties is provided in *Table 9: Dearborn, Ohio and Union Counties Emissions Inventories (Tons per Year)*. Data for the Kentucky and Ohio portions of the CBSA are included in the table for comparison. NO_x and VOC emissions from Ohio and Kentucky sources account for approximately 96.3% and 91.8% respectively of the area's emissions. The magnitude of emissions from each area within the CBSA is illustrated in *Figure F: Dearborn, Ohio and Union County Emissions Comparisons*.

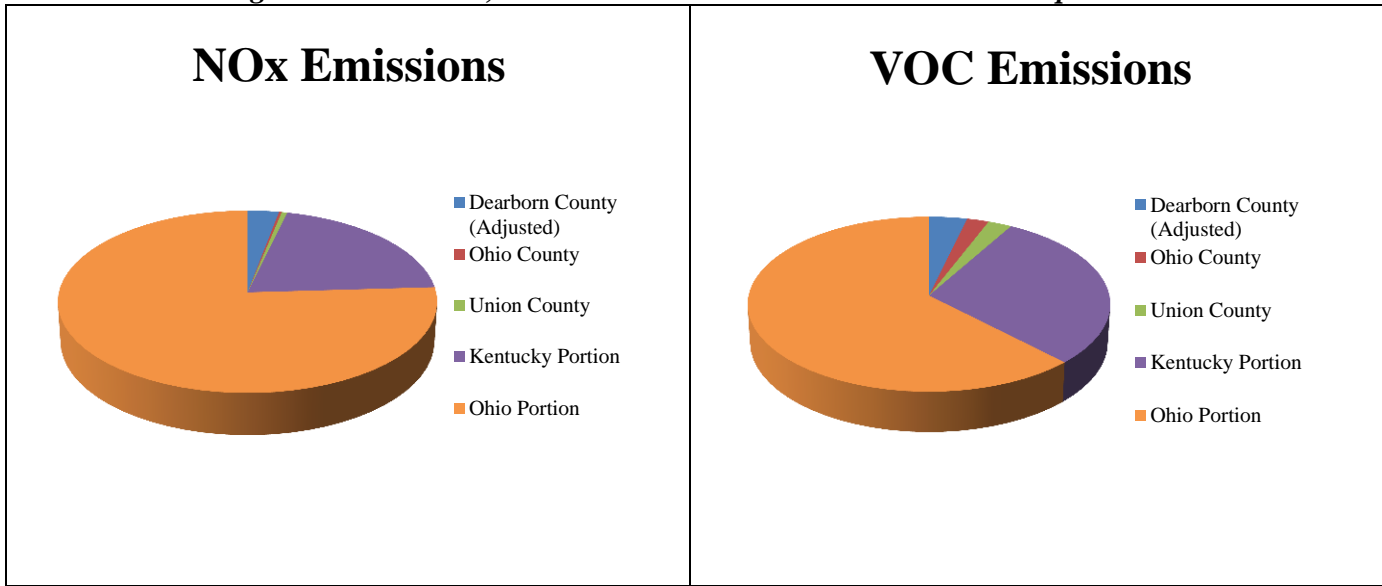
The Tanners Creek power plant in Lawrenceburg Township, Dearborn County was the primary source of ozone precursor emissions (NO_x and VOCs) within Indiana's portion of the Cincinnati, OH-KY-IN CBSA and the basis for the township's inclusion in the nonattainment area under the previous NAAQS. Under a settlement between AEP and U.S. EPA resolving violations of the CAA's New Source Review (NSR) requirements, Tanners Creek and all four of the facility's coal-fired electric generating units were retired as of June 1, 2015. As a result, Tanners Creek is no longer a source of NO_x and VOC ozone precursor emissions in the area.

***Table 9: Dearborn, Ohio and Union Counties Emissions Inventories
(Tons per Year)***

Area	NO _x	Percent of CBSA	VOCs	Percent of CBSA
Dearborn County ^a	3,143	2.9%	2,943	3.7%
Ohio County	270	0.3%	1,713	2.2%
Union County	552	0.5%	1,846	2.3%
Kentucky Portion	21,658	20.4%	23,289	29.5%
Ohio Portion	80,785	75.9%	49,211	62.3%
Entire CBSA Totals	106,408	100%	79,002	100%

^a 2011 NEI data adjusted to account for the permanent closure of Tanner's Creek Electric Generating Station in Dearborn County on June 1, 2015.

Figure F: Dearborn, Ohio and Union Counties Emissions Comparisons



b. Control of Emission Sources

The Lawrenceburg Township portion of Dearborn County was included in nonattainment areas under the 1997 and 2008 8-hour ozone NAAQS due to emissions from the Tanners Creek power plant located in Lawrenceburg Township in Dearborn County. As a result of the closure of Tanners Creek power plant effective June 1, 2015, Dearborn County does not contribute to monitored violations of the 2015 8-hour ozone NAAQS in the Cincinnati-Hamilton Area. Additional regional NOx and VOC emission reductions following the implementation of Phase II of the NOx SIP Call and CSAPR and/or its replacement rule or program will ensure compliance with the standard with an increasing margin of safety over time.

c. Population and Degree of Urbanization¹⁰

The vast majority of the CBSA's residents live in the Ohio and Kentucky portions of the CBSA. Dearborn, Ohio and Union counties comprised 3.1% of the population of the CBSA in 2010. Actual growth in the three Indiana counties was 4,610 people for the 2000-2010 timeframe. Projected growth for Dearborn, Ohio and Union counties for 2010-2025 is estimated at 5,376 people compared with 129,363 people for the entire CBSA.

Population density is also a significant factor in determining the degree of urbanization. Several counties within the Kentucky and Ohio portion of the CBSA have larger populations and comparatively dense concentrations in comparison with Dearborn, Ohio and Union counties, which are lightly populated and mostly rural in nature.

¹⁰ Population and population density data obtained from U.S. Census Bureau, <https://www.census.gov/>.

Population figures for Dearborn, Ohio and Union counties are provided in *Table 10: Dearborn, Ohio and Union Counties Population Growth Rates, Patterns and Projections (2000-2025)*. Data for the Kentucky and Ohio portions of the CBSA are included in the table for comparison. A complete breakdown of all counties in the CBSA is provided in Table 11: *Dearborn, Ohio and Union Counties Population Density and Changes (2000-2010)*.

Table 10: Dearborn, Ohio and Union Counties Population Growth Rates, Patterns and Projections (2000-2025)

Area	2000	2010	Percent of CBSA (2010)	2015	2020	2025	Overall Projected Change 2010- 2025
Dearborn County	46,109	50,047	2.4%	51,927	53,482	54,726	9.3%
Ohio County	5,623	6,128	0.3%	6,367	6,549	6,671	8.9%
Union County	7,349	7,516	0.4%	7,583	7,632	7,670	2.0%
Ohio portion of the CBSA	1,546,755	1,625,406	76.8%	1,641,910	1,660,660	1,677,570	3.2%
Kentucky portion of the CBSA	378,994	425,483	20.1%	449,677	474,345	497,306	16.9%
CBSA Total	1,984,830	2,114,580	100%	2,157,464	2,202,668	2,243,943	6.1%

Table 11: Dearborn, Ohio and Union Counties Population Density and Changes (2000-2010)

Area	2000		2010		Change in Population Density 2000-2010
	Population	Density	Population	Density	
Indiana Counties					
Dearborn	46,109	151.1	50,047	164.1	8.6%
Ohio	5,623	64.8	6,128	71.1	9.7%
Union	7,349	45.5	7,516	46.6	2.4%
Kentucky Counties					
Boone	85,991	349.2	118,811	482.3	38.1%
Bracken	8,279	40.7	8,488	41.3	1.5%
Campbell	88,616	584.7	90,336	597	2.1%
Gallatin	7,870	79.7	8,589	84.8	6.4%
Grant	22,384	86.1	24,662	95.6	11.0%
Kenton	151,464	935.2	159,720	996.7	6.6%
Pendleton	14,390	51.3	14,877	53.7	4.7%
Ohio Counties					
Brown	42,285	86.0	44,846	91.5	6.4%
Butler	322,807	712.2	368,130	788.2	10.7%
Clermont	177,977	393.8	197,363	436.5	10.8%
Hamilton	845,303	2075.1	802,374	1976.7	-4.7%
Warren	158,383	396.3	212,693	530.0	33.7%

d. Traffic, Commuting Patterns and Vehicle Miles Traveled

An examination of labor force data for Indiana¹¹, Kentucky¹² and Ohio¹³ indicates that Dearborn, Ohio and Union counties contribute 4.4% of the entire CBSA's workforce compared with Kentucky and Ohio's combined 95.6% share. Data is provided in *Table 12: Dearborn, Ohio and Union Counties Commuting Patterns and Trends (2009-2013)*.

Although the percentage of out-of-county workers in all three Indiana counties may appear relatively high, the actual numbers are small with fewer than 1,800 out-of-county commuters in Ohio County, slightly more than 2,000 in Union County, and 13,194 in Dearborn County.

Table 12: Dearborn, Ohio and Union Counties Commuting Patterns and Trends (2009-2013)

Implied Resident Labor Force			Workers Who Live AND work in county		Workers Who Live in/Work Outside the County (Commuters)	
Area	Actual Number	Percent of Entire CBSA	Actual Number	Percent of Implied Resident Labor Force	Actual Number	Percent of Implied Resident Labor Force
Dearborn County	34,093	3.5%	20,899	61.3%	13,194	38.7%
Ohio County	4,173	0.4%	2,419	58.0%	1,754	42.0%
Union County	4,880	0.5%	2,799	57.4%	2,081	42.6%
Ohio portion of CBSA	753,469	75.9%	367,768	48.8%	385,701	51.2%
Kentucky portion of CBSA	195,512	19.7%	59,904	30.6%	135,608	69.4%
Entire CBSA	992,127	100%	453,789	45.7%	538,338	54.3%

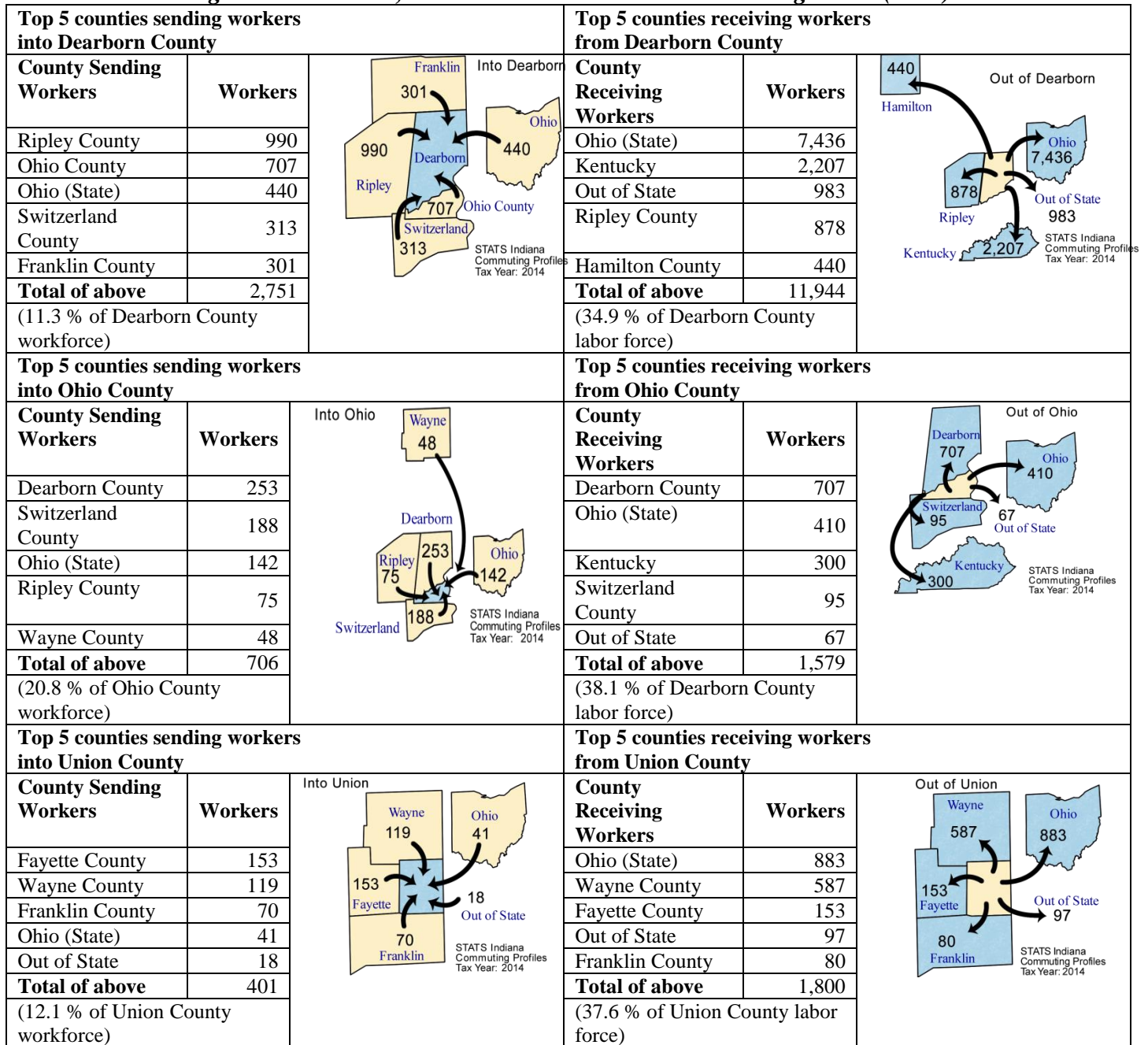
Dearborn County has maintained the largest workforce and highest traffic flow in and out of its borders of the three Indiana counties. Commuter flow shown in *Figure G: Dearborn, Ohio and Union Counties Commuting Flows (2014)* is typical of the flow in recent years.

¹¹ STATSIndiana, STATSIndiana, <http://www.stats.indiana.edu/topic/commuting.asp>

¹² Kentucky Career Center, <https://kylmi.ky.gov/vosnet/Default.aspx>

¹³ Ohio Department of Job and Family Services, <http://ohiolmi.com/census/commuting.htm>

Figure G: Dearborn, Ohio and Union Counties Commuting Flows (2014)



Source: STATSIndiana website, <http://www.stats.indiana.edu/dms4/commuting.asp>

Dearborn County sends an average of 7,515 residents to work in the State of Ohio, as shown in Table 13: Number of Commuters from Dearborn County into Ohio (2009-2013). The number amounts to approximately 1% of the workforce in the Ohio portion of the CBSA. Based on Dearborn, Ohio and Union counties' commuting patterns and trends, it is safe to assume that cross-county mobile sources (for example, Dearborn County to neighboring areas) have very little to no impact on ozone concentrations in this area.

Table 13: Number of Commuters from Dearborn County into Ohio (2009-2013)

2009	2010	2011	2012	2013	Average
7,656	7,549	7,483	7,423	7,462	7,515

Data on vehicle miles traveled for Indiana¹⁴, Kentucky¹⁵ and Ohio¹⁶ indicates that much of the area's vehicular traffic occurs in the Kentucky and Ohio portions of the CBSA. Figures are provided in *Table 14, Daily Vehicle Miles Traveled, Dearborn, Ohio and Union Counties (2011, 2014)*. Of the three Indiana counties, Dearborn County accounts for the largest DVMT but comprises only 3.1% of the entire CBSA in 2014.

Table 14: Daily Vehicle Miles Traveled, Dearborn, Ohio and Union Counties (2011, 2014)

County	Year 2011	Percent of CBSA (2011)	Year 2014	Percent of CBSA (2014)	Percent Change 2011-2014
Indiana Portion of the CBSA					
Dearborn	1,847,000	3.4%	1,778,900	3.1%	-3.7%
Ohio	121,000	0.2%	132,000	0.2%	9.1%
Union	205,000	0.4%	226,500	0.4%	10.5%
Ohio Portion of the CBSA	39,570,000	72.3%	42,600,000	73.8%	7.7%
Kentucky Portion of the CBSA	12,943,000	23.7%	13,021,000	22.5%	0.6%
Total(s)	54,686,000	100%	57,758,400	100%	5.6%

3. Meteorological Data and Transport Patterns

The primary source of ozone precursor emissions (NO_x and VOCs) within Indiana's portion of the Cincinnati, OH-KY-IN CBSA was the Tanners Creek power plant. As a result of a settlement with U.S. EPA to resolve violations of the CAA's new source review (NSR) requirements, AEP permanently retired the Tanners Creek facility and all four of the facility's coal-fired electric generating units on June 1, 2015. This will ensure that the facility does not restart without proper permitting under the CAA. As a result of Tanners Creek's closure, Dearborn, Ohio and Union counties do not contribute to monitored violations of the 2015 8-hour ozone NAAQS in the Cincinnati, OH-KY-IN CBSA. No further assessment of meteorological data and transport patterns was conducted.

¹⁴ Indiana Department of Transportation, <http://www.in.gov/indot/2469.htm>

¹⁵ Kentucky Transportation Cabinet, <http://transportation.ky.gov/Planning/Pages/Roadway-Information-and-Data.aspx>

¹⁶ Ohio Department of Transportation, <https://www.dot.state.oh.us/Divisions/Planning/TechServ/traffic/Pages/DVMT.aspx>

4. Geography/Topography

There are no geographical or topographical features within Dearborn, Ohio or Union County that would have an impact on air quality or potential transport. Therefore, this factor was not significant when making initial nonattainment recommendations.

5. Jurisdictional Boundaries

Dearborn, Ohio and Union counties are included in the Cincinnati, OH-KY-IN CBSA. The Ohio-Kentucky-Indiana Regional Council of Governments (OKI) serves as the planning agency for an area that includes Dearborn County in Indiana.

Conclusion and Recommendations for Dearborn, Ohio and Union Counties

To provide a basis for Indiana's initial recommendations for Dearborn, Ohio and Union counties under the 2015 8-hour ozone NAAQS, IDEM has evaluated the following factors: three complete years of quality-assured certified ambient air monitoring data for 2013-2015 and quality-assured data for 2014-2016 timeframes; 2011 National Emissions Inventory data; data on population and population density; commuting trends and patterns; daily vehicle miles traveled; meteorology and transport patterns; geography and topography; and jurisdictional boundaries.

A total of 10 ozone air monitors are located in the CBSA. Eight monitors are located in Ohio and two are located in Kentucky. Data shows that the eight Ohio monitors and one of the Kentucky monitors are attaining the standard. One monitor in the Kentucky portion of the CBSA is above the standard.

Although no air quality monitors are located within Indiana's portion of the CBSA, Lawrenceburg Township in Dearborn County was included in previously designated nonattainment areas based on emissions from the Tanners Creek power plant and the facility's assumed contribution to violations of the NAAQS. As a result of its permanent closure effective June 1, 2015, the Tanners Creek power plant is no longer a source of ozone precursor emissions in the CBSA.

NEI data from 2011, adjusted for the closure of the Tanners Creek power plant in Dearborn County, shows that Dearborn, Ohio and Union counties contribute a small percentage of emissions compared with the magnitude of impacts from the Kentucky and Ohio portions of the CBSA. Dearborn County accounts for 2.9% of the CBSA's total NO_x emissions and 3.7% of the CBSA's total VOC emissions. Ohio County accounts for 0.3% of the CBSA's NO_x emissions and 2.2% of the CBSA's VOC emissions. Union County contributes 0.5% of the CBSA's total NO_x emissions and 2.3% of the CBSA's total VOC emissions.

The three Indiana counties of Dearborn, Ohio, and Union account for only 3.1% of the population of the Cincinnati CBSA and thus have a comparatively small effect on the CBSA. Also, the Indiana portions of the CBSA account for small percentages of the CBSA's total

workforce (an average of 4.4% from 2009-2013) and vehicular traffic (3.7% in 2014), again having only small effects on the CBSA.

As mentioned above, a violation of the NAAQS occurred at a monitor in the Kentucky portion of the CBSA. The violating monitor is located at Northern Kentucky University in Campbell County and had a design value slightly over the standard at 0.071 ppm. As a result of the closure of Tanners Creek power plant in Dearborn County, Dearborn, Ohio and Union counties do not contribute to monitored violations of the 2015 8-hour ozone NAAQS in the CBSA. No further assessment of meteorological data or transport patterns was conducted. There are no geographical or topographical features within Dearborn, Ohio or Union counties that would have an impact on air quality or potential transport.

Due to limitations of jurisdictional authority, transportation conformity and the development of State Implementation Plans are addressed independently. The largest contributors of ozone precursors fall outside of Indiana's jurisdictional boundaries within the states of Kentucky and Ohio. Indiana has been and will continue to use its authority to address transportation conformity and SIP planning within state boundaries, ensuring effective coordination and communication between U.S. EPA, local and regional communities, and appropriate officials in affected areas outside of Indiana's jurisdiction. IDEM's Office of Air Quality staff works closely with U.S. EPA Region 5 to ensure Indiana meets its commitments and complies with the requirements of the federal Clean Air Act.

The overall impact from Dearborn, Ohio and Union counties in Indiana is very small compared with the magnitude of the Kentucky and Ohio portions of the CBSA. Dearborn, Ohio and Union counties are essentially rural in nature and ozone air monitors are not located in Indiana's portion of the CBSA. As a result of its permanent closure effective June 1, 2015, the Tanners Creek facility (Lawrenceburg Township in Dearborn County) is no longer a source of emissions in the CBSA and there is no indication that Dearborn, Ohio and Union counties contribute significantly to ozone in the CBSA. Indiana has been and will continue working with federal, state and local entities to ensure compliance with clean air regulations and the protection of public health and the environment. For these reasons, Indiana recommends that Dearborn, Ohio and Union counties be designated as unclassifiable under the 2015 8-hour ozone NAAQS, as shown in *Table 15: Initial Recommendations for Dearborn, Ohio and Union Counties*.

Table 15: Initial Recommendations for Dearborn, Ohio and Union Counties

Dearborn County	Unclassifiable
Ohio County	Unclassifiable
Union County	Unclassifiable

ANALYSIS AND RECOMMENDATIONS FOR THE REMAINING COUNTIES IN INDIANA

The counties addressed in the earlier sections of this document (Jasper, Lake, Newton, and Porter counties in northwestern Indiana, and Dearborn, Ohio and Union counties near Cincinnati, OH) account for seven of Indiana's 92 counties. Among the remaining 85 counties within Indiana, 29 counties have ozone monitors and 56 counties do not have ozone monitors. Under the 2008 8-hour ozone NAAQS, all 85 counties were designated as unclassifiable/attainment.

Ozone design values based on quality-assured certified 2013-2015 ambient air quality data and preliminary, quality-assured 2014-2016 data show that air quality in the 29 monitored counties meets the 2015 8-hour ozone NAAQS. Indiana is recommending a designation of attainment for these 29 counties. Indiana is recommending a designation of unclassifiable for each of the remaining 56 counties without an air monitor.

Enclosure 1 of this submittal contains a complete list of Indiana's 92 counties and the initial recommendation for each. The ozone design values for monitors in the 29 counties are included in the complete table of air quality data provided in Enclosure 2 of this submittal.