

## **Analysis of Technical Information for Indiana 8-Hour Ozone Designation 120 Day Letter**

The following is a list of the metropolitan areas in Indiana and the summary of the analysis performed to inform decisions regarding designations for the 120 day letters. Additional data is available as part of the docket (i.e. tables and charts summarizing data as well as the Indiana Department of Environmental Management (IDEM) submittal).

### **Cincinnati-Hamilton OH-KY-IN CMSA**

Includes Brown, Butler, Clermont, Hamilton and Warren counties in Ohio; Boone, Campbell, Gallatin, Grant, Kenton, and Pendleton Counties in Kentucky and Dearborn and Ohio Counties in Indiana.

#### IDEM Recommendation:

IDEM recommended that Dearborn and Ohio Counties be attainment/unclassifiable.

#### Issue:

Designating less than the presumptive area.

#### EPA 120 day Recommendation:

EPA agrees with IDEM to designate Ohio County as attainment/unclassifiable. However, Dearborn County is proposed as nonattainment because of the large power plant in Dearborn County which alone emits 36,000 tons per year of NOx emissions.

#### 1) Emissions and Air Quality

There are no monitors located in Dearborn and Ohio Counties. Ohio County VOC emissions are only 394 tpy and NOx is only 703 tpy. The population in Ohio County is 5,623 for the year 2000. Ohio County emissions and population are small and not a significant contributor to the ozone problem in Cincinnati. Dearborn County has 3,754 tpy of VOC and 39,275 tpy of NOx and a population of 46,109. IDEM provided a table in it's submittal detailing the point, area, nonroad and onroad emissions for these Counties. This information is in the docket. Dearborn County is currently only 2% of the population of the MSA, and 2.9% of the VOCs in the MSA but the NOx emissions contribution is 17% of the MSA.

## 2) Population Density and degree of Urbanization

IDEM writes that Ohio and Dearborn Counties are predominantly rural in nature with very low population densities. Ohio County's population density is one of the lowest in the State. IDEM submitted a map showing the population densities and road data for Ohio and Dearborn Counties. The graphic clearly shows the rural nature of the counties with no large urban centers. In addition, the US census bureau was consulted to get population density. The population density of Dearborn County is 151 persons per square mile and the density of Ohio County is 65 per square mile.

## 3) Monitoring Data

There are no monitors located in Dearborn and Ohio Counties. In the Ohio portion of the CMSA, Hamilton, Clermont, Butler and Warren counties contain monitors that are violating the 8-hour standard.

## 4) Location of Emissions Sources

A listing of the major sources is included in IDEM's submittal and in the docket. Ohio County has no major emissions sources. Dearborn County has 6 sources which are listed by IDEM. There is one major power plant located very near the Ohio River which emits about 36,000 tpy of NOx. A map in the docket indicates the location of this source. IDEM has not submitted information to indicate that the Tanners Creek power plant is planning to install control equipment although the source is covered under the NOx SIP regulations.

## 5) Traffic and Commuting Patterns

There were 8,446 persons in 1997 who commuted from Dearborn County into the Cincinnati, Ohio area to work and 1,162 persons commuted from neighboring Counties in Ohio into Dearborn County, Indiana to work. For Ohio County, the number of commuters into Dearborn County was 809 persons in 1997 and 755 persons commuted into the Cincinnati, Ohio area. This number of commuters is not significant for a CMSA of almost 2 million people.

## 6) Expected Growth

Population growth in Ohio County is estimated at 1.4% over the next 10 years. Population growth in Dearborn County is estimated at 22.9% over the next 10 years. However, IDEM writes that although Dearborn's population growth rate appears significant

in terms of percentage increase, the volume in terms of growth is insignificant. If the population of 46,000 grows by 23% then the total population in 2010 would be an extra 10,580 people for a total of 56,500 people. In a CMSA of almost 2 million people this would still not have a significant impact.

#### 7) Meteorology

IDEM has submitted wind rose data which indicate that the wind is very calm on many of the high ozone days on others the wind is from the south or south west at low speeds. It is unclear to what extent Dearborn County emissions are impacting the ozone levels in Cincinnati on high ozone days. The NOx emissions could possibly be funneling east along the Ohio River and reacting to form ozone even on calm days.

#### 8) Geography

The Ohio River divides Dearborn and Ohio Counties from Boone County, Kentucky.

#### 9) Jurisdictional Boundaries

Ohio and Dearborn Counties are in the State of Indiana. Indiana is concerned about the need to establish an Inspection and Maintenance program in Dearborn County if the area is designated nonattainment along with the Cincinnati metro area. Ohio already has an I/M program that covers Cincinnati but it would be very costly for Indiana to establish an I/M program for Dearborn County. Dearborn County was not included in the one-hour nonattainment designation.

#### 10) Level of Emission Controls

Indiana's Statewide NOx SIP Call regulations cover both Ohio and Dearborn Counties although there is currently no indication if the power plant in Dearborn County will be installing control equipment.

#### 11) Regional Emission Reductions

Indiana is part of the NOx SIP Call. NOx reductions will begin in 2004.

#### Region 5 review:

Based on our review of the 11 factors we agree with IDEM to designate Ohio county as attainment/unclassifiable. Ohio County is a very small portion of the overall CMSA in terms of

population and emissions. Ohio county is rural, with a low population density, population and mass emissions and does not significantly contribute to the CMSA.

Based on our review of the 11 factors, we intend to designate Dearborn County nonattainment. Dearborn County has a total estimated 39,000 tons per year of NOx with the power plant producing 36,000 tpy of NOx emissions. If the power plant were to install controls, the contribution would be insignificant but the NOx emissions (17% of the total MSA NOx) may be contributing to the nonattainment and the wind data appears inconclusive at this point. The area is part of the NOx SIP call and Indiana has NOx regulations covering Dearborn County. Thus the power plant will either have controls or will be buying credits from other power plants. Because of the size of the power plant, it is highly likely that at least one unit will be fitted with controls but at this point, we have no assurance that controls will be installed.

#### **Evansville-Henderson IN-KY MSA**

There are 4 Counties in the MSA; Vanderburgh, Warrick, and Posey Counties in Indiana and Henderson County which is in Kentucky.

#### **IDEM Recommendation:**

Indiana deferred a decision on the Evansville area in the July 15, 2003, recommendation letter. In the October 7, 2003, letter, Indiana notes that only one County (Warrick) is violating the 8-hour ozone standard with 85 ppb and recommends that if the area cannot be designated as attainment/unclassifiable then only Warrick should be designated nonattainment. Indiana makes a case that the Evansville area is heavily impacted by regional transport and expected to meet the health standard when the State NOx regulations are fully implemented.

#### **Issue:**

Areas with a violating monitor are required by the CAA to be designated nonattainment. The presumption is the entire MSA.

#### **EPA 120 Day Recommendation:**

EPA recommends Vanderburgh and Warrick Counties as nonattainment.

#### **Technical Analysis:**

1)Emissions and Air Quality

For 2001-2003 only Warrick County is monitoring nonattainment with an 85. For 2000-2002 Posey County was the only county violating with an 87. IDEM submitted population and emissions data for the Indiana Counties. The chart below provides emissions from the national emissions inventory (NEI) and population for the counties in the MSA.

County	1999 VOC (tons/year)	1999 NOx (tons/year)	2000 Population
Posey, IN	4,701	15,927	27,061
Vanderburgh, IN	13,819	10,121	171,922
Warrick, IN	5,078	31,131	52,383
Henderson, KY	4,766	8,375	44,829

Henderson has a higher population than Posey County, IN and has comparable emissions.

### 2) Population Density and degree of Urbanization

IDEM submitted a map of the area showing population distribution for 1990 and an indication of the population change for the 1997 to 2020 time frame. The map also showed urbanization and major roadways. However, the map did not include Henderson County, Kentucky. The population density is clearly highest in Vanderburgh County near the Ohio River and also in Warrick County. The highest growth in population is expected in Warrick County. The US Census Bureau website has information on population density and this site was used to collect information on Henderson County, Kentucky. Most of Henderson County, Kentucky is rural however, there is a small portion of the County that is just across the river from the city of Evansville and has a high concentration of urbanization. The population density of this area is over 1000 persons per square mile. Kentucky submitted information on Henderson County which is included in the docket.

### 3) Monitoring Data

For 2001-2003 only Warrick County is monitoring nonattainment with an 85. For 2000-2002 Posey County was the only county violating with an 87. IDEM has certified the 2001-2003 8-hour ozone design values.

#### 4) Location of Emissions Sources

A listing of the major sources is included in IDEM's submittal and in the docket. In addition a map of the major sources in the MSA is included in the docket. Most major sources are located along the river.

#### 5) Traffic and Commuting Patterns

IDEM submitted information on the work force distribution and the number of workers working in each County as opposed to working outside the County. Warrick County has 57% of the total workforce of 21,566 people working outside of the County. This implies significant commuting to surrounding Counties. Posey County also has significant commuting outside of the County with 43% of the total workforce of 11,879 people working outside of the County. Vanderburgh County has only 10% of the population commuting outside of the County to work. Vanderburgh also has the highest workforce at 76,919.

#### 6) Expected Growth

Warrick County population is expected to grow by 11.4 percent from 2000 to 2010. Posey is expected to grow by 5.9% and Vanderburgh is expected to decrease slightly in population. Henderson is expected to grow by 3.3%.

#### 7) Meteorology

Kentucky has recommended Henderson County as attainment/unclassifiable and has submitted wind back trajectories to show Henderson has minimal impacts on Posey County and on Warrick County. IDEM submitted wind roses to show the wind directions on high ozone days over the past 3 years. The wind data seems to demonstrate that when the winds blow from the west and south west that emissions are blown east along the river and there are high ozone values at the Warrick County monitor. However, when the wind blows from the east or south east that the emissions impact the Posey County monitor. In addition, the City of Evansville submitted a thorough analysis of meteorological conditions for the Evansville MSA for a number of different weather patterns. This analysis seems to indicate that a number of weather patterns are important in the local formation of ozone. The conclusion of the analysis is that the upwind location in the study area is not always in the south or southwest quadrant (although this is the majority of

the days) but on certain days the upwind location is to the northeast. Locally, ozone dissociation by NO emitted from mobile sources is an important factor in reducing high ozone levels. This is consistent with what is found in other areas where ozone levels are lower in the center urban area due to high NO levels. This phenomena explains the lower ozone levels monitored in Vanderburgh County.

8)Geography

Evansville is located along the Ohio River Valley.

9)Jurisdictional Boundaries

Gibson County is not part of the MSA for the 1999 census bureau data but is part of the metropolitan area with the new 2003 boundaries.

10)Level of Emission Controls

Indiana has statewide NOx SIP Call regulations.

11)Regional Emission Reductions

Indiana is part of the NOx SIP Call. NOx reductions will begin in 2004.

Region 5 review summary:

Vanderburgh County clearly has the highest population and emissions of all the counties in the MSA and would be contributing to the nonattainment problem. Emissions from Vanderburgh County appear to be alternately impacting Posey and Warrick Counties. Warrick has a monitored violation and thus must be nonattainment.

**Fort Wayne IN MSA**

There are 6 Counties in the MSA. Allen, Adams, De Kalb, Huntington, Wells and Whitley Counties in Indiana. In this analysis, we considered the 1999 MSA boundaries.

IDEM Recommendation:

IDEM recommended that only Allen County be nonattainment. IDEM recommended that Huntington County be designated a transport area. However, the CAA does not have a transport designation.

Issue:

Designating less than the presumptive area.

EPA 120 day Recommendation:

EPA agrees with IDEM that Allen County should be nonattainment. EPA also agrees that Adams, De Kalb, Wells and Whitley Counties should be attainment/unclassifiable. However, Huntington County is proposed as nonattainment because of the monitor which was violating with 2000-2002 data and because it is upwind of Allen County.

Technical Analysis:

1) Emissions and Air Quality

Indiana is recommending that Allen County be nonattainment. With the new 2003 data, Huntington County is now monitoring attainment. Indiana submitted a supplemental recommendation for Huntington County, in October, to be attainment/unclassifiable. Indiana is recommending that 5 of the 6 Counties in the MSA be dropped from the nonattainment designation. All of the Counties in the MSA were considered for inclusion in the nonattainment designation in the EPA review. IDEM submitted information to show that the Counties are very rural with low emissions. However, collectively the 5 counties surrounding Allen County make up 45% of the total emissions in the MSA. If both Huntington and Allen are designated nonattainment then about 72% of the population and 67% of the emissions will be in the nonattainment area.

County	1999 VOC (tons/year )	1999 NOx (tons/year)	2000 Population	Population density
Allen	25,141	17,843	331,849	505

De Kalb	4,732	4,978	40,285	111
Huntington	4,530	3,812	38,075	99
Wells	2,314	1,781	27,600	75
Whitley	2,826	2,331	30,707	91
Adams	3,610	2,572	33,625	99

2) Population Density and degree of Urbanization

IDEM submitted population density maps and roadway maps and commuting information to support their contention that only Allen County be nonattainment. The maps clearly show the rural nature of the surrounding counties with little development even on the outskirts of Allen County. The map also showed urbanization and major roadways. The population density is clearly highest in Allen County. In addition the Fort Wayne MPO wrote a summary of policies in Allen County which will help keep urban growth within the County boundaries. This summary is included in the docket and was submitted by email from IDEM.

3) Monitoring Data

For 2001-2003 only Allen County is monitoring nonattainment with an 88. For 2000-2002 Huntington County was violating but now is monitoring attainment with an 84. IDEM has certified the 2001-2003 8-hour ozone design values. The other Counties do not have

ozone monitors so no data is available.

4) Location of Emissions Sources

A listing of the major sources is included in IDEM's submittal and in the docket.

5) Traffic and Commuting Patterns

IDEM submitted information on the work force distribution and the number of workers working in each County as opposed to working outside the County. Most workers in Allen County work in Allen County. There is minimal commuting from the surrounding counties into Allen County.

6) Expected Growth

Huntington County is upwind of the violating County and is expected to grow by about 5% in the next 10 years (this growth rate is not exceptional). Allen County is expected to grow by 1% from 2000 -2010.

7) Meteorology

IDEM submitted wind rose data which showed that the predominant winds are from the south west.

8) Geography

The geography of the entire area is flat plains.

9) Jurisdictional Boundaries

The Metropolitan Planning Organization for the area is in the Allen County and the urbanized area covered is only in Allen County. IDEM submitted information on urban growth restrictions in place in Allen County that would prevent urbanization from expanding into the surrounding counties.

10) Level of Emission Controls

Indiana has statewide NOx SIP Call regulations.

11) Regional Emission Reductions

Indiana is part of the NOx SIP Call. NOx reductions will begin in 2004.

Region 5 review:

Huntington County is the only one of the surrounding Counties which is upwind and thus may be a contributor. It also had a violating monitor in 2002. Because Huntington County is part of

the MSA and is upwind of Allen County we have included Huntington County in the nonattainment list.

### **Louisville KY-IN MSA**

There are 7 Counties in the MSA. Clark, Floyd, Harrison and Scott Counties in Indiana and Bullitt, Jefferson, and Oldham Counties in Kentucky.

#### IDEM Recommendation:

IDEM recommended that only Clark and Floyd Counties be nonattainment. IDEM recommended that Scott and Harrison Counties be attainment/unclassifiable.

#### Issue:

Designating less than the presumptive area.

#### EPA 120 day Recommendation:

We agree with the State's recommendation that Clark and Floyd Counties be nonattainment and that Harrison and Scott Counties be designated attainment/unclassifiable.

#### Technical Analysis:

##### 1) Emissions and Air Quality

The 1999 NEI data show that Harrison County has 2,735 tpy of VOCs (3% of the MSA) and 3,817 tpy of NOx (3% of the MSA) and a population of 34,325 (3% of the MSA). Scott has 2,444 tpy of VOCs (3% of the MSA) and 1,610 tpy of NOx (1% of the MSA) and a population of 22,960 (2% of the MSA). There are no ozone monitors in Harrison or Scott Counties. IDEM submitted emissions data by County for 1996 and projected data for 2007. This data is included in the docket. Clark and Floyd Counties have significantly more population and employment than Harrison or Scott Counties and this is reflected in IDEM's submittal.

##### 2) Population Density and degree of Urbanization

IDEM submitted population density maps and roadway maps and commuting information to support the designation of Clark and Floyd Counties as nonattainment and Harrison and Scott as attainment/unclassifiable. The maps clearly show the rural nature of Harrison and Scott Counties. The maps also show urbanization and major roadways. The population density is clearly highest in the southern sections of Clark and Floyd Counties closest to Louisville. Also the maps give population growth expected to 2020. The highest growth is projected for Clark County with some growth in Floyd County. Harrison and

Scott have very little growth projected.

### 3) Monitoring Data

For 2001-2003 Clark County is monitoring 92 ppb as the 8-hour ozone design value and Floyd County is monitoring 86 for the 8-hour design value. No ozone monitors are located in Harrison or Scott Counties. IDEM has certified the 2001-2003 8-hour ozone design values.

### 4) Location of Emissions Sources

A listing of the major sources for each County is included in IDEM's submittal and in the docket. Very few sources are located in Harrison and Scott Counties.

### 5) Traffic and Commuting Patterns

IDEM submitted information on the work force distribution and the number of workers working in each County as opposed to working outside the County. Although about 50% of the workforce in both Harrison and Scott Counties commute outside the county to work, the total number of persons is small. In Scott County 3,500 people commute outside the county to work and in Harrison County 7,400 people commute outside the county to work. These numbers would not generate a significant amount of emissions for that area.

### 6) Expected Growth

Clark County population is expected to grow by 5.8 percent from 2000 to 2010 and Floyd County is expected to grow by 12.8%. Harrison is expected to grow by 16.9 percent although this data is not confirmed by the IDEM growth projections. Scott is expected to grow by 8.7%.

### 7) Meteorology

The prevailing winds are from the west and south west. Scott County is to the north of the Louisville area and would not be a contributor. Harrison County is west of Clark and Floyd Counties and northwest of Jefferson County, Kentucky.

### 8) Geography

The geography of the entire area is flat plains with the Ohio River valley dividing Indiana and Kentucky.

### 9) Jurisdictional Boundaries

The MPO covers the entire Louisville area and transportation planning is facilitated for both sides of the river (both

Indiana and Kentucky). IDEM does SIP planning for the Indiana side and KDAQ for the Kentucky side of the Louisville area. This has worked for the 1-hour ozone planning.

10)Level of Emission Controls

Indiana's Statewide NOx SIP Call regulations cover all of Indiana.

11)Regional Emission Reductions

Indiana is part of the NOx SIP Call. NOx reductions will begin in 2004.

Region 5 review:

The bulk of the population and emissions in the Indiana portion of the area are contained in Clark and Floyd Counties. These Counties were also part of the 1-hour ozone designation while Scott and Harrison are not part of the 1-hour nonattainment area. Based on the 11 factors Scott and Harrison would not be expected to contribute to the nonattainment problem. Scott is downwind considering the prevailing wind direction and the emissions from both Scott and Harrison are not significant given the much larger emissions in the Louisville MSA. Harrison County has 2,735 tpy of VOCs (3% of the MSA) and 3,817 tpy of NOx (3% of the MSA) and a population of 34,325 (3% of the MSA). Scott has 2,444 tpy of VOCs (3% of the MSA)and 1,610 tpy of NOx (1% of the MSA) and a population of 22,960 (2% of the MSA).

**Greene and Jackson Counties**

Neither Greene County or Jackson County are in an MSA or CMSA although they are both adjoining the Bloomington MSA. In addition, Jackson County is adjoining the Columbus MSA and is located to the south of Columbus.

IDEM Recommendation:

Indiana recommended the areas be classified as affected by regional transport in the July 15, 2003, recommendation letter.

Issue:

Areas with a violating monitor are required by the CAA to be designated nonattainment. There is no transport designation.

EPA 120 Day Recommendation:

These are rural counties south of Indianapolis with 3 years of

monitoring data recording nonattainment. Therefore the CAA requires these areas to be designated nonattainment.

Technical Analysis:

1) Emissions and Air Quality

The emissions in Greene County are 3,055 tpy of VOCs, 2,154 tpy of NOx and a population of 33,157. Jackson County emissions are 4,815 tpy VOCs and 3,598 tpy NOx with a population of 41,335. Both Counties are monitoring ozone levels above the 8-hour ozone standard

2) Population Density and degree of Urbanization

IDEM did not submit population density maps and roadway maps and commuting information for these Counties. However, Greene County has an area of 546 square miles and thus the density is 61 persons per square mile which is very rural (any density under 100 is considered rural). A road map indicates no significant urbanized areas in Greene County. Jackson County has 513 square miles and thus a density of 81 persons per square mile. This is also very rural. The road map again indicates there are no large urban areas in Jackson County. The northern part of Jackson County is primarily the Hoosier National Forest. The expressway I65 runs through the eastern part of Jackson County but the few towns in Jackson County are small.

3) Monitoring Data

IDEM has submitted the 2001-2003 8 hour design values for these Counties in the October 7, 2003 letter. Both Greene and Jackson Counties are violating the 8-hour ozone standard. Greene County is monitoring 89 ppb and Jackson County is monitoring 85 ppb. Ozone monitoring in Greene County and Jackson County was started to determine the amount of ozone transport into the Indianapolis area to support modeling and control efforts in the Central Indiana nonattainment area.

4) Location of Emissions Sources

Very few sources are located in Greene and Jackson Counties. Sources are not grouped in any particular locations.

5) Traffic and Commuting Patterns

Most of the traffic is local. Most of the economy is farming. I65 runs through the eastern part of Jackson County. That is the only major expressway in the area.

#### 6) Expected Growth

Greene County population is expected to grow by 7.8 percent from 2000 to 2010 and Jackson County is expected to grow by 9.5% over the 2000 to 2010 time frame.

#### 7) Meteorology

The prevailing winds are from the west and south west. Indiana has submitted wind data to substantiate that the Columbus and Bloomington MSAs are not contributing to the ozone nonattainment in these two counties. Wind data on high ozone days shows the wind blowing from the south and south west directions. This analysis supports designating only Jackson and Greene Counties as nonattainment instead of the adjoining MSAs.

#### 8) Geography

The geography of the entire area is flat plains.

#### 9) Jurisdictional Boundaries

Greene and Jackson Counties are not in an MSA but are adjoining the small one county MSA of Bloomington and Jackson is also adjoining the one county MSA of Columbus. However, neither county is part of an urbanized area.

#### 10) Level of Emission Controls

Indiana's NOx SIP Call regulations apply Statewide.

#### 11) Regional Emission Reductions

Indiana is part of the NOx SIP Call. NOx reductions will begin in 2004.

#### Region 5 review:

Because these Counties are monitoring nonattainment of the 8-hour ozone standard, they must be designated nonattainment. Analysis of the 11 factors indicate that there are no nearby areas that contribute to these violations. The meteorological data, in addition to the low emissions in these areas and the rural nature of the Counties, supports IDEMs contention that the Counties are affected by overwhelming regional transport. The data is supportive that the Counties are not contributing to their own nonattainment problem. The counties are adjoining the Bloomington and Columbus MSA respectively but are upwind of those MSAs. The proposed designation guidance does not allow a rural transport designation.

## **Terre Haute MSA**

The MSA consists of Vigo, Vermillion and Clay Counties.

### IDEM Recommendation:

Indiana deferred a recommendation in the July 15, 2003, letter and recommended just Vigo County as nonattainment in the October supplement.

### Issue:

Designating less than the presumptive boundary.

### EPA 120 Day Recommendation:

EPA agrees with IDEM to designate only Vigo County as nonattainment.

#### 1) Emissions and Air Quality

The Vigo County monitor now has 3 years of data showing nonattainment. Vigo has 13,155 tpy of VOCs and 17,175 tpy of NOx and a population of 103,890. Clay and Vermillion Counties are in the MSA. Clay has 4,262 tpy of VOCs, 3,394 of NOx, and a population of 27,152. Vermillion has 4,023 tpy of VOCs, 13,370 tpy of NOx and a population of 18,917. IDEM also looked at population and emissions for Sullivan County

#### 2) Population Density and degree of Urbanization

IDEM did not submit population density maps, roadway maps or commuting information for this area. Clay County is 360 square miles and has a population density of 74 people per square mile which is considered rural. Vermillion county is larger in size and has less population and thus is also rural. Road maps clearly show the rural nature of Clay and Vermillion Counties with no urbanized areas in either county. The urbanized area of Terre Haute is in Vigo County.

#### 3) Monitoring Data

For 2001-2003 IDEM submitted the quality assured design values and Vigo County is monitoring 87 ppb as the 8-hour ozone design value. There are no ozone monitors in Clay or Vermillion Counties.

#### 4) Location of Emissions Sources

A listing of the major sources for each County is included in IDEM's submittal and in the docket. Very few sources are located in Clay and Vermillion Counties. The largest source is in

Vermillion County. The source is PSI Energy with 9,852 tpy of NOx.

#### 5) Traffic and Commuting Patterns

Traffic is mostly centered in Terre Haute. Highway 63 goes thru Vermillion County to the city of Terre Haute. The expressway I70 goes through Clay County to Terre Haute. Traffic travels from Indianapolis to Terre Haute along interstate I70.

#### 6) Expected Growth

Growth over the next 10 years is expected to be minimal. Clay County population is expected to grow by 5.8 percent from 2000 to 2010 and Vermillion County is expected to grow by 5.5%.

#### 7) Meteorology

The prevailing winds during the summer are from the west and south west. Because Clay County is to the east of Vigo County and Vermillion County is to the north of Vigo County these counties are not likely to be contributing to the high ozone readings in Vigo County.

#### 8) Geography

The geography of the entire area is flat plains.

#### 9) Jurisdictional Boundaries

Vermillion County and Clay County are included in the Terre Haute MSA.

#### 10) Level of Emission Controls

Indiana's Statewide NOx SIP Call regulations cover the entire State.

#### 11) Regional Emission Reductions

Indiana is part of the NOx SIP Call. NOx reductions will begin in 2004.

#### Region 5 review:

Clay County is rural, with low emissions and is downwind of Vigo county, thus EPA agrees it would not be contributing to the nonattainment problem. Vermillion County does have some NOx emissions due to the PSI facility. However, because it is downwind of the violating monitor, EPA agrees it is likely not contributing to the violation.

## **Delaware County, IN**

This is a single County MSA consisting of Delaware County.

### IDEM Recommendation:

Indiana deferred a recommendation in the July 15, 2003, letter because the County only had 2 years of monitoring data. In the October supplement, IDEM lists Delaware County as now having 3 years of data monitoring nonattainment. A call to IDEM clarified that this was a recommended that Delaware County be nonattainment in the October supplement. Indiana recommended that Delaware County be separate from the Central Indiana nonattainment area because it is a separate MSA with its own Metropolitan Planning Organization.

### EPA 120 Day Recommendation:

EPA agrees with IDEM to designate Delaware County as nonattainment and separate from the Central Indiana area.

### Region 5 review:

Delaware County (Muncie MSA) now has 3 years of monitoring data showing nonattainment with a design value of 88 parts per billion (ppb). Indiana deferred a recommendation until the 2003 ozone season was complete and has recommended that the Delaware County be nonattainment. Delaware County has an urban core (Muncie, Indiana) and a separate MPO. It is not part of the Indianapolis MSA and therefore according to our guidance can be separate from the Central Indiana nonattainment area.

## **Laporte County, IN**

This is a single County MSA consisting of LaPorte County.

### IDEM Recommendation:

Indiana recommended nonattainment in the July 15, 2003, letter. Indiana recommended that LaPorte County be separate from the MSAs on either side of LaPorte County.

### EPA 120 Day Recommendation:

EPA agrees with IDEM to designate LaPorte County as nonattainment and as its own nonattainment area because LaPorte is a separate MSA from the MSA on either side of LaPorte.

### Region 5 review:

LaPorte County is a separate MSA from the adjoining

Chicago/Gary/Lake County MSA. It is also separate from the Elkhart/St. Joe MSA. Indiana has recommended LaPorte as a separate nonattainment area. Although LaPorte is a separate MSA from the Chicago CMSA, one of the ozone monitors in LaPorte is clearly affected by transport off the Lake and from the Chicago and Milwaukee areas. In this respect, LaPorte is similar to Muskegon, Michigan in that ozone levels are sometimes reflecting the transport from other areas. On the other hand, LaPorte is a separate MSA with 2 large cities, Michigan City and LaPorte and 110,000 population, 10,873 tpy VOC and 16,569 tpy NOx and thus contributes to its own nonattainment problem. We agree that under our guidance LaPorte can be a separate nonattainment area because it is a separate MSA from the Chicago MSA. Also, LaPorte will have it's own metropolitan planning organization and thus conformity and planning will be made easier.

### **Elkhart/St. Joseph IN**

This is a 2 County MSA consisting of Elkhart and St. Joe Counties.

#### IDEM Recommendation:

Indiana recommended nonattainment in the July 15, 2003, letter.

#### EPA 120 Day Recommendation:

EPA agrees with IDEM to designate Elkhart/St. Joe as nonattainment.

#### Region 5 review:

Elkhart and St. Joe are both monitoring nonattainment. These Counties were designated together as one nonattainment area under the one-hour standard.

### **Chicago/Gary/Lake County, IL-IN-WI**

The Chicago-Gary-Kenosha IL-IN-WI Consolidated Metropolitan Statistical Area (CMSA) contains the Indiana Counties of Lake and Porter Counties. Lake and Porter County in Indiana are part of the CMSA and were included in the one-hour ozone designation.

#### IDEM Recommendation:

Indiana recommended that Lake and Porter Counties be designated as part of the Chicago nonattainment area in the July 15, 2003, letter.

#### EPA 120 Day Recommendation:

EPA agrees with IDEM to designate both Lake and Porter Counties as nonattainment since this is the presumptive boundary.

Region 5 review:

Lake and Porter County are both monitoring nonattainment. These Counties are part of the Chicago CMSA and were designated together under the one hour standard. It should be noted that Kenosha County, Wisconsin is part of the official CMSA and has been the design value site for the 1 hour ozone standard. Kenosha County is downwind of the Chicago area and generally has the highest ozone concentrations representing emissions from the Chicago CMSA. Indiana has followed the guidance and recommended the presumptive area. There are no issues here.

**Central Indiana**

This is a large MSA surrounding and including the City of Indianapolis which is located in Marion County at the center of the MSA. There are 9 Counties in the MSA. These Counties are Marion, Boone, Hendricks, Morgan, Johnson, Shelby, Hancock, Madison and Hamilton. All 9 Counties are monitoring nonattainment.

IDEM Recommendation:

Indiana recommended nonattainment for all 9 Counties in the July 15, 2003, letter.

EPA 120 Day Recommendation:

EPA agrees with IDEM to designate all 9 Counties as the Central Indiana nonattainment area.

Region 5 review:

There are no issues here. All 9 Counties are monitoring nonattainment and the recommendation is the presumptive boundary.