Kentucky
Area Designations for the
2008 Ozone National Ambient Air Quality Standards

The table below identifies the areas and associated counties or parts of counties in Kentucky that EPA intends to designate as nonattainment for the 2008 ozone national ambient air quality standards (2008 ozone NAAQS). In accordance with section 107(d) of the Clean Air Act, EPA must designate an area (county or part of a county) "nonattainment" if it is violating the 2008 ozone NAAQS or if it is contributing to a violation of the 2008 ozone NAAQS in a nearby area. The technical analyses supporting the boundaries for the individual nonattainment areas are provided below.

Table 1. Intended Nonattainment Areas in Kentucky

Area	Kentucky's Recommended Nonattainment Counties	EPA's Intended Nonattainment Counties
Cincinnati-Middletown-Wilmington, OH-KY-IN*	None	Boone Campbell Kenton

* Cincinnati-Middletown-Wilmington, OH-KY-IN is a multi-state nonattainment area. Table 2 below identifies the counties in the other states that EPA intends to designate as part of the nonattainment area.

EPA intends to designate the remaining counties in Kentucky that are not listed in the table above as "unclassifiable/attainment" for the 2008 ozone NAAQS.

The analysis below provides the basis for intended nonattainment area boundaries. It relies on our analysis of whether and which monitors are violating the 2008 ozone NAAQS, based on certified air quality monitoring data from 2008-2010 and an evaluation of whether nearby areas are contributing to such violations. EPA issued guidance on December 4, 2008 that identified these factors as ones EPA would consider in determining nonattainment area boundaries and recommended that states consider these factors in making their designations recommendations to EPA.[1]

1. Air quality data (including the design value calculated for each Federal Reference Method or Federal Equivalent Method (FEM) monitors in the area);
2. Emissions and emissions-related data (including location of sources and population, amount of emissions and emissions controls, and urban growth patterns);
3. Meteorology (weather/transport patterns);
4. Geography and topography (mountain ranges or other basin boundaries);
5. Jurisdictional boundaries (e.g., counties, air districts, existing nonattainment areas, Indian country, metropolitan planning organizations (MPOs))

Ground-level ozone generally is not emitted directly into the air, but is created by chemical reactions between oxides of nitrogen (NOx) and volatile organic compounds (VOC) in the presence of sunlight. Because NOx and VOC emissions from a broad range of sources over a wide area typically contribute to

[1] The December 4, 2008 guidance memorandum "Area Designations for the 2008 Revised Ozone National Ambient Air Quality Standards" refers to 9 factors. In this technical support document we have grouped the emissions-related factors together under the heading of "Emissions and Emissions-Related Data," which results in 5 categories of factors.

violations of the ozone standards, EPA believes it is important to consider whether there are contributing emissions from a broad geographic area. Accordingly, EPA chose to examine the 5 factors with respect to the larger of the Combined Statistical Area (CSA) or Core Based Statistical Area (CBSA) associated with the violating monitor(s).[2] All data and information used by EPA in this evaluation are the latest available to EPA and/or provided to EPA by states or tribes.

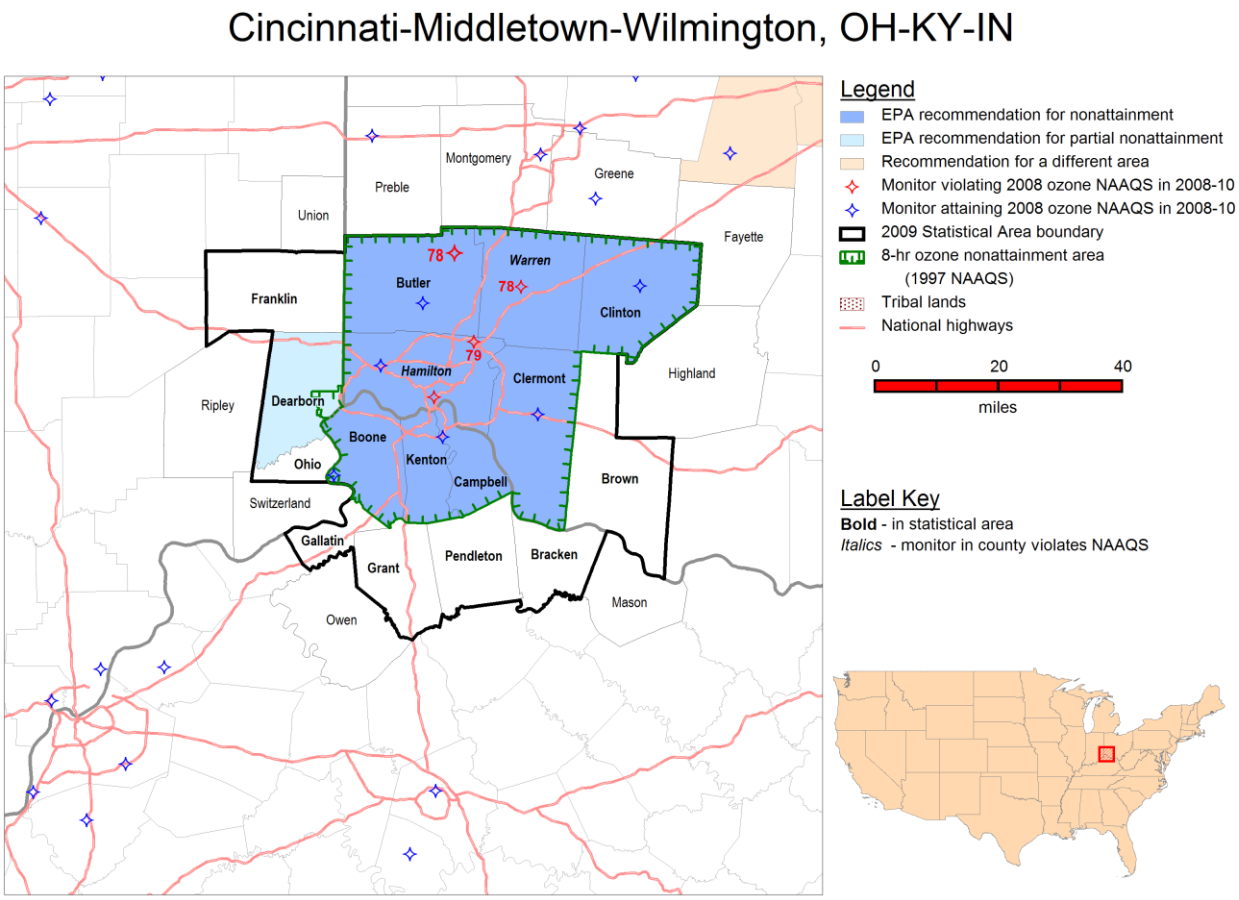
In EPA's designations guidance for the 2008 ozone NAAQS[3] EPA recommended examining CSA/CBSAs because certain factors used to establish CSAs and CBSAs are similar to the factors EPA is using in this technical analysis to determine if a nearby area is contributing to a violation of the 2008 ozone NAAQS. Congress required a similar approach in 1990 for areas classified as serious or above for the 1-hour ozone standard and EPA used the same basic approach in the designation process for the 1997 ozone NAAQS. Where a violating monitor is not located in a CSA or CBSA, EPA's guidance recommended using the boundary of the county containing the violating monitor as the starting point for considering the nonattainment area's boundary.

Technical Analysis for Cincinnati-Middletown-Wilmington, OH-KY-IN

Figure 1 is a map of the Cincinnati-Middletown-Wilmington, OH-KY-IN intended nonattainment area. The map provides other relevant information including the locations and design values of air quality monitors, county and other jurisdictional boundaries, existing maintenance boundary for the 1997 ozone NAAQS, Cincinnati-Middletown-Wilmington, OH-KY-IN CSA boundary, and major transportation arteries.

[2] Lists of CBSAs and CSAs and their geographic components are provided at www.census.gov/population/www/metroareas/metrodef.html . The lists are periodically updated by the Office of Management and Budget. EPA used the most recent update, based on 2008 population estimates, issued on December 1, 2009 (OMB Bulletin No. 10-02).

Figure 1. Cincinnati-Middletown-Wilmington, OH-KY-IN Area



For purposes of the 1997 8-hour ozone NAAQS, this Area was designated nonattainment. The boundary for the nonattainment area for the 1997 ozone NAAQS included Boone, Campbell and Kenton Counties, in their entireties, in Kentucky; Butler, Clermont, Clinton, Hamilton and Warren Counties, in their entireties, in Ohio; and a portion of Dearborn County(Lawrenceburg Township) in Indiana.

In March 2009, Kentucky recommended that Kenton County be designated as "nonattainment" for the 2008 8-hour ozone standard based on air quality data from 2006-2008. In October 2011, Kentucky submitted an update to their 2009 recommendation and revised their recommendation to "attainment" designations for each county in the State. Letters from Leonard K, Peters, Kentucky Energy and Environmental Cabinet Secretary to A. Stanley Meiburg, Acting Administrator, US EPA Region 4 (March 12, 2009) and Gwendolyn Keyes Fleming, Regional Administrator US EPA Region 4 (October 13, 2011) (on file with US EPA Region 4).

Additionally, in March 2009, Ohio recommended that Butler, Clermont, Clinton, Hamilton, and Warren Counties in Ohio be designated as "nonattainment" for the 2008 8-hour ozone standard based on air quality data from 2006-2008. Ohio did not send an updated recommendation in 2011. Letter from Chris

Korleski, State of Ohio Environmental Protection Agency Director to Lynn Buhl, Regional Administrator, US EPA Region 5 (March 9, 2009) (on file with US EPA Region 5).
Indiana, in March 2009, recommended that each county in Indiana be designated as "attainment. Indiana did not send in updated recommendations in 2011 Letter from Thomas W. Easterly, Indiana Department of Environmental Management Commissioner to Bharat Mathur, Acting Regional Administrator US EPA Region 5 (March 11, 2009) (on file with US EPA Region 4). These data are from FEM monitors sited and operated in accordance with 40 CFR Part 58.

After considering these recommendations and based on EPA's technical analysis described below, EPA intends to designate three whole counties in Kentucky; five whole counties in Ohio; and a partial county in Indiana (identified in Table 2 below) as "nonattainment" for the 2008 ozone NAAQS as part of the Cincinnati-Middletown-Wilmington nonattainment area.

Table 2. State's Recommended and EPA's Intended Designated Nonattainment Counties for Cincinnati-Middletown-Wilmington, OH-KY-IN

Cincinnati-Middletown-Wilmington, OH-KY-IN	State-Recommended Nonattainment Counties	EPA Intended Nonattainment Counties
Indiana	None	Dearborn (partial)
Kentucky	None	Boone Campbell Kenton
Ohio	Butler Clermont Clinton Hamilton Warren	Butler Clermont Clinton Hamilton Warren

Factor Assessment

Factor 1: Air Quality Data

For this factor, we considered 8-hour ozone design values (in parts per billion (ppb)) for air quality monitors in counties in the Cincinnati-Middletown-Wilmington, OH-KY-IN Area based on data for the 2008-2010 period (i.e., the 2010 design value, or DV), which are the most recent years with fully-certified air quality data. A monitor's DV is the metric or statistic that indicates whether that monitor attains a specified air quality standard. The 2008 ozone NAAQS are met at a monitor when the annual fourth-highest daily maximum 8-hour average concentration, averaged over 3 years is 75 ppb or less. A DV is only valid if minimum data completeness criteria are met. See 40 CFR part 50 Appendix P. Where several monitors are located in a county (or a designated nonattainment area or maintenance area), the DV for the county or area is determined by the monitor with the highest individual design value.

Note: Monitors that are eligible for providing design value data generally include State and Local Air Monitoring Stations (SLAMS) that are sited in accordance with 40 CFR Part 58, Appendix D (Section 4.1) and operating with a federal reference method (FRM) or federal equivalent method (FEM) monitor that meets the requirements of 40 CFR part 58, appendix A. All data from a special purpose monitor (SPM) using an FRM or FEM which has operated for more than 24 months is eligible for comparison to the NAAQS unless the monitoring agency demonstrates that the data came from a particular period during which the requirements of appendix A (quality assurance requirements) or appendix E (probe and monitoring path siting criteria) were not met.

The 2010 DVs for the ozone NAAQS for counties in the Cincinnati-Middletown-Wilmington, OH-KY-IN and nearby surrounding area are shown in Table 3.

Table 3. Ozone Air Quality Data for the Cincinnati-Middletown-Wilmington, OH-KY-IN CSA

County	State Recommended Nonattainment?	2010 8-hour Ozone DV (ppb)
Boone, KY	No	65
Butler, OH	Yes	78
Campbell, KY	No	72
Clermont, OH	Yes	71
Clinton, OH	Yes	74
Hamilton, OH	Yes	79
Warren, OH	Yes	78

Hamilton, Butler, and Warren Counties in Ohio show a violation of the 2008 ozone NAAQS, therefore these counties are included in the nonattainment area. A county (or partial county) must also be designated nonattainment if it contributes to a violation in a nearby area. Each county without a violating monitor that is located near a county with a violating monitor has been evaluated based on the weight of evidence of the five factors and other relevant information to determine whether it contributes to the nearby violation.

Factor 2: Emissions and Emissions-Related Data

EPA evaluated emissions of ozone precursors (NOx and VOC) and other emissions-related data that provide information on areas contributing to violating monitors.

Emissions Data

EPA evaluated county-level emission data for NOx and VOC derived from the 2008 National Emissions Inventory (NEI), version 1.5. This is the most recently available NEI. (See http://www.epa.gov/ttn/chief/net/2008inventory.html). Significant emissions levels in a nearby area indicate the potential for the area to contribute to observed violations. We will also consider any additional information we receive on changes to emissions levels that are not reflected in recent inventories. These changes include emissions reductions due to permanent and enforceable emissions controls that will be in place before final designations are issued and emissions increases due to new sources. The precursor emission source-category percentages used below and throughout the document were derived from emissions data from the 2008 NEI version 1.5 referenced above.

Table 4. Total 2008 VOC and NOx Emissions (tons/year) in the Cincinnati-Middletown-Wilmington, OH-KY-IN CSA

State/County	State Recommended Nonattainment?	VOC Emissions (tpy)	NOx Emissions (tpy)
Indiana:			
Dearborn	**No**	**3,572**	**11,637**
Franklin	No	1,097	862
Ohio	No	210	259
Kentucky:			
Boone	**No**	**4,332**	**8,848**
Bracken	No	361	760
Campbell	**No**	**2,260**	**2,697**
Gallatin	No	671	1,634
Grant	No	1,148	1,623
Kenton	**No**	**3,901**	**4,095**
Pendleton	No	608	1,394
Ohio:			
Brown	No	1,720	1,430
Butler	**Yes**	**10,813**	**12,600**
Clermont	**Yes**	**5,809**	**28,461**
Clinton	**Yes**	**2,618**	**2,941**
Hamilton	**Yes**	**26,816**	**38,664**
Warren	**Yes**	**5,618**	**6,027**
	CSA Total	71,554	123,933

*Counties that EPA intends to designate as nonattainment are shown in bold.

Indiana:
From the emissions data in Table 4, it can be seen that, for Indiana, relatively high 2008 VOC and NOx emissions in the vicinity of the violating counties originate in Dearborn County. Emissions from these counties in 2008 account for 5.0 percent of the VOC emissions and 9.4 percent of the NOx emissions for the entire Cincinnati-Middletown-Wilmington, OH-KY-IN CSA. The majority of these emissions come from the American Electric Power (AEP) - Tanner's Creek Generating Station located in the Lawrence Township adjacent to the recommended nonattainment area.

The VOC and NOx emissions from Franklin and Ohio Counties in Indiana are considerably smaller than those originating in the higher emitting counties elsewhere in the Cincinnati-Middletown-Wilmington, OH-KY-IN CSA. This would support the exclusion of these counties from the recommended ozone nonattainment area for the 2008 8-hour ozone NAAQS.

Kentucky:
Based on the 2008 NEI, 62 percent of Boone County's NOx emissions are from point sources, and 21 percent of Boone County's NOx emissions from mobile sources. Less than 5 percent of Campbell County's NOx emissions are from point sources and 57 percent of Campbell County's NOX emissions are from mobile sources. Kenton County also has less than 5 percent of its NOx emission from point sources but 63 percent of Kenton County's NOX emissions are from mobile sources. Boone County has

29 percent of its VOC emission coming from area sources and 23 percent of its VOC emissions from mobile sources. Campbell County has 35 percent of its VOC emissions coming from area sources and 43 percent of VOC emissions from mobile sources. Kenton County has 38 percent of its VOC emission coming from area sources and 41 percent of its VOC emissions from mobile sources.

The VOC and NOx emissions from Bracken, Gallatin, Grant, and Pendleton Counties, Kentucky are considerably less than those originating in the higher emitting counties elsewhere in the Cincinnati-Middletown-Wilmington, OH-KY-IN CSA. This would support the exclusion of these counties from the recommended ozone nonattainment area for the 2008 8-hour ozone NAAQS.

Ohio:
From the emissions data in Table 4, it can be seen that, for Ohio, relatively high 2008 VOC and NOx emissions in the vicinity of the violating counties originate in the following counties: Butler, Clermont, Hamilton, and Warren. Emissions from these counties in 2008 account for 68.6 percent of the VOC emissions and 69.2 percent of the NOx emissions for the entire Cincinnati-Middletown-Wilmington, OH-KY-IN CSA.

The VOC and NOx emissions from Brown County, Ohio are smaller than those originating in the higher emitting counties elsewhere in the Cincinnati-Middletown-Wilmington, OH-KY-IN CSA. This would support the exclusion of this county from the recommended ozone nonattainment area for the 2008 8-hour ozone NAAQS.

Population density and degree of urbanization

EPA evaluated the population and vehicle use characteristics and trends of the Area as indicators of the probable location and magnitude of non-point source emissions. These include ozone-creating emissions from on-road and off-road vehicles and engines, consumer products, residential fuel combustion, and consumer services. Areas of dense population or commercial development are an indicator of area source and mobile source NOx and VOC emissions that may contribute to violating ozone monitors. Rapid population or vehicle miles travelled (VMT) growth (see below) in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that it may be appropriate to include the Area associated with the area source and mobile source emissions as part of the nonattainment area. Table 5 shows the population, population density, and population growth information for each county in the Cincinnati-Middletown-Wilmington, OH-KY-IN CSA.

Table 5. Population and Population Growth In the Cincinnati-Middletown-Wilmington, OH-KY-IN CSA

State/County	State Recommended Nonattainment	2010 Population	2010 Population Density (1,000 per square mile)	Change in Population (2000-2010)	Population Percent Change (2000-2010)
Indiana:					
Dearborn	**No**	**50,047**	**0.16**	**3,702**	**8**
Franklin	No	23,087	0.06	866	4
Ohio	No	6,128	0.07	492	9
Kentucky:					

Boone	**No**	**118,811**	**0.46**	**31,811**	**37**
Bracken	No	8,488	0.04	211	3
Campbell	**No**	**90,336**	**0.57**	**1,680**	**2**
Gallatin	No	8,589	0.08	705	9
Grant	No	24,662	0.09	2,115	9
Kenton	**No**	**159,720**	**0.97**	**8,032**	**5**
Pendleton	No	14,877	0.05	389	3
Ohio:					
Brown	No	44,846	0.09	2,263	5
Butler	**Yes**	**368,130**	**0.78**	**34,447**	**10**
Clermont	**Yes**	**197,363**	**0.43**	**18,733**	**10**
Clinton	**Yes**	**42,040**	**0.10**	**1,378**	**3**
Hamilton	**Yes**	**802,374**	**1.94**	**-41,916**	**-5**
Warren	**Yes**	**212,693**	**0.52**	**52,006**	**32**
Area-wide		2,172,191	0.45	116,914	6

*Counties that EPA intends to designate as nonattainment are shown in bold.
Sources: U.S. Census Bureau population estimates for 2010 as of August 4, 2011 (http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_PL_GCTPL2.STO5&prodType=table)

Indiana:
For Indiana, the population data shows that the populations are smaller than the counties in Ohio and the larger counties in Kentucky, but Dearborn County is showing a moderate population implying moderate population-related VOC and NOx emissions. In addition, the population change rate in Dearborn County exceeds the population change rate for the entire Cincinnati-Middletown-Wilmington, OH-KY-IN area, implying that the population-related emission contribution from this county is increasing relative to those from other counties in the Cincinnati-Middletown-Wilmington, OH-KY-IN area. Ohio County, Indiana population change rate increased from 2000-2011, however, the county's 2010 population is low compared to the CSA total population.

Kentucky:
For Kentucky, Boone, Campbell, and Kenton have relatively high populations and population densities when compared to the rest of the CSA. Bracken, Gallatin, Grant and Pendleton are smaller when compared to the counties included in the non-attainment recommendation. Boone County at 37 percent and Warren County at 32 percent had the highest percentage of population growth for any of the counties in the listed as part of the Cincinnati-Middletown-Wilmington CSA. Other counties in this CSA did not have as large of a population percentage change with the growth rates ranging from a 2 to 10 percent increase. Hamilton County population decreased by 5 percent from 2000-2010.

Ohio:
For Ohio, the population data show that Butler, Clermont, Hamilton, and Warren Counties have relatively high populations and population densities. This implies that the population-related VOC and NOx emissions in these counties are relatively high. In addition, the population change rates in Butler, Clermont, and Warren Counties exceed the population change rate for the entire Cincinnati-Middletown-Wilmington, OH-KY-IN area, implying that the population-related emission contributions

from these counties are increasing relative to those from other counties in the Cincinnati-Middletown-Wilmington, OH-KY-IN area.

Traffic VMT data and commuting patterns

EPA evaluated the total VMT for each county in the Area. In combination with the population/population density data and the location of main transportation arteries (see above), this information helps identify the probable location of non-point source emissions. A county with high VMT is generally an integral part of an urban area and indicates the presence of motor vehicle emissions that may contribute to ozone formation that contributes to nonattainment in the area. Rapid population or VMT growth in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that the associated area source and mobile source emissions may be appropriate to include in the nonattainment area. Table 6 includes the total 2008 VMT along with state recommendations.

Table 6. Traffic VMT Data.

County	State Recommended Nonattainment?	2008 VMT (million miles)
Indiana		
Dearborn, IN	**Yes**	**904**
Franklin, IN	No	316
Ohio, IN	No	63
Kentucky		
Boone, KY	**No**	**1,095**
Bracken, KY	No	89
Campbell, KY	**No**	**1,005**
Gallatin, KY	No	278
Grant, KY	No	432
Kenton, KY	**No**	**1,669**
Pendleton, KY	No	182
Ohio		
Brown, OH	No	413
Butler, OH	**Yes**	**2,469**
Clermont, OH	**Yes**	

		1,464
Clinton, OH	**Yes**	**655**
Hamilton, OH	**Yes**	**7,391**
Warren, OH	**Yes**	**1,640**
	Areawide:	20,063

*Counties that EPA intends to designate as nonattainment are shown in bold.
* MOBILE model VMTs are those inputs into the NEI version 1.5.

For Indiana, the VMT data show that VMT levels in Dearborn County are a significant portion of the total VMT for the Cincinnati-Middletown-Wilmington, OH-KY-IN CSA.

For Kentucky, the VMT data show that VMT levels in Boone, Campbell, and Kenton Counties are larger than those in Bracken, Gallatin, Grant, and Pendleton Counties and, accumulatively, are a large portion of the total VMT for the Cincinnati-Middletown-Wilmington, OH-KY-IN CSA.

For Ohio, the VMT data show that VMT levels in Butler, Clermont, Hamilton, and Warren Counties are higher than those in Brown and Clinton Counties and, accumulatively, are a large portion of the total VMT for the Cincinnati-Middletown-Wilmington, OH-KY-IN CSA.

Factor 3: Meteorology (weather/transport patterns)

For this factor, EPA analyzed 30-years of National Weather Service (NWS) wind speed and wind direction data collected at the Covington/Greater Cincinnati Airport (NWS Station 93814) to help determine transport patterns and source contributions. EPA assessed wind direction and speed for the 2008-2010 "ozone season" (March through October) in the Cincinnati-Middletown-Wilmington, OH-KY-IN CSA. These analyses were conducted to better understand the fate and transport of precursor emissions contributing to ozone formation. EPA's analysis of the NWS data indicate predominate south-southwest and west-southwest component for the Cincinnati-Middletown-Wilmington, OH-KY-IN CSA.

Factor 4: Geography/topography (mountain ranges or other air basin boundaries)

The geography/topography analysis evaluates the physical features of the land that might affect the airshed and, therefore, the distribution of ozone over the Area.

The Cincinnati-Middletown-Wilmington, OH-KY-IN Area does not have any geographical or topographical barriers significantly limiting air pollution transport within its air shed. Therefore, this factor did not play a significant role in this evaluation.

Factor 5: Jurisdictional boundaries

Once we identified the general areas we anticipated we would recommend in the nonattainment area, we then considered existing jurisdictional boundaries for the purposes of providing a clearly defined legal boundary and to help identify the areas appropriate for carrying out the air quality planning and enforcement functions for nonattainment areas. Examples of jurisdictional boundaries include existing/prior nonattainment area boundaries for ozone or other urban-scale pollutants, county lines, air district boundaries, township boundaries, area covered by a MPOs, state lines, Reservation boundaries, and urban growth boundary. Where existing jurisdictional boundaries were not adequate or appropriate to describe the nonattainment area, other clearly defined and permanent landmarks or geographic coordinates were considered.

The Cincinnati-Middletown-Wilmington, OH-KY-IN Area has previously established nonattainment boundaries associated with the both the 1-hour ozone and 1997 8-hour ozone NAAQS. The Cincinnati nonattainment boundary for the 1-hour ozone NAAQS included Boone, Campbell and Kenton Counties in their entireties in Kentucky; Butler, Clermont, Hamilton and Warren Counties in their entireties in Ohio. Whereas the Cincinnati nonattainment boundary for the 1997 8-hour ozone NAAQS included Boone, Campbell and Kenton Counties in their entireties in Kentucky, Butler, Clermont, Clinton, Hamilton and Warren Counties in their entireties in Ohio, and a portion of Dearborn County in Indiana. Kentucky and Indiana have recommended a different boundary for the 2008 ozone NAAQS for their portion of this Area. Ohio recommended the same as the previous boundary for their portion of this Area.

Conclusion

Table 7 summarizes which factors discussed above support the inclusion of each Ohio county in the preliminary nonattainment area for the 2008 ozone NAAQS. Note that Table 7 covers all Ohio counties in the Cincinnati-Middletown-Wilmington, OH-KY-IN CSA, but that not all of these counties are included in the preliminary nonattainment area for the 2008 ozone NAAQS.

Table 7. Factors Supporting Inclusion of Ohio Counties in the Cincinnati-Middletown-Wilmington, OH-KY-IN Ozone Nonattainment Area for the 2008 Ozone NAAQS

County	Violates Ozone Standard	High Emissions Population and Traffic Levels	Meteorology Favors Emissions Impact on Violating Monitor	Geography Favors High Ozone or Emissions Impact on Violating Monitor	Jurisdictional Basis for Inclusion In Nonattainment Area
Indiana					
Dearborn - Partial		**X**	**X**	**NA**	**X**
Franklin			X	NA	
Ohio			X	NA	
Kentucky					
Boone		**X**	**X**	**NA**	**X**
Bracken			X	NA	

Campbell		**X**	**X**	**NA**	**X**
Gallatin			X	NA	
Grant			X	NA	
Kenton		**X**	**X**	**NA**	**X**
Pendleton			X	NA	
Ohio					
Brown			X	NA	
Butler	**X**	**X**	**X**	**NA**	**X**
Clermont		**X**	**X**	**NA**	**X**
Clinton			**X**	**NA**	**X**
Hamilton	**X**	**X**	**X**	**NA**	**X**
Warren	**X**	**X**	**X**	**NA**	**X**

*Counties that EPA intends to designate as nonattainment are shown in bold.

Indiana:
For Indiana as shown in the table above, Franklin and Ohio Counties hardly contribute to the recommended Cincinnati-Middletown-Wilmington, OH-KY-IN ozone nonattainment area the 2008 ozone NAAQS other than proximity. The areas are mostly rural with no point source emissions and minimal amounts of nonpoint source and mobile emissions. The areas were not included in the Cincinnati ozone nonattainment area for the 1997 ozone NAAQS. Franklin and Ohio Counties are again recommended to be excluded from the proposed nonattainment area.

Lawrence Township in Dearborn County contains the American Electric Power (AEP)- Tanner's Creek Generating Station that has high NO_x and VOC emissions. Dearborn County also has the potential to have moderate mobile source and population related VOC and NO_x emissions. The inclusion on Lawrence Township would be consistent with the Cincinnati ozone nonattainment area for the 1997 ozone NAAQS. Lawrence Township contains the only major stationary source and accounts for the majority of the emissions for the area. The remainder of the county is fairly rural and is similar to Franklin and Ohio Counties. Therefore Lawrence Township in Dearborn County Indiana is a sufficient portion of Indiana to include in the preliminary Cincinnati-Middletown-Wilmington, OH-KY-IN ozone nonattainment area for the 2008 ozone NAAQS.

Kentucky:
For Kentucky based on the assessment of factors described above, EPA has preliminarily concluded that the following counties, Boone, Campbell and Kenton, should be included as part of the Cincinnati-Middletown-Wilmington nonattainment area because they are contributing to a violation in a nearby area. Source category emissions data indicate that mobile sources and area sources are not the primary contributors of NOx to ozone formation in the Cincinnati-Middletown -Wilmington Area. The analysis reveals that mobile emissions make up approximately 28 percent of the total NOx in the Cincinnati-Middletown-Wilmington Area, and area sources make up approximately 12 percent of the total NOx emissions in the Cincinnati-Middletown -Wilmington Area. The total of mobile sources and area sources make up approximately 40 percent of the total NOx emissions in the Cincinnati area. However, VOC emissions in Cincinnati-Middletown -Wilmington Area are high for area and mobile sources. The analysis reveals that mobile emissions make up approximately 37 percent of the total VOC in the Cincinnati-Middletown-Wilmington Area, and area sources make up approximately 38 percent of the total VOC emissions in the Cincinnati area. The total of mobile sources and area sources make up approximately 75 percent of the total VOC emissions in the Cincinnati-Middletown-Wilmington Area, area. Point sources in the area make up approximately 50 percent of the total NOx emissions and approximatley10 percent of the total VOC emissions in the Cincinnati-Middletown-Wilmington Area.

Boone, Campbell, and Kenton counties' NOx and VOC precursor emissions, high VMT along with population growth suggest that these counties should be considered for inclusion in the Cincinnati-Middletown-Wilmington Area.

Ohio:
For Ohio the results in the above table show that Delaware, Fairfield, Franklin and Licking Counties should be included in the Columbus, OH ozone nonattainment area on the bases of a violation of the 2008 ozone NAAQS and/or emissions that contribute to the violation of the 2008 ozone NAAQS.

The issue is less clear for Knox and Madison Counties due to the lack of a monitored ozone standard violation and relatively low VOC and NOx emissions, populations, and VMT in these counties. The only bases for including these counties in the intended, preliminary ozone nonattainment area for the 2008 ozone NAAQS are the facts that the State of Ohio has recommended their inclusion in the nonattainment area and that these counties were included in the nonattainment area for the 2007 ozone NAAQS. Based on these facts, we agree with the State of Ohio that these counties should also be included in the Columbus, OH nonattainment area.

With the exception of those counties that comprise the 1997 8-hour ozone boundary for this Area, we believe that the remainder of the counties in the CSA do not contribute to the violations at the monitors in this Area and therefore are not necessary be considered as part of the nonattainment area.