



State of Ohio Environmental Protection Agency

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**MAR 09 2009**

Ms. Lynn Buhl  
Regional Administrator  
U.S. EPA, Region 5  
77 West Jackson Blvd.  
Chicago, Illinois 60604

Re: Ohio's Recommended Nonattainment Areas for the 2008 8-hour Ozone Standard

Dear Administrator Buhl:

I am writing to submit Ohio's recommendations for ozone nonattainment areas within Ohio for the revised 2008 8-hour standard. Ambient data for the period 2006-2008 have been evaluated to determine which areas within the State are not attaining the revised standard.

The designation recommendations are based on the most current ozone monitoring data along with the December 4, 2008 USEPA guidance, "Area Designations for the 2008 Revised Ozone National Ambient Air Quality Standards." This guidance recommends states use the nine-factor analysis for designations taking into consideration the Core Based Statistical Area (CBSA) or Combined Statistical Area (which includes two or more adjacent CBSA's) associated with the violating monitor(s). Under this guidance, these areas would serve as the starting point or "presumptive" boundary for evaluating each nonattainment area. Ohio EPA is using this approach in our recommendations. We believe that the attached documentation, including emission and air quality data, population density and degree of urbanization, traffic and commuting patterns, and growth rates and patterns, supports the recommended status for each particular area.

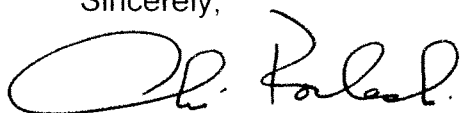
The counties within and adjacent to the existing nonattainment boundaries were evaluated to determine what, if any, adjustments needed to be made to the recommendations. Areas previously designated attainment were evaluated in accordance with the current ozone boundary determination guidance. All 88 counties in the State were evaluated. Below are the current recommended ozone nonattainment areas and the identification of the specific counties which should be included in the area designations:

Ohio EPA held a public hearing on these recommendations on February 12, 2009. Comments were minimal during the public comment period.

I appreciate the opportunity to provide these initial recommendations and will work cooperatively with U.S. EPA Region 5 staff as we both review new ambient data and U.S. EPA prepares their comments which are due 120 days prior to promulgation of the actual designations. If you have any questions concerning this submittal, please feel free to contact Jennifer Hunter of the Division of Air Pollution Control at (614) 644-3696.

Please call if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Chris Korleski", written over a large, loopy "C".

Chris Korleski  
Director

Enclosures

Xc: Jennifer Hunter, DAPC





## SUMMARY OF OHIO'S PROPOSED RECOMMENDATIONS

### 8-hour Ozone Nonattainment Designations

### 2008 National Ambient Air Quality Standard

#### INTRODUCTION

On March 12, 2008, the U.S. Environmental Protection Agency (USEPA) promulgated a revision to the ozone NAAQS which obligated the State of Ohio to designate the attainment status of all areas. USEPA revised the NAAQS by changing the level of the primary and secondary standards from 0.08 ppm to 0.075 ppm with an 8-hour averaging time. The previous 8-hour ozone NAAQS was promulgated in 1997, but legal delays caused the ozone recommendation process to extend until July 2003.

The Clean Air Act (CAA) allows each state to recommend initial designations of the attainment status for all areas of the state. Specifically, Section 107(d)(1) of the CAA allows each state an opportunity to recommend attainment/unclassifiable and nonattainment areas including appropriate boundaries. USEPA can accept the recommendations or make modifications as it deems necessary.

The designation recommendations are based on the most current ozone monitoring data (2006-2008) along with the December 4, 2008 USEPA guidance, "Area Designations for the 2008 Revised Ozone National Ambient Air Quality Standards." This guidance recommends states use the nine-factor analysis for designations taking into consideration the Core Based Statistical Area (CBSA) or Combined Statistical Area (which includes two or more adjacent CBSA's) associated with the violating monitor(s). Under this guidance, these areas would serve as the starting point or "presumptive" boundary for evaluating each nonattainment area. Ohio EPA is using this approach in our recommendation.

#### SUMMARY OF RECOMMENDATIONS

Based on the 2006-2008 monitoring data, eleven distinct areas in Ohio violate the 2008 8-hour ozone National Ambient Air Quality Standard (NAAQS) as summarized in the table below.

<b>Eight-Hour Ozone Designation Area</b>	<b>Metropolitan Statistical Area (MSA) and, if applicable, Combined Statistical Area (CSA)</b>	<b>Current Nonattainment Designation Counties for 1997 Standard</b>	<b>Ohio EPA Recommended Nonattainment Counties for 2008 Standard</b>
<b>(A) Canton-Massillon, OH</b>	Stark Carroll		Stark
<b>(B) Cincinnati-Middletown, OH-KY-IN<sup>1</sup></b>	Brown Butler Clermont Clinton Hamilton Warren  Indiana: Dearborn, Franklin and Ohio  Kentucky: Boone, Bracken, Campbell, Gallatin, Grant, Kenton and Pendleton	Butler Clermont Clinton Hamilton Warren	Butler Clermont Clinton Hamilton Warren
<b>(C) Cleveland-Akron-Lorain, OH<sup>2</sup></b>	Ashtabula Cuyahoga Geauga Lake Lorain Medina Portage Summit	Ashtabula Cuyahoga Geauga Lake Lorain Medina Portage Summit	Ashtabula Cuyahoga Geauga Lake Lorain Medina Portage Summit
<b>(D) Columbus, OH<sup>2</sup></b>	Delaware Fairfield Fayette Franklin Knox Licking Madison Marion Morrow Pickaway Ross Union	Delaware Fairfield Franklin Knox Licking Madison	Delaware Fairfield Franklin Knox Licking Madison
<b>(E) Dayton-Springfield, OH</b>	Champaign Clark Darke Greene Miami Montgomery Preble		Clark Greene Montgomery

<b>(F) Huntington-Ashland, WV-KY-OH</b>	Lawrence  Kentucky: Boyd and Greenup  West Virginia: Cabell and Wayne		Lawrence
<b>(G) Lima, OH</b>	Allen Auglaize Van Wert		
<b>(H) Parkersburg-Marietta, WV-OH</b>	Washington  West Virginia: Pleasants, Wirt and Wood		Washington
<b>(I) Steubenville-Weirton, OH-WV</b>	Jefferson  West Virginia: Brooke and Hancock		Jefferson
<b>(J) Toledo, OH</b>	Fulton Lucas Ottawa Wood		
<b>(K) Wheeling, WV-OH</b>	Belmont  West Virginia: Marshall and Ohio		Belmont
<b>(L) Youngstown-Warren-Sharon, OH-PA</b>	Columbiana Mahoning Trumbull  Pennsylvania: Mercer		Mahoning Trumbull

The remaining counties in the State of Ohio are recommended for designation as attainment/unclassifiable. In comparison to Ohio EPA's current recommendations for the 2008 standard, the following differences are outlined from the original designations finalized for the 1997 standard:

- Huntington-Ashland, WV-KY-OH: Lawrence County is recommended for designation as nonattainment for the 2008 standard based on violations of monitoring data. Lawrence County was originally designated attainment under the 1997 standard.
- Lima, OH: Allen County is recommended for designation as attainment for the 2008 standard based on monitoring data. Allen County was originally designated nonattainment under the 1997 standard.
- Toledo, OH: Lucas and Wood Counties are recommended for designation as attainment for the 2008 standard based on monitoring data. Lucas and Wood Counties were originally designated nonattainment under the 1997 standard.
- Youngstown-Warren-Sharon, OH-PA: Columbiana County is recommended for designation as attainment for the 2008 standard based on a review of the nine factors. There is no monitor in Columbiana County. Columbiana County was originally designated nonattainment under the 1997 standard.
- Dayton-Springfield, OH: Miami County is recommended for designation as attainment for the 2008 standard based on a review of the nine factors. The monitor in Miami County is currently attaining the revised standard. Miami County was originally designated nonattainment under the 1997 standard.

All other areas where designations were considered for the 2008 standard are consistent with the final original designations for the 1997 standard.

Pursuant to the establishment of any new NAAQS, USEPA requests states submit recommendations twelve months after promulgation. Therefore, Ohio's recommendation for the 2008 8-hour ozone NAAQS will be submitted before March 12, 2009.



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State of Ohio Environmental Protection Agency  
Division of Air Pollution Control

**Ohio's**

**2008 Eight-Hour Ozone  
Recommended Designations**

Prepared by:  
The Ohio Environmental Protection Agency  
Division of Air Pollution Control

**February 2009**

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## **Acknowledgement**

The Ohio EPA, Division of Air Pollution Control would like to express appreciation for the extensive efforts, guidance and expertise provided by the Ohio Department of Development, Office of Strategic Research staff, especially Ed Simmons. The level of detailed County-specific information provided in this document would not have been possible without Mr. Simmons' efforts and timely assistance. Appreciation is also extended to Mark Janssen at Midwest RPO for his assistance with the emissions data included in this submittal.

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- F.** Physiographic, elevation and land cover maps
- G.** Jurisdiction boundary maps
- H.** County profiles and statewide informational maps
- I.** Public notice, public hearing, and response to comments  
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<b>Eight-Hour Ozone Designation Area</b>	<b>Metropolitan Statistical Area (MSA) and, if applicable, Combined Statistical Area (CSA)</b>	<b>Current Nonattainment Designation Counties for 1997 Standard</b>	<b>Ohio EPA Recommended Nonattainment Counties for 2008 Standard</b>
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<b>(E) Dayton-Springfield, OH</b>	Champaign Clark Darke Greene Miami Montgomery Preble		Clark Greene Montgomery

<sup>1</sup> Currently attaining the 1997 standard. Ohio EPA is preparing a redesignation request.

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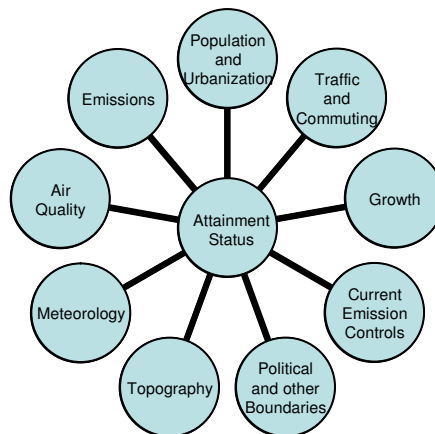
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<b>(F) Huntington-Ashland, WV- KY-OH</b>	Lawrence  Kentucky: Boyd and Greenup  West Virginia: Cabell and Wayne		Lawrence
<b>(G) Lima, OH</b>	Allen Auglaize Van Wert		
<b>(H) Parkersburg-Marietta, WV- OH</b>	Washington  West Virginia: Pleasants, Wirt and Wood		Washington
<b>(I) Steubenville-Weirton, OH- WV</b>	Jefferson  West Virginia: Brooke and Hancock		Jefferson
<b>(J) Toledo, OH</b>	Fulton Lucas Ottawa Wood		
<b>(K) Wheeling, WV-OH</b>	Belmont  West Virginia: Marshall and Ohio		Belmont
<b>(L) Youngstown-Warren- Sharon, OH-PA</b>	Columbiana Mahoning Trumbull  Pennsylvania: Mercer		Mahoning Trumbull

## An Explanation of Ohio EPA's Nine-Factor Analysis

U.S. EPA guidance (December 4, 2008) states that each area evaluated for attainment should be assessed on a case-by-case basis considering the metropolitan statistical area (MSA) and combined statistical area (CSA) (Appendix G). A nonattainment area must include not only the area that is violating the standard, but also nearby areas that contribute to the violation. Boundary recommendations should be based on an evaluation of the nine factors used in the designation process, as well as any other relevant factors or circumstances specific to a particular area.

The nine designation factors used to evaluate the attainment status of an area for the eight-hour ozone NAAQS are:

- Air quality
- Emissions
- Population and urbanization
- Traffic & commuting
- Growth
- Current emission controls
- Political and other boundaries
- Topography
- Meteorology



Ohio EPA has included all of the nine factors for each area; however, two are combined, population/urbanization and growth. Meteorology information is not included with each respective area's discussion but is provided as one document in Appendix E.

### **Factor 1: Air quality data**

The air quality analysis looks at the three-year average of the annual fourth-highest daily maximum eight-hour average ozone values for each County based on data for 2006 to 2008. The eight-hour revised standard is 0.075 ppm. Counties without monitors are not listed. Data is retrieved from the U.S. EPA's Air Quality System (AQS) at <http://www.epa.gov/ttn/airs/airsaqs/> and is presented in ppb in all tables<sup>3</sup>. The three-year averages for monitors that are violating the standard are highlighted in red. Ohio EPA operates a large network of federally approved monitors primarily in urbanized areas and areas with expected maximum concentrations of ozone. Monitoring sites that have less than 75 percent capture in any one year or less than 90 percent capture for the 2006-2008 period are highlighted in yellow and green, respectively<sup>4</sup>. AQS data retrieval sheets and Ohio EPA summary sheets for 2006, 2007, and 2008 are

<sup>3</sup> Please note that the standard is measured in ppm while the commonly used unit is ppb. For the remainder of this document, ppb will be used.

<sup>4</sup> Not all data has been reported for 2008. Capture percentages will increase and be updated, along with any changes to the actual emissions data, upon entry into the AQS.

provided in Appendices A and B, respectively. The State and local air monitoring stations (SLAMS) data certification report for calendar year 2008 is provided in Appendix C.

## **Factor 2: Emissions data**

The analysis for factor 2 looks at emissions of volatile organic compounds (VOC) and nitrogen oxides (NO<sub>x</sub>). Emissions data from 2005 and 2009 are derived from Mid-West RPO and are contained in Appendix D.

The data are for 2005 (base year) and 2009 (attainment year for 1997 standard). The Counties in **bold** font are currently designated as nonattainment.

Tables presented under factor 2 show 2005 and 2009 VOC and NO<sub>x</sub> emissions for each County. Also included in this factor are tables showing the major employers for each County.

Emissions data indicate the potential for a County to contribute to observed violations, often making the emissions data one of the most important factors in assessing a County to be designated as nonattainment for ozone.

## **Factor 3: Population and projected growth**

Tables presented under factor 3 show the past, present, and projected population for each County. Population data and expected growth indicate the likelihood of population-based emissions that may contribute to violations. The Counties in **bold** are currently designated as nonattainment. The population data are provided by the Ohio Department of Development, Office of Strategic Research <http://www.odod.state.oh.us/research/>. Appendix H provides population data for all 88 Counties in Ohio.

## **Factor 4: Traffic and commuting patterns**

The traffic and commuting analysis looks at the number of commuters in each County who drive to another County, the number of total commuters in each County who commute to other Counties, as well as the estimated daily vehicle miles traveled (kDVMT) for each County in thousands of miles. Commuting information is provided by the Ohio Department of Development, Office of Strategic Research <http://www.odod.state.oh.us/research/>, and the kDVMT data estimates are provided by the Ohio Department of Transportation, Office of Technical Services. Appendix H provides traffic and commuting data for all 88 Counties in Ohio.

A County with a significant amount of traffic commuting to an area with a violating monitor is generally an integral part of the area, and would be an appropriate part of the domain of some mobile source strategies; thus, it may warrant inclusion in the nonattainment area. In this document, a County that has a high level of

commuting into a County with a violating monitor is identified as a contributing County. Ohio EPA also took the level of emissions, population, and growth into consideration for determining whether a County is contributing.

### **Factor 5: Meteorology**

The meteorology review looks at wind data gathered at stations in and near Ohio by the National Weather Service (NWS). Figures presented for factor 5 indicate the annual average winds for each NWS site. These data may also suggest that emissions in some directions relative to the violation may be more prone to contribute than emissions in other directions. A discussion of relevant meteorological factors is discussed in Appendix E rather than for the individual areas.

### **Factor 6: Topography and land use/land cover**

The topography and land use/land cover analysis looks at physical features and land use or cover that might have an effect on the airshed, and therefore, the distribution of pollutants over an area. Ohio does not have significant topographic features that significantly influence the regional transport of pollutants within the multi-County study areas. Tables presented under factor 6 show the land use/land cover for each County in percentage of urban (residential, commercial, industrial, transportation, grasses), cropland, pasture, forest, and wetlands (all types). Maps for this section are provided in Appendix F. The sources for the information provided in this section are:

Ohio EPA, Division of Surface Water

<ftp://ftp-gis.epa.state.oh.us/gisdepot/gisdata/dsw/LandCover/Statewide Land Cover DSW pub 2005.pdf>

Ohio Department of Natural Resources, Division of Soil and Water

<http://www.dnr.state.oh.us/default/soils/surveysupplements/tabid/17839/Default.aspx>

Ohio Department of Development, Office of Strategic Research

<http://www.odod.state.oh.us/research/files/s0.htm>

### **Factor 7: Jurisdictional boundaries**

The analysis of jurisdictional boundaries looks at the planning and organizational structure of an area to determine if the implementation of controls in a potential nonattainment area can be carried out in a cohesive manner. MSA and CSA boundaries were considered for these recommendations. A map showing the MSAs and CSAs in Ohio and an MPO map are provided in Appendix G. For information on the metropolitan planning organizations referenced in this document, please see:

<http://www.odotnet.net/Planning/ACCESS%20OHIO/Final/AppendixB.pdf>.

## **Factor 8: Level of control of emission sources**

The level of control analysis looks at what controls are currently implemented in each area. Emission reductions which have recently occurred or are expected to occur in the near future affect both the current ozone design values, the potential future design values, and, ultimately, attainment of the standards. In Ohio, the emission reduction programs which have had or will have the greatest potential impact on ozone concentrations are:

### Statewide Control Programs:

- Federal Motor Vehicle Control Program
- On-road and off-road diesel control programs
- NO<sub>x</sub> SIP Call rules (emissions trading program) for electric generating units (EGUs) and internal combustion engines (ICEs)
- Clean Air Interstate Rule (CAIR)
- RACT rules for various VOC source categories
- Portable Fuel Containers requirements
- Architectural and Industrial Maintenance (AIM) Coatings rules
- Consumer Products rules
- Aerosol Coatings rules
- Ohio Clean Diesel Initiative
- USEPA and State enforcement activities at major facilities

### Additional Control Programs in the Cleveland-Akron-Lorain 1997 Ozone Nonattainment Designation Area (eight Counties):

- NO<sub>x</sub> Reasonably Available Control Technology (RACT) rules
- RACT rules for additional VOC source categories
- Motor Vehicle Inspection and Maintenance Program (E-Check)

Of the above-mentioned control programs, the NO<sub>x</sub> SIP Call rules and the CAIR program have had and will continue to cause the greatest reductions in NO<sub>x</sub> emissions throughout the State. Huge reductions in NO<sub>x</sub> emissions have occurred at EGUs due to the implementation of these rules. Large reductions in VOC emissions are expected with the full implementation of the rules for AIM coatings, consumer products, aerosol coatings and portable fuel containers, as well as the ongoing implementation of the Federal Motor Vehicle Control Program.

On March 10, 2005, the USEPA announced CAIR. On July 11, 2008, the U.S. Court of Appeals for D.C. Circuit vacated USEPA's CAIR rule. The reductions in NO<sub>x</sub> and SO<sub>2</sub> emissions associated with this rule are a key part of Ohio's attainment demonstrations for ozone and PM<sub>2.5</sub> and the reasonable progress determinations for regional haze. On December 23, 2008, the U.S. Court of Appeals for D.C. Circuit issued its mandate deciding to remand CAIR back to USEPA without vacatur. This decision allows implementation of CAIR, and the benefit of CAIR emission reductions, while USEPA continues work to address the Court's prior opinions contained in the original vacatur.

CAIR will bring about large reductions in emissions of NO<sub>x</sub>. In Ohio, all of the major utilities located along the Ohio River Valley (Miami Fort, Zimmer (previously controlled), Killen, Stuart, Gavin, Keiger Creek, Burger, Cardinal and Sammis) and the largest units within the interior of Ohio (Muskingum River and Conesville) will be controlling NO<sub>x</sub>. The units along Lake Erie are partially controlled for NO<sub>x</sub>. There are similar EGU control programs in all of the states bordering Ohio as well. These regional and State control programs are expected to further reduce future ozone concentrations Statewide. Throughout this document you will see significant reductions of NO<sub>x</sub> between 2005 and 2009 emissions levels for counties where major utilities are located. These reductions are a result of the CAIR program. Because of these significant reductions for utilities, Ohio is not proposing recommended designations for these counties based solely on the fact of a utility being located within the county. Rather, Ohio analyzed these counties based on the nine factors as discussed in this section. Therefore, Ohio is not recommending any partial nonattainment counties based solely on the location of a utility.

Mobile source control measures (on-road and off-road) provide emission reductions proportional to the vehicle miles traveled and levels of construction and other major industrial activities. As such, areas nearest the highest reading urban/industrial ambient monitors will benefit the most from these controls, in particular the Federal Motor Vehicle Control Program. These areas, though, will continue to have the highest emission levels for these source categories.

In some cases, enforcement activities may result in VOC and/or NO<sub>x</sub> emissions reductions that could have beneficial impacts on ambient ozone concentrations. However, the potential reductions are not quantified, nor are the ambient impacts estimated. There are no instances we can identify where reductions in emissions from enforcement activities would result in an area becoming an attainment area for the ozone NAAQS.

Another area where Ohio is placing significant effort is in clean diesel programs. These programs can accelerate the turnover of the dirtiest portions of the diesel fleet by several years by controlling emissions from units that otherwise would not be replaced for several years. The benefits of these programs can be magnified when specific fleets are targeted which are located and operate primarily in the highest monitored areas. These programs will not result in an area becoming insignificant for emissions contributing to high ozone concentrations, but they are valuable nonetheless.



**Factor Analysis for  
Current and Recommended  
Ozone Nonattainment Counties  
in Ohio**

## **Canton-Massillon, OH**

**Current** County nonattainment: none

**Current nonattainment Counties**

***Recommended*** County nonattainment: Stark

 Recommended nonattainment Counties



## **Discussion**


There is one County in this existing ozone designation area, Stark County. Stark County was designated nonattainment for the 1997 ozone standard and then redesignated as attainment in June of 2007. With respect to the new standard, Ohio EPA recommends designating Stark County as nonattainment for the Canton-Massillon area. Stark County contains three monitors, all of which are violating the revised standard. There are eight Counties that are adjacent to Stark County: Wayne, Holmes, Tuscarawas, Carroll, Columbiana, Mahoning, Summit, and Portage Counties. Columbiana and Mahoning Counties are discussed in the Youngstown-Warren section while Summit and Portage Counties are discussed in the Cleveland-Akron-Lorain section.

The three-year average of the annual fourth-highest daily maximum eight-hour average concentrations at the three sites not attaining the revised standard are identified under factor 1 below. Emissions of VOC and NO<sub>x</sub> in Stark County and the adjacent Counties are small, and future emissions are projected to decline, as identified under factor 2 below. Comparatively, emissions in all Counties adjacent to Stark County are significantly lower than Stark County emissions.

Although Carroll County is part of the MSA, Ohio EPA is recommending to exclude Carroll County, a rural upwind area with the lowest emissions of all adjacent Counties and a 2007 population of 28,156. Emissions in Carroll County are projected to decrease by approximately 10% for VOC and 8% for NO<sub>x</sub> from 2005 to 2009. The projected growth for Carroll County is minimal in number, increasing by 7,204 for a 2030 population of 35,720, compared to the 2030 projected population of Stark County, 368,900. Daily miles traveled by vehicles in Carroll County has been steadily declining. While some workers do travel to Stark County for employment purposes, the number is minimal in comparison to the number of workers in Stark County, 3.0%.

Wayne County is not part of the MSA; however, it is adjacent to Stark County. Although Wayne County does have the highest overall emissions when compared to the other counties adjacent to Stark County, Ohio EPA is not recommending inclusion of Wayne County. Emissions in Wayne County are projected to decrease by approximately 14% for VOC and 22% for NO<sub>x</sub> from 2005 to 2009. The projected 2009 emissions for Stark County are more than double the projected 2009 emissions of Wayne County. The projected growth for Wayne County is minimal in number, increasing by 23,136 for a 2030 population of 136,690, compared to the 2030 projected population of Stark County, 368,900. Daily miles traveled by vehicles in Wayne County has been steadily declining. While some workers from Wayne County do travel to Stark County for employment purposes, the number is minimal in comparison to the number of workers in Stark County, 1.0%.

## Factor 1: Air quality data



 = Exceeds standard

AQS: 8-Hour three-year average of the annual fourth-highest daily maximum (ppb)

Site Area County	Year	Highest Daily Maximum Concentrations (ppb)			
		1	2	3	4

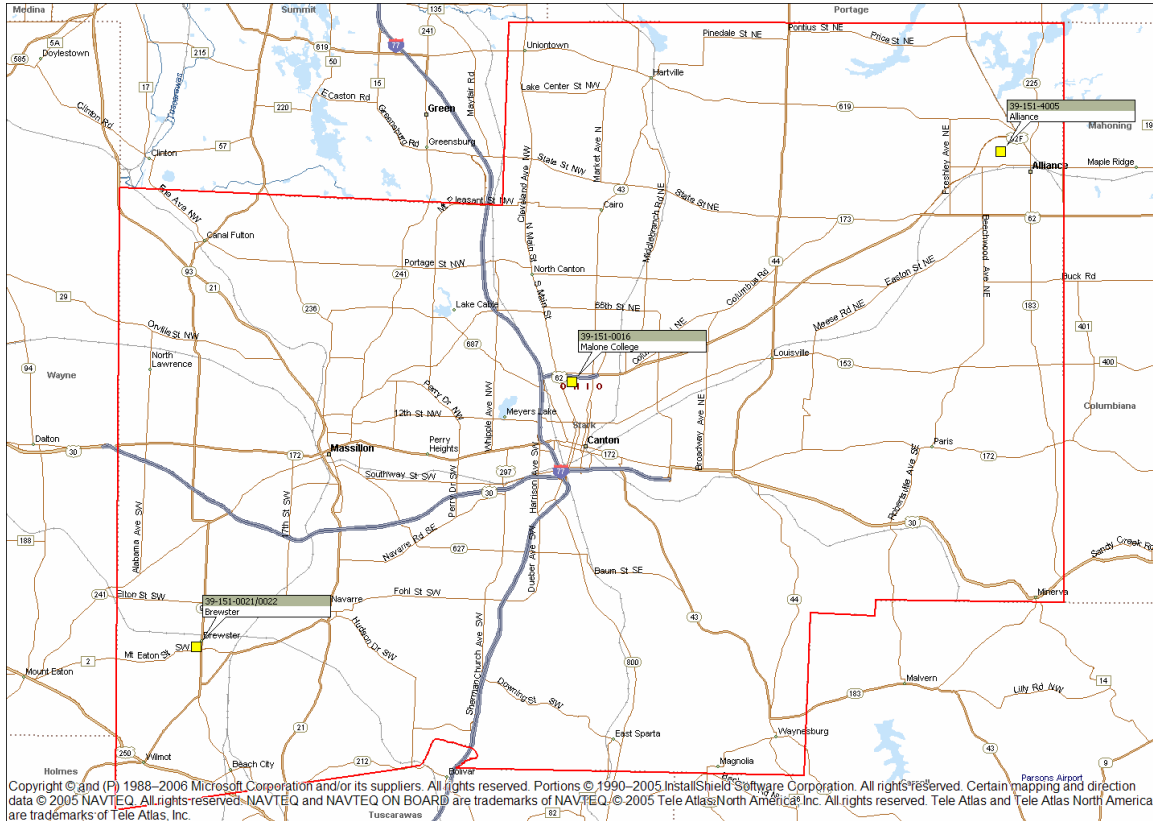
<b>39-151-0016</b> <b>Canton</b> <b>Stark Co.</b>	2006	83	81	80	78
	2007	89	87	86	84
	2008	82	80	78	77
	Avg				79.7
<b>39-151-0021, -</b> <b>0022<sup>5</sup></b> <b>Canton</b> <b>Stark Co.</b>	2006	85	81	79	79
	2007	91	87	86	85
	2008	81	79	77	76
	Avg				80.0

<b>39-151-4005</b> <b>Canton</b> <b>Stark Co.</b>	2006	82	78	75	75
	2007	98	94	88	87
	2008	79	79	77	77
	Avg				79.7

 Sites with less than 75% capture for a given year  
 Sites with less than 90% capture for the 3-year period

<sup>5</sup> Mid 2007 monitor location changed

## Stark County Ozone Monitor Locations and Site ID Numbers



### Factor 2: Emissions Data (tons per day)

2005		
County	VOC	NO <sub>x</sub>
<b>STARK</b>	<b>46.80</b>	<b>39.14</b>
Wayne	17.08	23.62
Holmes	7.33	4.52
Tuscarawas	12.98	14.34
Carroll	3.96	4.84

2009		
County	VOC	NO <sub>x</sub>
<b>STARK</b>	<b>38.26</b>	<b>30.39</b>
Wayne	14.73	18.45
Holmes	6.80	3.79
Tuscarawas	10.38	13.01
Carroll	3.58	4.44

## Major Employers

Source: Ohio Department of Development, 2007

Most of the major employers in Stark County and the surrounding Counties are in the categories of manufacturing, service and government as shown below.

### Carroll County

American Axle & Manufacturing Holding	Manufacturing
Ashi Tec Corp/Metaldyne Corp	Service
Atwood Lake Resort	Service
Carroll Health Care Center Inc	Service
Carrollton Exempted Village Bd of Ed	Government
GBS Corporation	Manufacturing
Summitville Tiles Inc	Manufacturing

### Holmes County

Case Foods Inc	Manufacturing
Collins & Aikman Corp	Manufacturing
East Holmes Local Bd of Ed	Government
Owens-Illinois Inc	Manufacturing
Pomerene Hospital	Service
Sperry & Rice Mfg Co LLC	Manufacturing
Wayne-Dalton Corp	Manufacturing
Weaver Leather Goods Inc	Manufacturing
West Holmes Local Bd of Ed	Government
Robin Industries	Manufacturing

### Stark County

Aultman Hospital	Service
Canton City Bd of Ed	Government
Fisher Food Inc	Trade
General Electric Co	Finance
Mercy Medical Center	Service
Precision Castparts Corp	Manufacturing
Republic Engineered Products	Manufacturing
Timken Co	Manufacturing
Wal-Mart Stores Inc	Trade

### Tuscarawas County

Alamo Group/Gradall Industries	Manufacturing
Allied Machine & Engineering	Manufacturing
Dover City Bd of Ed	Government
New Philadelphia City Bd of Ed	Government
Sanwa Shutter Corp/Genie Co	Manufacturing
Smurfit-Stone Container Corp	Manufacturing
Union Hospital	Service
Wal-Mart Stores Inc	Trade
Zimmer Holdings Inc	Manufacturing

## Wayne

College of Wooster	Service
Frito-Lay Inc	Manufacturing
JM Smucker Co	Manufacturing
LuK Inc	Manufacturing
State of Ohio	Government
Will-Burt Co	Manufacturing
Wooster Brush Co	Manufacturing
Wooster City Bd of Ed	Government
Wooster Community Hospital	Service
Worthington Ind/Gerstenslager Co	Manufacturing

### Factor 3: Population and Projected Growth

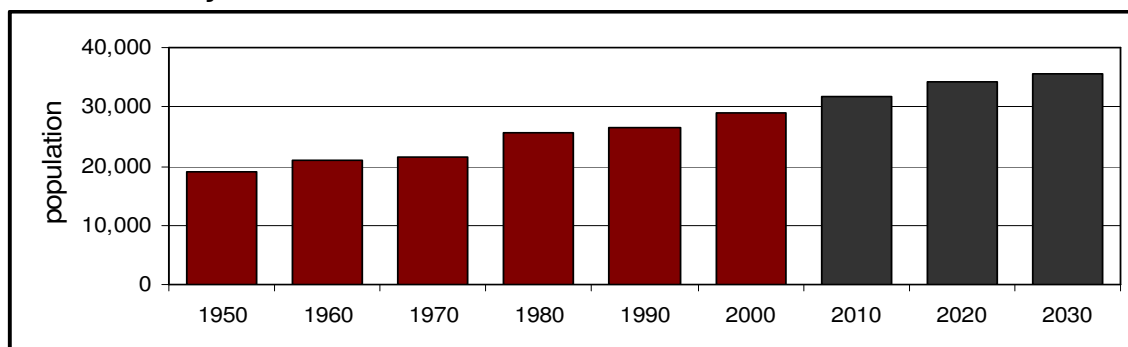
Sources: Office of Strategic Research, Ohio Department of Development  
U.S. Census Bureau Population Estimates Program 2007

The primary urban areas in Stark County are Canton, Massillon, and Alliance; in Wayne County, Wooster, Rittman and Orrville; in Holmes County, Millersburg; in Tuscarawas County, New Philadelphia, Dover, Uhrichsville and Sugarcreek; and in Carroll County, Carrollton.

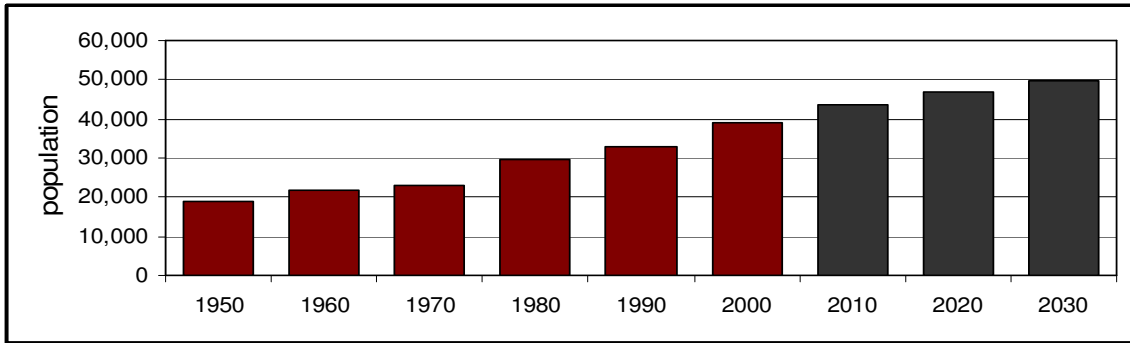
As indicated in the following table and graphs, Stark County has the highest population in this area and it is projected to steadily decrease. The population in the surrounding Counties is projected to gradually increase.

County	2004	2005	2006	2007	2010	2020	2030
Stark	380,421	380,275	380,575	378,664	376,470	372,490	368,900
Wayne	113,086	113,496	113,950	113,554	119,850	128,670	136,690
Holmes	41,165	41,424	41,574	41,369	43,440	47,010	49,690
Tuscarawas	91,956	91,791	91,766	91,398	93,160	96,080	98,220
Carroll	29,448	29,252	29,189	28,516	31,820	34,170	35,720

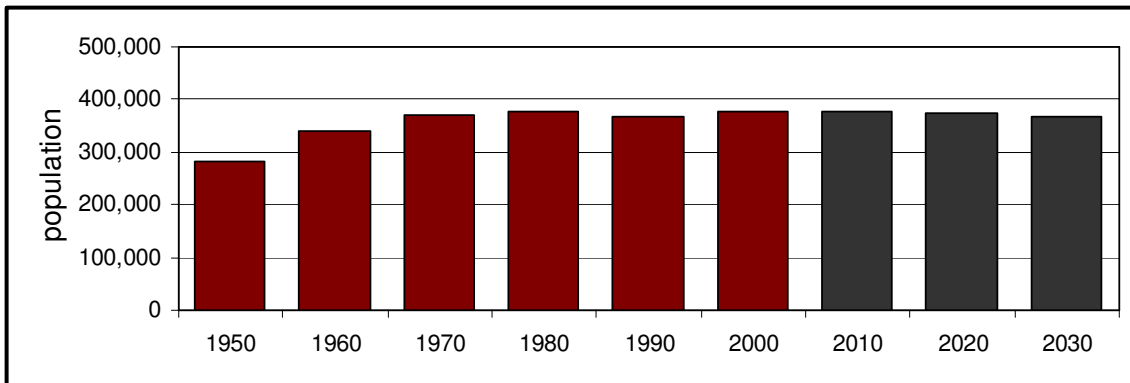
### Carroll County



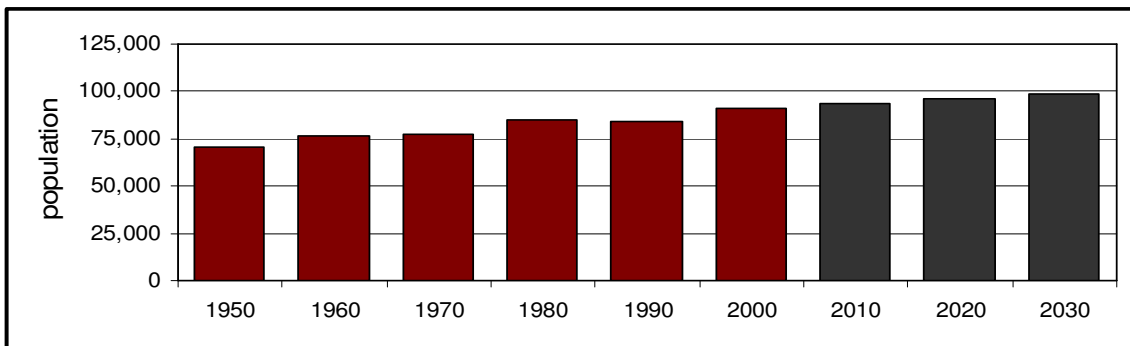
### Holmes County



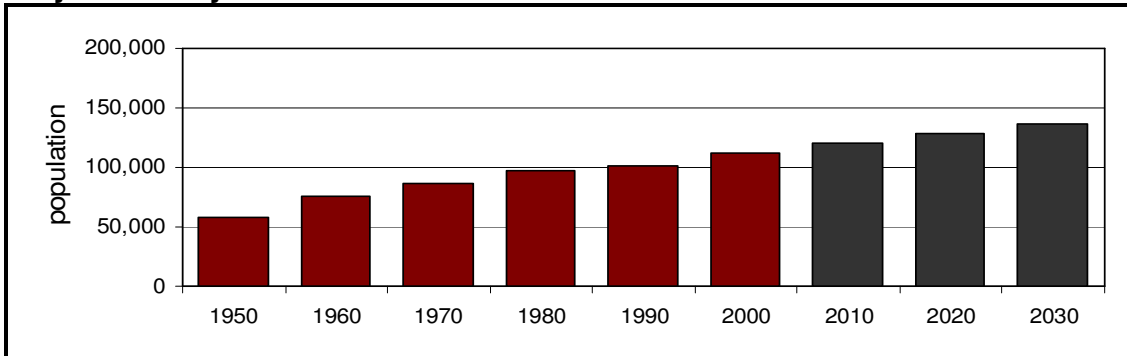
### Stark County



### Tuscarawas County



### Wayne County



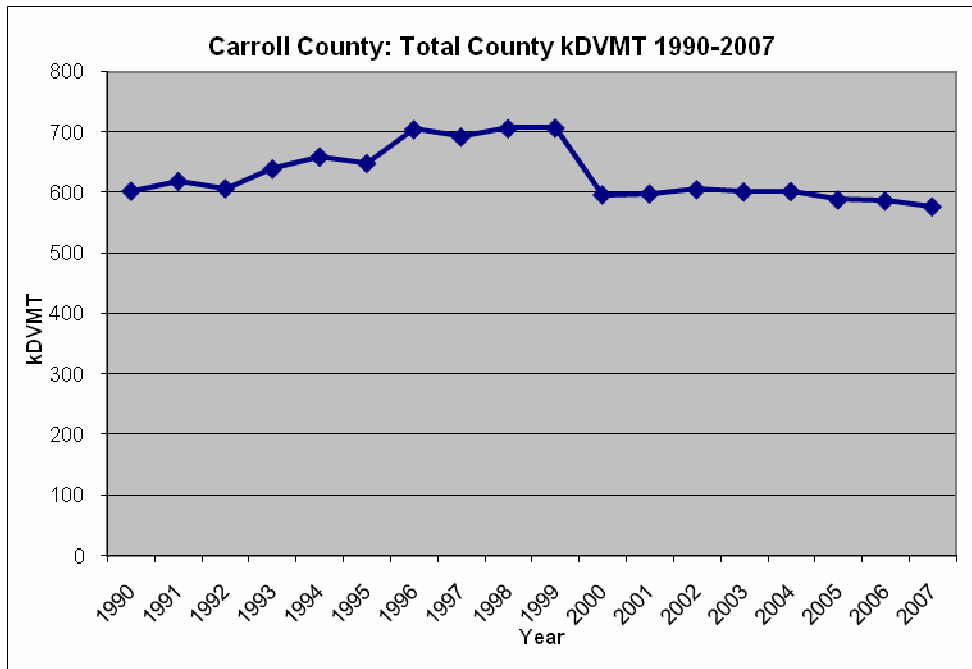


#### Factor 4: Traffic and commuting patterns

While the kDVMT in Stark County have had upward trend, the surrounding Counties have experienced a downward trend in kDVMT between 2005 and 2007, as shown in the graphs below.

##### Estimated Daily Vehicle Miles Traveled (kDVMT =in thousands)

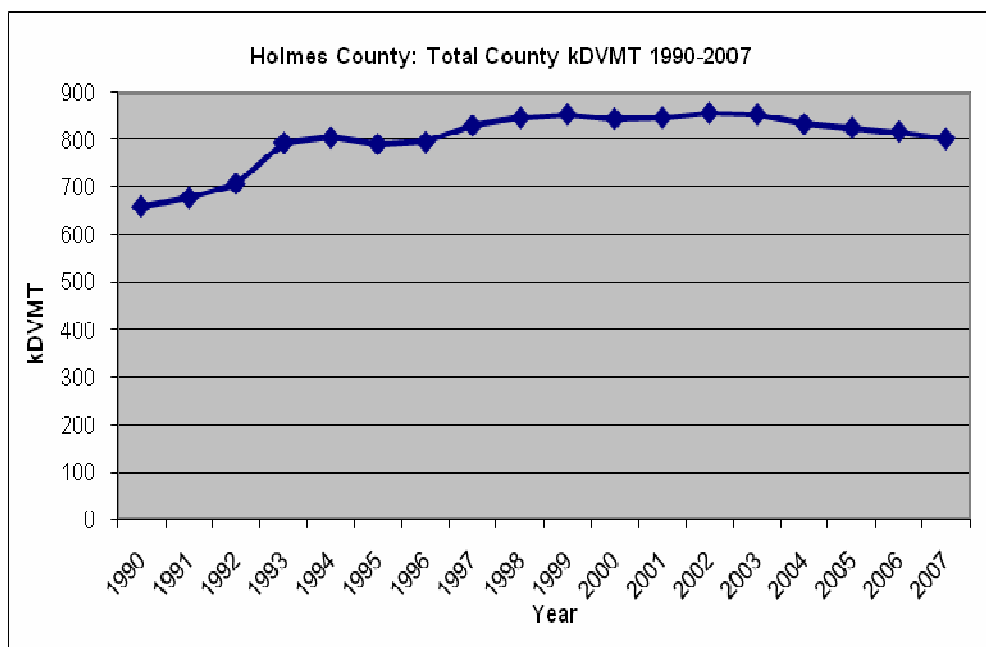
Source: Ohio Department of Transportation, Office of Technical Services



2005 = 588.35

2006 = 586.54

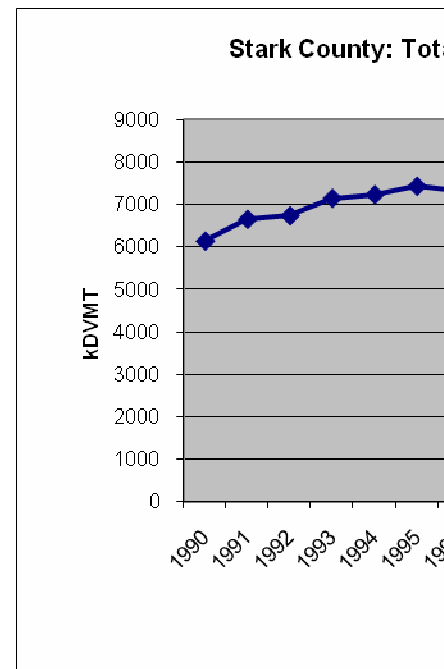
2007 = 576.76



2005 = 824.54

2006 = 816.84

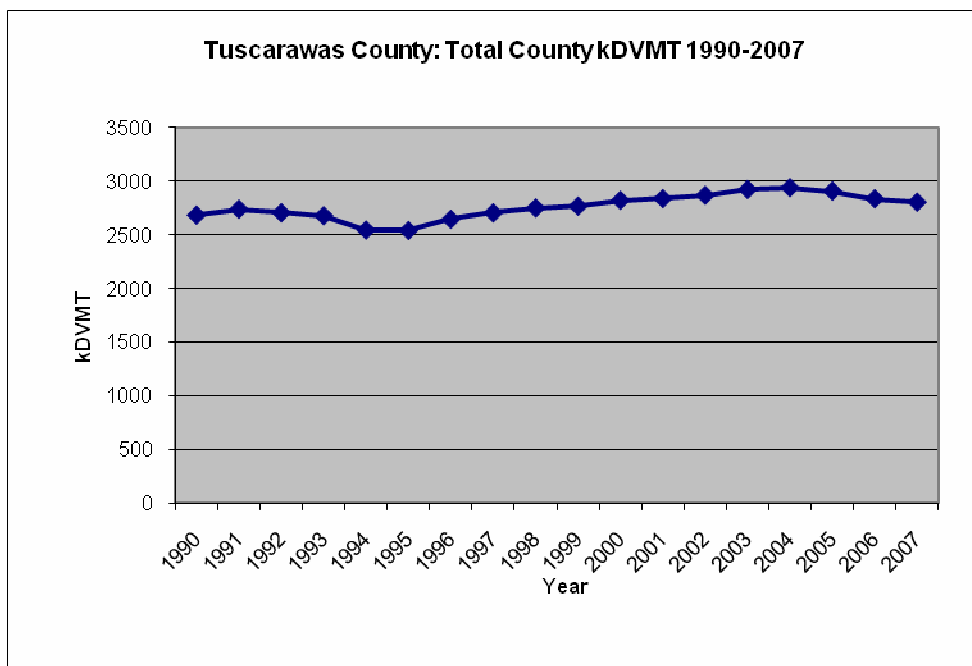
2007 = 802.52



2005 = 8136.66

2006 = 8405.65

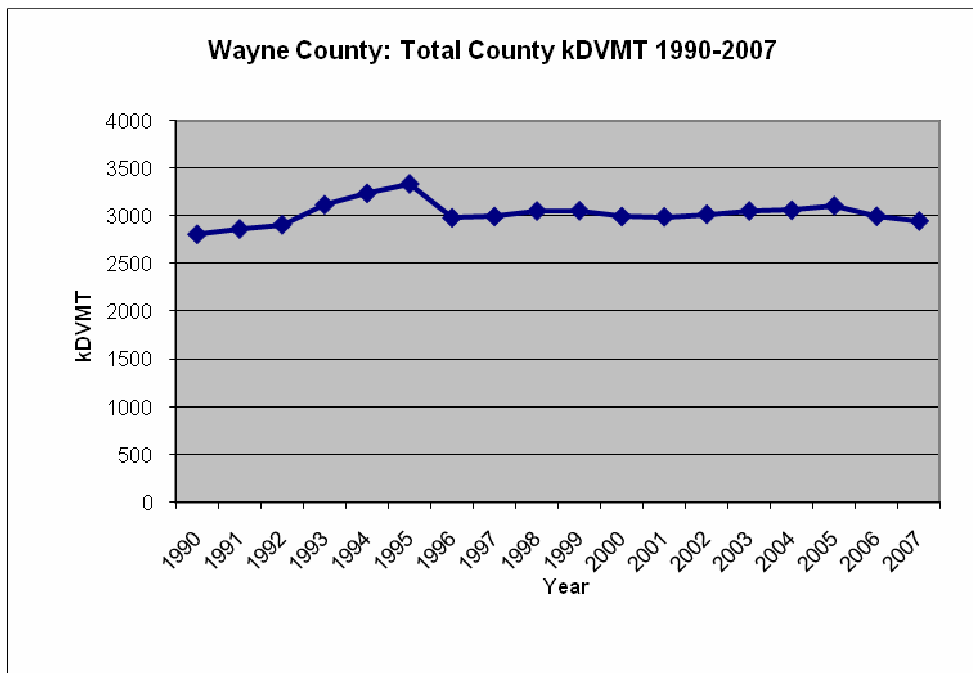
2007 = 8315.26



2005 = 2907.78

2006 = 2835.37

2007 = 2803.41



2005 = 3111.7

2006 = 3003.18

2007 = 2954.55

## Commuting Patterns

Source: Office of Strategic Research, Ohio Department of Development  
U.S. Census Bureau, 2000

Over 5,000 workers from Tuscarawas County and Carroll County commute to Stark County. The majority of Stark County workers commuting outside the County, travel to Summit County. The largest portion of Wayne County workers commuting outside the County, travel to Medina and Summit Counties. Most of the commuting workers from Holmes County drive to Wayne County.

<b>Carroll</b>		Percent of workers that work outside the County	57.0%
		Average commute time in minutes -	27.5
<b>Number of workers 16+ years of age living in Carroll County</b>			<b>12,882</b>
Commute Out To	Number	Percent	
Stark Co. OH	5,125	39.8%	
Tuscarawas Co. OH	840	6.5%	
Columbiana Co. OH	297	2.3%	
Summit Co. OH	271	2.1%	
Jefferson Co. OH	178	1.4%	
Harrison Co. OH	160	1.2%	
Cuyahoga Co. OH	73	0.6%	
Wayne Co. OH	73	0.6%	
Mahoning Co. OH	47	0.4%	
Portage Co. OH	37	0.3%	
Percent is of workers living in County.			
<b>Number of workers 16+ years of age working in Carroll County</b>			<b>7,947</b>
Commute In From	Number	Percent	
Stark Co. OH	956	12.0%	
Columbiana Co. OH	453	5.7%	
Tuscarawas Co. OH	289	3.6%	
Jefferson Co. OH	265	3.3%	
Harrison Co. OH	188	2.4%	
Holmes Co. OH	76	1.0%	
Mahoning Co. OH	44	0.6%	
Mercer Co. PA	16	0.2%	
Clark Co. OH	13	0.2%	
Geauga Co. OH	12	0.2%	
Percent is of workers working in County.			

Holmes	Percent of workers that work outside the County		26.1%
	Average commute time in minutes -		21.6
Number of workers 16+ years of age living in Holmes County			16,456
Commute Out To	Number	Percent	
Wayne Co. OH	2,411	14.7%	
Tuscarawas Co. OH	538	3.3%	
Ashland Co. OH	352	2.1%	
Stark Co. OH	200	1.2%	
Summit Co. OH	104	0.6%	
Carroll Co. OH	76	0.5%	
Medina Co. OH	72	0.4%	
Knox Co. OH	70	0.4%	
Coshocton Co. OH	68	0.4%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Holmes County			17,493
Commute In From	Number	Percent	
Tuscarawas Co. OH	1,983	11.3%	
Wayne Co. OH	1,247	7.1%	
Coshocton Co. OH	774	4.4%	
Stark Co. OH	480	2.7%	
Ashland Co. OH	437	2.5%	
Knox Co. OH	106	0.6%	
Richland Co. OH	96	0.5%	
Summit Co. OH	39	0.2%	
Harrison Co. OH	34	0.2%	
Percent is of workers working in County.			

Stark	Percent of workers that work outside the County		20.7%
	Average commute time in minutes -		21.3
Number of workers 16+ years of age living in Stark County			177,234
Commute Out To	Number	Percent	
Summit Co. OH	21,094	11.9%	
Wayne Co. OH	3,026	1.7%	
Cuyahoga Co. OH	2,443	1.4%	
Portage Co. OH	2,256	1.3%	
Tuscarawas Co. OH	1,679	0.9%	
Mahoning Co. OH	1,158	0.7%	
Carroll Co. OH	956	0.5%	
Medina Co. OH	770	0.4%	
Columbiana Co. OH	640	0.4%	
Holmes Co. OH	480	0.3%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Stark County			171,642
Commute In From	Number	Percent	
Summit Co. OH	7,665	4.5%	
Tuscarawas Co. OH	5,707	3.3%	
Carroll Co. OH	5,125	3.0%	
Columbiana Co. OH	3,306	1.9%	
Mahoning Co. OH	2,548	1.5%	
Wayne Co. OH	1,672	1.0%	
Portage Co. OH	1,578	0.9%	
Cuyahoga Co. OH	565	0.3%	
Medina Co. OH	445	0.3%	
Harrison Co. OH	292	0.2%	
Percent is of workers working in County.			

Tuscarawas	Percent of workers that work outside the County		26.8%
	Average commute time in minutes		21.6
Number of workers 16+ years of age living in Tuscarawas County			42,093
Commute Out To	Number	Percent	
Stark Co. OH	5,707	13.6%	
Holmes Co. OH	1,983	4.7%	
Coshocton Co. OH	709	1.7%	
Wayne Co. OH	688	1.6%	
Summit Co. OH	606	1.4%	
Carroll Co. OH	289	0.7%	
Harrison Co. OH	182	0.4%	
Guernsey Co. OH	153	0.4%	
Cuyahoga Co. OH	128	0.3%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Tuscarawas County			37,247
Commute In From	Number	Percent	
Stark Co. OH	1,679	4.5%	
Harrison Co. OH	1,410	3.8%	
Carroll Co. OH	840	2.3%	
Coshocton Co. OH	780	2.1%	
Holmes Co. OH	538	1.4%	
Guernsey Co. OH	249	0.7%	
Summit Co. OH	150	0.4%	
Wayne Co. OH	125	0.3%	
Jefferson Co. OH	89	0.2%	
Percent is of workers working in County.			

Wayne	Percent of workers that work outside the County		27.1%
	Average commute time in minutes -		19.4
Number of workers 16+ years of age living in Wayne County			54,487
Commute Out To	Number	Percent	
Medina Co. OH	4,667	8.6%	
Summit Co. OH	3,948	7.2%	
Stark Co. OH	1,672	3.1%	
Holmes Co. OH	1,247	2.3%	
Cuyahoga Co. OH	1,193	2.2%	
Ashland Co. OH	565	1.0%	
Richland Co. OH	297	0.5%	
Lorain Co. OH	145	0.3%	
Tuscarawas Co. OH	125	0.2%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Wayne County			52,259
Commute In From	Number	Percent	
Stark Co. OH	3,026	5.8%	
Holmes Co. OH	2,411	4.6%	
Medina Co. OH	1,726	3.3%	
Ashland Co. OH	1,712	3.3%	
Summit Co. OH	1,095	2.1%	
Tuscarawas Co. OH	688	1.3%	
Richland Co. OH	443	0.8%	
Coshocton Co. OH	178	0.3%	
Cuyahoga Co. OH	163	0.3%	
Percent is of workers working in County.			

## Factor 5: Meteorology

Please refer to Appendix E for applicable meteorology information for the Canton-Massillon area.

## Factor 6: Topography/Land use/Land cover

Stark County is in the Appalachian Plateau Physiographic Province (see

Appendix F). The northern two-thirds of the County are located in the glacial part of the Appalachian Plateau, and the rest of the County is in the unglaciated part. Elevations range from a little less than 900 feet above sea level to about 1,350 feet above sea level. The topography of the unglaciated portion of the County is hilly and steep and variations in relief average about 200 feet within one-half mile. The glaciated part of the County is undulating and rolling, with an average relief varying less than 100 feet within a mile.

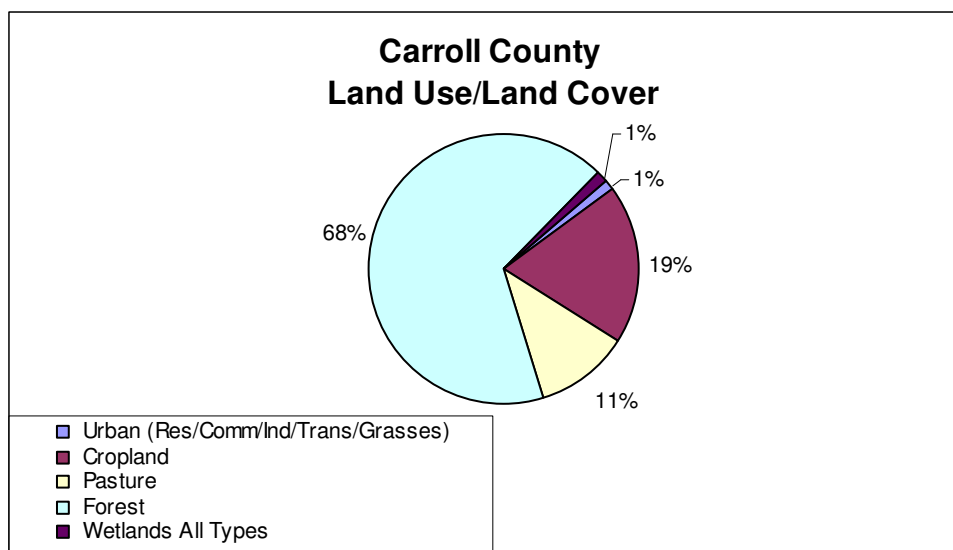
Wayne County is a County of contrasts. Although the entire area has been glaciated, the landforms are very diverse including flat wetlands, steep slopes and hilly areas. The elevation ranges from about 850 feet to 1260 feet above sea level.

Holmes County lies in the Appalachian Plateau Province, both the glaciated and unglaciated sections. The northern glaciated landscape is gently rolling while the southern unglaciated portion retains its rough, bedrock relief. The highest elevation is 1,410 feet and the lowest is 790 feet above sea level.

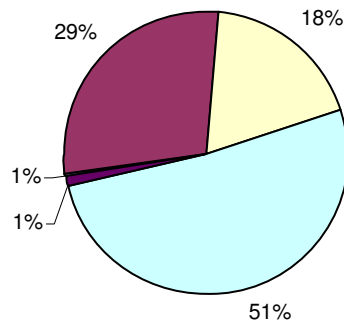
Tuscarawas County is in the unglaciated part of the Allegheny Plateau region except for the northwest corner. Most areas in the southern and eastern parts of the County have deep valleys and narrow ridgetops while the western part of the County, the hills are not as steep. The elevation ranges from 795 feet to 1,340 feet above sea level.

Carroll County is on the unglaciated, dissected Allegheny Plateau. The highest point in the County is near the northern border at 1,375 feet and the lowest point 900 feet.

As shown in the following pie charts, the land use/land cover in Stark County and all the surrounding Counties except for Wayne County is predominately classified as forest. Wayne County is nearly 60 percent cropland. As expected, in comparison to the surrounding Counties, Stark County has the largest percentage of urbanized area at 23 percent.

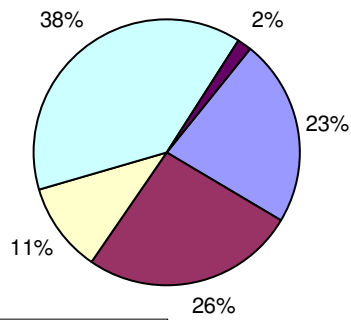


### Holmes County Land Use/Land Cover



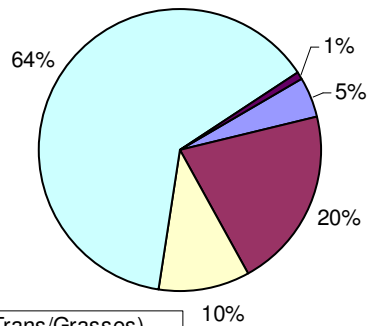
- Urban (Res/Comm/Ind/Trans/Grasses)
- Cropland
- Pasture
- Forest
- Wetlands All Types

### Stark County Land Use/Land Cover

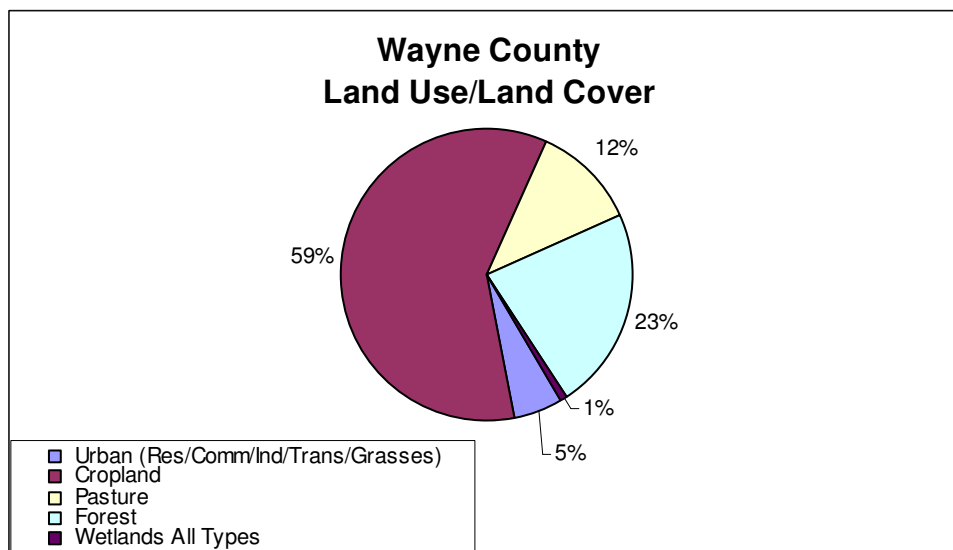


- Urban (Res/Comm/Ind/Trans/Grasses)
- Cropland
- Pasture
- Forest
- Wetlands All Types

### Tuscarawas County Land Use/Land Cover



- Urban (Res/Comm/Ind/Trans/Grasses)
- Cropland
- Pasture
- Forest
- Wetlands All Types



### **Factor 7: Jurisdictional boundaries**

The Canton-Massillon, OH MSA include Stark and Carroll Counties and the principal cities of Canton and Massillon. There is no CSA for this area.

The Stark County Transportation Study (SCATS) is the planning agency designated as the Metropolitan Planning Organization (MPO) for Stark County. The SCATS region is composed of Stark County.

The surrounding Counties, Wayne, Holmes, Tuscarawas, and Carroll, are not part of an MPO. Columbiana and Mahoning Counties also border Stark County; however, they are discussed in the Youngstown-Warren section. Summit and Portage Counties also border Stark County; however, they are discussed in the Cleveland-Akron-Lorain section.

### **Factor 8: Level of control of emission sources**

Please refer to the factor 8 general discussion at the beginning of this document for applicable control information for this area.



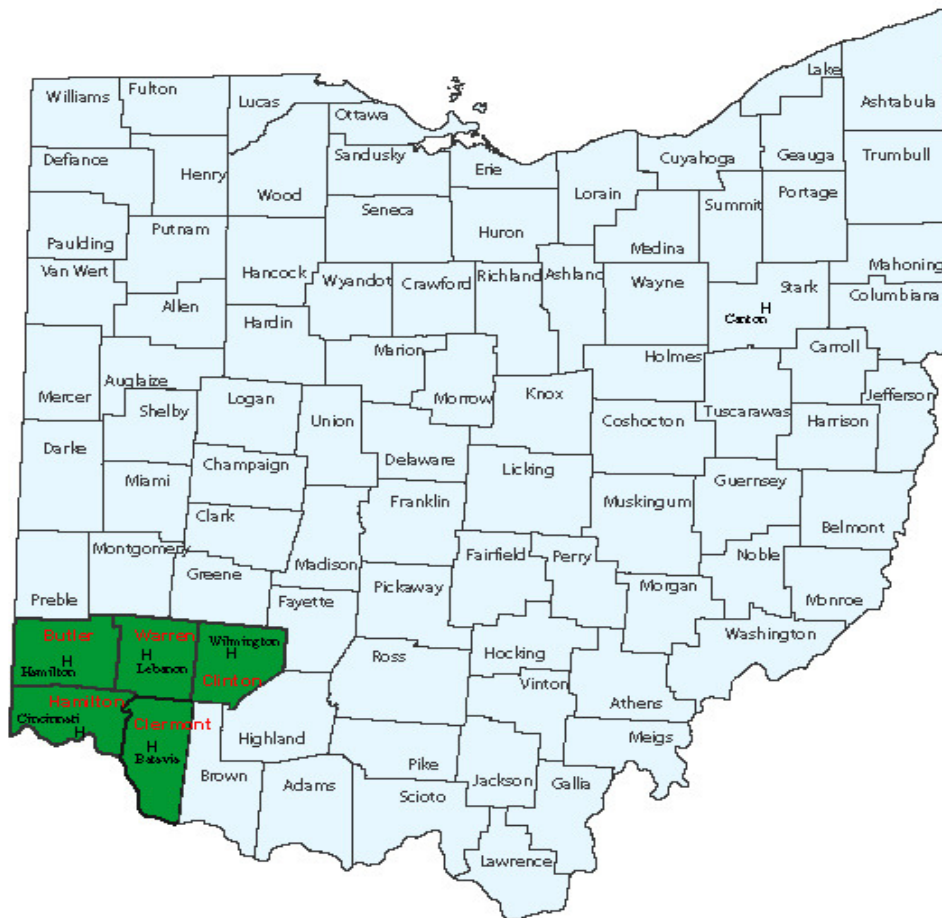
## Cincinnati-Hamilton, OH-KY-IN

**Current** County nonattainment: Butler, Clermont, Clinton, Hamilton and Warren

**Current nonattainment Counties**

***Recommended*** County nonattainment: Butler, Clermont, Clinton, Hamilton and Warren

 Recommended nonattainment Counties



## **Discussion**

There are five Ohio Counties in this existing ozone nonattainment area: Butler, Clermont, Clinton, Hamilton, and Warren Counties; one Indiana County: Dearborn; and three Kentucky Counties: Boone, Campbell, and Kenton. Ohio EPA recommends retaining the five Ohio Counties as nonattainment for the new ozone standard for the Cincinnati-Hamilton area. All five Ohio Counties contain violating monitors. Fayette, Highland and Brown are adjacent Counties. Only Brown County, adjacent to the existing nonattainment area, but included in the MSA, is discussed in this section. Fayette and Highland Counties are not part of the MSA or CSA and are excluded due to very low emissions and population. Preble, Montgomery, and Green Counties are also adjacent Counties and are discussed in the Dayton-Springfield area section.


The three-year average of the annual fourth-highest daily maximum eight-hour average concentrations at sites in Butler, Clermont, Clinton, Hamilton, and Warren Counties are not attaining the revised standards as indicated under factor 1 below. Also, neighboring Kenton, and Campbell Counties in Kentucky contain violating monitors as identified under factor 1 below. Emissions of VOC in all Indiana, Kentucky, and Ohio Counties, except Hamilton, OH are not significant. Emissions of NO<sub>x</sub> in all Indiana, Kentucky and Ohio Counties, except Clermont, and Hamilton are relatively small.

Although Brown County is part of the MSA, Ohio EPA is recommending to exclude Brown County, a rural upwind area, due to very low emissions and a 2007 population of only 43,956. Brown County has the lowest emissions of the MSA Counties. Emissions in Brown County are projected to decrease by approximately 10% for VOC and 18% for NO<sub>x</sub> from 2005 to 2009. The projected growth for Brown County is minimal in number, increasing by 12,624 for a 2030 population of 56,580, compared to the 2030 projected populations of larger Counties in the MSA, ranging from 338,350 to 439,740. Daily miles traveled by vehicles in Brown County have been steadily declining since 2002. There are also minimal workers traveling from Brown County to neighboring Counties. The largest number of commuters from Brown County is to Clermont County, but that only accounts for 8.6% of Clermont's workforce. In comparison, the majority of Clermont County's commuters come from Hamilton County, 14.7%.

### **Factor 1: Air quality**

 = Exceeds standard

AQS: 8-Hour three-year average of the annual fourth-highest daily maximum (ppb)

Site Area County	Year	Highest Daily Maximum Concentrations (ppb)			
		1	2	3	4
39-017-0004 Cincinnati Butler Co.	2006	87	82	82	79
	2007	97	96	91	91
	2008	89	75	72	71
	Avg				 80.3

<b>39-017-1004</b> <b>Cincinnati</b> <b>Butler Co.</b>	2006	85	84	77	76
	2007	104	97	95	91
	2008	91	87	82	79
	Avg				82.0

<b>39-025-0022</b> <b>Cincinnati</b> <b>Clermont Co.</b>	2006	87	81	77	77
	2007	93	92	90	86
	2008	72	71	71	71
	Avg				78.0

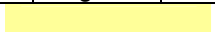

<b>39-027-1002</b> <b>Wilmington</b> <b>Clinton Co</b>	2006	90	85	84	81
	2007	91	89	85	82
	2008	87	80	77	76
	Avg				79.7

<b>39-061-0006</b> <b>Cincinnati</b> <b>Hamilton Co.</b>	2006	84	84	82	81
	2007	100	92	91	89
	2008	93	89	87	86
	Avg				85.3

<b>39-061-0010</b> <b>Cincinnati</b> <b>Hamilton Co.</b>	2006	98	92	82	81
	2007	93	91	88	86
	2008	85	79	78	77
	Avg				81.3

<b>39-061-0040</b> <b>Cincinnati</b> <b>Hamilton Co.</b>	2006	89	80	79	78
	2007	97	93	88	86
	2008	86	83	81	80
	Avg				81.3

<b>39-165-0007</b> <b>Cincinnati</b> <b>Warren Co.</b>	2006	92	90	88	86
	2007	103	89	88	88
	2008	92	87	84	82
	Avg				85.3

 Sites with less than 75% capture for a given year  
 Sites with less than 90% capture for the 3-year period

## Kentucky

 = Exceeds standard

AQS: 8-Hour three-year average of the annual fourth-highest daily maximum (ppb)

Site Area County	Year	Highest Daily Maximum Concentrations (ppb)			
		1	2	3	4
<b>21-105-0003</b> <b>Boone Co.</b>	2006	72	72	72	71
	2007	81	79	78	78
	2008	65	64	64	64
	Avg				71.0

<b>21-117-0007 Covington Kenton Co.</b>	2006	82	81	79	75
	2007	93	89	85	85
	2008	80	77	74	73
	Avg				77.7

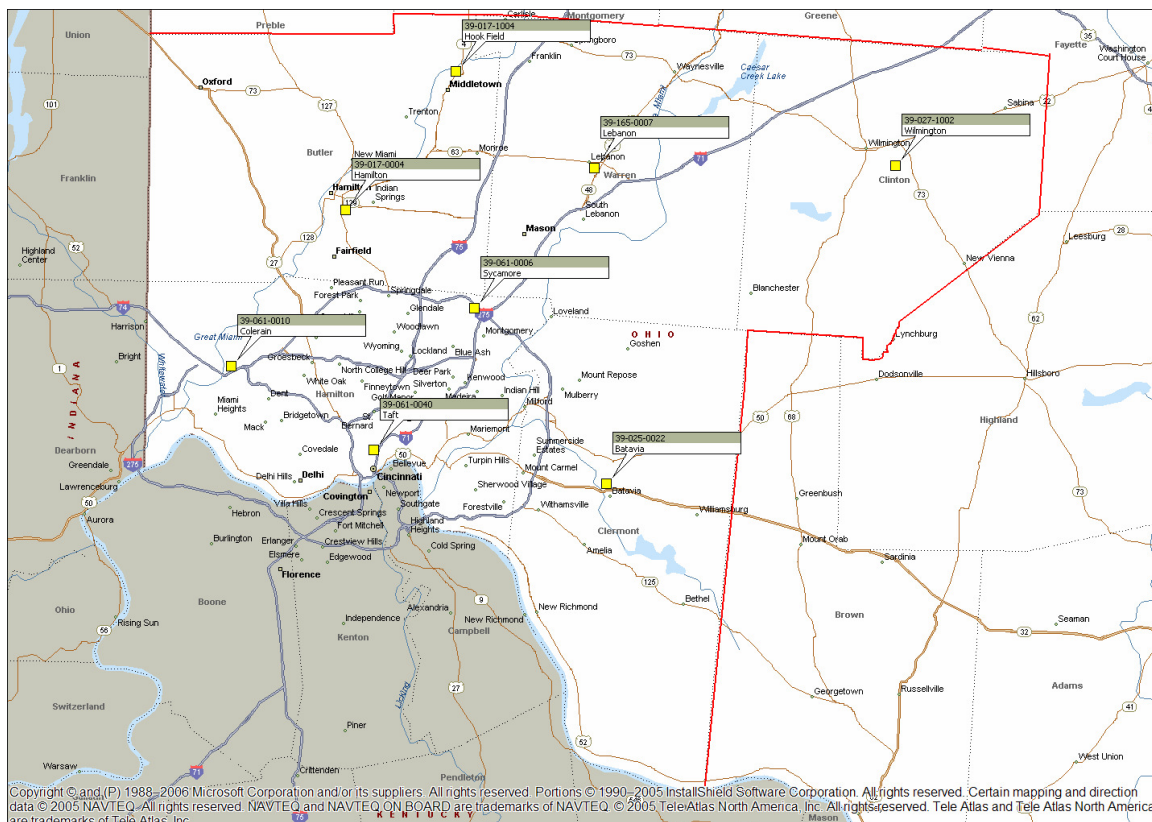
<b>21-037-3002, - 0003<sup>6</sup> Highland Heights Campbell Co.</b>	2006	41	40	38	36
	2007	95	92	88	86
	2008	84	83	75	75
	Avg				80.5

Sites with less than 75% capture for a given year  
 Sites with less than 90% capture for the 3-year period

## Indiana

There are no monitors in applicable areas of Indiana.

## Cincinnati-Hamilton Area Ozone Monitor Locations and Site ID Numbers



<sup>6</sup> The Fort Thomas monitor in Campbell County (21-037-0003), Kentucky was not operating for the full year (only 12 measurements taken); therefore, its highest daily maximum concentrations are not being considered in the 3-year average. It was later replaced by the monitor at Highland Heights.

**Factor 2: Emissions data**  
(tons per day)

<b>2005</b>		
<b>County</b>	<b>VOC</b>	<b>NO<sub>x</sub></b>
CLINTON	8.56	7.98
HAMILTON	84.37	132.53
BUTLER	34.06	44.72
WARREN	19.36	24.86
CLERMONT	17.91	95.98
Brown	6.05	5.65

<b>2009</b>		
<b>County</b>	<b>VOC</b>	<b>NO<sub>x</sub></b>
CLINTON	7.15	6.64
HAMILTON	51.39	80.32
BUTLER	21.83	34.58
WARREN	13.91	20.66
CLERMONT	11.94	54.28
Brown	5.44	4.65

**Indiana**

<b>2005</b>		
<b>County</b>	<b>VOC</b>	<b>NO<sub>x</sub></b>
DEARBORN	7.88	35.08
Franklin	3.07	2.83
Ohio	0.68	0.85

<b>2009</b>		
<b>County</b>	<b>VOC</b>	<b>NO<sub>x</sub></b>
DEARBORN	7.58	41.90
Franklin	2.69	2.17
Ohio	0.58	0.58

**Kentucky ( Does not include on-road data)**

<b>2005</b>		
<b>County</b>	<b>VOC</b>	<b>NO<sub>x</sub></b>
BOONE	14.56	26.54
CAMPBELL	6.55	6.79
KENTON	11.25	11.64
Bracken	0.96	0.78
Gallatin	1.38	3.45
Grant	2.15	2.91
Pendleton	1.48	8.36

<b>2009</b>		
<b>County</b>	<b>VOC</b>	<b>NO<sub>x</sub></b>
BOONE	8.68	13.11
<b>CAMPBELL</b>	<b>2.98</b>	<b>4.20</b>
KENTON	4.96	6.64
Bracken	0.55	0.51
Gallatin	1.00	2.43
Grant	1.33	1.88
Pendleton	0.77	7.47

## Major Employers

Source: Ohio Department of Development 2007

Most of the major employers in the greater Cincinnati area the surrounding Counties (in Ohio) are in the categories of manufacturing, government and service as shown in the following tables.

### Brown

Brown County General Hospital	Service
Eastern Local Bd of Ed	Government
Milacron Inc	Manufacturing
Ohio Valley Manor	Service
RUHL Local Bd of Ed	Government
Stanley Works	Manufacturing
Surgical Appliance Industries	Trade
Western Brown Local Bd of Ed	Government

### Butler County

AK Steel Holding Corp	Manufacturing
Amylin Pharmaceuticals Inc	Manufacturing
Armor Holdings Inc	Manufacturing
Butler County Government	Government
Cincinnati Financial Corp	Insurance
Cornerstone Brands Inc	Trade
Fairfield City Bd of Ed	Government
Ft Hamilton Memorial Hospital	Service
Hamilton City Bd of Ed	Government
Lakota Local Bd of Ed	Government
Liberty Mutual/Ohio Casualty Corp	Insurance
Mercy regional Hospital	Service
Miami University	Government
Middletown regional Health System	Service

### Clermont County

Clermont County Government	Government
Duke Energy Corp	Utility
Fifth Third Bank	Finance
International Paper Co	R&D
Meijer Inc	Trade
Mercy Health Partners	Service

Midland Co/American Modern Ins	Insurance
Milacron Inc	Manufacturing
Milford Exempted Village Bd of Ed	Government
Siemens AG/UGS Corp	Service
Total Quality Logistics	Service
West Clermont Local Bd of Ed	Government

### Clinton

ABX Air Inc	Transportation
Ahresty Wilmington Corp	Manufacturing
Alkermes Inc	Manufacturing
Clinton Memorial Hospital	Service
Ferno-Washington Inc	Manufacturing
Nippon Seiki/New Sabina Industries	Manufacturing
R & L Carriers	Transportation
Showa Corp/American Showa	Manufacturing
Textron Company	Manufacturing
Wilmington City Bd of Ed	Government
Wilmington College	Service

### Hamilton County

American Financial Group Inc	Insurance
Chiquita Brands International Inc	Trade
Convergys Corp	Service
Duke Energy Corp	Utility
Fifth Third Bancorp	Finance
Ford Motor Co	Manufacturing
General Electric Co	Manufacturing
Health Alliance of Greater Cincinnati	Service
Johnson & Johnson/Ethicon	Manufacturing
Kroger Co	Trade
Macy's Inc	Trade
Mercy Health Partners	Service
Procter & Gamble Co	Manufacturing
TriHealth Inc	Service
University of Cincinnati	Government

### Warren County

Aisin Seiki/ADVICS Co Ltd	Manufacturing
Blackhawk Automotive Plastics Inc	Manufacturing
Cedar Fair/Kings Island	Service
Cintas Corp	Manufacturing
HJ Heinz/Portion Pac Inc	Manufacturing
Luxottica Group SpA	Manufacturing
Macy's Inc	Trade
Mason Local Bd of Ed	Government
Procter & Gamble Co	R&D
State of Ohio	Government
Sumco Phoenix	Manufacturing
WellPoint Inc/Anthem	Insurance

### Factor 3: Population and Projected Growth

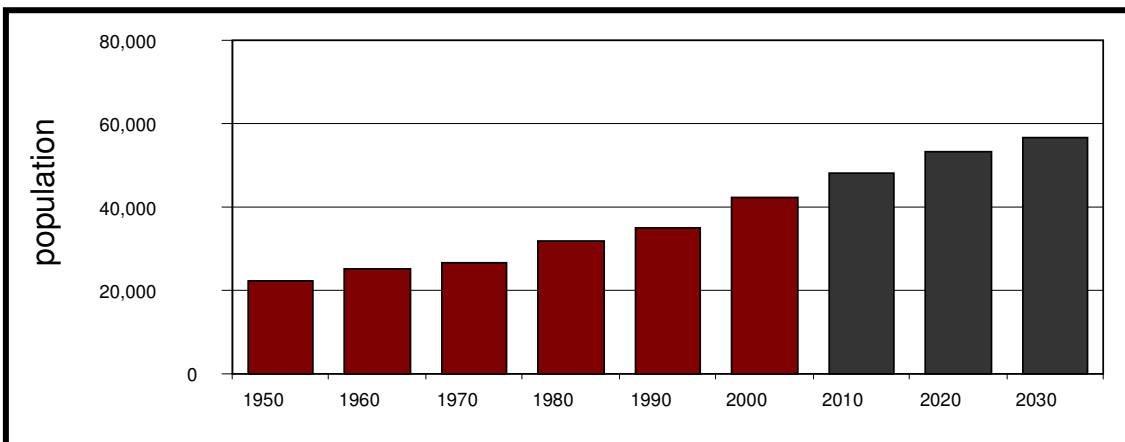
Sources: Office of Strategic Research, Ohio Department of Development  
U.S. Census Bureau Population Estimates Program 2007

The largest populated places in the Cincinnati-Hamilton area are: the greater Cincinnati area in Hamilton County; Hamilton, Fairfield, and Middletown in Butler County; Lebanon, Mason, Franklin and Springboro in Warren County; and Batavia, Milford, and New Richmond in Clermont County.

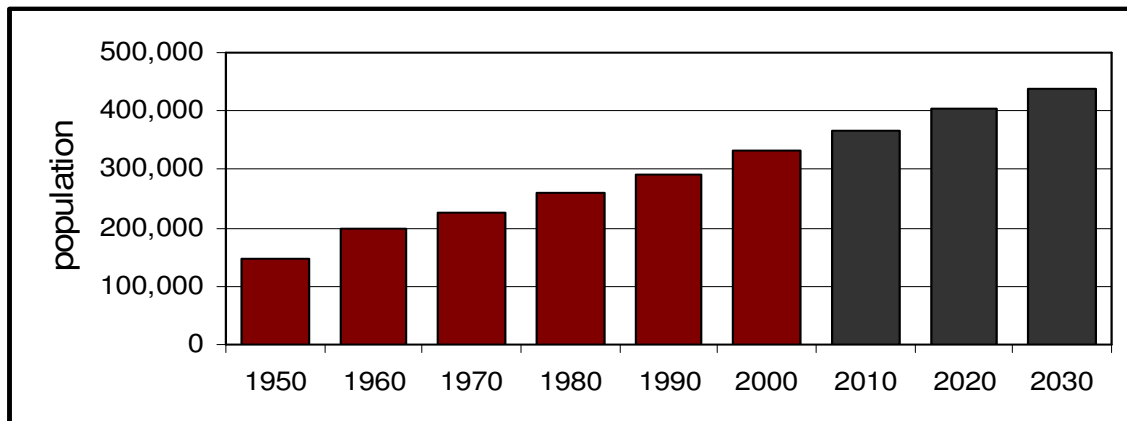
As indicated in the following table and graphs, Hamilton County has the highest population in this area; however, it is projected to steadily decrease. The population in the surrounding Counties is projected to increase.

COUNTY	2004	2005	2006	2007	2010	2020	2030
Butler	345,755	349,966	354,992	357,888	367,670	403,860	439,740
Clermont	188,025	190,329	192,706	193,490	202,830	225,340	245,000
Hamilton	832,250	828,487	822,596	842,369	807,560	771,540	730,570
Warren	189,823	196,793	201,871	204,390	215,020	276,250	338,350
Clinton	42,177	42,561	43,399	43,071	45,470	49,810	53,730
Brown	44,106	44,255	44,423	43,956	48,050	53,290	56,580

#### Brown County

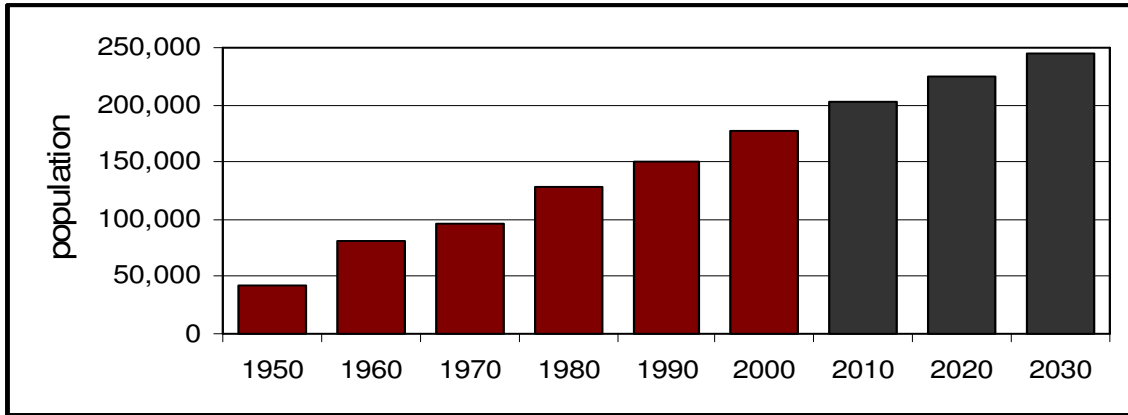


#### Butler County

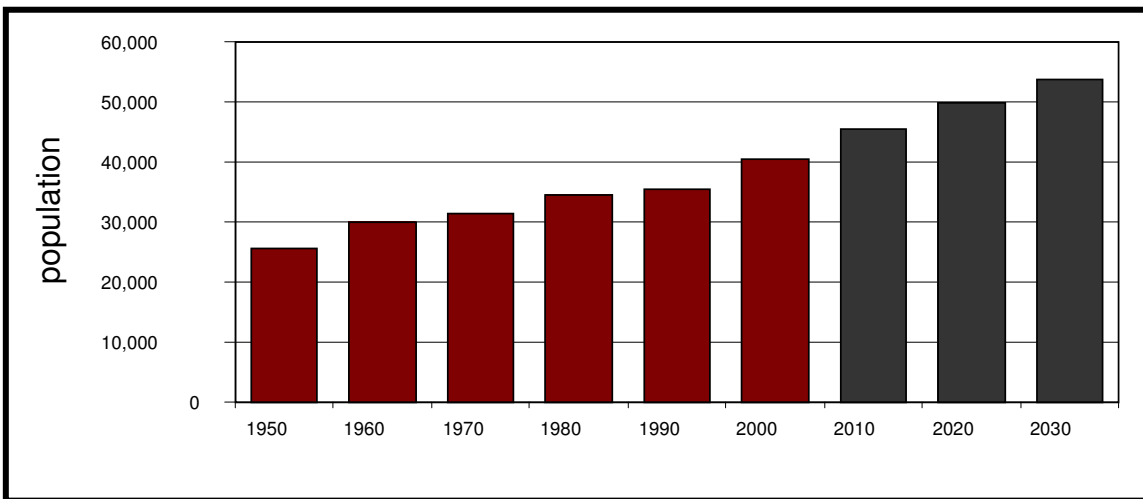




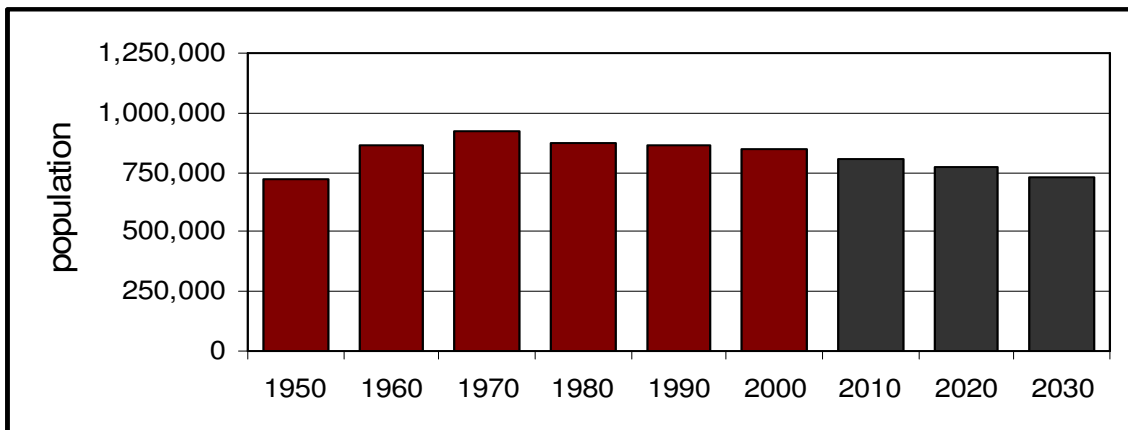
### Clermont County



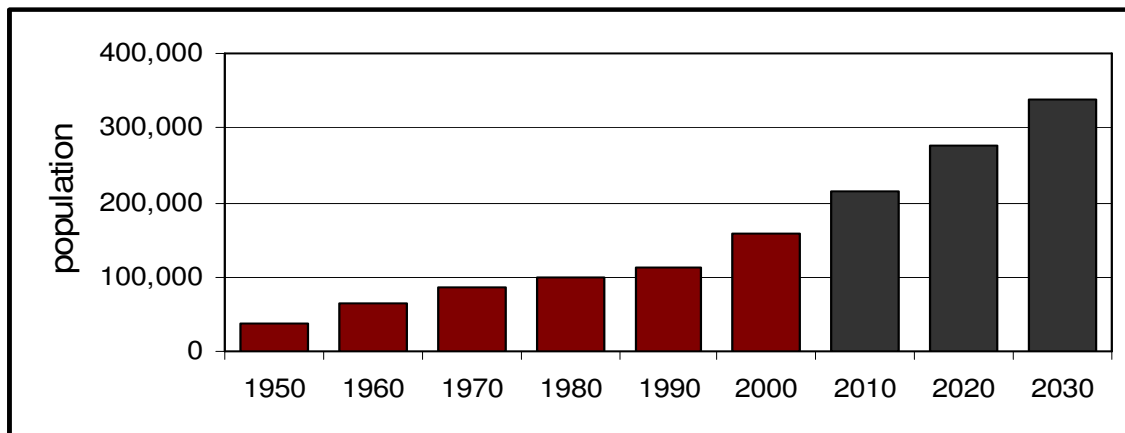
### Clinton County



### Hamilton County



## Warren County

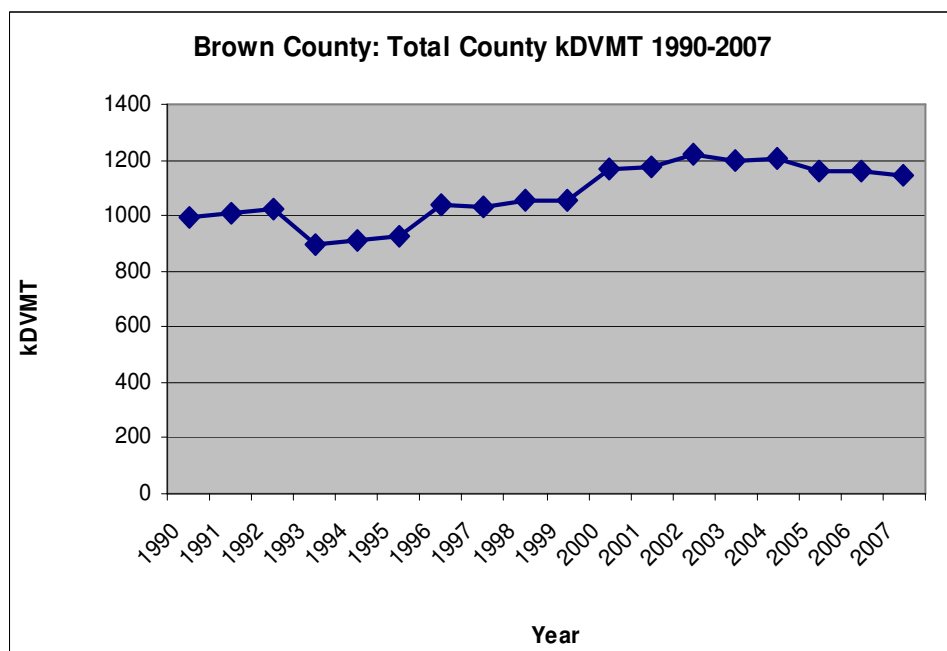


### Factor 4: Traffic and commuting patterns

All six of the Counties (including Brown) in the Cincinnati-Hamilton area have shown an upward trend in the kDVMT since 1990 as shown in the following graphs. Hamilton County has the highest level of KDVT just under the 21,000 range and Warren County experienced the most significant increase in kDVMT of 328 miles from 2005 to 2007 although there was a slight decline from 2006 to 2007.

#### Estimated Daily Vehicle Miles Traveled (kDVMT = in thousands)

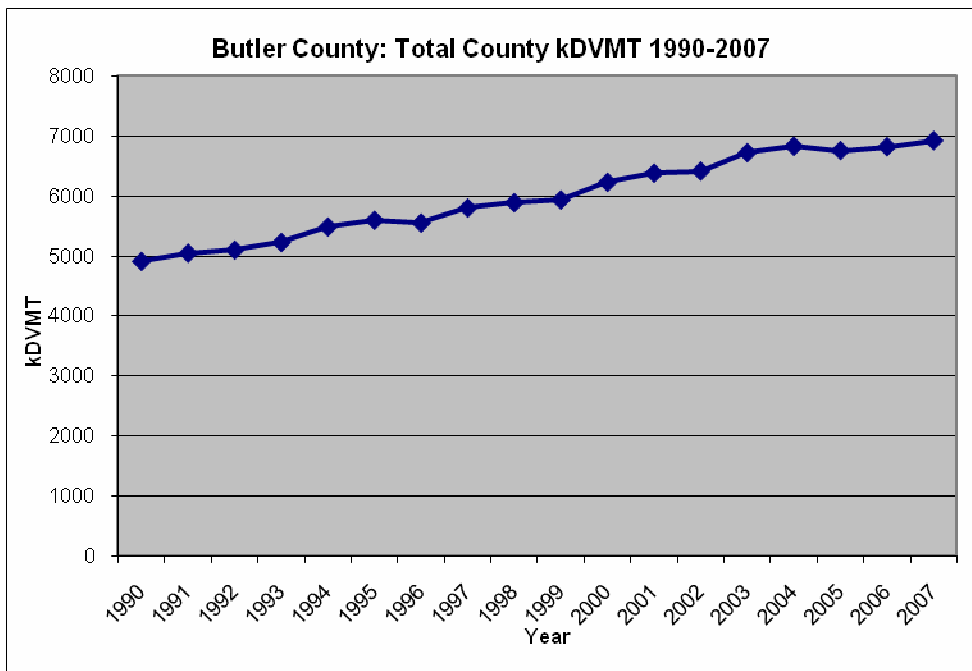
Source: Ohio Department of Transportation, Office of Technical Services



2005 = 1162.8

2006 = 1160.37

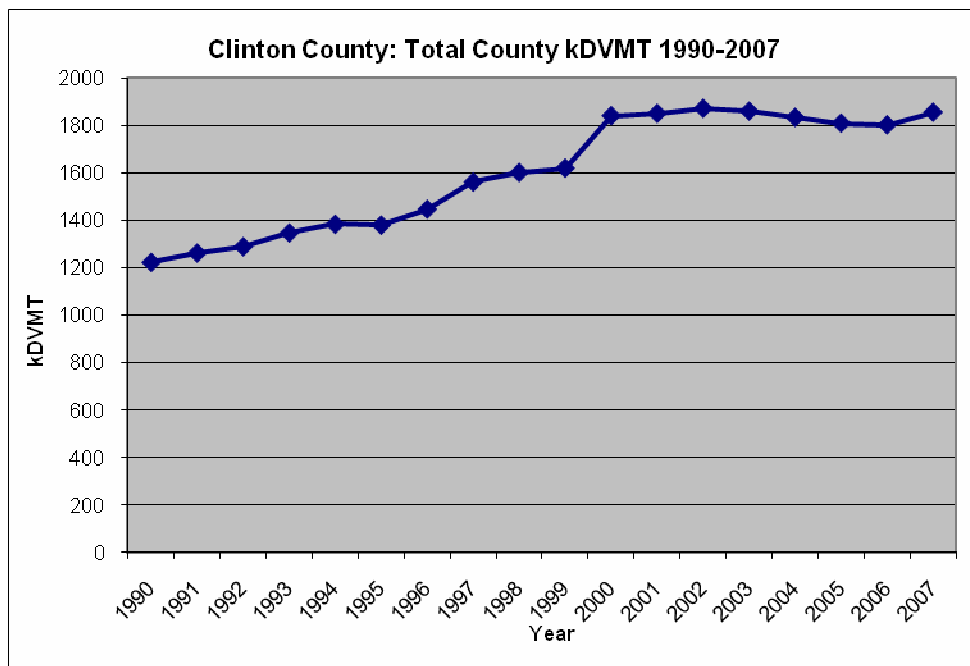
2007 = 1147.39



2005 = 6757.61

2006 = 6820.28

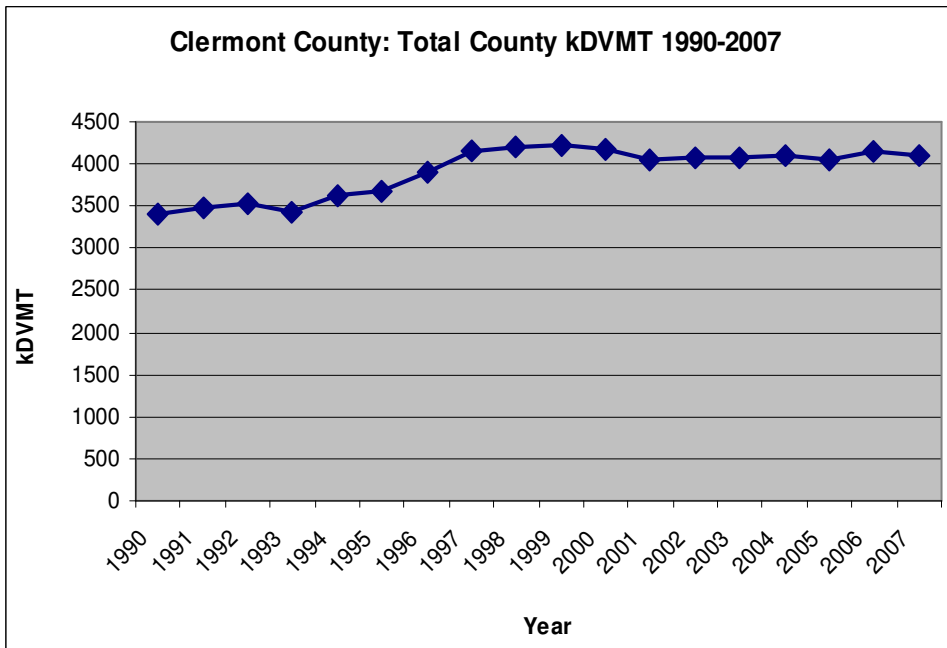
2007 = 6921.88



2005 = 1809.75

2006 = 1802.55

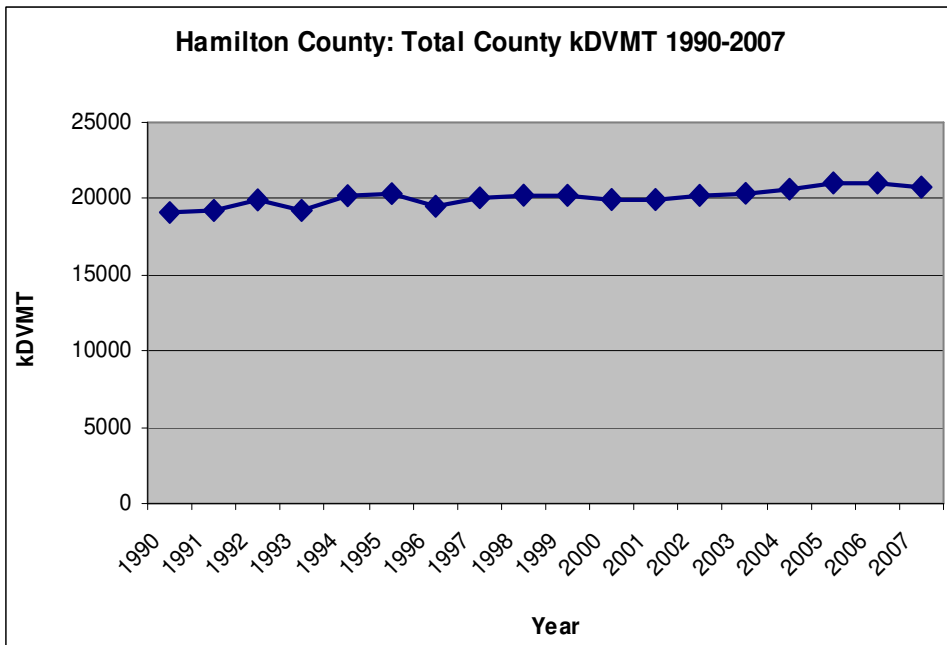
2007 = 1855.89



2005 = 4054.08

2006 = 4140.62

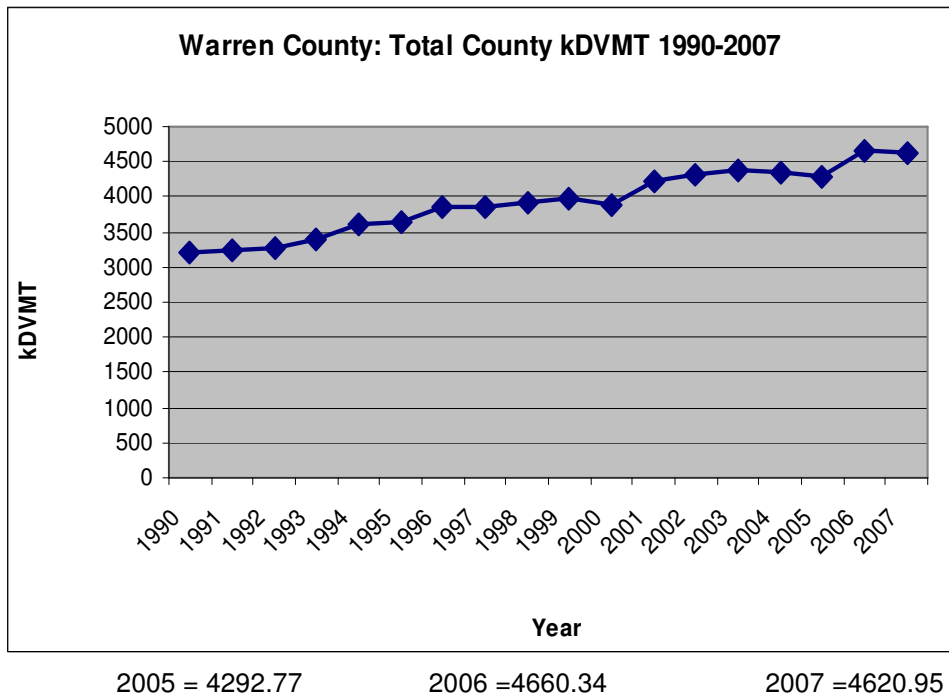
2007 = 4107.12



2005 = 20957.26

2006 = 21006.83

2007 = 20721.96



## Commuter Patterns

Source: Office of Strategic Research, Ohio Department of Development  
U.S. Census Bureau, 2000

The vast majority of workers (traveling out of County) from Butler, Warren and Clermont Counties commute to Hamilton County. Approximately 15 percent of Hamilton County workers commute outside the County, the majority traveling to Butler County, with Warren and Clermont coming in second and third.

Brown	Percent of workers that work outside the County -		63.8%
	Average commute time in minutes	-	35.0
Number of workers 16+ years of age living in Brown County			18,691
Commute Out To	Number	Percent	
Clermont Co. OH	4,802	25.7%	
Hamilton Co. OH	3,945	21.1%	
Mason Co. KY	780	4.2%	
Clinton Co. OH	466	2.5%	
Butler Co. OH	414	2.2%	
Warren Co. OH	347	1.9%	
Highland Co. OH	305	1.6%	
Adams Co. OH	252	1.3%	
Boone Co. KY	157	0.8%	
Kenton Co. KY	133	0.7%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Brown County			9,569
Commute In From	Number	Percent	
Adams Co. OH	793	8.3%	
Clermont Co. OH	529	5.5%	
Highland Co. OH	337	3.5%	
Mason Co. KY	316	3.3%	
Hamilton Co. OH	173	1.8%	
Clinton Co. OH	90	0.9%	
Fleming Co. KY	68	0.7%	
Kenton Co. KY	58	0.6%	
Warren Co. OH	47	0.5%	
Lewis Co. KY	44	0.5%	
Percent is of workers working in County.			

Butler	Percent of workers that work outside the County		43.6%
	Average commute time in minutes -		23.0
Number of workers 16+ years of age living in Butler County			160,314
Commute Out To	Number	Percent	
Hamilton Co. OH	47,984	29.9%	
Warren Co. OH	11,133	6.9%	
Montgomery Co. OH	4,635	2.9%	
Clermont Co. OH	1,072	0.7%	
Boone Co. KY	857	0.5%	
Kenton Co. KY	696	0.4%	
Greene Co. OH	400	0.2%	
Campbell Co. KY	318	0.2%	
Preble Co. OH	239	0.1%	
Clinton Co. OH	209	0.1%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Butler County			133,727
Commute In From	Number	Percent	
Hamilton Co. OH	18,452	13.8%	
Warren Co. OH	8,586	6.4%	
Clermont Co. OH	2,912	2.2%	
Montgomery Co. OH	2,622	2.0%	
Preble Co. OH	2,575	1.9%	
Kenton Co. KY	908	0.7%	
Dearborn Co. IN	750	0.6%	
Union Co. IN	698	0.5%	
Franklin Co. IN	677	0.5%	
Campbell Co. KY	652	0.5%	
Percent is of workers working in County.			

Clermont	Percent of workers that work outside the County		59.9%
	Average commute time in minutes		28.2
Number of workers 16+ years of age living in Clermont County			88,372
Commute Out To	Number	Percent	
Hamilton Co. OH	40,090	45.4%	
Warren Co. OH	3,269	3.7%	
Butler Co. OH	2,912	3.3%	
Kenton Co. KY	1,630	1.8%	
Boone Co. KY	1,422	1.6%	
Campbell Co. KY	744	0.8%	
Brown Co. OH	529	0.6%	
Montgomery Co. OH	433	0.5%	
Clinton Co. OH	403	0.5%	
Dearborn Co. IN	154	0.2%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Clermont County			55,884
Commute In From	Number	Percent	
Hamilton Co. OH	8,240	14.7%	
Brown Co. OH	4,802	8.6%	
Warren Co. OH	1,448	2.6%	
Butler Co. OH	1,072	1.9%	
Kenton Co. KY	761	1.4%	
Campbell Co. KY	579	1.0%	
Adams Co. OH	527	0.9%	
Clinton Co. OH	483	0.9%	
Highland Co. OH	427	0.8%	
Boone Co. KY	350	0.6%	
Percent is of workers working in County.			

Clinton	Percent of workers that work outside the County		30.4%
	Average commute time in minutes -		23.8
Number of workers 16+ years of age living in Clinton County			19,949
Commute Out To	Number	Percent	
Hamilton Co. OH	1,498	7.5%	
Warren Co. OH	1,079	5.4%	
Montgomery Co. OH	782	3.9%	
Highland Co. OH	534	2.7%	
Clermont Co. OH	483	2.4%	
Greene Co. OH	451	2.3%	
Fayette Co. OH	351	1.8%	
Butler Co. OH	265	1.3%	
Franklin Co. OH	132	0.7%	
Boone Co. KY	104	0.5%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Clinton County			24,277
Commute In From	Number	Percent	
Highland Co. OH	3,789	15.6%	
Fayette Co. OH	1,229	5.1%	
Warren Co. OH	1,038	4.3%	
Greene Co. OH	808	3.3%	
Brown Co. OH	466	1.9%	
Montgomery Co. OH	419	1.7%	
Clermont Co. OH	403	1.7%	
Adams Co. OH	293	1.2%	
Hamilton Co. OH	240	1.0%	
Ross Co. OH	222	0.9%	
Percent is of workers working in County.			

Hamilton	Percent of workers that work outside the County		15.6%
	Average commute time in minutes -		23.0
Number of workers 16+ years of age living in Hamilton County			398,465
Commute Out To	Number	Percent	
Butler Co. OH	18,452	4.6%	
Warren Co. OH	9,303	2.3%	
Clermont Co. OH	8,240	2.1%	
Kenton Co. KY	7,937	2.0%	
Boone Co. KY	6,505	1.6%	
Campbell Co. KY	2,739	0.7%	
Montgomery Co. OH	1,747	0.4%	
Dearborn Co. IN	1,335	0.3%	
Franklin Co. OH	472	0.1%	
Ripley Co. IN	295	0.1%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Hamilton County			519,981
Commute In From	Number	Percent	
Butler Co. OH	47,984	9.2%	
Clermont Co. OH	40,090	7.7%	
Warren Co. OH	21,347	4.1%	
Kenton Co. KY	20,200	3.9%	
Campbell Co. KY	14,946	2.9%	
Boone Co. KY	8,351	1.6%	
Dearborn Co. IN	7,672	1.5%	
Brown Co. OH	3,945	0.8%	
Montgomery Co. OH	2,698	0.5%	
Franklin Co. IN	1,880	0.4%	
Percent is of workers working in County.			

Warren	Percent of workers that work outside the County		61.5%
	Average commute time in minutes		24.0665
Number of workers 16+ years of age living in Warren County			76,548
Commute Out To	Number	Percent	
Hamilton Co. OH	21,347	27.9%	
Montgomery Co. OH	11,325	14.8%	
Butler Co. OH	8,586	11.2%	
Clermont Co. OH	1,448	1.9%	
Greene Co. OH	1,321	1.7%	
Clinton Co. OH	1,038	1.4%	
Boone Co. KY	337	0.4%	
Franklin Co. OH	286	0.4%	
Kenton Co. KY	249	0.3%	
Clark Co. OH	125	0.2%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Warren County			62,714
Commute In From	Number	Percent	
Butler Co. OH	11,133	17.8%	
Hamilton Co. OH	9,303	14.8%	
Montgomery Co. OH	4,488	7.2%	
Clermont Co. OH	3,269	5.2%	
Clinton Co. OH	1,079	1.7%	
Greene Co. OH	797	1.3%	
Brown Co. OH	347	0.6%	
Preble Co. OH	336	0.5%	
Campbell Co. KY	322	0.5%	
Kenton Co. KY	297	0.5%	
Percent is of workers working in County.			

## Factor 5: Meteorology

Please refer to Appendix E for applicable meteorology information for the Cincinnati-Hamilton area.

## Factor 6: Topography/Land use/Land cover

The eastern portion of Hamilton County lies in the Till Plains section of the Central Lowland physiographic Province while the western portion of the County lies in the Bluegrass section of the Interior Low Plateau (see Appendix F). The landscape of the County is characterized by wide terraces, flood plains, steep hillsides along the major rivers and tributary stream valleys, and gently rolling glacial till plains. The altitude varies from about 962 feet down to 455 feet above sea level.

The surface relief in the uplands in Brown County is that of a broad plan that has been dissected by numerous streams. Significant rises or knolls are quite rare in the areas away from the stream valleys. Elevation ranges from about 1,120 feet above sea level near Ash Ridge to about 463 feet, which is the water level of the Ohio River.

Butler County lies in the Till Plains section of the Central Lowland Province. The topography of the County is rolling hills, river terraces and outwash plains.



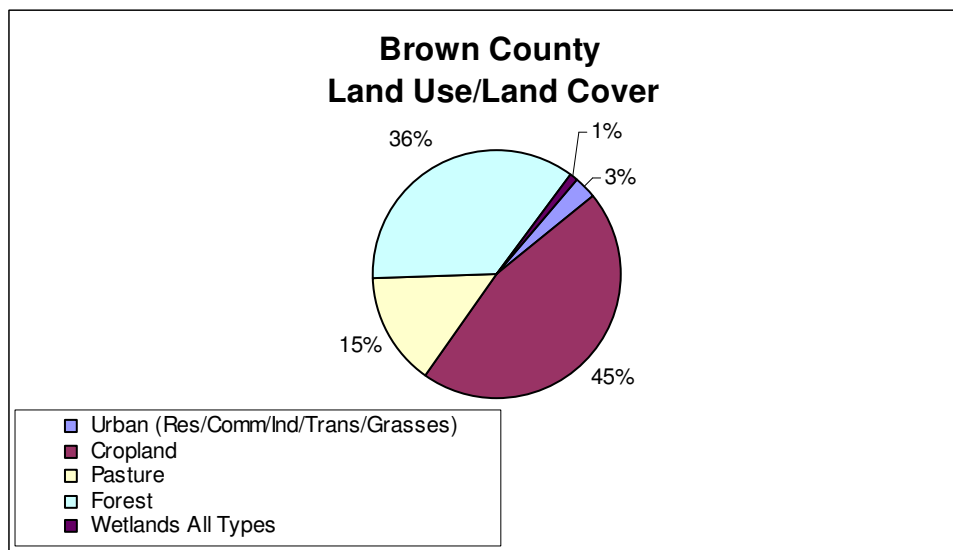
Like Butler County, Warren County is located in the Till Plains section of the Central Lowland Province. The western and northern parts of the County are nearly level to gently rolling hills. In the southern and southeastern parts of the County the topography is gently sloping but highly dissected due to numerous streams that are narrow and deeply entrenched.

Clermont County lies in the Till Plains section of the Central Lowland Province. The surface of the County is characterized by deep, narrow valleys and by level interstream areas. From the Ohio River, along the East Fork of the Little Miami River the surface is very broken and hilly.

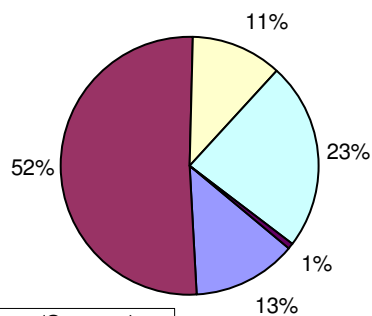
Clinton County lies entirely within the glaciated region of Ohio. Three-fourths of the County lies within the Indiana and Ohio Till Plain. The local name for this area is "pin-oak flats". The maximum elevation is in Green Township, at about 1190 feet above mean sea level, about 1 mile north of New Vienna. The lowest elevation is about 790 feet, in Vernon Township near Clarksville, where Todds Fork enters Warren County.

Warren County is nearly level to undulating in the western and northern parts. The southern and southeastern parts are in the Illinoian-age till plain and nearly level to gently sloping.

As shown in the following pie charts, the land use/land cover in Butler and Warren Counties is predominately characterized as cropland. Clermont County is nearly 50 percent forest while Hamilton County is split between urban and forest. As expected, Hamilton County has the highest percentage of urban area at 41 percent.

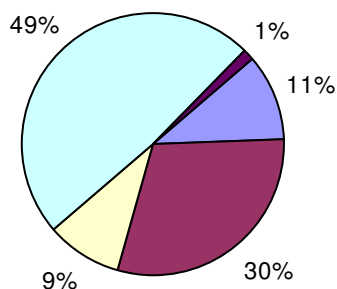


### Butler County Land Use/Land Cover



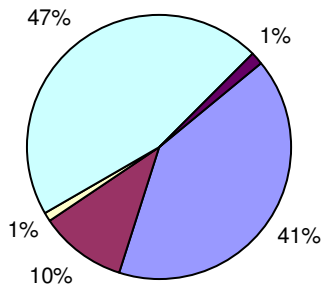
- Urban (Res/Comm/Ind/Trans/Grasses)
- Cropland
- Pasture
- Forest
- Wetlands All Types

### Clermont County Land Use/Land Cover

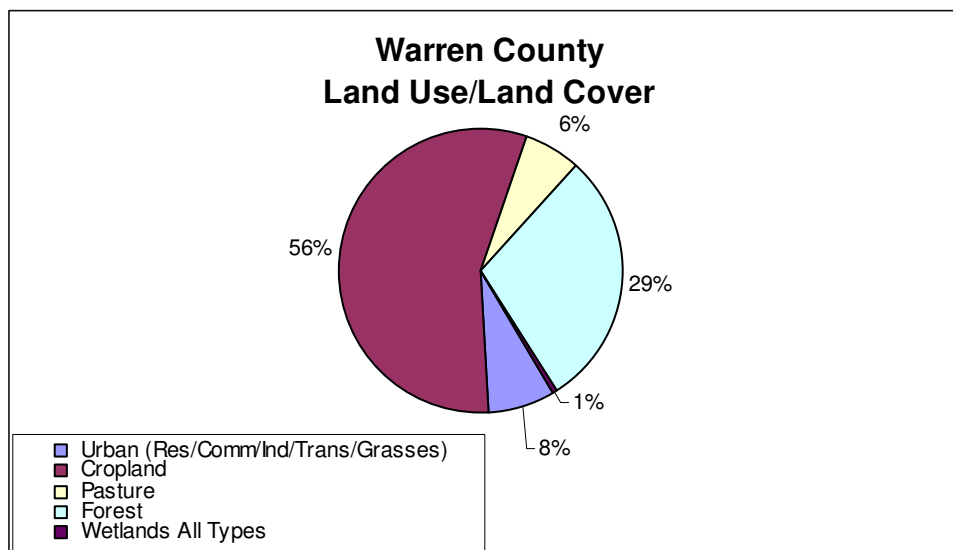


- Urban (Res/Comm/Ind/Trans/Grasses)
- Cropland
- Pasture
- Forest
- Wetlands All Types

### Hamilton County Land Use/Land Cover



- Urban (Res/Comm/Ind/Trans/Grasses)
- Cropland
- Pasture
- Forest
- Wetlands All Types



### **Factor 7: Jurisdictional boundaries**

The Cincinnati-Middletown, OH-KY-IN MSA includes the following Counties in Indiana: Dearborn, Franklin and Ohio; in Kentucky: Boone, Bracken, Campbell, Gallatin, Grant, Kenton and Pendleton; and in Ohio: Brown, Butler, Clermont, Hamilton, and Warren. The Cincinnati-Middletown-Wilmington, OH-KY-IN CSA includes the above along with Clinton County. The principal cities are Cincinnati and Middletown, Ohio.

The Ohio-Kentucky-Indiana regional Council of Governments (OKI) is the planning agency designated as the Metropolitan Planning Organization for the greater Cincinnati area. The OKI region is composed of eight Counties in three states: Butler, Clermont, Hamilton, and Warren Counties in Ohio; Boone, Campbell, and Kenton Counties in Kentucky; and Dearborn County in Indiana. *Please note that the cities of Franklin and Carlisle in Warren County are part of the Miami Valley Regional Planning Commission (MVRPC) planning area.*

### **Factor 8: Level of control of emission sources**

Please refer to the factor 8 general discussion at the beginning of this document for applicable control information for this area.

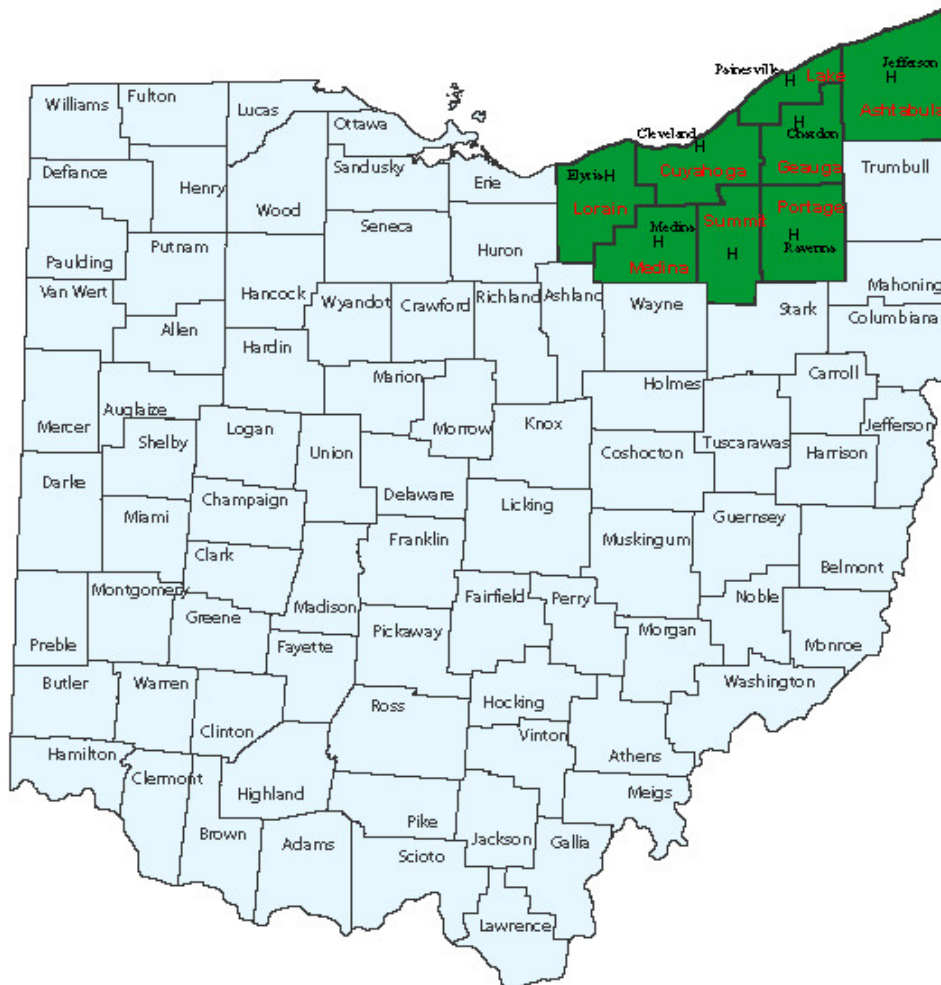
## Cleveland-Akron-Lorain, OH

**Current** County nonattainment: Ashtabula, Cuyahoga, Geauga, Lake, Lorain, Medina, Portage and Summit

**Current nonattainment Counties**

**Recommended** County nonattainment: Ashtabula, Cuyahoga, Geauga, Lake, Lorain, Medina, Portage and Summit

 Recommended nonattainment Counties




## **Discussion:**

There are eight Counties in this existing ozone nonattainment area: Ashtabula, Cuyahoga, Geauga, Lake, Lorain, Medina, Portage, and Summit Counties. However, based on 2005-2007 emissions data, the area is now in attainment with the 1997 standard and Ohio EPA is preparing a redesignation request. With respect to the new ozone standard, Ohio EPA recommends designating the eight Counties as nonattainment for the Cleveland-Akron-Lorain area; Ashtabula, Cuyahoga, Lake, and Summit Counties have violating monitors. The Counties of Erie, Huron, Ashland, Wayne, Stark, Mahoning and Trumbull are adjacent to this nonattainment area. Mahoning, and Trumbull are discussed in the Youngstown-Warren section while Stark is discussed in the Canton-Massillon section. The remaining adjacent Counties, Erie, Huron, Ashland and Wayne, are not a part of the MSA or CSA, and are excluded due to low emissions and low population. Although Wayne County's 2007 population is 113,554, it is largely agricultural and forested.

Wayne County is not part of the MSA; however, it is an adjacent County. Although Wayne County does have overall emissions comparable to other counties in the MSA, Ohio EPA is not recommending inclusion of Wayne County. Emissions in Wayne County are projected to decrease by approximately 14% for VOC and 22% for NO<sub>x</sub> from 2005 to 2009. The projected 2009 emissions for Cuyahoga, Lake, Lorain and Summit counties are far more significant than the projected 2009 emissions of Wayne County. The projected growth for Wayne County is minimal in number, increasing by 23,136 for a 2030 population of 136,690, compared to the 2030 projected population of Cuyahoga County, 1,274,020. Daily miles traveled by vehicles in Wayne County have been steadily declining. While some workers from Wayne County do travel to other MSA Counties for employment purposes, the numbers are minimal. The most significant of those is to Medina County but is low in comparison to the number of workers in Medina County, 8.4%. Also, Medina County's monitor is currently showing attainment of the new standard.

The three-year average of the annual fourth-highest daily maximum eight-hour average concentrations are not attaining the revised standard at four of the eight monitors as identified under factor 1 below.

### **Factor 1: Air quality data**

 = Exceeds standard

AQS: 8-Hour three-year average of the annual fourth-highest daily maximum (ppb)

Site Area County	Year	Highest Daily Maximum Concentrations (ppb)			
		1	2	3	4
39-007-1001 Conneaut Ashtabula Co.	2006	99	99	90	86
	2007	98	95	92	92
	2008	81	81	78	75
	Avg				84.3

<b>39-035-0034</b> <b>Cleveland</b> <b>Cuyahoga Co.</b>	2006	79	77	77	74
	2007	84	84	83	80
	2008	88	85	84	81
	Avg				78.3

39-035-0064 Cleveland Cuyahoga Co.	2006	72	71	71	68
	2007	103	95	87	83
	2008	87	81	77	72
	Avg				74.3

<b>39-035-5002</b> <b>Cleveland</b> <b>Cuyahoga Co.</b>	2006	90	85	83	81
	2007	86	84	82	80
	2008	90	87	86	83
	Avg				81.3

39-055-0004 Cleveland Geauga Co.	2006	76	72	71	70
	2007	71	69	68	68
	2008	88	83	82	82
	Avg				73.3

<b>39-085-0003</b> <b>Cleveland</b> <b>Lake Co.</b>	2006	88	84	83	83
	2007	79	76	75	74
	2008	84	84	84	78
	Avg				78.3

<b>39-085-3002</b> <b>Cleveland</b> <b>Lake Co.</b>	2006	80	76	75	75
	2007	93	84	82	79
	2008	81	77	77	76
	Avg				76.7

39-093-0018 Elyria Lorain Co.	2006	77	72	69	69
	2007	84	82	79	78
	2008	88	76	76	75
	Avg				74.0

39-103-0003 Cleveland Medina Co.	2006	76	75	74	73
	2007	73	71	70	69
	2008	80	79	77	75
	Avg				72.3

39-133-1001 Akron Portage Co.	2006	80	79	74	70
	2007	90	85	85	84
	2008	75	71	69	69
	Avg				74.3



**Factor 2: Emissions data**  
(tons per day)

<b>2005</b>		
<b>County</b>	<b>VOC</b>	<b>NO<sub>x</sub></b>
<b>ASHTABULA</b>	<b>19.60</b>	<b>22.93</b>
<b>CUYAHOGA</b>	<b>105.89</b>	<b>131.85</b>
<b>LAKE</b>	<b>24.62</b>	<b>61.81</b>
<b>SUMMIT</b>	<b>45.86</b>	<b>60.55</b>
PORTAGE	17.75	21.14
MEDINA	16.90	20.05
LORAIN	30.81	51.67
GEAUGA	16.91	8.40
Wayne	17.08	23.62

<b>2009</b>		
<b>County</b>	<b>VOC</b>	<b>NO<sub>x</sub></b>
<b>ASHTABULA</b>	<b>16.52</b>	<b>19.35</b>
<b>CUYAHOGA</b>	<b>85.01</b>	<b>107.51</b>
<b>LAKE</b>	<b>20.71</b>	<b>48.87</b>
<b>SUMMIT</b>	<b>36.19</b>	<b>44.53</b>
PORTAGE	14.74	15.94
MEDINA	14.33	15.55
LORAIN	26.06	43.48
GEAUGA	16.09	6.67
Wayne	14.73	18.45

**Major Employers**

Source: Ohio Department of Development 2007

Most of the major employers in the Cleveland-Akron area are in the categories of manufacturing, government and service as shown below.

**Ashtabula County**

Ashtabula Area City Bd of Ed	Government
Ashtabula County Govt	Government
Ashtabula County Medical Center	Service
General Aluminum Mfg Co	Manufacturing
Kennametal Inc	Manufacturing
Lyondell Chemical Co	Manufacturing
Masco/KraftMaid Cabinetry	Manufacturing
Molded Fiber Glass Companies	Manufacturing
Premix Inc	Manufacturing



**Cuyahoga County**

American Greetings Corp	Manufacturing
Case Western Reserve University	Service
Cleveland Clinic Health System	Service
Continental Airlines	Transportation
Ford Motor Co	Manufacturing
General Motors Corp	Manufacturing
KeyCorp	Finance
Lincoln Electric Holding Inc	Manufacturing
National City Corp	Finance
Parker Hannifin Corp	Manufacturing
Progressive Corp	Insurance
Sherwin-Williams Co	Manufacturing
University Hospitals Health System	Service

**Geauga County**

Chardon Local Bd of Ed	Government
Duramax Inc/Johnson Rubber	Manufacturing
Geauga County Government	Government
Great Lakes Cheese Company	Manufacturing
Kenston Local Bd of Ed	Government
Masco Corp/KraftMaid Cabinetry Inc	Manufacturing
Myers Holding Corp	Manufacturing
Pentair Inc	Manufacturing
Tarkett/Johnsonite Inc	Manufacturing
University Hospitals Health System	Service

**Lake County**

ABB Inc	Manufacturing
Avery Dennison Corp	Manufacturing
Cleveland Clinic Health System	Service
FirstEnergy Corp	Utility
Lake County Government	Government
Lake Hospital System	Service
Lubrizol Corp	Manufacturing
Mentor Exempted Village Bd of Ed	Government
STERIS Corp	Manufacturing
Willoughby-Eastlake City Bd of Ed	Government

**Lorain County**

Community Health Partners	Service
Elyria City Bd of Ed	Government
Emerson Electric/Ridge Tool	Manufacturing
EMH regional Medical Center	Service
Ford Motor Co	Manufacturing
Invacare Corp	Manufacturing
Lorain City Bd of Ed	Government
Lorain County Government	Government
Nordson Corp	Manufacturing
Oberlin College	Service
PolyOne Corp	Manufacturing
Republic Engineered Products Inc	Manufacturing
State of Ohio	Government

**Medina County**

Brunswick City Bd of Ed	Government
Discount Drug Mart Inc	Trade
Medina City Bd of Ed	Government
Medina County Government	Government
Medina General Hospital	Service
MTD Products Inc	Manufacturing
Schneider National Inc	Transportation
Wadsworth City Bd of Ed	Government
Wadsworth-Rittman Hospital	Service
Westfield Group	Insurance

**Portage County**

East Manufacturing Corp	Manufacturing
General Electric Co	Manufacturing
Kent City Board of Education	Government
Kent State University	Government
McMaster-Carr Supply Co	Trade
Ravenna City Bd of Ed	Government
Robinson Memorial Hospital	Service
State of Ohio	Government
Step2 Company	Manufacturing

**Summit County**

Akron City Bd of Ed	Government
Akron General Health System	Service
Children's Hospital Medical Center	Service
Chrysler LLC	Manufacturing
Diebold Inc	Manufacturing
FirstEnergy Corp	Utility
Goodyear Tire & Rubber Co	Manufacturing
Jo-Ann Stores Inc	Trade
McDermott Int'l/Babcock & Wilcox	Manufacturing
Signet Group plc/Sterling Inc	Trade
Summa Health System	Service
University of Akron	Government

**Wayne County**

College of Wooster	Service
Frito-Lay Inc	Manufacturing
JM Smucker Co	Manufacturing
LuK Inc	Manufacturing
State of Ohio	Government
Will-Burt Co	Manufacturing
Wooster Brush Co	Manufacturing
Wooster City Bd of Ed	Government
Wooster Community Hospital	Service
Worthington Ind/Gerstenslager Co	Manufacturing

### Factor 3: Population and Projected Growth

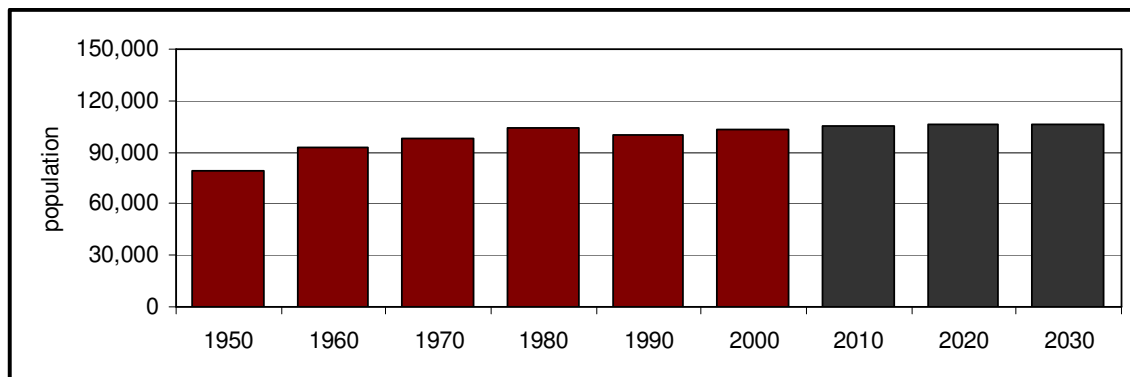
Sources: Office of Strategic Research, Ohio Department of Development  
U.S. Census Bureau Population Estimates Program 2007

The largest populated places in the Cleveland-Akron-Lorain area are: the greater Cleveland area in Cuyahoga County; Elyria, Avon and North Ridgeville in Lorain County; Medina, Brunswick and Wadsworth in Medina County; Akron, Barberton, Cuyahoga Falls and Stow in Summit County; Kent and Ravenna in Portage County; Chardon and Middlefield in Geauga County; Mentor, Willoughby and Eastlake in Lake County; and Conneaut and Ashtabula in Ashtabula County.

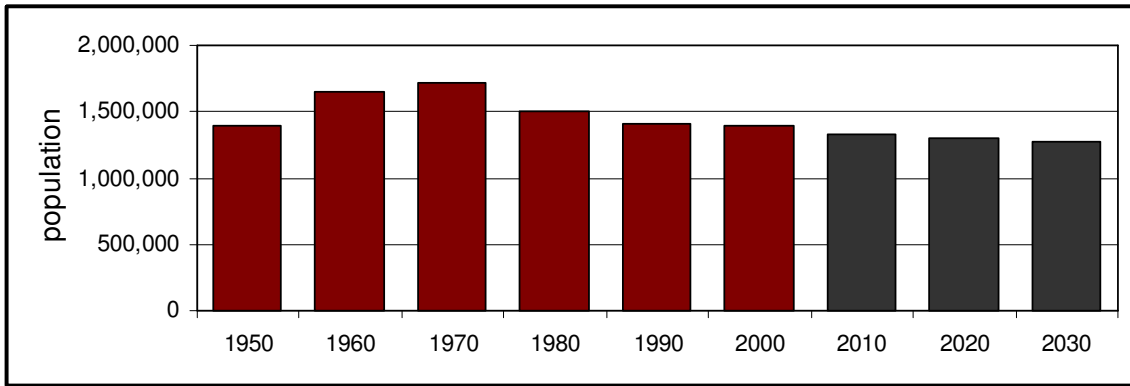
As indicated in the following table and graphs, Cuyahoga County has the highest population in this area; however, it is projected steadily decrease. The population in the surrounding Counties is remaining generally constant with slight trends upward with Medina County having the most significant upward trend.

COUNTY	2004	2005	2006	2007	2010	2020	2030
<b>Cuyahoga</b>	1,346,194	1,330,428	1,314,241	1,295,958	1,332,540	1,301,870	1,274,020
<b>Lake</b>	232,059	232,416	232,892	233,392	233,890	234,520	232,350
Lorain	296,717	300,266	301,993	302,260	290,840	299,630	312,540
Medina	164,644	166,968	169,353	169,832	173,760	191,850	206,770
Portage	155,079	155,150	155,012	155,869	158,160	161,660	161,880
<b>Summit</b>	546,366	546,285	545,931	543,487	557,660	564,810	564,210
Wayne	113,086	113,496	113,950	113,554	119,850	128,670	136,690
<b>Ashtabula</b>	102,960	103,044	102,703	101,141	104,970	106,090	106,420
Geauga	94,379	95,060	95,676	95,029	98,820	104,810	109,180

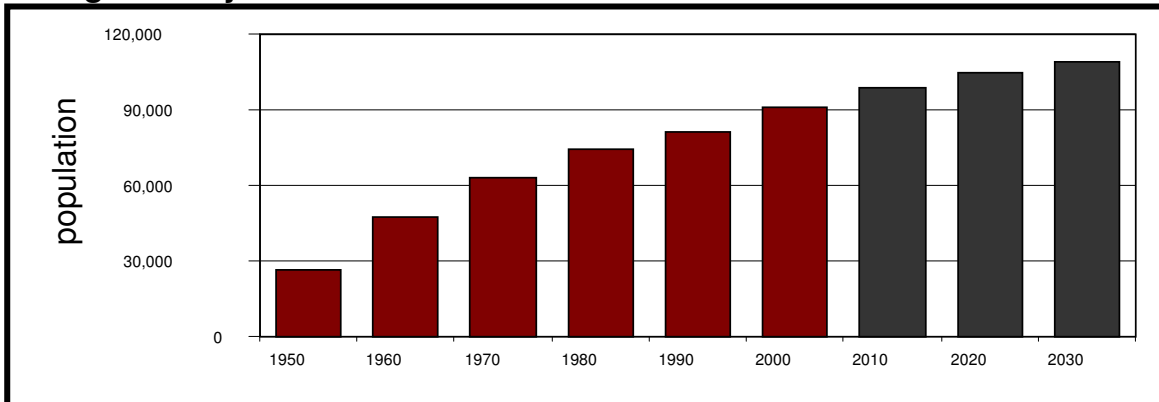
#### Ashtabula County



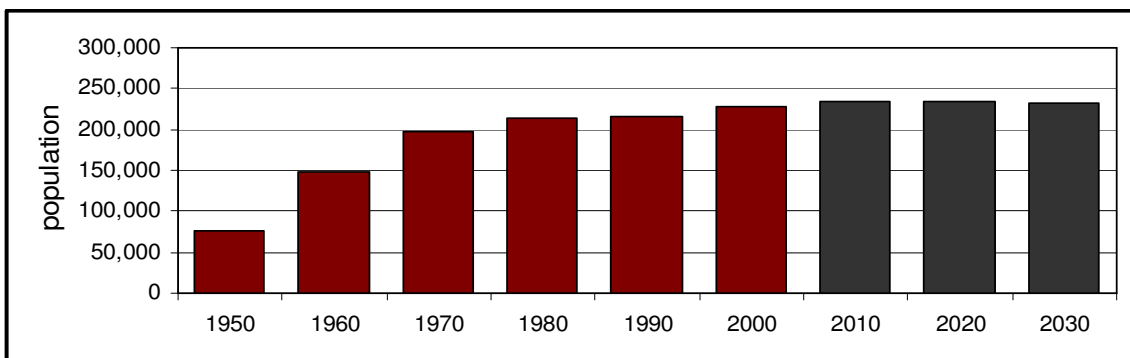
## Cuyahoga County



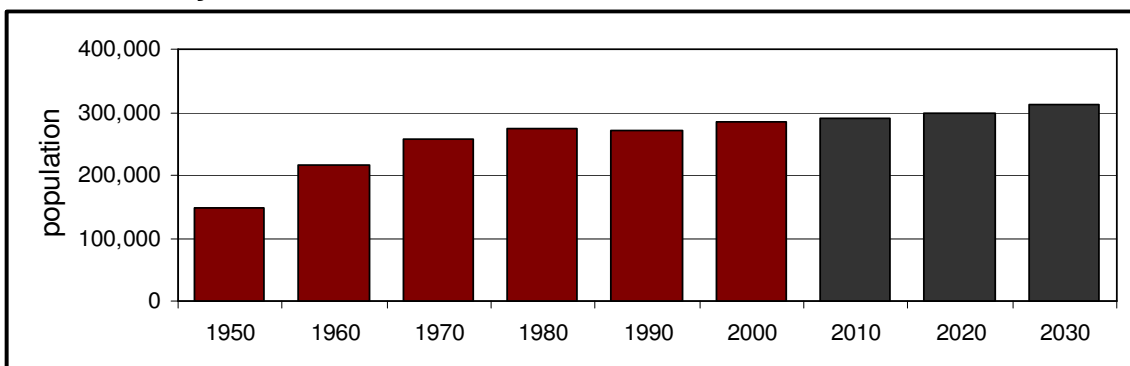
## Geauga County



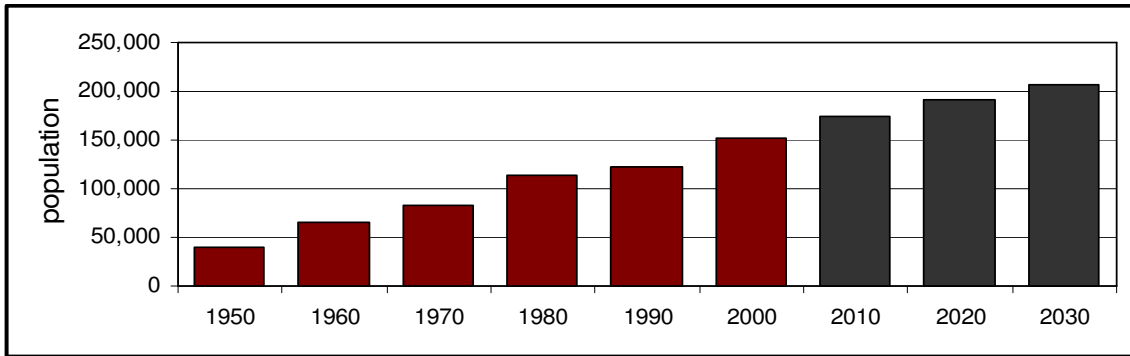
## Lake County



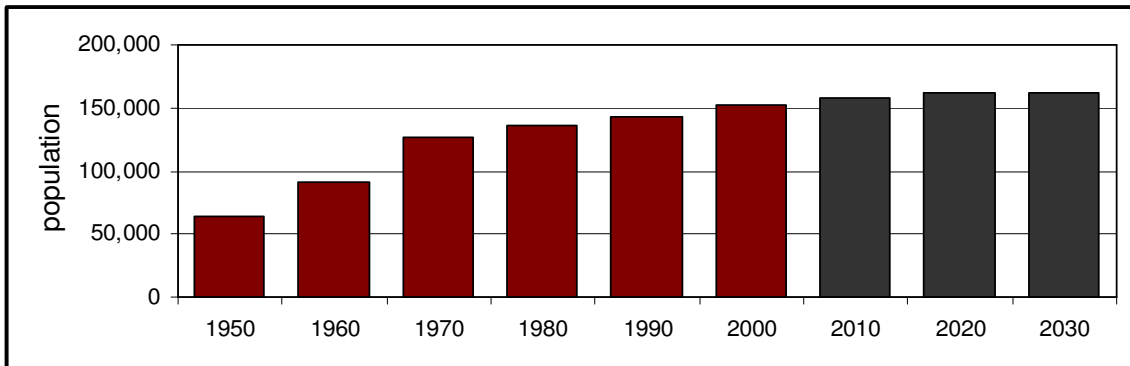
## Lorain County



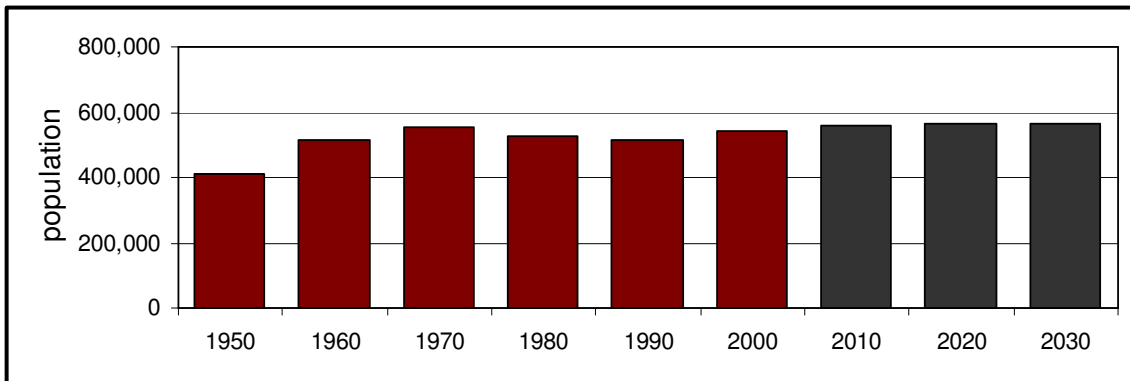
### Medina County



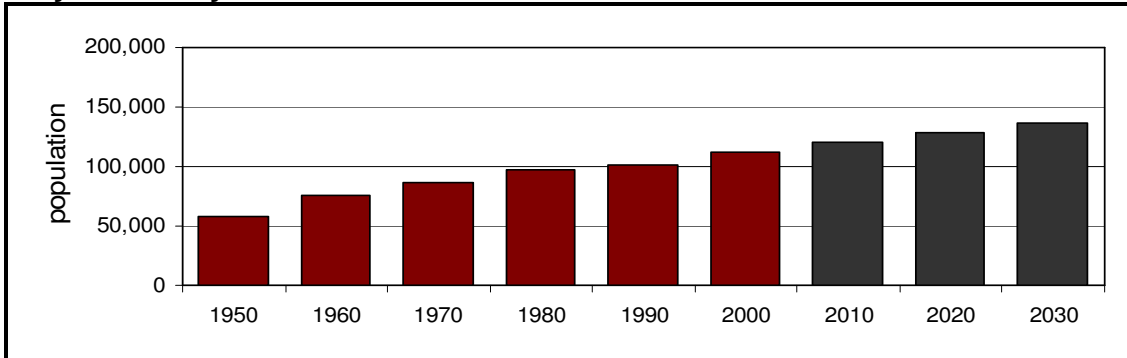
### Portage County



### Summit County



### Wayne County

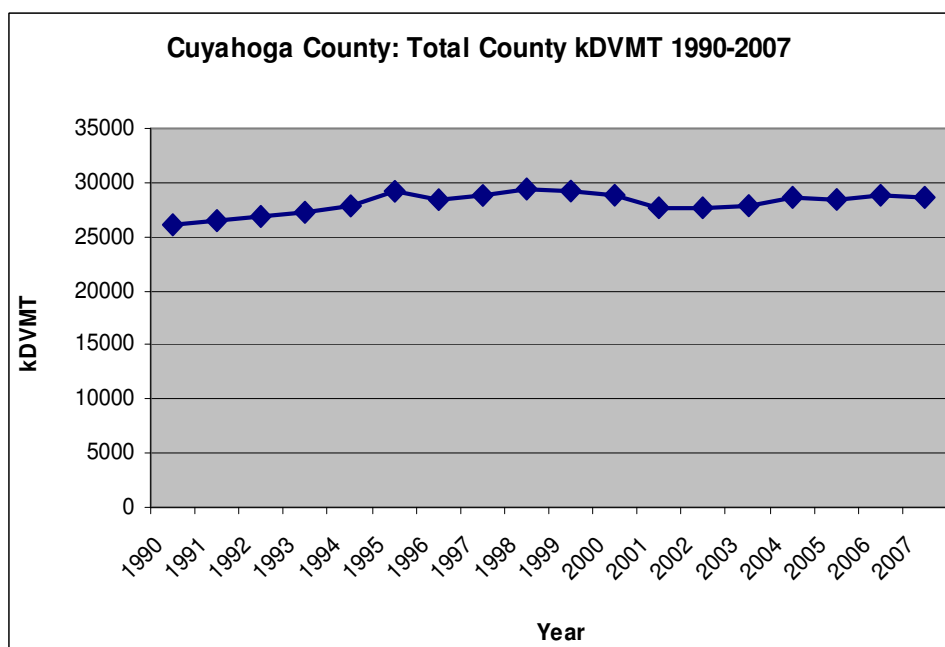
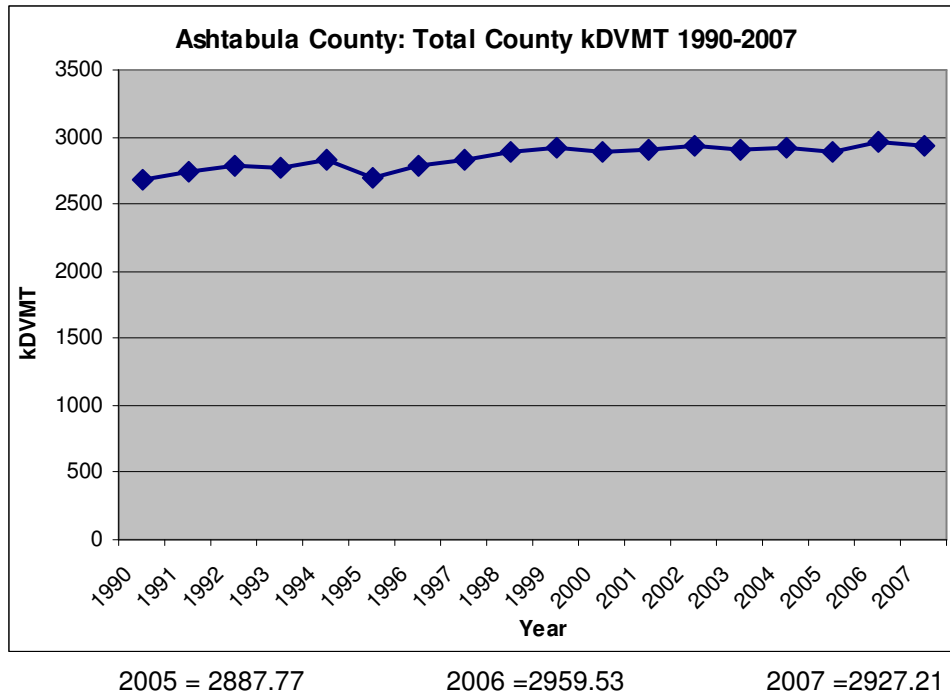


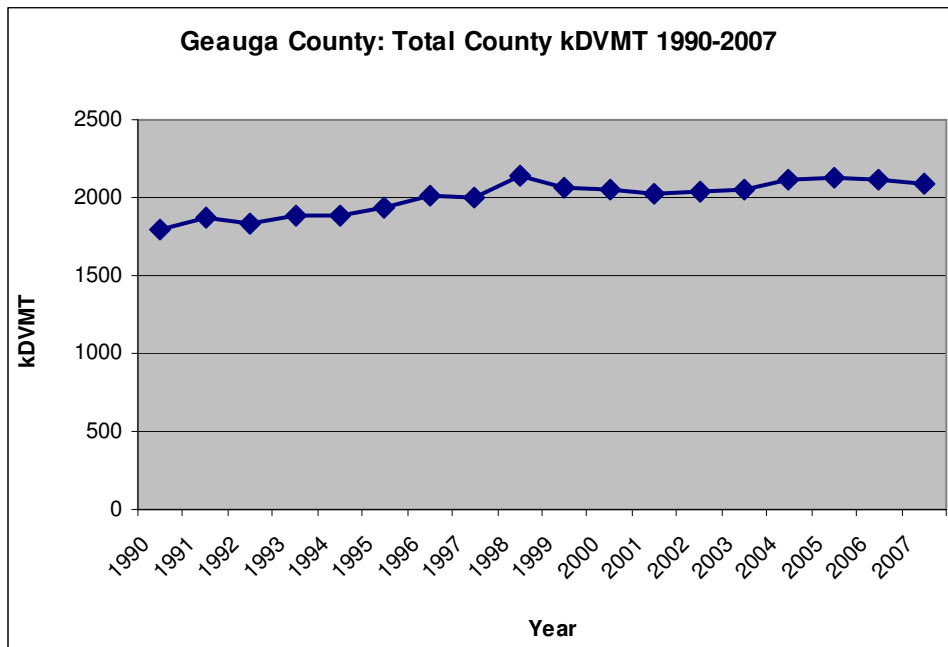
#### Factor 4: Traffic and commuting patterns

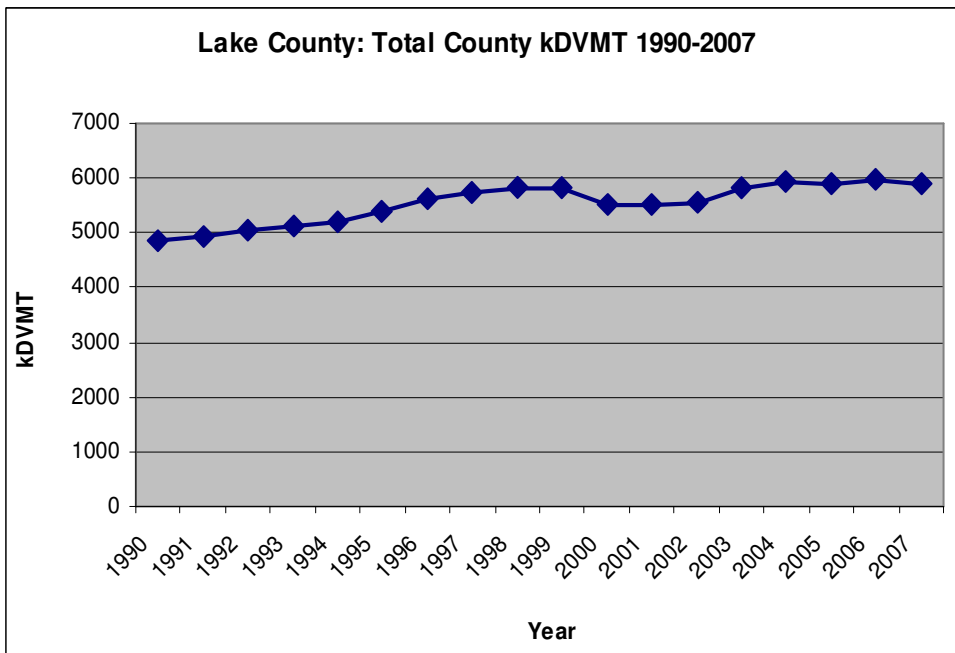
The kDVMT within the Cleveland-Akron-Lorain area have had an upward trend with the exception of Lorain County that has had a slight downward trend since 2004. Ashtabula experienced the most increase between 2005 and 2007 with 39.44 kDVMT. As expected, Cuyahoga has the overall highest kDVMT in the 28,000 range and Ashtabula has the lowest kDVMT in the 2,900 range as shown in the following graphs.

##### Estimated Daily Vehicle Miles Traveled (kDVMT = in thousands)

Source: Ohio Department of Transportation, Office of Technical Services



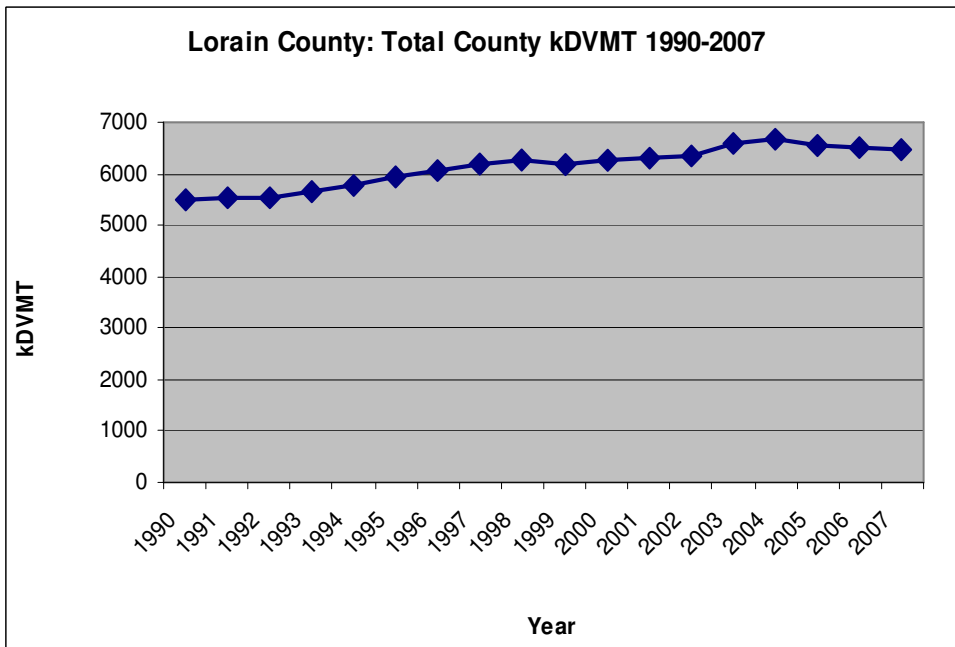




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2006 = 5980.35

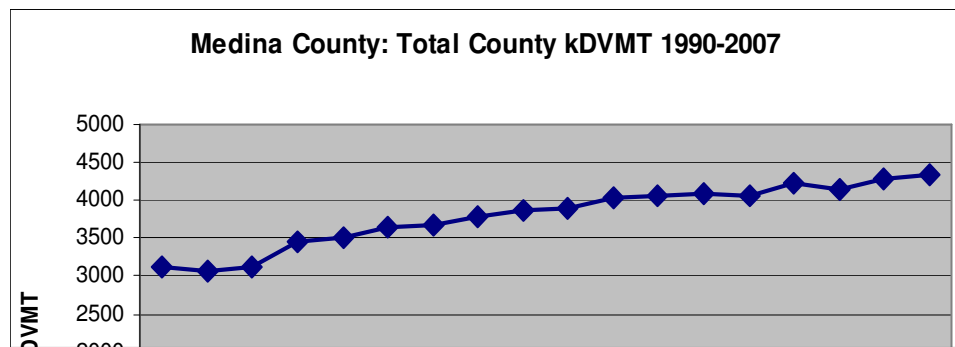
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2005 = 6568.15

2006 = 6514.41

2007 = 6460.55

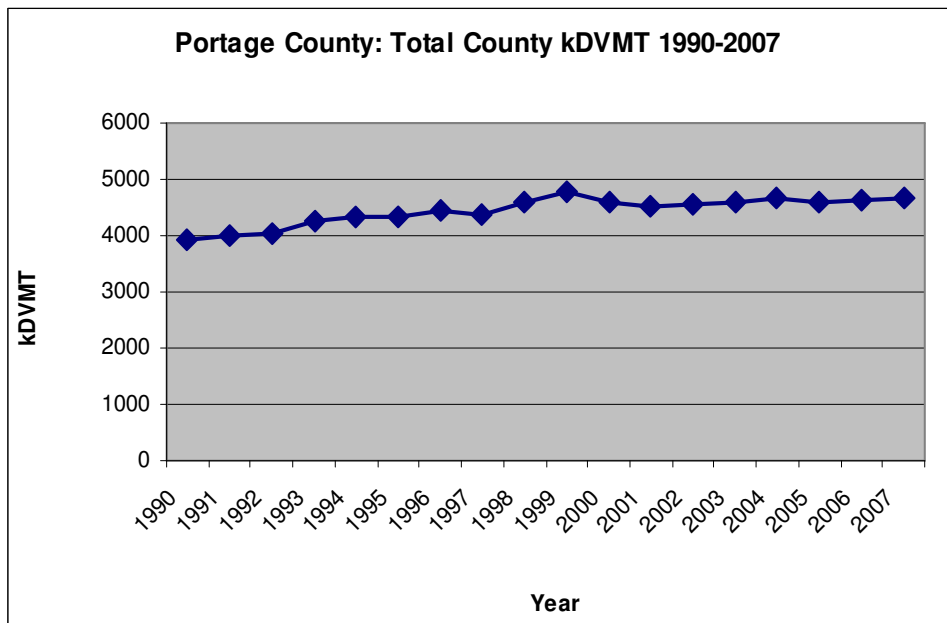




2005 = 4146.97

2006 = 4289.86

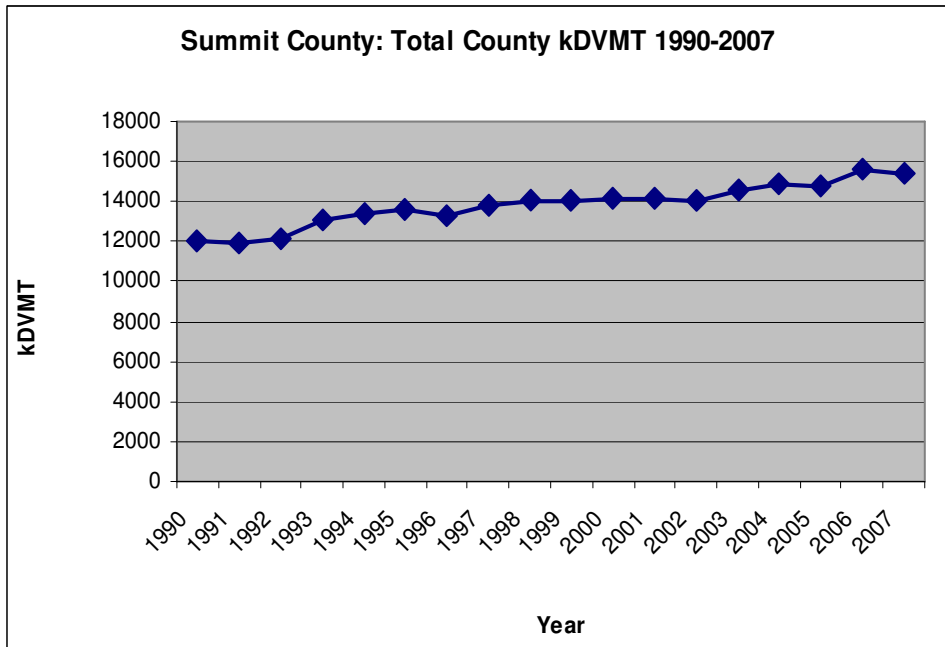
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2005 = 4609.22

2006 = 4644.6

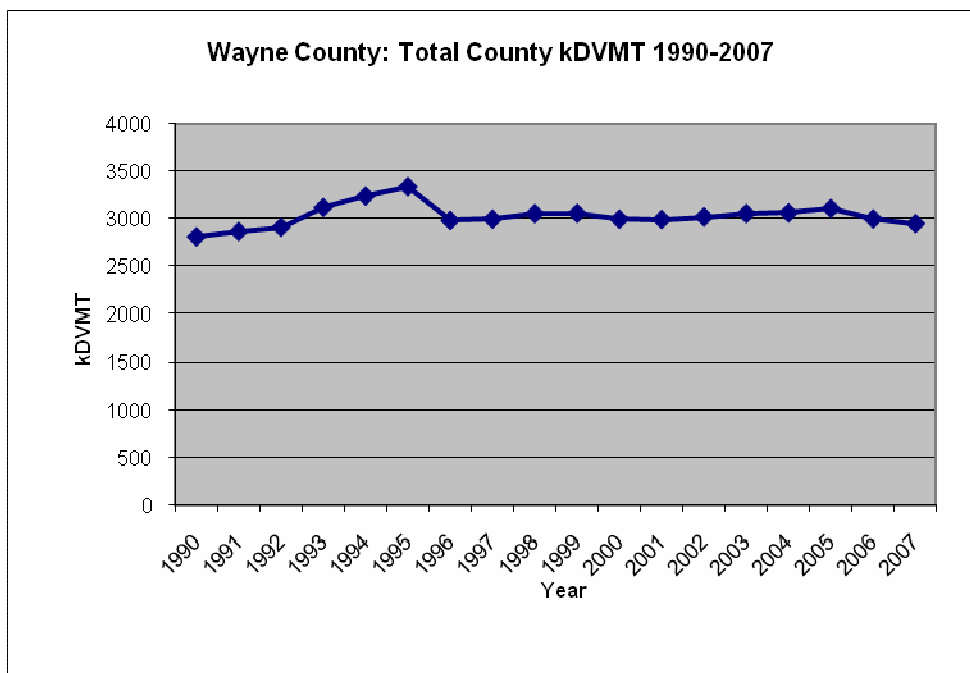
2007 = 4659.45



2005 = 14751.41

2006 = 15549.13

2007 = 15367.21



2005 = 3111.7

2006 = 3003.18

2007 = 2954.55

## Commuter Patterns

Source: Office of Strategic Research, Ohio Department of Development  
U.S. Census Bureau, 2000

Cuyahoga County receives the most of its work-commuters from Lorain, Lake, and Summit Counties, and the least from Wayne County. Portage and Cuyahoga Counties provide the most commuters to Summit County and Ashtabula has the least as shown in the tables below.

<b>Ashtabula</b>		Percent of workers that work outside the County	27.9%
		Average commute time in minutes -	23.9
<b>Number of workers 16+ years of age living in Ashtabula County</b>		<b>45,689</b>	
Commute Out To	Number	Percent	
Lake Co. OH	5,775	12.6%	
Cuyahoga Co. OH	2,683	5.9%	
Geauga Co. OH	2,265	5.0%	
Trumbull Co. OH	485	1.1%	
Erie Co. PA	412	0.9%	
Mahoning Co. OH	151	0.3%	
Lorain Co. OH	134	0.3%	
Summit Co. OH	113	0.2%	
Portage Co. OH	100	0.2%	
Crawford Co. PA	91	0.2%	
Percent is of workers living in County.		Percent is of workers working in County.	
<b>Number of workers 16+ years of age working in Ashtabula County</b>		<b>37,925</b>	
Commute In From	Number	Percent	
Lake Co. OH	1,200	3.2%	
Trumbull Co. OH	892	2.4%	
Crawford Co. PA	644	1.7%	
Erie Co. PA	569	1.5%	
Cuyahoga Co. OH	397	1.0%	
Geauga Co. OH	257	0.7%	
Summit Co. OH	196	0.5%	
Mercer Co. PA	146	0.4%	
Lorain Co. OH	138	0.4%	
Portage Co. OH	127	0.3%	
<b>Cuyahoga</b>		Percent of workers that work outside the County	9.1%
		Average commute time in minutes -	24.4
<b>Number of workers 16+ years of age living in Cuyahoga County</b>		<b>622,876</b>	
Commute Out To	Number	Percent	
Lake Co. OH	15,692	2.5%	
Summit Co. OH	14,207	2.3%	
Lorain Co. OH	9,289	1.5%	
Medina Co. OH	4,795	0.8%	
Geauga Co. OH	2,973	0.5%	
Portage Co. OH	2,632	0.4%	
Stark Co. OH	565	0.1%	
Franklin Co. OH	524	0.1%	
Ashtabula Co. OH	397	0.1%	
Cook Co. IL	298	0.0%	
Percent is of workers living in County.		Percent is of workers working in County.	
<b>Number of workers 16+ years of age working in Cuyahoga County</b>		<b>748,630</b>	
Commute In From	Number	Percent	
Lorain Co. OH	36,888	4.9%	
Lake Co. OH	36,741	4.9%	
Summit Co. OH	34,476	4.6%	
Medina Co. OH	26,572	3.5%	
Geauga Co. OH	16,676	2.2%	
Portage Co. OH	11,934	1.6%	
Ashtabula Co. OH	2,683	0.4%	
Stark Co. OH	2,443	0.3%	
Trumbull Co. OH	1,976	0.3%	
Wayne Co. OH	1,193	0.2%	
<b>Geauga</b>		Percent of workers that work outside the County	57.2%
		Average commute time in minutes -	27.0

Number of workers 16+ years of age living in Geauga County 44,499			Number of workers 16+ years of age working in Geauga County 34,417		
Commute Out To	Number	Percent	Commute In From	Number	Percent
Cuyahoga Co. OH	16,676	37.5%	Trumbull Co. OH	3,900	11.3%
Lake Co. OH	5,276	11.9%	Lake Co. OH	3,147	9.1%
Summit Co. OH	1,130	2.5%	Cuyahoga Co. OH	2,973	8.6%
Portage Co. OH	1,002	2.3%	Ashtabula Co. OH	2,265	6.6%
Trumbull Co. OH	310	0.7%	Portage Co. OH	1,989	5.8%
Ashtabula Co. OH	257	0.6%	Summit Co. OH	563	1.6%
Mahoning Co. OH	105	0.2%	Mahoning Co. OH	107	0.3%
Stark Co. OH	82	0.2%	Lorain Co. OH	70	0.2%
Lorain Co. OH	68	0.2%	Mercer Co. PA	40	0.1%
Percent is of workers living in County.			Percent is of workers working in County.		

<b>Lake</b>	Percent of workers that work outside the County	37.6%
	Average commute time in minutes -	22.9

Number of workers 16+ years of age living in Lake County 116,830			Number of workers 16+ years of age working in Lake County 102,913		
Commute Out To	Number	Percent	Commute In From	Number	Percent
Cuyahoga Co. OH	36,741	31.4%	Cuyahoga Co. OH	15,692	15.2%
Gauga Co. OH	3,147	2.7%	Ashtabula Co. OH	5,775	5.6%
Ashtabula Co. OH	1,200	1.0%	Gauga Co. OH	5,276	5.1%
Summit Co. OH	1,157	1.0%	Summit Co. OH	1,148	1.1%
Portage Co. OH	307	0.3%	Portage Co. OH	436	0.4%
Lorain Co. OH	277	0.2%	Lorain Co. OH	342	0.3%
Trumbull Co. OH	119	0.1%	Medina Co. OH	307	0.3%
Stark Co. OH	108	0.1%	Stark Co. OH	142	0.1%
Medina Co. OH	65	0.1%	Trumbull Co. OH	135	0.1%
Percent is of workers living in County.			Percent is of workers working in County.		

<b>Lorain</b>	Percent of workers that work outside the County	33.2%
	Average commute time in minutes -	22.8

Number of workers 16+ years of age living in Lorain County. 132,895			Number of workers 16+ years of age working in Lorain County 108,001		
Commute Out To	Number	Percent	Commute In From	Number	Percent
Cuyahoga Co. OH	36,888	27.8%	Cuyahoga Co. OH	9,289	8.6%
Medina Co. OH	1,874	1.4%	Erie Co. OH	3,923	3.6%
Erie Co. OH	1,594	1.2%	Huron Co. OH	1,501	1.4%
Summit Co. OH	970	0.7%	Medina Co. OH	1,418	1.3%
Huron Co. OH	421	0.3%	Ashland Co. OH	648	0.6%
Lake Co. OH	342	0.3%	Summit Co. OH	588	0.5%
Portage Co. OH	182	0.1%	Lake Co. OH	277	0.3%
Ashtabula Co. OH	138	0.1%	Portage Co. OH	152	0.1%
Franklin Co. OH	135	0.1%	Wayne Co. OH	145	0.1%
Percent is of workers living in County.			Percent is of workers working in County.		

<b>Medina</b>	Percent of workers that work outside the County	53.4%
	Average commute time in minutes -	26.4

Number of workers 16+ years of age living in Medina County 76,548		
Commute Out To	Number	Percent
Cuyahoga Co. OH	26,572	34.7%
Summit Co. OH	8,647	11.3%
Wayne Co. OH	1,726	2.3%
Lorain Co. OH	1,418	1.9%
Stark Co. OH	445	0.6%
Portage Co. OH	322	0.4%
Ashland Co. OH	307	0.4%
Lake Co. OH	307	0.4%
Richland Co. OH	148	0.2%
Percent is of workers living in County.		

Number of workers 16+ years of age working in Medina County 55,311		
Commute In From	Number	Percent
Summit Co. OH	5,248	9.5%
Cuyahoga Co. OH	4,795	8.7%
Wayne Co. OH	4,667	8.4%
Lorain Co. OH	1,874	3.4%
Stark Co. OH	770	1.4%
Ashland Co. OH	720	1.3%
Portage Co. OH	314	0.6%
Huron Co. OH	102	0.2%
Richland Co. OH	89	0.2%
Percent is of workers working in County.		

Portage	Percent of workers that work outside the County		49.6%
	Average commute time in minutes -		25.1
Number of workers 16+ years of age living in Portage County			78,023
Commute Out To	Number	Percent	
Summit Co. OH	19,049	24.4%	
Cuyahoga Co. OH	11,934	15.3%	
Geauga Co. OH	1,989	2.5%	
Stark Co. OH	1,578	2.0%	
Trumbull Co. OH	1,449	1.9%	
Mahoning Co. OH	603	0.8%	
Lake Co. OH	436	0.6%	
Medina Co. OH	314	0.4%	
Columbiana Co. OH	182	0.2%	
Lorain Co. OH	152	0.2%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Portage County			60,123
Commute In From	Number	Percent	
Summit Co. OH	9,702	16.1%	
Cuyahoga Co. OH	2,632	4.4%	
Stark Co. OH	2,256	3.8%	
Trumbull Co. OH	1,863	3.1%	
Mahoning Co. OH	1,171	1.9%	
Geauga Co. OH	1,002	1.7%	
Medina Co. OH	322	0.5%	
Columbiana Co. OH	316	0.5%	
Lake Co. OH	307	0.5%	
Lorain Co. OH	182	0.3%	
Percent is of workers working in County.			

Summit		Percent of workers that work outside the County		25.0%
		Average commute time in minutes -		22.4
Number of workers 16+ years of age living in Summit County				258,414
Commute Out To	Number	Percent		
Cuyahoga Co. OH	34,476	13.3%		
Portage Co. OH	9,702	3.8%		
Stark Co. OH	7,665	3.0%		
Medina Co. OH	5,248	2.0%		
Lake Co. OH	1,148	0.4%		
Wayne Co. OH	1,095	0.4%		
Lorain Co. OH	588	0.2%		
Geauga Co. OH	563	0.2%		
Mahoning Co. OH	460	0.2%		
Percent is of workers living in County.				
Number of workers 16+ years of age working in Summit County				270,431
Commute In From	Number	Percent		
Stark Co. OH	21,094	7.8%		
Portage Co. OH	19,049	7.0%		
Cuyahoga Co. OH	14,207	5.3%		
Medina Co. OH	8,647	3.2%		
Wayne Co. OH	3,948	1.5%		
Lake Co. OH	1,157	0.4%		
Geauga Co. OH	1,130	0.4%		
Mahoning Co. OH	1,096	0.4%		
Trumbull Co. OH	1,038	0.4%		
Percent is of workers working in County.				

<b>Wayne</b>		Percent of workers that work outside the County	27.1%
		Average commute time in minutes -	19.4
<b>Number of workers 16+ years of age living in Wayne County</b>		<b>54,487</b>	
Commute Out To	Number	Percent	
Medina Co. OH	4,667	8.6%	
Summit Co. OH	3,948	7.2%	
Stark Co. OH	1,672	3.1%	
Holmes Co. OH	1,247	2.3%	
Cuyahoga Co. OH	1,193	2.2%	
Ashland Co. OH	565	1.0%	
Richland Co. OH	297	0.5%	
Lorain Co. OH	145	0.3%	
Tuscarawas Co. OH	125	0.2%	
Percent is of workers living in County.			
<b>Number of workers 16+ years of age working in Wayne County</b>		<b>52,259</b>	
Commute In From	Number	Percent	
Stark Co. OH	3,026	5.8%	
Holmes Co. OH	2,411	4.6%	
Medina Co. OH	1,726	3.3%	
Ashland Co. OH	1,712	3.3%	
Summit Co. OH	1,095	2.1%	
Tuscarawas Co. OH	688	1.3%	
Richland Co. OH	443	0.8%	
Coshocton Co. OH	178	0.3%	
Cuyahoga Co. OH	163	0.3%	
Percent is of workers working in County.			

## Factor 5: Meteorology

Please refer to Appendix E for applicable meteorology information for the Cleveland-Akron area.

## Factor 6: Topography/Land use/Land cover

Cuyahoga County is one of the most highly urbanized Counties in Ohio. It is located within two physiographic Provinces: the glaciated Allegheny Plateau of the Appalachian Plateaus Province on the south and east and the Huron-Erie Lake Plains and Till Plains sections of the Central Lowland Province on the west and north (see Appendix F). The shore of Lake Erie is 569 feet above sea level. The City of Cleveland lies on a series of irregular bluffs lying roughly parallel to the lake. The land rises quickly from the lakeshore with an elevation of 791 feet above sea level at the Hopkins Airport five miles inland from the lake.

Lorain County is located on the eastern fringe of the till plain area of the Great Central Lowlands. The topography is generally flat to gently rolling. Exceptions to the nearly flat topography are the gorges of the Black River near Elyria and the Vermillion River at Mill Hollow.

Medina County includes parts of two physiographic Provinces: the Great Central Lowlands and the glaciated part of the Appalachian Plateau, each making up about half the County. The topography is generally level to sloping along stream valleys. The elevation ranges from 765 to 1,325 feet above sea level.

Summit County lies entirely within the glaciated Allegheny Plateau region. In the southern portion of the County, the topography is made up of a series of glacial till-covered plateaus and outwash-filled valleys. Elevations of the plateau are between 1,100 and 1,200 feet above sea level and the valleys are about 950 to

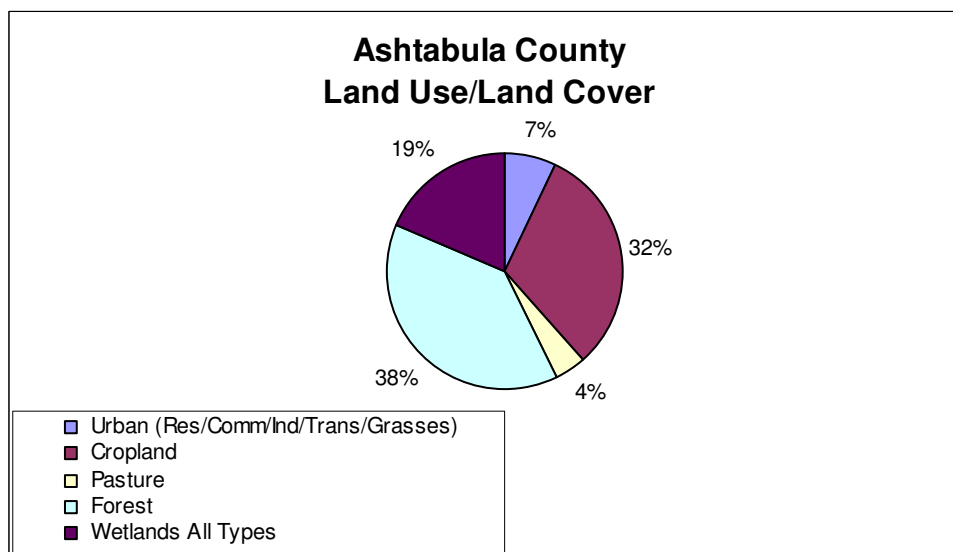
1,000 feet. The northern portion of the County has greater elevation because the old valley fill has been dissected by the Cuyahoga River and its tributaries. The highest point in Summit County is 1,320 feet near West Richfield. The lowest point is about eight miles away, along the Cuyahoga River where the river leaves the County.

Portage County is located in the northwestern part of the glaciated Allegheny Plateau and lies on the divide between the Lake Erie and the Ohio River basins. The relief of the County is generally level with gently rolling plateaus. Elevation ranges from 910 feet to 1,340.

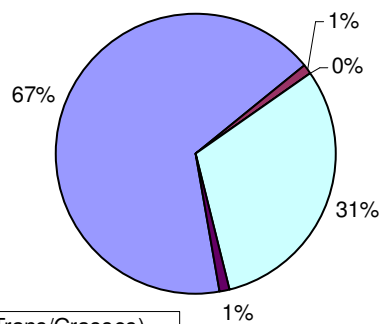
Geauga County is part of the Appalachian Plateau region. The relief of the County is primarily gently sloping and steeper slopes along streams. The lowest elevation is 770 feet along the Chagrin River at the Geauga-Lake County line, and the highest elevation is 1,396 feet at Sugarloaf Mountain in the south-central part of the County.

Ashtabula County is in two contrasting major physiographic Provinces. The northern part of the County is in the Eastern Lake Section of the Central Lowland Province while the southern part of the County is in the Southern New York Section of the Appalachian Plateau Province. The relief of the County is primarily level and gently undulating in the northern, western and south central parts of the County. Elevation ranges from 572 feet to 1,100 feet above sea level, with steep areas along the streams.

As shown in the following pie charts, the land use/land cover in Cuyahoga and Summit Counties, as expected is predominately residential, commercial and industrial. However, both have fairly large percentages of forest areas like Portage, Lake and Ashtabula Counties. Lorain County has the largest percentage of cropland with Ashtabula and Portage coming in a close second and third.

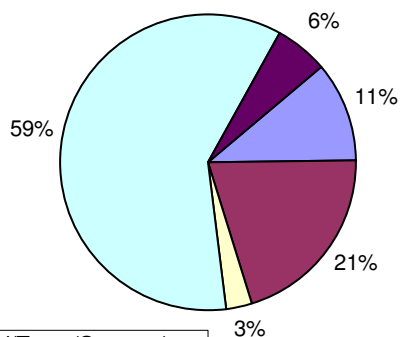


### Cuyahoga County Land Use/Land Cover



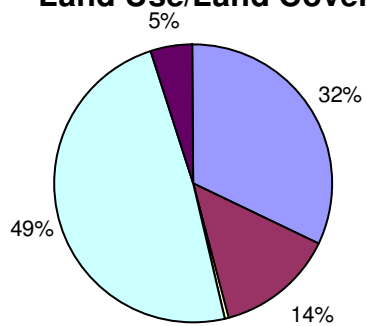
- Urban (Res/Comm/Ind/Trans/Grasses)
- Cropland
- Pasture
- Forest
- Wetlands All Types

### Geauga County Land Use/Land Cover



- Urban (Res/Comm/Ind/Trans/Grasses)
- Cropland
- Pasture
- Forest
- Wetlands All Types

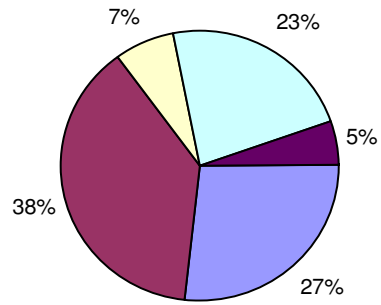
### Lake County Land Use/Land Cover



- Urban (Res/Comm/Ind/Trans/Grasses)
- Cropland
- Pasture
- Forest
- Wetlands All Types

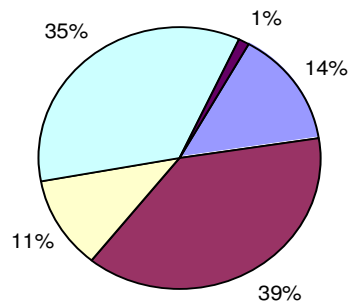


### Lorain County Land Use/Land Cover



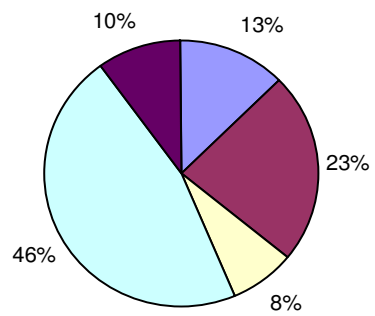
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■ Cropland  
■ Pasture  
■ Forest  
■ Wetlands All Types

### Medina County Land Use/Land Cover

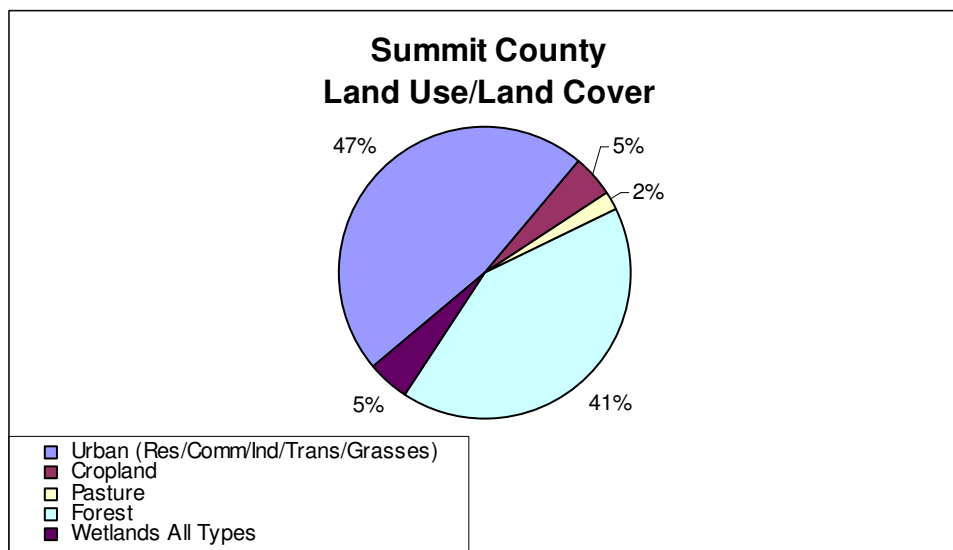


■ Urban (Res/Comm/Ind/Trans/Grasses)  
■ Cropland  
■ Pasture  
■ Forest  
■ Wetlands All Types

### Portage County Land Use/Land Cover



■ Urban (Res/Comm/Ind/Trans/Grasses)  
■ Cropland  
■ Pasture  
■ Forest  
■ Wetlands All Types



### **Factor 7: Jurisdictional boundaries**

The Cleveland-Elyria-Mentor, OH MSA includes Cuyahoga, Geauga, Lake, Lorain and Medina Counties in Ohio. The principal cities are Cleveland, Elyria and Mentor. The CSA also includes Ashtabula, Portage and Summit Counties.

The Northeast Ohio Areawide coordinating Agency (NOACA) is the planning agency designated as the Metropolitan Planning Organization for the greater Cleveland area. The NOACA region is composed of five Counties: Cuyahoga, Geauga, Lake, Lorain, and Medina.

The Akron Metropolitan Area Transportation Study (AMATS) is the planning agency designated as the MPO for the Akron area. The AMATS region is composed of two Counties: Summit and Portage.

### **Factor 8: Level of control of emission sources**

Please refer to the factor 8 general discussion at the beginning of this document for applicable control information for this area.

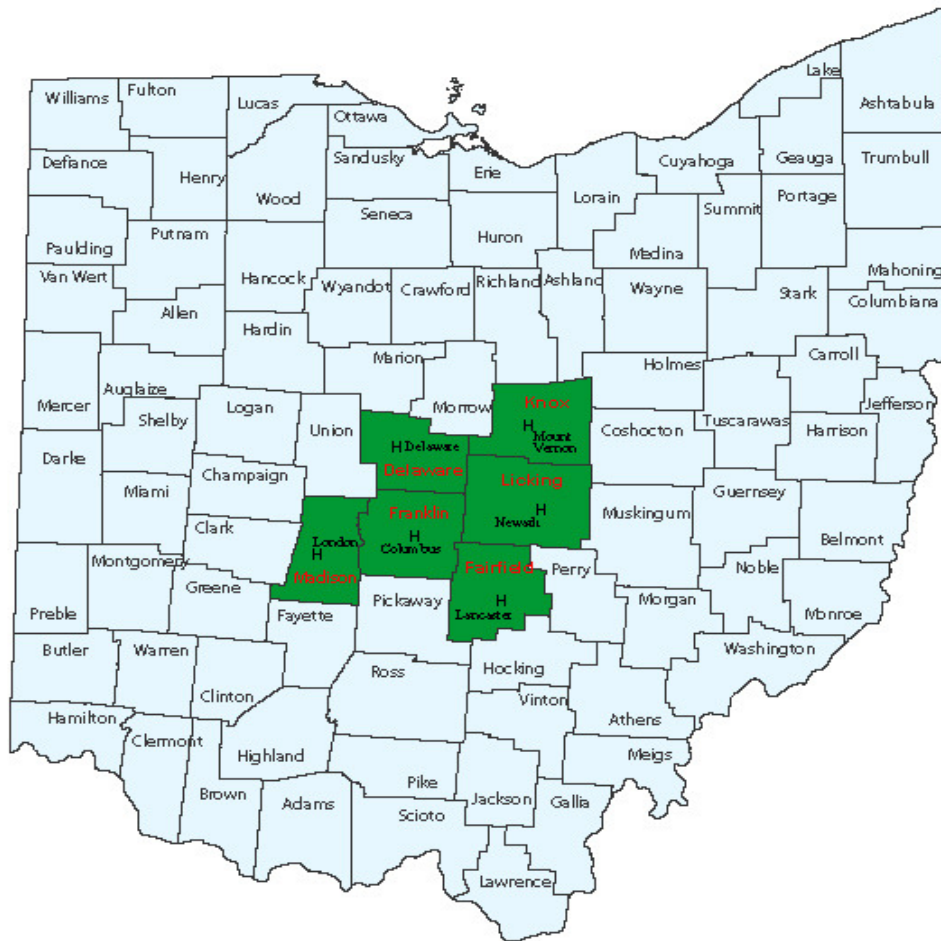
## Columbus, OH

**Current** County nonattainment: Delaware, Fairfield, Franklin, Knox, Licking, and Madison

**Current nonattainment Counties**

***Recommended*** County nonattainment: Delaware, Fairfield, Franklin, Knox, Licking, and Madison

 Recommended nonattainment Counties



## **Discussion**

There are six Counties in the existing ozone nonattainment area: Delaware, Fairfield, Franklin, Knox, Licking, and Madison. Based on 2005-2007 emissions data, the area is now in attainment with the 1997 standard and Ohio EPA is preparing a redesignation request. With respect to the new ozone standard, Ohio EPA recommends designating the six Counties as nonattainment for the Columbus area; Delaware, Franklin, Knox, and Madison Counties have violating monitors. The Counties of Fayette, Greene, Clarke, Champaign, Union, Marion, Morrow, Richland, Ashland, Holmes, Coshocton, Muskingum, Perry, Hocking, and Pickaway are adjacent to this nonattainment area. Union, Marion, Morrow and Pickaway Counties are discussed under this section. Greene, Clarke and Champaign Counties are discussed in the Dayton-Springfield section. The remaining adjacent Counties, Richland, Ashland, Holmes, Coshocton, Muskingum, Perry, and Hocking, are not a part of the MSA or CSA, and are excluded due to low emissions and low population. Although Richland County's 2007 population is 113,554, it is largely agricultural/forested and workers that commute primarily commute to Crawford, Huron, and Ashland Counties. Although Coshocton County has 2005 NO<sub>x</sub> emissions of 64.93 tons per day, projections show emissions are decreasing significantly (2009, 15.72 tons per day). This is due to a power plant where projected emissions are anticipated to significantly decrease due to CAIR.

The three-year average of the annual fourth-highest daily maximum eight-hour average concentrations are not meeting the revised standard at two of the four monitors in Franklin County, and at the Delaware, Knox, and Madison County monitors. The emissions of VOC and NO<sub>x</sub> in Franklin County are much larger than any of the other Counties.

Although Morrow, Pickaway (up-wind), and Union Counties are part of the MSA, Ohio EPA is recommending to exclude these Counties. These Counties have small 2007 populations ranging from 24,520 to 53,809. The 2030 population growth projections for all of these Counties are minimal, with the exception of Union County (projected to increase from 47,239 in 2007 to 85,190 in 2030). Very little commuting is occurring between these Counties and the existing nonattainment Counties: 0.9% of Fairfield County workers, 1.5% of Franklin County workers and 3.0% of Madison County workers commute from Pickaway County; 0.5% of Franklin County workers, 2.0% of Knox County workers and 4.6% of Delaware County workers commute from Morrow County; and 0.8% of Franklin County workers, 2.0% of Delaware County workers and 3.3% of Madison County workers commute from Union County. Lastly, VOC and NO<sub>x</sub> emissions from all of these Counties are small, and emission projections between 2005 and 2009 all show declines.

Although Fayette (up-wind), Ross (up-wind), and Marion Counties are part of the CSA but not the MSA, Ohio EPA is recommending to exclude these Counties. The relatively small 2007 populations of the other CSA Counties, which are more outlying, range from 28,308 to 75,398. The 2030 population growth projections for these Counties are minimal. For the CSAs, coupled with the relatively low population, is the fact that very little commuting is occurring between these

Counties and the existing nonattainment Counties: 4.3% of Madison County workers commute from Fayette County; 0.5% of Fairfield County workers and 0.4% of Franklin County workers commute from Ross County; and 3.7% of Delaware County workers commute from Marion County.

For all MSA and CSA Counties adjacent to the existing nonattainment Counties, VOC and NOx emissions are small, and emission projections between 2005 and 2009 all show declines. Lastly, for all Counties in this CSA, kDMVT over the past few years has remained constant with only Madison County showing a slight increase between 2006 and 2007.

#### Factor 1: Air quality data

       = Exceeds standard

AQS: 8-Hour three-year average of the annual fourth-highest daily maximum (ppb)

Site Area County	Year	Highest Daily Maximum Concentrations (ppb)			
		1	2	3	4
<b>39-041-0002</b> <b>Columbus</b> <b>Delaware Co.</b>	2006	86	84	76	75
	2007	87	83	81	80
	2008	80	76	75	75
	Avg				76.7

39-049-0028 Columbus Franklin Co.	2006	86	80	76	76
	2007	85	82	81	78
	2008	78	70	69	69
	Avg				74.3

<b>39-049-0029</b> <b>Columbus</b> <b>Franklin Co.</b>	2006	87	85	85	82
	2007	94	88	88	87
	2008	95	85	83	83
	Avg				84.0

<b>39-049-0037</b> <b>Columbus</b> <b>Franklin Co.</b>	2006	86	84	80	79
	2007	89	81	81	79
	2008	87	81	72	71
	Avg				76.3

39-049-0081 Columbus Franklin Co.	2006	85	84	80	77
	2007	86	83	80	79
	2008	88	73	66	66
	Avg				74.0

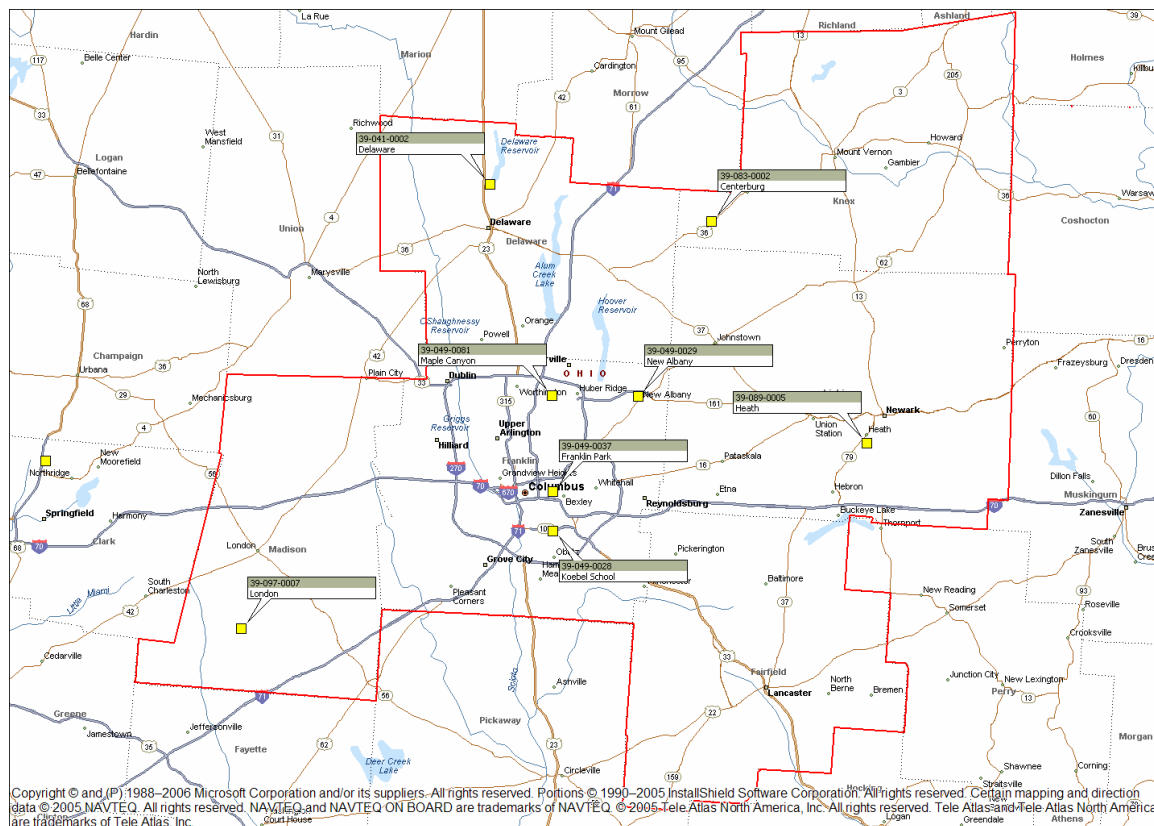
<b>39-083-0002</b> <b>Columbus</b> <b>Knox Co.</b>	2006	85	82	76	75
	2007	88	82	82	80
	2008	77	75	75	74
	Avg				76.3

39-089-0005 Columbus Licking Co.	2006	82	77	74	72
	2007	85	82	81	78
	2008	78	76	75	74
	Avg				74.7

<b>39-097-0007</b> <b>Columbus</b> <b>Madison Co.</b>	2006	84	81	79	76
	2007	91	86	84	83
	2008	77	75	73	71
	Avg				76.7

Sites with less than 75% capture for a given year  
 Sites with less than 90% capture for the 3-year period

## Columbus Ozone Monitor Locations and Site ID Numbers



**Factor 2: Emission data**  
(tons per day)

<b>2005</b>		
<b>County</b>	<b>VOC</b>	<b>NO<sub>x</sub></b>
<b>FRANKLIN</b>	<b>124.11</b>	<b>133.86</b>
<b>DELAWARE</b>	<b>18.19</b>	<b>22.63</b>
<b>KNOX</b>	<b>7.38</b>	<b>5.65</b>
<b>MADISON</b>	<b>7.79</b>	<b>9.53</b>
FAIRFIELD	14.40	16.78
LICKING	19.71	22.03
Morrow	6.92	7.64
Marion	11.07	12.41
Union	15.91	8.96
Fayette	6.25	6.85
Pickaway	9.51	12.33
Ross	13.07	20.13

<b>2009</b>		
<b>County</b>	<b>VOC</b>	<b>NO<sub>x</sub></b>
<b>FRANKLIN</b>	<b>87.60</b>	<b>101.90</b>
<b>DELAWARE</b>	<b>14.55</b>	<b>17.30</b>
<b>KNOX</b>	<b>6.45</b>	<b>4.56</b>
<b>MADISON</b>	<b>6.06</b>	<b>7.93</b>
FAIRFIELD	10.83	13.61
LICKING	15.95	18.33
Morrow	5.76	6.26
Marion	9.39	9.77
Union	16.14	7.22
Fayette	5.07	5.64
Pickaway	8.10	10.36
Ross	11.96	18.08

**Major Employers**

Source: Ohio Department of Development 2007

Most of the major employers in the Columbus area are in the categories of manufacturing, government, service and trade as shown below.

**Delaware County**

Delaware City Bd of Ed	Government
JP Morgan Chase & Co	Finance
Kroger Co	Trade
McGraw Hill Companies	Manufacturing
Ohio Wesleyan University	Service
OhioHealth/Grady Memorial Hospital	Service
Olentangy Local Bd of Ed	Government

PPG Industries Inc	Manufacturing
Showa Corp/American Showa Inc	Manufacturing
State of Ohio	Government

### **Fairfield County**

Anchor Hocking Corp	Manufacturing
Cyril-Scott Co	Manufacturing
Fairfield Medical Center	Service
Kroger Co	Trade
Lancaster City Bd of Ed	Government
McDermott Int'l/Diamond Power	Manufacturing
Meijer Inc	Trade
Pickerington Local Bd of Ed	Government
Ralcorp/Ralston Foods	Manufacturing
State of Ohio	Government

### **Fayette County**

Fayette County Memorial Hospital	Service
McKesson Corp	Trade
Miami Trace Local Bd of Ed	Government
Saint-Gobain/Calmar Inc	Manufacturing
Sugar Creek Packing Co	Manufacturing
Wal-Mart Stores Inc	Trade
Washington CH City Bd of Ed	Government
Yamashita Rubber/YUSA Corp	Manufacturing

### **Franklin County**

Abbott Laboratories/Ross Products	Manufacturing
American Electric Power Co	Utility
Battelle Memorial Institute	R&D
Cardinal Health Inc	Trade
Huntington Bancshares Inc	Finance
JP Morgan Chase & Co	Finance
Limited Brands Inc	Trade
National City Corp	Finance
Nationwide Mutual Insurance Co	Insurance
Ohio State University	Government
OhioHealth	Service
Schottenstein Stores Corp	Trade
State of Ohio	Government
Wendy's International Inc	Trade

### **Knox County**

Ariel Ltd	Manufacturing
JELD-WEN Inc	Manufacturing
Kenyon College	Service
Knox Community Hospital	Service
Kokosing Construction Co	Construction
Mount Vernon Nazarene University	Service
Mt Vernon City Bd of Ed	Government
Rolls-Royce plc	Manufacturing
State of Ohio	Government
TRW Automotive Holdings	Manufacturing



**Licking County**

Anomatic Corp	Manufacturing
ArvinMeritor Inc	Manufacturing
Boeing Co	Service
Denison University	Service
Kroger Co	Trade
Licking Memorial Health Systems	Service
Newark City Bd of Ed	Government
Owens-Corning	Manufacturing
State Farm Mutual Automobile Ins Co	Insurance

**Madison County**

Battelle Memorial Institute	R&D
Kikuchi Metal et al/Jefferson Industries	Manufacturing
London City Bd of Ed	Government
Madison County Hospital	Service
Nissen Chemitec/London Industries	Manufacturing
Showa Demko KK/Showa Aluminum Corp	Manufacturing
Stanley Electric U S Co Inc	Manufacturing
Staples Inc	Trade
State of Ohio	Government
Target Corp	Trade

**Marion County**

Andersen Corp/Silver Line	Manufacturing
Marion City Bd of Ed	Government
Marion County Government	Government
Marion General Hospital Inc	Service
Meijer Inc	Trade
Nucor Corp	Manufacturing
Smith Clinic	Service
State of Ohio	Government
Verizon Communications Inc	Utility
Whirlpool Corp	Manufacturing
Wyandot Inc	Manufacturing

**Morrow County**

Berkshire Hathaway/Scott Fetzer/Stahl	Manufacturing
Cardington-Lincoln Local Bd of Ed	Government
Core Systems LLC	Manufacturing
Highland Local Bd of Ed	Government
Kroger Co	Trade
Morrow County Hospital	Service
Mt Gilead Exempted Village Bd of Ed	Government
Northmor Local Bd of Ed	Government
Taylor's Industrial Services/HPM	Manufacturing
Yutaka Giken/Cardington Yutaka Corp	Manufacturing

**Pickaway County**

ALSCO Metals Corp	Manufacturing
Berger Health System	Service
Circleville City Bd of Ed	Government
E I du Pont de Nemours & Co	Manufacturing

General Electric Co	Manufacturing
Logan Elm Local Bd of Ed	Government
PPG Industries Inc	Manufacturing
State of Ohio	Government
Teays Valley Local Bd of Ed	Government
Wal-Mart Stores Inc	Trade

### **Ross County**

Adena Regional Health system	Service
Chillicothe City Bd of Ed	Government
Commercial Vehicle Grp/Trim Systems	Manufacturing
Horizon Telcom Inc	Utility
PACCAR/Kenworth Truck Co	Manufacturing
PH Glatfelter Co	Manufacturing
Ross County Government	Government
State of Ohio	Government
US Fed Government/Veterans Admin	Government
Wal-Mart Stores Inc	Trade
Yanagawa Seiki/YSK Corp	Manufacturing

### **Union County**

EDP Inc/Goodyear Tire & Rubber Co	Manufacturing
Honda Motor Co Ltd	Manufacturing
Marysville Exempted Village Bd of Ed	Government
Memorial Hospital of Union County	Service
Nestle R&D	R&D
Parker Hannifin Corp	Manufacturing
Scotts Miracle-Gro Co	Manufacturing
State of Ohio	Government
Union County Government	Government

### **Factor 3: Population and Projected Growth**

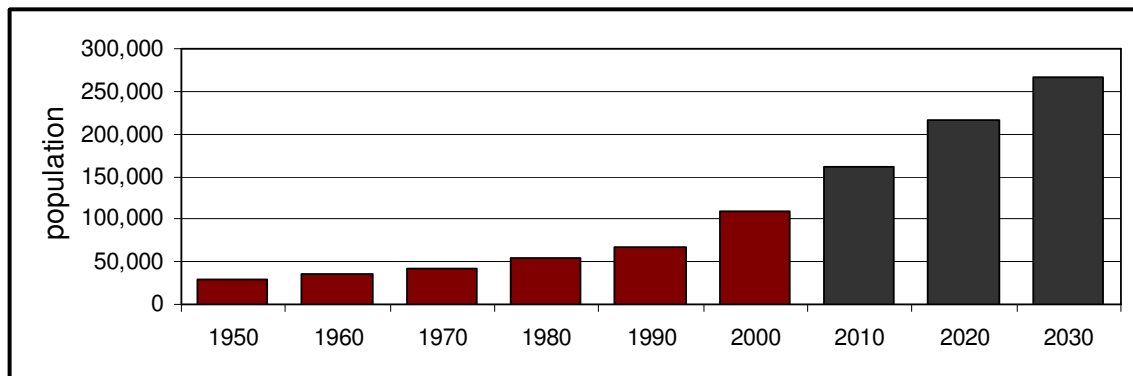
Sources: Office of Strategic Research, Ohio Department of Development  
U.S. Census Bureau Population Estimates Program 2007

The largest populated places in the Columbus area are: the greater Columbus area in Franklin County; Delaware, Powell and Sunbury in Delaware County; Lancaster, Canal Winchester, and Pickerington in Fairfield County; and Newark, Pataskala, Heath, and Hebron in Licking County.

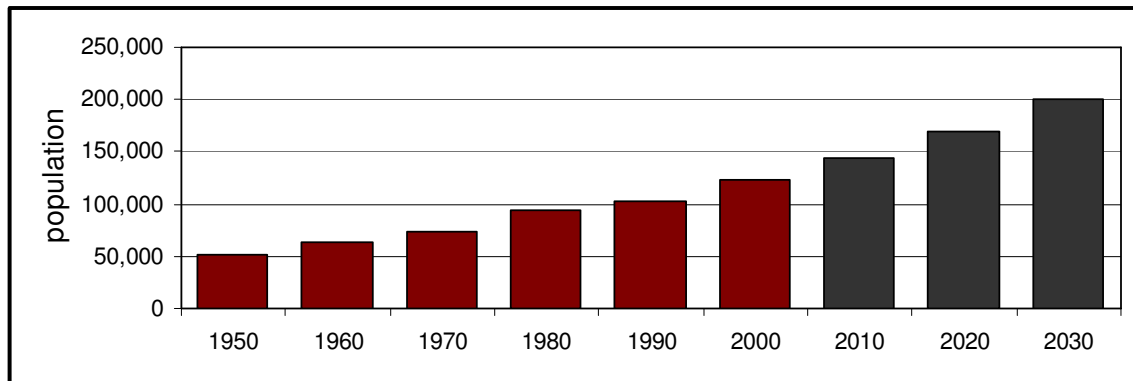
As expected, Franklin County has the highest population in this area. All of the surrounding Counties are projected to experience an upward trend in population as shown in the table below.

COUNTY	2004	2005	2006	2007	2010	2020	2030
<b>Delaware</b>	142,849	150,496	156,697	160,865	161,730	215,480	266,200
Fairfield	135,857	138,403	140,591	141,318	143,860	169,540	201,010
<b>Franklin</b>	1,086,152	1,089,365	1,095,662	1,118,107	1,155,910	1,238,250	1,326,180
Licking	152,699	154,683	156,287	156,985	161,280	179,050	198,760
<b>Knox</b>	57,676	58,207	58,561	58,961	60,600	65,940	69,890
Morrow	34,080	34,309	34,529	34,520	34,410	36,890	38,650
Marion	66,031	65,834	65,583	65,248	66,210	67,190	68,200
Union	44,689	45,600	46,702	47,234	50,740	64,570	85,190
<b>Madison</b>	40,927	41,220	41,496	41,499	43,130	45,190	46,520
Fayette	28,044	28,193	28,305	28,308	28,680	29,570	30,290
Pickaway	52,010	52,837	53,606	53,809	55,680	58,200	59,980
Ross	74,749	75,135	75,556	75,398	78,380	82,930	87,430

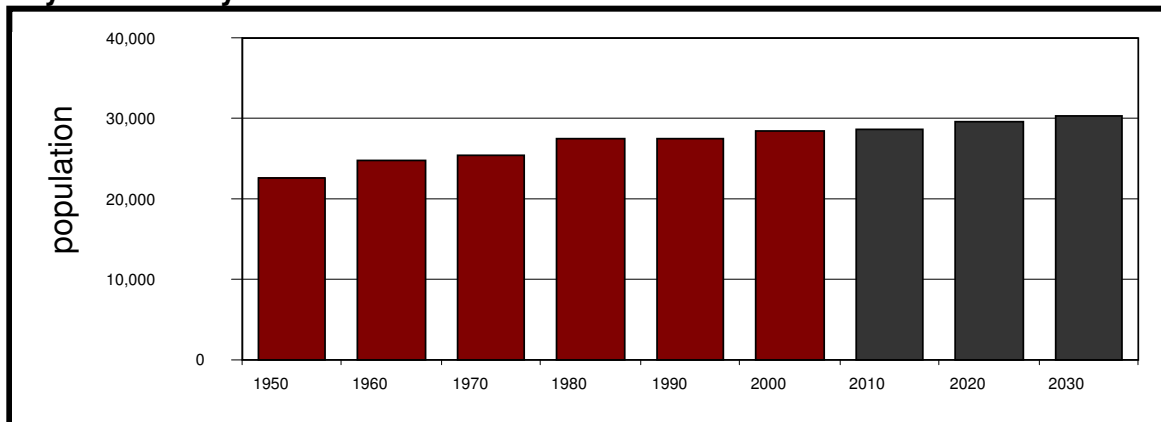
### Delaware County



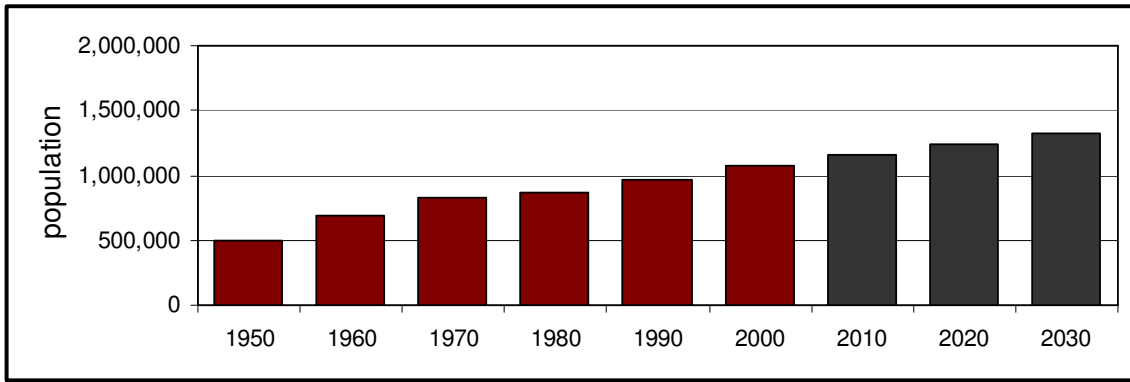
### Fairfield County



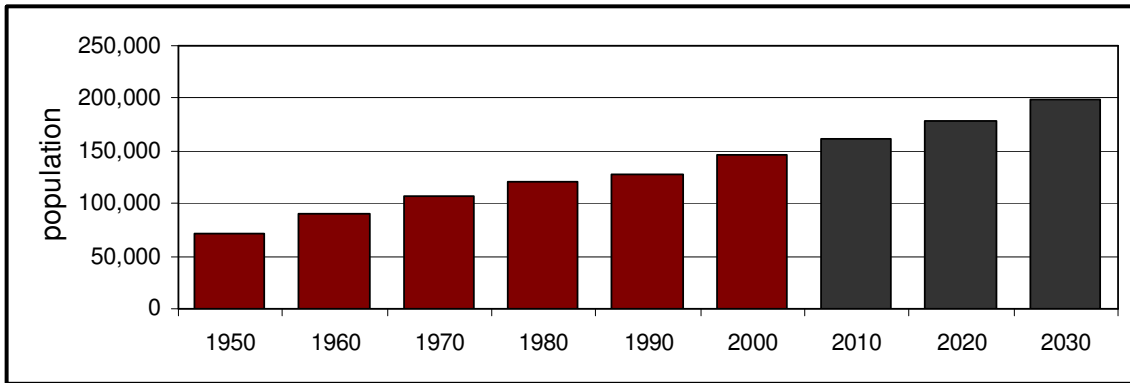
### Fayette County



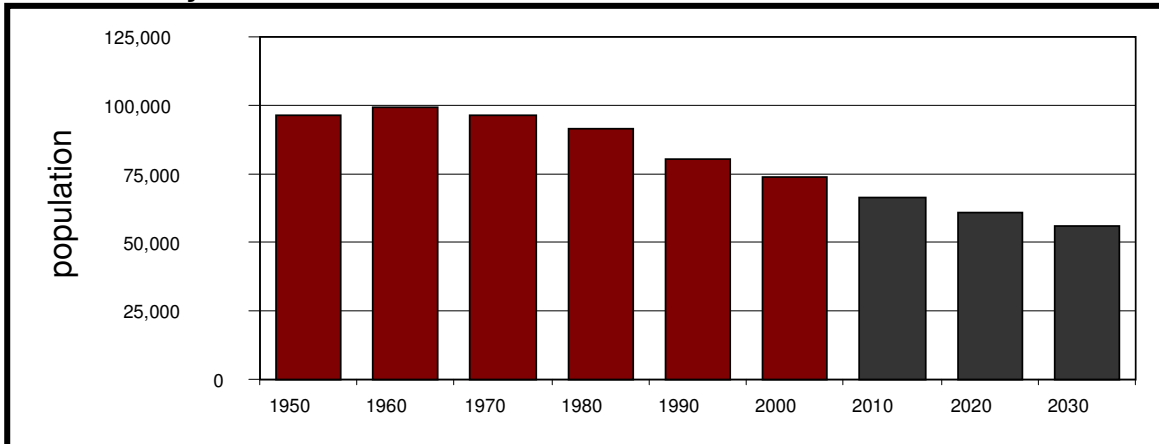
### Franklin County



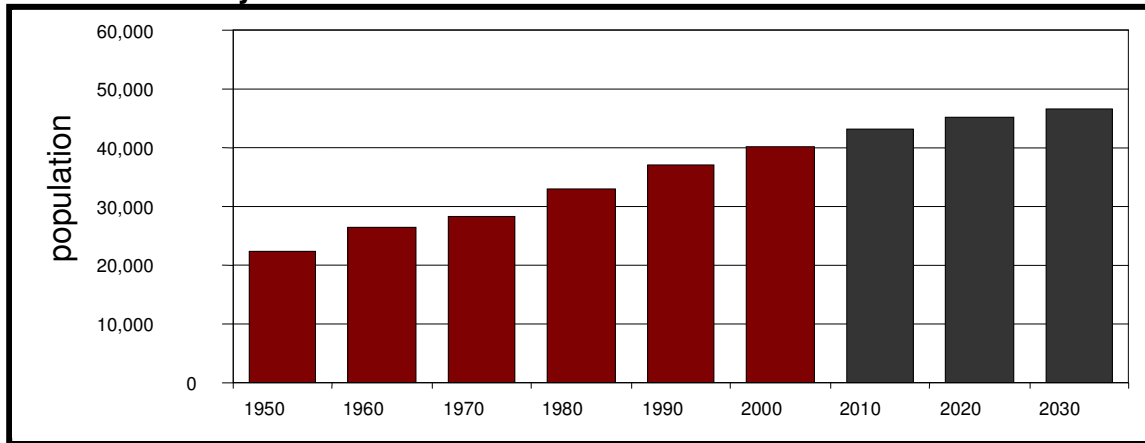
### Licking County



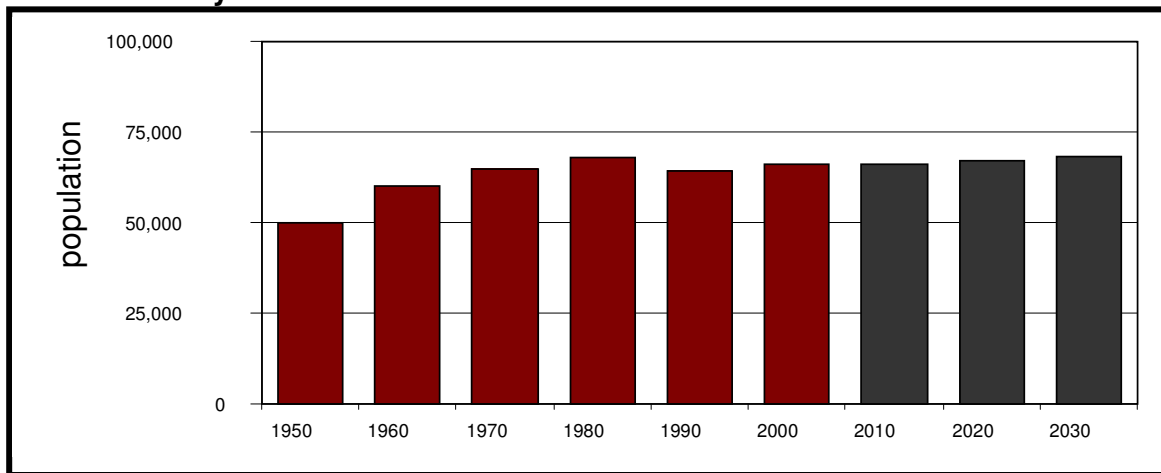
### Knox County



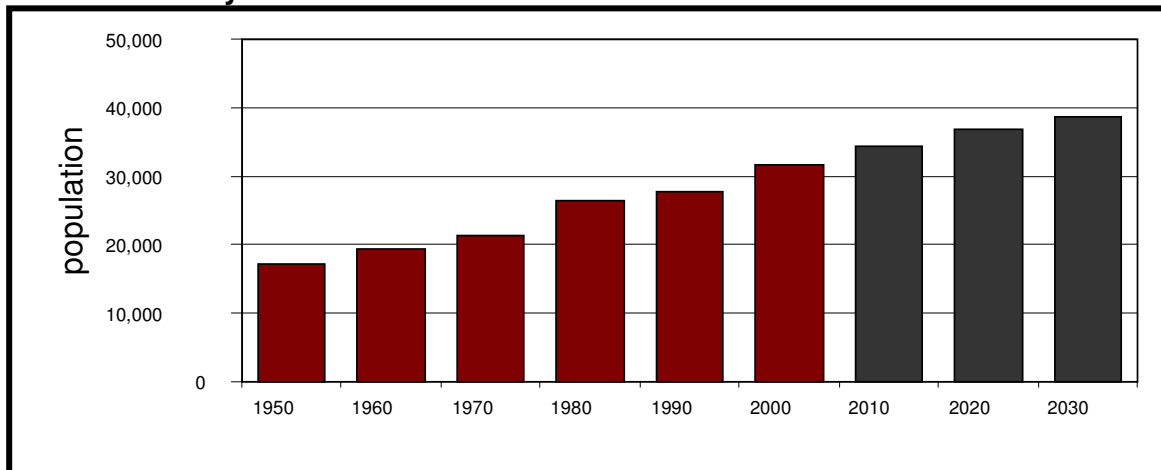
### Madison County



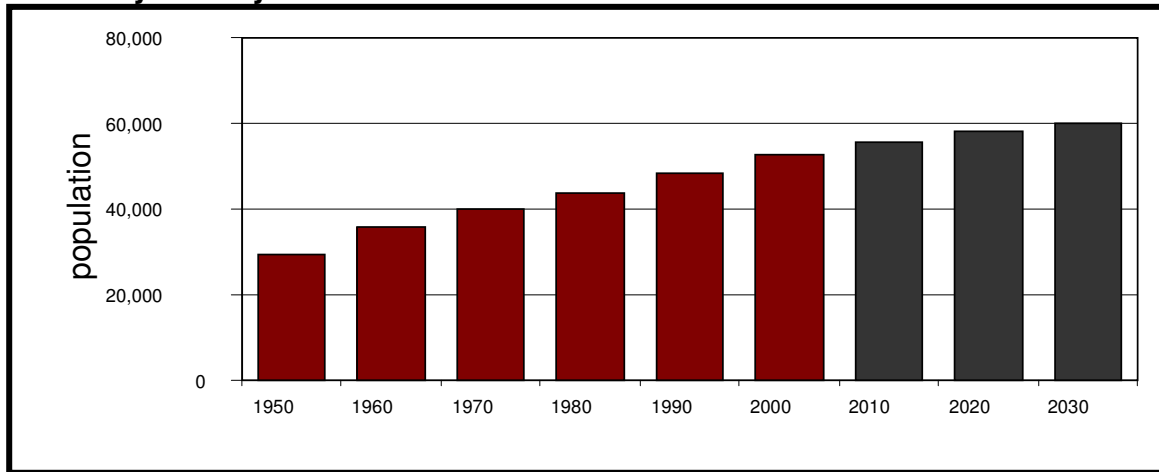
### Marion County



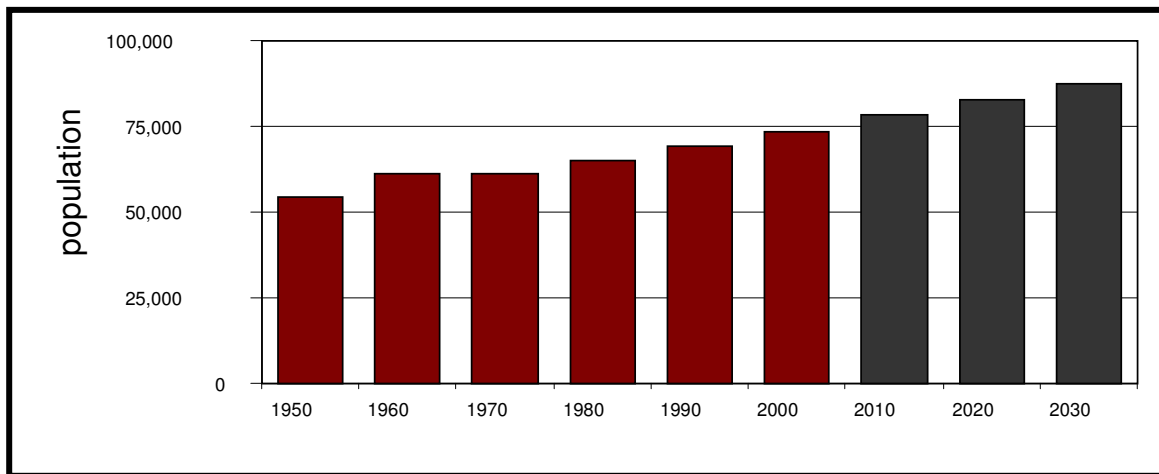
### Morrow County



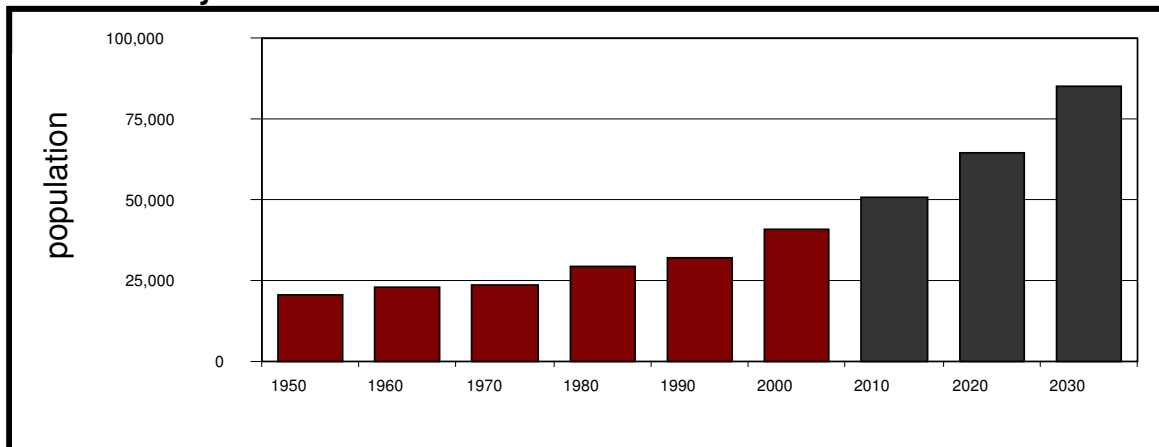
## Pickaway County



## Ross



## Union County



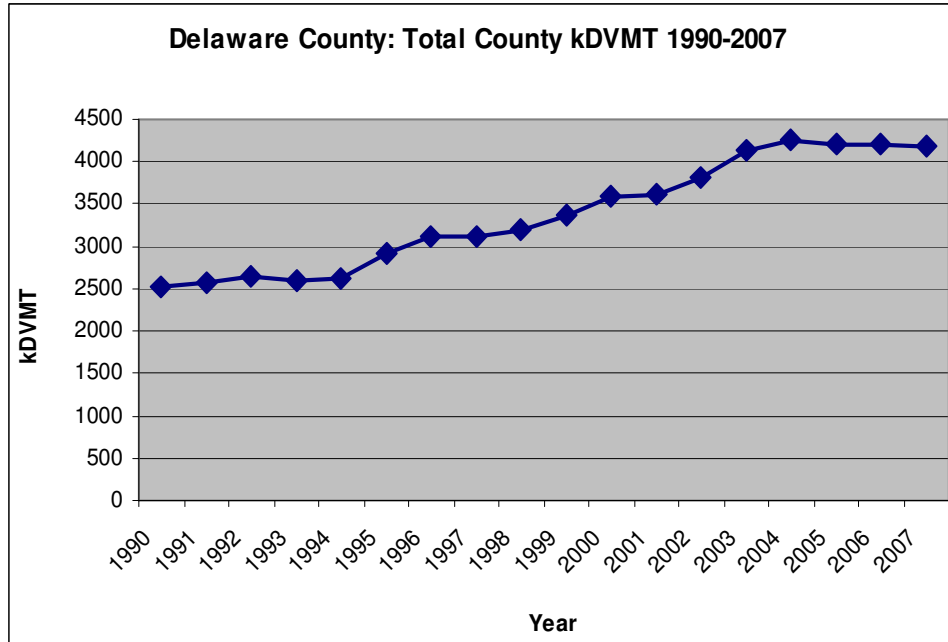
## Factor 4: Traffic and commuting patterns

The kDVT between 2005 and 2007 in the Columbus area have remained fairly constant as shown in the graphs below. Franklin County has the highest level of

kDVMT and Knox has the lowest. Madison County was the only County in this area to have an increase in kDMVT between 2006 and 2007.

### Estimated Daily Vehicle Miles Traveled (kDVMT = in thousands)

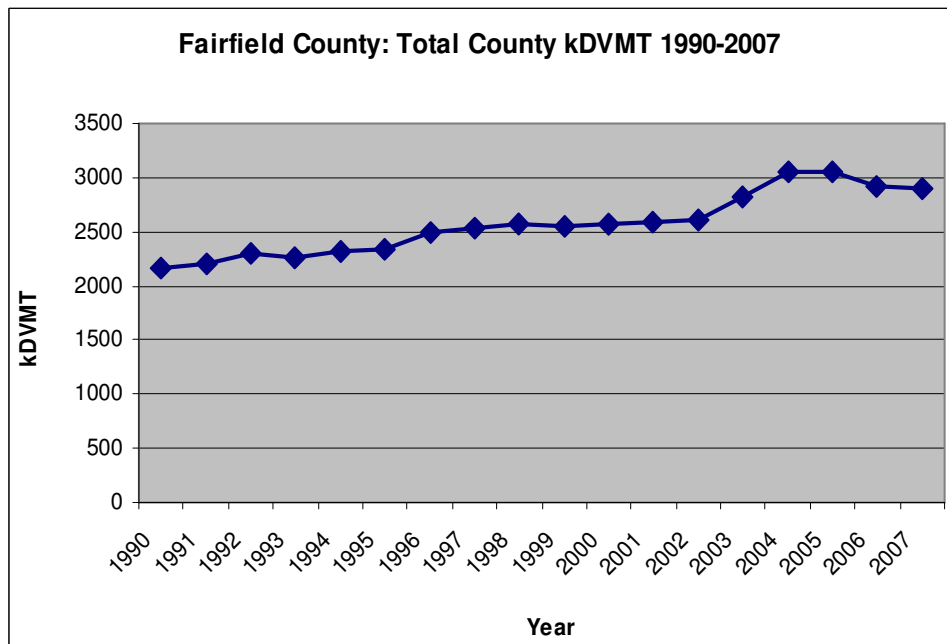
Source: Ohio Department of Transportation, Office of Technical Services



2005 = 4211.03

2006 = 4207.91

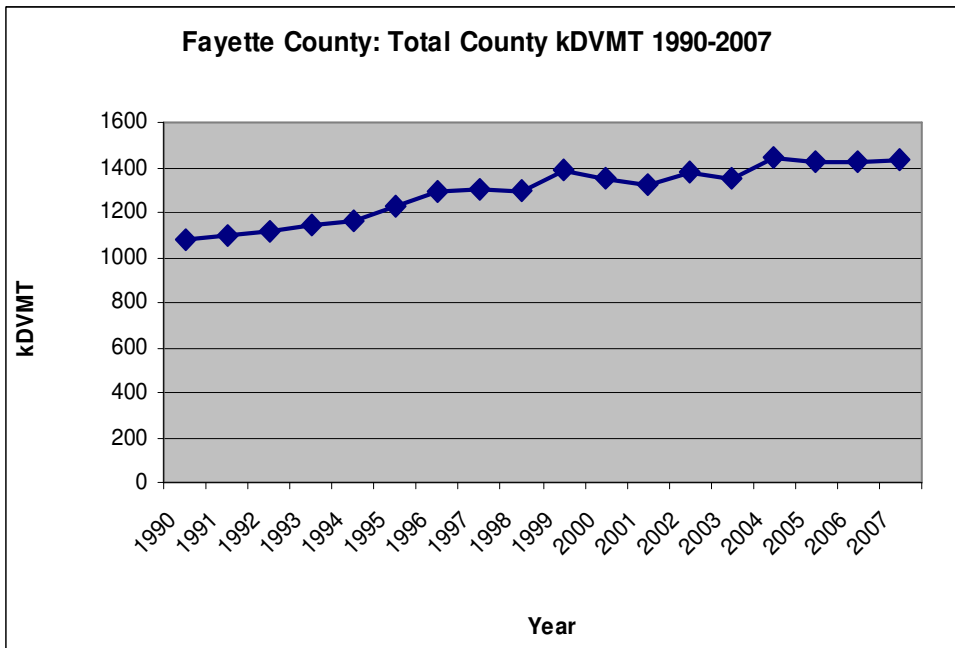
2007 = 4175.9



2005 = 3060.66

2006 = 2916.9

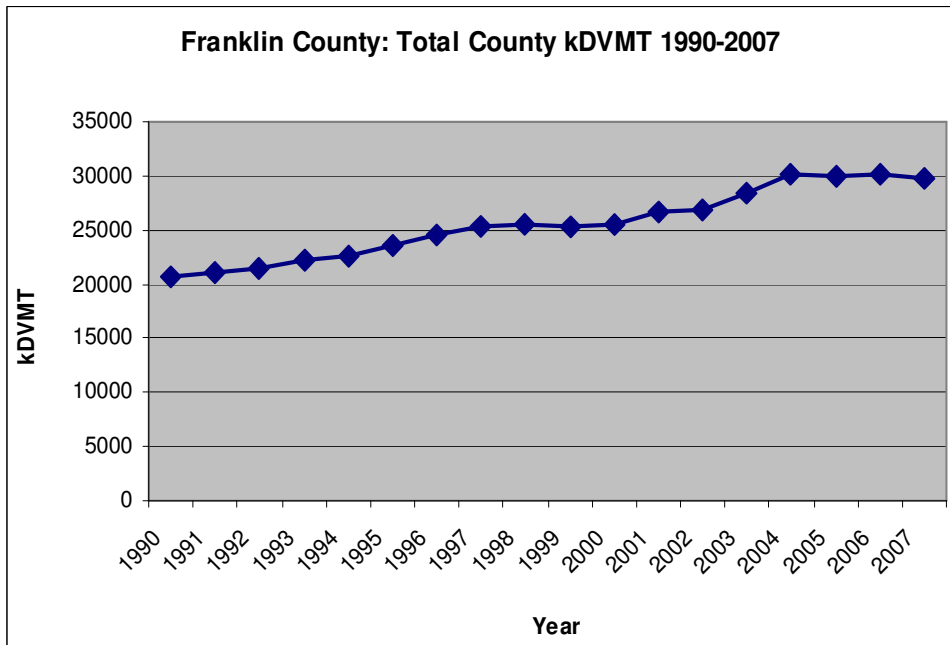
2007 = 2899.88



2005 = 1421.65

2006 = 1419.55

2007 = 1432.57

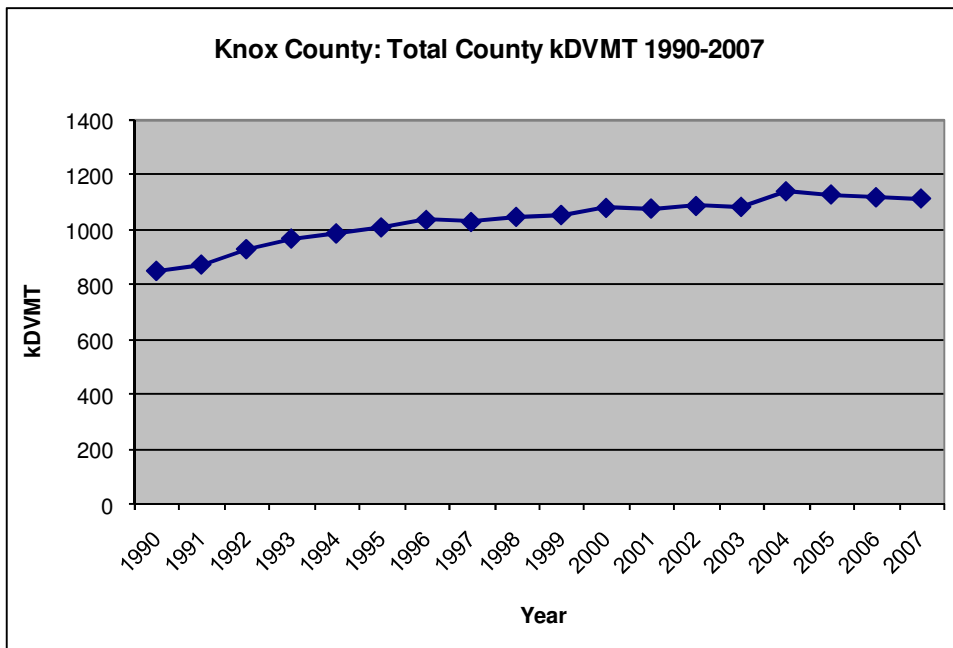


2005 = 1421.65

2006 = 1419.55

2007 = 1432.57

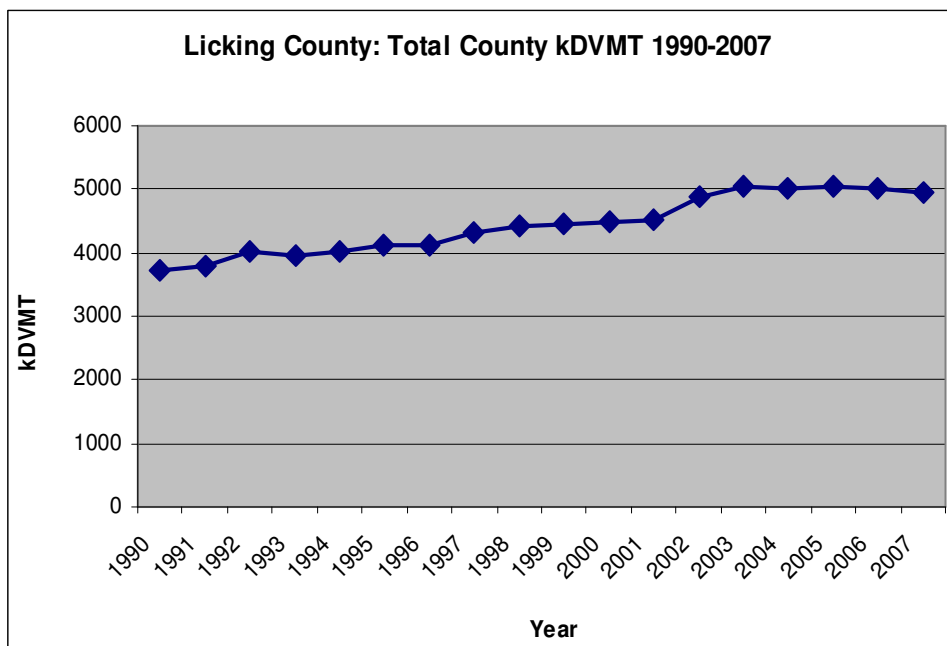




2005 = 1133.74

2006 = 1123.68

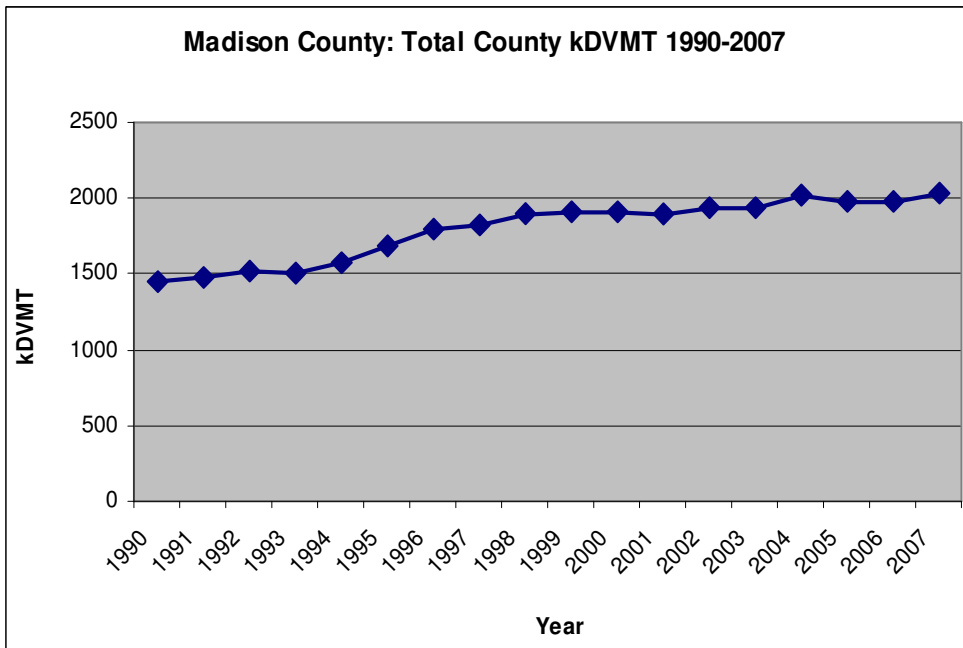
2007 = 1119.12



2005 = 5030.4

2006 = 4994.54

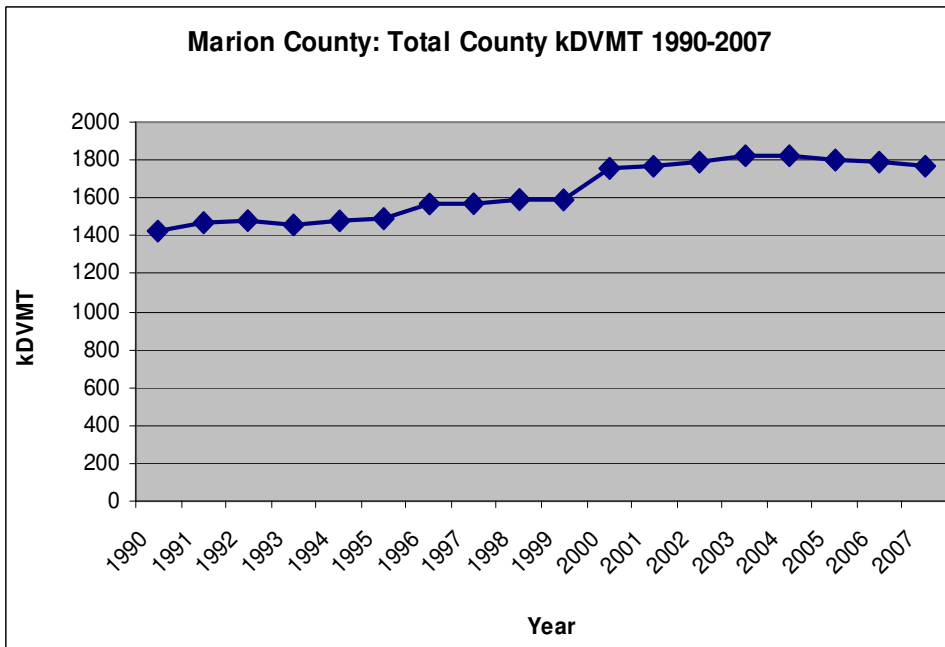
2007 = 4933.41



2005 = 1971.49

2006 = 1970.93

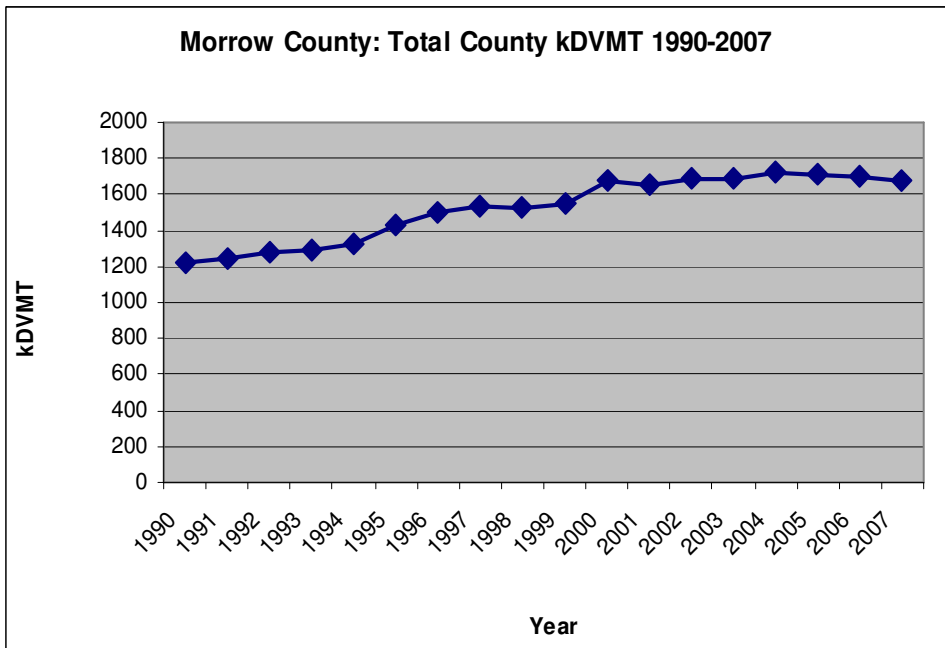
2007 = 2031.16



2005 = 1798.75

2006 = 1793.51

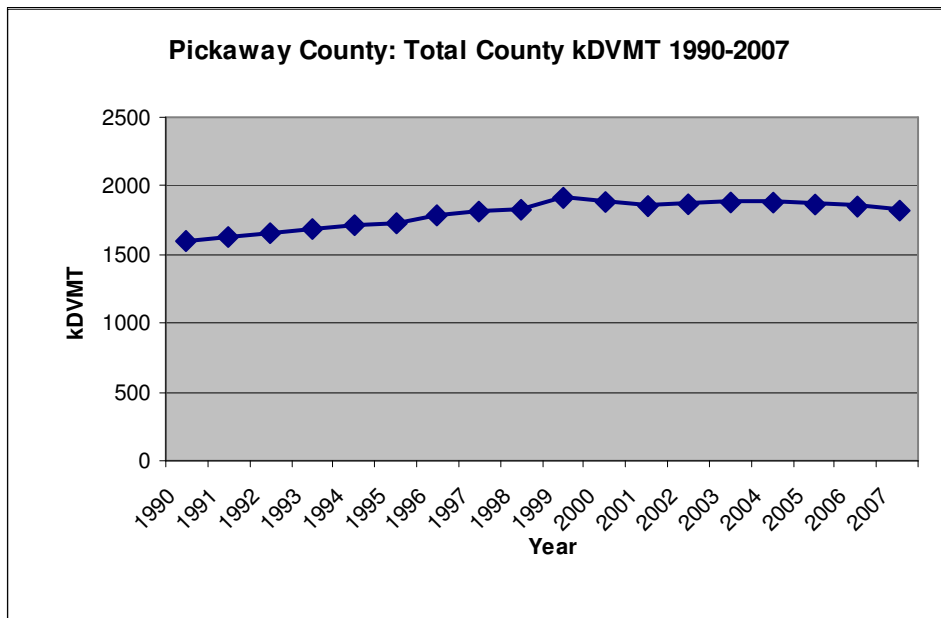
2007 = 1769.62



2005 = 1703.58

2006 = 1697.03

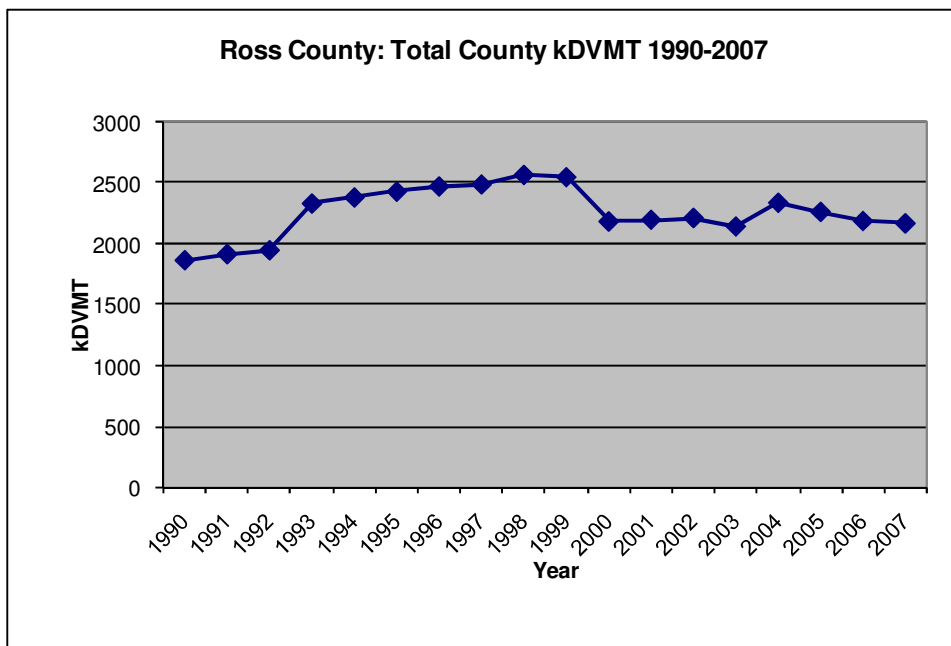
2007 = 1670.99



2005 = 1873.26

2006 = 1861.37

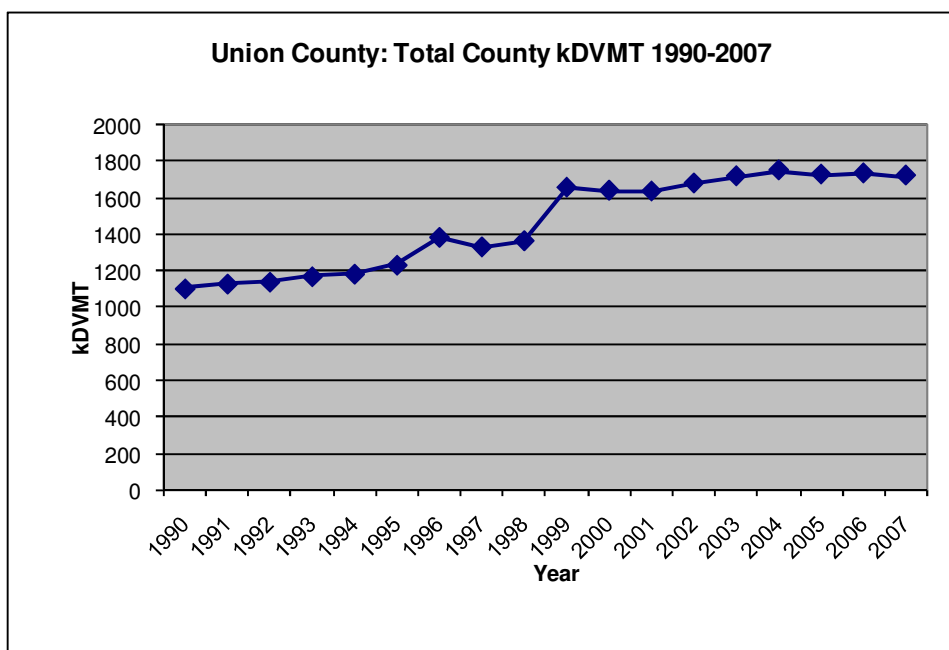
2007 = 1829.2



2005 = 2264.49

2006 = 2189.2

2007 = 2169.06



2005 = 1728.72

2006 = 1734.56

2007 = 1722.58

## Commuter Patterns

Source: Office of Strategic Research, Ohio Department of Development  
U.S. Census Bureau, 2000

Delaware, Fairfield and Licking Counties each have a high level of commuters traveling into Franklin County. The majority of Franklin County workers commuting outside the County, travel to Delaware County. Coshocton County has a low level of commuting and a very insignificant number traveling to Franklin County.

Delaware	Percent of workers that work outside the County		63.5%
	Average commute time in minutes -		26.5
Number of workers 16+ years of age living in Delaware County			57,840
Commute Out To	Number	Percent	
Franklin Co. OH	31,708	54.8%	
Union Co. OH	1,782	3.1%	
Marion Co. OH	839	1.5%	
Licking Co. OH	374	0.6%	
Knox Co. OH	218	0.4%	
Logan Co. OH	200	0.3%	
Morrow Co. OH	172	0.3%	
Madison Co. OH	111	0.2%	
Fairfield Co. OH	102	0.2%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Delaware County			43,463
Commute In From	Number	Percent	
Franklin Co. OH	14,222	32.7%	
Morrow Co. OH	1,983	4.6%	
Marion Co. OH	1,609	3.7%	
Licking Co. OH	900	2.1%	
Union Co. OH	890	2.0%	
Knox Co. OH	831	1.9%	
Fairfield Co. OH	395	0.9%	
Madison Co. OH	174	0.4%	
Richland Co. OH	129	0.3%	
Percent is of workers working in County.			

Fairfield	Percent of workers that work outside the County		55.8%
	Average commute time in minutes		27.7
Number of workers 16+ years of age living in Fairfield County			60,465
Commute Out To	Number	Percent	
Franklin Co. OH	28,259	46.7%	
Licking Co. OH	1,563	2.6%	
Pickaway Co. OH	1,289	2.1%	
Delaware Co. OH	395	0.7%	
Hocking Co. OH	361	0.6%	
Perry Co. OH	273	0.5%	
Ross Co. OH	255	0.4%	
Muskingum Co. OH	158	0.3%	
Athens Co. OH	142	0.2%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Fairfield County			36,957
Commute In From	Number	Percent	
Franklin Co. OH	3,261	8.8%	
Perry Co. OH	1,980	5.4%	
Hocking Co. OH	1,897	5.1%	
Licking Co. OH	915	2.5%	
Athens Co. OH	431	1.2%	
Pickaway Co. OH	349	0.9%	
Muskingum Co. OH	211	0.6%	
Ross Co. OH	191	0.5%	
Delaware Co. OH	102	0.3%	
Percent is of workers working in County.			

Fayette	Percent of workers that work outside the County		35.1%
	Average commute time in minutes -		24.4
Number of workers 16+ years of age living in Fayette County			13,433
Commute Out To	Number	Percent	
Franklin Co. OH	1,250	9.3%	
Clinton Co. OH	1,229	9.1%	
Madison Co. OH	563	4.2%	
Highland Co. OH	457	3.4%	
Pickaway Co. OH	248	1.8%	
Greene Co. OH	190	1.4%	
Ross Co. OH	153	1.1%	
Clark Co. OH	124	0.9%	
Montgomery Co. OH	78	0.6%	
Hamilton Co. OH	52	0.4%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Fayette County			11,415
Commute In From	Number	Percent	
Highland Co. OH	645	5.7%	
Ross Co. OH	503	4.4%	
Clinton Co. OH	351	3.1%	
Greene Co. OH	350	3.1%	
Pickaway Co. OH	244	2.1%	
Franklin Co. OH	152	1.3%	
Madison Co. OH	145	1.3%	
Montgomery Co. OH	55	0.5%	
Clark Co. OH	54	0.5%	
Pike Co. OH	34	0.3%	
Percent is of workers working in County.			

Franklin	Percent of workers that work outside the County		7.3%
	Average commute time in minutes -		21.9
Number of workers 16+ years of age living in Franklin County			548,655
Commute Out To	Number	Percent	
Delaware Co. OH	14,222	2.6%	
Union Co. OH	4,527	0.8%	
Licking Co. OH	4,089	0.7%	
Fairfield Co. OH	3,261	0.6%	
Madison Co. OH	1,903	0.3%	
Pickaway Co. OH	1,517	0.3%	
Montgomery Co. OH	612	0.1%	
Marion Co. OH	590	0.1%	
Hamilton Co. OH	552	0.1%	
Logan Co. OH	506	0.1%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Franklin County			652,261
Commute In From	Number	Percent	
Delaware Co. OH	31,708	4.9%	
Fairfield Co. OH	28,259	4.3%	
Licking Co. OH	23,755	3.6%	
Pickaway Co. OH	9,613	1.5%	
Madison Co. OH	7,921	1.2%	
Union Co. OH	5,473	0.8%	
Morrow Co. OH	3,108	0.5%	
Knox Co. OH	3,014	0.5%	
Perry Co. OH	2,433	0.4%	
Ross Co. OH	2,335	0.4%	
Percent is of workers working in County.			

Licking	Percent of workers that work outside the County		40.4%
	Average commute time in minutes -		24.8
Number of workers 16+ years of age living in Licking County			71,213
Commute Out To	Number	Percent	
Franklin Co. OH	23,755	33.4%	
Muskingum Co. OH	1,100	1.5%	
Fairfield Co. OH	915	1.3%	
Delaware Co. OH	900	1.3%	
Knox Co. OH	744	1.0%	
Perry Co. OH	107	0.2%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Licking County			56,215
Commute In From	Number	Percent	
Franklin Co. OH	4,089	7.3%	
Muskingum Co. OH	2,667	4.7%	
Perry Co. OH	1,656	2.9%	
Fairfield Co. OH	1,563	2.8%	
Knox Co. OH	1,304	2.3%	
Coshocton Co. OH	536	1.0%	
Percent is of workers working in County.			

Knox	Percent of workers that work outside the County -		29.5%
	Average commute time in minutes -		25.8
Number of workers 16+ years of age living in Knox County		25,064	
Commute Out To	Number	Percent	
Franklin Co. OH	3,014	12.0%	
Licking Co. OH	1,304	5.2%	
Richland Co. OH	865	3.5%	
Delaware Co. OH	831	3.3%	
Ashland Co. OH	271	1.1%	
Morrow Co. OH	220	0.9%	
Holmes Co. OH	106	0.4%	
Cuyahoga Co. OH	89	0.4%	
Wayne Co. OH	74	0.3%	
Coshocton Co. OH	71	0.3%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Knox County		20,823	
Commute In From	Number	Percent	
Licking Co. OH	744	3.6%	
Richland Co. OH	550	2.6%	
Morrow Co. OH	426	2.0%	
Franklin Co. OH	404	1.9%	
Delaware Co. OH	218	1.0%	
Coshocton Co. OH	100	0.5%	
Ashland Co. OH	83	0.4%	
Holmes Co. OH	70	0.3%	
Wayne Co. OH	60	0.3%	
Muskingum Co. OH	59	0.3%	
Percent is of workers working in County.			

Madison	Percent of workers that work outside the County -		57.5%
	Average commute time in minutes -		25.8
Number of workers 16+ years of age living in Madison County			17,828
Commute Out To	Number	Percent	
Franklin Co. OH	7,921	44.4%	
Union Co. OH	763	4.3%	
Clark Co. OH	373	2.1%	
Delaware Co. OH	174	1.0%	
Pickaway Co. OH	172	1.0%	
Fayette Co. OH	145	0.8%	
Greene Co. OH	107	0.6%	
Champaign Co. OH	91	0.5%	
Montgomery Co. OH	79	0.4%	
Licking Co. OH	73	0.4%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Madison County			13,180
Commute In From	Number	Percent	
Franklin Co. OH	1,903	14.4%	
Clark Co. OH	1,092	8.3%	
Fayette Co. OH	563	4.3%	
Union Co. OH	439	3.3%	
Pickaway Co. OH	392	3.0%	
Ross Co. OH	289	2.2%	
Champaign Co. OH	265	2.0%	
Delaware Co. OH	111	0.8%	
Greene Co. OH	71	0.5%	
Montgomery Co. OH	66	0.5%	
Percent is of workers working in County.			

Marion	Percent of workers that work outside the County		22.1%
	Average commute time in minutes -		21.5
Number of workers 16+ years of age living in Marion County			29,138
Commute Out To	Number	Percent	
Delaware Co. OH	1,609	5.5%	
Franklin Co. OH	1,371	4.7%	
Union Co. OH	1,041	3.6%	
Morrow Co. OH	585	2.0%	
Crawford Co. OH	513	1.8%	
Wyandot Co. OH	305	1.0%	
Logan Co. OH	251	0.9%	
Hardin Co. OH	156	0.5%	
Richland Co. OH	153	0.5%	
Seneca Co. OH	46	0.2%	
Number of workers 16+ years of age working in Marion County			29,138
Commute In From	Number	Percent	
Morrow Co. OH	1,565	5.4%	
Crawford Co. OH	1,060	3.6%	
Delaware Co. OH	839	2.9%	
Wyandot Co. OH	729	2.5%	
Franklin Co. OH	590	2.0%	
Union Co. OH	508	1.7%	
Richland Co. OH	312	1.1%	
Hardin Co. OH	178	0.6%	
Montgomery Co. OH	47	0.2%	
Seneca Co. OH	41	0.1%	

<b>Morrow</b>	Percent of workers that work outside the County		67.0%
	Average commute time in minutes -		30.4
<b>Number of workers 16+ years of age living in Morrow County</b>			<b>15,083</b>
Commute Out To	Number	Percent	
Franklin Co. OH	3,108	20.6%	
Delaware Co. OH	1,983	13.1%	
Marion Co. OH	1,565	10.4%	
Richland Co. OH	1,519	10.1%	
Crawford Co. OH	882	5.8%	
Knox Co. OH	426	2.8%	
Union Co. OH	131	0.9%	
Licking Co. OH	82	0.5%	
Ashland Co. OH	45	0.3%	
Huron Co. OH	34	0.2%	
Percent is of workers living in County.			

<b>Number of workers 16+ years of age working in Morrow County</b>			<b>6,803</b>
Commute In From	Number	Percent	
Marion Co. OH	585	8.6%	
Crawford Co. OH	301	4.4%	
Richland Co. OH	293	4.3%	
Knox Co. OH	220	3.2%	
Delaware Co. OH	172	2.5%	
Franklin Co. OH	110	1.6%	
Ashland Co. OH	32	0.5%	
Logan Co. OH	25	0.4%	
Licking Co. OH	22	0.3%	
Hardin Co. OH	15	0.2%	
Percent is of workers working in County.			

Pickaway	Percent of workers that work outside the County		55.4%
	Average commute time in minutes -		26.7
Number of workers 16+ years of age living in Pickaway County			21,921
Commute Out To	Number	Percent	
Franklin Co. OH	9,613	43.9%	
Ross Co. OH	847	3.9%	
Madison Co. OH	392	1.8%	
Fairfield Co. OH	349	1.6%	
Fayette Co. OH	244	1.1%	
Licking Co. OH	86	0.4%	
Hocking Co. OH	62	0.3%	
Union Co. OH	60	0.3%	
Delaware Co. OH	58	0.3%	
Clinton Co. OH	51	0.2%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Pickaway County			17,332
Commute In From	Number	Percent	
Ross Co. OH	2,617	15.1%	
Franklin Co. OH	1,517	8.8%	
Fairfield Co. OH	1,289	7.4%	
Hocking Co. OH	564	3.3%	
Fayette Co. OH	248	1.4%	
Pike Co. OH	241	1.4%	
Madison Co. OH	172	1.0%	
Vinton Co. OH	128	0.7%	
Jackson Co. OH	108	0.6%	
Delaware Co. OH	55	0.3%	
Percent is of workers working in County.			

Ross			Percent of workers that work outside the County		29.6%
			Average commute time in minutes -		25.9
Number of workers 16+ years of age living in Ross County			30,409		
Commute Out To	Number	Percent	Commute In From	Number	Percent
Pickaway Co. OH	2,617	8.6%	Pike Co. OH	1,450	5.2%
Franklin Co. OH	2,335	7.7%	Jackson Co. OH	917	3.3%
Pike Co. OH	1,071	3.5%	Pickaway Co. OH	847	3.0%
Highland Co. OH	671	2.2%	Vinton Co. OH	538	1.9%
Fayette Co. OH	503	1.7%	Franklin Co. OH	497	1.8%
Jackson Co. OH	325	1.1%	Scioto Co. OH	494	1.8%
Madison Co. OH	289	1.0%	Highland Co. OH	347	1.2%
Clinton Co. OH	222	0.7%	Fairfield Co. OH	255	0.9%
Fairfield Co. OH	191	0.6%	Fayette Co. OH	153	0.5%
Vinton Co. OH	97	0.3%	Hocking Co. OH	126	0.4%
Percent is of workers living in County.			Percent is of workers working in County.		

Union		Percent of workers that work outside the County		42.7%
		Average commute time in minutes -		23.0
Number of workers 16+ years of age living in Union County			20,416	
Commute Out To	Number	Percent		
Franklin Co. OH	5,473	26.8%		
Delaware Co. OH	890	4.4%		
Logan Co. OH	869	4.3%		
Marion Co. OH	508	2.5%		
Madison Co. OH	439	2.2%		
Hardin Co. OH	82	0.4%		
Champaign Co. OH	80	0.4%		
Licking Co. OH	54	0.3%		
Summit Co. OH	41	0.2%		
Knox Co. OH	38	0.2%		
Percent is of workers living in County.				
Number of workers 16+ years of age working in Union County			26,376	
Commute In From	Number	Percent		
Franklin Co. OH	4,527	17.2%		
Logan Co. OH	2,470	9.4%		
Champaign Co. OH	1,802	6.8%		
Delaware Co. OH	1,782	6.8%		
Marion Co. OH	1,041	3.9%		
Clark Co. OH	775	2.9%		
Madison Co. OH	763	2.9%		
Hardin Co. OH	542	2.1%		
Morrow Co. OH	131	0.5%		
Fairfield Co. OH	91	0.3%		
Percent is of workers working in County.				



## **Factor 5: Meteorology**

Please refer to Appendix E for applicable meteorology information for the Columbus area.

## **Factor 6: Topography/Land use/Land cover**

Delaware County is in the Central Lowland Province (see Appendix F). The highest elevation is 1,239 feet and the lowest is 754 feet above sea level. The western and central parts of the County consist of an almost level plain at about 950 feet. The eastern part of the County rises to about 1,200 feet.

Fairfield County is in the Allegheny Plateau and the Central Lowland Provinces. Relief of the County can be nearly level to strongly undulating with steep-sided ridges. In the southeastern part of the County, in the unglaciated section of the Allegheny Plateau, the relief from the ridgetops to the flood plains can be about 250 to 300 feet.

Franklin County is within the glaciated till plains of the Central Lowland Province. The elevation in the County ranges from 1,130 feet in the northeast corner to about 670 feet along the southern border where the Scioto River leaves the County. The relief is nearly level to gently rolling.

Knox County is on the outer edge of an area that was covered by continental glaciers. The highest point is 1,420 feet above sea level in Liberty Township. The lowest point, where the Kokosing River leaves the County, is 840 feet above sea level.

Licking County is in two physiographic Provinces. The eastern third is part of the Allegheny Plateau Province, and the rest is on the eastern edge of the glaciated section of the Central Lowlands Province. The elevation ranges from about 1,360 feet to 740 feet above sea level. Relief throughout the west-central part of the County is gently undulating and rolling to moderately steep to very steep. The eastern part of the County has hilly topography with a relief of about 200 feet between ridgetops and flood plains.

Madison County is nearly level from the Wisconsin Glacier retreat. The highest point, along the west-central County line, is slightly more than 1,200 feet above sea level. The lowest point, in the extreme southeast corner along Deer Creek, is slightly less than 800 feet above sea level.

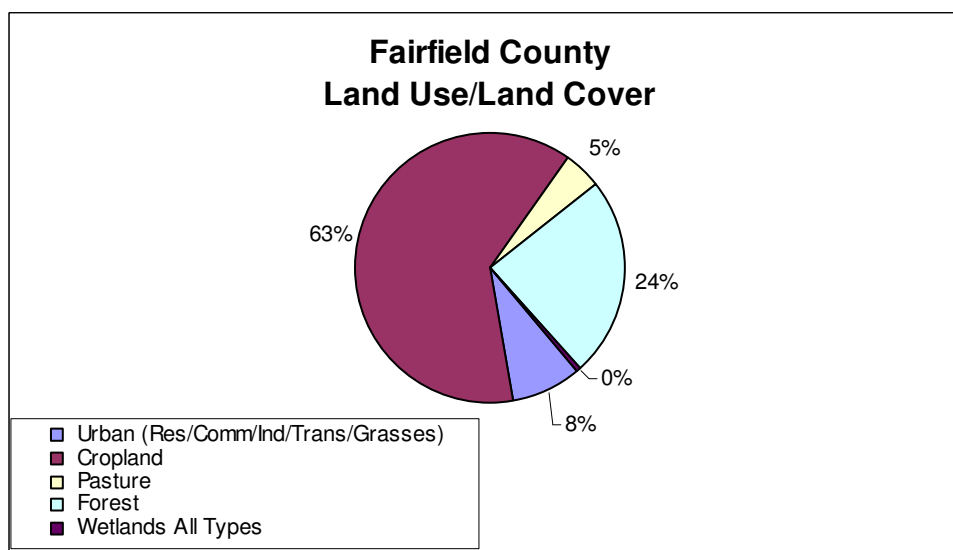
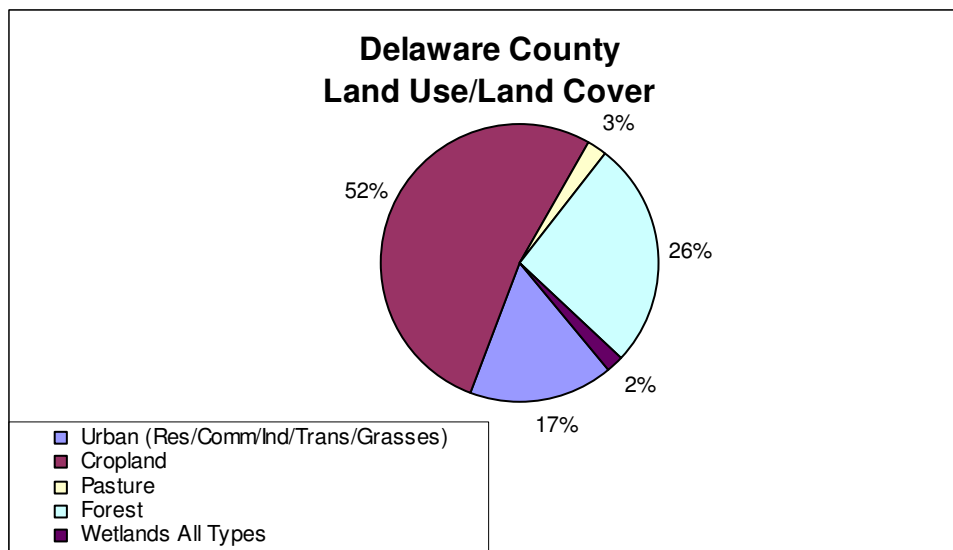
Marion County has generally uniform level plains and basins and lies in the Scioto Lobe of the Indiana-Ohio Till Plain. The highest elevation is about 1,105 feet above sea level in Tully Township. The lowest elevation is about 870 feet in Grand Township.

Morrow County was covered by several large continental glaciers during the Pleistocene epoch. The average relief in the western half is about 15 feet with a

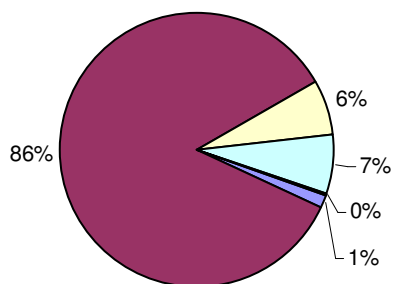
maximum of about 50 feet. In the eastern half the average relief is about 50 feet with a maximum relief of about 100 feet.

Ross County consists of rolling plains in the northern one-third of the County and low hills of the glaciated portion of the Central Lowlands Province. The central and southern parts of Ross County rise 200 to 300 feet above the lowlands. The maximum is 1,342 feet on Horseback Knob, 1.8 miles northeast of Summithill in Huntington Township. The lowest elevation, 559 feet, is along the Scioto River on the Ross County-Pike County boundary.

As shown in the following pie charts, the land use/land cover in Franklin County has the highest percentage of urban area. All other Counties have a significant percentage of cropland and forest.

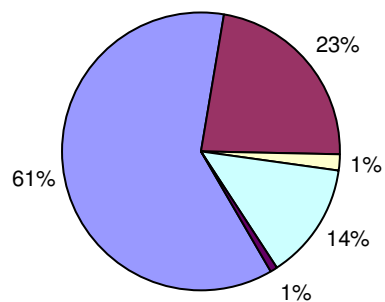


### Fayette County Land Use/Land Cover



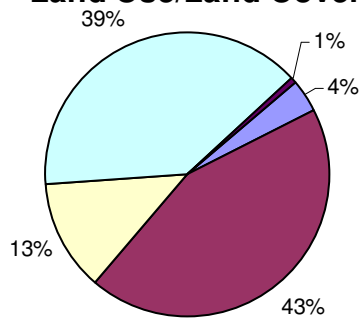
- Urban (Res/Comm/Ind/Trans/Grasses)
- Cropland
- Pasture
- Forest
- Wetlands All Types

### Franklin County Land Use/Land Cover



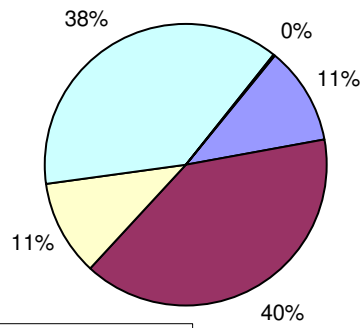
- Urban (Res/Comm/Ind/Trans/Grasses)
- Cropland
- Pasture
- Forest
- Wetlands All Types

### Knox County Land Use/Land Cover



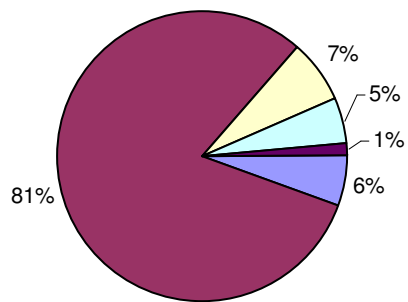
- Urban (Res/Comm/Ind/Trans/Grasses)
- Cropland
- Pasture
- Forest
- Wetlands All Types

### Licking County Land Use/Land Cover



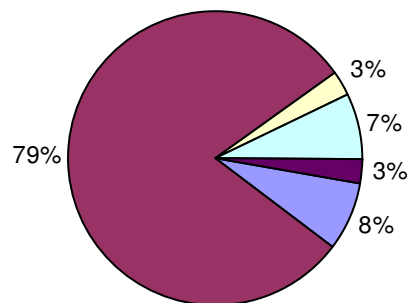
■ Urban (Res/Comm/Ind/Trans/Grasses)  
■ Cropland  
■ Pasture  
■ Forest  
■ Wetlands All Types

### Madison County Land Use/Land Cover



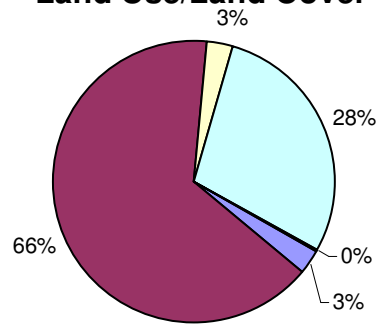
■ Urban (Res/Comm/Ind/Trans/Grasses)  
■ Cropland  
■ Pasture  
■ Forest  
■ Wetlands All Types

### Marion County Land Use/Land Cover



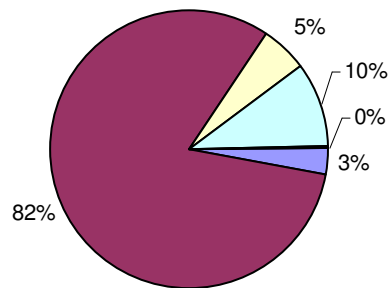
■ Urban (Res/Comm/Ind/Trans/Grasses)  
■ Cropland  
■ Pasture  
■ Forest  
■ Wetlands All Types

### Morrow County Land Use/Land Cover



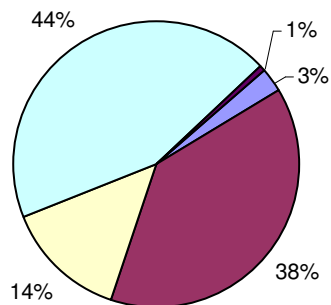
- Urban (Res/Comm/Ind/Trans/Grasses)
- Cropland
- Pasture
- Forest
- Wetlands All Types

### Pickaway County Land Use/Land Cover

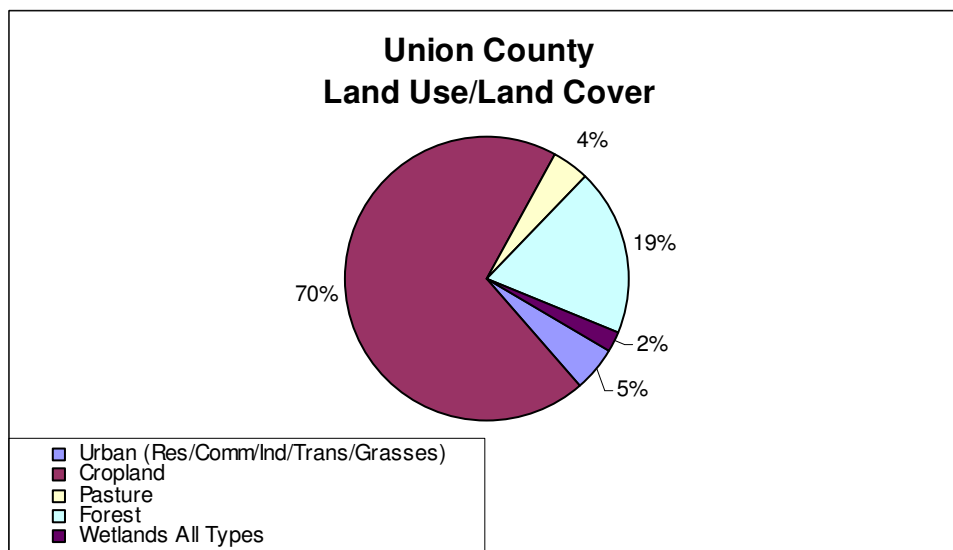


- Urban (Res/Comm/Ind/Trans/Grasses)
- Cropland
- Pasture
- Forest
- Wetlands All Types

### Ross County Land Use/Land Cover



- Urban (Res/Comm/Ind/Trans/Grasses)
- Cropland
- Pasture
- Forest
- Wetlands All Types



### **Factor 7: Jurisdictional boundaries**

The Columbus, OH MSA includes: Delaware, Fairfield, Franklin, Licking, Madison, Morrow, Pickaway, and Union Counties. The principal city is Columbus. The CSA also includes Fayette, Knox, Marion, and Ross Counties.

The Mid-Ohio Regional Planning Commission (MORPC) is the planning agency designated as the Metropolitan Planning Organization for the greater Columbus area. The MORPC region is composed of two Counties: Delaware and Franklin and portions of Fairfield and Licking Counties.

The Licking County Area Transportation Study (LCATS) is the planning agency designated as the MPO for Licking County.

### **Factor 8: Level of control of emission sources**

Please refer to the Factor 8 general discussion at the beginning of this document for applicable control information for this area.

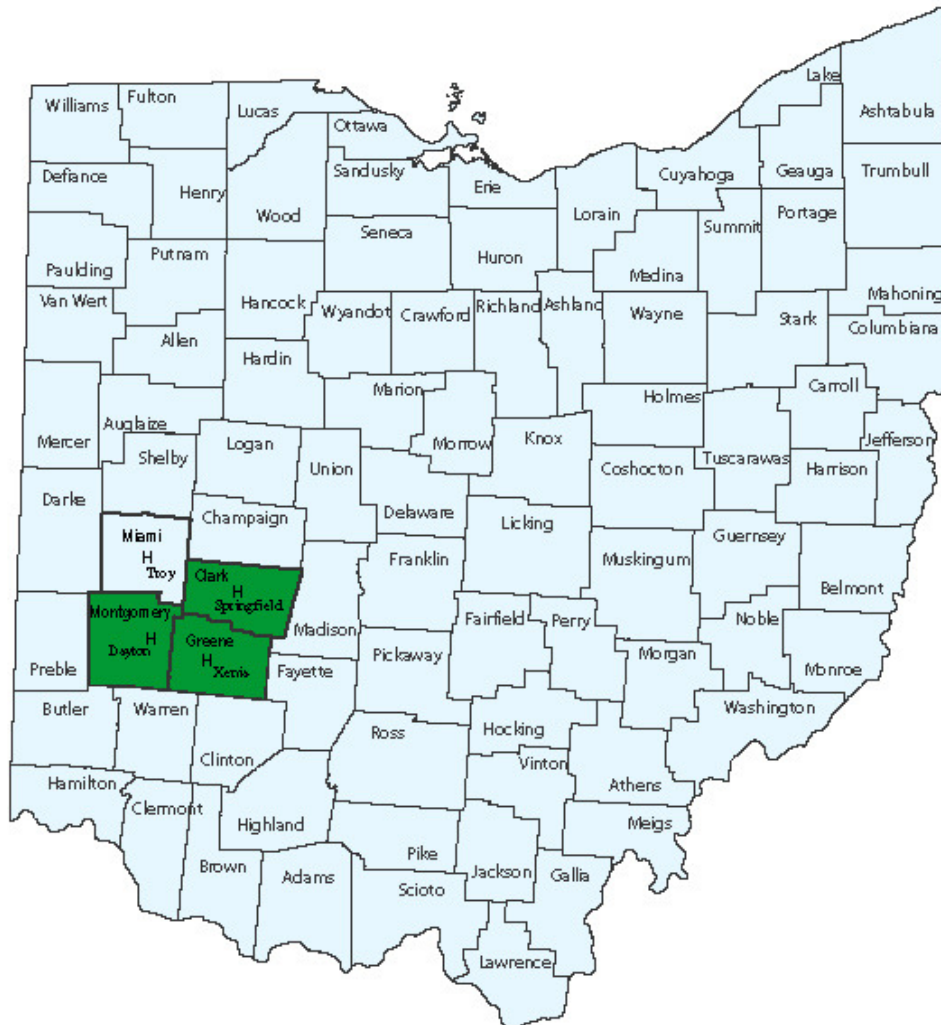
## Dayton-Springfield, OH

**Current** County nonattainment: none

**Current nonattainment Counties**

***Recommended*** County nonattainment: Clark, Greene, and Montgomery

 Recommended nonattainment Counties



## **Discussion**

There are four Counties in the existing ozone designation area: Clark, Greene, Miami, and Montgomery. This area initially was designated nonattainment for the 1997 ozone standard and then was redesignated as attainment in August of 2007. With respect to the new standard, Ohio EPA recommends designating three of these Counties as nonattainment for the Dayton-Springfield area. Three of six monitors in the area are violating the standard, two in Clark County and one in Greene County. Montgomery County's monitor is not violating the standard, but the County does have a significant population. The Cincinnati-Hamilton MSA and Columbus MSA both border this area and are discussed under their sections. Five other Counties are adjacent to this area: Miami, Preble, Darke, Shelby and Champaign Counties. Shelby County is not a part of the MSA or CSA, and is excluded due to low emissions and low population.

The three-year averages of the annual fourth-highest daily maximum eight-hour average concentrations at three of six monitors are not attaining the revised standard as identified under factor 1 below. Emissions of VOC and NO<sub>x</sub> in Montgomery County are substantially greater than all other Counties in the area.

Although Preble and Miami Counties are a part of the MSA, Ohio EPA is recommending to exclude these Counties. Preble County contains one monitor with a value significantly lower than the revised standard, 71 ppb. Preble County is also most closely located to, and up-wind from Miami and Montgomery Counties, which also contain monitors showing attainment for the revised standard. Preble County has significantly lower population (41,739 in 2007) and lower emissions than the other existing ozone designation Counties. Emissions of VOC and NO<sub>x</sub> are projected to decrease by 15% and 19%, respectively, from 2005 to 2009. Population projections show minimal growth in Preble County, increasing to 45,380 in 2030. All of the existing ozone designation Counties have had fairly constant kDMVT values with slight declines from 2005 to 2007. Preble County has had the most significant decline during this period - 5.6%. Very little commuting is occurring between Preble County and the existing ozone designation Counties, with the highest percentage being 1.7% of Montgomery County workers commuting from Preble County. Miami County's monitor also shows a value significantly lower than the revised standard, 72 ppb. Miami County has significantly lower population (101,038 in 2007) and lower emissions than the other existing ozone designation Counties. With respect to the existing ozone designation Counties, emission projections for 2009 show the combined VOC and NO<sub>x</sub> emissions from Miami County will be the lowest. They will be nearly 15% lower than those of Clark County, the which has the lowest projected emissions of those Counties Ohio EPA is recommending for nonattainment designation. Population projections show minimal growth in Miami County, increasing to 107,930 in 2030. With respect to the original ozone designation Counties, Miami County has the lowest population by nearly 40,000. Miami County has had the second most significant decline in kDMVT values from 2005 to 2007 - 5.4%. Very little commuting is occurring between Miami County and the existing ozone designation Counties, with the highest percentage being 3.9% of Montgomery County workers commuting from Miami County. Recall, Montgomery County does not contain a violating monitor.



Although Darke and Champaign Counties are part of the CSA but not the MSA, Ohio EPA is recommending to exclude these Counties. Darke and Champaign Counties have significantly lower 2007 populations than the existing ozone designation Counties, 52,205 and 39,522, respectively. Darke and Champaign Counties also have lower emissions than the other existing ozone designation Counties. Emissions of VOC are projected to decrease by 9.0% in Darke County and 9.4% in Champaign County from 2005 to 2009. Emissions of NOx are projected to decrease by 18.5% in Darke County and 15.6% in Champaign County from 2005 to 2009. Population projections show minimal growth in Darke and Champaign Counties, increasing to 52,710 and 47,020, respectively, in 2030. Both Counties have seen a slight decline in kDMVT values over the past several years. There is little commuting occurring between these Counties and the existing ozone designation Counties. The most significant for each being 6.1% of Clark County workers commuting from Champaign County and 5.5% of Miami County workers commuting from Darke County.

### Factor 1: Air quality data

       = Exceeds standard

AQS: 8-Hour three-year average of the annual fourth-highest daily maximum (ppb)

Site Area County	Year	Highest Daily Maximum Concentrations (ppb)			
		1	2	3	4
39-023-0001 Dayton Clark Co.	2006	91	81	77	76
	2007	96	86	81	78
	2008	90	84	78	75
	Avg				76.3

39-023-0003 Dayton Clark Co.	2006	87	81	78	74
	2007	89	84	80	78
	2008	89	77	76	75
	Avg				75.7

39-057-0006 Dayton Greene Co.	2006	85	82	81	79
	2007	92	85	81	77
	2008	83	78	76	75
	Avg				77.0

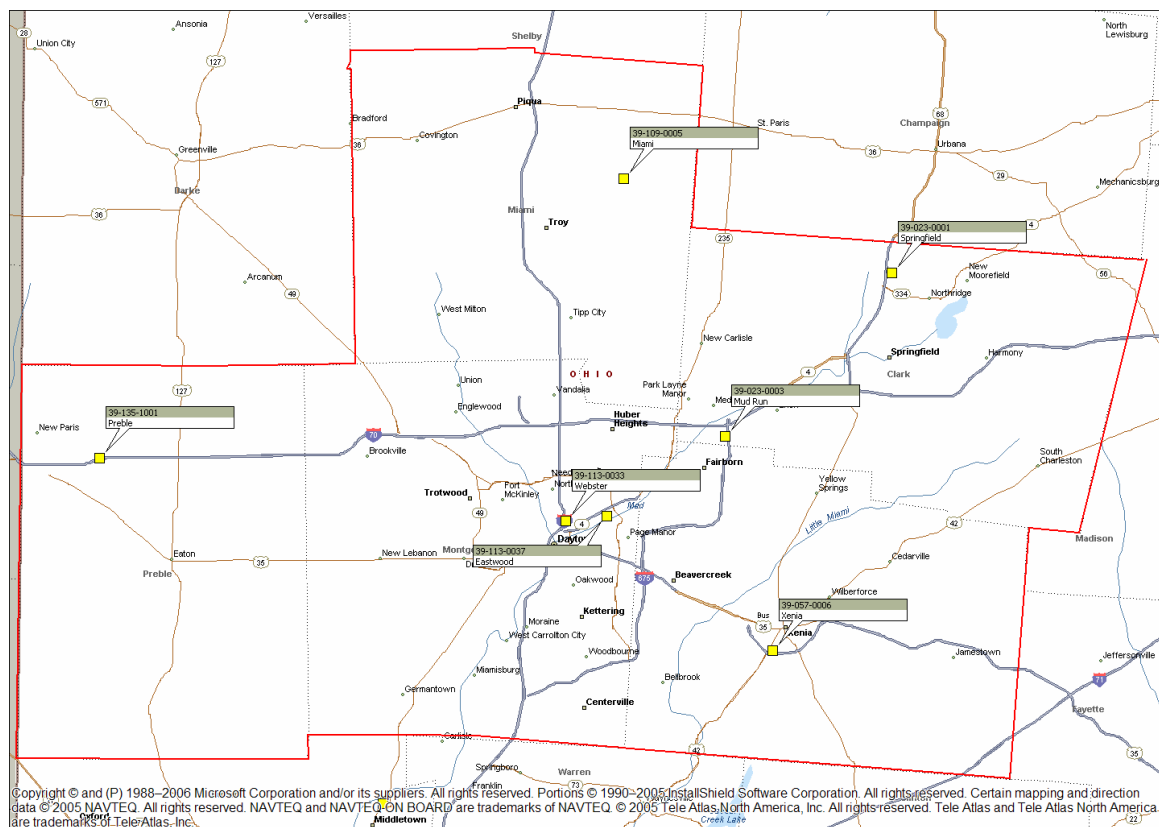
39-109-0005 Dayton Miami Co.	2006	88	76	74	73
	2007	83	79	78	73
	2008	74	74	71	70
	Avg				72.0

39-113-0033 , -0037 Dayton Montgomery Co.	2006	84	77	74	71
	2007	84	84	84	74
	2008	95	81	80	77
	Avg				74.0

39-135-1001 Dayton Preble Co.	2006	78	75	73	72
	2007	79	79	78	73
	2008	72	69	68	68
	Avg				71.0

Sites with less than 75% capture for a given year  
 Sites with less than 90% capture for the 3-year period

## Dayton-Springfield Area Ozone Monitor Locations and Site ID Numbers



**Factor 2: Emissions data**  
(tons per day)

<b>2005</b>		
<b>County</b>	<b>VOC</b>	<b>NO<sub>x</sub></b>
<b>CLARK</b>	<b>15.42</b>	<b>16.28</b>
<b>GREENE</b>	<b>12.22</b>	<b>21.19</b>
MONTGOMERY	53.47	61.13
MIAMI	13.42	13.13
Preble	7.21	7.34
Darke	8.63	6.93
Champaign	5.67	4.75

<b>2009</b>		
<b>County</b>	<b>VOC</b>	<b>NO<sub>x</sub></b>
<b>CLARK</b>	<b>12.49</b>	<b>12.96</b>
<b>GREENE</b>	<b>9.07</b>	<b>18.57</b>
MONTGOMERY	38.02	48.34
MIAMI	10.68	13.45
Preble	6.13	5.93
Darke	7.82	5.65
Champaign	5.16	4.01

**Major Employers:**

Source: Ohio Department of Development 2007

Most of the major employers in the Dayton-Springfield area are in the categories of service, government and manufacturing as shown below.

**Champaign County**

Community Mercy Health Partners	Service
Graham Local Bd of Ed	Government
Honeywell International Inc	Manufacturing
KTH Parts Industries Inc	Manufacturing
Menasha Corp/ORBIS	Manufacturing
Urbana City Bd of Ed	Government
Urbana University	Service
Wal-Mart Stores Inc	Trade

**Clark County**

Assurant Inc	Insurance
Community Mercy Health Partners	Service
Dole Fresh Vegetables	Manufacturing
Gordon Food Service	Trade
International Truck and Engine Corp	Manufacturing
Marathon/Speedway SuperAmerica LLC	Trade
Mercy Medical Center	Service
Ohio Masonic Home	Service
Springfield City Bd of Ed	Government
Wittenberg University	Service

**Darke County**

Brethren Retirement Community	Service
Ernie Green/Florida Production Eng	Manufacturing
Greenville City Bd of Ed	Government
Honeywell International	Manufacturing
Midmark Corp	Manufacturing
Morioku Co/Greenville Technology	Manufacturing
Wal-Mart Stores Inc	Trade
Wayne Hospital	Service
Whirlpool Corp/KitchenAid	Manufacturing
Whiteford Food Products Inc	Manufacturing

**Greene County**

Beavercreek Local Bd of Ed	Government
Cedarville University	Service
Fairborn City Bd of Ed	Government
Fifth Third Bank	Finance
General Electric Co/Unison Industries	Manufacturing
Greene Memorial Hospital	Service
SAIC Inc	Service
Supervalu Inc	Trade
US Federal Govt/Wright Patterson AFB	Government
Wright State University	Government
Xenia Community City Board of Education	Government

**Miami County**

AO Smith Corp	Manufacturing
Crane Co	Manufacturing
Evenflo Company Inc	Manufacturing
Faurecia SA	Manufacturing
F-Tech Inc/F&P America	Manufacturing
Goodrich Corp	Manufacturing
Illinois Tool Works Inc/Hobart	Manufacturing
Jackson Tube Service	Manufacturing
Meijer Inc	Trade
Troy City Bd of Ed	Government
Upper Valley Medical Center	Service

**Montgomery County**

Behr Dayton Thermal Products LLC	Manufacturing
Dayton City Bd of Ed	Government
DPL Inc/Dayton Power & Light Co	Utility
General Motors Corp	Manufacturing
Kettering Medical Center	Service
NCR Corp	Manufacturing
Premier Health Partners Inc	Service
Reed Elsevier/LexisNexis	Service
Reynolds & Reynolds Co Inc	Manufacturing
University of Dayton	Service
US Federal Government	Government

## Preble County

Akey Inc	Manufacturing
Bullen Ultrasonics Inc	Manufacturing
Eaton City Bd of Ed	Government
Henny Penny Corp	Manufacturing
Nihon Plast/Neaton Auto Products	Manufacturing
Parker-Hannifin Corp	Manufacturing
Pratt Industries/Love Box Co	Manufacturing
Procter & Gamble/lams Co	Manufacturing
Weyerhaeuser Co	Manufacturing
Zumstein Inc	Transportation

### Factor 3: Population and Projected Growth

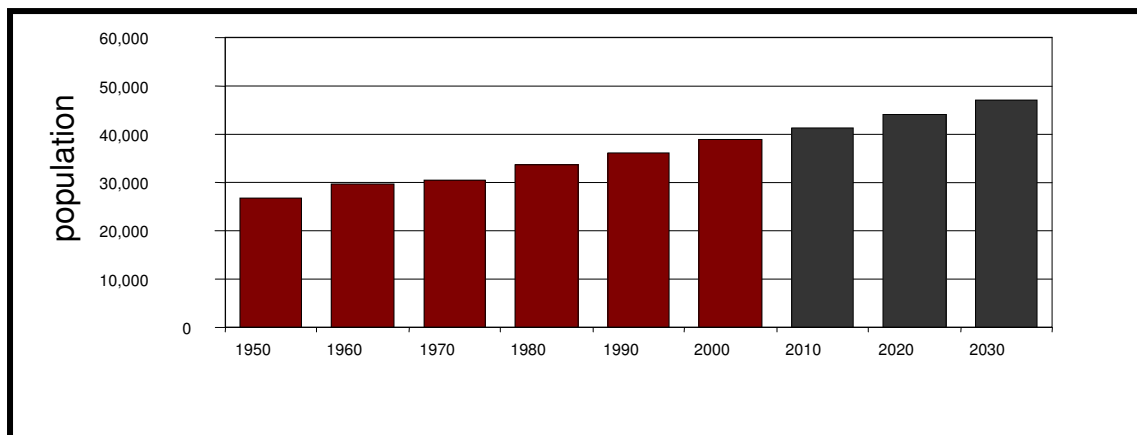
Sources: Office of Strategic Research, Ohio Department of Development  
U.S. Census Bureau Population Estimates Program 2007

The primary urban areas in the Dayton-Springfield area are; Springfield and Enon in Clark County; Xenia, Beavercreek and Fairborn in Greene County; Dayton and Kettering in Montgomery County.

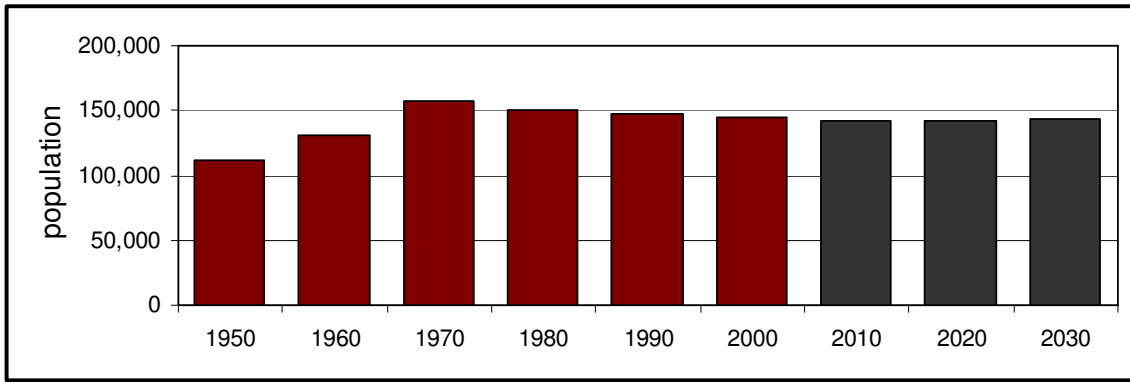
As indicated in the following table and graphs, Montgomery County has the highest population in this area and it is projected to steadily decrease. The population in Clark, Preble and Darke Counties is projected remain fairly constant with only slight increases. Greene, Miami and Champaign are projected to experience gradual increases.

COUNTY	2004	2005	2006	2007	2010	2020	2030
Clark	142,230	141,908	141,872	140,477	142,300	141,660	143,960
Greene	151,892	151,823	152,298	154,656	151,760	156,590	158,860
Montgomery	548,561	545,603	542,237	538,104	540,420	528,800	524,060
Miami	100,670	101,414	101,914	101,038	103,460	106,770	107,930
Preble	42,423	42,400	42,491	41,739	44,200	45,070	45,380
Darke	53,074	52,967	52,780	52,205	52,730	52,550	52,710
Champaign	39,540	39,692	39,921	39,522	41,270	44,050	47,020

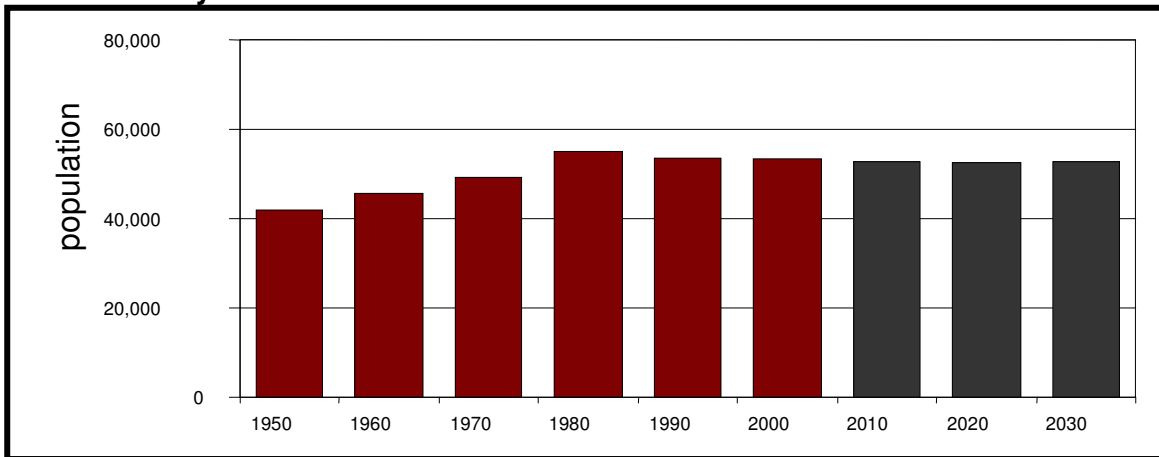
## Champaign County



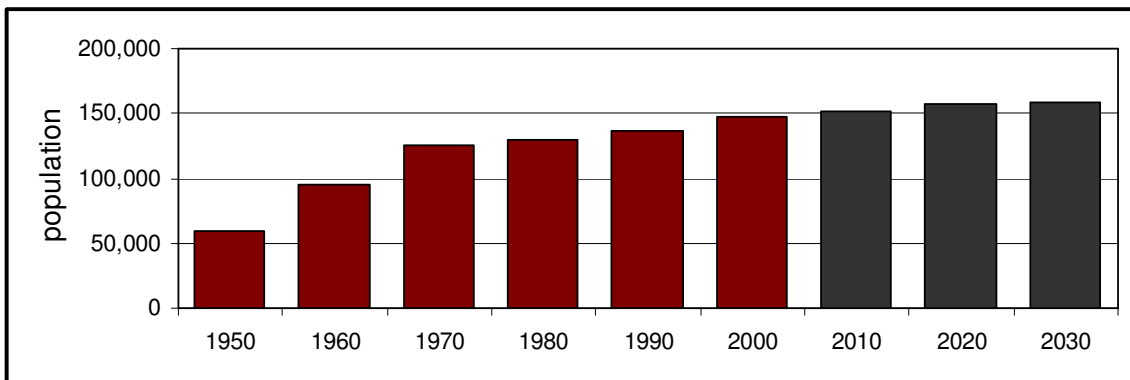
### Clark County



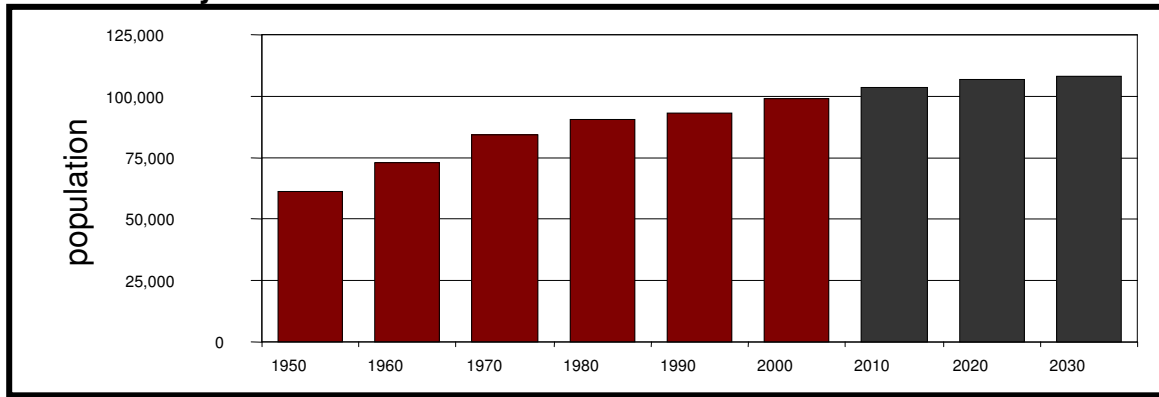
### Darke County



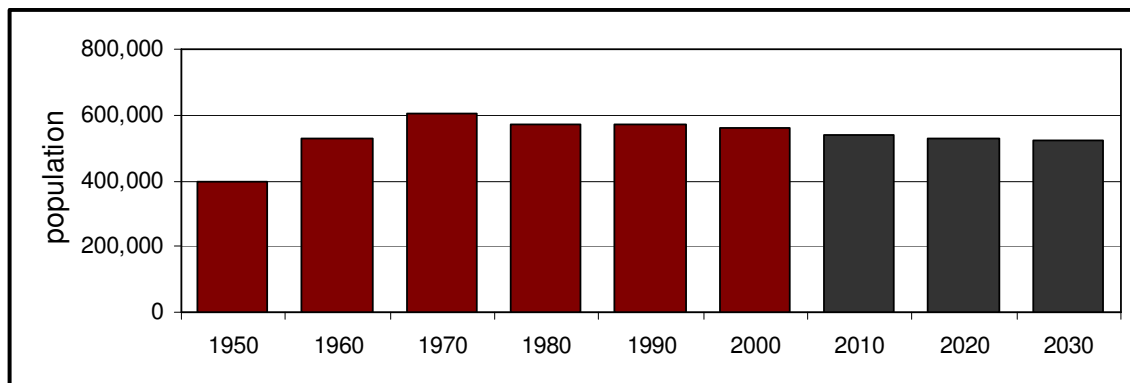
### Greene County



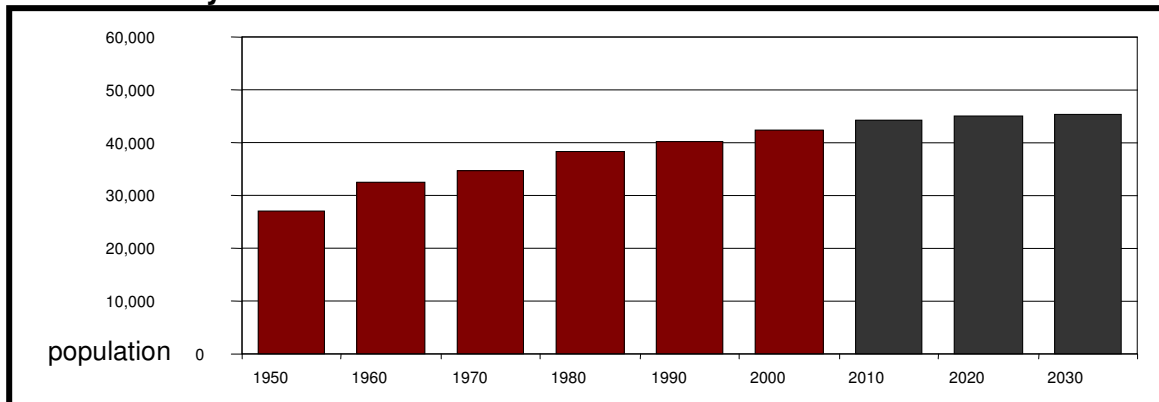
### Miami County



### Montgomery County



### Preble County

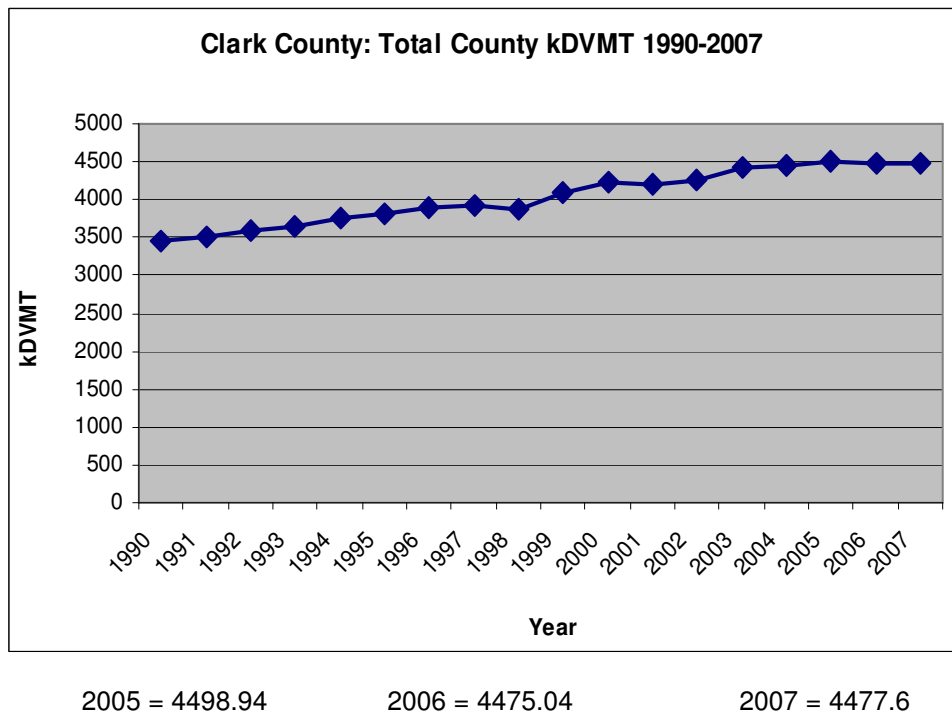
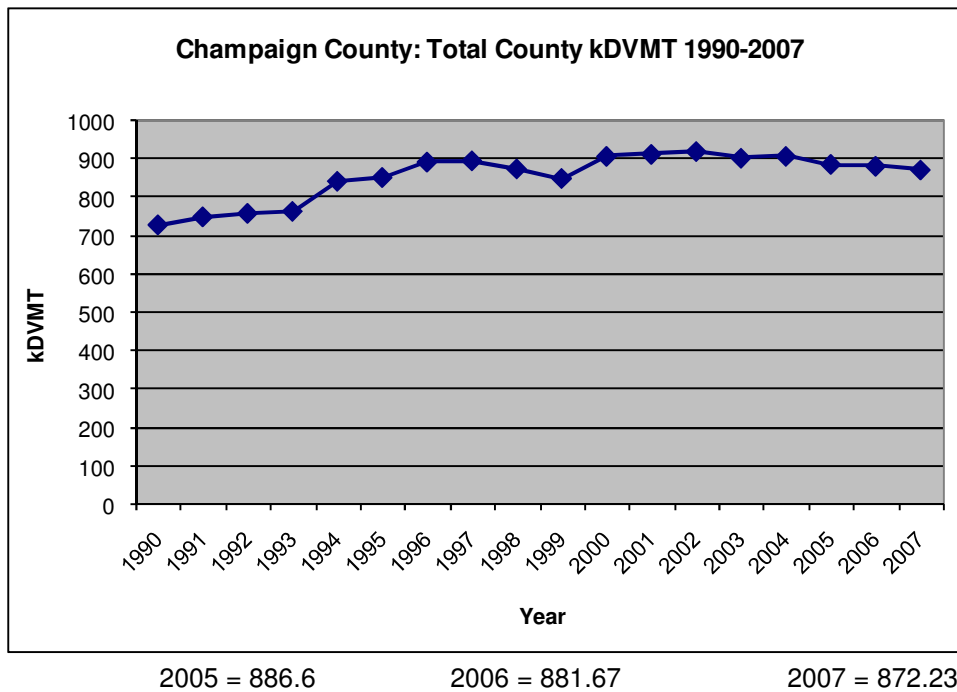


### Factor 4: Traffic and commuting patterns

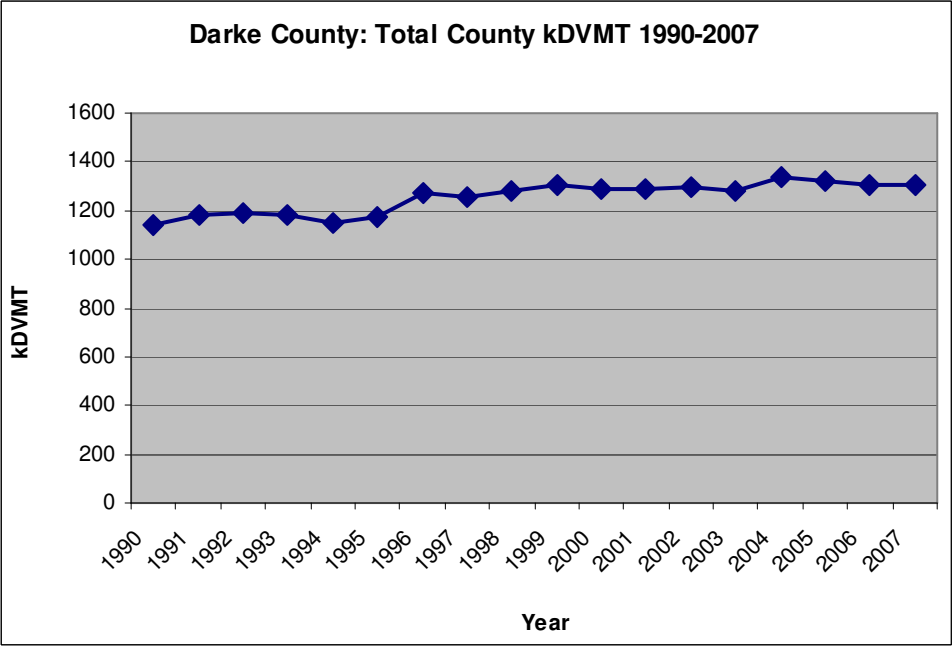
The kDVMT in the Dayton-Springfield area have remained generally constant with only minor declines from 2005 to 2007, as shown in the graphs below. Preble County has had the most significant decline during this period -5.6%. Montgomery County has the highest level of kDVMT and Champaign has the lowest.

## Estimated Vehicle Miles Traveled (kDVMT = in thousands)

Source: Ohio Department of Transportation, Office of Technical Services



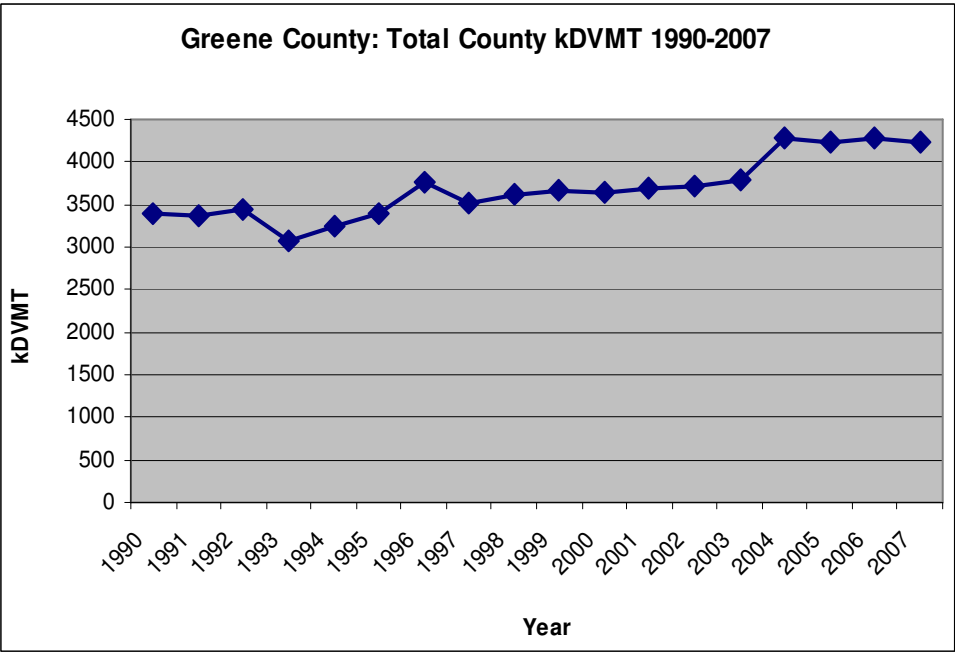




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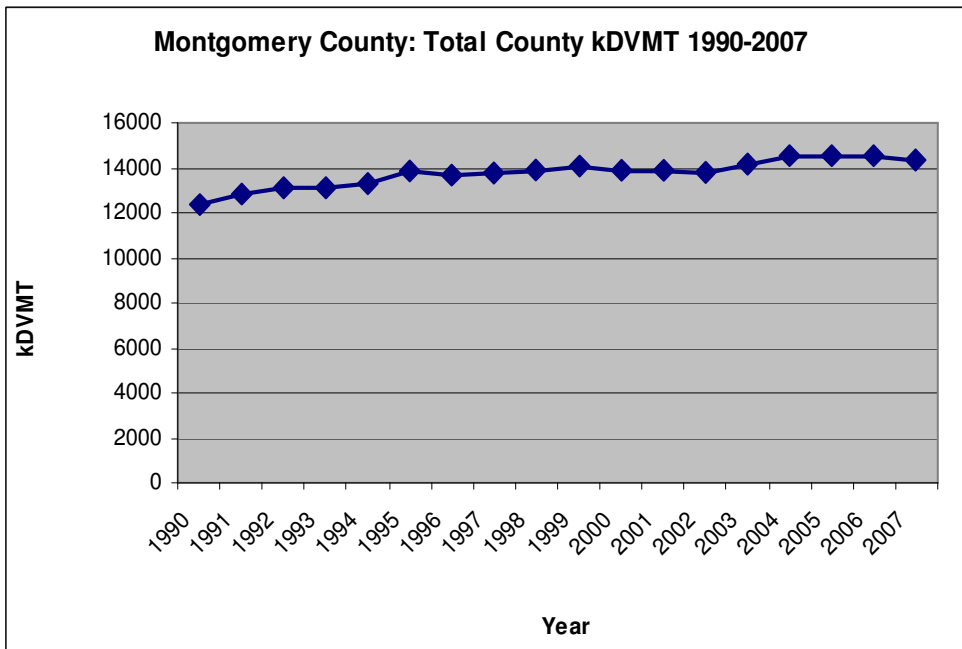
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2005 = 4238.33

2006 = 4281.29

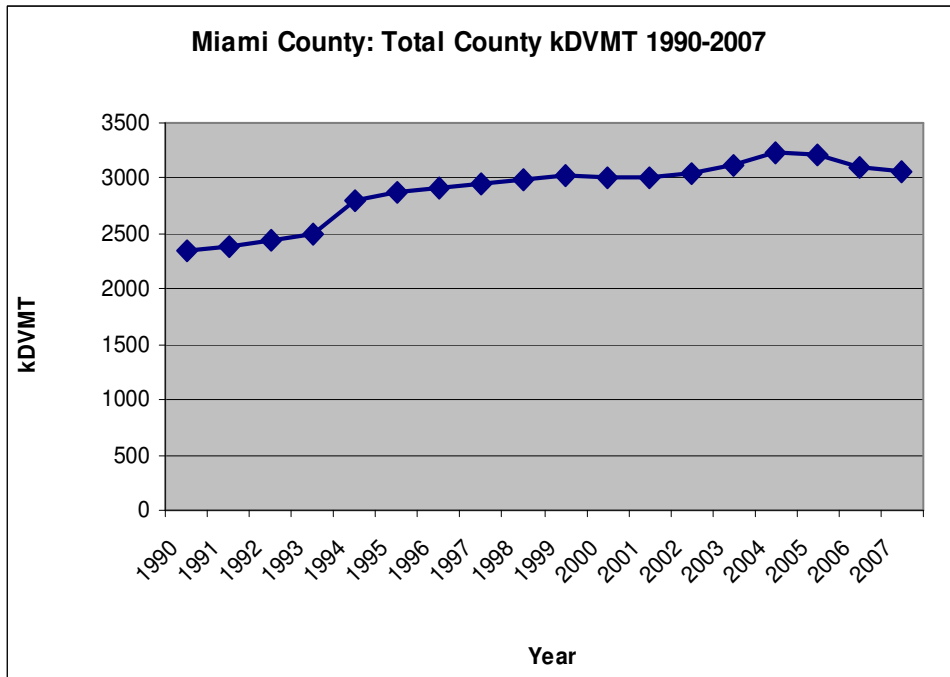
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2005 = 14506.09

2006 = 14541.39

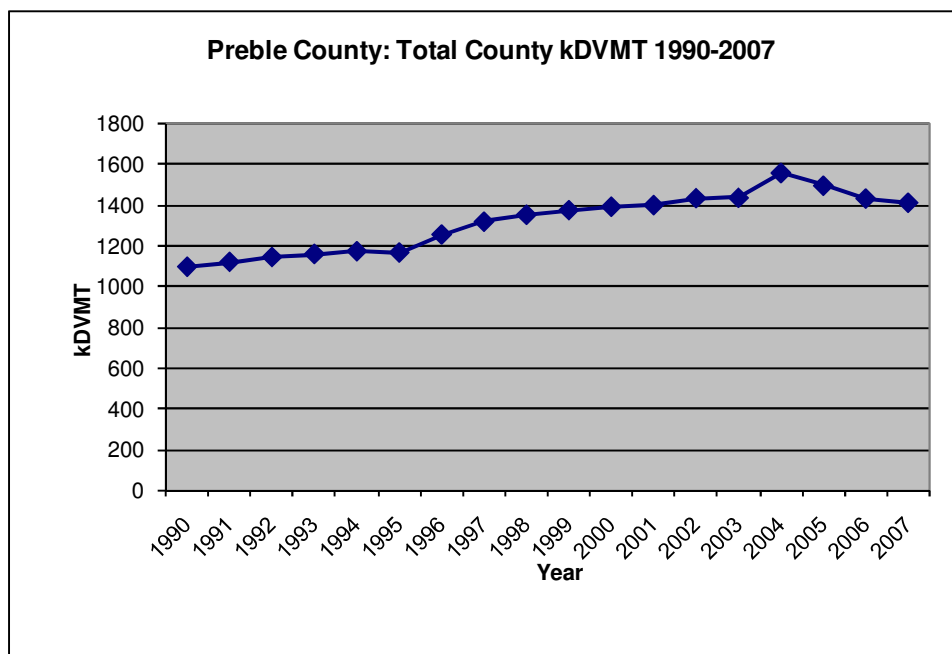
2007 = 14345.87



2005 = 3211.95

2006 = 3110.98

2007 = 3072.25



2005 = 1496.2

2006 = 1432.92

2007 = 1412.27

## Commuter Patterns

Source: Office of Strategic Research, Ohio Department of Development  
U.S. Census Bureau, 2000

Montgomery County receives a high number of commuters from Greene County, and in turn, Greene County receives a similar number of commuters from Montgomery County. Clark County commuters travel to Montgomery and Greene Counties, but in lower numbers as shown in the following tables.

Champaign	Percent of workers that work outside the County -		53.1%
	Average commute time in minutes -		25.0
Number of workers 16+ years of age living in Champaign County			18,905
Commute Out To	Number	Percent	
Clark Co. OH	3,493	18.5%	
Union Co. OH	1,802	9.5%	
Logan Co. OH	1,118	5.9%	
Franklin Co. OH	886	4.7%	
Miami Co. OH	827	4.4%	
Montgomery Co. OH	662	3.5%	
Shelby Co. OH	354	1.9%	
Madison Co. OH	265	1.4%	
Greene Co. OH	239	1.3%	
Summit Co. OH	47	0.2%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Champaign County			12,897
Commute In From	Number	Percent	
Clark Co. OH	1,299	10.1%	
Logan Co. OH	707	5.5%	
Montgomery Co. OH	675	5.2%	
Miami Co. OH	426	3.3%	
Franklin Co. OH	163	1.3%	
Greene Co. OH	121	0.9%	
Shelby Co. OH	104	0.8%	
Madison Co. OH	91	0.7%	
Union Co. OH	80	0.6%	
Jefferson Co. OH	42	0.3%	
Percent is of workers working in County.			

Clark	Percent of workers that work outside the County		31.5%
	Average commute time in minutes -		21.6
Number of workers 16+ years of age living in Clark County			65,887
Commute Out To	Number	Percent	
Montgomery Co. OH	7,856	11.9%	
Greene Co. OH	5,508	8.4%	
Franklin Co. OH	1,437	2.2%	
Champaign Co. OH	1,299	2.0%	
Miami Co. OH	1,240	1.9%	
Madison Co. OH	1,092	1.7%	
Union Co. OH	775	1.2%	
Hamilton Co. OH	205	0.3%	
Logan Co. OH	186	0.3%	
Shelby Co. OH	132	0.2%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Clark County			57,637
Commute In From	Number	Percent	
Champaign Co. OH	3,493	6.1%	
Montgomery Co. OH	2,517	4.4%	
Greene Co. OH	2,516	4.4%	
Miami Co. OH	882	1.5%	
Franklin Co. OH	446	0.8%	
Madison Co. OH	373	0.6%	
Logan Co. OH	256	0.4%	
Preble Co. OH	142	0.2%	
Warren Co. OH	125	0.2%	
Fayette Co. OH	124	0.2%	
Percent is of workers working in County.			

Darke	Percent of workers that work outside the County		36.8%
	Average commute time in minutes -		22.8
Number of workers 16+ years of age living in Darke County			25,303
Commute Out To	Number	Percent	
Montgomery Co. OH	2,557	10.1%	
Miami Co. OH	2,429	9.6%	
Shelby Co. OH	1,131	4.5%	
Randolph Co. IN	582	2.3%	
Mercer Co. OH	545	2.2%	
Preble Co. OH	468	1.8%	
Wayne Co. IN	455	1.8%	
Auglaize Co. OH	278	1.1%	
Greene Co. OH	154	0.6%	
Clark Co. OH	115	0.5%	
Percent is of workers living in County.			

Number of workers 16+ years of age working in Darke County			19,871
Commute In From	Number	Percent	
Miami Co. OH	813	4.1%	
Randolph Co. IN	659	3.3%	
Montgomery Co. OH	647	3.3%	
Mercer Co. OH	519	2.6%	
Preble Co. OH	311	1.6%	
Shelby Co. OH	238	1.2%	
Auglaize Co. OH	121	0.6%	
Wayne Co. IN	109	0.5%	
Greene Co. OH	58	0.3%	
Clark Co. OH	58	0.3%	
Percent is of workers working in County.			

Greene	Percent of workers that work outside the County		44.5%
	Average commute time in minutes -		20.3
Number of workers 16+ years of age living in Greene County			72,958
Commute Out To	Number	Percent	
Montgomery Co. OH	24,925	34.2%	
Clark Co. OH	2,516	3.4%	
Clinton Co. OH	808	1.1%	
Warren Co. OH	797	1.1%	
Hamilton Co. OH	610	0.8%	
Miami Co. OH	522	0.7%	
Franklin Co. OH	441	0.6%	
Butler Co. OH	358	0.5%	
Fayette Co. OH	350	0.5%	
Champaign Co. OH	121	0.2%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Greene County			76,312
Commute In From	Number	Percent	
Montgomery Co. OH	24,214	31.7%	
Clark Co. OH	5,508	7.2%	
Miami Co. OH	1,514	2.0%	
Warren Co. OH	1,321	1.7%	
Clinton Co. OH	451	0.6%	
Butler Co. OH	400	0.5%	
Hamilton Co. OH	245	0.3%	
Champaign Co. OH	239	0.3%	
Franklin Co. OH	236	0.3%	
Preble Co. OH	220	0.3%	
Percent is of workers working in County.			

Miami	Percent of workers that work outside the County		37.4%
	Average commute time in minutes -		20.1
Number of workers 16+ years of age living in Miami County			49,799
Commute Out To	Number	Percent	
Montgomery Co. OH	11,368	22.8%	
Shelby Co. OH	2,438	4.9%	
Greene Co. OH	1,514	3.0%	
Clark Co. OH	882	1.8%	
Darke Co. OH	813	1.6%	
Champaign Co. OH	426	0.9%	
Hamilton Co. OH	142	0.3%	
Preble Co. OH	130	0.3%	
Auglaize Co. OH	126	0.3%	
Butler Co. OH	95	0.2%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Miami County			44,378
Commute In From	Number	Percent	
Montgomery Co. OH	4,722	10.6%	
Darke Co. OH	2,429	5.5%	
Shelby Co. OH	1,902	4.3%	
Clark Co. OH	1,240	2.8%	
Champaign Co. OH	827	1.9%	
Greene Co. OH	522	1.2%	
Auglaize Co. OH	200	0.5%	
Preble Co. OH	182	0.4%	
Hamilton Co. OH	120	0.3%	
Logan Co. OH	117	0.3%	
Percent is of workers working in County.			

Montgomery	Percent of workers that work outside the County		18.6%
	Average commute time in minutes -		21.2
Number of workers 16+ years of age living in Montgomery County 259,419			
Commute Out To	Number	Percent	
Greene Co. OH	24,214	9.3%	
Miami Co. OH	4,722	1.8%	
Warren Co. OH	4,488	1.7%	
Hamilton Co. OH	2,698	1.0%	
Butler Co. OH	2,622	1.0%	
Clark Co. OH	2,517	1.0%	
Franklin Co. OH	1,022	0.4%	
Preble Co. OH	933	0.4%	
Champaign Co. OH	675	0.3%	
Darke Co. OH	647	0.2%	
Percent is of workers living in County.			

Number of workers 16+ years of age working in Montgomery County 288,140			
Commute In From	Number	Percent	
Greene Co. OH	24,925	8.7%	
Miami Co. OH	11,368	3.9%	
Warren Co. OH	11,325	3.9%	
Clark Co. OH	7,856	2.7%	
Preble Co. OH	4,837	1.7%	
Butler Co. OH	4,635	1.6%	
Darke Co. OH	2,557	0.9%	
Hamilton Co. OH	1,747	0.6%	
Clinton Co. OH	782	0.3%	
Champaign Co. OH	662	0.2%	
Percent is of workers working in County.			

Preble	Percent of workers that work outside the County -		54.1%
	Average commute time in minutes -		26.7
Number of workers 16+ years of age living in Preble County			20,226
Commute Out To	Number	Percent	
Montgomery Co. OH	4,837	23.9%	
Butler Co. OH	2,575	12.7%	
Wayne Co. IN	1,499	7.4%	
Hamilton Co. OH	388	1.9%	
Warren Co. OH	336	1.7%	
Darke Co. OH	311	1.5%	
Greene Co. OH	220	1.1%	
Miami Co. OH	182	0.9%	
Clark Co. OH	142	0.7%	
Union Co. IN	50	0.2%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Preble County			12,119
Commute In From	Number	Percent	
Montgomery Co. OH	933	7.7%	
Wayne Co. IN	588	4.9%	
Darke Co. OH	468	3.9%	
Butler Co. OH	239	2.0%	
Miami Co. OH	130	1.1%	
Randolph Co. IN	66	0.5%	
Greene Co. OH	58	0.5%	
Hamilton Co. OH	50	0.4%	
Warren Co. OH	35	0.3%	
Union Co. IN	35	0.3%	
Percent is of workers working in County.			

## Factor 5: Meteorology

Please refer to Appendix E for applicable meteorology information for the Dayton-Springfield area.

## Factor 6: Topography/Land use/Land cover

Clark County lies within the glaciated till plains of the Central Lowlands Province. Relief ranges from nearly level to steep, but the land surface is predominately undulating. The highest elevation in the County is 1,250 feet above sea level close to Catawba near the Champaign County line. The lowest elevation is 820 feet in the southwest corner where the Mad River crosses the County line.

Darke County is in the Till Plains section of the Central Lowlands physiographic province. Maximum relief in the County is 310 feet. The highest point, about 1,240 feet above sea level, is on top of a knoll about 2 miles southwest of New Madison. The lowest point, about 930 feet above sea level, is on a flood plain about 2 miles north of Bradford, where the Stillwater River flows out of the County. The elevation in most of the County is 1,000 to 1,100 feet above sea level.

Greene County is located in the glaciated till plains of the Central Lowlands Province. Relief varies very little throughout the County. The eastern part is nearly level to gently undulating, while the central and western part of the County is more pronounced with undulating to rolling hills.

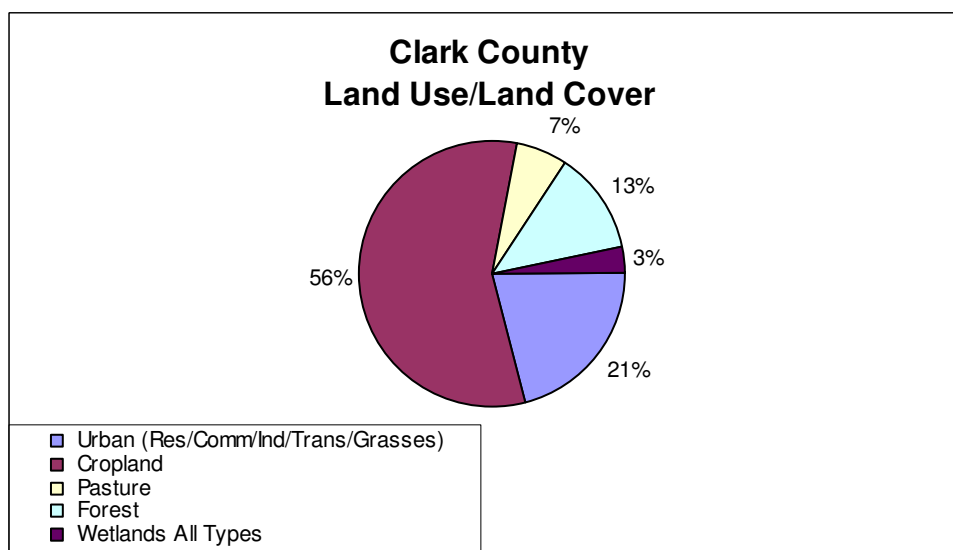
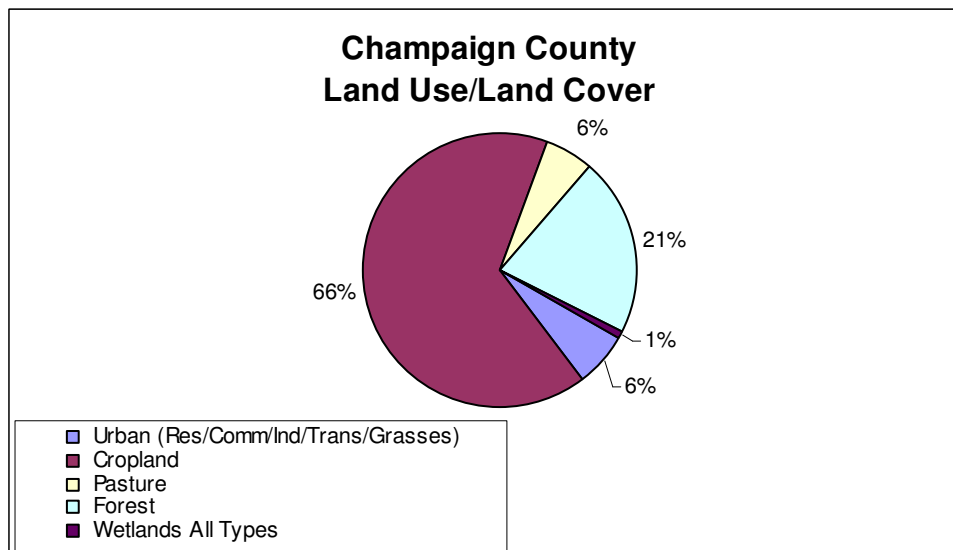
Miami County is in the Till Plains section of the Central Lowlands physiographic province. It is generally nearly level. The highest point in the County, 1,155 feet

above sea level, occurs along the County line, 1.75 miles north of Lena. The lowest spot, 770 feet above sea level, occurs along the eastern side of the Great Miami River on the Miami-Montgomery County line.

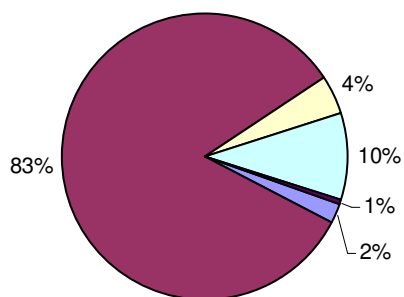
Montgomery County, like Greene and Clark Counties, lies within the glaciated till plains of the Central Lowlands Province. The relief varies greatly throughout the County, from nearly level to significant relief changes along the Great Miami River, Stillwater River and other drainageways.

Preble County lies entirely within the glaciated region of Ohio within the Indiana and Ohio Till Plain. The western quarter of the County has nearly level landscape and is known locally as the "Boston Plains".

As shown in the following pie charts, the land use/land cover in Montgomery County has the highest percentage of urban area. Clark and Greene Counties share very similar characteristics with nearly the same percentage of all categories.

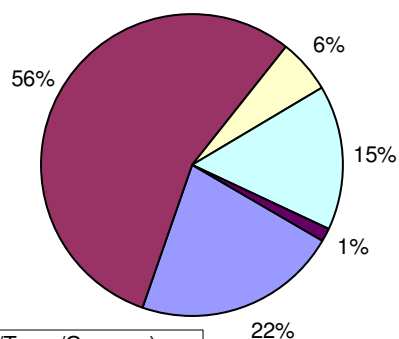


### Darke County Land Use/Land Cover



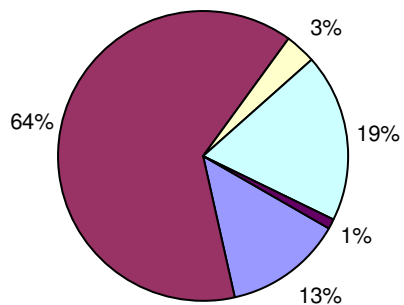
- Urban (Res/Comm/Ind/Trans/Grasses)
- Cropland
- Pasture
- Forest
- Wetlands All Types

### Greene County Land Use/Land Cover



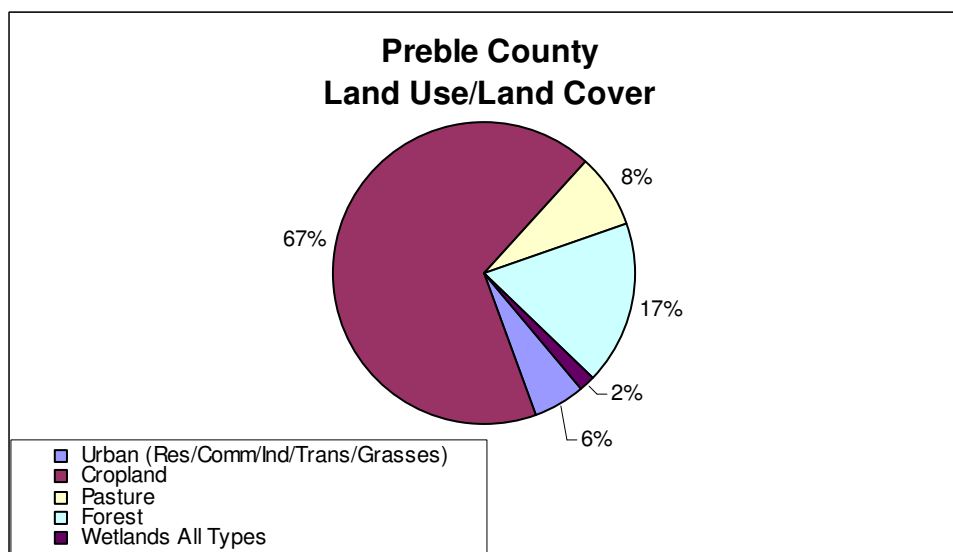
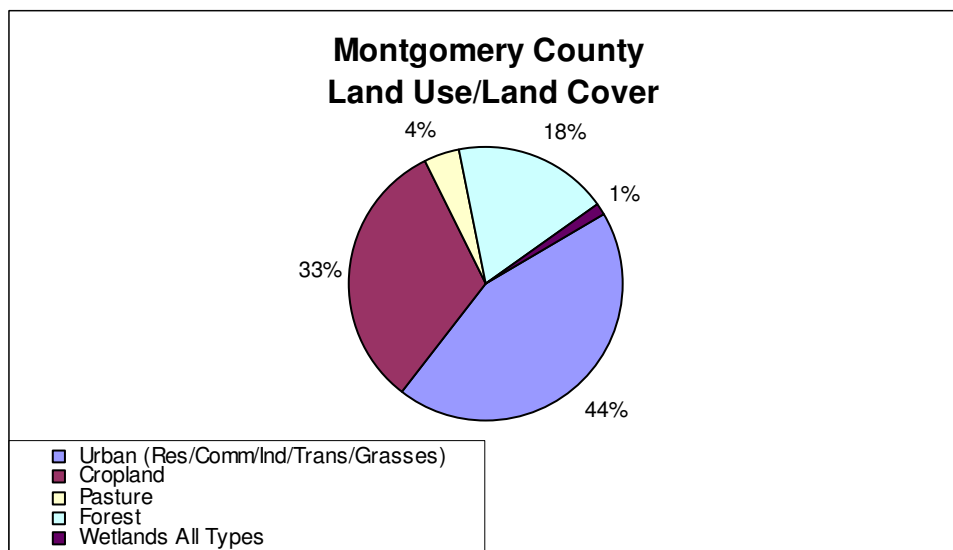
- Urban (Res/Comm/Ind/Trans/Grasses)
- Cropland
- Pasture
- Forest
- Wetlands All Types

### Miami County Land Use/Land Cover



- Urban (Res/Comm/Ind/Trans/Grasses)
- Cropland
- Pasture
- Forest
- Wetlands All Types





## Factor 7: Jurisdictional boundaries

The Dayton, OH MSA includes: Greene, Miami, Montgomery, and Preble Counties. The principal city is Dayton. The Springfield, OH MSA includes Clark County. The principal city is Springfield. The CSA also includes Champaign, Clark, and Darke Counties.

The Miami Valley Regional Planning Commission (MVRPC) is the planning agency designated as the Metropolitan Planning Organization for the region composed of three Counties: Greene, Miami, and Montgomery Counties. The cities of Franklin and Carlisle in Warren County are part of the Miami Valley Regional Planning Commission (MVRPC) planning area.

The Clark County-Springfield Transportation Coordinating Committee (CCSTCC) is the planning agency designated as the MPO for the region composed of Clark County.

**Factor 8: Level of control of emission sources**

Please refer to the factor 8 general discussion at the beginning of this document for applicable control information for this area.

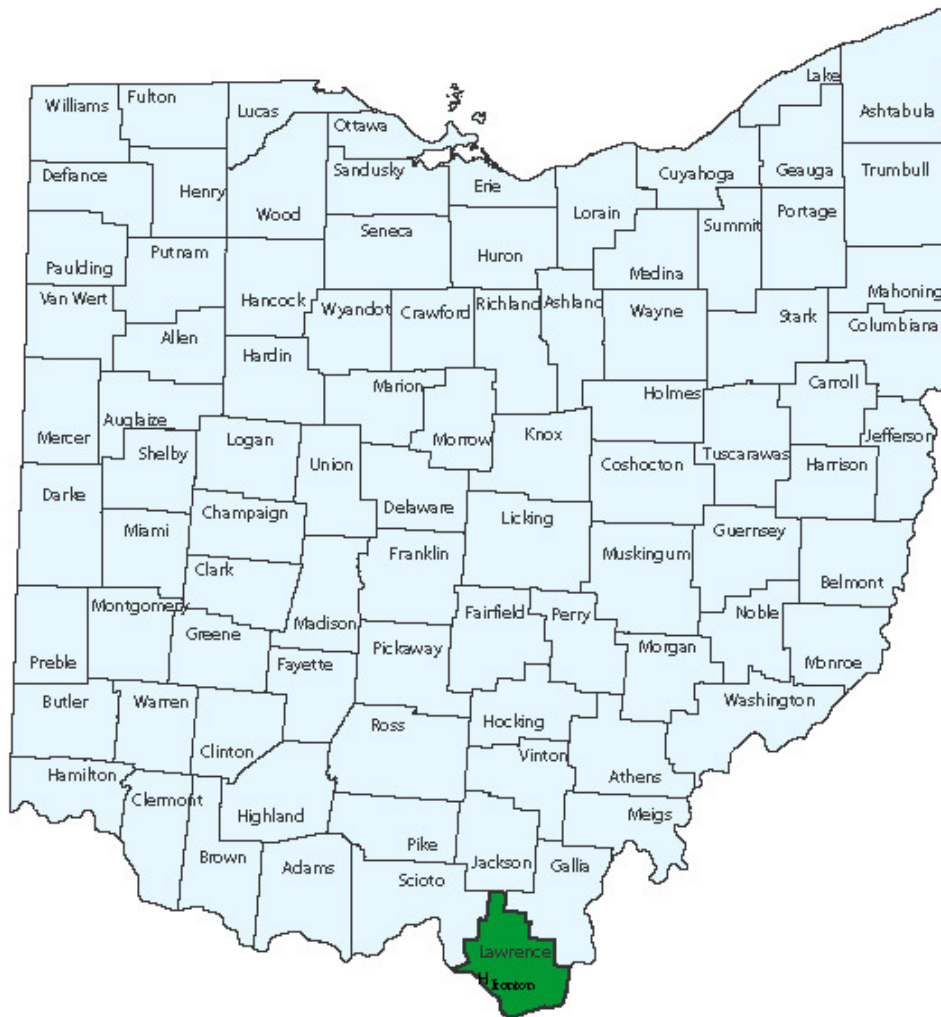
## Huntington-Ashland, WV-KY-OH

**Current** County nonattainment: none

**Current nonattainment Counties**

***Recommended*** County nonattainment: Lawrence

 Recommended nonattainment Counties



## Discussion

There is one Ohio County in the existing ozone designation area- Lawrence; and one Kentucky County- Boyd. This area was designated attainment for the 1997 ozone standard. With respect to the new standard, Ohio EPA recommends designating Lawrence County as nonattainment for the Huntington-Ashland area due to violating monitors in the area. Three other Ohio Counties are adjacent to this area: Scioto, Jackson, and Gallia Counties.

The three-year average of the annual fourth-highest daily maximum eight-hour average concentration at one of two monitors in Lawrence County is not attaining the revised standard as identified under factor 1 below. Also, neighboring Cabell County in West Virginia and Greenup County in Kentucky contain violating monitors as identified under factor 1 below. Comparatively, emissions of VOC and NOx in all Counties are very small with the exception of NOx emissions in Gallia County, Ohio. This is due to a power plant, and projected emissions are anticipated to significantly decrease due to CAIR.

Ohio EPA is not recommending additional adjacent Counties for nonattainment designations in this area. The Counties in this area have low population and growth, low kDMVT with no significant levels of commuters.


### **Factor 1: Air quality data**

#### **Ohio**

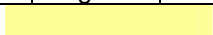

 = Exceeds standard

AQS: 8-Hour three-year average of the annual fourth-highest daily maximum (ppb)

Site Area County	Year	Highest Daily Maximum Concentrations (ppb)			
		1	2	3	4

39-087-0006 Portsmouth Lawrence Co.	2006	87	82	73	72
	2007	89	78	77	76
	2008	92	86	83	82
	Avg				 76.7

39-087-0011 Portsmouth Lawrence Co.	2006	72	68	68	67
	2007	89	87	84	82
	2008	87	81	77	74
	Avg				74.3

 Sites with less than 75% capture for a given year  
 Sites with less than 90% capture for the 3-year period

## West Virginia

  = Exceeds standard

AQS: 8-Hour three-year average of the annual fourth-highest daily maximum (ppb)

Site Area County	Year	Highest Daily Maximum Concentrations (ppb)			
		1	2	3	4

54-011-0006 Huntington Cabell Co	2006	86	85	81	81
	2007	94	91	90	89
	2008	76	71	71	70
	Avg				80.0

  Sites with less than 75% capture for a given year  
  Sites with less than 90% capture for the 3-year period

## Kentucky

  = Exceeds standard

AQS: 8-Hour three-year average of the annual fourth-highest daily maximum (ppb)

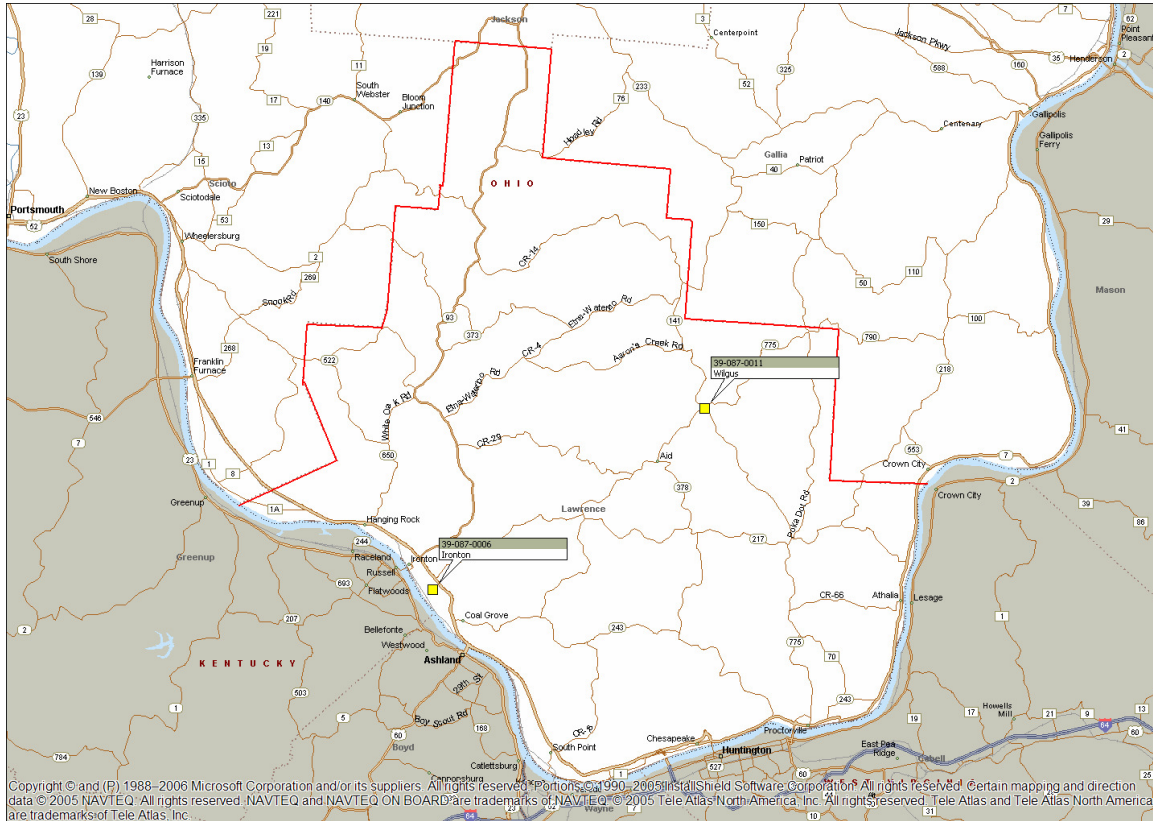
Site Area County	Year	Highest Daily Maximum Concentrations (ppb)			
		1	2	3	4

21-019-0017 Ashland Boyd Co	2006	87	83	81	79
	2007	80	76	76	72
	2008	80	79	77	73
	Avg				74.7

21-089-0007 Worthington Greenup Co.	2006	93	81	77	77
	2007	86	85	84	79
	2008	77	76	75	74
	Avg				76.7

  Sites with less than 75% capture for a given year  
  Sites with less than 90% capture for the 3-year period

## Huntington-Ashland Area Ozone Monitor Locations and Site ID Numbers



### Factor 2: Emissions data (tons per day)

#### Ohio

2005		
County	VOC	NO <sub>x</sub>
LAWRENCE	6.09	7.80
Scioto	10.20	12.54
Gallia	5.36	162.28
Jackson	5.12	4.29

2009		
County	VOC	NO <sub>x</sub>
LAWRENCE	5.21	6.73
Scioto	9.00	9.54
Gallia	4.72	29.54
Jackson	4.96	3.55

**West Virginia (Does not include on-road data)**

<b>2005</b>		
<b>County</b>	<b>VOC</b>	<b>NO<sub>x</sub></b>
<b>Cabell</b>	<b>11.72</b>	<b>7.70</b>
Wayne	5.35	17.77

<b>2009</b>		
<b>County</b>	<b>VOC</b>	<b>NO<sub>x</sub></b>
<b>Cabell</b>	<b>5.31</b>	<b>4.99</b>
Wayne	2.62	13.16

**Kentucky (Does not include on-road data)**

<b>2005</b>		
<b>County</b>	<b>VOC</b>	<b>NO<sub>x</sub></b>
<b>BOYD</b>	<b>11.22</b>	<b>28.03</b>
<b>Greenup</b>	<b>3.08</b>	<b>9.07</b>

<b>2009</b>		
<b>County</b>	<b>VOC</b>	<b>NO<sub>x</sub></b>
<b>BOYD</b>	<b>10.11</b>	<b>25.54</b>
<b>Greenup</b>	<b>1.64</b>	<b>6.61</b>

**Major Employers:**

Source: Ohio Department of Development 2007

Most of the major employers in the Huntington-Ashland area are in the categories of manufacturing, government and service as shown below.

**Gallia County**

American Electric Power	Utility
DMI Technology/ElectroCraft	Manufacturing
Gallia County Local Bd of Ed	Government
Gallipolis City Bd of Ed	Government
GKN Sinter Metals	Manufacturing
Holzer Clinic	Service
Holzer Medical Center	Service
Infocision Management Corp	Service
Ohio Valley Bank	Finance
Ohio Valley Electric Corp	Utility
State of Ohio	Government
University of Rio Grande	Service
Wal-Mart Stores Inc	Trade

**Jackson County**

Galerie Au Chocolat	Service
General Mills Inc	Manufacturing
Holzer Medical Center	Service
Jackson City Bd of Ed	Government
Masco Corp/Merillat Inds Inc	Manufacturing
Michelina's Inc	Manufacturing
Ohio Precious Metals LLC	Manufacturing
Osco Industries Inc	Manufacturing
Resco Products	Manufacturing
Wal-Mart Stores Inc	Trade
Wellston City Bd of Ed	Government

**Lawrence County**

Dow Chemical Co	Manufacturing
Duke Energy Corp	Manufacturing
Emerson Electric/Liebert Corp	Manufacturing
Engines Inc of Ohio	Manufacturing
Ironton City Bd of Ed	Government
Jo-Lin Health Center	Service
Lawrence County Government	Government
McGinnis Inc	Manufacturing
McSweeneys Inc	Manufacturing
Ohio University	Government
Rock Hill Local Bd of Ed	Government
South Point Local Bd of Ed	Government
Superior Marine Ways Inc	Service
Wal-Mart Stores Inc	Trade

**Scioto County**

G&J Pepsi-Cola Bottlers Inc	Manufacturing
Mitchellace Inc	Manufacturing
OSCO Industries	Manufacturing
Portsmouth City Bd of Ed	Government
Scioto County Government	Government
Shawnee State University	Government
Southern Ohio Medical Center	Service
State of Ohio	Government
Sunoco In/Sun Coke	Manufacturing
Taylor Lumber Inc	Manufacturing
Wal-Mart Stores Inc	Trade

**Factor 3: Population and Projected Growth**

Sources: Office of Strategic Research, Ohio Department of Development  
U.S. Census Bureau Population Estimates Program 2007

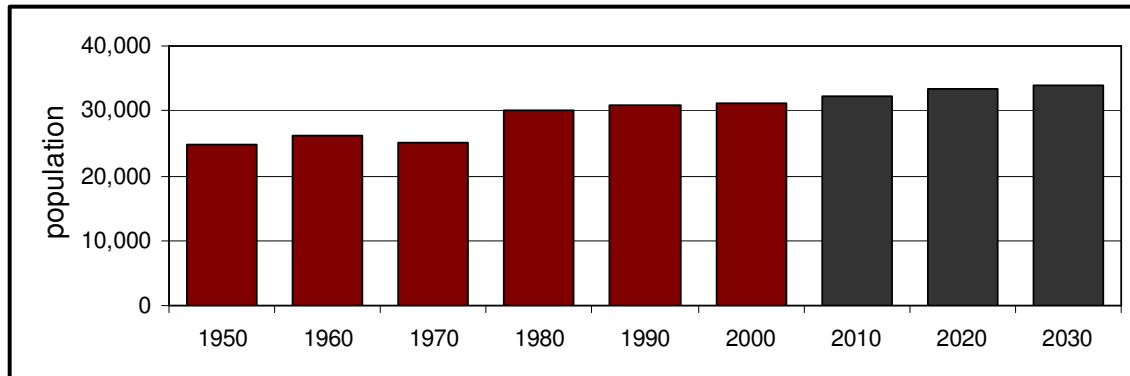
The primary urban areas in the Ohio portion of the Huntington-Ashland area are: Ironton in Lawrence County; Portsmouth in Scioto County; West Union and Seaman in Adams County; and Gallipolis in Gallia County.



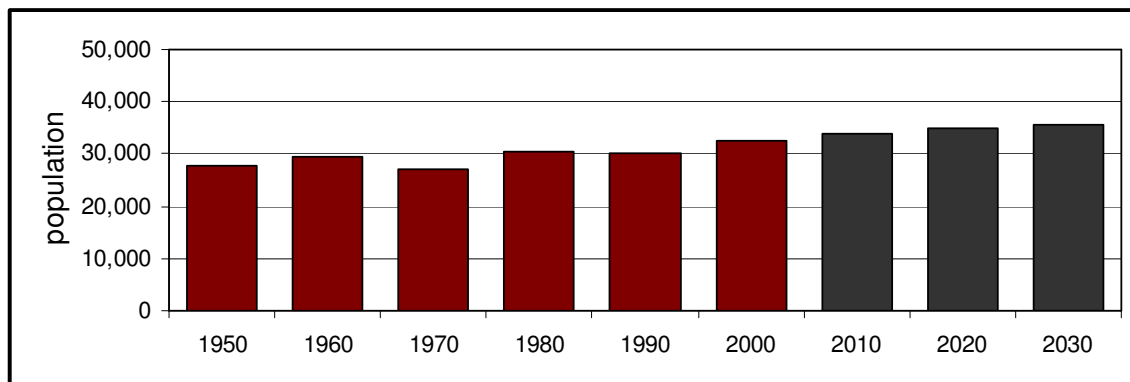
As indicated in the following table and graphs, Scioto County has the highest population in this area and it is projected to gradually decrease. The populations in the surrounding Counties are projected to gradually increase.

COUNTY	2004	2005	2006	2007	2010	2020	2030
Lawrence	62,573	62,946	63,179	62,609	62,910	63,830	64,060
Scioto	76,579	76,506	76,441	75,958	78,820	78,330	78,270
Gallia	31,232	31,241	31,313	30,841	32,230	33,360	34,020
Jackson	33,302	33,576	33,543	33,314	34,020	35,060	35,680

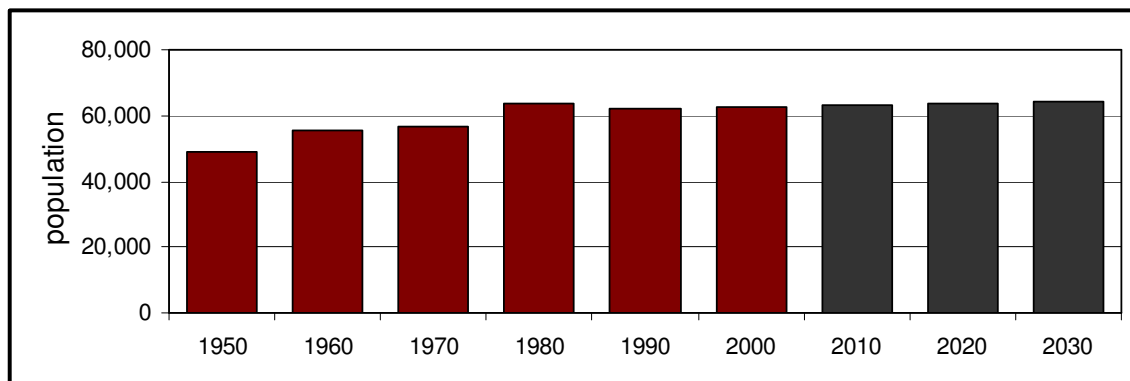
### Gallia County



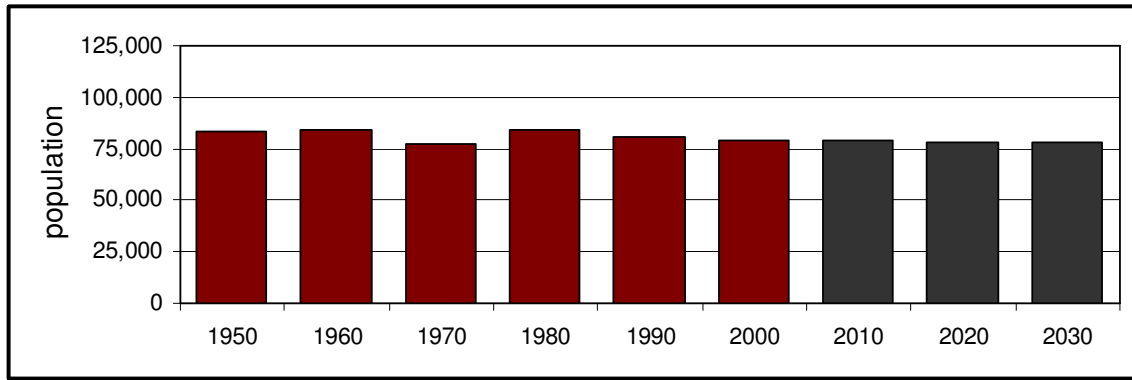
### Jackson County



### Lawrence County



## Scioto County

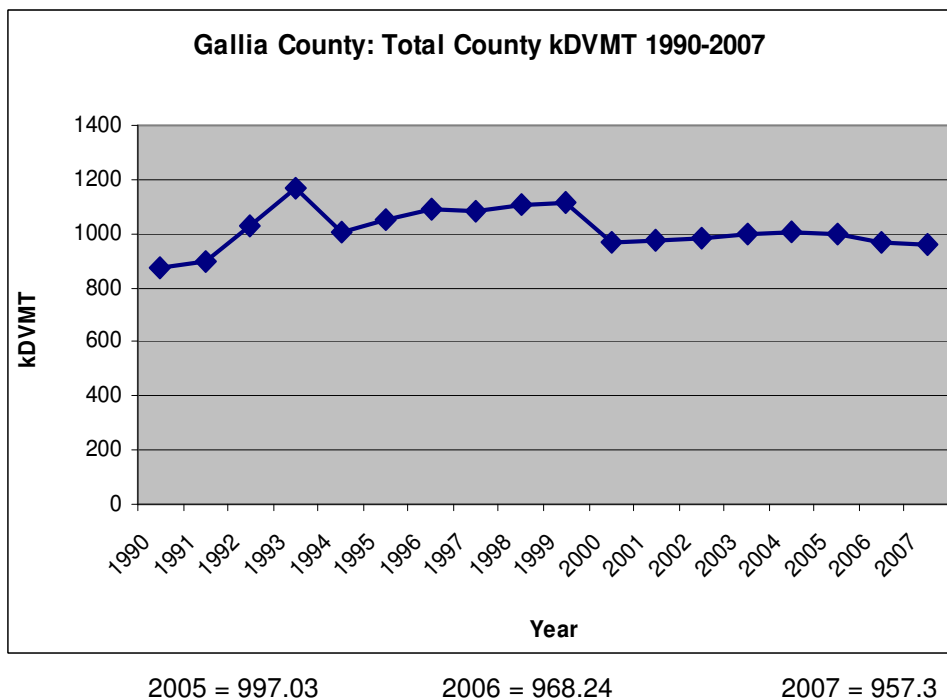


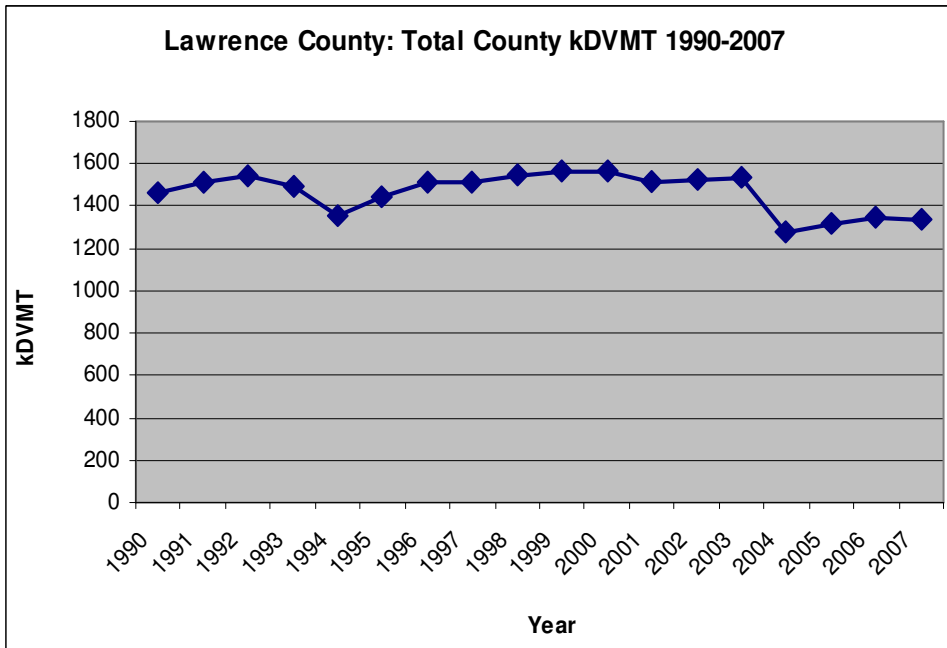
### Factor 4: Traffic and commuting patterns

The kDVMT in the Huntington-Ashland area did not change significantly from 2005 to 2007 as shown in the following graphs. All Counties experienced a slight decrease in kDVMT from 2006 to 2007. Scioto County has the prestige of having the highest kDVMT in this area.

#### Estimated Daily Vehicle Miles Traveled (kDVMT = in thousands)

Source: Ohio Department of Transportation, Office of Technical Services

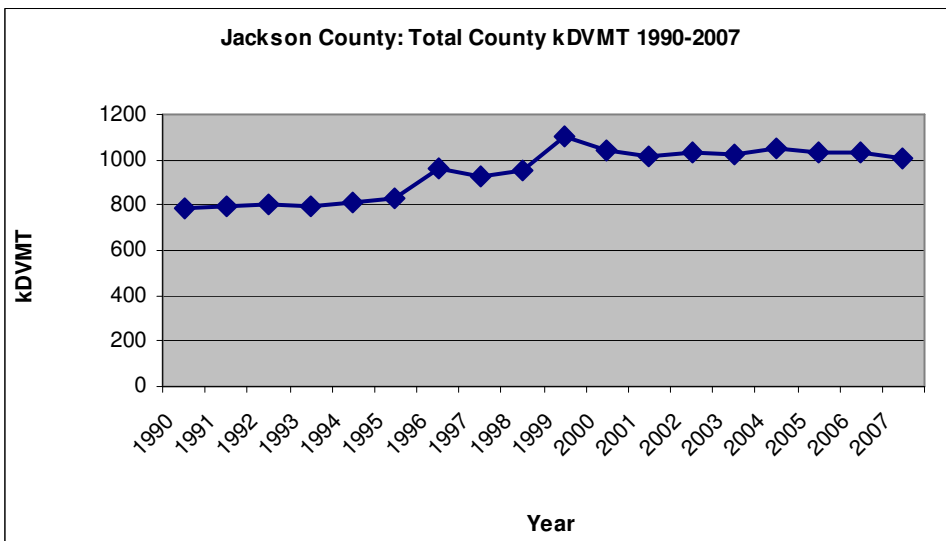




2005 = 1315.02

2006 = 1345.98

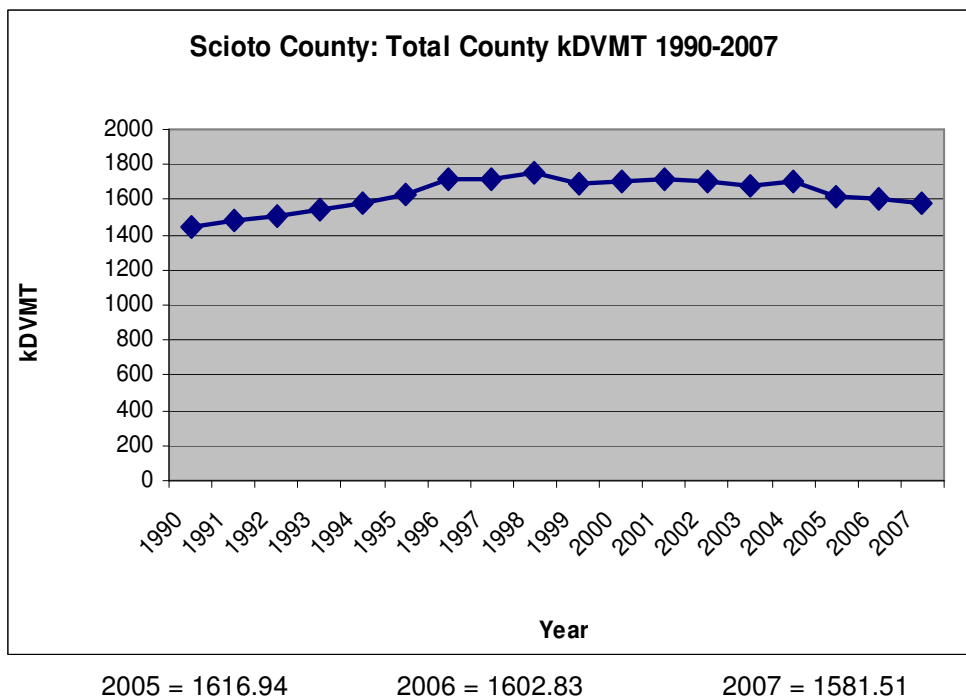
2007 = 1331.95



2005 = 1033.12

2006 = 1030.26

2007 = 1008.4



### **Commuter Patterns**

Source: Office of Strategic Research, Ohio Department of Development  
U.S. Census Bureau, 2000

The majority of Lawrence County workers commuting outside the County, travel to West Virginia and Kentucky. The largest portion of Scioto County workers commuting outside the County, travel to Pike County. Gallia County commuters drive to Jackson County and Mason County, West Virginia as shown in the tables below.

Gallia	Percent of workers that work outside the County		25.2%
	Average commute time in minutes -		28.1
Number of workers 16+ years of age living in Gallia County			11,813
Commute Out To	Number	Percent	
Mason Co. WV	669	5.7%	
Jackson Co. OH	595	5.0%	
Franklin Co. OH	218	1.8%	
Cabell Co. WV	190	1.6%	
Meigs Co. OH	187	1.6%	
Athens Co. OH	165	1.4%	
Lawrence Co. OH	111	0.9%	
Ross Co. OH	108	0.9%	
Kanawha Co. WV	96	0.8%	
Jackson Co. WV	71	0.6%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Gallia County			12,073
Commute In From	Number	Percent	
Mason Co. WV	1,358	11.2%	
Meigs Co. OH	844	7.0%	
Jackson Co. OH	403	3.3%	
Lawrence Co. OH	164	1.4%	
Putnam Co. WV	51	0.4%	
Vinton Co. OH	45	0.4%	
Athens Co. OH	44	0.4%	
Franklin Co. OH	37	0.3%	
Scioto Co. OH	36	0.3%	
Cabell Co. WV	35	0.3%	
Percent is of workers working in County.			

<b>Jackson</b>		Percent of workers that work outside the County	32.5%
		Average commute time in minutes -	28.3
Number of workers 16+ years of age living in Jackson County			13,026
Commute Out To	Number	Percent	
Pike Co. OH	957	7.3%	
Ross Co. OH	917	7.0%	
Franklin Co. OH	540	4.1%	
Gallia Co. OH	403	3.1%	
Vinton Co. OH	356	2.7%	
Athens Co. OH	220	1.7%	
Scioto Co. OH	211	1.6%	
Pickaway Co. OH	108	0.8%	
Muskingum Co. OH	44	0.3%	
Fairfield Co. OH	38	0.3%	
Number of workers 16+ years of age working in Jackson County			11,892
Commute In From	Number	Percent	
Vinton Co. OH	773	6.5%	
Gallia Co. OH	595	5.0%	
Scioto Co. OH	428	3.6%	
Ross Co. OH	325	2.7%	
Pike Co. OH	229	1.9%	
Lawrence Co. OH	179	1.5%	
Meigs Co. OH	164	1.4%	
Athens Co. OH	130	1.1%	
Mason Co. WV	57	0.5%	
Franklin Co. OH	42	0.4%	
Percent is of workers living in County.			Percent is of workers working in County.

<b>Lawrence</b>		Percent of workers that work outside the County	58.0%
		Average commute time in minutes -	24.1
Number of workers 16+ years of age living in Lawrence County			23,136
Commute Out To	Number	Percent	
Cabell Co. WV	7,179	31.0%	
Boyd Co. KY	2,926	12.6%	
Greenup Co. KY	715	3.1%	
Wayne Co. WV	622	2.7%	
Scioto Co. OH	616	2.7%	
Jackson Co. OH	179	0.8%	
Kanawha Co. WV	175	0.8%	
Gallia Co. OH	164	0.7%	
Putnam Co. WV	95	0.4%	
Franklin Co. OH	82	0.4%	
Number of workers 16+ years of age working in Lawrence County			12,671
Commute In From	Number	Percent	
Cabell Co. WV	626	4.9%	
Boyd Co. KY	540	4.3%	
Scioto Co. OH	455	3.6%	
Greenup Co. KY	443	3.5%	
Wayne Co. WV	400	3.2%	
Gallia Co. OH	111	0.9%	
Carter Co. KY	58	0.5%	
Lewis Co. KY	36	0.3%	
Jackson Co. OH	31	0.2%	
Lawrence Co. KY	31	0.2%	
Percent is of workers living in County.			Percent is of workers working in County.

<b>Scioto</b>		Percent of workers that work outside the County	22.7%
		Average commute time in minutes -	26.0
Number of workers 16+ years of age living in Scioto County			28,356
Commute Out To	Number	Percent	
Pike Co. OH	2,453	8.7%	
Franklin Co. OH	540	1.9%	
Ross Co. OH	494	1.7%	
Lawrence Co. OH	455	1.6%	
Jackson Co. OH	428	1.5%	
Boyd Co. KY	390	1.4%	
Greenup Co. KY	332	1.2%	
Adams Co. OH	223	0.8%	
Cabell Co. WV	108	0.4%	
Hamilton Co. OH	99	0.3%	
Number of workers 16+ years of age working in Scioto County			25,573
Commute In From	Number	Percent	
Greenup Co. KY	1,252	4.9%	
Lawrence Co. OH	616	2.4%	
Pike Co. OH	504	2.0%	
Lewis Co. KY	341	1.3%	
Jackson Co. OH	211	0.8%	
Boyd Co. KY	166	0.6%	
Adams Co. OH	126	0.5%	
Ross Co. OH	92	0.4%	
Wayne Co. WV	73	0.3%	
Franklin Co. OH	38	0.1%	
Percent is of workers living in County.			Percent is of workers working in County.

## Factor 5: Meteorology

Please refer to Appendix E for applicable meteorology information for the Huntington-Ashland area.

## Factor 6: Topography/Land use/Land cover

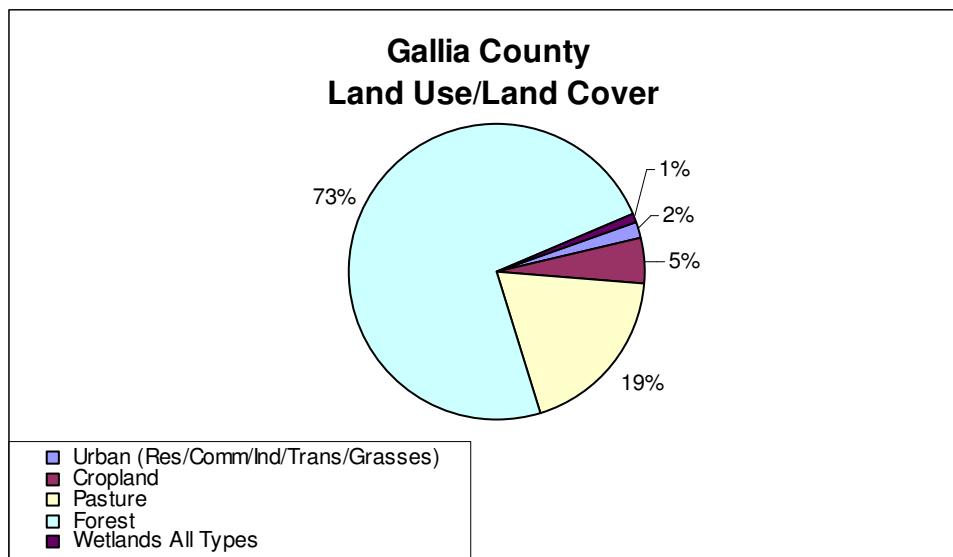
Scioto County is on the unglaciated Allegheny Plateau. The landscape consists of hills, narrow and wide ridgetops, and stream valleys. Elevation in the County ranges from 464 feet along the Adams-Scioto County line to 1,338 feet near Mt. Joy in the northwest part of the County.

Jackson County is in the unglaciated Allegheny Plateau Region with hilly and rough topography. The maximum difference in elevation is about 445 feet. The lowest point, about 595 feet above sea level, is in Little Salt Creek near the northwestern corner of the County. The highest point, about 1,040 feet above sea level, is on the western edge of the County near the Pike County line. The elevation of the main valleys is between 600 and 700 feet.

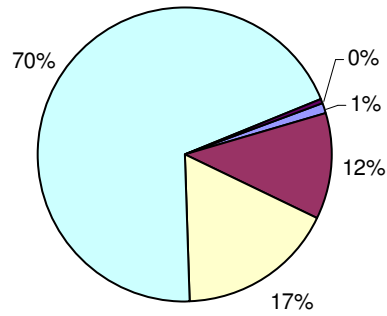
Lawrence County is the southernmost County in Ohio. The County is located on the unglaciated Allegheny Plateau. Relief consists of steep and very steep slopes and V-shaped valleys. The elevation ranges from 515 feet to 1,061 feet above sea level.

Gallia County is in the unglaciated Allegheny Plateau region. It is extensively dissected by drainageways and has hilly and rough topography. The highest point in the County is about 1,060 feet and the lowest is about 515 feet above sea level.

As shown in the following pie charts, the land use/land cover in this area is predominately characterized as forest area.

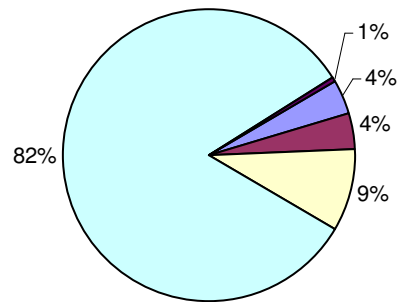


### Jackson County Land Use/Land Cover



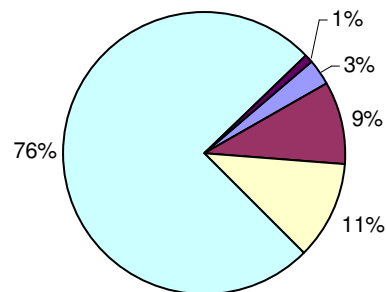
■ Urban (Res/Comm/Ind/Trans/Grasses)  
■ Cropland  
■ Pasture  
■ Forest  
■ Wetlands All Types

### Lawrence County Land Use/Land Cover



■ Urban (Res/Comm/Ind/Trans/Grasses)  
■ Cropland  
■ Pasture  
■ Forest  
■ Wetlands All Types

### Scioto County Land Use/Land Cover



■ Urban (Res/Comm/Ind/Trans/Grasses)  
■ Cropland  
■ Pasture  
■ Forest  
■ Wetlands All Types

**Factor 7: Jurisdictional Boundaries**

The Huntington-Ashland, WV-KY-OH MSA includes: Boyd and Greenup Counties in Kentucky, Cabell and Wayne Counties in West Virginia, and Lawrence County in Ohio. The principal cities are Huntington, WV and Ashland, KY. There is no CSA for this area.

The KYOVA Interstate Planning Commission (KYOVA) is the planning agency designated as the Metropolitan Planning Organization for the Huntington-Ashland area. The KYOVA region is composed of three Counties: Cabell and Wayne Counties in KY and Lawrence County in Ohio.

**Factor 8: Level of control of emission sources**

Please refer to the factor 8 general discussion at the beginning of this document for applicable control information for this area.



## Lima, OH

**Current** County nonattainment: none

**Current nonattainment Counties**

***Recommended*** County nonattainment: none

 Recommended nonattainment Counties




## **Discussion**

There is one County in this existing ozone designation area, Allen County. This area was initially designated nonattainment for the 1997 ozone standard and then was redesignated as attainment in June of 2007. With respect to the new standard, Ohio EPA recommends designating Allen County as attainment for the Lima area. Allen County contains one monitor which is not violating the revised standard. There are five Counties that are adjacent to Allen County: Putnam, Hancock, Hardin, Auglaize, and Van Wert Counties. None of these Counties contain monitors.

The three-year average of the annual fourth-highest daily maximum eight-hour average concentrations at the monitor is attaining the revised standard as identified under factor 1 below. Emissions in Allen County and the adjacent Counties are relatively small.

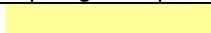

### **Factor 1: Air quality data**

 = Exceeds standard

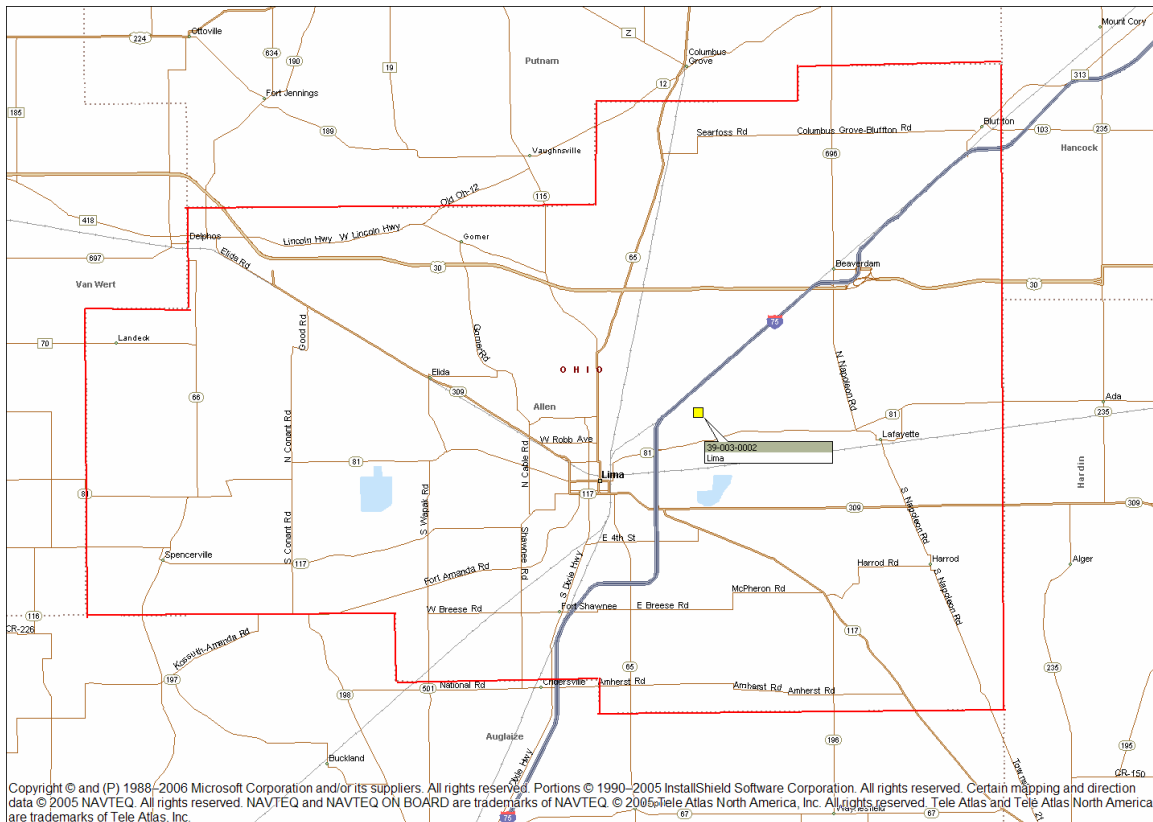
AQS: 8-Hour three-year average of the annual fourth-highest daily maximum (ppb)

Site Area County	Year	Highest Daily Maximum Concentrations (ppb)			
		1	2	3	4

39-003-0002 Lima Allen	2006	90	82	82	75
	2007	88	80	79	78
	2008	72	68	68	67
	Avg				73.3

 Sites with less than 75% capture for a given year  
 Sites with less than 90% capture for the 3-year period

## Allen County Ozone Monitor Locations and Site ID Numbers



### Factor 2: Emissions Data (tons per day)

2005		
County	VOC	NO <sub>x</sub>
ALLEN	18.09	22.72
Auglaize	9.14	8.07
Hancock	16.79	14.44
Hardin	5.69	4.27
Putnam	7.18	6.29
Van Wert	6.17	5.00

2009		
County	VOC	NO <sub>x</sub>
ALLEN	14.17	20.45
Auglaize	7.68	10.46
Hancock	13.72	11.12
Hardin	5.10	3.31
Putnam	6.88	4.91
Van Wert	5.59	4.26

## Major Employers

Source: Ohio Department of Development, 2007

Most of the major employers in Allen County and the surrounding Counties are in the categories of manufacturing, service and government as shown below.

### Allen County

BP Chemicals Inc	Manufacturing
Countryside Foods/I&K Distributors	Manufacturing
Dana Corp	Manufacturing
Ford Motor Co	Manufacturing
General Dynamics Corp	Manufacturing
Husky Energy Inc	Manufacturing
Lima City Bd of Ed	Government
Lima Memorial Health System	Service
MetoKote Corp	Manufacturing
Nash Finch Co	Trade
Procter & Gamble Co	Manufacturing
St. Rita's Medical Center	Service
Tokai Kogyo/DTR Industries	Manufacturing

### Auglaize County

Crown Equipment Corp	Manufacturing
Danone Group/Dannon Co	Manufacturing
EDP Inc/Goodyear Tire & Rubber Co	Manufacturing
Hitachi Metals/AAP St. Mary's Corp	Manufacturing
Joint Township Dist Memorial Hosp	Service
Minster Machine Co	Manufacturing
Setex Inc	Manufacturing
St Mary's City Bd of Ed	Government
Wapakoneta City Bd of Ed	Government

### Hardin County

Ada Technologies	Manufacturing
Amer Grp plc/Wilson Sporting Goods	Manufacturing
Hardin County Government	Government
Hardin Memorial Hospital	Service
International Paper Co	Manufacturing
Kenton City Bd of Ed	Government
Ohio Northern University	Service
Reliance Steel & Alum/Precision Strip Inc	Manufacturing
Sumitomo Chemical/Durez Corp	Manufacturing
Sypris Solutions Inc	Manufacturing
Triumph Group Inc	Manufacturing

**Hancock County**

Blanchard Valley Regional Health	Service
Consolidated Biscuit Co	Manufacturing
Cooper Tire & Rubber Co	Manufacturing
Findlay City Bd of Ed	Government
Kohl's Corp	Trade
Lowe's Companies Inc	Trade
Marathon Petroleum Co LLC	Trade
Nissin Brake Ohio	Manufacturing
Sanoh America Inc	Manufacturing
University of Findlay	Service
Whirlpool Corp	Manufacturing

**Putnam County**

Kalida Manufacturing Inc	Manufacturing
Midway Products/Progressive Stamping	Manufacturing
Ottawa-Glandorf Local Bd of Ed	Government
Procter & Gamble/Iams Co	Manufacturing
Pro-Tec Coating Co Inc	Manufacturing
Putnam County Government	Government
Schnipke Engraving Co Inc	Manufacturing
Silgan Plastics Corp	Manufacturing
Unverferth Manufacturing Co Inc	Manufacturing
W C Wood Co Inc	Manufacturing
Wal-Mart Stores Inc	Trade

**Van Wert County**

Central Mutual Insurance Co	Insurance
Cooper Farms Inc	Manufacturing
Eaton Corp	Manufacturing
Federal-Mogul Corp	Manufacturing
Greif Inc	Manufacturing
KAM Manufacturing Inc	Manufacturing
Kennedy Manufacturing Co Inc	Manufacturing
Teleflex Inc	Manufacturing
Van Wert City Bd of Ed	Government
Van Wert County Hospital Association	Service

**Factor 3: Population and Projected Growth**

Sources: Office of Strategic Research, Ohio Department of Development  
U.S. Census Bureau Population Estimates Program 2007

The primary urban area in Allen County is Lima; in Auglaize County, Wapakoneta; in Hardin County, Kenton; in Hancock County, Findlay; in Putnam County, Ottawa; and in Van Wert County, Van Wert.

As indicated in the following table and graphs, Allen County has the highest population in this area and it is projected to steadily decrease. The populations in the surrounding Counties are projected to gradually increase.

County	2004	2005	2006	2007	2010	2020	2030
Allen	106,195	106,051	105,788	105,233	105,990	105,880	105,788
Auglaize	46,883	47,179	47,060	46,429	47,690	49,740	52,060
Hardin	32,113	32,015	31,966	31,650	32,450	32,720	32,830
Hancock	73,470	73,508	73,824	74,204	74,180	76,910	79,040
Putnam	34,712	34,807	34,744	34,635	35,080	35,710	36,060
Van Wert	29,264	29,213	29,303	28,889	29,330	28,970	28,190

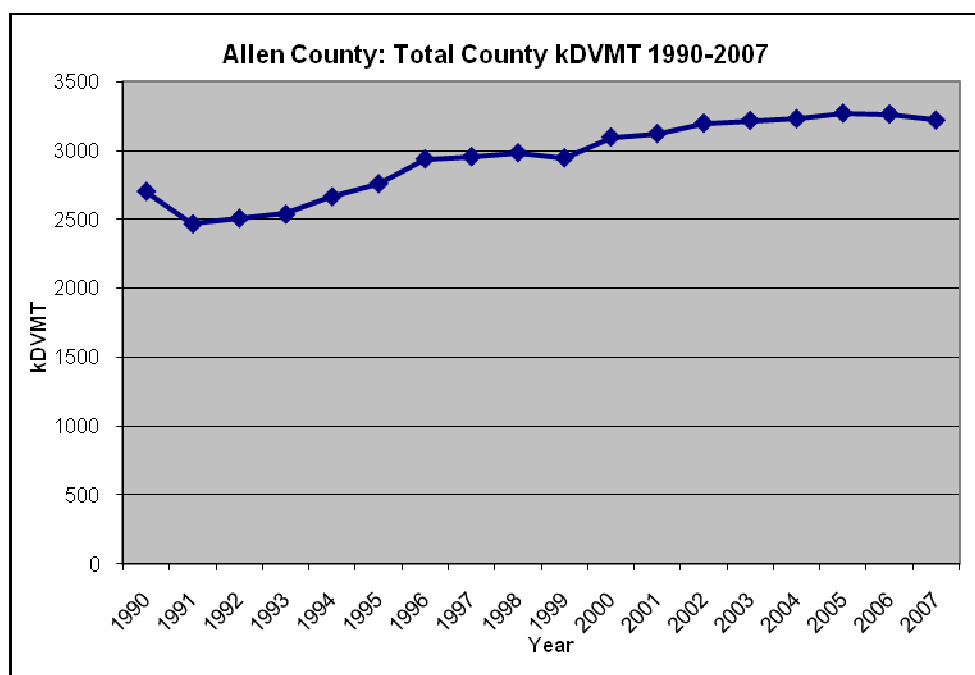
*\*graphs of population growth are omitted because this area is in attainment*

#### Factor 4: Traffic and commuting patterns

While the kDVMT in Auglaize County have had an upward trend, the surrounding Counties and Allen County have experienced a downward trend in kDVMT between 2005 and 2007, as shown in the graphs below.

##### Estimated Daily Vehicle Miles Traveled (kDVMT =in thousands)

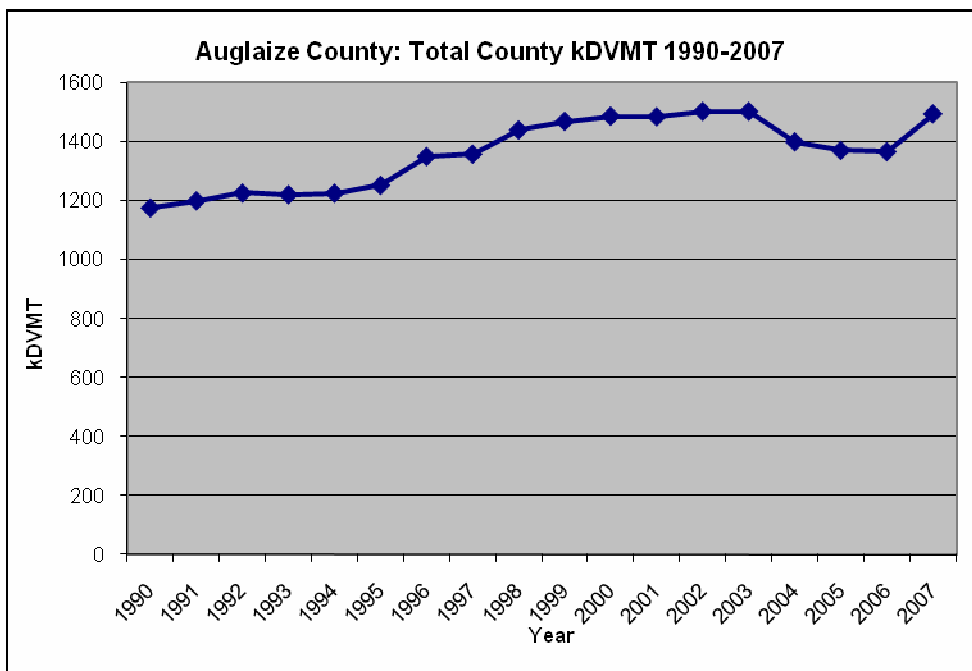
Source: Ohio Department of Transportation, Office of Technical Services



2005 = 3272.43

2006 = 3266.03

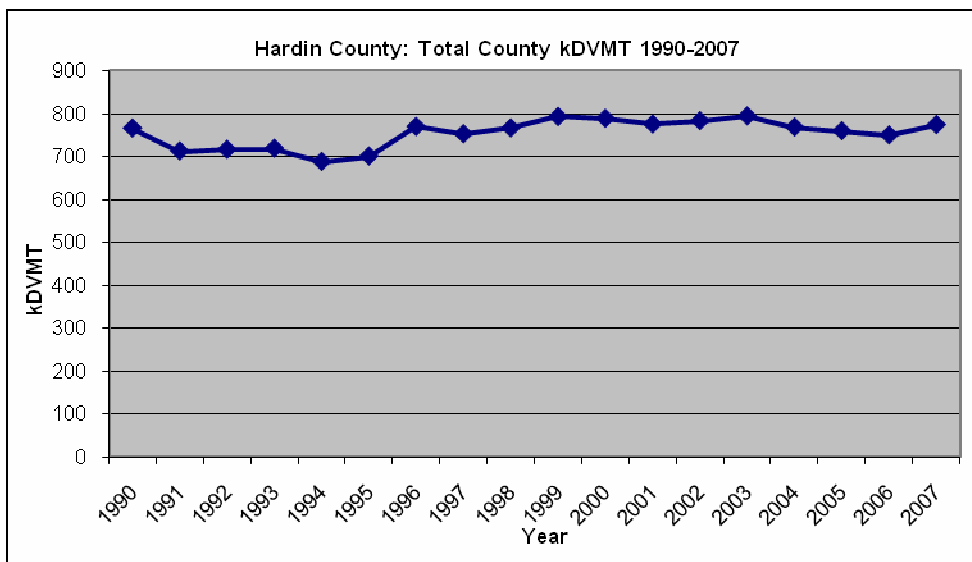
2007 = 3222.82



2005 = 1370.16

2006 = 1365.73

2007 = 1494.43

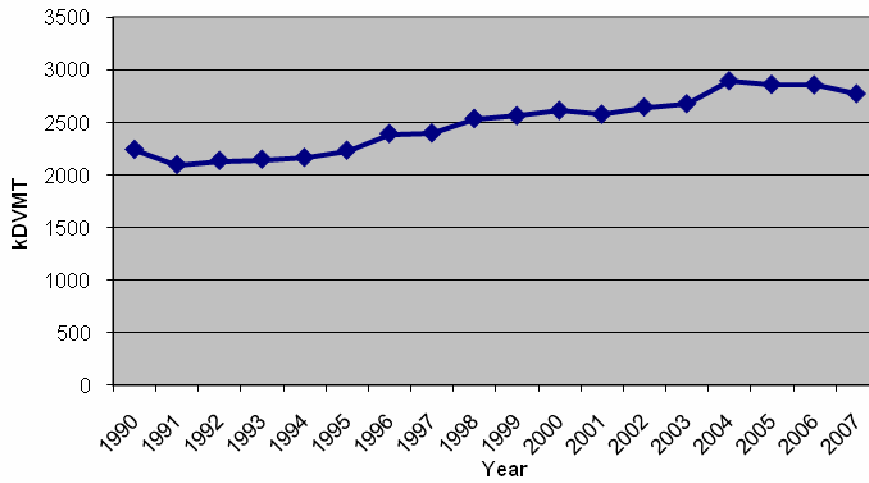


2005 = 759.78

2006 = 749.92

2007 = 774.34

**Hancock County: Total County kDVT 1990-2007**

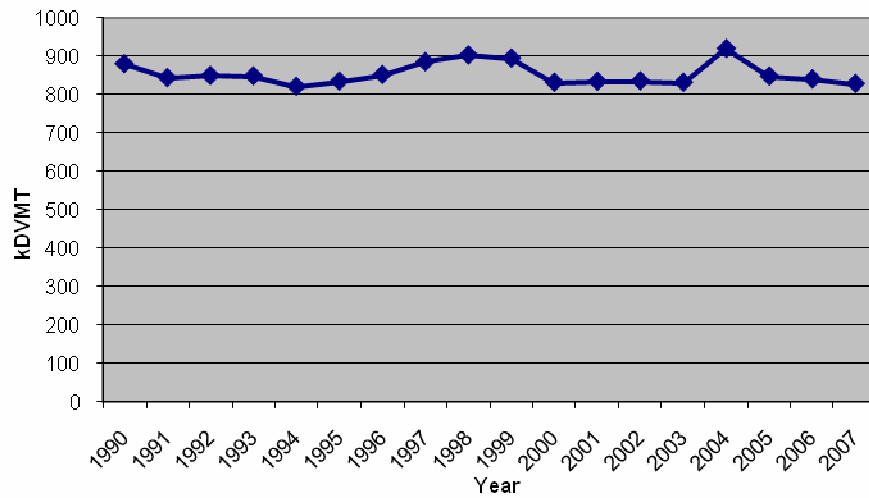


2005 = 2866.29

2006 = 2861.8

2007 = 2777.05

**Putnam County: Total County kDVT 1990-2007**

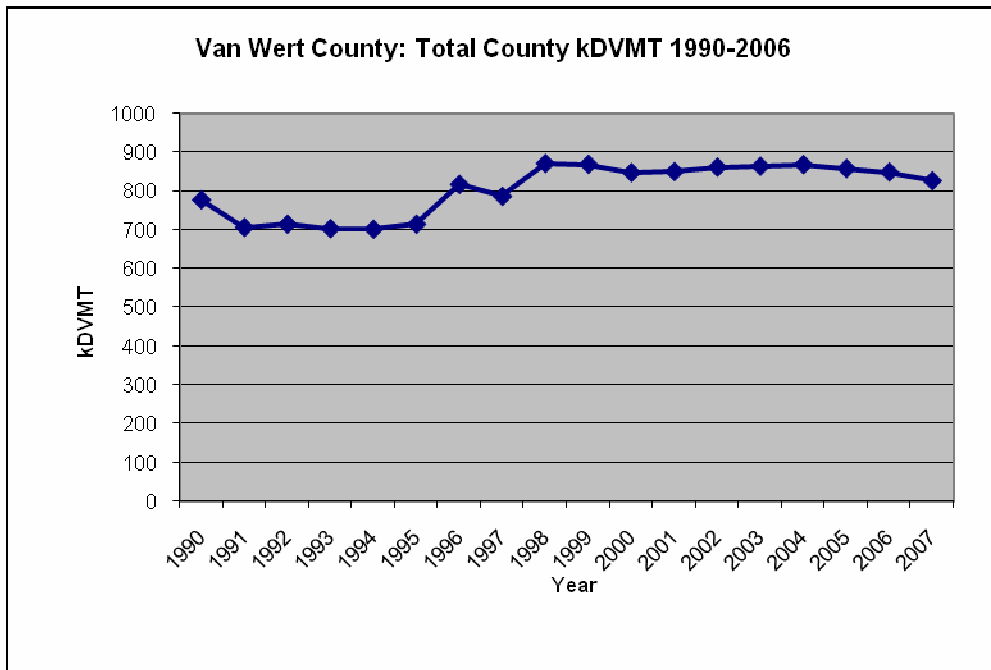


2005 = 847.87

2006 = 840.11

2007 = 828.32





2005 = 858.79

2006 = 849.7

2007 = 827.29

## Commuting Patterns

Source: Office of Strategic Research, Ohio Department of Development  
U.S. Census Bureau, 2000

A significant number of workers living in adjacent Counties, 3.0% to 18.8%, commute to Allen County. The majority of Allen County workers (3.3%) commuting outside the County, travel to Auglaize County.

Allen		Percent of workers that work outside the County -		15.7%	
		Average commute time in minutes -		18.4	
Number of workers 16+ years of age living in Allen County			47,096		
Commute Out To	Number	Percent	Commute In From	Number	Percent
Auglaize Co. OH	1,537	3.3%	Auglaize Co. OH	3,928	7.3%
Hancock Co. OH	1,169	2.5%	Putnam Co. OH	3,186	5.9%
Shelby Co. OH	1,002	2.1%	Van Wert Co. OH	1,947	3.6%
Van Wert Co. OH	919	2.0%	Hardin Co. OH	1,495	2.8%
Putnam Co. OH	910	1.9%	Hancock Co. OH	1,074	2.0%
Hardin Co. OH	514	1.1%	Logan Co. OH	509	0.9%
Defiance Co. OH	147	0.3%	Mercer Co. OH	478	0.9%
Logan Co. OH	137	0.3%	Shelby Co. OH	269	0.5%
Mercer Co. OH	89	0.2%	Paulding Co. OH	116	0.2%
Montgomery Co. OH	65	0.1%	Wood Co. OH	101	0.2%

Auglaize	Percent of workers that work outside the County		39.3%
	Average commute time in minutes -		18.1
Number of workers 16+ years of age living in Auglaize County			23,282
Commute Out To	Number	Percent	
Allen Co. OH	3,928	16.9%	
Shelby Co. OH	3,002	12.9%	
Mercer Co. OH	930	4.0%	
Logan Co. OH	277	1.2%	
Miami Co. OH	200	0.9%	
Darke Co. OH	121	0.5%	
Montgomery Co. OH	113	0.5%	
Van Wert Co. OH	94	0.4%	
Hardin Co. OH	90	0.4%	
Hancock Co. OH	51	0.2%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Auglaize County			21,159
Commute In From	Number	Percent	
Mercer Co. OH	2,981	14.1%	
Allen Co. OH	1,537	7.3%	
Shelby Co. OH	1,370	6.5%	
Darke Co. OH	278	1.3%	
Van Wert Co. OH	130	0.6%	
Miami Co. OH	126	0.6%	
Hardin Co. OH	90	0.4%	
Putnam Co. OH	85	0.4%	
Logan Co. OH	84	0.4%	
Montgomery Co. OH	54	0.3%	
Percent is of workers working in County.			

Hancock	Percent of workers that work outside the County		18.7%
	Average commute time in minutes -		17.5
Number of workers 16+ years of age living in Hancock County			35,845
Commute Out To	Number	Percent	
Wood Co. OH	1,603	4.5%	
Seneca Co. OH	1,296	3.6%	
Allen Co. OH	1,074	3.0%	
Lucas Co. OH	607	1.7%	
Wyandot Co. OH	491	1.4%	
Putnam Co. OH	382	1.1%	
Hardin Co. OH	379	1.1%	
Sandusky Co. OH	126	0.4%	
Ottawa Co. OH	50	0.1%	
Van Wert Co. OH	49	0.1%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Hancock County			41,331
Commute In From	Number	Percent	
Seneca Co. OH	3,118	7.5%	
Wood Co. OH	2,177	5.3%	
Putnam Co. OH	1,722	4.2%	
Allen Co. OH	1,169	2.8%	
Wyandot Co. OH	1,107	2.7%	
Hardin Co. OH	1,082	2.6%	
Lucas Co. OH	514	1.2%	
Sandusky Co. OH	191	0.5%	
Henry Co. OH	189	0.5%	
Franklin Co. OH	91	0.2%	
Percent is of workers working in County.			

Hardin	Percent of workers that work outside the County		38.3%
	Average commute time in minutes -		21.8
Number of workers 16+ years of age living in Hardin County			14,390
Commute Out To	Number	Percent	
Allen Co. OH	1,495	10.4%	
Hancock Co. OH	1,082	7.5%	
Logan Co. OH	964	6.7%	
Union Co. OH	542	3.8%	
Wyandot Co. OH	460	3.2%	
Marion Co. OH	178	1.2%	
Franklin Co. OH	121	0.8%	
Shelby Co. OH	96	0.7%	
Auglaize Co. OH	90	0.6%	
Summit Co. OH	57	0.4%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Hardin County			11,044
Commute In From	Number	Percent	
Allen Co. OH	514	4.7%	
Hancock Co. OH	379	3.4%	
Logan Co. OH	303	2.7%	
Wyandot Co. OH	288	2.6%	
Marion Co. OH	156	1.4%	
Auglaize Co. OH	90	0.8%	
Union Co. OH	82	0.7%	
Putnam Co. OH	35	0.3%	
Crawford Co. OH	29	0.3%	
Delaware Co. OH	28	0.3%	
Percent is of workers working in County.			

Putnam	Percent of workers that work outside the County -		42.8%
	Average commute time in minutes -		21.1
Number of workers 16+ years of age living in Putnam County			16,905
Commute Out To	Number	Percent	
Allen Co. OH	3,186	18.8%	
Hancock Co. OH	1,722	10.2%	
Defiance Co. OH	875	5.2%	
Van Wert Co. OH	395	2.3%	
Henry Co. OH	206	1.2%	
Paulding Co. OH	158	0.9%	
Lucas Co. OH	116	0.7%	
Wood Co. OH	109	0.6%	
Auglaize Co. OH	85	0.5%	
Allen Co. IN	51	0.3%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Putnam County			12,059
Commute In From	Number	Percent	
Allen Co. OH	910	7.5%	
Hancock Co. OH	382	3.2%	
Van Wert Co. OH	244	2.0%	
Paulding Co. OH	198	1.6%	
Henry Co. OH	138	1.1%	
Defiance Co. OH	60	0.5%	
Summit Co. OH	40	0.3%	
Wood Co. OH	36	0.3%	
Hardin Co. OH	36	0.3%	
Mercer Co. OH	36	0.3%	
Percent is of workers working in County.			

Van Wert		Percent of workers that work outside the County -		34.5%
		Average commute time in minutes -		19.0
Number of workers 16+ years of age living in Van Wert County				14,375
Commute Out To	Number	Percent		
Allen Co. OH	1,947	13.5%		
Adams Co. IN	858	6.0%		
Allen Co. IN	843	5.9%		
Paulding Co. OH	316	2.2%		
Putnam Co. OH	244	1.7%		
Mercer Co. OH	203	1.4%		
Auglaize Co. OH	130	0.9%		
Defiance Co. OH	54	0.4%		
Wells Co. IN	35	0.2%		
DeKalb Co. IN	34	0.2%		
Percent is of workers living in County.				

Number of workers 16+ years of age working in Van Wert County		12,653
Commute In From	Number	Percent
Allen Co. OH	919	7.3%
Mercer Co. OH	814	6.4%
Paulding Co. OH	478	3.8%
Putnam Co. OH	395	3.1%
Allen Co. IN	132	1.0%
Auglaize Co. OH	94	0.7%
Adams Co. IN	92	0.7%
Hancock Co. OH	49	0.4%
Franklin Co. OH	34	0.3%
Shelby Co. OH	30	0.2%
Percent is of workers working in County.		

## Factor 5: Meteorology

Please refer to Appendix E for applicable meteorology information for the Lima area.

## Factor 6: Topography/Land use/Land cover

Allen County is in two parts of the Central Lowland Physiographic Province. The extreme northwestern part of the County is on the Erie-Huron Lake Plain, and the rest of the County is on the Indiana and Ohio Till Plain. The highest elevation in the County is about 1,061 feet above sea level, in Auglaize Township. The lowest elevation is about 760 feet, in Marion Township where the Auglaize River leaves the County. The relief in the County is quite variable. In the northwest, near Delphos, the landscape is more uniform.

Auglaize County is part of the Indiana and Ohio Till Plains, in the Central Lowland physiographic province. The highest elevation is about 1,100 feet above sea level, between Boundary Road and Wrestle Creek Road. The lowest elevation is 800 feet above sea level where the St. Marys River leaves the County.

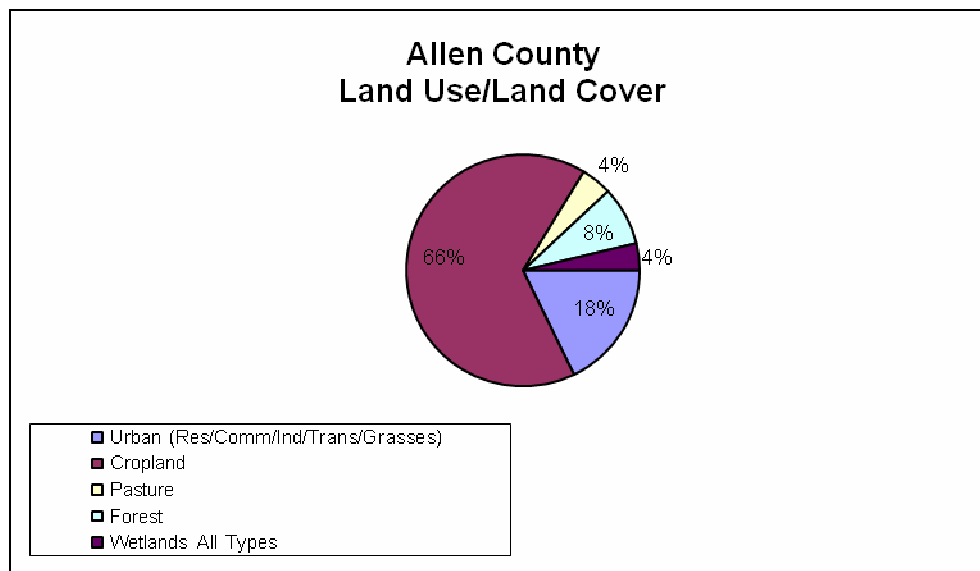
Hancock County is part of the Central Lowland Province. Most of the physiographic features in the County are a result of the Wisconsin glaciation. As an area of lake plain and till plain physiography, Hancock County has a relatively uniform, level topography. The highest point in the County is about 955 feet above sea level, along the Hardin County line, in Orange Township. The lowest point in the County is about 715 feet above sea level, where the Rader Creek enters Wood County, in Pleasant Township.

Most of the physiographic features of Hardin County are a result of the Wisconsin Glaciation. The surface features range from gently rolling hills and a few steep valley walls to extensive nearly level plains and flat basins. Total relief is about 267 feet. The highest point is a ridge in an area near the Hardin-Logan County line where Treece Road enters Logan County. The lowest point is in an area where the Blanchard River enters Hancock County.

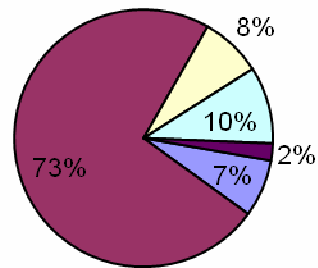
Putnam County landforms are mainly the result of glaciations during the Pleistocene epoch. Most of the County was affected by glacial lakes. Several of the more obvious beach ridges can be observed along State Route No. 12 and from Leipsic to the Hancock County line, along State Route No. 613, and along County Road Y in the vicinity of Belmore.

In Van Wert County, in areas south of U.S. Route 30, the soils formed mostly in glacial till deposited by the Wisconsin-age glacier. In areas north of this highway, the soils formed mostly in water-worked till, lacustrine sediments, and old beach-ridge deposits. These areas were covered by lake water after the glacier had retreated and are now part of the Lake Plain in northwestern Ohio. Elevations range from slightly less than 720 feet above sea level on the lake plain in the northeastern part of the County to slightly more than 960 feet on the Fort Wayne end moraine in the southern part of the County.

As shown in the following pie charts, the land use/land cover in Allen County and all the surrounding Counties is predominately classified as cropland. As expected, in comparison to the surrounding Counties, Allen County has the largest percentage of urbanized area at 18 percent.

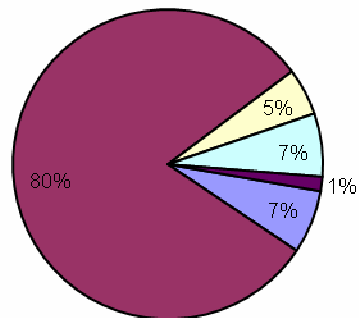


### Auglaize County Land Use/Land Cover



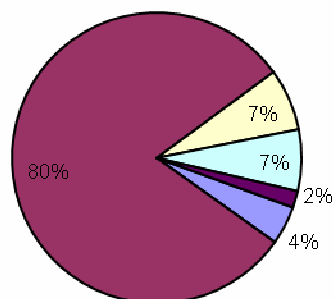
- Urban (Res/Comm/Ind/Trans/Grasses)
- Cropland
- Pasture
- Forest
- Wetlands All Types

### Hancock County Land Use/Land Cover

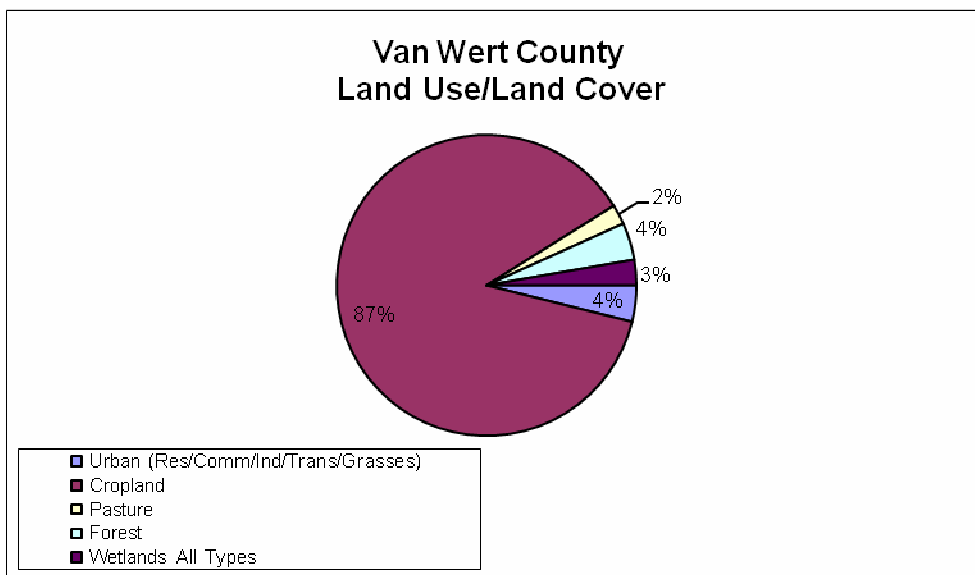
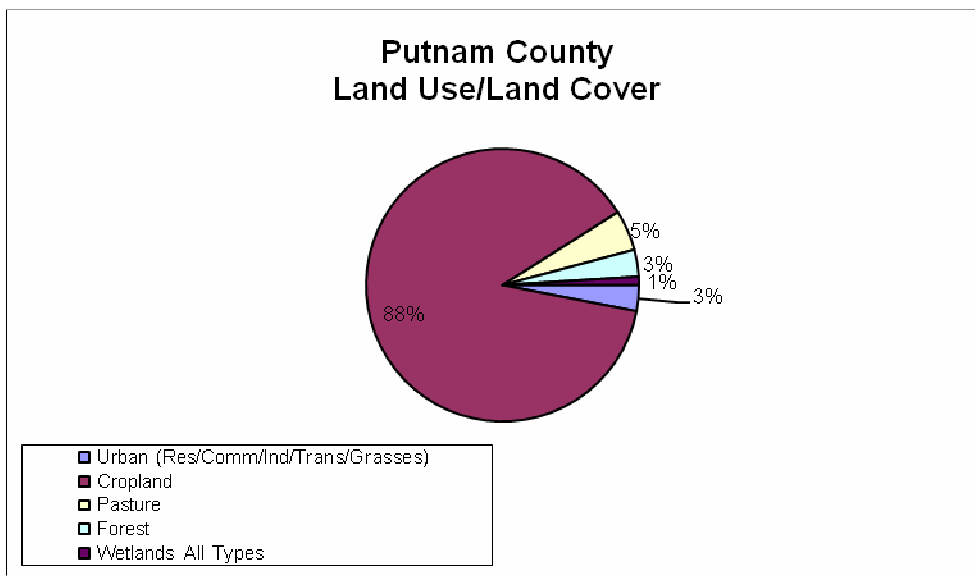


- Urban (Res/Comm/Ind/Trans/Grasses)
- Cropland
- Pasture
- Forest
- Wetlands All Types

### Hardin County Land Use/Land Cover



- Urban (Res/Comm/Ind/Trans/Grasses)
- Cropland
- Pasture
- Forest
- Wetlands All Types



## **Factor 7: Jurisdictional boundaries**

The Lima, OH MSA includes only Lima County and the principal city of Lima.

The Lima-Allen County Regional Planning Commission (LACRPC) is the planning agency designated as the Metropolitan Planning Organization (MPO) for Allen County. The LACRPC region is composed of Allen County. The surrounding Counties, Auglaize, Hancock, Hardin, Putnam, and Van Wert, are not part of an MPO. The CSA includes Van Wert and Auglaize Counties.

## **Factor 8: Level of control of emission sources**

Please refer to the Factor 8 general discussion at the beginning of this document for applicable control information for this area.

**Parkersburg-Marietta, WV-OH:**

**Current** County nonattainment: none

**Current nonattainment Counties**

***Recommended*** County nonattainment: Washington

 Recommended nonattainment Counties





## **Discussion:**

There is one Ohio County and one West Virginia County in this existing ozone designation area: Washington County, Ohio and Wood County, WV. Washington County was initially designated nonattainment for the 1997 ozone standard and then was redesignated to attainment in June 2007. With respect to the new standard, Ohio EPA recommends designating Washington County as nonattainment for the Parkersburg-Marietta area. There is one violating monitor in Washington County and the monitor in Wood County, WV is also not meeting the revised standard. Athens and Morgan Counties are two of four adjacent Counties to Washington County. Athens and Morgan Counties are discussed in this section while Noble and Monroe Counties are discussed in the Wheeling, WV-OH section.

As shown under factor 1 below, the three-year averages of the annual fourth-highest daily maximum eight-hour average concentrations at in the Washington County, OH and Wood County, WV monitors are not attaining the revised standard. There is a monitor in Athens County. This is not a violating monitor (based on only 2007 and 2008 data) and is included for informational purposes. Emissions of VOC and NO<sub>x</sub> in all Counties are relatively small.

Ohio EPA is not recommending any additional adjacent Counties for nonattainment designations in this area. The Counties in this area have low population and growth, low kDVMT with no significant levels of commuters and low emissions.

### **Factor 1: Air quality data**


 = Exceeds standard



#### **Ohio**

AQS: 8-Hour three-year average of the annual fourth-highest daily maximum (ppb)

Site Area County	Year	Highest Daily Maximum Concentrations (ppb)			
		1	2	3	4

39-009-0004 Athens Athens Co.	2006				
	2007	86	81	81	80
	2008	75	74	73	69
	Avg				74.5

39-167-0004 Marietta Washington	2006	92	86	82	81
	2007	91	90	86	86
	2008	95	82	79	78
	Avg				 81.7

 Sites with less than 75% capture for a given year  
 Sites with less than 90% capture for the 3-year period

## West Virginia

AQS: 8-Hour three-year average of the annual fourth-highest daily maximum (ppb)

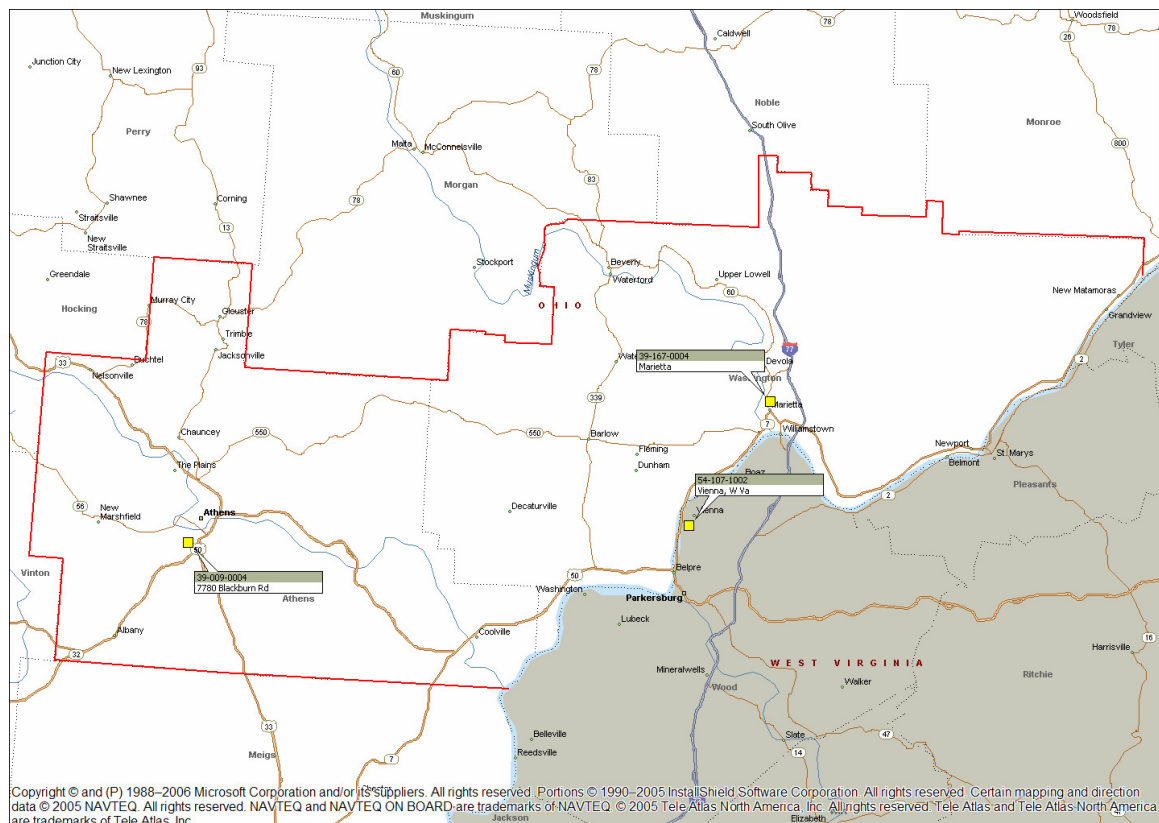
Site Area County	Year	Highest Daily Maximum Concentrations (ppb)			
		1	2	3	4

54-107-1002 Vienna Wood	2006	87	83	83	80
	2007	90	89	84	84
	2008	82	75	75	71
	Avg				78.3



Sites with less than 75% capture for a given year  
Sites with less than 90% capture for the 3-year period

## Parkersburg-Marietta Area Ozone Monitor Locations and Site ID Numbers



**Factor 2: Emissions data**  
(tons per day)

**Ohio**

<b>2005</b>		
<b>County</b>	<b>VOC</b>	<b>NO<sub>x</sub></b>
<b>WASHINGTON</b>	<b>10.33</b>	<b>58.00</b>
Athens	6.93	7.90
Morgan	2.35	1.77

<b>2009</b>		
<b>County</b>	<b>VOC</b>	<b>NO<sub>x</sub></b>
<b>WASHINGTON</b>	<b>9.10</b>	<b>20.34</b>
Athens	5.28	6.59
Morgan	2.06	1.44

**West Virginia (Does not include on-road data)**

<b>2005</b>		
<b>County</b>	<b>VOC</b>	<b>NO<sub>x</sub></b>
Pleasants	3.35	39.62
<b>WOOD</b>	<b>12.46</b>	<b>8.34</b>
Wirt	1.08	0.17

<b>2009</b>		
<b>County</b>	<b>VOC</b>	<b>NO<sub>x</sub></b>
Pleasants	1.52	15.92
<b>WOOD</b>	<b>5.99</b>	<b>6.20</b>
Wirt	0.85	0.11

**Major Employers:**

Source: Ohio Department of Development 2007

Most of the major employers in Parkersburg-Marietta area are in the categories of government, manufacturing and service as shown below.

**Athens County**

Alexander Local Bd of Ed	Government
Athens City Bd of Ed	Government
Athens County Government	Government
Diagnostic Hybrids Inc	Manufacturing
ED MAP Inc	Service
Federal Hocking Local Bd of Ed	Government
Hocking College	Government
Nelsonville-York City Bd of Ed	Government
O'Bleness Memorial Hospital	Service
Ohio University	Government
Wal-Mart Stores Inc	Trade

**Morgan County**

Careserve Inc/Mark Rest Center	Service
Draper Inc	Manufacturing
Hann Manufacturing	Manufacturing
Kroger Co	trade
MAHLE International	Manufacturing
Miba Bearings US LLC	Manufacturing
Morgan County Govt	Government
Morgan Local Bd of Ed	Government
Warren's Morgan Co IGA	trade

**Washington County**

American Electric Power Co	Utility
Eramet Marietta Inc	Manufacturing
KRATON Polymers LLC	Manufacturing
Marietta City Bd of Ed	Government
Marietta College	Service
Marietta Memorial Hospital	Service
RJF International Corp	Manufacturing
Thermo Fisher Scientific Inc	Manufacturing
Wal-Mart Stores Inc	Trade
Warren Local Bd of Ed	Government

**Factor 3: Population and Projected Growth**

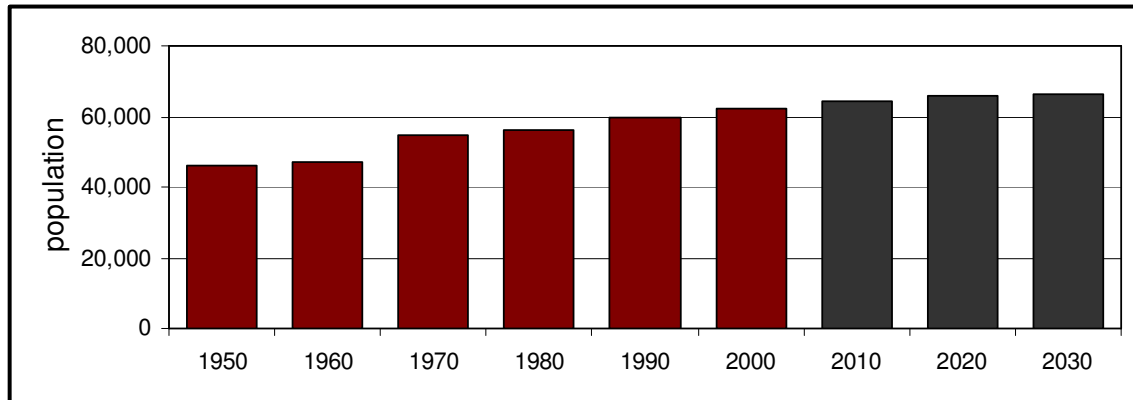
Sources: Office of Strategic Research, Ohio Department of Development  
U.S. Census Bureau Population Estimates Program 2007

The primary urban area in the Ohio portion of the Parkersburg-Marietta area is Marietta in Washington County. The primary urban areas in the adjacent Counties are: Athens, Nelsonville, and Glouster in Athens County; and McConnellsville in Morgan County.

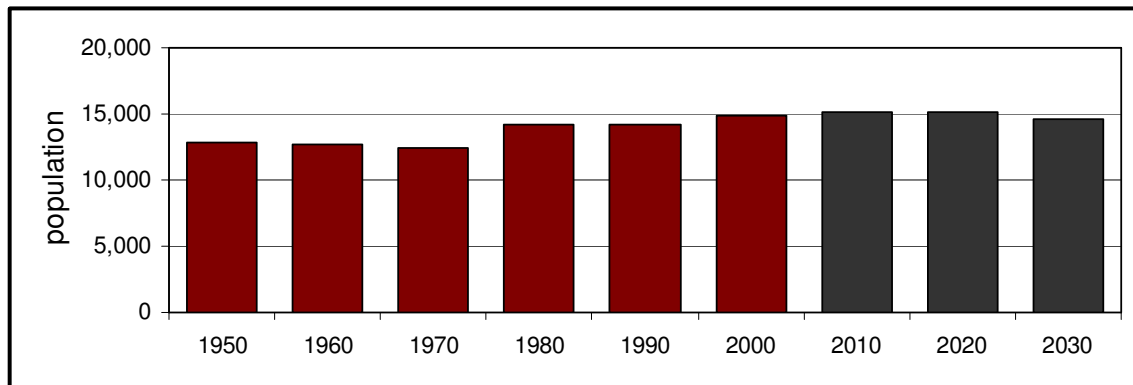
As indicated in the following table and graphs, Washington and Athens Counties have been in a population competition but it appears that Athens County is projected to pull ahead of Washington County in the near future. Washington and Morgan Counties are projected to experience a decrease in population.

	2004	2005	2006	2007	2010	2020	2030
<b>Washington</b>	62,582	62,155	61,867	61,576	63,510	63,090	61,650
Athens	62,185	62,028	61,860	63,275	64,540	66,000	66,340
Morgan	14,932	14,895	14,821	14,613	15,200	15,120	14,620

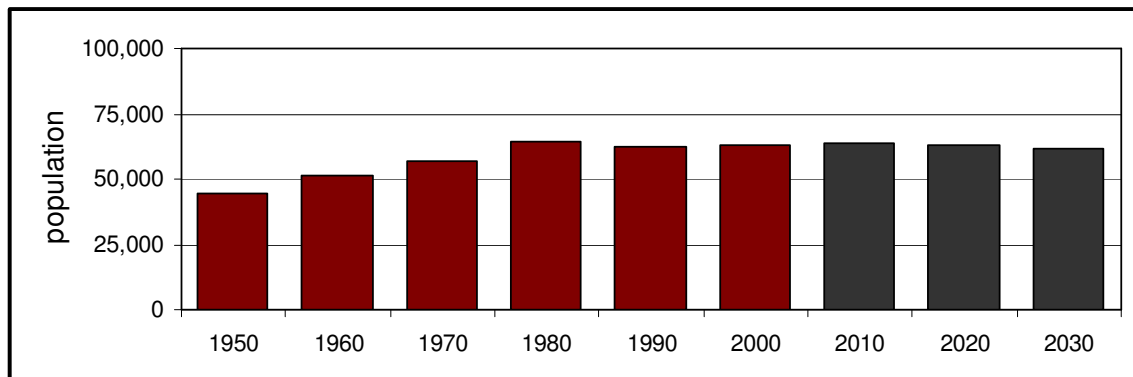
### Athens County



### Morgan County



### Washington County

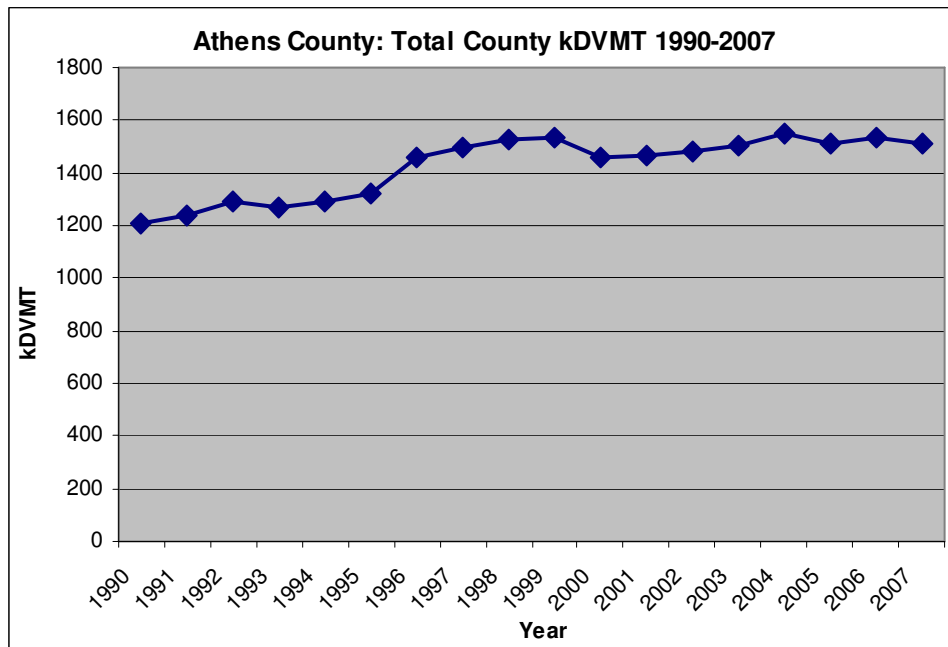


#### Factor 4: Traffic and commuting patterns

Unlike population, Washington County has first place for kDVMT between 2005 and 2007. All Counties experienced a slight downward trend in kDVMT from 2006 to 2007.

#### Estimated Daily Vehicle Miles Traveled (kDVMT = in thousands)

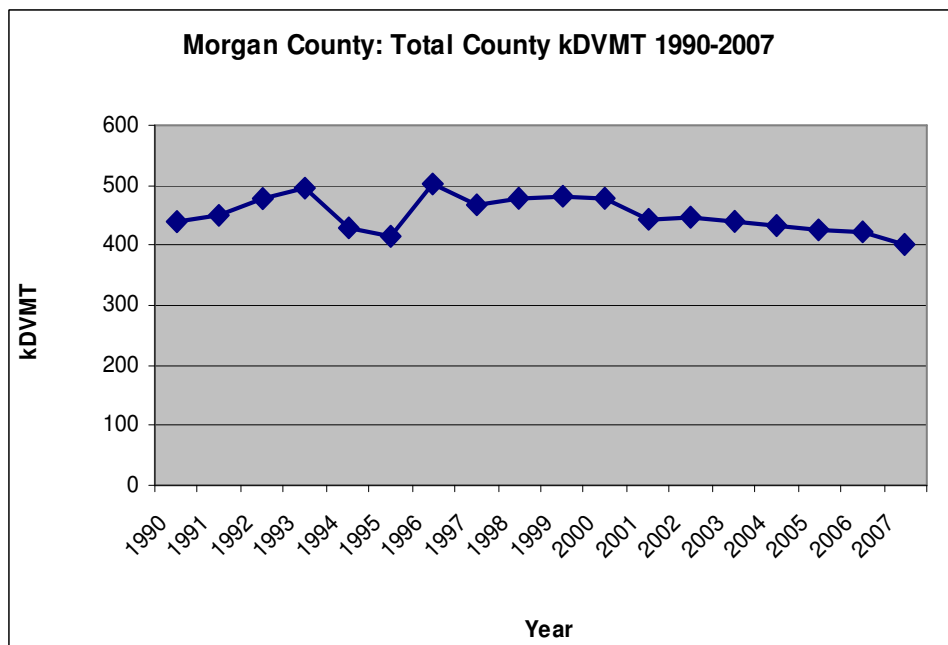
Source: Ohio Department of Transportation, Office of Technical Services



2005 = 1511.92

2006 = 1530.52

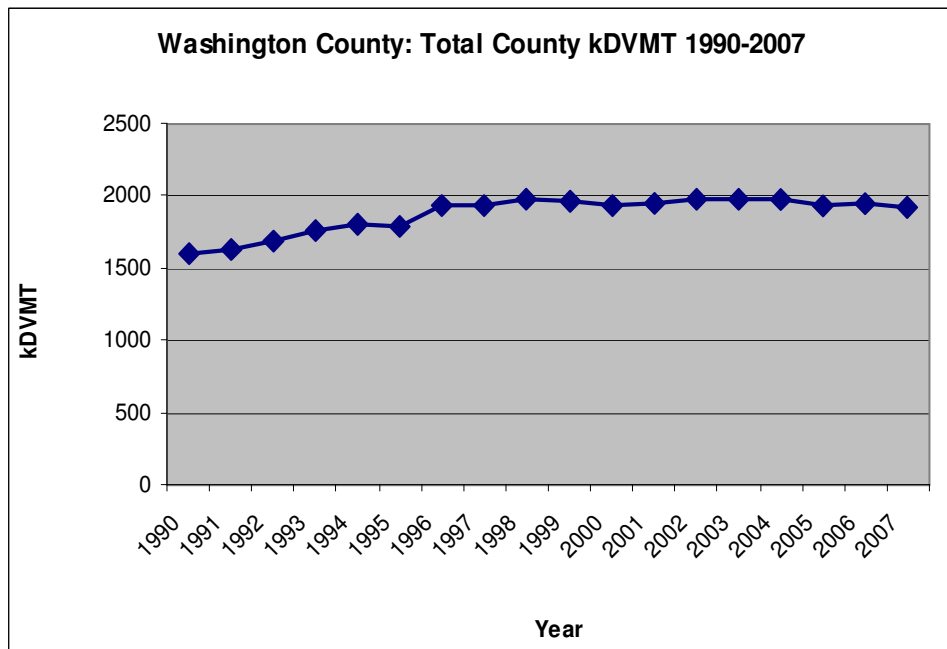
2007 = 1508.93



2005 = 426.43

2006 = 422.76

2007 = 402.49



2005 = 1939.15

2006 = 1949.44

2007 = 1922.07

### **Commuter Patterns**

Source: Office of Strategic Research, Ohio Department of Development  
U.S. Census Bureau, 2000

Not surprisingly, the majority of Washington County workers commuting outside the County, travel to Wood County, WV. Likewise, Wood County, WV has a number of workers traveling across the river to Washington County. A low number of workers from Athens and Morgan County commute to Washington County.

Athens	Percent of workers that work outside the County		16.8%
	Average commute time in minutes -		21.7
Number of workers 16+ years of age living in Athens County			25,586
Commute Out To	Number	Percent	
Franklin Co. OH	712	2.8%	
Hocking Co. OH	580	2.3%	
Wood Co. WV	563	2.2%	
Washington Co. OH	462	1.8%	
Fairfield Co. OH	431	1.7%	
Vinton Co. OH	149	0.6%	
Meigs Co. OH	142	0.6%	
Jackson Co. OH	130	0.5%	
Perry Co. OH	123	0.5%	
Ross Co. OH	112	0.4%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Athens County			26,145
Commute In From	Number	Percent	
Meigs Co. OH	1,334	5.1%	
Hocking Co. OH	945	3.6%	
Vinton Co. OH	420	1.6%	
Morgan Co. OH	380	1.5%	
Jackson Co. OH	220	0.8%	
Washington Co. OH	208	0.8%	
Gallia Co. OH	165	0.6%	
Fairfield Co. OH	142	0.5%	
Wood Co. WV	116	0.4%	
Perry Co. OH	110	0.4%	
Percent is of workers working in County.			

<b>Morgan</b>			Percent of workers that work outside the County	47.0%
			Average commute time in minutes -	36.2
<b>Number of workers 16+ years of age living in Morgan County</b>			<b>5,858</b>	
Commute Out To	Number	Percent		
Muskingum Co. OH	707	12.1%		
Washington Co. OH	501	8.6%		
Athens Co. OH	380	6.5%		
Franklin Co. OH	307	5.2%		
Perry Co. OH	225	3.8%		
Licking Co. OH	157	2.7%		
Guernsey Co. OH	80	1.4%		
Fairfield Co. OH	68	1.2%		
Wood Co. WV	51	0.9%		
Pickaway Co. OH	29	0.5%		
Percent is of workers living in County.				
<b>Number of workers 16+ years of age working in Morgan County</b>			<b>3,632</b>	
Commute In From	Number	Percent		
Muskingum Co. OH	211	5.8%		
Washington Co. OH	125	3.4%		
Athens Co. OH	54	1.5%		
Perry Co. OH	52	1.4%		
Guernsey Co. OH	21	0.6%		
Noble Co. OH	13	0.4%		
Brooke Co. WV	10	0.3%		
Jackson Co. WV	7	0.2%		
Virginia Beach city VA	7	0.2%		
Tuscarawas Co. OH	6	0.2%		
Percent is of workers working in County.				

<b>Washington</b>			Percent of workers that work outside the County	29.2%
			Average commute time in minutes -	22.5
<b>Number of workers 16+ years of age living in Washington County</b>			<b>28,171</b>	
Commute Out To	Number	Percent		
Wood Co. WV	5,927	21.0%		
Pleasants Co. WV	378	1.3%		
Monroe Co. OH	221	0.8%		
Athens Co. OH	208	0.7%		
Noble Co. OH	197	0.7%		
Morgan Co. OH	125	0.4%		
Franklin Co. OH	124	0.4%		
Jackson Co. WV	95	0.3%		
Guernsey Co. OH	83	0.3%		
Tyler Co. WV	71	0.3%		
Percent is of workers living in County.				
<b>Number of workers 16+ years of age working in Washington County</b>			<b>26,792</b>	
Commute In From	Number	Percent		
Wood Co. WV	3,316	12.4%		
Morgan Co. OH	501	1.9%		
Athens Co. OH	462	1.7%		
Noble Co. OH	453	1.7%		
Pleasants Co. WV	391	1.5%		
Meigs Co. OH	340	1.3%		
Monroe Co. OH	237	0.9%		
Ritchie Co. WV	137	0.5%		
Franklin Co. OH	84	0.3%		
Tyler Co. WV	81	0.3%		
Percent is of workers working in County.				

## Factor 5: Meteorology

Please refer to Appendix E for applicable meteorology information for the Parkersburg-Marietta area.

## Factor 6: Topography/Land use/Land cover

Washington County is entirely within the unglaciated Allegheny Plateau region (see Appendix F). The landscape is one of hills, narrow ridgetops, and stream valleys. The eastern part of the County is rugged with steep to very steep slopes

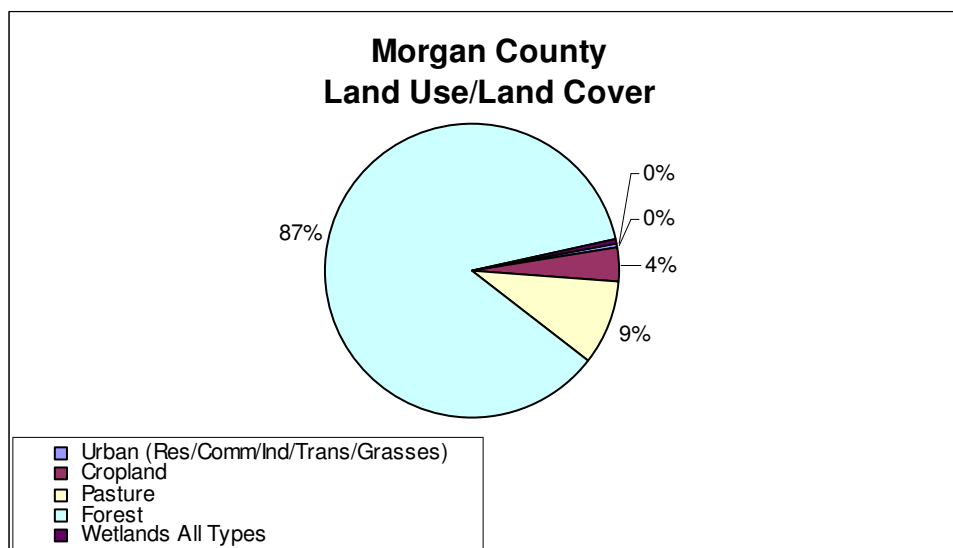
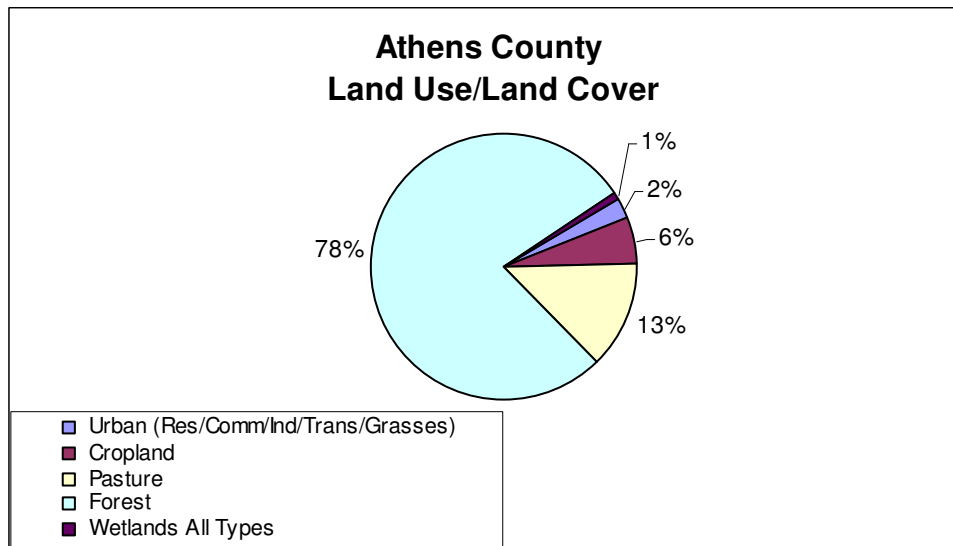


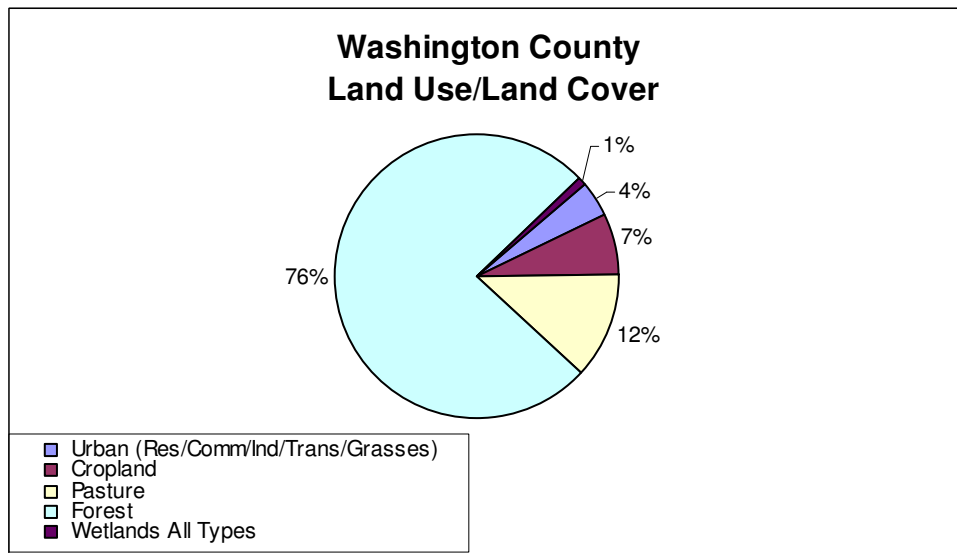
while the central and western parts of the County have a more rolling topography, wider ridgetops and fewer steep side slopes. The lowest point in the County is 580 feet and the highest is more than 1,200 feet above sea level.

Morgan County lies in the unglaciated Appalachian Plateaus Province. Rugged, it consists mostly of steep hillsides and narrow ridgetops. Some broad, gently sloping uplands are in the western part of the County and in stream valleys. The elevation ranges from about 630 feet to 1115 feet above sea level.

Athens County, like Morgan and Washington Counties, is in the unglaciated Allegheny Plateau region. The northern part of the County is rugged with steep to very steep slopes and the southern part of the County has more rolling hills and fewer steep hillsides. The highest point is 1,055 and lowest point is about 640 feet above sea level.

As shown in the following pie charts, the land use/land cover in this area is predominately characterized as forest area.





**Factor 7: Jurisdictional boundaries**

The Parkersburg-Marietta-Vienna, WV-OH MSA includes: Pleasants, Wirt and Wood Counties in West Virginia; and Washington County in Ohio. The principal cities are Parkersburg and Vienna in West Virginia, and Marietta in Ohio. There is no CSA for this area.

The Wood, Wirt, Washington Interstate Planning Commission (WWWIPC) is the planning agency designated as the Metropolitan Planning Organization for Parkersburg-Marietta area. The WWWIPC region is composed of two Counties: Wood County, WV and the greater Marietta area of Washington County, OH.

**Factor 8: Level of control of emission sources**

Please refer to the Factor 8 general discussion at the beginning of this document for applicable control information for this area.

**Steubenville-Weirton, OH:**

**Current** County nonattainment: none

**Current nonattainment Counties**

***Recommended*** County nonattainment: Jefferson

 Recommended nonattainment Counties



## **Discussion:**

There are one Ohio County and two West Virginia Counties in this existing ozone designation area: Jefferson County, Ohio and Hancock and Brooke Counties in WV. Jefferson County was initially designated nonattainment for the 1997 ozone standard and then was redesignated to attainment in June 2007. With respect to the new standard, Ohio EPA recommends designating Jefferson County as nonattainment for the Weirton-Steubenville WV-OH area. There is one violating monitor in Jefferson County and the monitor in Hancock County, WV is also not meeting the revised standard. There is one adjacent County discussed in this section- Harrison County. Columbiana, Carroll, and Belmont Counties are also adjacent to Jefferson County but are included in the Youngstown-Warren, Canton-Massillon and Wheeling, WV-OH sections, respectively.

The three-year averages of the annual fourth-highest daily maximum eight-hour average concentrations at the monitors in Jefferson County, OH and Hancock County, WV are not attaining the revised standard as indicated under factor 1 below. VOC and NOx emissions in Harrison county and VOC emissions in Jefferson County are small. NOx emissions in Jefferson County are significant due to a power plant, and projected emissions are anticipated to significantly decrease due to CAIR.

Ohio EPA is not recommending any additional adjacent Counties for nonattainment designations in this area. The Counties in this area have low population and growth, low kDVT with no significant levels of commuters, and low emissions. Specifically, Harrison County is not considered a contributing County due to insignificant emissions, low population, no expected growth, and insignificant commuting levels.

### **Factor 1: Air quality data**

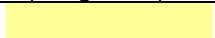

 = Exceeds standard

#### **Ohio**

AQS: 8-Hour three-year average of the annual fourth-highest daily maximum (ppb)

Site Area County	Year	Highest Daily Maximum Concentrations (ppb)			
		1	2	3	4

39-081-0017 Steubenville Jefferson Co.	2006	89	83	80	80
	2007	82	80	80	79
	2008	81	78	74	73
	Avg				77.3

 Sites with less than 75% capture for a given year  
 Sites with less than 90% capture for the 3-year period

## West Virginia

  = Exceeds standard

AQS: 8-Hour three-year average of the annual fourth-highest daily maximum (ppb)

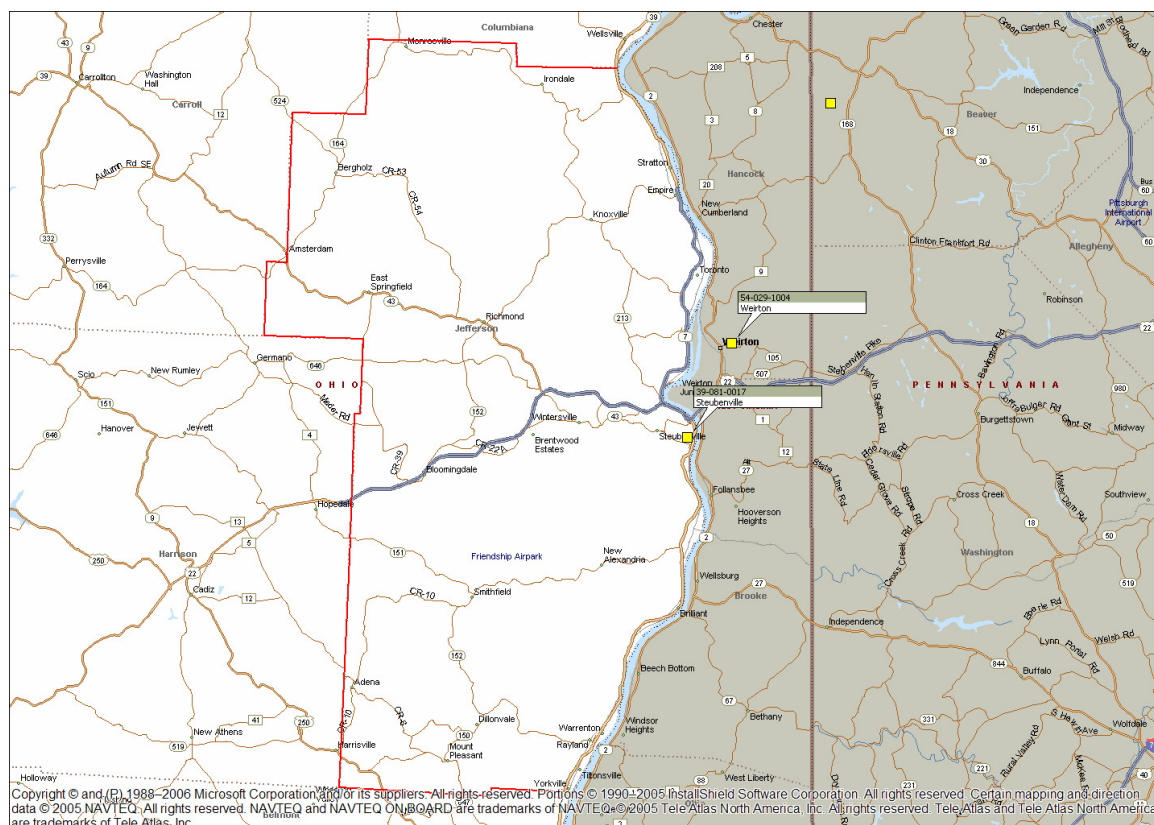
Site Area County	Year	Highest Daily Maximum Concentrations (ppb)			
		1	2	3	4

54-029-1004 Weirton Hancock Co.	2006	85	79	79	77
	2007	83	80	79	79
	2008	84	82	79	77
	Avg				77.7



Sites with less than 75% capture for a given year  
Sites with less than 90% capture for the 3-year period

## Steubenville-Weirton Area Ozone Monitor Locations and Site ID Numbers



**Factor 2: Emissions data**  
(tons per day)

2005		
County	VOC	NO <sub>x</sub>
JEFFERSON	9.26	125.76
Harrison	3.07	2.80

2009		
County	VOC	NO <sub>x</sub>
JEFFERSON	7.77	50.50
Harrison	2.73	2.30

**West Virginia (Does not include on-road data)**

2005		
County	VOC	NO <sub>x</sub>
BROOKE	6.46	4.16
HANCOCK	6.22	8.54

2009		
County	VOC	NO <sub>x</sub>
BROOKE	3.60	3.10
HANCOCK	4.29	7.85

**Major Employers:**

Source: Ohio Department of Development 2007

Most of the major employers in the Ohio portion of the Weirton-Steubenville, WV-OH area are in the categories of government, manufacturing and service as shown in the following tables. It is likely that the utilities employ a significant number of people in this area.

**Harrison County**

CamOhio LLC	Mining
Carriage Inn of Cadiz	Service
Freeport Press Inc	Manufacturing
Gables Care Center	Service
Harrison Community Hospital	Service
Harrison County Government	Government
Harrison Hills City Bd of Ed	Government
McDonough Corp/L J Smith	Manufacturing
Saint-Gobain/Bayform	Manufacturing

## Jefferson County

American Electric Power	Utility
Buckeye Local Bd of Ed	Government
Edison Local Bd of Ed	Government
FirstEnergy Corp	Utility
Franciscan Univ of Steubenville	Service
Indian Creek Local Bd of Ed	Government
Steubenville City Bd of Ed	Government
Titanium Metals Corp/Timet	Manufacturing
Trinity Health System	Service
Wal-Mart Stores Inc	Trade
Wheeling-Pittsburgh Steel	Manufacturing

## Factor 3: Population and Projected Growth

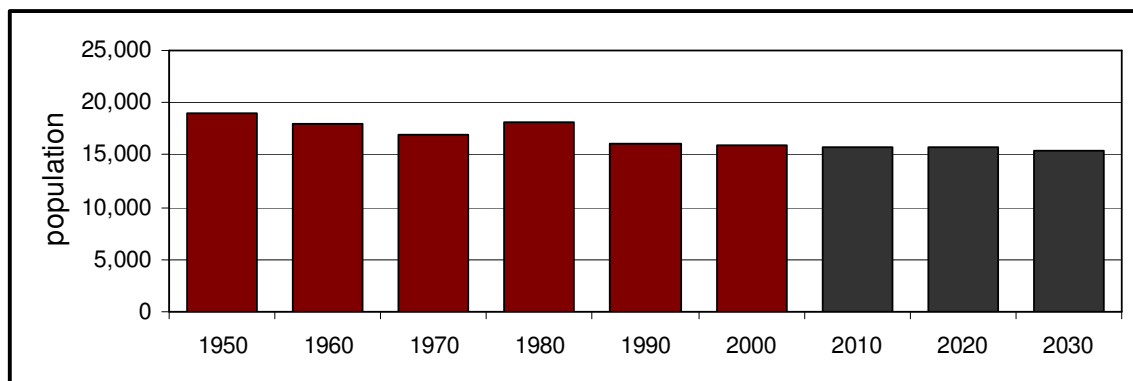
Sources: Office of Strategic Research, Ohio Department of Development  
U.S. Census Bureau Population Estimates Program 2007

The primary urban areas in the Ohio portion of the Weirton-Steubenville, WV-OH area are: Steubenville in Jefferson County; and in the adjacent Harrison County, the City of Cadiz.

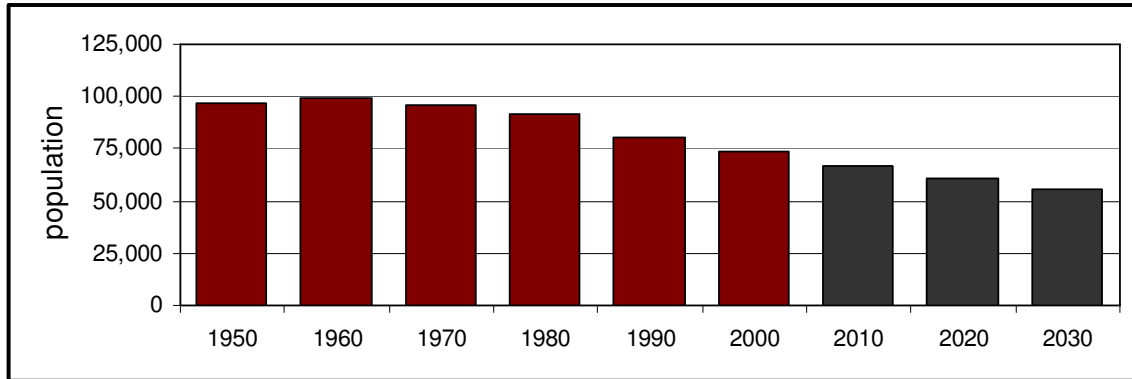
As indicated in the following table and graphs, Jefferson County has the highest population in this area and it is projected to decrease. The population in Harrison County is also projected to decrease.

	2004	2005	2006	2007	2010	2020	2030
<b>Jefferson</b>	71,277	70,631	70,125	68,730	66,530	60,770	55,850
Harrison	15,873	15,881	15,799	15,506	15,710	15,680	15,460

## Harrison County



## Jefferson County

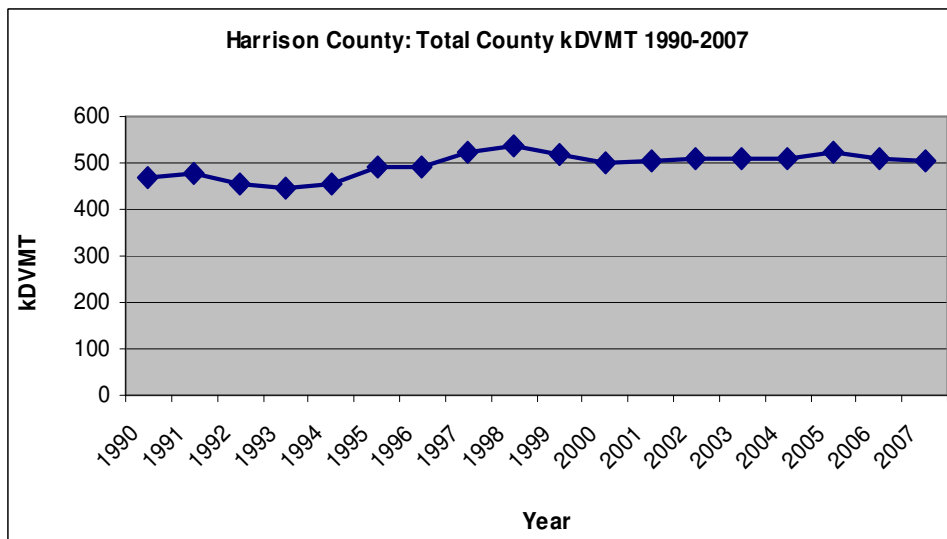


### Factor 4: Traffic and commuting patterns

The kDVMT in Jefferson County have had an interesting fifteen years of ups and downs. From 2005 to 2007 the kDVMT in Jefferson County has increased slightly while there has been a slight decrease in Harrison County.

#### Estimated Daily Vehicle Miles Traveled (kDVMT = in thousands)

Source: Ohio Department of Transportation, Office of Technical Services

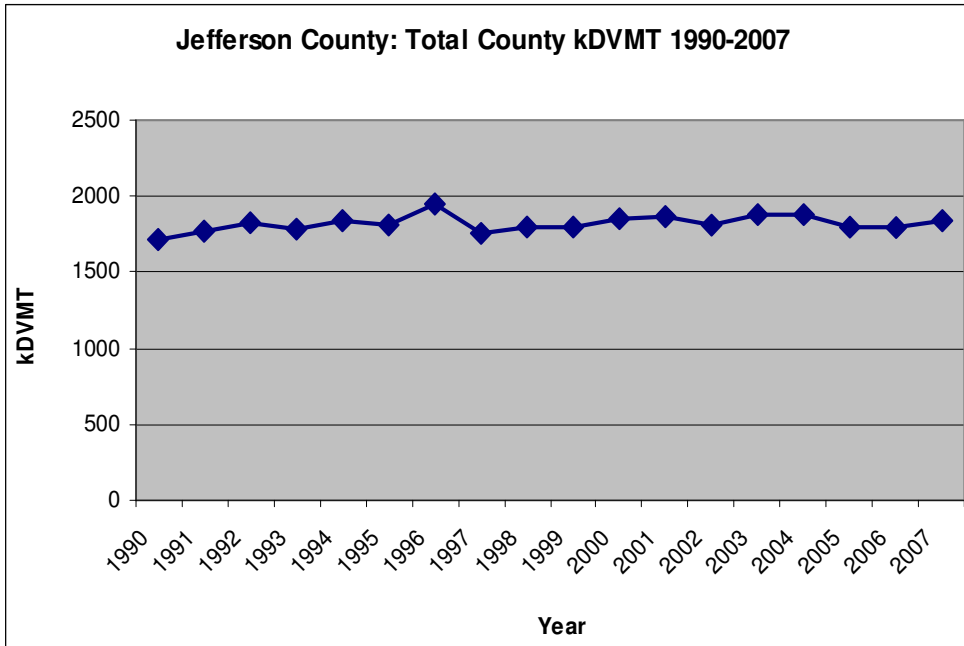


2005 = 522.22

2006 = 511.2

2007 = 505.24





2005 = 1801.26

2006 = 1801.73

2007 = 1839.71

### **Commuter Patterns**

Source: Office of Strategic Research, Ohio Department of Development  
U.S. Census Bureau, 2000

The majority of Jefferson County workers commuting outside the County, travel to Brooke County, WV County. The largest portion Harrison County workers commuting outside the County travel to Tuscarawas County.

Harrison	Percent of workers that work outside the County		52.4%
	Average commute time in minutes -		28.8
Number of workers 16+ years of age living in Harrison County			6,585
Commute Out To	Number	Percent	
Tuscarawas Co. OH	1,410	21.4%	
Jefferson Co. OH	593	9.0%	
Belmont Co. OH	361	5.5%	
Stark Co. OH	292	4.4%	
Carroll Co. OH	188	2.9%	
Ohio Co. WV	83	1.3%	
Brooke Co. WV	65	1.0%	
Wayne Co. OH	62	0.9%	
Holmes Co. OH	34	0.5%	
Allegheny Co. PA	33	0.5%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Harrison County			4,416
Commute In From	Number	Percent	
Jefferson Co. OH	383	8.7%	
Belmont Co. OH	280	6.3%	
Tuscarawas Co. OH	182	4.1%	
Carroll Co. OH	160	3.6%	
Guernsey Co. OH	52	1.2%	
Holmes Co. OH	41	0.9%	
Stark Co. OH	27	0.6%	
Brooke Co. WV	18	0.4%	
Allegheny Co. PA	13	0.3%	
Hamilton Co. OH	12	0.3%	
Percent is of workers working in County.			

<b>Jefferson</b>			Percent of workers that work outside the County		31.3%
			Average commute time in minutes -		22.2
<b>Number of workers 16+ years of age living in Jefferson County</b>			<b>28,793</b>		
Commute Out To	Number	Percent			
Brooke Co. WV	2,377	8.3%			
Belmont Co. OH	1,236	4.3%			
Allegheny Co. PA	1,094	3.8%			
Hancock Co. WV	784	2.7%			
Ohio Co. WV	706	2.5%			
Columbiana Co. OH	632	2.2%			
Harrison Co. OH	383	1.3%			
Carroll Co. OH	265	0.9%			
Stark Co. OH	195	0.7%			
Beaver Co. PA	154	0.5%			
Percent is of workers living in County.					
			<b>Number of workers 16+ years of age working in Jefferson County</b>		
			<b>25,922</b>		
Commute In From	Number	Percent			
Brooke Co. WV	1,296	5.0%			
Belmont Co. OH	1,129	4.4%			
Hancock Co. WV	1,007	3.9%			
Harrison Co. OH	593	2.3%			
Columbiana Co. OH	517	2.0%			
Ohio Co. WV	436	1.7%			
Carroll Co. OH	178	0.7%			
Allegheny Co. PA	175	0.7%			
Washington Co. PA	171	0.7%			
Marshall Co. WV	147	0.6%			
			Percent is of workers working in County.		

## Factor 5: Meteorology

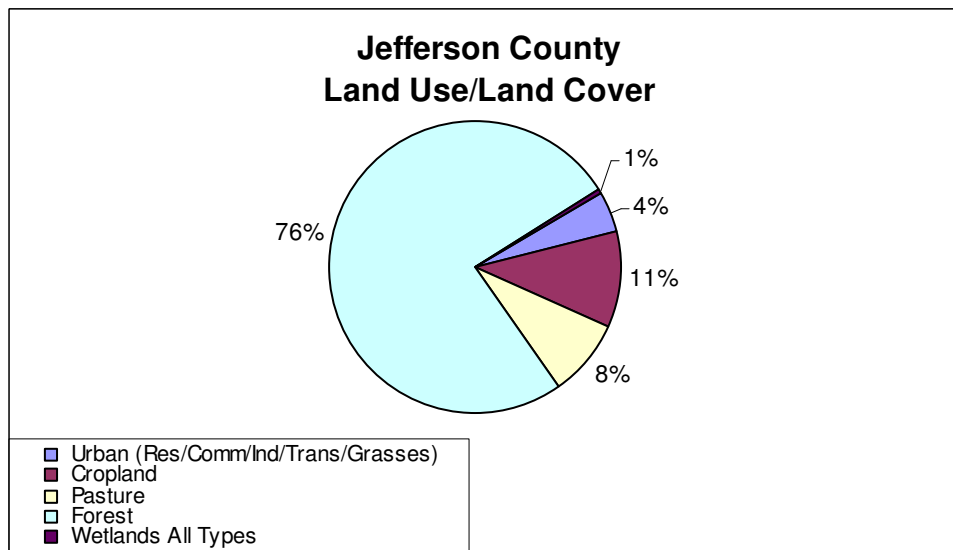
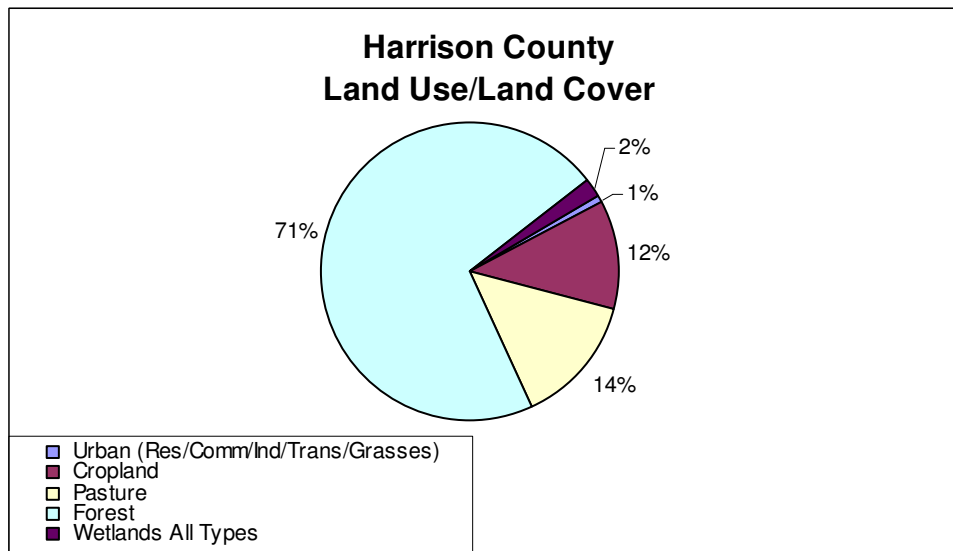
Please refer to Appendix E for applicable meteorology information for the Weirton-Steubenville area.

## Factor 6: Topography/Land use/Land cover

Jefferson County is in the unglaciated Allegheny Plateau region (see Appendix F). The County has been extensively dissected by drainageways that empty into the Ohio River, which is the sinuous eastern border of the County. Relief is generally greatest in the eastern part of the County. The elevation ranges from 1,388 feet to about 644 feet above sea level.

Harrison County is located in the unglaciated Allegheny Plateau region and is similar in topography to that of Jefferson County. The highest point in the County is 1,366 feet and the lowest point is about 861 feet above sea level.

As shown in the following pie charts, the land use/land cover in Jefferson and Harrison Counties are nearly the same, predominately characterized as forest area.



## Factor 7: Jurisdictional boundaries

The Weirton-Steubenville, WV-OH MSA includes: Brooke and Hancock Counties, West Virginia and Jefferson County, Ohio. The principal cities are Weirton, WV and Steubenville, OH. There is no CSA for this area.

The Brooke-Hancock-Jefferson Metropolitan Planning Commission (BHJMPO) is the planning agency designated as the Metropolitan Planning Organization for the Weirton-Steubenville area. The BHJMPO region is composed of three Counties: Hancock and Brooke Counties in WV and Jefferson County in OH.

## Factor 8: Level of control of emission sources

Please refer to the Factor 8 general discussion at the beginning of this document for applicable control information for this area.

**Toledo, OH:**

**Current** County nonattainment: none

**Current nonattainment Counties**

***Recommended*** County nonattainment: none

 Recommended nonattainment Counties



## **Discussion:**

There are two Counties in this existing ozone designation area, Lucas and Wood Counties. This area was initially designated nonattainment for the 1997 ozone standard and then was redesignated as attainment in August of 2007. With respect to the new standard, Ohio EPA recommends designating Lucas and Wood Counties as attainment for the Toledo area. Lucas and Wood Counties contains four monitors which are not violating the revised standard. There are seven adjacent Counties to the Toledo area: Fulton, Henry, Putnam, Hancock, Seneca, Sandusky, and Ottawa. None of these Counties contain monitors.

The three-year average of the annual fourth-highest daily maximum eight-hour average concentrations at the monitor is attaining the revised standard as identified under factor 1 below. Emissions in Lucas and Wood Counties and the adjacent Counties are relatively small.


### **Factor 1: Air quality data**

 = Exceeds standard

#### **Ohio**

AQS: 8-Hour three-year average of the annual fourth-highest daily maximum (ppb)

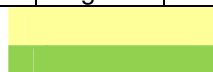
Site Area County	Year	Highest Daily Maximum Concentrations (ppb)			
		1	2	3	4

39-095-0024 Toledo Lucas Co.	2006	81	79	76	75
	2007	99	93	93	81
	2008	78	73	73	71
	Avg				75.6 

39-095-0027 Toledo Lucas Co.	2006	79	77	72	69
	2007	82	82	78	75
	2008	79	74	73	73
	Avg				72.3

39-095-0034 Toledo Lucas Co.	2006	79	77	74	74
	2007	84	81	79	78
	2008	77	74	74	73
	Avg				75.0

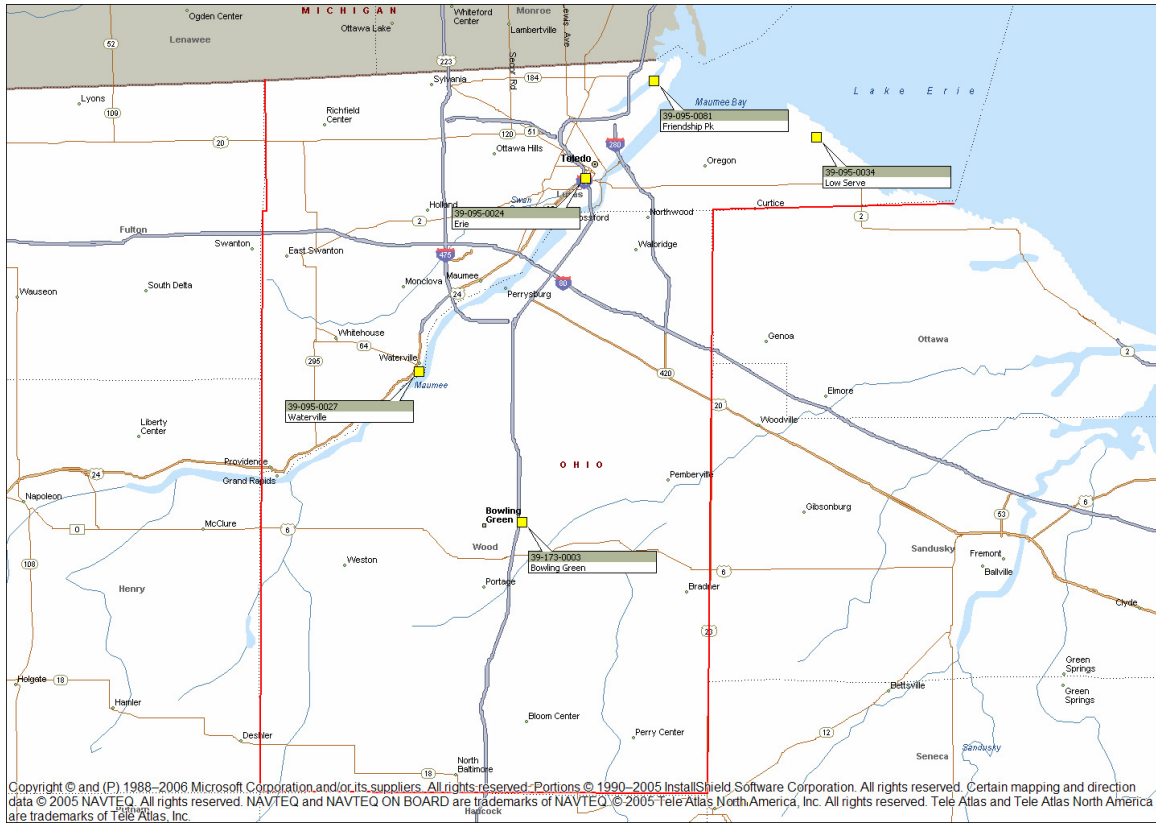
39-173-0003 Toledo Wood Co.	2006	81	80	75	73
	2007	89	88	88	83
	2008	77	72	71	70
	Avg				75.3



Sites with less than 75% capture for a given year

Sites with less than 90% capture for the 3-year period

## Toledo Area Ozone Monitor Locations and Site ID Numbers



### **Factor 2: Emissions data (tons per day)**

2005		
County	VOC	NO <sub>x</sub>
LUCAS	56.72	78.13
WOOD	21.21	30.21
Fulton	14.70	11.12
Henry	7.63	7.18
Hancock	16.79	14.44
Seneca	10.28	26.91
Sandusky	16.85	22.49
Ottawa	12.52	13.13

<b>2009</b>		
<b>County</b>	<b>VOC</b>	<b>NO<sub>x</sub></b>
<b>LUCAS</b>	<b>43.00</b>	<b>59.09</b>
WOOD	15.73	23.24
Fulton	14.01	8.97
Henry	6.87	5.82
Hancock	13.72	11.12
Seneca	8.85	22.59
Sandusky	14.70	18.94
Ottawa	11.13	10.72

### **Major Employers:**

Source: Ohio Department of Development 2007

Most of the major employers in the Toledo area are in the categories of manufacturing, government and service as shown below.

#### **Fulton County**

Dana Corp	Manufacturing
Fulton County Government	Government
Fulton County Health Center	Service
International Automotive Components	Manufacturing
ITT Industries Inc	Manufacturing
North Star BlueScope Steel LLC	Manufacturing
Sauder Woodworking Co	Manufacturing
TRW Automotive	Manufacturing

#### **Hancock County**

Blanchard Valley regional Health	Service
Consolidated Biscuit Co	Manufacturing
Cooper Tire & Rubber Co	Manufacturing
Findlay City Bd of Ed	Government
Kohl's Corp	Trade
Lowe's Companies Inc	Trade
Marathon Petroleum Co LLC	Trade
Nissin Brake Ohio	Manufacturing
Sanoh America Inc	Manufacturing
University of Findlay	Service
Whirlpool Corp	Manufacturing

**Henry County**

Alex Products	Manufacturing
Campbell Soup Co	Manufacturing
Deshler Group/Claud Sintz Inc	Manufacturing
Filling Memorial Home of Mercy	Service
Henry County Hospital	Service
Lutheran Home at Napoleon	Service
Napoleon Area City Bd of Ed	Government
Silgan Holding Inc	Manufacturing
Tenneco Inc	Manufacturing
Wal-Mart Stores Inc	Trade

**Lucas County**

Andersons Inc	Trade
Carlyle Group/HCR Manor Care	Service
Chrysler LLC	Manufacturing
City of Toledo	Government
Dana Corp	Manufacturing
General Motors Corp	Manufacturing
Libbey Inc	Manufacturing
Lucas County Government	Government
Mercy Health Partners	Service
Owens Corning	Manufacturing
Promedica Health System	Service
Toledo City Bd of Ed	Government
United Parcel Service Inc	Transportation
University of Toledo	Government

**Ottawa County**

Benton-Carroll-Salem Local Bd of Ed	Government
Brush Wellman Inc	Manufacturing
FirstEnergy Corp	Utility
Luther Home of Mercy	Service
Magruder Hospital	Service
Ottawa County Government	Government
Port Clinton City Bd of Ed	Government
Silgan Holdings Inc	Manufacturing
USG Corp/US Gypsum Co	Manufacturing

**Sandusky County**

Atlas Industries	Manufacturing
Bellevue Hospital	Service
Crown Battery	Manufacturing
Eaton INOAC	Manufacturing
Fremont City Bd of Ed	Government
HJ Heinz Co	Manufacturing
Memorial Hospital	Service
Poly-Foam Int'l/Style Crest	Manufacturing
Revere Plastics Inc	Manufacturing
Sandusky County Government	Government
Whirlpool Corp	Manufacturing



**Seneca County**

American Standard Inc	Manufacturing
Dorel Industries/Ameriwood Ind	Manufacturing
Fostoria City Bd of Ed	Government
Heidleberg College	Service
Mercy Hospital of Tiffin	Service
National Machinery LLC	Manufacturing
State of Ohio	Government
ThyssenKrupp/TKA Atlas Inc	Manufacturing
Tiffin City Bd of Ed	Government
Tiffin University	Service

**Wood County**

Bowling Green State University	Government
Chrysler LLC	Manufacturing
Cooper Standard Automotive Inc	Manufacturing
First Solar Inc	Manufacturing
Great Lakes Window Inc	Manufacturing
Magna Int'l/Norplas Inc	Manufacturing
Owens Community College	Government
Owens Illinois Inc	Manufacturing
Perrysburg Exempted Village Bd of Ed	Government
Rudolph-Libbe Companies	Construction
Walgreen Co	Trade
Wood County Government	Government
Wood County Hospital Assoc	Service

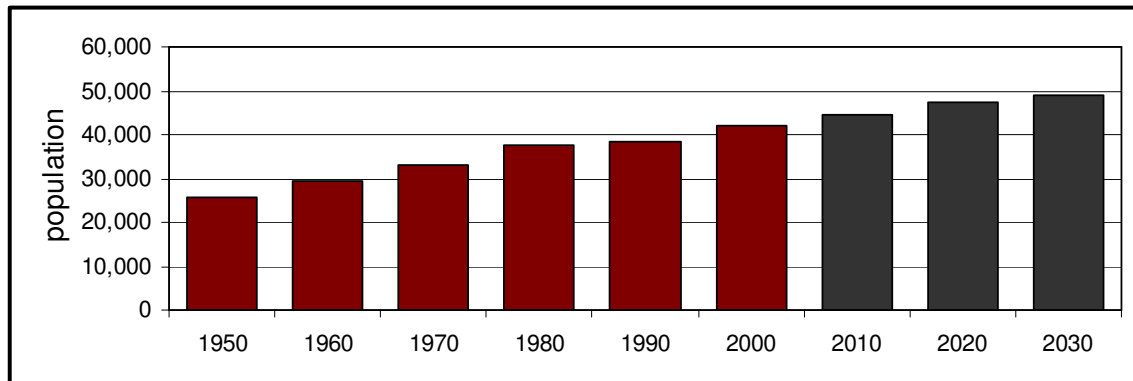
**Factor 3: Population and Projected Growth**

Sources: Office of Strategic Research, Ohio Department of Development  
U.S. Census Bureau Population Estimates Program 2007

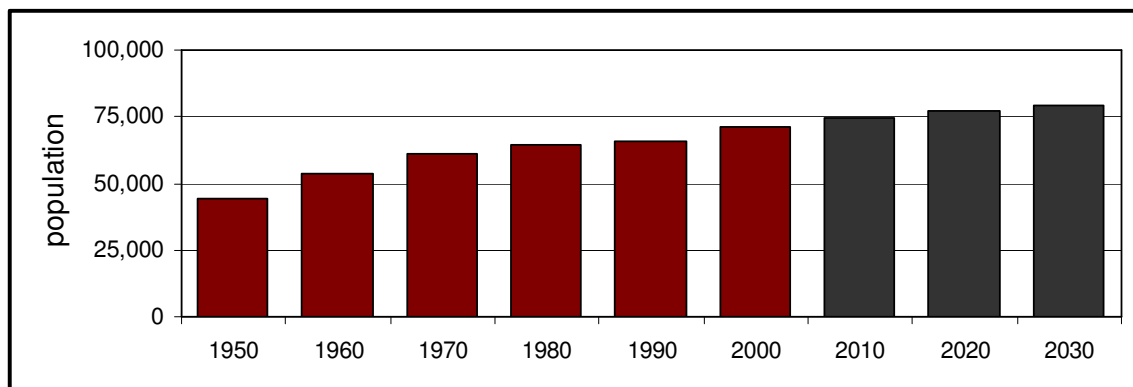
The primary urban areas in the Toledo area and adjacent Counties are: Toledo, Oregon, and Sylvania in Lucas County; Bowling Green, Perrysburg, Rossford, and Maumee in Wood County; Wauseon in Fulton County; Napoleon in Henry County, Ottawa in Putnam County; Findlay in Hancock County; Tiffin in Seneca County, Fremont and Clyde in Sandusky County; and Port Clinton, Marblehead, and Kelleys Island in Ottawa County. Lucas County has the highest population in this area and it is projected to steadily decrease while the population in Wood County is projected to steadily increase. The population in Fulton, Henry, and Hancock is projected to increase; and in Seneca, Sandusky and Ottawa Counties the population is expected to gradually decrease as shown in the table and graphs below.

	2004	2005	2006	2007	2010	2020	2030
<b>Lucas</b>	449,588	447,410	445,281	441,910	444,870	434,650	417,870
Wood	123,377	123,889	124,183	125,399	127,020	133,330	141,880
Fulton	42,785	42,888	42,900	42,562	44,610	47,210	49,110
Henry	29,364	29,431	29,520	28,931	29,540	29,990	30,110
Hancock	73,470	73,508	73,824	74,204	74,180	76,910	79,040
Seneca	57,724	57,373	57,255	56,705	56,750	54,260	50,920
Sandusky	61,689	61,579	61,625	60,997	59,940	57,900	56,420
Ottawa	41,436	41,430	41,331	41,084	40,800	40,270	38,520

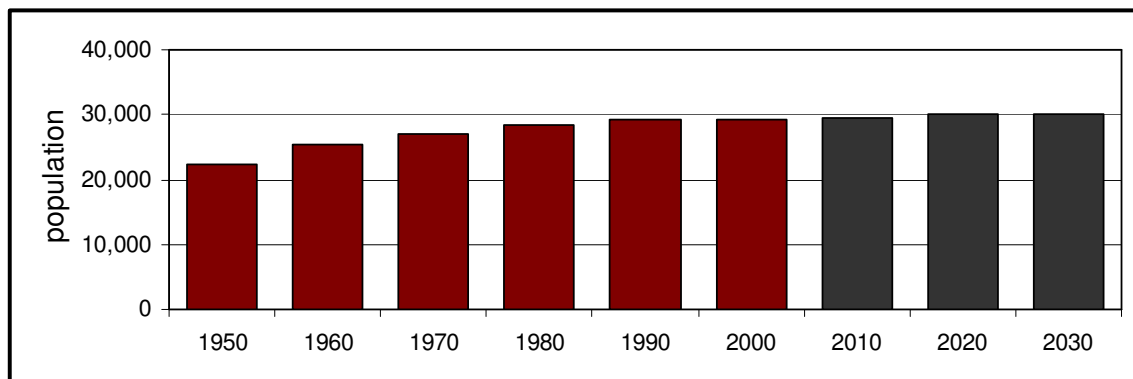
### Fulton County



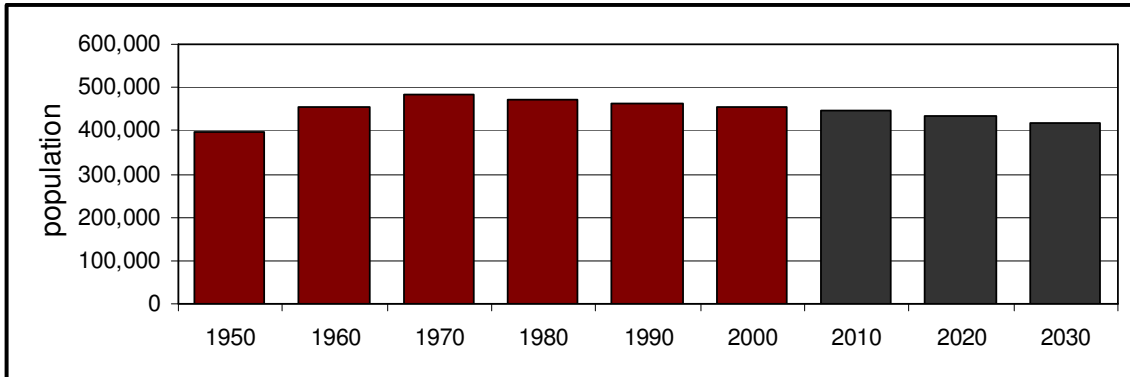
### Hancock County



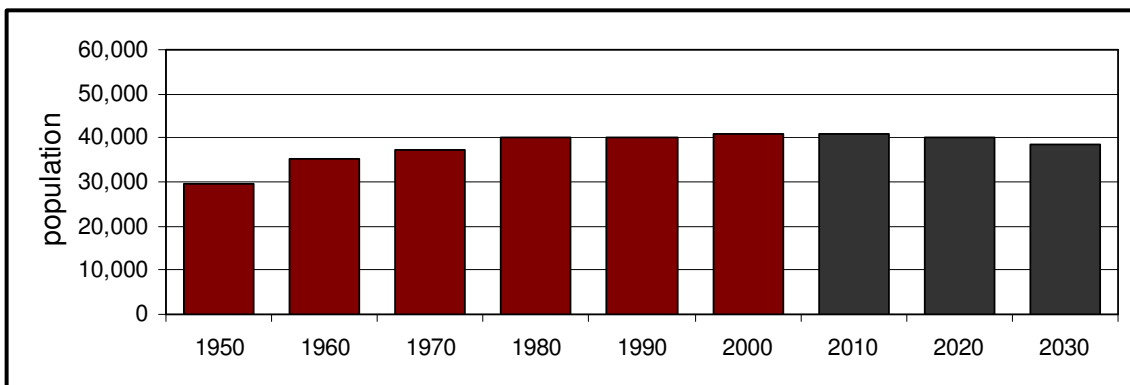
### Henry County



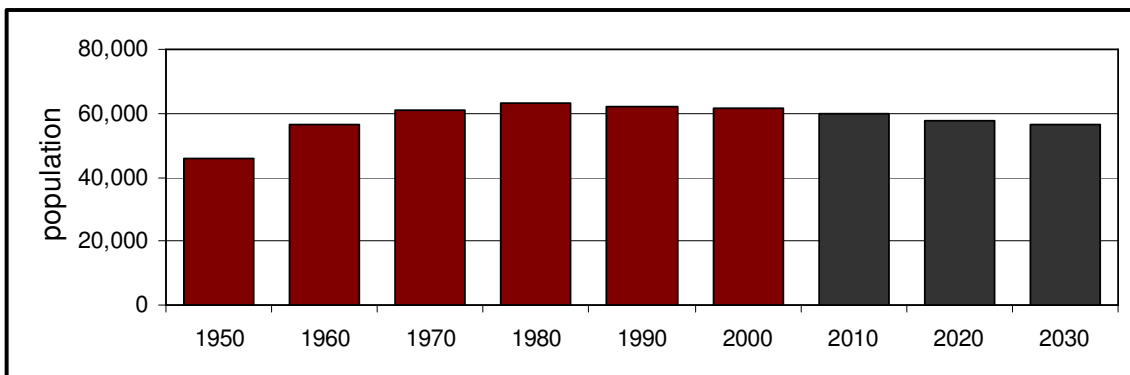
### Lucas County



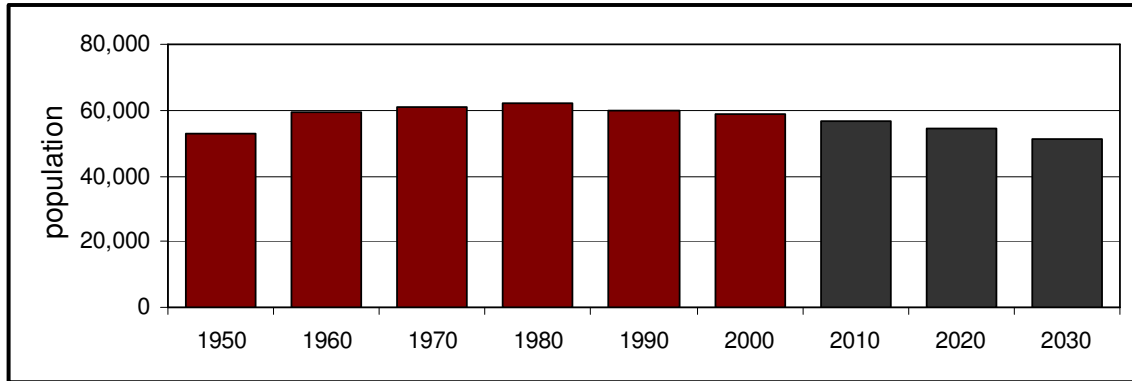
### Ottawa County



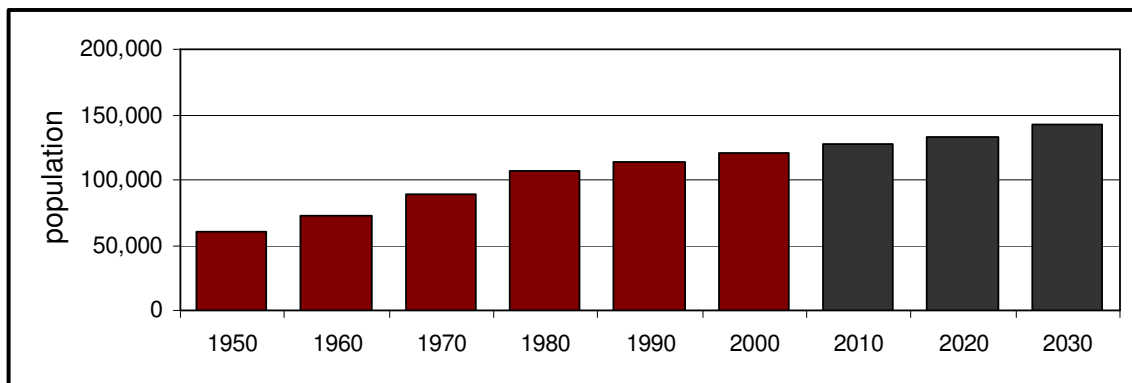
### Sandusky County



### Seneca County



### Wood County

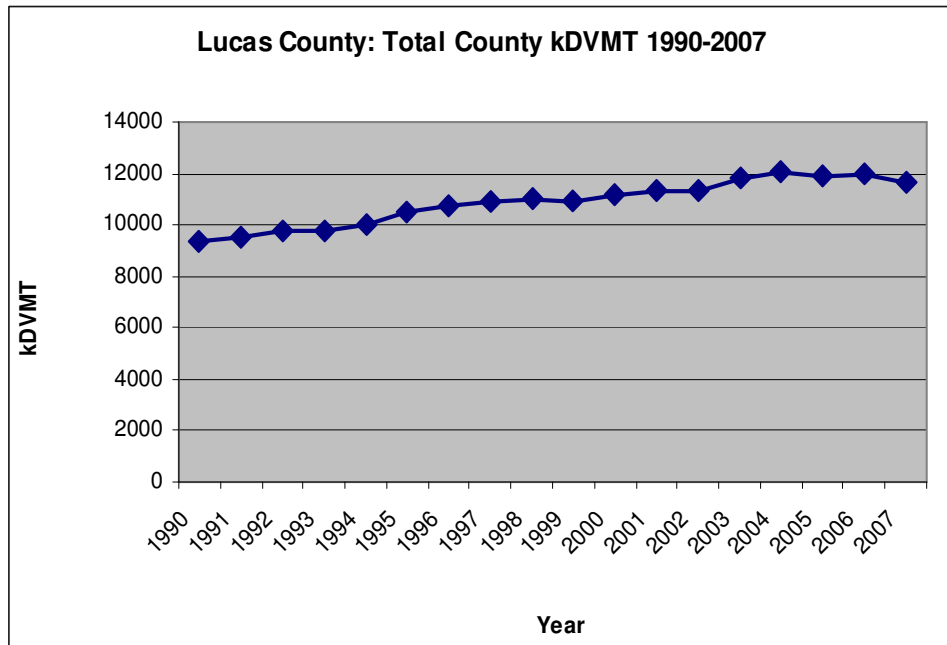


### Factor 4: Traffic and commuting patterns

As expected, Lucas County has the highest kDVMT in the Toledo area as indicated in the tables below. All Counties have had slight decreases in kDVMT from 2005 to 2007. Sandusky and Ottawa Counties had the most notable downward trend in kDVMT between 2005 and 2007.

## Estimated Daily Vehicle Miles Traveled (kDVMT = in thousands)

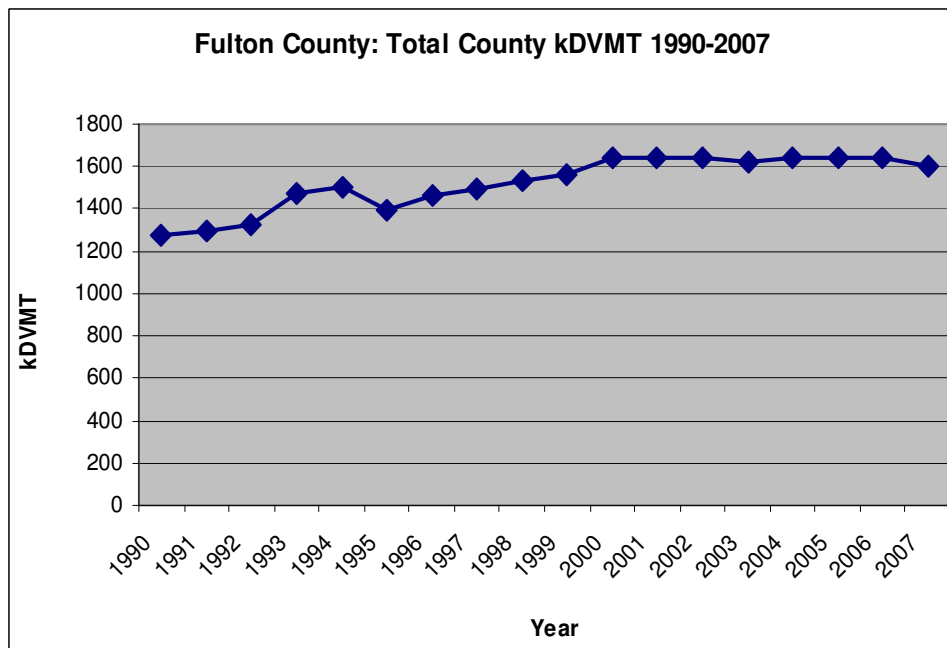
Source: Ohio Department of Transportation, Office of Technical Services



2005 = 11895.43

2006 = 11980.01

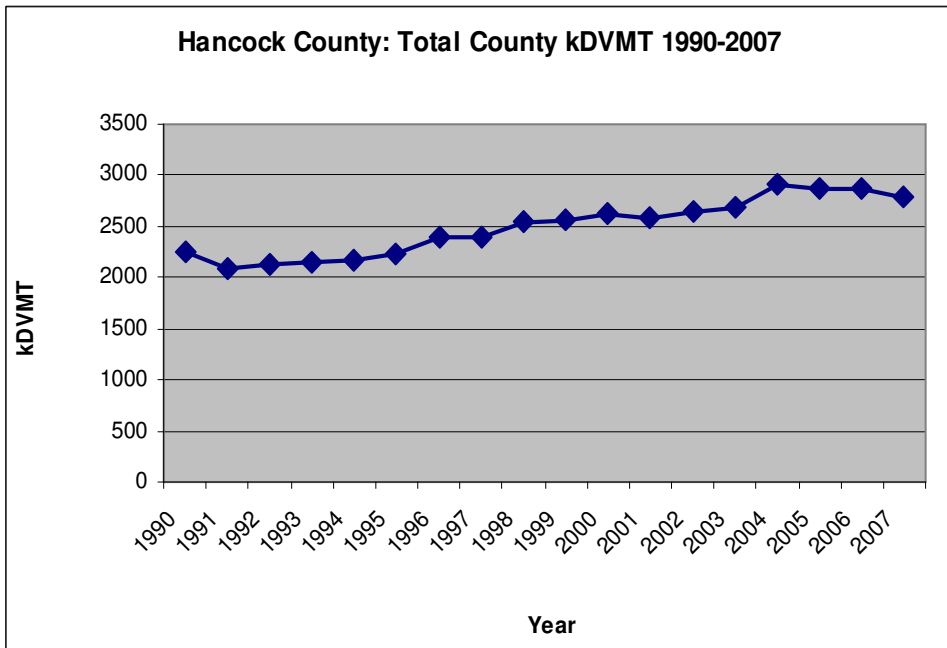
2007 = 11638.02



2005 = 1637.05

2006 = 1639.18

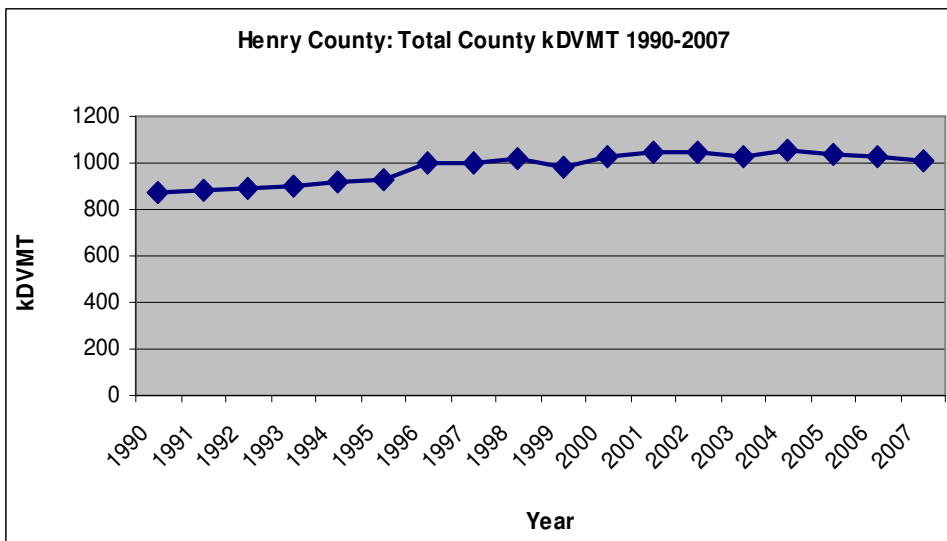
2007 = 1606.65



2005 = 2866.29

2006 = 2861.8

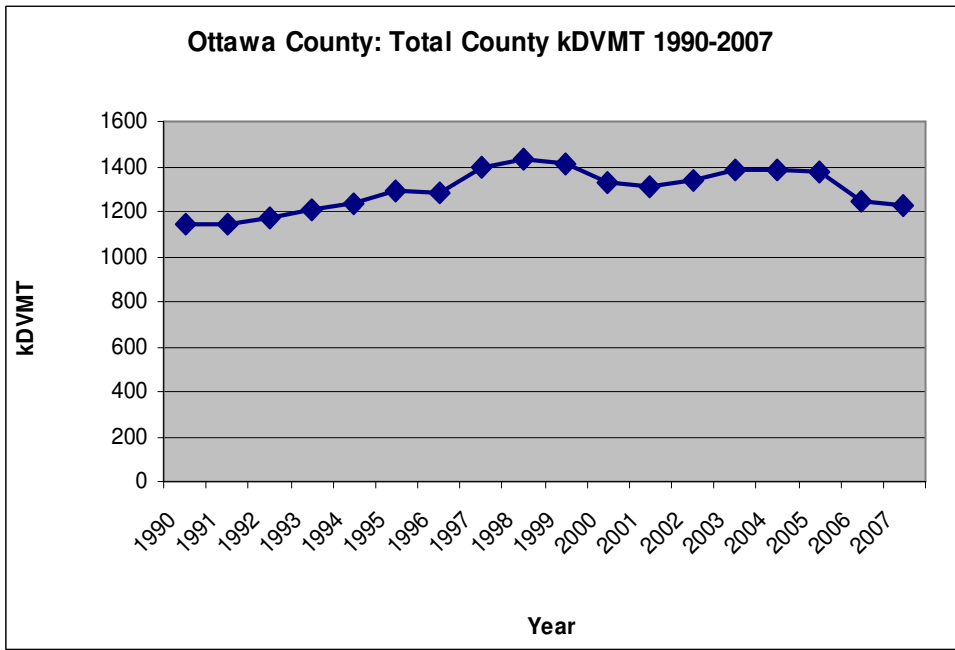
2007 = 2777.05



2005 = 1039.24

2006 = 1026.35

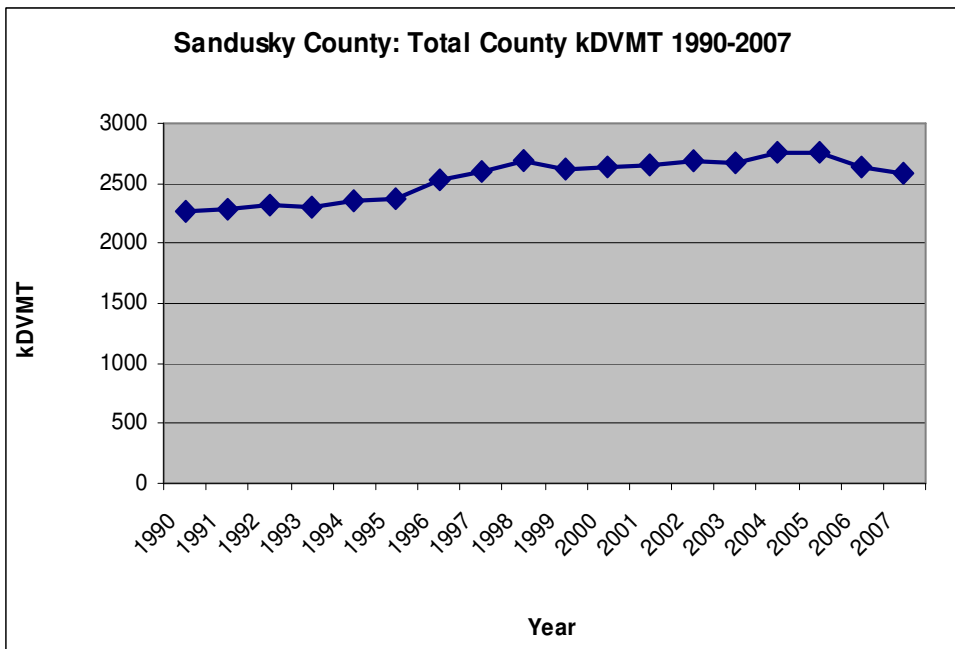
2007 = 1007.09



2005 = 1375.25

2006 = 1244.3

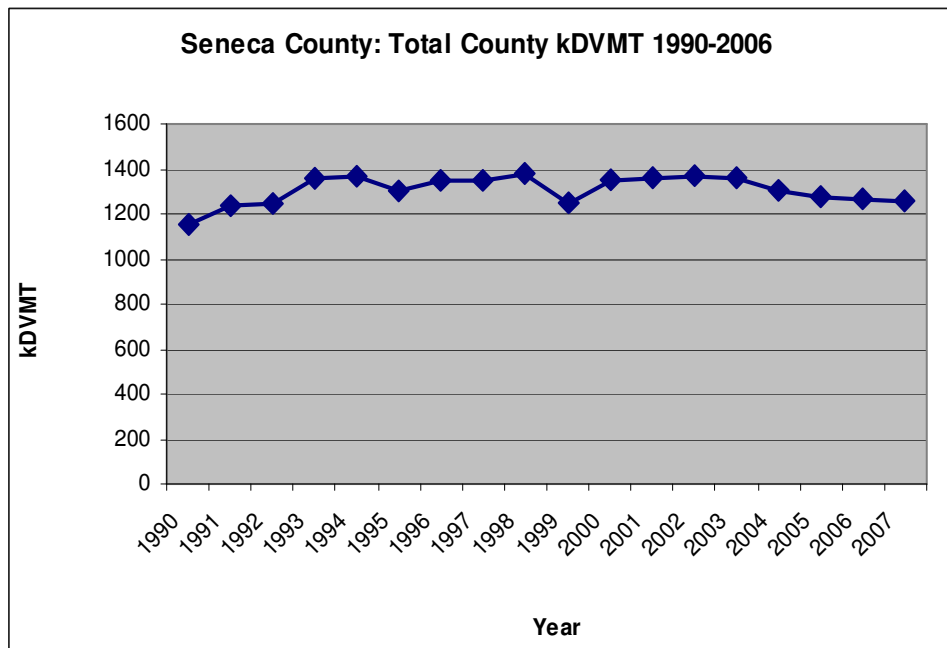
2007 = 1255.74



2005 = 2762.48

2006 = 2632.8

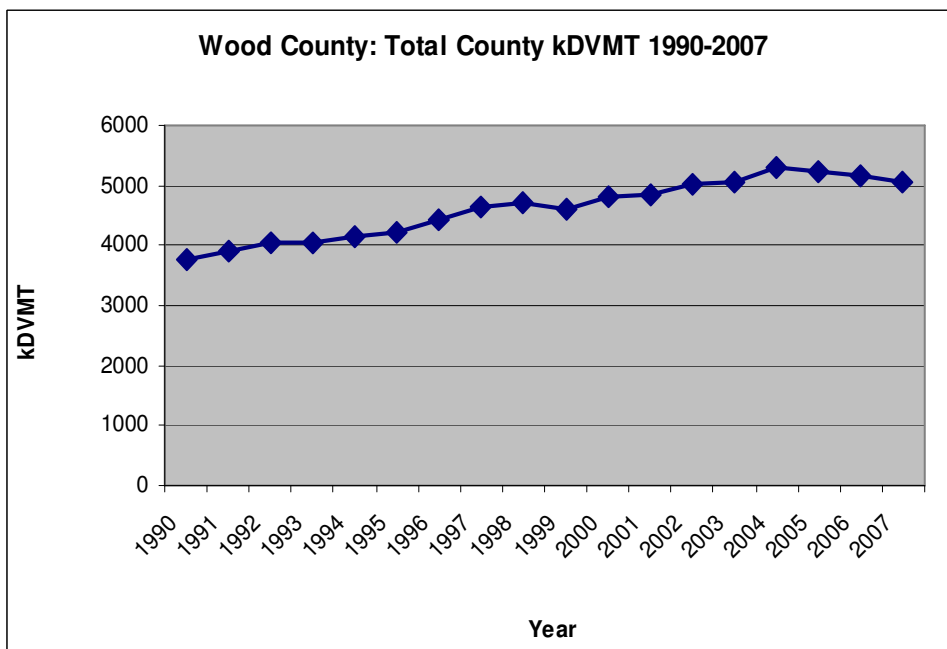
2007 = 2585.04



2005 = 1278.29

2006 = 1269.44

2007 = 1253.14



2005 = 5228.79

2006 = 5179.89

2007 = 5055.96

### **Commuter Patterns**

Source: Office of Strategic Research, Ohio Department of Development  
U.S. Census Bureau, 2000

As shown in the following tables, the majority of Ohio commuters traveling into Lucas County are from Wood County and vice versa.



<b>Fulton</b>	Percent of workers that work outside the County		39.0%
	Average commute time in minutes -		21.3
<b>Number of workers 16+ years of age living in Fulton County</b>			<b>20,855</b>
Commute Out To	Number	Percent	
Lucas Co. OH	5,203	24.9%	
Williams Co. OH	677	3.2%	
Henry Co. OH	659	3.2%	
Wood Co. OH	622	3.0%	
Lenawee Co. MI	233	1.1%	
Defiance Co. OH	217	1.0%	
Monroe Co. MI	122	0.6%	
Wayne Co. MI	30	0.1%	
Hillsdale Co. MI	29	0.1%	
Sandusky Co. OH	29	0.1%	
Percent is of workers living in County.			
<b>Number of workers 16+ years of age working in Fulton County</b>			<b>21,516</b>
Commute In From	Number	Percent	
Henry Co. OH	1,981	9.2%	
Lucas Co. OH	1,957	9.1%	
Williams Co. OH	1,810	8.4%	
Defiance Co. OH	1,270	5.9%	
Lenawee Co. MI	639	3.0%	
Wood Co. OH	269	1.3%	
Hillsdale Co. MI	156	0.7%	
Paulding Co. OH	134	0.6%	
Monroe Co. MI	87	0.4%	
Sandusky Co. OH	72	0.3%	
Percent is of workers working in County.			

<b>Hancock</b>	Percent of workers that work outside the County		18.7%
	Average commute time in minutes -		17.5
<b>Number of workers 16+ years of age living in Hancock County</b>			<b>35,845</b>
Commute Out To	Number	Percent	
Wood Co. OH	1,603	4.5%	
Seneca Co. OH	1,296	3.6%	
Allen Co. OH	1,074	3.0%	
Lucas Co. OH	607	1.7%	
Wyandot Co. OH	491	1.4%	
Putnam Co. OH	382	1.1%	
Hardin Co. OH	379	1.1%	
Sandusky Co. OH	126	0.4%	
Ottawa Co. OH	50	0.1%	
Van Wert Co. OH	49	0.1%	
Percent is of workers living in County.			
<b>Number of workers 16+ years of age working in Hancock County</b>			<b>41,331</b>
Commute In From	Number	Percent	
Seneca Co. OH	3,118	7.5%	
Wood Co. OH	2,177	5.3%	
Putnam Co. OH	1,722	4.2%	
Allen Co. OH	1,169	2.8%	
Wyandot Co. OH	1,107	2.7%	
Hardin Co. OH	1,082	2.6%	
Lucas Co. OH	514	1.2%	
Sandusky Co. OH	191	0.5%	
Henry Co. OH	189	0.5%	
Franklin Co. OH	91	0.2%	
Percent is of workers working in County.			

Henry	Percent of workers that work outside the County		43.0%
	Average commute time in minutes -		21.4
Number of workers 16+ years of age living in Henry County			13,911
Commute Out To	Number	Percent	
Fulton Co. OH	1,981	14.2%	
Defiance Co. OH	1,327	9.5%	
Lucas Co. OH	952	6.8%	
Wood Co. OH	865	6.2%	
Williams Co. OH	295	2.1%	
Hancock Co. OH	189	1.4%	
Putnam Co. OH	138	1.0%	
Allen Co. OH	38	0.3%	
Lenawee Co. MI	23	0.2%	
Monroe Co. MI	18	0.1%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Henry County			11,170
Commute In From	Number	Percent	
Defiance Co. OH	817	7.3%	
Fulton Co. OH	659	5.9%	
Williams Co. OH	406	3.6%	
Lucas Co. OH	365	3.3%	
Wood Co. OH	359	3.2%	
Putnam Co. OH	206	1.8%	
Paulding Co. OH	105	0.9%	
Hancock Co. OH	43	0.4%	
Seneca Co. OH	34	0.3%	
Webb Co. TX	26	0.2%	
Percent is of workers working in County.			

Lucas	Percent of workers that work outside the County		15.5%
	Average commute time in minutes -		20.5
Number of workers 16+ years of age living in Lucas County 207,585			
Commute Out To	Number	Percent	
Wood Co. OH	17,054	8.2%	
Monroe Co. MI	4,456	2.1%	
Fulton Co. OH	1,957	0.9%	
Wayne Co. MI	1,906	0.9%	
Washtenaw Co. MI	867	0.4%	
Ottawa Co. OH	738	0.4%	
Lenawee Co. MI	583	0.3%	
Hancock Co. OH	514	0.2%	
Sandusky Co. OH	418	0.2%	
Oakland Co. MI	375	0.2%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Lucas County 226,840			
Commute In From	Number	Percent	
Wood Co. OH	19,504	8.6%	
Monroe Co. MI	12,654	5.6%	
Fulton Co. OH	5,203	2.3%	
Ottawa Co. OH	3,418	1.5%	
Lenawee Co. MI	1,557	0.7%	
Sandusky Co. OH	1,537	0.7%	
Henry Co. OH	952	0.4%	
Wayne Co. MI	922	0.4%	
Hancock Co. OH	607	0.3%	
Seneca Co. OH	480	0.2%	
Percent is of workers working in County.			

Ottawa	Percent of workers that work outside the County		43.8%
	Average commute time in minutes -		22.5
Number of workers 16+ years of age living in Ottawa County			19,434
Commute Out To	Number	Percent	
Lucas Co. OH	3,418	17.6%	
Wood Co. OH	1,652	8.5%	
Sandusky Co. OH	1,299	6.7%	
Erie Co. OH	1,107	5.7%	
Cuyahoga Co. OH	155	0.8%	
Huron Co. OH	151	0.8%	
Monroe Co. MI	90	0.5%	
Seneca Co. OH	81	0.4%	
Wayne Co. MI	75	0.4%	
Lorain Co. OH	71	0.4%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Ottawa County			15,208
Commute In From	Number	Percent	
Sandusky Co. OH	1,426	9.4%	
Wood Co. OH	760	5.0%	
Lucas Co. OH	738	4.9%	
Erie Co. OH	530	3.5%	
Seneca Co. OH	177	1.2%	
Huron Co. OH	111	0.7%	
Monroe Co. MI	68	0.4%	
Hancock Co. OH	50	0.3%	
Lorain Co. OH	43	0.3%	
Franklin Co. OH	32	0.2%	
Percent is of workers working in County.			

Sandusky	Percent of workers that work outside the County		31.1%
	Average commute time in minutes -		19.4
Number of workers 16+ years of age living in Sandusky County			29,971
Commute Out To	Number	Percent	
Erie Co. OH	1,659	5.5%	
Lucas Co. OH	1,537	5.1%	
Ottawa Co. OH	1,426	4.8%	
Wood Co. OH	1,408	4.7%	
Huron Co. OH	1,305	4.4%	
Seneca Co. OH	1,217	4.1%	
Hancock Co. OH	191	0.6%	
Fulton Co. OH	72	0.2%	
Cuyahoga Co. OH	59	0.2%	
Monroe Co. MI	44	0.1%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Sandusky County			28,184
Commute In From	Number	Percent	
Seneca Co. OH	2,735	9.7%	
Ottawa Co. OH	1,299	4.6%	
Huron Co. OH	1,025	3.6%	
Erie Co. OH	768	2.7%	
Wood Co. OH	587	2.1%	
Lucas Co. OH	418	1.5%	
Hancock Co. OH	126	0.4%	
Lorain Co. OH	71	0.3%	
Franklin Co. OH	51	0.2%	
Wyandot Co. OH	45	0.2%	
Percent is of workers working in County.			

Seneca		Percent of workers that work outside the County		37.2%
		Average commute time in minutes -		20.5
Number of workers 16+ years of age living in Seneca County			28,274	
Commute Out To	Number	Percent		
Hancock Co. OH	3,118	11.0%		
Sandusky Co. OH	2,735	9.7%		
Wood Co. OH	1,019	3.6%		
Huron Co. OH	954	3.4%		
Wyandot Co. OH	781	2.8%		
Lucas Co. OH	480	1.7%		
Erie Co. OH	317	1.1%		
Crawford Co. OH	284	1.0%		
Ottawa Co. OH	177	0.6%		
Allen Co. OH	68	0.2%		
Percent is of workers living in County.				
Number of workers 16+ years of age working in Seneca County			23,261	
Commute In From	Number	Percent		
Hancock Co. OH	1,296	5.6%		
Sandusky Co. OH	1,217	5.2%		
Wood Co. OH	889	3.8%		
Wyandot Co. OH	675	2.9%		
Crawford Co. OH	323	1.4%		
Huron Co. OH	282	1.2%		
Lucas Co. OH	138	0.6%		
Erie Co. OH	89	0.4%		
Ottawa Co. OH	81	0.3%		
Franklin Co. OH	48	0.2%		
Percent is of workers working in County.				

<b>Wood</b>			Percent of workers that work outside the County	44.3%
			Average commute time in minutes -	20.1
<b>Number of workers 16+ years of age living in Wood County</b>			<b>61,207</b>	
Commute Out To	Number	Percent		
Lucas Co. OH	19,504	31.9%		
Hancock Co. OH	2,177	3.6%		
Seneca Co. OH	889	1.5%		
Ottawa Co. OH	760	1.2%		
Sandusky Co. OH	587	1.0%		
Monroe Co. MI	384	0.6%		
Henry Co. OH	359	0.6%		
Wayne Co. MI	307	0.5%		
Fulton Co. OH	269	0.4%		
Defiance Co. OH	172	0.3%		
<b>Number of workers 16+ years of age working in Wood County</b>			<b>60,992</b>	
Commute In From	Number	Percent		
Lucas Co. OH	17,054	28.0%		
Ottawa Co. OH	1,652	2.7%		
Hancock Co. OH	1,603	2.6%		
Sandusky Co. OH	1,408	2.3%		
Seneca Co. OH	1,019	1.7%		
Henry Co. OH	865	1.4%		
Monroe Co. MI	778	1.3%		
Fulton Co. OH	622	1.0%		
Lenawee Co. MI	128	0.2%		
Putnam Co. OH	109	0.2%		
Percent is of workers living in County.			Percent is of workers working in County.	

## Factor 5: Meteorology

Please refer to Appendix E for applicable meteorology information for the Toledo area.

## Factor 6: Topography/Land use/Land cover

Lucas County is in the glaciated Huron-Erie Lake Plains region (see Appendix F). The County is on a nearly level plain. The generally flat landscape is broken by low, rounded hills created by streams throughout the County. The average elevation is about 614 feet above sea level.

Wood County lies entirely within the Huron-Erie Lake Plains region. The County landscape is relatively uniform and level, with most of the County having a slope of six percent or less. The highest point is about 775 feet and the lowest point is about 575 feet above sea level.

Fulton County, like Lucas and Wood Counties, is located in the Huron-Erie Lake Plains region. The County is made up of gently rolling terrain and nearly level plain. The landscape slopes eastward toward Lake Erie. The elevation ranges from about 680 feet to 806 feet above sea level.

Henry County has large glaciated areas of level or nearly level topography. The elevation ranges from 625 feet to 750 feet above sea level.

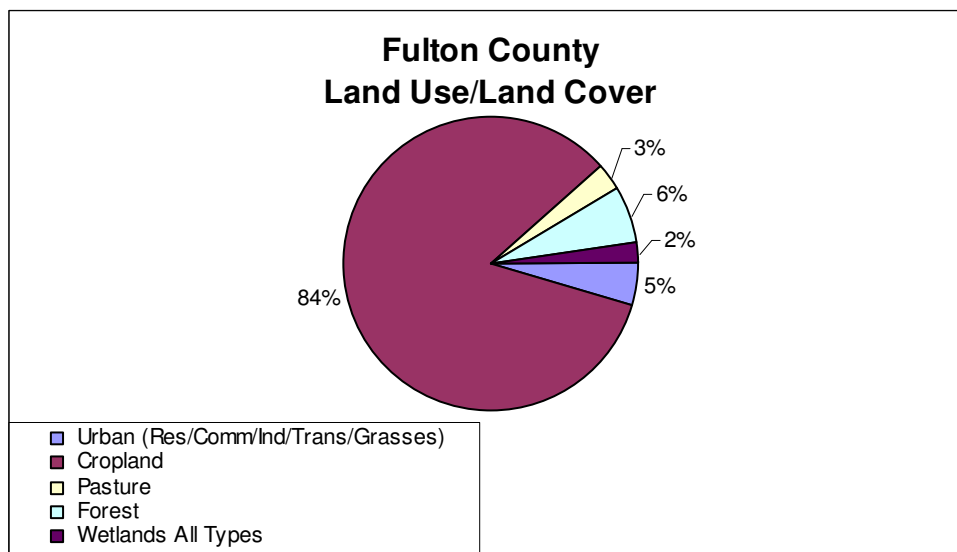
Hancock County like most Counties in the northwest section of Ohio has a relatively uniform, level topography. The highest point is 955 feet and the lowest is 715 feet above sea level. Most of the County has a slope of six percent or less.

Seneca County straddles the Lake Plain and Till Plain areas of the Central Lowlands region. Relief of the County is mainly nearly level to undulating. As expected, steeper areas are along streams.

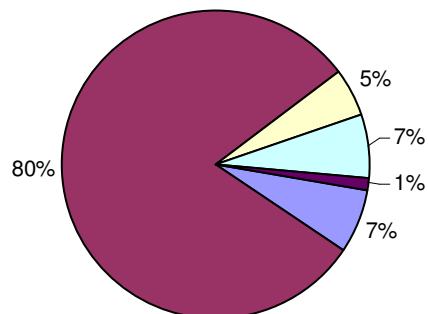
Sandusky County is mainly in the broad lake plain section of the Central Lowlands Province. Exceptions to the nearly flat topography dominant throughout the County are the beach ridges in the southeastern and southwestern parts of the County. Elevation ranges from 575 feet to 810 feet above sea level.

Ottawa County lies entirely within the glaciated part of Ohio. The relief of the County is nearly level to sloping. West of Port Clinton the surface is flat and is a little elevated above Lake Erie. East of Port Clinton the relief is gently rolling.

As shown in the following pie charts, the land use/land cover in this area is primarily cropland. As expected Lucas County has the highest percentage of urban area with 36 percent.

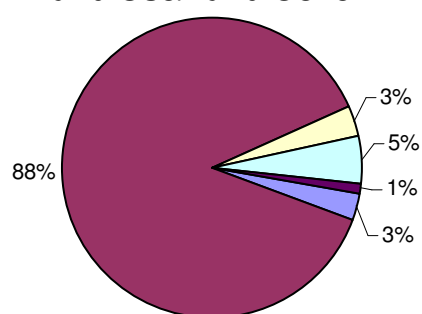


### Hancock County Land Use/Land Cover



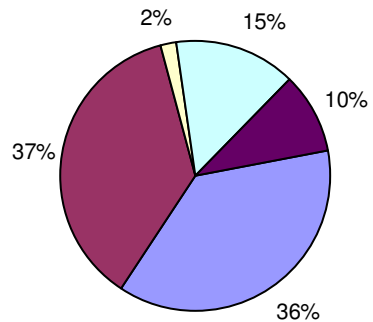
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- Cropland
- Pasture
- Forest
- Wetlands All Types

### Henry County Land Use/Land Cover



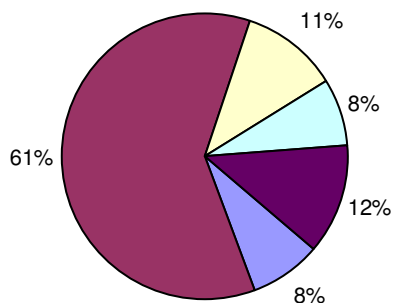
- Urban (Res/Comm/Ind/Trans/Grasses)
- Cropland
- Pasture
- Forest
- Wetlands All Types

### Lucas County Land Use/Land Cover



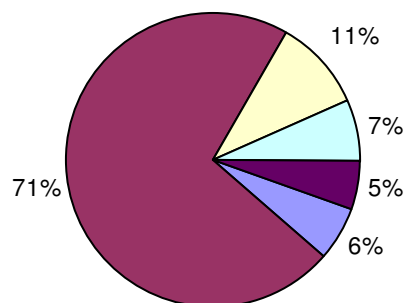
- Urban (Res/Comm/Ind/Trans/Grasses)
- Cropland
- Pasture
- Forest
- Wetlands All Types

### Ottawa County Land Use/Land Cover



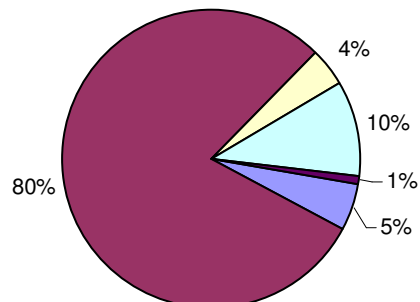
■ Urban (Res/Comm/Ind/Trans/Grasses)  
■ Cropland  
■ Pasture  
■ Forest  
■ Wetlands All Types

### Sandusky County Land Use/Land Cover

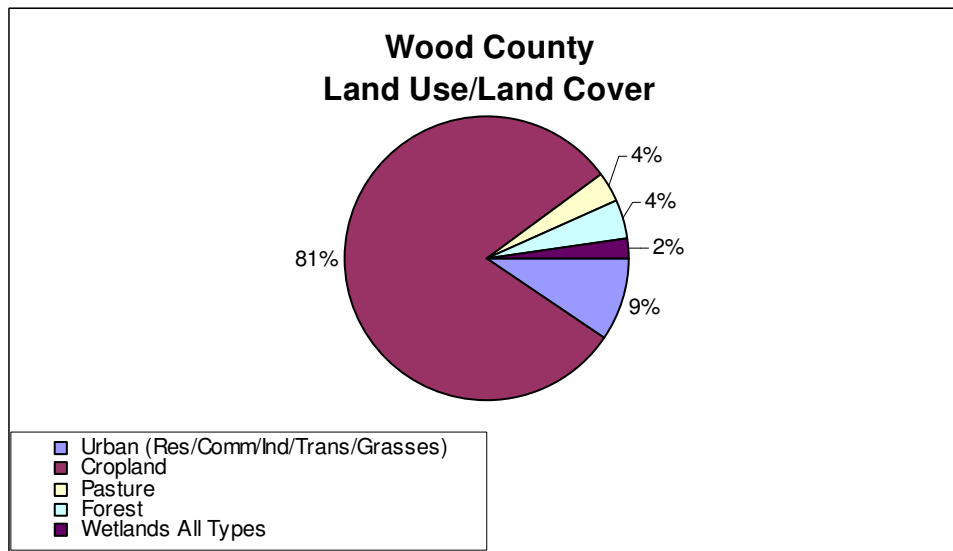


■ Urban (Res/Comm/Ind/Trans/Grasses)  
■ Cropland  
■ Pasture  
■ Forest  
■ Wetlands All Types

### Seneca County Land Use/Land Cover



■ Urban (Res/Comm/Ind/Trans/Grasses)  
■ Cropland  
■ Pasture  
■ Forest  
■ Wetlands All Types



**Factor 7: Jurisdictional boundaries**

The Toledo, OH MSA includes: Fulton, Lucas, Ottawa, and Wood Counties. The principal city is Toledo. There is no CSA for this area.

The Toledo Metropolitan Area Council of Governments (TMACOG) is the planning agency designated as the Metropolitan Planning Organization for the greater Toledo area. The TMACOG region is composed of three Counties in two States: Lucas and Wood Counties in Ohio and Monroe County in Michigan.

**Factor 8: Level of control of emission sources**

Please refer to the factor 8 general discussion at the beginning of this document for applicable control information for this area.



**Wheeling, WV-OH:**

**Current** County nonattainment: none

**Current nonattainment Counties**

***Recommended*** County nonattainment: Belmont

 Recommended nonattainment Counties



## **Discussion:**

There is one Ohio County and two West Virginia Counties in this existing ozone designation area: Belmont County in Ohio and Marshall and Ohio Counties in West Virginia. The monitor used for this area is located in West Virginia. Belmont County was initially designated nonattainment for the 1997 ozone standard and then was redesignated to attainment in June 2007. With respect to the new standard, Ohio EPA recommends designating Belmont County as nonattainment for ozone due to one monitor in Ohio County, WV not meeting the revised standard. There are three adjacent Counties to Belmont County included in this section: Guernsey, Noble and Monroe. Harrison and Jefferson Counties are discussed in the Steubenville-Weirton section of this document.

The three-year average of the annual fourth-highest daily maximum eight-hour average concentration at the monitor site in Ohio County, WV is not attaining the revised standard as indicated under factor 1 below. Emissions of VOC and NOx in all Ohio Counties are very small.


Ohio EPA is not recommending any additional adjacent Counties for nonattainment designations in this area. The Counties in this area have low population and growth, low KDVT with no significant levels of commuters, and low emissions. Marshall County, West Virginia has high levels of NOx emissions.

### **Factor 1: Air quality data**

#### **Ohio**

**There are no monitors in applicable areas of Ohio.**



#### **West Virginia**

 = Exceeds standard

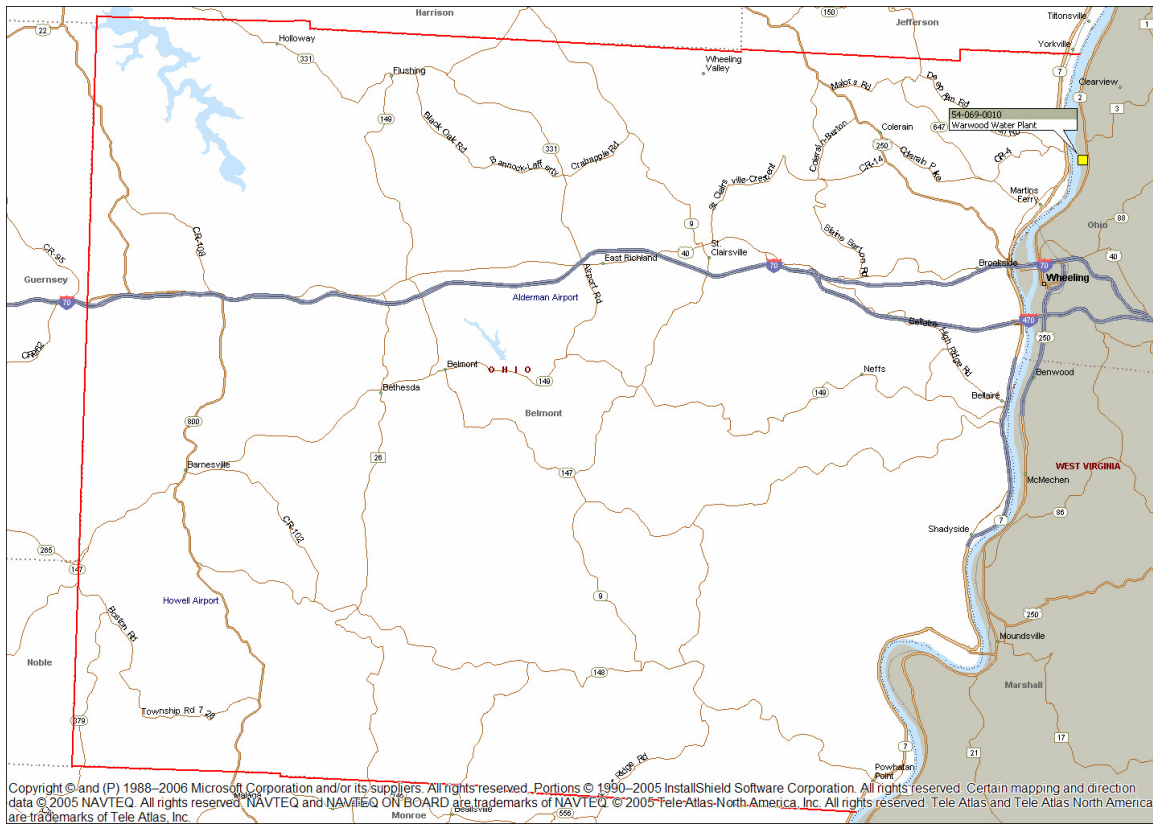
AQS: 8-Hour three-year average of the annual fourth-highest daily maximum (ppb)

Site Area County	Year	Highest Daily Maximum Concentrations (ppb)			
		1	2	3	4

54-069-1010 Wheeling Ohio Co.	2006	85	83	79	79
	2007	81	81	81	80
	2008	75	74	72	72
	Avg				77.0

 Sites with less than 75% capture for a given year  
 Sites with less than 90% capture for the 3-year period

## Wheeling WV-OH Area Ozone Monitor Locations and Site ID Numbers



### Factor 2: Emissions data (tons per day)

#### Ohio

2005		
County	VOC	NO <sub>x</sub>
<b>BELMONT</b>	<b>10.65</b>	<b>21.79</b>
Monroe	3.19	3.32
Noble	2.41	2.54
Guernsey	9.12	12.86

2009		
County	VOC	NO <sub>x</sub>
<b>BELMONT</b>	<b>8.37</b>	<b>19.74</b>
Monroe	2.89	2.71
Noble	2.10	2.02
Guernsey	7.62	11.30

**West Virginia (Does not include on-road data)**

<b>2005</b>		
<b>County</b>	<b>VOC</b>	<b>NO<sub>x</sub></b>
MARSHALL	7.23	95.96
<b>OHIO</b>	<b>5.19</b>	<b>4.66</b>

<b>2009</b>		
<b>County</b>	<b>VOC</b>	<b>NO<sub>x</sub></b>
MARSHALL	4.43	84.23
<b>OHIO</b>	<b>2.40</b>	<b>2.67</b>

**Major Employers:**

Source: Ohio Department of Development 2007

Most of the major employers in the Wheeling area are in the categories of government, government and service as shown below.

**Belmont County**

Barnesville Hospital Assn	Service
Belmont Community Hospital	Service
Belmont County Government	Government
Belmont County Technical College	Government
Commercial Vehicle Group/Mayflower	Manufacturing
East Ohio regional Hospital	Service
Kroger Co	Trade
Ohio Valley Coal Co	Mining
State of Ohio	Government
Wal-Mart Stores Inc	Trade
Wheeling-Pittsburgh Steel Corp	Manufacturing

**Guernsey County**

Cambridge City Bd of Ed	Government
Daimler AG/Detroit Diesel	Manufacturing
Colgate-Palmolive Co	Manufacturing
Federal-Mogul Corp	Manufacturing
Guernsey County Government	Government
Plastech Engineered Products	Manufacturing
Southeastern Ohio regional Medical Center	Service
State of Ohio	Government
Wal-Mart Stores Inc	Trade

### Monroe County

Extendicare/Woodsfield Nursing Center	Service
Monroe County Government	Government
Ormet Corp	Manufacturing
Riesbeck Food Markets	Trade
Safe Auto Insurance Group	Service
Slay Transportation Co Inc	Transportation
Switzerland of Ohio Local Bd of Ed	Government

### Noble County

Caldwell Exempted Village Bd of Ed	Government
MAHLE International	Manufacturing
Noble County Government	Government
Noble Local Bd of Ed	Government
Packaging Dynamics/Intl Converter	Manufacturing
State of Ohio	Government
Summit Acres	Service

### Factor 3: Population and Projected Growth

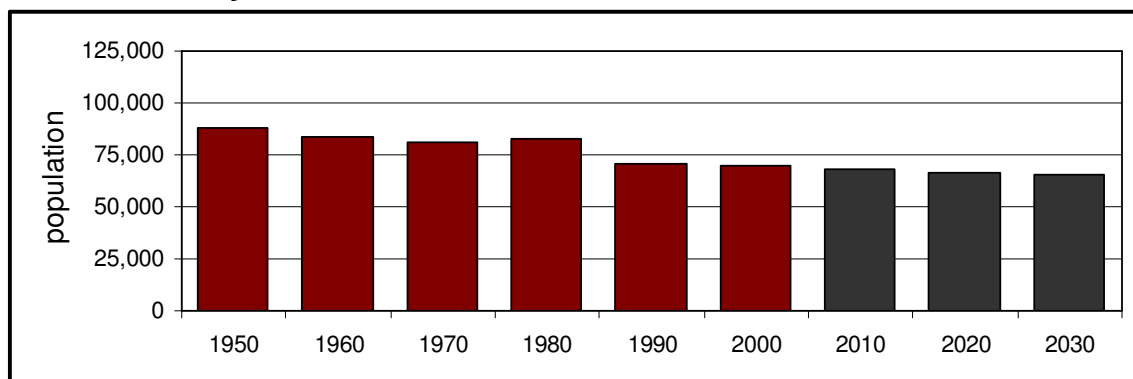
U.S. Census Bureau Population Estimates Program 2007

The primary urban areas in Belmont County are St. Clairsville and Martins Ferry; in Monroe County, Woodsfield and Graysville; in Noble County, Caldwell; and in Guernsey County, Cambridge.

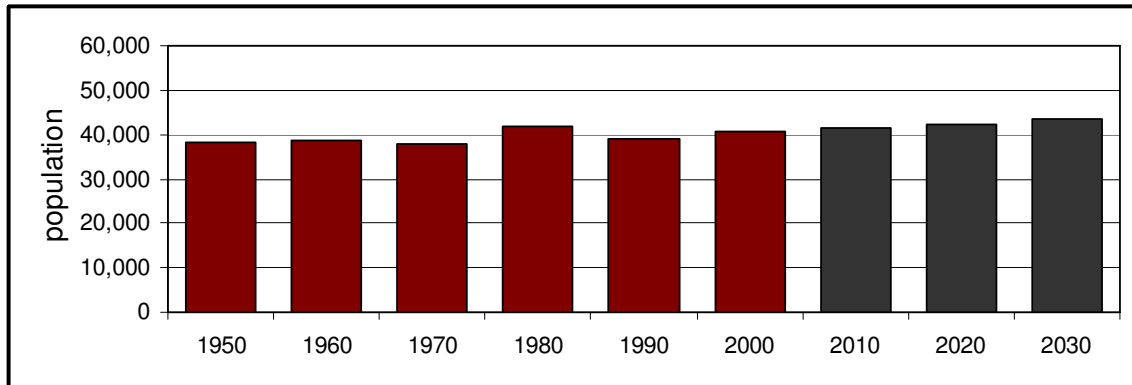
As indicated in the following table and graphs, Belmont County has the highest population in this area, and it is projected to steadily decrease. The populations in the surrounding Counties are projected to remain generally constant with only minor changes in the future.

	2004	2005	2006	2007	2010	2020	2030
<b>Belmont</b>	69,444	69,089	68,771	67,908	68,030	66,810	65,340
Monroe	14,927	14,736	14,606	14,258	14,800	14,280	13,490
Noble	14,172	14,097	14,165	14,096	15,370	16,230	16,690
Guernsey	41,185	41,007	40,876	40,409	41,400	42,480	43,360

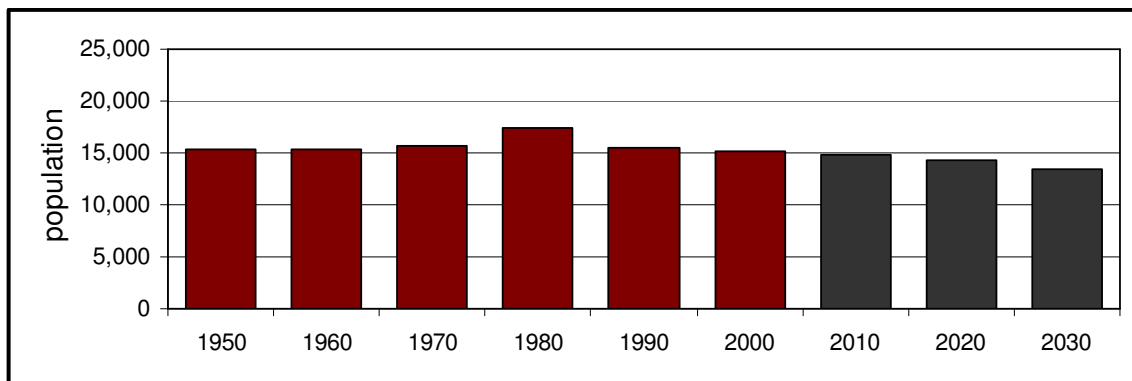
### Belmont County



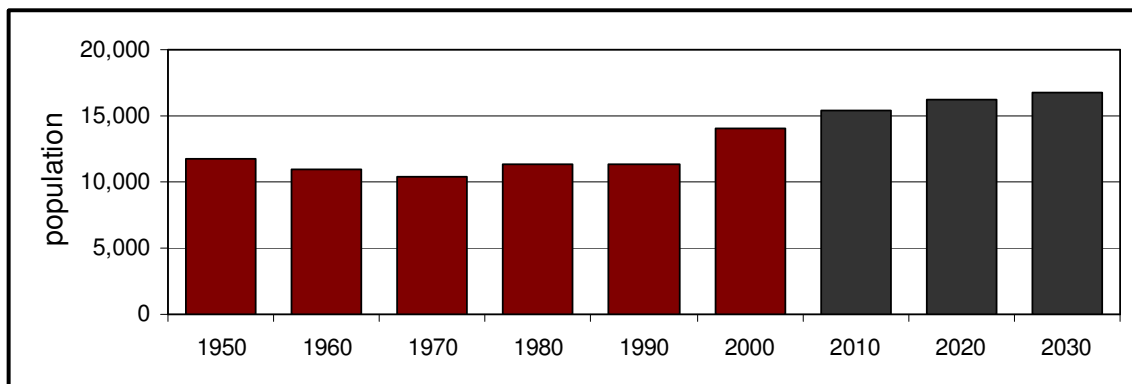
### Guernsey County



### Monroe County



### Noble County

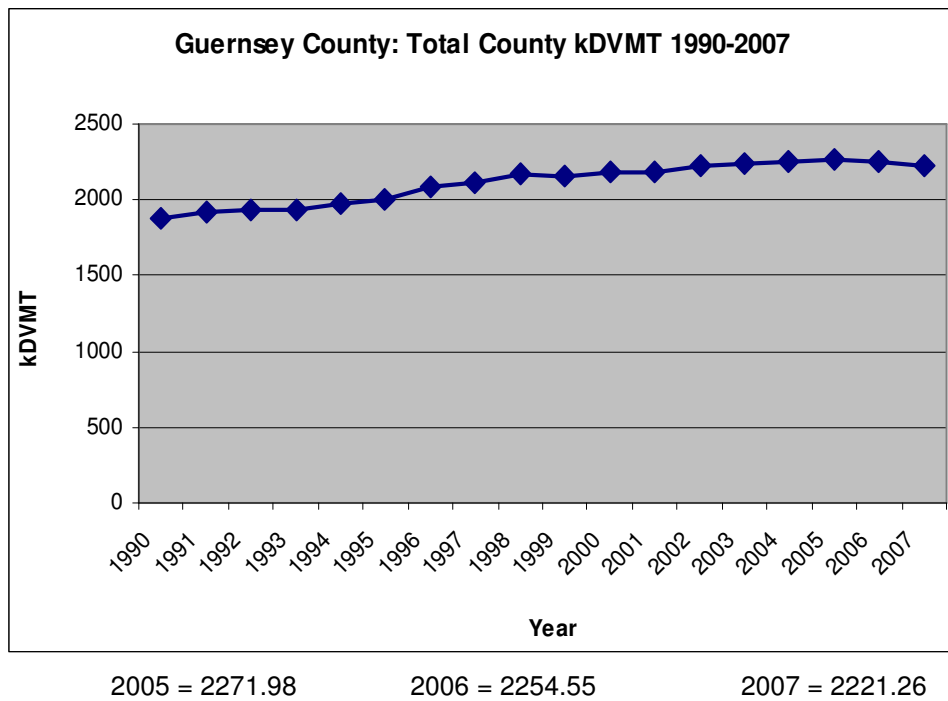
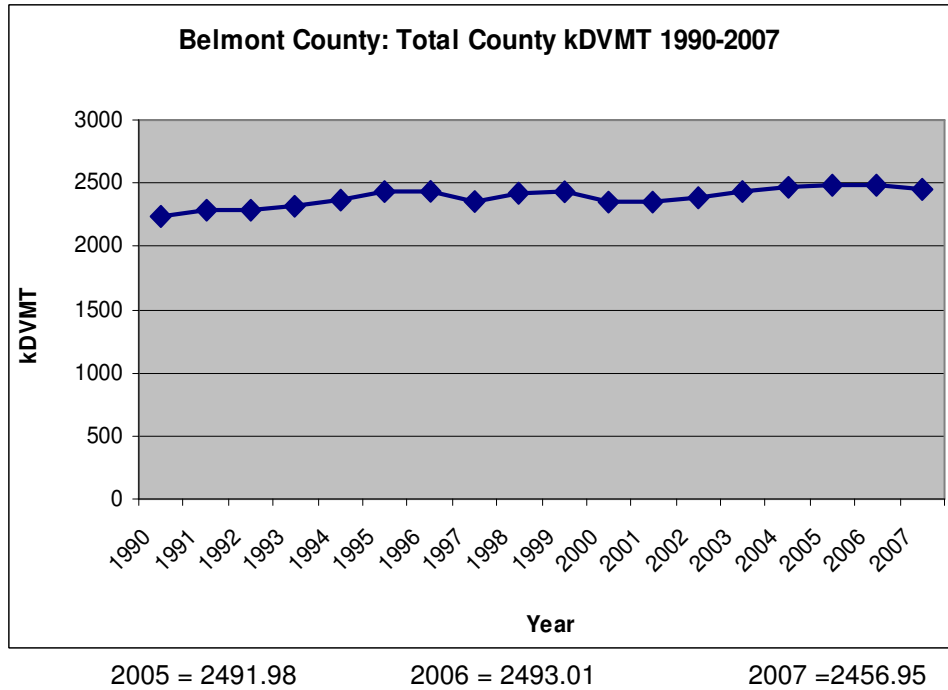


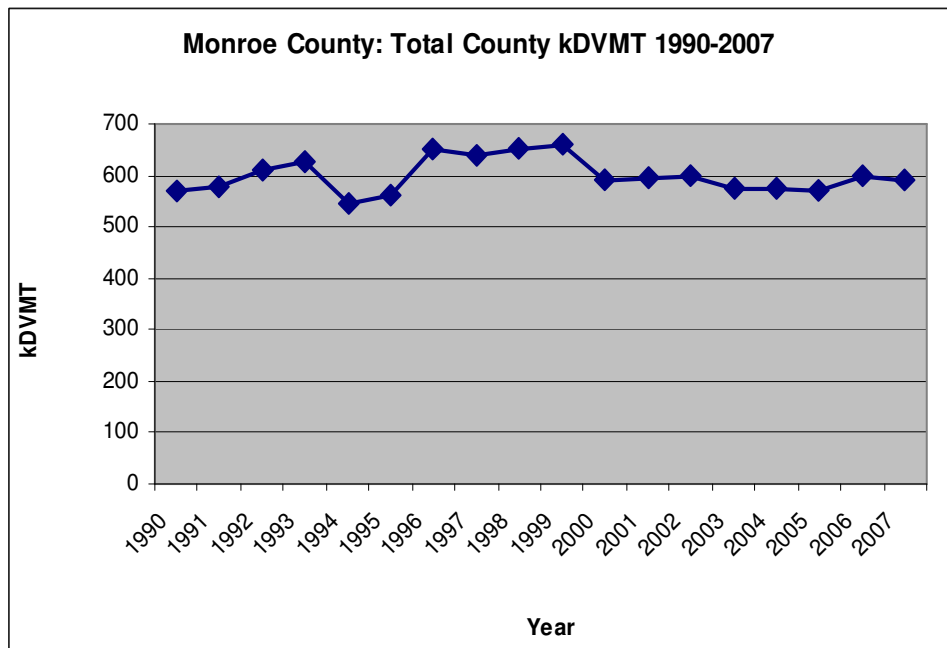
### Factor 4: Traffic and commuting patterns

Belmont and Guernsey Counties have the highest kDVMT in this area. Between 2005 and 2007, all Counties have shown a slight decrease in kDVMT as shown in the graphs below.

### Estimated Vehicle Miles Traveled (kDVMT = in thousands)

Source: Ohio Department of Transportation, Office of Technical Services

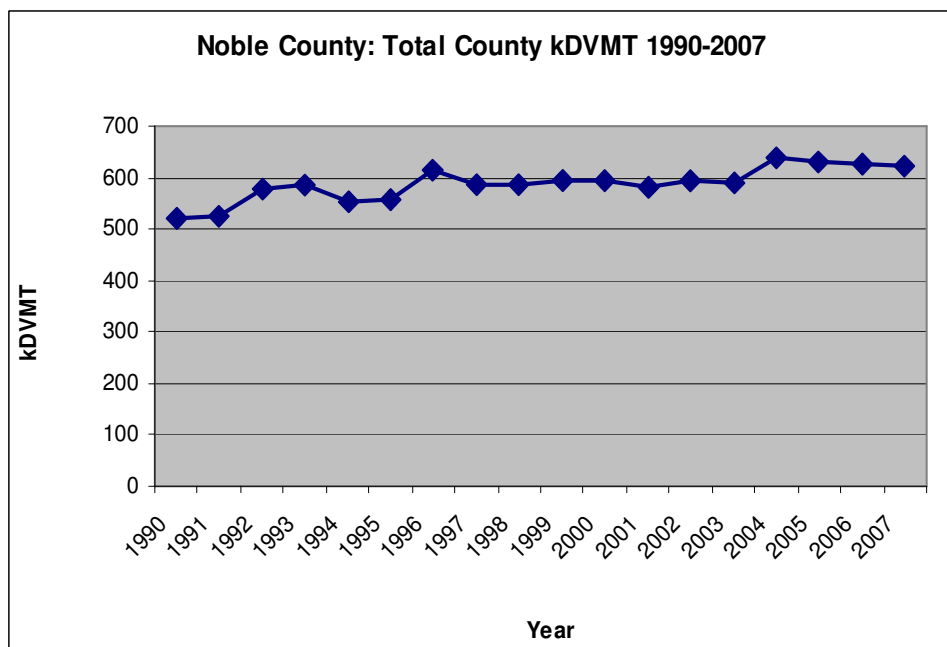




2005 = 569.63

2006 = 600.06

2007 = 590.58



2005 = 629.96

2006 = 625.29

2007 = 621.98

### **Commuter Patterns**

Source: Office of Strategic Research, Ohio Department of Development  
U.S. Census Bureau, 2000

Commuting in the Wheeling area is minimal as shown in the tables below. The largest number of commuters is from Belmont County traveling into Ohio County, WV. Each of the adjacent Counties has commuters traveling into Belmont County, but the number is insignificant.



Belmont	Percent of workers that work outside the County		36.0%
	Average commute time in minutes -		23.5
Number of workers 16+ years of age living in Belmont County			27,889
Commute Out To	Number	Percent	
Ohio Co. WV	4,603	16.5%	
Jefferson Co. OH	1,129	4.0%	
Marshall Co. WV	1,064	3.8%	
Monroe Co. OH	626	2.2%	
Guernsey Co. OH	466	1.7%	
Harrison Co. OH	280	1.0%	
Wetzel Co. WV	227	0.8%	
Allegheny Co. PA	206	0.7%	
Franklin Co. OH	141	0.5%	
Washington Co. PA	138	0.5%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Belmont County			23,944
Commute In From	Number	Percent	
Ohio Co. WV	1,876	7.8%	
Jefferson Co. OH	1,236	5.2%	
Marshall Co. WV	858	3.6%	
Monroe Co. OH	596	2.5%	
Harrison Co. OH	361	1.5%	
Guernsey Co. OH	318	1.3%	
Brooke Co. WV	155	0.6%	
Noble Co. OH	103	0.4%	
Washington Co. PA	75	0.3%	
Muskingum Co. OH	38	0.2%	
Percent is of workers working in County.			

Guernsey	Percent of workers that work outside the County		26.4%
	Average commute time in minutes -		23.7
Number of workers 16+ years of age living in Guernsey County			16,644
Commute Out To	Number	Percent	
Muskingum Co. OH	1,815	10.9%	
Noble Co. OH	438	2.6%	
Franklin Co. OH	396	2.4%	
Belmont Co. OH	318	1.9%	
Tuscarawas Co. OH	249	1.5%	
Coshocton Co. OH	210	1.3%	
Licking Co. OH	127	0.8%	
Stark Co. OH	88	0.5%	
Summit Co. OH	81	0.5%	
Cuyahoga Co. OH	52	0.3%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Guernsey County			15,528
Commute In From	Number	Percent	
Noble Co. OH	1,069	6.9%	
Muskingum Co. OH	793	5.1%	
Belmont Co. OH	466	3.0%	
Tuscarawas Co. OH	153	1.0%	
Coshocton Co. OH	94	0.6%	
Monroe Co. OH	84	0.5%	
Washington Co. OH	83	0.5%	
Morgan Co. OH	80	0.5%	
Perry Co. OH	56	0.4%	
Franklin Co. OH	39	0.3%	
Percent is of workers working in County.			

Monroe	Percent of workers that work outside the County		38.5%
	Average commute time in minutes -		30.8
Number of workers 16+ years of age living in Monroe County			5,768
Commute Out To	Number	Percent	
Belmont Co. OH	596	10.3%	
Wetzel Co. WV	532	9.2%	
Washington Co. OH	237	4.1%	
Marshall Co. WV	145	2.5%	
Noble Co. OH	132	2.3%	
Ohio Co. WV	111	1.9%	
Guernsey Co. OH	84	1.5%	
Tyler Co. WV	57	1.0%	
Wood Co. WV	46	0.8%	
Franklin Co. OH	29	0.5%	
Percent is of workers living in County.			

Number of workers 16+ years of age working in Monroe County			5,346
Commute In From	Number	Percent	
Belmont Co. OH	626	11.7%	
Wetzel Co. WV	447	8.4%	
Washington Co. OH	221	4.1%	
Marshall Co. WV	122	2.3%	
Tyler Co. WV	102	1.9%	
Noble Co. OH	67	1.3%	
Ohio Co. WV	36	0.7%	
Lucas Co. OH	33	0.6%	
Franklin Co. OH	28	0.5%	
Montgomery Co. OH	15	0.3%	
Percent is of workers working in County.			

Noble	Percent of workers that work outside the County		45.3%
	Average commute time in minutes -		26.7
Number of workers 16+ years of age living in Noble County			5,028
Commute Out To	Number	Percent	
Guernsey Co. OH	1,069	21.3%	
Washington Co. OH	453	9.0%	
Muskingum Co. OH	274	5.4%	
Belmont Co. OH	103	2.0%	
Franklin Co. OH	79	1.6%	
Monroe Co. OH	67	1.3%	
Wood Co. WV	27	0.5%	
Licking Co. OH	24	0.5%	
Summit Co. OH	21	0.4%	
Stark Co. OH	19	0.4%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Noble County			3,796
Commute In From	Number	Percent	
Guernsey Co. OH	438	11.5%	
Washington Co. OH	197	5.2%	
Monroe Co. OH	132	3.5%	
Muskingum Co. OH	76	2.0%	
Belmont Co. OH	70	1.8%	
Morgan Co. OH	25	0.7%	
Wood Co. WV	21	0.6%	
Cuyahoga Co. OH	19	0.5%	
Franklin Co. OH	15	0.4%	
Logan Co. OH	10	0.3%	
Percent is of workers working in County.			

## Factor 5: Meteorology

Please refer to Appendix E for applicable meteorology information for the Wheeling area.

## Factor 6: Topography/Land use/Land cover

Belmont County is in the unglaciated Allegheny Plateau region (see Appendix F). The area has been extensively dissected by drainageways. The topography is varied with rugged, steep to very steep slopes in the eastern part of the County

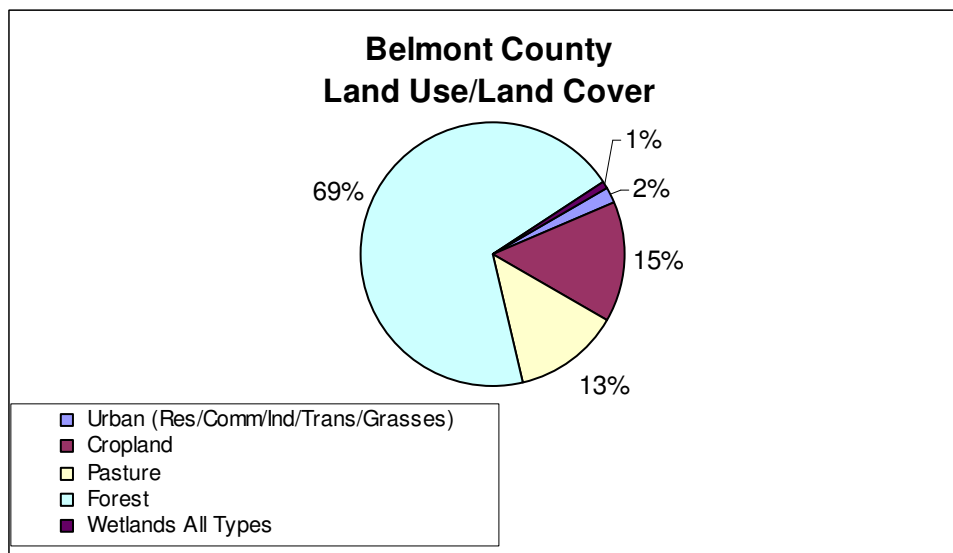
to more gently rolling in the western portion of the County. The highest elevation is 1,397 feet and the lowest is about 625 feet above sea level.

Monroe County is located entirely within the unglaciated Allegheny Plateau region. The County is thoroughly dissected and many of the slopes are steep to very steep. The elevation ranges from about 595 feet to 1,340 feet above sea level.

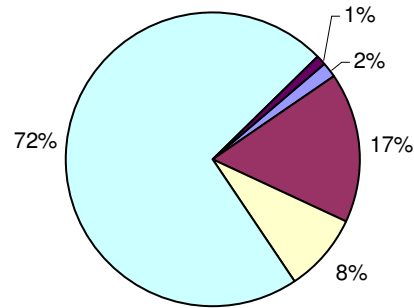
Noble County is also located in the unglaciated Allegheny Plateau region. The relief is mainly steep hills, ridges and many intervening valleys. The highest point is about 1,340 feet and the lowest is 675 feet above sea level.

Guernsey County lies in the Central and Western Allegheny Plateau areas. The County is extensively dissected by drainageways and is characterized by moderately steep to very steep hillsides and relatively narrow valleys that were produced by stream erosion. The elevation ranges from 1,310 feet to 770 feet above sea level.

As shown in the following pie charts, the land use/land cover in this area is predominately characterized as forest area.

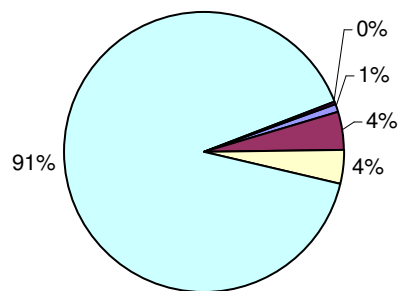


### Guernsey County Land Use/Land Cover



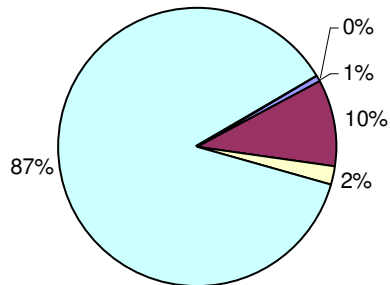
■ Urban (Res/Comm/Ind/Trans/Grasses)  
■ Cropland  
■ Pasture  
■ Forest  
■ Wetlands All Types

### Monroe County Land Use/Land Cover



■ Urban (Res/Comm/Ind/Trans/Grasses)  
■ Cropland  
■ Pasture  
■ Forest  
■ Wetlands All Types

### Noble County Land Use/Land Cover



■ Urban (Res/Comm/Ind/Trans/Grasses)  
■ Cropland  
■ Pasture  
■ Forest  
■ Wetlands All Types

**Factor 7: Jurisdictional boundaries**

The Wheeling, WV-OH MSA includes: Marshall and Ohio Counties in West Virginia and Belmont County in Ohio. The principal city is Wheeling, WV. There is no CSA for this area.

The Belomar Regional Council (Belomar) is the planning agency designated as the Metropolitan Planning Organization for the greater Wheeling, WV area. The Belomar region is composed of three Counties: Marshall and Ohio Counties in WV and Belmont County in OH.

**Factor 8: Level of control of emission sources**

Please refer to the factor 8 general discussion at the beginning of this document for applicable control information for this area.

**Youngstown-Warren-Sharon, PA-OH:**

**Current** County nonattainment: none

**Current nonattainment Counties**

***Recommended*** County nonattainment: Mahoning and Trumbull

 Recommended nonattainment Counties



## **Discussion:**

There are three Counties in this existing ozone designation area: Mahoning, Trumbull and Columbiana Counties. This area was initially designated nonattainment for the 1997 ozone standard and then was redesignated to attainment in June 2007. With respect to the new standard, Ohio EPA recommends that Mahoning and Trumbull Counties be designated as nonattainment for ozone due to monitor exceedances of the revised standard. All Counties adjacent to this area are discussed in other sections of this document- the Canton-Massillon area, Cleveland-Akron-Lorain area, and Steubenville-Weirton area.

The three-year averages of the annual fourth-highest daily maximum eight-hour average concentrations at the two monitor sites in Trumbull County and the one monitor site in Mercer County, PA are not attaining the revised standard as indicated under factor 1 below. However, the monitor in Mahoning County is showing attainment. VOC and NO<sub>x</sub> emissions in all Counties are relatively small.

Ohio EPA is not recommending any additional adjacent Counties for nonattainment designations in this area. The Counties in this area have low population and growth, low kDVMT with no significant levels of commuters, and low emissions.

Although Columbiana County is part of the CSA, but not the MSA, and was included in the ozone designation area for the 1997 standard, Ohio EPA is not recommending Columbiana County for nonattainment designation for the revised standard. Due to low emissions, population, and commuting levels, Columbiana County is not considered a contributing County. Columbiana County is south of Mahoning County whose monitor is showing attainment for the revised standard. Columbiana County has nearly half the population (108,698 in 2007) and approximately half the emissions of the other existing ozone designation Counties. Emissions of VOC and NO<sub>x</sub> are projected to decrease by 19.2% and 21.2%, respectively, from 2005 to 2009. Population projections show expected overall declines in all the ozone designation area through 2030. All of the existing ozone designation Counties have had a slight decline in kDMVT from 2006 to 2007. Columbiana County has experienced a very steady downward trend in kDVMT for the past several years. There is not a significant amount of commuting occurring between Columbiana County and the existing ozone designation Counties. For those who work in Mahoning County, 7.2% commute from Columbiana; while for those who work in Trumbull County, 1.7% commute from Columbiana.

## Factor 1: Air quality data

### Ohio

 = Exceeds standard



AQS: 8-Hour three-year average of the annual fourth-highest daily maximum (ppb)

Site Area County	Year	Highest Daily Maximum Concentrations (ppb)			
		1	2	3	4

39-099-0013 Youngstown Mahoning Co.	2006	81	80	77	76
	2007	85	82	81	79
	2008	75	73	71	71
	Avg				75.3

39-155-0011 Youngstown Trumbull Co.	2006	83	82	82	82
	2007	84	83	83	80
	2008	80	78	78	77
	Avg				79.7

39-155-0009 Youngstown Trumbull Co.	2006	89	86	75	74
	2007	92	86	84	81
	2008	82	77	76	76
	Avg				77.0

 Sites with less than 75% capture for a given year  
 Sites with less than 90% capture for the 3-year period

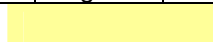

### Pennsylvania

 = Exceeds standard

AQS: 8-Hour three-year average of the annual fourth-highest daily maximum (ppb)

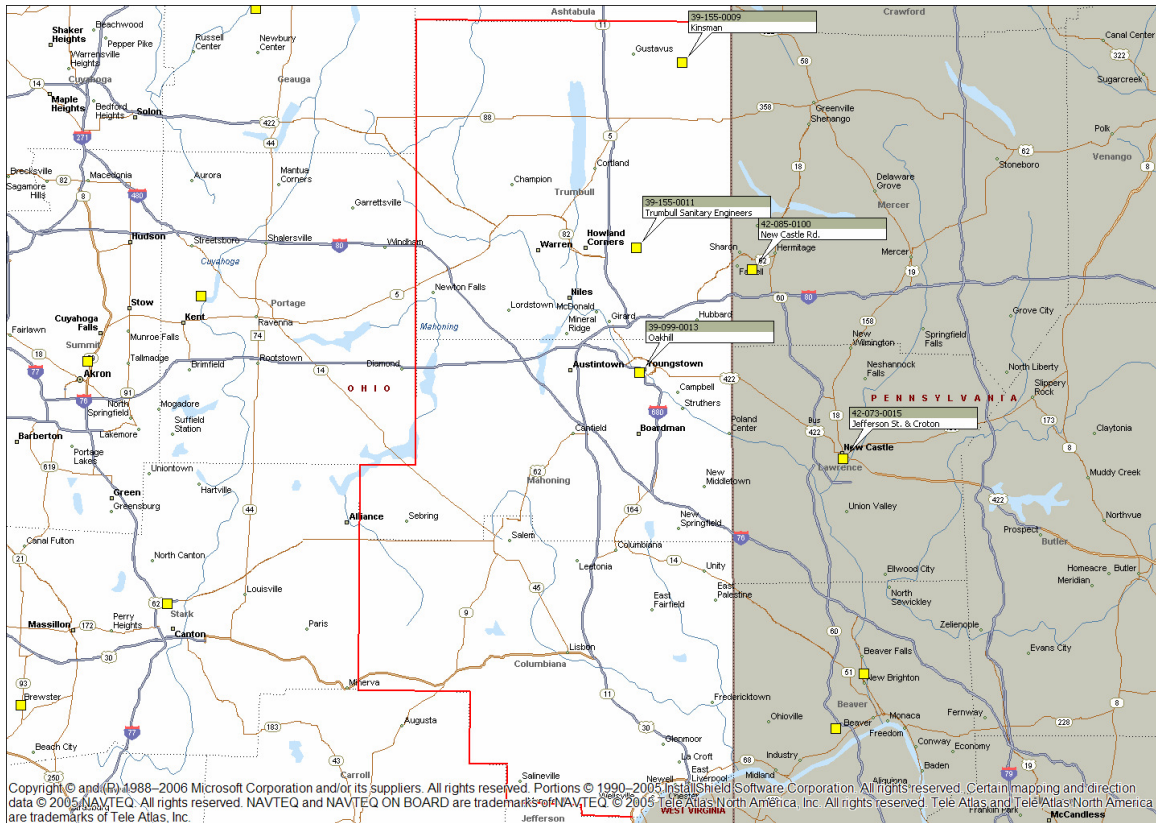
Site Area County	Year	Highest Daily Maximum Concentrations (ppb)			
		1	2	3	4

42-085-0100 Farrell Mercer Co.	2006	93	86	86	79
	2007	86	85	84	83
	2008	85	84	81	78
	Avg				80.0

 Sites with less than 75% capture for a given year  
 Sites with less than 90% capture for the 3-year period



## Youngstown-Warren-Sharon Area Ozone Monitor Locations and Site ID Numbers



### Factor 2: Emissions data (tons per day)

2005		
County	VOC	NO <sub>x</sub>
MAHONING	27.80	28.63
TRUMBULL	35.05	37.09
COLUMBIANA	14.12	14.19

2009		
County	VOC	NO <sub>x</sub>
MAHONING	21.79	21.46
TRUMBULL	28.98	21.52
COLUMBIANA	11.41	11.18

## Pennsylvania (Does not include on-road data)

2005		
County	VOC	NO <sub>x</sub>
Mercer, PA	12.75	6.57
Lawrence, PA	7.17	18.80

2009		
County	VOC	NO <sub>x</sub>
Mercer, PA	7.32	5.11
Lawrence, PA	4.02	19.92

### Major Employers:

Source: Ohio Department of Development 2007

Most of the major employers in the Youngstown-Warren area are in the categories of government, service and manufacturing as shown in the tables below.

#### Columbiana County

Bain Capital/American Standard Inc	Manufacturing
Blackhawk Automotive Plastics Inc	Manufacturing
Columbiana County Government	Government
East Liverpool City Bd of Ed	Government
East Liverpool City Hospital	Service
Fresh Mark Inc	Manufacturing
Salem City Bd of Ed	Government
Salem Community Hospital	Service
Wal-Mart Stores Inc	Trade

#### Mahoning County

Austintown Local Bd of Ed	Government
Boardman Local Bd of Ed	Government
Forum Health	Service
HM Health Partners	Service
Mahoning County Government	Government
UCFC/Home Savings & Loan Co	Finance
Wal-Mart Stores Inc	Trade
Youngstown City Bd of Ed	Government
Youngstown State University	Government

## Trumbull County

Delphi Corp	Manufacturing
Forum Health	Service
General Motors Corp	Manufacturing
Giant Eagle Inc	Trade
HM Health Services	Service
Sears Holdings/Kmart Corp	Trade
Trumbull County Government	Government
Warren City Bd of Ed	Government
West Corp	Service
WCI Steel Inc	Manufacturing

## Factor 3: Population and Projected Growth

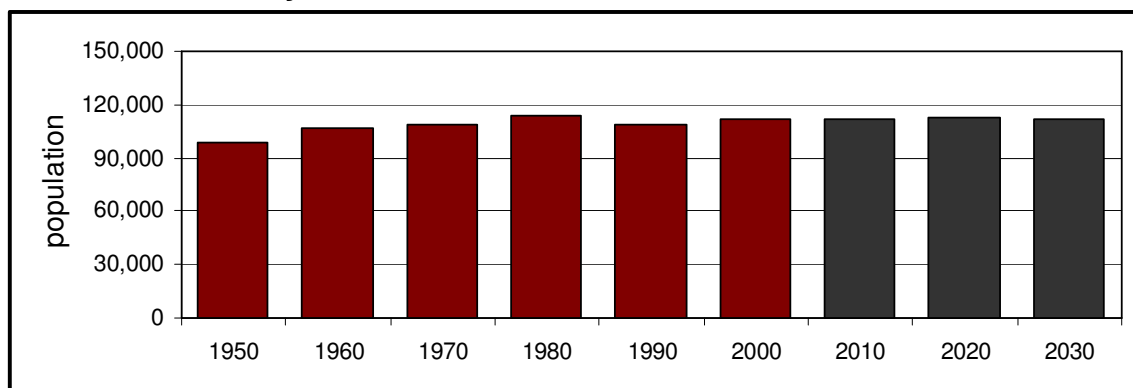
Sources: Office of Strategic Research, Ohio Department of Development  
U.S. Census Bureau Population Estimates Program 2007

The primary urban areas are: in Trumbull County, Warren and Niles; in Mahoning County, Youngstown; and in Columbiana County, E. Liverpool.

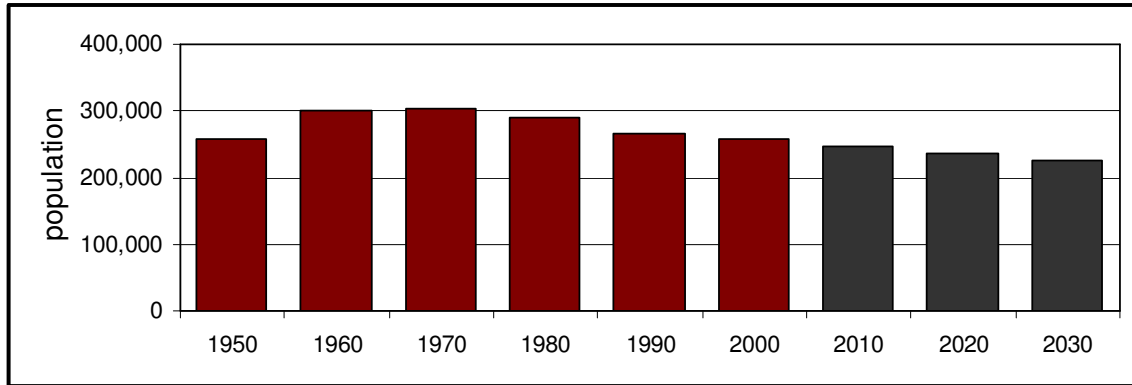
As indicated in the following table and graphs, Mahoning County has the highest population in this area and it is projected to steadily decrease. The population in Trumbull County is also projected to decrease. The population in Columbiana County remains generally constant with a projected slight increase.

	2004	2005	2006	2007	2010	2020	2030
<b>Mahoning</b>	255,538	253,181	251,026	240,420	245,760	235,350	226,800
Trumbull	220,184	218,672	217,362	213,475	218,730	211,100	200,990
Columbiana	111,287	110,636	110,542	108,698	111,950	112,520	112,000

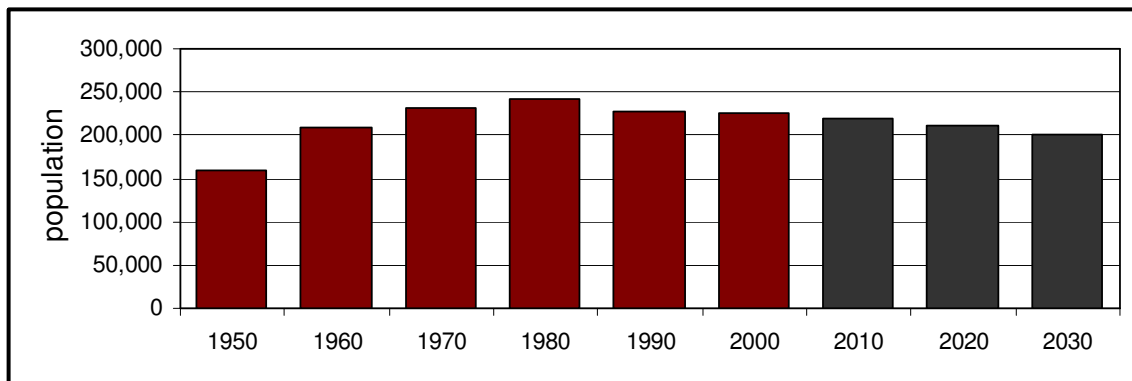
## Columbiana County



## Mahoning County



## Trumbull County

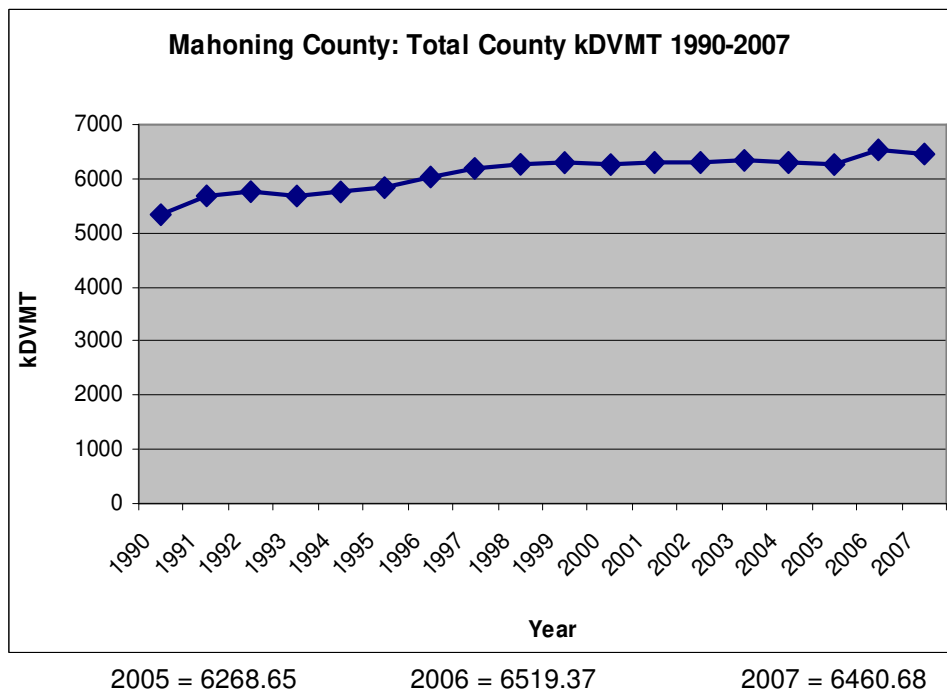
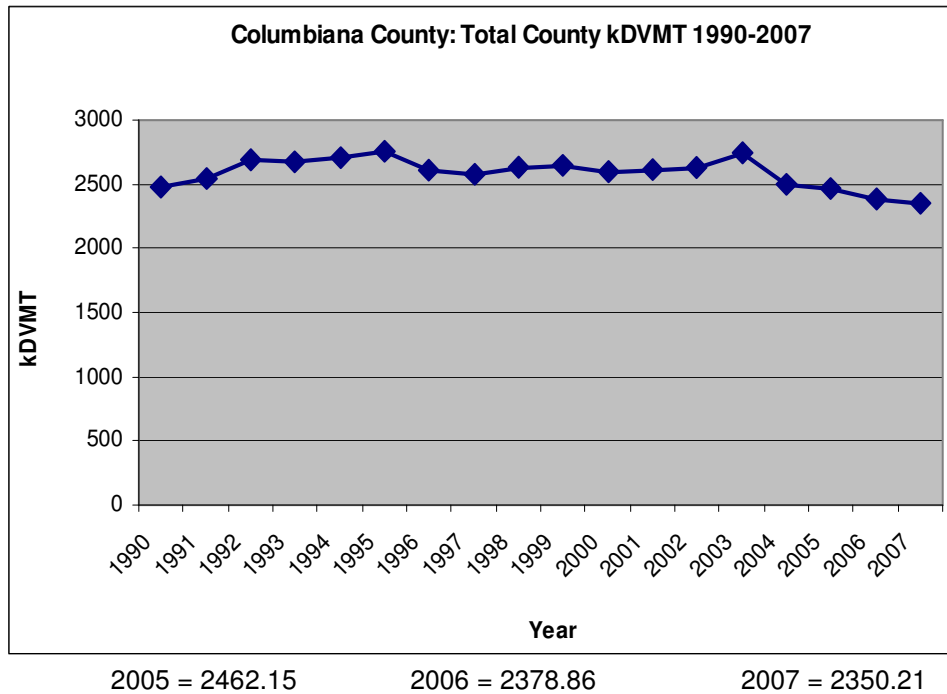


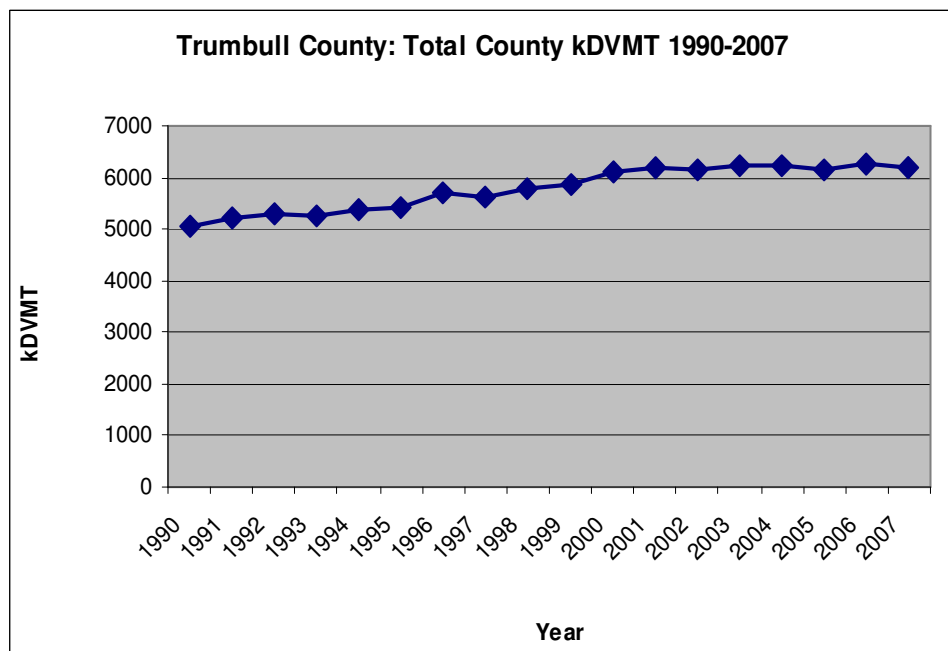
### Factor 4: Traffic and commuting patterns

The kDVMT in Mahoning and Trumbull Counties have had an upward trend, although values did drop from 2006 to 2007. Columbiana County has experienced a very steady downward trend in kDVMT between 2005 and 2007, as shown in the graphs below.

## Estimated Daily Vehicle Miles Traveled (kDVMT = in thousands)

Source: Ohio Department of Transportation, Office of Technical Services





2005 = 6147.35

2006 = 6260.72

2007 = 6184.11

### **Commuter Patterns**

Source: Office of Strategic Research, Ohio Department of Development  
U.S. Census Bureau, 2000

Trumbull and Columbiana combined have about 20,000 workers commuting to Mahoning County. The largest portion of Mahoning County workers commuting outside the County, travel to Trumbull County.

Columbiana	Percent of workers that work outside the County		39.5%
	Average commute time in minutes -		22.7
Number of workers 16+ years of age living in Columbiana County			49,461
Commute Out To	Number	Percent	
Mahoning Co. OH	7,371	14.9%	
Stark Co. OH	3,306	6.7%	
Beaver Co. PA	1,889	3.8%	
Trumbull Co. OH	1,719	3.5%	
Hancock Co. WV	1,488	3.0%	
Allegheny Co. PA	735	1.5%	
Jefferson Co. OH	517	1.0%	
Summit Co. OH	464	0.9%	
Carroll Co. OH	453	0.9%	
Portage Co. OH	316	0.6%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Columbiana County			37,705
Commute In From	Number	Percent	
Mahoning Co. OH	3,684	9.8%	
Hancock Co. WV	831	2.2%	
Stark Co. OH	640	1.7%	
Jefferson Co. OH	632	1.7%	
Beaver Co. PA	443	1.2%	
Trumbull Co. OH	344	0.9%	
Carroll Co. OH	297	0.8%	
Portage Co. OH	182	0.5%	
Lawrence Co. PA	152	0.4%	
Allegheny Co. PA	88	0.2%	
Percent is of workers working in County.			

Mahoning	Percent of workers that work outside the County		29.7%
	Average commute time in minutes -		21.5
Number of workers 16+ years of age living in Mahoning County			109,102
Commute Out To	Number	Percent	
Trumbull Co. OH	19,210	17.6%	
Columbiana Co. OH	3,684	3.4%	
Stark Co. OH	2,548	2.3%	
Portage Co. OH	1,171	1.1%	
Cuyahoga Co. OH	1,117	1.0%	
Summit Co. OH	1,096	1.0%	
Lawrence Co. PA	718	0.7%	
Mercer Co. PA	624	0.6%	
Allegheny Co. PA	508	0.5%	
Beaver Co. PA	224	0.2%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Mahoning County			102,992
Commute In From	Number	Percent	
Trumbull Co. OH	12,003	11.7%	
Columbiana Co. OH	7,371	7.2%	
Lawrence Co. PA	1,620	1.6%	
Stark Co. OH	1,158	1.1%	
Mercer Co. PA	1,083	1.1%	
Portage Co. OH	603	0.6%	
Summit Co. OH	460	0.4%	
Cuyahoga Co. OH	268	0.3%	
Beaver Co. PA	172	0.2%	
Allegheny Co. PA	159	0.2%	
Percent is of workers working in County.			

Trumbull	Percent of workers that work outside the County		27.1%
	Average commute time in minutes -		21.0
Number of workers 16+ years of age living in Trumbull County			97,485
Commute Out To	Number	Percent	
Mahoning Co. OH	12,003	12.3%	
Geauga Co. OH	3,900	4.0%	
Mercer Co. PA	2,457	2.5%	
Cuyahoga Co. OH	1,976	2.0%	
Portage Co. OH	1,863	1.9%	
Summit Co. OH	1,038	1.1%	
Ashtabula Co. OH	892	0.9%	
Columbiana Co. OH	344	0.4%	
Lawrence Co. PA	251	0.3%	
Stark Co. OH	202	0.2%	
Percent is of workers living in County.			
Number of workers 16+ years of age working in Trumbull County			100,101
Commute In From	Number	Percent	
Mahoning Co. OH	19,210	19.2%	
Mercer Co. PA	2,805	2.8%	
Columbiana Co. OH	1,719	1.7%	
Portage Co. OH	1,449	1.4%	
Lawrence Co. PA	653	0.7%	
Ashtabula Co. OH	485	0.5%	
Summit Co. OH	447	0.4%	
Geauga Co. OH	310	0.3%	
Cuyahoga Co. OH	281	0.3%	
Stark Co. OH	172	0.2%	
Percent is of workers working in County.			

## Factor 5: Meteorology

Please refer to Appendix E for applicable meteorology information for the Youngstown-Warren area.

## Factor 6: Topography/Land use/Land cover

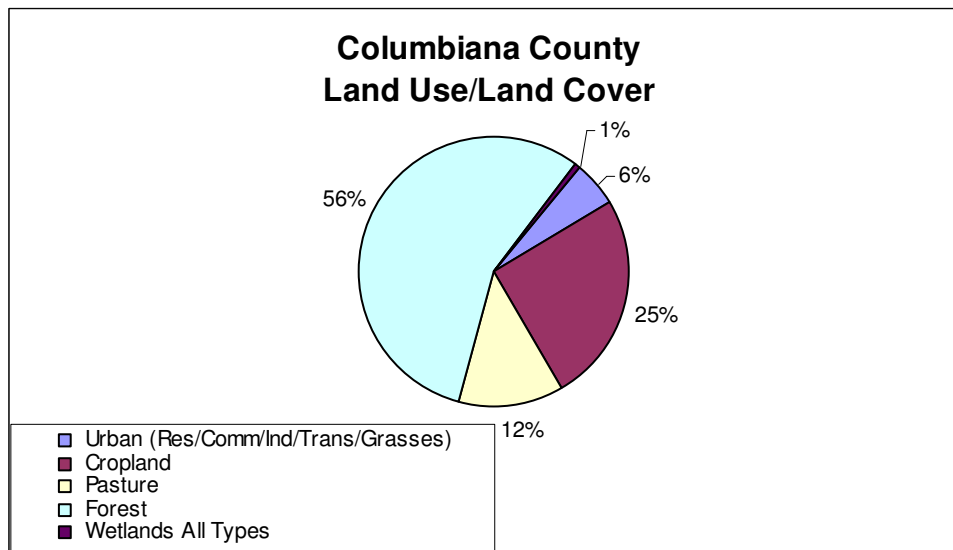
Mahoning County is in the glaciated part of the Allegheny Plateau region (see Appendix F). The northeastern part of the County contains some sloping to steep areas, mainly along the Mahoning River. The central and northern parts are mostly a nearly level plateau, where the average elevation is about 1,150 feet.

The highest point in the County is 1,320 feet and the lowest point is 800 feet above sea level.

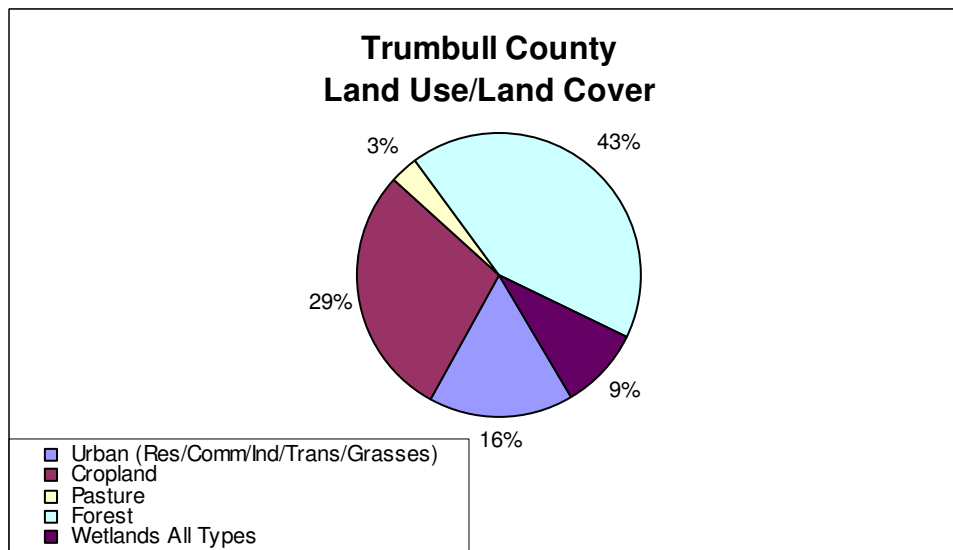
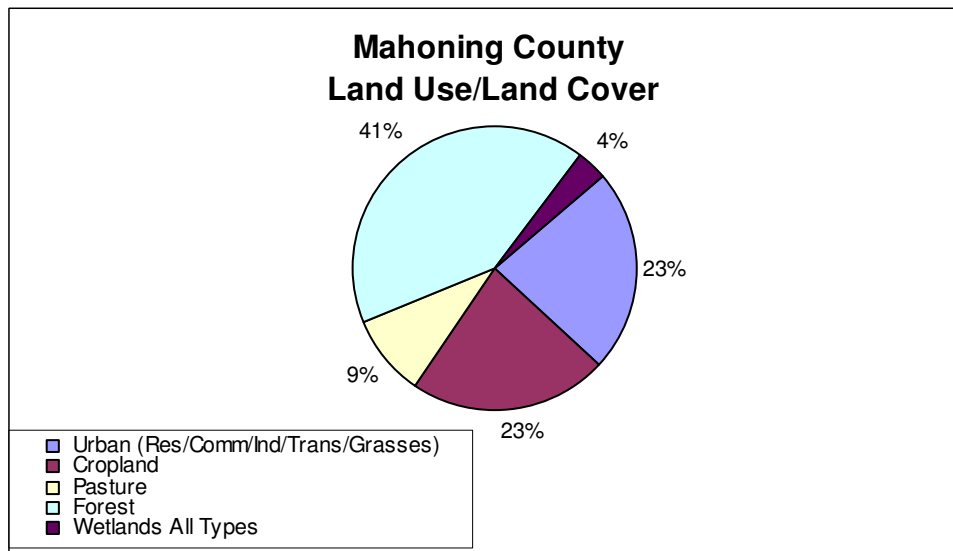
Trumbull County is in the glaciated Appalachian Plateau region. The northern, western and south-central parts of the County generally are nearly level and gently sloping. The lowest elevation is 795 feet and the highest is 1,280 feet above sea level.

Columbiana County, like Trumbull and Mahoning Counties, lies within the glaciated Allegheny Plateau Province, with the southern third of the County on the edge of the unglaciated Allegheny Plateau Province. Topography varies from rolling uplands in the northern part of the County to higher relief and steep uplands in the central area and a more rugged landscape in the unglaciated portion in the southern part of the County.

As shown in the following pie charts, the land use/land cover in these Counties is predominately characterized as forest and cropland. Mahoning County has the highest percentage of urban area at 23 percent.







## Factor 7: Jurisdictional boundaries

The Youngstown-Warren-Boardman, OH-PA MSA includes: Mahoning and Trumbull Counties in Ohio and Mercer County in Pennsylvania. The principal cities are Youngstown and Warren in Ohio. The CSA also includes Columbiana County.

The Eastgate Regional Council of Governments (Eastgate) is the planning agency designated as the Metropolitan Planning Organization for the greater Youngstown area. The Eastgate region is composed of three Counties in two states: Mahoning and Trumbull Counties in Ohio and Mercer County in Pennsylvania.

## Factor 8: Level of control of emission sources

Please refer to the Factor 8 general discussion at the beginning of this document for applicable control information for this area.

User ID: GYE

## QUICKLOOK CRITERIA PARAMETERS

Report Request ID: 611807

Report Code: AMP450

Feb. 18, 2009

## GEOGRAPHIC SELECTIONS

Tribal	State	County	Site	Parameter	POC	City	AQCR	UAR	CBSA	CSA	EPA Region	Method	Duration	Begin Date	End Date
	39														
	21	015													
	21	019													
	21	037													
	21	043													
	21	059													
	21	101													
	21	089													
	21	091													
	21	117													
	21	183													
	18	123													
	18	129													
	18	163													
	18	173													
	42	033													
	42	049													
	42	073													
	42	085													
	54	011													
	54	029													
	54	069													
	54	107													

## PROTOCOL SELECTIONS

Parameter Classification	Parameter	Method	Duration
-----------------------------	-----------	--------	----------

CRITERIA	44201	W	
----------	-------	---	--

## SELECTED OPTIONS

Option Type	Option Value
EVENTS PROCESSING	EXCLUDE REGIONALLY CONCURRED EVENTS
MERGE PDF FILES	YES

## SORT ORDER

Order	Column
1	PARAMETER_CODE

User ID: GYE

QUICKLOOK CRITERIA PARAMETERS

Report Request ID: 611807

Report Code: AMP450

Feb. 18, 2009

2	STATE_CODE
3	COUNTY_CODE
4	SITE_ID
5	POC
6	DATES
7	EDT_ID

GLOBAL DATES	
Start Date	End Date
2006	2008

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EXCEPTIONAL DATA TYPES

EDT	DESCRIPTION
0	NO EVENTS
1	EVENTS EXCLUDED
2	EVENTS INCLUDED
3	EXCEPTIONAL EVENTS EXCLUDED
4	NATURAL EVENTS EXCLUDED
5	EVENTS WITH CONCURRENCE EXCLUDED
6	EXCEPTIONAL EVENTS WITH CONCURRENCE EXCLUDED
7	NATURAL EVENTS WITH CONCURRENCE EXCLUDED

Note: The \* indicates that the mean does  
not satisfy summary criteria.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
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Ozone (44201)

Indiana

Parts per million (007)

8-HOUR

SITE ID	P O C	PQAO	CITY	COUNTY	ADDRESS	YEAR	METH	%OBS	VALID DAYS MEAS	NUM DAYS REQ	1ST MAX 8-HR	2ND MAX 8-HR	3RD MAX 8-HR	4TH MAX 8-HR	DAY MAX > 0.075	CERT	EDT
18-123-0009	1	0520	Not in a city	Perry	19856 OLD ST RD 37/PERRY CENTRAL HS/ LEOPOLD	2006	047	100	183	183	.084	.082	.080	.079	7	Y	0
18-123-0009	1	0520	Not in a city	Perry	19856 OLD ST RD 37/PERRY CENTRAL HS/ LEOPOLD	2007	047	100	183	183	.092	.086	.085	.080	10	Y	0
18-123-0009	1	0520	Not in a city	Perry	19856 OLD ST RD 37/PERRY CENTRAL HS/ LEOPOLD	2008	047	98	180	183	.080	.078	.075	.073	2	Y	0
18-129-0003	1	0520	Not in a city	Posey	2027 S. ST. PHILLIPS RD.	2006	047	96	176	183	.079	.066	.063	.058	1	Y	0
18-129-0003	1	0520	Not in a city	Posey	2027 S. ST. PHILLIPS RD.	2007	047	98	180	183	.086	.084	.083	.081	12	Y	0
18-129-0003	1	0520	Not in a city	Posey	2027 S. ST. PHILLIPS RD.	2008	047	95	173	183	.080	.073	.070	.069	1	Y	0
18-163-0012	1	0520	Evansville	Vanderburgh	425 WEST MILL ROAD/ FIRE STATION #17	2006	047	93	170	183	.092	.083	.079	.075	3	Y	0
18-163-0012	1	0520	Evansville	Vanderburgh	425 WEST MILL ROAD/ FIRE STATION #17	2007	047	98	180	183	.089	.088	.086	.085	17	Y	0
18-163-0012	1	0520	Evansville	Vanderburgh	425 WEST MILL ROAD/ FIRE STATION #17	2008	047	98	180	183	.083	.079	.074	.074	2	Y	0
18-163-0013	1	0520	Evansville	Vanderburgh	14940 OLD STATE ROAD/ SCOTT ELEMENTARY	2006	047	99	182	183	.095	.088	.082	.081	8	Y	0
18-163-0013	1	0520	Evansville	Vanderburgh	14940 OLD STATE ROAD/ SCOTT ELEMENTARY	2007	047	100	183	183	.091	.089	.088	.088	28	Y	0
18-163-0013	1	0520	Evansville	Vanderburgh	14940 OLD STATE	2008	047	95	174	183	.077	.075	.075	.072	1	Y	0

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
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Feb. 18, 2009

Ozone (44201)

Indiana

Parts per million (007)

8-HOUR

SITE ID	P O C	PQAO	CITY	COUNTY	ADDRESS	YEAR	METH	%OBS	VALID DAYS MEAS	NUM DAYS REQ	1ST MAX 8-HR	2ND MAX 8-HR	3RD MAX 8-HR	4TH MAX 8-HR	DAY MAX > 0.075	CERT	EDT
18-173-0008	1	0520	Boonville	Warrick	300 N. 1ST ST./ BOONVILLE HIGH SCHOOL	2006	047	99	182	183	.087	.086	.083	.078	6	Y	0
18-173-0008	1	0520	Boonville	Warrick	300 N. 1ST ST./ BOONVILLE HIGH SCHOOL	2007	047	100	183	183	.086	.084	.083	.083	13	Y	0
18-173-0008	1	0520	Boonville	Warrick	300 N. 1ST ST./ BOONVILLE HIGH SCHOOL	2008	047	99	181	183	.073	.072	.072	.071	0	Y	0
18-173-0009	1	0520	Not in a city	Warrick	5244 STATE RD 68/ TECUMSEH HIGH SCHOOL	2006	047	100	183	183	.076	.074	.074	.070	1	Y	0
18-173-0009	1	0520	Not in a city	Warrick	5244 STATE RD 68/ TECUMSEH HIGH SCHOOL	2007	047	100	183	183	.084	.084	.081	.080	10	Y	0
18-173-0009	1	0520	Not in a city	Warrick	5244 STATE RD 68/ TECUMSEH HIGH SCHOOL	2008	047	97	177	183	.076	.068	.064	.064	1	Y	0
18-173-0011	1	0520	Not in a city	Warrick	DAYVILLE- 3488 EBLE RD	2006	047	95	173	183	.080	.078	.078	.078	4	Y	0
18-173-0011	1	0520	Not in a city	Warrick	DAYVILLE- 3488 EBLE RD	2007	047	97	177	183	.078	.077	.076	.076	4	Y	0
18-173-0011	1	0520	Not in a city	Warrick	DAYVILLE- 3488 EBLE RD	2008	047	99	181	183	.067	.063	.061	.060	0	Y	0

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Ozone (44201)

Kentucky

Parts per million (007)

8-HOUR

SITE ID	P O C	PQAO	CITY	COUNTY	ADDRESS	YEAR	METH	%OBS	VALID	NUM	1ST	2ND	3RD	4TH	DAY	CERT	EDT
									DAYS MEAS	DAYS REQ	MAX 8-HR	MAX 8-HR	MAX 8-HR	MAX 8-HR	MAX > 0.075		
21-015-0003	1	0584	Not in a city	Boone	KY 338 & LOWER RIVER ROAD	2006	087	100	244	245	.072	.072	.072	.071	0		0
21-015-0003	1	0584	Not in a city	Boone	KY 338 & LOWER RIVER ROAD	2007	087	100	245	245	.081	.079	.078	.078	6		5
21-015-0003	1	0584	Not in a city	Boone	KY 338 & LOWER RIVER ROAD	2008	087	98	241	245	.065	.064	.064	.064	0	Y	0
21-019-0017	1	0584	Ashland	Boyd	2924 HOLT ST, FIVCO HEALTH DEPT	2006	087	100	245	245	.087	.083	.081	.079	5		0
21-019-0017	1	0584	Ashland	Boyd	2924 HOLT ST, FIVCO HEALTH DEPT	2007	087	100	244	245	.080	.076	.076	.072	3		5
21-019-0017	1	0584	Ashland	Boyd	2924 HOLT ST, FIVCO HEALTH DEPT	2008	087	99	242	245	.080	.079	.077	.073	3	Y	0
21-037-0003	1	0584	Fort Thomas	Campbell	700 ALEXANDRIA PK, WATER PLT, FT THOMAS	2006	087	75	12	16	.041	.040	.038	.036	0		0
21-037-3002	1	0584	Highland Heights	Campbell	524A John Hill Road	2007	087	100	123	123	.095	.092	.088	.086	19		5
21-037-3002	1	0584	Highland Heights	Campbell	524A John Hill Road	2008	087	99	242	245	.084	.083	.075	.075	2	Y	0
21-043-0500	1	0584	Not in a city	Carter	CAMP WEBB GRAYSON LAKE	2006	087	100	245	245	.074	.072	.067	.065	0		0
21-043-0500	1	0584	Not in a city	Carter	CAMP WEBB GRAYSON LAKE	2007	087	96	234	245	.074	.073	.073	.072	0		5
21-043-0500	1	0584	Not in a city	Carter	CAMP WEBB GRAYSON LAKE	2008	087	96	235	245	.082	.078	.075	.072	2	Y	0
21-059-0005	1	0584	Owensboro	Daviess	WYNDALL SHPG CTR US 60 & PLSNT VALLEY RD	2006	087	99	242	245	.090	.080	.075	.075	2		0
21-059-0005	1	0584	Owensboro	Daviess	WYNDALL SHPG CTR US 60 & PLSNT VALLEY RD	2007	087	100	244	245	.095	.094	.086	.086	18		5

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Kentucky

Parts per million (007)

8-HOUR

SITE ID	P O C	PQAO	CITY	COUNTY	ADDRESS	YEAR	METH	%OBS	VALID	NUM	1ST	2ND	3RD	4TH	DAY	CERT	EDT
									DAYS MEAS	DAYS REQ	MAX 8-HR	MAX 8-HR	MAX 8-HR	MAX 8-HR	MAX > 0.075		
21-059-0005	1	0584	Owensboro	Daviess	WYNDALL SHPG CTR US 60 & PLSNT VALLEY RD	2008	087	99	243	245	.080	.074	.072	.072	1	Y	0
21-089-0007	1	0584	Worthington	Greenup	SCOTT & CENTER STREETS, WORTHINGTON	2006	087	77	189	245	.093	.081	.077	.077	5		0
21-089-0007	1	0584	Worthington	Greenup	SCOTT & CENTER STREETS, WORTHINGTON	2007	087	98	240	245	.086	.085	.084	.079	10		5
21-089-0007	1	0584	Worthington	Greenup	SCOTT & CENTER STREETS, WORTHINGTON	2008	087	100	244	245	.077	.076	.075	.074	2	Y	0
21-091-0012	1	0584	Lewisport	Hancock	2ND & CAROLINE, LEWISPORT ELEMENTARY SCH	2006	087	98	239	245	.085	.079	.078	.076	8		0
21-091-0012	1	0584	Lewisport	Hancock	2ND & CAROLINE, LEWISPORT ELEMENTARY SCH	2007	087	98	240	245	.087	.085	.081	.081	15		5
21-091-0012	1	0584	Lewisport	Hancock	2ND & CAROLINE, LEWISPORT ELEMENTARY SCH	2008	087	96	234	245	.075	.074	.073	.072	0	Y	0
21-101-0014	1	0584	Not in a city	Henderson	BASKETT FIRE DEPARTMENT	2006	087	97	238	245	.078	.074	.074	.074	1		0
21-101-0014	1	0584	Not in a city	Henderson	BASKETT FIRE DEPARTMENT	2007	087	99	243	245	.088	.084	.083	.083	14		5
21-101-0014	1	0584	Not in a city	Henderson	BASKETT FIRE DEPARTMENT	2008	087	97	237	245	.077	.074	.074	.074	1	Y	0
21-117-0007	1	0584	Covington	Kenton	1401 DIXIE HWY, UNIVERSITY COLLEGE	2006	087	97	238	245	.082	.081	.079	.075	3		0
21-117-0007	1	0584	Covington	Kenton	1401 DIXIE HWY, UNIVERSITY COLLEGE	2007	087	100	244	245	.093	.089	.085	.085	12		5
21-117-0007	1	0584	Covington	Kenton	1401 DIXIE HWY,	2008	087	99	242	245	.080	.077	.074	.073	2	Y	0

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Ozone (44201)

Kentucky

Parts per million (007)

8-HOUR

SITE ID									VALID	NUM	1ST	2ND	3RD	4TH	DAY		
									DAYS	DAYS	MAX	MAX	MAX	MAX	MAX >		
	C	PQAO	CITY	COUNTY	ADDRESS	YEAR	METH	%OBS	MEAS	REQ	8-HR	8-HR	8-HR	8-HR	0.075	CERT	EDT
21-183-0032	1	0584	Not in a city	Ohio	KEYTOWN ROAD	2006	087	97	237	245	.070	.068	.068	.068	0		0

Note: The \* indicates that the mean does not satisfy summary criteria.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
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Ozone (44201)

Ohio

Parts per million (007)

8-HOUR

SITE ID	P O C	PQAO	CITY	COUNTY	ADDRESS	YEAR	METH	%OBS	VALID	NUM	1ST	2ND	3RD	4TH	DAY	CERT	EDT
									DAYS	DAYS	MAX	MAX	MAX	MAX	MAX >		
									MEAS	REQ	8-HR	8-HR	8-HR	8-HR	0.075		
39-003-0002	1	0808	Not in a city	Allen	2650 BIBLE RD.	2006	047	99	211	214	.090	.082	.082	.075	3	Y	0
39-003-0002	1	0808	Not in a city	Allen	2650 BIBLE RD.	2007	047	100	214	214	.088	.080	.079	.078	7		0
39-003-0002	1	0808	Not in a city	Allen	2650 BIBLE RD.	2008	047	100	213	214	.072	.068	.068	.067	0		0
39-007-1001	1	0807	Conneaut	Ashtabula	770 LAKE RD.	2006	047	99	211	214	.099	.099	.090	.086	8	Y	0
39-007-1001	1	0807	Conneaut	Ashtabula	770 LAKE RD.	2007	047	99	212	214	.098	.095	.092	.092	17		0
39-007-1001	1	0807	Conneaut	Ashtabula	770 LAKE RD.	2008	047	97	208	214	.081	.081	.078	.075	3		0
39-009-0004	1	1335	Athens	Athens	7760 BLACKBURN ROAD	2007	056	94	202	214	.086	.081	.081	.080	8		0
39-009-0004	1	1335	Athens	Athens	7760 BLACKBURN ROAD	2008	056	98	209	214	.075	.074	.073	.069	0		0
39-017-0004	1	1259	Hamilton	Butler	SCHULER AND BENDER	2006	087	99	212	214	.087	.082	.082	.079	11	Y	0
39-017-0004	1	1259	Hamilton	Butler	SCHULER AND BENDER	2007	087	100	214	214	.097	.096	.091	.091	20		0
39-017-0004	1	1259	Hamilton	Butler	SCHULER AND BENDER	2008	087	99	211	214	.089	.075	.072	.071	1		0
39-017-1004	3	1259	Middletown	Butler	HOOK FIELD AIRPORT	2006	087	100	213	214	.085	.084	.077	.076	4	Y	0
39-017-1004	3	1259	Middletown	Butler	HOOK FIELD AIRPORT	2007	087	100	214	214	.104	.097	.095	.091	27		0
39-017-1004	3	1259	Middletown	Butler	HOOK FIELD AIRPORT	2008	000	96	205	214	.091	.087	.082	.079	7		0
39-023-0001	1	0287	Springfield	Clark	5171 URBANA	2006	019	100	214	214	.091	.081	.077	.076	5	Y	0
39-023-0001	1	0287	Springfield	Clark	5171 URBANA	2007	000	100	214	214	.096	.086	.081	.078	9		0
39-023-0001	1	0287	Springfield	Clark	5171 URBANA	2008	047	100	213	214	.090	.084	.078	.075	3		0
39-023-0003	1	0287	Not in a city	Clark	5400 SPANGLER	2006	019	100	214	214	.087	.081	.078	.074	3	Y	0
39-023-0003	1	0287	Not in a city	Clark	5400 SPANGLER	2007	000	99	212	214	.089	.084	.080	.078	5		0
39-023-0003	1	0287	Not in a city	Clark	5400 SPANGLER	2008	047	98	210	214	.089	.077	.076	.075	3		0
39-025-0022	1	1259	Batavia	Clermont	2400 CLERMONT CENTER DR.	2006	087	99	212	214	.087	.081	.077	.077	7	Y	0

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Ozone (44201)

Ohio

Parts per million (007)

8-HOUR

SITE ID	P O C	PQAO	CITY	COUNTY	ADDRESS	YEAR	METH	%OBS	VALID	NUM	1ST	2ND	3RD	4TH	DAY	CERT	EDT
									DAYS	DAYS	MAX	MAX	MAX	MAX	MAX >		
									MEAS	REQ	8-HR	8-HR	8-HR	8-HR	0.075		
39-025-0022	1	1259	Batavia	Clermont	2400 CLERMONT CENTER DR.	2007	000	98	209	214	.093	.092	.090	.086	17		0
39-025-0022	1	1259	Batavia	Clermont	2400 CLERMONT CENTER DR.	2008	087	97	207	214	.072	.071	.071	.071	0		0
39-027-1002	1	0810	Wilmington	Clinton	62 LAUREL DR.	2006	047	100	214	214	.090	.085	.084	.081	10	Y	0
39-027-1002	1	0810	Wilmington	Clinton	62 LAUREL DR.	2007	047	99	212	214	.091	.089	.085	.082	21		0
39-027-1002	1	0810	Wilmington	Clinton	62 LAUREL DR.	2008	047	96	206	214	.087	.080	.077	.076	4		0
39-035-0034	1	0229	Cleveland	Cuyahoga	891 E. 152 ST.	2006	087	97	208	214	.079	.077	.077	.074	3	Y	0
39-035-0034	1	0229	Cleveland	Cuyahoga	891 E. 152 ST.	2007	087	98	209	214	.084	.084	.083	.080	8		0
39-035-0034	1	0229	Cleveland	Cuyahoga	891 E. 152 ST.	2008	087	98	209	214	.088	.085	.084	.081	5		0
39-035-0064	1	0229	Berea	Cuyahoga	390 FAIR ST.	2006	000	100	213	214	.072	.071	.071	.068	0	Y	0
39-035-0064	1	0229	Berea	Cuyahoga	390 FAIR ST.	2007	000	97	208	214	.103	.095	.087	.083	8		0
39-035-0064	1	0229	Berea	Cuyahoga	390 FAIR ST.	2008	000	98	209	214	.087	.081	.077	.072	3		0
39-035-5002	1	0229	Mayfield	Cuyahoga	6116 WILSON MILLS	2006	000	98	210	214	.090	.085	.083	.081	8	Y	0
39-035-5002	1	0229	Mayfield	Cuyahoga	6116 WILSON MILLS	2007	087	98	209	214	.086	.084	.082	.080	5		0
39-035-5002	1	0229	Mayfield	Cuyahoga	6116 WILSON MILLS	2008	019	98	210	214	.090	.087	.086	.083	8		0
39-041-0002	1	0805	Delaware	Delaware	359 MAIN RD.	2006	047	100	214	214	.086	.084	.076	.075	3	Y	0
39-041-0002	1	0805	Delaware	Delaware	359 MAIN RD.	2007	047	100	213	214	.087	.083	.081	.080	9		0
39-041-0002	1	0805	Delaware	Delaware	359 MAIN RD.	2008	047	99	211	214	.080	.076	.075	.075	2		0
39-049-0028	1	0805	Columbus	Franklin	2521 FAIRWOOD	2006	047	100	213	214	.086	.080	.076	.076	4	Y	0
39-049-0028	1	0805	Columbus	Franklin	2521 FAIRWOOD	2007	047	100	214	214	.085	.082	.081	.078	8		0
39-049-0028	1	0805	Columbus	Franklin	2521 FAIRWOOD	2008	047	99	111	112	.078	.070	.069	.069	1		0
39-049-0029	1	0805	New Albany	Franklin	7600 FODOR RD.	2006	087	99	211	214	.087	.085	.085	.082	10	Y	0
39-049-0029	1	0805	New Albany	Franklin	7600 FODOR RD.	2007	047	100	214	214	.094	.088	.088	.087	21		0
39-049-0029	1	0805	New Albany	Franklin	7600 FODOR RD.	2008	047	99	211	214	.095	.085	.083	.083	7		0

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
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Feb. 18, 2009

Ozone (44201)

Ohio

Parts per million (007)

8-HOUR

SITE ID	P O C	PQAO	CITY	COUNTY	ADDRESS	YEAR	METH	%OBS	VALID	NUM	1ST	2ND	3RD	4TH	DAY	CERT	EDT
									DAYS	DAYS	MAX	MAX	MAX	MAX	MAX >		
									MEAS	REQ	8-HR	8-HR	8-HR	8-HR	0.075		
39-049-0037	1	0805	Columbus	Franklin	1777 E. BROAD	2006	087	97	208	214	.086	.084	.080	.079	8	Y	0
39-049-0037	1	0805	Columbus	Franklin	1777 E. BROAD	2007	087	98	210	214	.089	.081	.081	.079	7		0
39-049-0037	1	0805	Columbus	Franklin	1777 E. BROAD	2008	047	99	211	214	.087	.081	.072	.071	2		0
39-049-0081	1	0805	Columbus	Franklin	5750 MAPLE	2006	047	99	212	214	.085	.084	.080	.077	4	Y	0
					CANYON												
39-049-0081	1	0805	Columbus	Franklin	5750 MAPLE	2007	047	100	213	214	.086	.083	.080	.079	8		0
					CANYON												
39-049-0081	1	0805	Columbus	Franklin	5750 MAPLE	2008	047	100	214	214	.088	.073	.066	.066	1		0
					CANYON												
39-055-0004	1	0595	Not in a city	Geauga	13000 AUBURN	2006	019	100	214	214	.076	.072	.071	.070	1	Y	0
39-055-0004	1	0595	Not in a city	Geauga	13000 AUBURN	2007	019	100	214	214	.071	.069	.068	.068	0		0
39-055-0004	1	0595	Not in a city	Geauga	13000 AUBURN	2008	019	100	214	214	.088	.083	.082	.082	6		0
39-057-0006	1	0287	Xenia	Greene	541 LEDBETTER	2006	019	100	214	214	.085	.082	.081	.079	5	Y	0
					RD.,												
39-057-0006	1	0287	Xenia	Greene	541 LEDBETTER	2007	000	100	213	214	.092	.085	.081	.077	7		0
					RD.,												
39-057-0006	1	0287	Xenia	Greene	541 LEDBETTER	2008	047	99	211	214	.083	.078	.076	.075	3		0
					RD.,												
39-061-0006	1	1259	Cincinnati	Hamilton	11590 GROOMS RD	2006	087	100	213	214	.084	.084	.082	.081	9	Y	0
39-061-0006	1	1259	Cincinnati	Hamilton	11590 GROOMS RD	2007	087	96	206	214	.100	.092	.091	.089	33		0
39-061-0006	1	1259	Cincinnati	Hamilton	11590 GROOMS RD	2008	087	97	208	214	.093	.089	.087	.086	12		0
39-061-0010	1	1259	Cleves	Hamilton	6950 RIPPLE RD.	2006	000	100	213	214	.098	.092	.082	.081	10	Y	0
39-061-0010	1	1259	Cleves	Hamilton	6950 RIPPLE RD.	2007	087	99	212	214	.093	.091	.088	.086	23		0
39-061-0010	1	1259	Cleves	Hamilton	6950 RIPPLE RD.	2008	087	96	205	214	.085	.079	.078	.077	7		0
39-061-0040	1	1259	Cincinnati	Hamilton	250 WM. HOWARD	2006	087	99	212	214	.089	.080	.079	.078	8	Y	0
					TAFT												
39-061-0040	1	1259	Cincinnati	Hamilton	250 WM. HOWARD	2007	000	99	212	214	.097	.093	.088	.086	15		0
					TAFT												
39-061-0040	1	1259	Cincinnati	Hamilton	250 WM. HOWARD	2008	087	100	213	214	.086	.083	.081	.080	7		0
					TAFT												

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
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Feb. 18, 2009

Ozone (44201)

Ohio

Parts per million (007)

8-HOUR

SITE ID	P O C	PQAO	CITY	COUNTY	ADDRESS	YEAR	METH	%OBS	VALID	NUM	1ST	2ND	3RD	4TH	DAY	CERT	EDT
									DAYS	DAYS	MAX	MAX	MAX	MAX	MAX >		
									MEAS	REQ	8-HR	8-HR	8-HR	8-HR	0.075		
39-081-0017	1	0809	Steubenville	Jefferson	618 LOGAN ST.	2006	047	100	213	214	.089	.083	.080	.080	10	Y	0
39-081-0017	1	0809	Steubenville	Jefferson	618 LOGAN ST.	2007	047	97	207	214	.082	.080	.080	.079	10		0
39-081-0017	1	0809	Steubenville	Jefferson	618 LOGAN ST.	2008	047	99	211	214	.081	.078	.074	.073	2		0
39-083-0002	1	0805	Centerburg	Knox	WATER PLT, SR. 314	2006	087	98	210	214	.085	.082	.076	.075	3	Y	0
39-083-0002	1	0805	Centerburg	Knox	WATER PLT, SR. 314	2007	087	100	214	214	.088	.082	.082	.080	5		0
39-083-0002	1	0805	Centerburg	Knox	WATER PLT, SR. 314	2008	047	100	214	214	.077	.075	.075	.074	1		0
39-085-0003	1	0595	Eastlake	Lake	36010 LAKESHORE	2006	019	98	209	214	.088	.084	.083	.083	11	Y	0
39-085-0003	1	0595	Eastlake	Lake	36010 LAKESHORE	2007	019	98	210	214	.079	.076	.075	.074	2		0
39-085-0003	1	0595	Eastlake	Lake	36010 LAKESHORE	2008	019	99	212	214	.084	.084	.084	.078	8		0
39-085-3002	1	0595	Painesville	Lake	71 E HIGH	2006	019	100	214	214	.080	.076	.075	.075	2	Y	0
39-085-3002	1	0595	Painesville	Lake	71 E HIGH	2007	019	100	213	214	.093	.084	.082	.079	6		0
39-085-3002	1	0595	Painesville	Lake	71 E HIGH	2008	019	100	214	214	.081	.077	.077	.076	4		0
39-087-0006	1	0880	Ironton	Lawrence	2120 S. 8TH	2006	019	100	213	214	.087	.082	.073	.072	2	Y	0
39-087-0006	1	0880	Ironton	Lawrence	2120 S. 8TH	2007	019	98	210	214	.089	.078	.077	.076	4		0
39-087-0006	1	0880	Ironton	Lawrence	2120 S. 8TH	2008	019	99	212	214	.092	.086	.083	.082	5		0
39-087-0011	1	0880	Not in a city	Lawrence	S.R. 141, WILGUS	2006	019	98	210	214	.072	.068	.068	.067	0	Y	0
39-087-0011	1	0880	Not in a city	Lawrence	S.R. 141, WILGUS	2007	019	97	208	214	.089	.087	.084	.082	6		0
39-087-0011	1	0880	Not in a city	Lawrence	S.R. 141, WILGUS	2008	019	99	212	214	.087	.081	.077	.074	3		0
39-089-0005	1	0805	Heath (Fourmile Lock)	Licking	300 LICKING VIEW DR.	2006	047	100	213	214	.082	.077	.074	.072	2	Y	0
39-089-0005	1	0805	Heath (Fourmile Lock)	Licking	300 LICKING VIEW DR.	2007	047	100	214	214	.083	.082	.080	.078	4		0
39-089-0005	1	0805	Heath (Fourmile Lock)	Licking	300 LICKING VIEW DR.	2008	047	99	211	214	.078	.076	.075	.074	2		0

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Ozone (44201)

Ohio

Parts per million (007)

8-HOUR

SITE ID	P O C	PQAO	CITY	COUNTY	ADDRESS	YEAR	METH	%OBS	VALID	NUM	1ST	2ND	3RD	4TH	DAY	CERT	EDT
									DAYS	DAYS	MAX	MAX	MAX	MAX	MAX >		
									MEAS	REQ	8-HR	8-HR	8-HR	8-HR	0.075		
39-093-0018	1	0807	Sheffield	Lorain	4706 DETROIT RD.	2006	047	99	212	214	.077	.072	.069	.069	1	Y	0
39-093-0018	1	0807	Sheffield	Lorain	4706 DETROIT RD.	2007	047	99	212	214	.084	.082	.079	.078	4		0
39-093-0018	1	0807	Sheffield	Lorain	4706 DETROIT RD.	2008	047	99	212	214	.088	.076	.076	.075	3		0
39-095-0024	1	0220	Toledo	Lucas	348 S. ERIE	2006	056	99	212	214	.081	.079	.076	.075	3	Y	0
39-095-0024	1	0220	Toledo	Lucas	348 S. ERIE	2007	056	99	211	214	.099	.093	.093	.081	7		0
39-095-0024	1	0220	Toledo	Lucas	348 S. ERIE	2008	056	97	208	214	.078	.073	.073	.071	1		0
39-095-0027	1	0220	Waterville	Lucas	200 SOUTH RIVER RD.	2006	019	100	214	214	.079	.077	.072	.069	2	Y	0
39-095-0027	1	0220	Waterville	Lucas	200 SOUTH RIVER RD.	2007	019	99	211	214	.082	.082	.078	.075	3		0
39-095-0027	1	0220	Waterville	Lucas	200 SOUTH RIVER RD.	2008	019	98	210	214	.079	.074	.073	.073	1		0
39-095-0034	1	0220	Not in a city	Lucas	306 N. YONDOTA	2006	056	100	214	214	.079	.077	.074	.074	2	Y	0
39-095-0034	1	0220	Not in a city	Lucas	306 N. YONDOTA	2007	056	100	213	214	.084	.081	.079	.078	4		0
39-095-0034	1	0220	Not in a city	Lucas	306 N. YONDOTA	2008	056	95	204	214	.077	.074	.074	.073	1		0
39-095-0081	1	0220	Toledo	Lucas	2930 131ST ST.	2006	056	98	209	214	.080	.080	.075	.074	2	Y	0
39-095-0081	1	0220	Toledo	Lucas	2930 131ST ST.	2007	056	100	214	214	.088	.080	.077	.077	4		0
39-097-0007	1	0805	Not in a city	Madison	940 SR 38 SW	2006	047	100	213	214	.084	.081	.079	.076	4	Y	0
39-097-0007	1	0805	Not in a city	Madison	940 SR 38 SW	2007	047	99	211	214	.091	.086	.084	.083	15		0
39-097-0007	1	0805	Not in a city	Madison	940 SR 38 SW	2008	047	99	211	214	.077	.075	.073	.071	1		0
39-099-0013	1	0634	Youngstown	Mahoning	345 OAKHILL	2006	087	100	214	214	.081	.080	.077	.076	4	Y	0
39-099-0013	1	0634	Youngstown	Mahoning	345 OAKHILL	2007	087	100	214	214	.085	.082	.081	.078	8		0
39-099-0013	1	0634	Youngstown	Mahoning	345 OAKHILL	2008	087	100	213	214	.075	.073	.071	.071	0		0
39-103-0003	1	0012	Not in a city	Medina	6364 DEERVIEW	2006	087	98	209	214	.076	.075	.074	.073	1	Y	0
39-103-0003	1	0012	Not in a city	Medina	6364 DEERVIEW	2007	000	100	214	214	.073	.071	.070	.069	0		0
39-103-0003	1	0012	Not in a city	Medina	6364 DEERVIEW	2008	087	99	211	214	.080	.079	.077	.075	3		0

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Ozone (44201)

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Parts per million (007)

8-HOUR

SITE ID	P O C	PQAO	CITY	COUNTY	ADDRESS	YEAR	METH	%OBS	VALID	NUM	1ST	2ND	3RD	4TH	DAY	CERT	EDT
									DAYS MEAS	DAYS REQ	MAX 8-HR	MAX 8-HR	MAX 8-HR	MAX 8-HR	MAX > 0.075		
39-109-0005	1	0287	Not in a city	Miami	3825 NORTH S. R. 589	2006	019	99	212	214	.088	.076	.074	.073	2	Y	0
39-109-0005	1	0287	Not in a city	Miami	3825 NORTH S. R. 589	2007	000	100	214	214	.083	.079	.078	.073	3		0
39-109-0005	1	0287	Not in a city	Miami	3825 NORTH S. R. 589	2008	047	100	213	214	.074	.074	.071	.070	0		0
39-113-0033	1	0287	Dayton	Montgomery	1404 WEBSTER ST.	2006	019	100	214	214	.084	.077	.074	.071	2	Y	0
39-113-0033	1	0287	Dayton	Montgomery	1404 WEBSTER ST.	2007	000	100	214	214	.084	.084	.084	.074	3		0
39-113-0037	1	0287	Dayton	Montgomery	1401 Harshman Road	2008	047	99	183	184	.095	.081	.080	.077	6		0
39-133-1001	1	0012	Not in a city	Portage	1570 RAVENNA RD.	2006	047	99	212	214	.080	.079	.074	.070	2	Y	0
39-133-1001	1	0012	Not in a city	Portage	1570 RAVENNA RD.	2007	047	96	206	214	.090	.085	.085	.084	8		0
39-133-1001	1	0012	Not in a city	Portage	1570 RAVENNA RD.	2008	047	99	212	214	.075	.071	.069	.069	0		0
39-135-1001	1	0287	Not in a city	Preble	NATIONAL TRAILS	2006	019	98	210	214	.078	.075	.073	.072	1	Y	0
39-135-1001	1	0287	Not in a city	Preble	NATIONAL TRAILS	2007	000	100	214	214	.079	.079	.078	.073	3		0
39-135-1001	1	0287	Not in a city	Preble	NATIONAL TRAILS	2008	047	99	212	214	.072	.069	.068	.068	0		0
39-151-0016	1	0151	Canton	Stark	515 25TH. ST.	2006	047	91	195	214	.083	.081	.080	.078	9	Y	0
39-151-0016	1	0151	Canton	Stark	515 25TH. ST.	2007	047	95	204	214	.089	.087	.086	.084	18		0
39-151-0016	1	0151	Canton	Stark	515 25TH. ST.	2008	047	95	204	214	.082	.080	.078	.077	4		0
39-151-0021	1	0151	Brewster	Stark	245 W. 5TH ST.	2006	047	97	208	214	.085	.081	.079	.079	8	Y	0
39-151-0021	1	0151	Brewster	Stark	245 W. 5TH ST.	2007	047	84	75	89	.087	.086	.083	.082	14		0
39-151-0022	1	0151	Brewster	Stark	45 S. WABASH AVENUE, S.R 93	2007	047	86	107	125	.091	.085	.083	.083	10		0
39-151-0022	1	0151	Brewster	Stark	45 S. WABASH AVENUE, S.R 93	2008	047	95	204	214	.081	.079	.077	.076	5		0
39-151-4005	1	0151	Alliance	Stark	1175 WEST VINE	2006	047	93	199	214	.082	.078	.075	.075	2	Y	0

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Ohio

Parts per million (007)

8-HOUR

SITE ID	P O C	PQAO	CITY	COUNTY	ADDRESS	YEAR	METH	%OBS	VALID	NUM	1ST	2ND	3RD	4TH	DAY	CERT	EDT
									DAYS	DAYS	MAX	MAX	MAX	MAX	MAX >		
									MEAS	REQ	8-HR	8-HR	8-HR	8-HR	0.075		
39-151-4005	1	0151	Alliance	Stark	1175 WEST VINE	2007	047	98	209	214	.098	.094	.088	.087	19		0
39-151-4005	1	0151	Alliance	Stark	1175 WEST VINE	2008	047	92	196	214	.079	.079	.077	.077	5		0
39-153-0020	1	0012	Akron	Summit	800 PATTERSON AVE.	2006	087	100	214	214	.082	.080	.077	.077	5	Y	0
39-153-0020	1	0012	Akron	Summit	800 PATTERSON AVE.	2007	087	100	214	214	.097	.092	.090	.090	22		0
39-153-0020	1	0012	Akron	Summit	800 PATTERSON AVE.	2008	087	100	213	214	.091	.081	.080	.080	7		0
39-155-0009	1	0634	Not in a city	Trumbull	6346 KINSMAN- BLOOMFIELD RD.	2006	056	100	213	214	.089	.086	.075	.074	2	Y	0
39-155-0009	1	0634	Not in a city	Trumbull	6346 KINSMAN- BLOOMFIELD RD.	2007	056	100	214	214	.084	.083	.083	.080	14		0
39-155-0009	1	0634	Not in a city	Trumbull	6346 KINSMAN- BLOOMFIELD RD.	2008	056	100	214	214	.082	.077	.076	.076	4		0
39-155-0011	1	0634	Not in a city	Trumbull	842 YOUNGSTOWN- KINGSVILLE RD.	2006	087	99	211	214	.083	.082	.082	.082	7	Y	0
39-155-0011	1	0634	Not in a city	Trumbull	842 YOUNGSTOWN- KINGSVILLE RD.	2007	087	100	214	214	.092	.086	.084	.084	17		0
39-155-0011	1	0634	Not in a city	Trumbull	842 YOUNGSTOWN- KINGSVILLE RD.	2008	087	100	214	214	.080	.078	.078	.077	4		0
39-165-0007	1	1259	Lebanon	Warren	416 SOUTHEAST ST.	2006	087	100	214	214	.092	.090	.088	.086	12	Y	0
39-165-0007	1	1259	Lebanon	Warren	416 SOUTHEAST ST.	2007	087	100	214	214	.103	.089	.088	.088	32		0
39-165-0007	1	1259	Lebanon	Warren	416 SOUTHEAST ST.	2008	000	95	204	214	.092	.087	.084	.082	11		0
39-167-0004	1	0809	Marietta	Washington	2000 4TH STREET	2006	047	98	209	214	.092	.086	.082	.081	9	Y	0
39-167-0004	1	0809	Marietta	Washington	2000 4TH STREET	2007	047	100	214	214	.091	.090	.086	.086	16		0
39-167-0004	1	0809	Marietta	Washington	2000 4TH STREET	2008	047	100	213	214	.095	.082	.079	.078	4		0
39-173-0003	1	0808	Bowling Green	Wood	347 N DUNBRIDGE	2006	047	100	213	214	.081	.080	.075	.073	2	Y	0
39-173-0003	1	0808	Bowling Green	Wood	347 N DUNBRIDGE	2007	047	99	212	214	.089	.088	.088	.083	5		0
39-173-0003	1	0808	Bowling Green	Wood	347 N DUNBRIDGE	2008	047	100	213	214	.077	.072	.071	.070	1		0

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Ozone (44201)

Pennsylvania

Parts per million (007)

8-HOUR

SITE ID	P O C	PQAO	CITY	COUNTY	ADDRESS	YEAR	METH	%OBS	VALID	NUM	1ST	2ND	3RD	4TH	DAY	CERT	EDT
									DAYS	DAYS	MAX	MAX	MAX	MAX	MAX >		
									MEAS	REQ	8-HR	8-HR	8-HR	8-HR	0.075		
42-033-4000	1	0851	Not in a city	Clearfield	LOCATED NEAR S.B. ELLIOTT STATE PARK	2006	087	95	204	214	.081	.073	.072	.072	1	Y	0
42-033-4000	1	0851	Not in a city	Clearfield	LOCATED NEAR S.B. ELLIOTT STATE PARK	2007	087	94	202	214	.078	.076	.074	.072	2		0
42-033-4000	1	0851	Not in a city	Clearfield	LOCATED NEAR S.B. ELLIOTT STATE PARK	2008	087	95	204	214	.078	.078	.078	.077	4		0
42-049-0003	1	0851	Erie	Erie	10TH AND MARNE STREETS	2006	087	98	209	214	.090	.083	.077	.077	4	Y	0
42-049-0003	1	0851	Erie	Erie	10TH AND MARNE STREETS	2007	087	99	212	214	.098	.087	.084	.084	13		0
42-049-0003	1	0851	Erie	Erie	10TH AND MARNE STREETS	2008	087	99	211	214	.079	.077	.075	.074	2		0
42-073-0015	1	0851	New Castle	Lawrence	CROTON ST & JEFFERSON ST.	2006	087	98	210	214	.079	.077	.074	.070	2	Y	0
42-073-0015	1	0851	New Castle	Lawrence	CROTON ST & JEFFERSON ST.	2007	087	97	208	214	.076	.076	.076	.075	3		0
42-073-0015	1	0851	New Castle	Lawrence	CROTON ST & JEFFERSON ST.	2008	087	99	211	214	.083	.077	.072	.069	2		0
42-085-0100	1	0851	Farrell	Mercer	PA518 (NEW CASTLE ROAD) & PA418	2006	087	97	208	214	.093	.086	.086	.079	8	Y	0
42-085-0100	1	0851	Farrell	Mercer	PA518 (NEW CASTLE ROAD) & PA418	2007	087	99	211	214	.086	.085	.084	.083	14		0
42-085-0100	1	0851	Farrell	Mercer	PA518 (NEW CASTLE ROAD) & PA418	2008	087	100	214	214	.085	.084	.081	.078	7		0

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
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QUICK LOOK REPORT (AMP450)

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Ozone (44201)

West Virginia

Parts per million (007)

8-HOUR

SITE ID	P O C	PQAO	CITY	COUNTY	ADDRESS	YEAR	METH	%OBS	VALID	NUM	1ST	2ND	3RD	4TH	DAY	CERT	EDT
									DAYS	DAYS	MAX	MAX	MAX	MAX	MAX >		
									MEAS	REQ	8-HR	8-HR	8-HR	8-HR	0.075		
54-011-0006	1	1150	Huntington	Cabell	HUNTINGTON - MARSHALL UNIVERSITY	2006	112	100	213	214	.086	.085	.081	.081	11	Y	0
54-011-0006	1	1150	Huntington	Cabell	HUNTINGTON - MARSHALL UNIVERSITY	2007	112	99	211	214	.094	.091	.090	.089	27		0
54-011-0006	1	1150	Huntington	Cabell	HUNTINGTON - MARSHALL UNIVERSITY	2008	160	98	210	214	.076	.071	.071	.070	1		0
54-029-1004	1	1151	Weirton	Hancock	WEIRTON - OAK ST AND OWINGS ST (BETWEEN DEAD ENDS)	2006	112	100	214	214	.085	.079	.079	.077	7	Y	0
54-029-1004	1	1150	Weirton	Hancock	WEIRTON - OAK ST AND OWINGS ST (BETWEEN DEAD ENDS)	2007	112	99	211	214	.083	.080	.079	.079	10		0
54-029-1004	1	1150	Weirton	Hancock	WEIRTON - OAK ST AND OWINGS ST (BETWEEN DEAD ENDS)	2008	112	100	214	214	.084	.082	.079	.077	4		0
54-069-0010	1	1151	Wheeling	Ohio	WHEELING - WARWOOD WATER PLANT	2006	112	99	211	214	.085	.083	.079	.079	7	Y	0
54-069-0010	1	1150	Wheeling	Ohio	WHEELING - WARWOOD WATER PLANT	2007	112	100	214	214	.081	.081	.081	.080	13		0
54-069-0010	1	1150	Wheeling	Ohio	WHEELING - WARWOOD WATER PLANT	2008	112	100	213	214	.075	.074	.072	.072	0		0
54-107-1002	1	1150	Vienna	Wood	VIENNA - NEALE ELEM SCHOOL	2006	112	98	210	214	.087	.083	.083	.080	9	Y	0
54-107-1002	1	1150	Vienna	Wood	VIENNA - NEALE ELEM SCHOOL	2007	112	99	212	214	.090	.089	.084	.084	14		0

Note: The \* indicates that the mean does  
not satisfy summary criteria.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
 AIR QUALITY SYSTEM  
 QUICK LOOK REPORT (AMP450)

Feb. 18, 2009

Ozone (44201)

West Virginia

Parts per million (007)

8-HOUR

SITE ID	P O C	PQAO	CITY	COUNTY	ADDRESS	YEAR	METH	%OBS	VALID	NUM	1ST	2ND	3RD	4TH	DAY	CERT	EDT
									DAYS	DAYS	MAX	MAX	MAX	MAX	MAX >		
									MEAS	REQ	8-HR	8-HR	8-HR	8-HR	0.075		
54-107-1002	1	1150	Vienna	Wood	VIENNA - NEALE ELEM SCHOOL	2008	160	98	209	214	.082	.075	.075	.071	1		0

Note: The \* indicates that the mean does not satisfy summary criteria.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
AIR QUALITY SYSTEM  
QUICK LOOK REPORT (AMP450)

Feb. 18, 2009

METHODS USED IN THIS REPORT

PARAMETER	METHOD CODE	COLLECTION METHOD	ANALYSIS METHOD
44201	000	MULTIPLE METHODS	MULTIPLE METHODS
44201	019	INSTRUMENTAL	ULTRA VIOLET
44201	047	INSTRUMENTAL	ULTRA VIOLET
44201	056	INSTRUMENTAL	ULTRA VIOLET
44201	087	INSTRUMENTAL	ULTRA VIOLET ABSORPTION
44201	112	INSTRUMENTAL	ULTRAVIOLET ABSORPTION
44201	160	INSTRUMENTAL	ULTRAVIOLET ABSORPTION

Note: The \* indicates that the mean does  
not satisfy summary criteria.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
AIR QUALITY SYSTEM  
QUICK LOOK REPORT (AMP450)

Feb. 18, 2009

PQAOS USED IN THIS REPORT

PQAO	AGENCY DESCRIPTION
0012	Akron Regional Air Pollution Control Agency
0151	Canton City Health Department Air Pollution Control
0220	City of Toledo, Environmental Services Division
0229	Cleveland Air Pollution Control Agency
0287	Dayton Regional Air Pollution Control Agency
0520	Indiana Depart Of Environ Management/Office Of Air Management
0584	Kentucky Division For Air Quality
0595	Lake County Health Department Division Air Pollution Control
0634	Mahoning-Trumbull Air Pollution Control Agency
0805	Ohio EPA, Central District Office
0807	Ohio EPA, Northeast District Office
0808	Ohio EPA, Northwest District Office
0809	Ohio EPA, Southeast District Office
0810	Ohio EPA, Southwest District Office
0851	Pennsylvania Department Of Environmental Protection
0880	Portsmouth City Health Dept Division Air Pollution Control
1150	West Virginia Air Pollution Control Commission
1151	West Virginia Northern Panhandle Regional Office
1259	Hamilton County Department Of Environmental Services
1335	Ohio University, Athens, OH

Note: The \* indicates that the mean does  
not satisfy summary criteria.

Site Area County	Year	Value			
		1	2	3	4
39-003-0002 Lima Allen	2006	90	82	82	75
	2007	88	80	79	78
	2008	72	68	68	67
	Avg				73.3
39-007-1001 Conneaut Ashtabula	2006	99	99	90	86
	2007	98	95	92	92
	2008	81	81	78	75
	Avg				84.3
39-017-0004 Cincinnati Butler	2006	87	82	82	79
	2007	97	96	91	91
	2008	89	75	72	71
	Avg				80.3
39-017-1004 Cincinnati Butler Co.	2006	85	84	77	76
	2007	104	97	95	91
	2008	91	87	82	79
	Avg				82.0
39-025-0022 Cincinnati Clermont	2006	87	81	77	77
	2007	93	92	90	86
	2008	72	71	71	71
	Avg				78.0
39-061-0006 Cincinnati Hamilton	2006	84	84	82	81
	2007	100	92	91	89
	2008	93	89	87	86
	Avg				85.3
39-061-0010 Cincinnati Hamilton	2006	98	92	82	81
	2007	93	91	88	86
	2008	85	79	78	77
	Avg				81.3
39-061-0040 Cincinnati Hamilton	2006	89	80	79	78
	2007	97	93	88	86
	2008	86	83	81	80
	Avg				81.3
39-165-0007 Cincinnati Warren	2006	92	90	88	86
	2007	103	89	88	88
	2008	92	87	84	82
	Avg				85.3

39-023-0001 Dayton Clark Co.	2006	91	81	77	76
	2007	96	86	81	78
	2008	90	84	78	75
	Avg				76.3

39-023-0003 Dayton Clark Co.	2006	87	81	78	74
	2007	89	84	80	78
	2008	89	77	76	75
	Avg				75.7

39-057-0006 Dayton Greene Co.	2006	85	82	81	79
	2007	92	85	81	77
	2008	83	78	76	75
	Avg				77.0

39-109-0005 Dayton Miami Co.	2006	88	76	74	73
	2007	83	79	78	73
	2008	74	74	71	70
	Avg				72.0

39-113-0033 Dayton Montgomery Co. 39-113-0037	2006	84	77	74	71
	2007	84	84	84	74
	2008	95	81	80	77
	Avg				74.0

39-135-1001 Dayton Preble Co.	2006	78	75	73	72
	2007	79	79	78	73
	2008	72	69	68	68
	Avg				71.0

39-027-1002 Wilmington Clinton Co	2006	90	85	84	81
	2007	91	89	85	82
	2008	87	80	77	76
	Avg				79.7

39-035-0034 Cleveland Cuyahoga Co.	2006	79	77	77	74
	2007	84	84	83	80
	2008	88	85	84	81
	Avg				78.3

39-035-0064 Cleveland Cuyahoga Co.	2006	72	71	71	68
	2007	103	95	87	83
	2008	87	81	77	72
	Avg				74.3

39-035-5002 Cleveland Cuyahoga Co.	2006	90	85	83	81
	2007	86	84	82	80
	2008	90	87	86	83
	Avg				81.3

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39-055-0004 Cleveland Geauga Co.	2006	76	72	71	70
	2007	71	69	68	68
	2008	88	83	82	82
	Avg				73.3

39-085-0003 Cleveland Lake Co.	2006	88	84	83	83
	2007	79	76	75	74
	2008	84	84	84	78
	Avg				78.3

39-085-3002 Cleveland Lake Co.	2006	80	76	75	75
	2007	93	84	82	79
	2008	81	77	77	76
	Avg				76.7

39-133-1001 Cleveland Portage Co.	2006	80	79	74	70
	2007	90	85	85	84
	2008	75	71	69	69
	Avg				74.3

39-103-0003 Cleveland Medina Co.	2006	76	75	74	73
	2007	73	71	70	69
	2008	80	79	77	75
	Avg				72.3

39-153-0020 Cleveland Summit Co.	2006	82	80	77	77
	2007	97	92	90	90
	2008	91	81	80	80
	Avg				82.3

39-041-0002 Columbus Delaware Co.	2006	86	84	76	75
	2007	87	83	81	80
	2008	80	76	75	75
	Avg				76.7

39-049-0028 Columbus Franklin Co.	2006	86	80	76	76
	2007	85	82	81	78
	2008	78	70	69	69
	Avg				74.3

39-049-0029 Columbus Franklin Co.	2006	87	85	85	82
	2007	94	88	88	87
	2008	95	85	83	83
	Avg				84.0

39-049-0037 Columbus Franklin Co.	2006	86	84	80	79
	2007	89	81	81	79
	2008	87	81	72	71
	Avg				76.3



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39-049-0081 Columbus Franklin Co.	2006	85	84	80	77
	2007	86	83	80	79
	2008	88	73	66	66
	Avg				74.0

39-083-0002 Columbus Knox Co.	2006	85	82	76	75
	2007	88	82	82	80
	2008	77	75	75	74
	Avg				76.3

39-089-0005 Columbus Licking Co.	2006	82	77	74	72
	2007	85	82	81	78
	2008	78	76	75	74
	Avg				74.7

39-097-0007 Columbus Madison Co.	2006	84	81	79	76
	2007	91	86	84	83
	2008	77	75	73	71
	Avg				76.7

39-081-0017 Steubenville Jefferson Co.	2006	89	83	80	80
	2007	82	80	80	79
	2008	81	78	74	73
	Avg				77.3

39-087-0006 Portsmouth Lawrence Co.	2006	87	82	73	72
	2007	89	78	77	76
	2008	92	86	83	82
	Avg				76.7

39-087-0011 Portsmouth Lawrence Co,	2006	72	68	68	67
	2007	89	87	84	82
	2008	87	81	77	74
	Avg				74.3

39-093-0018 Elyria Lorain Co.	2006	77	72	69	69
	2007	84	82	79	78
	2008	88	76	76	75
	Avg				74.0

39-095-0024 Toledo Lucas Co.	2006	81	79	76	75
	2007	99	93	93	81
	2008	78	73	73	71
	Avg				75.7

39-095-0027 Toledo Lucas Co.	2006	79	77	72	69
	2007	82	82	78	75
	2008	79	74	73	73
	Avg				72.3

39-095-0034 Toledo Lucas Co.	2006	79	77	74	74
	2007	84	81	79	78
	2008	77	74	74	73
	Avg				75.0

39-173-0003 Toledo Wood Co.	2006	81	80	75	73
	2007	89	88	88	83
	2008	77	72	71	70
	Avg				75.3

39-099-0013 Youngstown Mahoning Co.	2006	81	80	77	76
	2007	85	82	81	79
	2008	75	73	71	71
	Avg				75.3

39-155-0011 Youngstown Trumbull Co.	2006	83	82	82	82
	2007	84	83	83	80
	2008	80	78	78	77
	Avg				79.7

39-155-0009 Youngstown Trumbull Co.	2006	89	86	75	74
	2007	92	86	84	81
	2008	82	77	76	76
	Avg				77.0

39-151-0016 Canton Stark Co.	2006	83	81	80	78
	2007	89	87	86	84
	2008	82	80	78	77
	Avg				79.7

39-151-0021 Canton Stark Co.	2006	85	81	79	79
	2007	91	87	86	85
	2008	81	79	77	76
	Avg				80.0

39-151-4005 Canton Stark Co.	2006	82	78	75	75
	2007	98	94	88	87
	2008	79	79	77	77
	Avg				79.7

39-167-0004 Marietta Washington Co.	2006	92	86	82	81
	2007	91	90	86	86
	2008	95	82	79	78
	Avg				81.7

39-009-0004 Athens Athens Co.	2006				
	2007	86	81	81	80
	2008	75	74	74	69
	Avg				74.5



State of Ohio Environmental Protection Agency

**STREET ADDRESS:**

Lazarus Government Center  
50 W. Town St., Suite 700  
Columbus, Ohio 43215

TELE: (614) 644-3020 FAX: (614) 644-3184  
www.epa.state.oh.us

**MAILING ADDRESS:**

P.O. Box 1049  
Columbus, OH 43216-1049

**CERTIFIED MAIL**

February 4, 2009

Cheryl L. Newton, Acting Director  
Air and Radiation Division  
U.S. EPA, Region V  
77 West Jackson Boulevard  
Chicago, Illinois 60604

RE: 2008 SLAMS Ozone Data Certification

Dear Ms Newton:

Please find enclosed our SLAMS Report (AMP-450 and AMP-255) for the certification of Ohio's Ozone data for calendar year 2008 as required in 40 CFR, Part 58, Section 58.15. The ambient concentration and the quality assurance data have been completely submitted to the AQS database.

I certify that the data in the report are accurate to the best of our knowledge taking into consideration the quality assurance findings and only to the extent of the activities performed by Ohio EPA.

There were no incidents of air pollution that reached or exceeded levels as specified by Section 51.151 which could cause significant harm to the health of persons.

Sincerely,

Robert Hodanbosi  
Chief, Division of Air Pollution Control

Enclosure

Ted Strickland, Governor  
Lee Fisher, Lieutenant Governor  
Chris Korleski, Director

2009 Annual Emission Projections from Midwest RPO (TPY)									
Non-EGU Point	Area Sources	Nonroad	Maritime/Air/Rail	EGU Point	Onroad	County	Summation without mobile	Summation with mobile	Tons Per Day
<b>NOx</b>									
1070.67099	134.162894	123.930114	210.5899951	6400.5459	672	Adams	7939.899926	8,611.52	23.59321
3324.02032	396.50794	650.267098	206.0168451		2,889	Allen	4576.812206	7,465.38	20.45308
33.610044	228.027366	786.3465645	172.5211276		1,926	Ashland	1220.505102	3,146.23	8.619797
295.644329	319.439853	902.0431939	1133.244782	1815.4868	2,596	Ashtabula	4465.858998	7,061.39	19.34628
737.222828	163.515607	187.5333345	52.47379623		1,264	Athens	1140.745566	2,404.48	6.587609
50.2364705	195.648995	477.5199316	89.96765922	1602.9306	1,403	Auglaize	2416.303682	3,819.23	10.46364
19.9808195	287.639327	188.327346	168.9347041	4173.944	2,366	Belmont	4838.826197	7,205.29	19.74051
1.60092532	179.733878	274.1359118	165.9308912		1,076	Brown	621.4016065	1,697.84	4.651612
4358.94814	811.409273	1866.271627	573.4784831	98.9351	4,914	Butler	7709.04262	12,623.17	34.58403
790.581929	101.962351	141.9864203	17.14091059		568	Carroll	1051.671611	1,619.90	4.438086
45.0166379	169.198482	379.8972314	30.55517915		837	Champaign	624.6675308	1,461.88	4.005161
54.4711542	562.247408	646.6869351	178.3654235		3,289	Clark	1441.770921	4,730.79	12.96107
69.4837415	621.365905	980.1557222	167.7288891	14443.441	3,530	Clermont	16282.17497	19,812.03	54.27953
	173.698486	465.763465	12.51362313		1,771	Clinton	651.9755739	2,422.53	6.637063
154.999607	450.162283	396.8164425	492.4965936		2,585	Columbiana	1494.474926	4,079.70	11.17727
559.756196	156.832063	213.8630472	113.3349373	3859.15	835	Coshocton	4902.936223	5,738.17	15.72101
26.4792337	170.681496	506.0149371	412.0998821		1,048	Crawford	1115.275549	2,163.64	5.927778
2649.08651	5181.80837	6561.233573	2354.47165	4509.5509	17,983	Cuyahoga	21256.15104	39,239.37	107.5051
55.8842805	222.443415	596.0411995	122.9768077	14.54359	1,049	Darke	1011.889293	2,060.97	5.646503
1405.33547	119.429329	410.411854	468.9505069	7.6520901	865	Defiance	2411.779252	3,276.51	8.976751
12.8943979	464.647723	1534.652149	509.2751359		3,794	Delaware	2521.469405	6,315.07	17.30155
380.86241	310.857736	920.4820261	821.4230706		3,062	Erie	2433.625242	5,495.15	15.05522
1193.77616	337.131161	975.5429124	59.55975334		2,403	Fairfield	2566.009986	4,969.17	13.61417
38.9833094	108.334213	414.9962338	7.987728693		1,489	Fayette	570.3014845	2,059.28	5.641858
795.60967	4004.46093	5838.641802	1127.019791		25,429	Franklin	11765.73219	37,195.18	101.9046
330.617135	195.980539	514.2689283	538.8065026		1,694	Fulton	1579.673105	3,273.34	8.968066
	130.087619	92.11897146	204.9621462	9385.9611	967	Gallia	9813.129813	10,780.47	29.53554
	407.148359	594.653538	0.410070782		1,433	Geauga	1002.211968	2,434.72	6.670477
2824.42334	511.336473	836.500717	42.42712207		2,563	Greene	4214.68765	6,778.18	18.57034
1474.73606	131.490054	244.6110772	0.072810716		2,275	Guernsey	1850.910005	4,126.16	11.30454

2009 Annual Emission Projections from Midwest RPO (TPY)									
Non-EGU Point	Area Sources	Nonroad	Maritime/Air/Rail	EGU Point	Onroad	County	Summation without mobile	Summation with mobile	Tons Per Day
2908.66567	1966.20453	3757.507934	935.3208135	4872.7224	14,876	Hamilton	14440.42132	29,316.85	80.32014
100.331822	240.845179	788.6721786	366.1000348		2,562	Hancock	1495.949214	4,057.82	11.1173
	143.003957	369.2776298	99.76591535		597	Hardin	612.0475022	1,209.07	3.312514
120.407483	74.6598584	117.6347747	54.58004536		471	Harrison	367.2821612	838.387956	2.296953
278.81325	136.016618	438.9842441	327.9503132	4.8689568	936	Henry	1186.633382	2,122.64	5.815445
	178.784544	351.8791853	18.25092448		762	Highland	548.9146533	1,310.69	3.590935
750.100347	129.980115	82.39641155	261.6328635		632	Hocking	1224.109736	1,856.14	5.085325
172.829199	144.027173	295.1112203	27.91080498		743	Holmes	639.878397	1,382.95	3.788906
76.70979	238.108545	504.7243901	727.5876921		1,239	Huron	1547.130417	2,785.90	7.632607
20.7751102	133.9189	122.123696	11.25084944		1,009	Jackson	288.0685556	1,297.26	3.554133
1875.24357	254.141708	199.417138	205.9723871	14399.148	1,499	Jefferson	16933.92278	18,432.67	50.50047
11.2072909	246.258245	465.7546167	0.055789157		941	Knox	723.2759416	1,664.27	4.559636
307.842243	859.760335	1560.321293	664.065067	10625.171	3,819	Lake	14017.15971	17,836.03	48.86585
92.6531366	237.046805	134.5661371	501.753915	98.403224	1,393	Lawrence	1064.423217	2,457.63	6.733223
1040.76871	593.634616	897.8531331	24.8691084		4,134	Licking	2557.125565	6,691.10	18.33178
10.0231846	218.807386	453.941345	263.1986801		1,172	Logan	945.9705955	2,117.58	5.801584
758.556934	996.466808	2064.976089	1069.661286	6954.4634	4,027	Lorain	11844.12456	15,871.26	43.48291
3923.18224	1624.78676	1963.082387	778.4905616	5453.9183	7,825	Lucas	13743.46024	21,568.40	59.0915
3.82496873	154.751793	542.7350202	101.9054987		2,093	Madison	803.2172805	2,896.00	7.93426
323.403722	985.324682	934.3856663	364.5839314		5,225	Mahoning	2607.698002	7,832.36	21.45853
475.551959	230.594883	566.6079014	680.4775655		1,613	Marion	1953.232309	3,565.87	9.769502
45.5036567	585.600025	1040.747122	209.2462181		3,793	Medina	1881.097021	5,674.25	15.5459
	101.489263	111.1119141	347.7503111		538	Meigs	560.3514882	1,098.28	3.008976
	174.240311	497.8571153	1.630103296		1,028	Mercer	673.7275299	1,701.39	4.661333
18.9493676	377.953739	692.117992	183.062725	1207.7293	2,431	Miami	2479.813173	4,910.94	13.45464
93.9672556	70.5689466	110.4972526	179.3662489	34.367963	500	Monroe	488.767667	988.788658	2.70901
1499.07854	1914.47704	2430.081027	596.6637174	3244.6346	8,140	Montgomery	9684.934944	17,824.78	48.83502
	70.3229875	71.16886302			383	Morgan	141.4918505	524.960326	1.438247
	160.105332	262.1850469	101.3798747		1,763	Morrow	523.6702537	2,286.30	6.263828
466.986164	326.504969	380.2321124	107.4951035		2,536	Muskingum	1281.218349	3,816.82	10.45704
2.94039583	63.1262788	68.33173166			603	Noble	134.3984063	737.456576	2.020429

2009 Annual Emission Projections from Midwest RPO (TPY)									
Non-EGU Point	Area Sources	Nonroad	Maritime/Air/Rail	EGU Point	Onroad	County	Summation without mobile	Summation with mobile	Tons Per Day
679.490337	173.096833	995.179183	769.5150275		1,295	Ottawa	2617.281381	3,912.77	10.71993
	88.2948202	380.0755047	227.1131556		553	Paulding	695.4834805	1,248.63	3.420907
708.864648	107.103675	151.8654041	54.72856589		671	Perry	1022.562293	1,693.78	4.640485
336.588101	137.770677	572.9196814	427.7460096	631.8553	1,674	Pickaway	2106.879772	3,781.11	10.35921
343.980017	125.995849	152.6495346	348.8153952		822	Pike	971.4407955	1,793.03	4.912406
74.4584371	567.745002	940.7869745	568.1953142		3,665	Portage	2151.185728	5,816.28	15.93501
1.27278535	181.04976	381.1117399	185.6487159		1,415	Preble	749.0830008	2,164.43	5.929947
10.7616931	146.251935	582.3125461	358.2843709		694	Putnam	1097.610545	1,792.10	4.909855
1708.59248	361.714201	612.6214883	189.9024946	930.86535	3,288	Richland	3803.696013	7,091.86	19.42975
3510.99839	291.668831	379.3420454	434.1895134		1,983	Ross	4616.19878	6,598.96	18.07934
3103.45217	240.725949	604.7515876	326.1903456		2,640	Sandusky	4275.120056	6,914.67	18.9443
483.047118	259.154248	266.8663156	846.3980096		1,628	Scioto	1855.465691	3,483.49	9.543795
5140.65314	244.578258	544.9463872	1223.260855		1,092	Seneca	7153.438642	8,245.09	22.58928
297.643416	149.50215	574.3799672	288.8424779		1,543	Shelby	1310.368011	2,853.42	7.817579
1023.78411	1333.32544	2162.668286	349.7810373		6,224	Stark	4869.558872	11,093.64	30.39353
664.780391	2064.17291	2294.771991	479.1048877		10,752	Summit	5502.83018	16,254.47	44.53278
1215.10505	632.760891	931.5734408	380.2302628	586.82487	4,108	Trumbull	3746.494512	7,854.87	21.52019
519.194286	336.151367	395.4267	103.0014672	729.50973	2,664	Tuscarawas	2083.283549	4,746.85	13.00508
33.4723366	185.44448	800.8775662	77.81406039		1,538	Union	1097.608443	2,635.90	7.221645
141.592181	115.558149	434.8435427	3.578274825		859	Van_Wert	695.5721469	1,554.72	4.259511
51.2437511	55.1764276	43.9149129	4.717033177		298	Vinton	155.0521248	453.065602	1.241276
1031.25232	434.184567	1426.71483	61.24790315	56.057599	4,530	Warren	3009.457216	7,539.59	20.65642
1846.53772	182.069667	333.6596349	322.7832836	3125.8993	1,614	Washington	5810.949613	7,425.26	20.34317
1268.662	481.329175	801.0760694	221.3578143	1199.7369	2,763	Wayne	3972.161948	6,734.90	18.45178
30.8935851	174.343872	434.2876069	598.7643749	0.4696831	1,448	Williams	1238.759122	2,686.47	7.360181
1094.87024	444.088008	1010.793288	1018.455036	10.488105	4,906	Wood	3578.694678	8,484.20	23.2444
201.183991	103.930094	365.587223	221.0345157		1,097	Wyandot	891.735824	1,988.79	5.448749

2009 Annual Emission Projections from Midwest RPO (TPY)									
Non-EGU Point	Area Sources	Nonroad	Maritime/Air/Rail	EGU Point	Onroad	County	Summation without mobile	Summation with mobile	Tons Per Day
<b>VOC</b>									
35.2651768	865.190401	132.6218211	5.063881603	263.76393	419	Adams	1301.905207	1,720.89	4.714769
1037.473	1995.70583	495.7418099	12.85656758		1,630	Allen	3541.777207	5,171.66	14.16894
11.3304655	1319.55747	2746.437355	9.358773104		903	Ashland	4086.68406	4,990.02	13.67129
277.186969	1956.52702	2420.286619	55.38038666	27.837835	1,291	Ashtabula	4737.218827	6,028.53	16.51653
49.250006	977.653773	159.1508852	2.847033411		738	Athens	1188.901698	1,927.25	5.280141
205.408475	1409.6821	444.3912559	5.244319781	39.548031	698	Auglaize	2104.274178	2,802.74	7.678753
60.2650757	1485.07973	381.2799686	4.691408568	29.053387	1,095	Belmont	1960.369567	3,055.13	8.370212
17.5350615	1173.20699	126.2785862	3.994218532		666	Brown	1321.014856	1,986.88	5.443507
1368.26932	3653.23582	1238.580588	34.9853305	2.4444332	1,670	Butler	6297.515491	7,967.14	21.82777
39.6290994	644.057504	266.9372453	1.377860093		355	Carroll	952.0017085	1,306.80	3.58028
0.55002226	1151.04759	194.0638934	1.769072985		537	Champaign	1347.430582	1,884.39	5.162721
104.667416	2837.59651	525.0075308	12.92779838		1,080	Clark	3480.19925	4,560.40	12.49426
79.7457505	2146.31323	808.7994266	4.429748796	198.44817	1,119	Clermont	3237.736324	4,356.67	11.93609
	1272.91627	343.3164817	12.43984384		982	Clinton	1628.672597	2,610.44	7.151891
76.9896784	1637.42847	805.5192693	25.74257563		1,618	Columbiana	2545.679995	4,163.72	11.40745
136.105767	787.264803	205.5857156	4.512205081	157.35964	560	Coshocton	1290.828133	1,851.11	5.071525
59.9739963	1187.47268	240.7724461	22.3036129		683	Crawford	1510.52273	2,193.30	6.00904
1246.18168	14133.1656	8885.516028	220.7421712	42.621637	6,499	Cuyahoga	24528.22708	31,027.57	85.00705
176.18835	1703.66188	265.6328642	6.479730542	0.3425386	701	Darke	2152.305364	2,853.04	7.816551
894.090203	787.748166	458.1187183	24.95255137	0.1747868	555	Defiance	2165.084426	2,720.10	7.452332
136.556086	1863.33897	1112.071201	27.91195853		2,170	Delaware	3139.878212	5,310.07	14.54815
337.54616	1293.23232	2223.926795	40.99662038		1,364	Erie	3895.701896	5,259.71	14.41016
76.532015	1956.52919	444.7215309	2.877596503		1,471	Fairfield	2480.660336	3,952.08	10.82763
139.931846	843.209681	133.2657094	1.065765427		734	Fayette	1117.473001	1,851.21	5.071799
948.631342	14457.4604	4213.044566	124.6892376		12,229	Franklin	19743.82554	31,972.36	87.59552
371.950232	3246.45393	583.8506297	28.72345419		884	Fulton	4230.978246	5,115.09	14.01395
	693.098104	166.6833503	5.582258402	280.56327	578	Gallia	1145.926987	1,724.27	4.724018
1.35715764	4155.43085	1111.141044	0.12730278		606	Geauga	5268.056353	5,873.79	16.09257
20.1610957	1707.9387	624.0131772	2.353226101		955	Greene	2354.466202	3,309.94	9.068322
106.957711	1036.1494	563.9895907	0.501265053		1,075	Guernsey	1707.597968	2,782.57	7.62348

2009 Annual Emission Projections from Midwest RPO (TPY)									
Non-EGU Point	Area Sources	Nonroad	Maritime/Air/Rail	EGU Point	Onroad	County	Summation without mobile	Summation with mobile	Tons Per Day
900.067833	10236.7678	3210.581721	46.27618075	108.07373	4,257	Hamilton	14501.76723	18,759.03	51.39461
760.154478	2514.62339	424.7522168	20.9807782		1,285	Hancock	3720.510863	5,006.00	13.71506
	1291.79929	167.1505566	5.427482665		397	Hardin	1464.377333	1,861.22	5.099225
	405.465086	297.5428648	2.297357831		290	Harrison	705.3053089	995.467024	2.727307
118.569746	1186.38469	608.1693513	16.84254079	0.1095324	579	Henry	1930.075858	2,509.13	6.874328
32.0020375	1404.40549	300.9296702	1.115565286		463	Highland	1738.452767	2,200.95	6.030011
6.26404334	760.107536	341.5903029	9.900665338		358	Hocking	1117.862547	1,475.48	4.042413
10.7817567	1654.91817	342.5624455	1.719425384		472	Holmes	2009.9818	2,482.14	6.800377
1457.63673	1987.62443	523.5526206	39.8148793		775	Huron	4008.628659	4,783.96	13.10675
88.3642659	739.884095	287.9131858	0.923803589		560	Jackson	1117.08535	1,677.46	4.595776
261.819564	859.717363	414.0202457	7.62576475	351.1236	942	Jefferson	1894.306534	2,836.36	7.770859
0.54505386	1442.00331	320.8447336	0.36203985		592	Knox	1763.755139	2,355.45	6.453288
291.973097	2863.83616	2894.503938	34.25868743	144.4332	1,329	Lake	6229.005089	7,557.61	20.70579
84.525764	772.296021	136.9625915	17.59341839	6.0472048	886	Lawrence	1017.424999	1,903.33	5.214616
210.545655	2670.39298	723.6529044	0.941092479		2,216	Licking	3605.532628	5,821.40	15.94903
0.10937999	3037.88088	595.7428414	13.73233205		662	Logan	3647.465435	4,309.01	11.8055
990.810414	3759.68682	3123.8908	53.76400197	43.573003	1,540	Lorain	7971.725043	9,511.23	26.05815
2977.14475	5250.08899	2369.711544	37.68812187	44.58376	5,015	Lucas	10679.21716	15,694.65	42.99903
44.784225	986.869717	280.0142077	6.600507617		894	Madison	1318.268657	2,212.70	6.062204
207.400938	3656.77687	966.248544	19.38091259		3,104	Mahoning	4849.807267	7,953.42	21.79018
464.381601	1690.67692	252.7479954	37.6715065		981	Marion	2445.478027	3,426.82	9.388538
267.330963	2445.79057	1181.042277	12.14600652		1,325	Medina	3906.309816	5,230.84	14.33106
	483.876233	148.2778539	8.815868445		307	Meigs	640.9699558	948.432617	2.598446
	1204.94981	286.6676554	0.251516459		715	Mercer	1491.868982	2,206.52	6.045259
40.327143	2035.21479	507.4102919	9.52027064	4.3272862	1,301	Miami	2596.799784	3,897.48	10.67804
92.0984498	488.18286	132.3974589	4.437380563	0.0163585	338	Monroe	717.1325076	1,055.47	2.891708
1231.30601	8040.2132	1965.329988	65.92773277	33.424691	2,540	Montgomery	11336.20162	13,876.60	38.01809
	414.1923	72.01921336			264	Morgan	486.211513	750.138528	2.055174
	997.753137	246.9871882	5.425682598		854	Morrow	1250.166007	2,103.96	5.764263
173.389639	1608.83456	439.2822142	4.671099201		1,349	Muskingum	2226.177516	3,574.78	9.793927
22.567959	358.09237	69.233609			318	Noble	449.8939384	767.464836	2.102643



2009 Annual Emission Projections from Midwest RPO (TPY)									
Non-EGU Point	Area Sources	Nonroad	Maritime/Air/Rail	EGU Point	Onroad	County	Summation without mobile	Summation with mobile	Tons Per Day
20.4616291	995.446309	2342.223667	42.29038271		661	Ottawa	3400.421987	4,061.82	11.12826
1.60051831	680.338382	702.4404591	12.1586083		363	Paulding	1396.537968	1,759.23	4.819798
192.630752	693.988898	94.53156024	2.593034061		447	Perry	983.7442447	1,430.94	3.92039
559.566381	1079.60172	294.4908067	22.93546936	3.8085376	996	Pickaway	1960.402917	2,956.19	8.09916
19.8439032	1632.23517	292.8041867	18.43030646		491	Pike	1963.313566	2,454.53	6.724735
332.433166	1995.21651	1582.31033	30.5222657		1,441	Portage	3940.482272	5,381.06	14.74263
33.520097	1220.36588	292.2714155	9.929287288		681	Preble	1556.086676	2,237.35	6.129715
10.2840879	1775.00799	231.8834908	18.98873267		475	Putnam	2036.164303	2,510.77	6.878832
227.794749	2433.79707	652.6856409	13.87007521	3.3523146	1,827	Richland	3331.499853	5,158.63	14.13322
332.749565	2657.84848	236.1394539	24.46610395		1,116	Ross	3251.2036	4,366.90	11.96412
609.833028	2551.33816	900.9686499	18.33124902		1,285	Sandusky	4080.471082	5,365.84	14.70092
225.217095	1471.0595	548.0264669	35.88073922		1,003	Scioto	2280.183799	3,283.29	8.995314
109.515068	1933.37573	394.0736884	66.1598559		726	Seneca	2503.124336	3,228.95	8.846435
662.114632	1517.32714	268.191831	15.17910316		801	Shelby	2462.812705	3,264.12	8.942807
745.268267	6891.42979	2379.054827	17.89073519		3,931	Stark	10033.64362	13,964.49	38.25889
446.204665	5735.0188	2510.854712	35.73996686		4,481	Summit	8727.818141	13,208.99	36.18902
4109.8605	3617.31321	776.4838033	26.04798766	30.96321	2,019	Trumbull	8560.668711	10,579.22	28.98416
485.334086	1455.91062	380.5862542	4.715570324	2.6138139	1,458	Tuscarawas	2329.160347	3,787.39	10.37642
117.092528	4692.67003	357.253934	5.322274312		719	Union	5172.338768	5,891.66	16.14153
34.6904553	1416.40742	116.7331962	0.48457181		473	Van Wert	1568.315639	2,041.47	5.593071
2.58796148	350.811624	45.20633713	0.278447804		175	Vinton	398.8843705	574.096645	1.572868
190.624775	2589.6755	917.3675954	3.225061901	0.0267145	1,376	Warren	3700.919643	5,076.47	13.90814
628.214564	1179.5332	374.5038728	8.378761058	157.08589	974	Washington	2347.716282	3,321.76	9.100726
284.163786	2781.65024	638.6453149	15.45404282	4.3739759	1,653	Wayne	3724.287358	5,376.89	14.73121
344.922049	1268.40034	663.1843219	32.10295421	0.0022279	768	Williams	2308.611896	3,076.16	8.427832
210.683076	2487.75828	590.7573659	58.54488251	0.3248717	2,393	Wood	3348.068473	5,741.03	15.72885
523.642498	844.025577	110.5245418	11.48692651		581	Wyandot	1489.679543	2,070.69	5.673125

## OTHER STATES' EMISSIONS DATA AND PROJECTIONS

						2005											2009							
NOx		County		Onroad	Nonroad	Maritime/Air /Rail	Area Sources	EGU	NonEGU	Total	Tons Per Day	Onroad	Nonroad	Maritime/A ir/Rail	Area Sources	EGU	NonEGU	Total	Tons Per Day					
18	IN	29	Dearborn	1,933	240	143	141	8,304	2,045	12,805.78	35.08	1,594	203	94	147	11,258	1,998	15,293.65	41.90					
		47	Franklin	731	215	13	73	0	0	1,031.97	2.83	516	192	9	77	0	0	793.87	2.17					
		115	Ohio	121	32	144	14	0	0	311.00	0.85	75	29	94	15	0	0	213.00	0.58					
21	KY	15	Boone		931	2,928	1,844	3,926	58	9,687.00	26.54		817	1,978	619	1,308	63	4,785.00	13.11					
		19	Boyd		171	3,035	41	39	6,944	10,230.00	28.03		144	1,990	14	0	7,174	9,322.00	25.54					
		23	Bracken		74	145	60	0	4	283.00	0.78		70	92	20	0	4	186.00	0.51					
		37	Campbell		285	1,618	523	0	54	2,480.00	6.79		254	1,052	178	0	48	1,532.00	4.20					
		77	Gallatin		39	1,065	8	0	148	1,260.00	3.45		38	696	3	0	150	887.00	2.43					
		81	Grant		107	865	79	0	12	1,063.00	2.91		96	550	27	0	13	686.00	1.88					
		89	Greenup		119	2,242	36	0	915	3,312.00	9.07		108	1,460	12	0	834	2,414.00	6.61					
		117	Kenton		617	2,068	1,542	0	20	4,247.00	11.64		545	1,336	520	0	21	2,422.00	6.64					
		191	Pendleton		88	1,016	302	0	1,647	3,053.00	8.36		79	653	101	0	1,894	2,727.00	7.47					
42	PA	85	Mercer		665.89826		578.72883	0	1151.9057	2,396.53	6.57		585.73683	0.0390586	198.06189	0	1081.7755	1,865.61	5.11					
			Lawrence		345.15954		416.75856	2526.8141	3571.897	6,860.63	18.80		300.76489	0.8205654	144.12864	3035.4422	3789.9493	7,271.11	19.92					
54	WV	9	Brooke		187.60956	433.821161	306.80234	0	591.23604	1,519.47	4.16		149.90106	285.49153	105.76222	0	589.49564	1,130.65	3.10					
		11	Cabell		316.80337	1578.63208	669.92685	0	244.26722	2,809.63	7.70		274.15195	1056.0789	242.60673	0	247.38693	1,820.22	4.99					
		29	Hancock		124.1856	677.122148	1451.3119	0	864.41593	3,117.04	8.54		106.26544	444.89789	491.85166	482.205	1339.4747	2,864.69	7.85					
		51	Marshall		106.35205	653.496037	177.33621	32205.424	1882.7545	35,025.36	95.96		98.962219	429.21909	62.660808	26344.03	3810.3853	30,745.26	84.23					
		69	Ohio		158.67494	949.687065	593.41059	0	0.6718646	1,702.44	4.66		142.95346	625.37867	205.46182	0	0.7102146	974.50	2.67					
		73	Pleasants		34.132229	776.817049	174.98355	12275.642	1198.632	14,460.21	39.62		32.385285	508.62128	59.800302	3896.2361	1314.2431	5,811.29	15.92					
		99	Wayne		117.55987	2872.80354	156.83812	60.506028	3279.1619	6,486.87	17.77		106.304	1917.8845	56.831199	60.259406	2663.4014	4,804.68	13.16					
		105	Wirt		29.548793	0.35797107	33.637047	0	0.0614933	63.61	0.17		27.945248	0.2352688	11.763511	0	0.0777451	40.02	0.11					
		107	Wood		377.71525	1218.7721	524.36196	0	921.83684	3,042.69	8.34		325.44363	805.17764	191.27905	0	940.45385	2,262.35	6.20					

			2005								2009							
VOC		County	Onroad	Nonroad	Maritime/Air /Rail	Area Sources	EGU	NonEGU	Total	Tons Per Day	Onroad	Nonroad	Maritime/A ir/Rail	Area Sources	EGU	NonEGU	Total	Tons Per Day
18	IN	29 Dearborn	765	210	4	834	91	971	2,875.47	7.88	715	167	3	759	150	1,071	2,865.50	7.85
		47 Franklin	351	252	1	517	0	0	1,121.47	3.07	274	214	0.3	492	0	0	980.58	2.69
		115 Ohio	75	38	3	132	0	0	248.00	0.68	56	31	2	123	0	0	212.00	0.58
21	KY	15 Boone		1,237	295	3,007	49	728	5,316.00	14.56		1,101	223	1,020	55	768	3,167.00	8.68
		19 Boyd		181	103	773	0	3,039	4,096.00	11.22		148	71	246	0	3,226	3,691.00	10.11
		23 Bracken		151	6	180	0	13	350.00	0.96		125	4	57	0	15	201.00	0.55
		37 Campbell		397	59	1,765	0	169	2,390.00	6.55		321	40	551	0	177	1,089.00	2.98
		77 Gallatin		146	37	161	0	160	504.00	1.38		121	25	51	0	169	366.00	1.00
		81 Grant		234	38	468	0	45	785.00	2.15		258	25	151	0	53	487.00	1.33
		89 Greenup		286	81	627	0	129	1,123.00	3.08		233	55	193	0	117	598.00	1.64
		117 Kenton		637	80	3,156	0	232	4,105.00	11.25		501	54	986	0	271	1,812.00	4.96
		191 Pendleton		66	41	354	0	80	541.00	1.48		54	28	115	0	83	280.00	0.77
42	PA	85 Mercer		1162.5118	12.2107844	2750.4348	0	727.4916	4,652.65	12.75		1081.0497	7.2483016	931.22161	0	652.11821	2,671.64	7.32
		Lawrence		598.44735	28.3194824	1654.7338	8.4242273	327.60343	2,617.53	7.17		574.4911	11.067181	558.60689	8.4671716	312.93815	1,465.57	4.02
54	WV	9 Brooke		175.83498	14.1696881	843.06402	0	1325.0988	2,358.17	6.46		141.28169	9.8379348	268.99192	0	895.33273	1,315.44	3.60
		11 Cabell		764.89889	59.3635169	3360.497	0	92.523741	4,277.28	11.72		753.69331	40.124191	1052.8976	0	92.421615	1,939.14	5.31
		29 Hancock		222.96299	22.2836984	984.13722	18.316177	1023.3419	2,271.04	6.22		183.28779	15.438513	308.43737	18.26489	1039.0686	1,564.50	4.29
		51 Marshall		208.20935	22.1045227	1574.6258	172.9178	662.48395	2,640.34	7.23		173.58049	15.326534	501.70841	171.81723	756.1996	1,618.63	4.43
		69 Ohio		382.96036	42.1290522	1455.7809	0	13.145486	1,894.02	5.19		376.04429	29.450584	458.08124	0	13.771935	877.35	2.40
		73 Pleasants		273.31168	25.9628439	437.76884	111.75086	375.51142	1,224.31	3.35		287.56315	17.901143	138.97463	111.31	391.60875	555.75	1.52
		99 Wayne		267.05703	127.58876	1284.1893	0.1431187	274.16293	1,953.14	5.35		222.27834	88.119218	397.68872	0.1411939	247.46266	955.69	2.62
		105 Wirt		220.17843	0.00914417	170.37114	0	4.3591904	394.92	1.08		243.84906	6.3571104	54.085299	0	5.3997522	309.69	0.85
		107 Wood		742.06172	40.1921936	3122.5713	0	643.20882	4,548.03	12.46		664.07606	27.783045	978.5958	0	514.36746	2,184.82	5.99

2005 Annual Emissions from Midwest RPO (TPY)									
Non-EGU Point	Area Sources	Nonroad	Maritime/Air/Rail	EGU Point	Onroad	County	Summartion without mobile	Summation with mobile	Tons Per Day
<b>NOx</b>									
665.4181468	127.8512308	142.2804961	325.3041981	30205.81803	862	Adams	31466.67211	32,328.73	88.5718552
2991.880844	389.5869891	803.2969087	324.2582648		3,784	Allen	4509.023006	8,292.81	22.7200145
32.36653369	216.436694	965.3600582	273.0783898		2,362	Ashland	1487.241676	3,848.94	10.5450291
237.5545903	314.7016768	1057.583383	1809.202225	1592.349255	3,359	Ashtabula	5011.391129	8,370.19	22.9320339
733.0289046	159.8532011	227.1561993	83.12148068		1,681	Athens	1203.159786	2,884.46	7.90263188
53.49588799	191.748453	575.6542011	142.8919782	195.3795374	1,785	Auglaize	1159.170058	2,943.85	8.0653419
22.75719756	284.6646277	222.4568203	261.8532617	4149.926608	3,013	Belmont	4941.658515	7,954.46	21.7930447
1.600925322	170.1505495	312.1414318	256.4216746		1,322	Brown	740.3145811	2,062.10	5.6495901
4367.148842	796.3408207	2348.416469	919.9078821	743.2701719	7,149	Butler	9175.084186	16,324.42	44.7244337
789.6463145	95.47257866	169.463334	24.90942133		686	Carroll	1079.491649	1,765.93	4.83817116
46.07266396	159.6159918	446.7931452	42.72370113		1,037	Champaign	695.2055021	1,732.63	4.74694482
52.22301547	554.0528481	806.8319593	277.5289641		4,251	Clark	1690.636787	5,941.27	16.2774644
67.49864656	612.9683579	1218.225219	259.0719743	28063.56236	4,812	Clermont	30221.32655	35,032.93	95.9806401
	164.4405328	552.820956	17.22327631		2,180	Clinton	734.4847651	2,914.24	7.98421125
134.4748323	444.8123844	496.7300971	785.6224985		3,319	Columbiana	1861.639812	5,180.67	14.193603
578.944339	148.9225708	262.0157883	158.462618	21465.82846	1,087	Coshocton	22614.17377	23,700.94	64.9340947
27.33687877	168.0343286	607.5158513	657.0436022		1,314	Crawford	1459.930661	2,774.42	7.60114772
3081.220091	5103.402371	8152.549331	3672.472093	1848.360326	26,269	Cuyahoga	21858.00421	48,126.64	131.853806
44.68283169	210.0251864	693.7889105	197.8449251		1,383	Darke	1146.341854	2,528.99	6.92875182
1397.495154	116.110749	498.9565395	755.1614199	48.42551779	1,153	Defiance	2816.14938	3,969.47	10.8752675
13.88530963	457.7916614	1875.657138	815.9313121		5,098	Delaware	3163.265421	8,261.25	22.6335511
406.7350701	305.8096999	1013.266847	1310.875671		3,769	Erie	3036.687288	6,805.71	18.6457743
1318.659257	329.9943995	1192.440543	91.249466		3,194	Fairfield	2932.343666	6,126.18	16.7840568
38.66221445	106.5656259	485.9791504	11.17031835		1,858	Fayette	642.3773091	2,500.87	6.85170194
842.4000769	3945.507681	7321.500826	1751.393206		34,997	Franklin	13860.80179	48,857.87	133.857176
309.8236066	185.2368927	636.529526	858.9882298		2,069	Fulton	1990.578255	4,059.57	11.1221194
	122.8063407	110.2283727	316.9243325	57523.60068	1,159	Gallia	58073.55972	59,232.14	162.279823
	389.8771472	761.0884955	0.572462495		1,913	Geauga	1151.538105	3,064.27	8.39525931
2530.803768	504.3031417	1016.046806	67.80312866		3,615	Greene	4118.956844	7,733.72	21.1882618
1470.326416	122.4630811	304.7216741	0.097729437		2,795	Guernsey	1897.608901	4,692.51	12.8561945
2756.20723	1923.267675	4845.976648	1463.798706	15236.0417	22,149	Hamilton	26225.29196	48,374.06	132.53167
89.40642489	235.7548532	976.4712236	586.5694608		3,381	Hancock	1888.201962	5,268.84	14.4351715

2005 Annual Emissions from Midwest RPO (TPY)									
Non-EGU Point	Area Sources	Nonroad	Maritime/Air/ Rail	EGU Point	Onroad	County	Summartion without mobile	Summation with mobile	Tons Per Day
	135.2530656	422.4791261	160.5576043		839	Hardin	718.289796	1,557.01	4.26578065
120.4074828	71.29829013	136.257251	76.72447786		617	Harrison	404.6875018	1,021.24	2.79792778
279.965503	128.416002	506.3779874	524.5943853		1,181	Henry	1439.353878	2,620.24	7.17874811
	169.6400498	414.5752281	25.51641534		1,016	Highland	609.7316933	1,625.56	4.45358515
614.8868863	123.5594686	103.3134266	365.8099649		830	Hocking	1207.569746	2,037.76	5.58289761
172.7548607	135.728842	363.7670811	42.61270655		936	Holmes	714.8634903	1,650.39	4.52160815
83.80755583	233.804764	619.316045	1146.559458		1,669	Huron	2083.487823	3,752.40	10.2805345
18.71940108	126.7787432	154.757543	17.22127733		1,249	Jackson	317.4769646	1,566.38	4.29144859
1991.850088	251.3787438	253.5924723	317.2955901	41046.60544	2,042	Jefferson	43860.72234	45,903.06	125.761812
11.40290251	233.4787688	566.9039207	0.079507086		1,249	Knox	811.8650991	2,060.85	5.64617346
471.6494899	848.091211	1873.783035	1065.830202	12969.07683	5,332	Lake	17228.43077	22,560.63	61.8099414
68.51094201	232.7299869	165.4977499	785.4810411		1,594	Lawrence	1252.21972	2,845.98	7.79720014
969.1508546	584.9887537	1106.26582	34.77150212		5,346	Licking	2695.17693	8,040.73	22.0293942
10.02318463	207.1781527	549.1710766	420.9409771		1,492	Logan	1187.313391	2,679.69	7.34161575
926.8370896	981.140429	2507.763837	1711.077378	6959.728252	5,774	Lorain	13086.54699	18,860.20	51.6717938
5284.263662	1599.069893	2423.621871	1230.908346	6872.65926	11,108	Lucas	17410.52303	28,518.39	78.1325699
4.490701089	152.1273134	636.8027651	162.1883007		2,521	Madison	955.6090803	3,476.71	9.52522622
472.2930691	972.0671185	1171.636714	583.5712062		7,251	Mahoning	3199.568108	10,450.73	28.6321266
456.1493527	226.7743031	692.0572343	1091.765116		2,064	Marion	2466.746006	4,530.28	12.411734
72.84383352	577.4160869	1295.08275	331.5718089		5,041	Medina	2276.914479	7,317.97	20.049235
	96.11009291	131.1741225	538.743482		698	Meigs	766.0276974	1,464.46	4.01221551
	164.7408764	573.1175204	2.279493481		1,321	Mercer	740.1378903	2,061.38	5.64762145
20.31810103	372.1208839	878.7004015	294.6682314		3,226	Miami	1565.807618	4,791.52	13.1274602
106.557486	67.37641828	135.0543103	277.1753146		627	Monroe	586.1635291	1,213.55	3.32478303
1481.02527	1886.520241	3141.215567	931.1444704	2835.309632	12,036	Montgomery	10275.21518	22,311.45	61.1272702
	67.067281	83.93493488			496	Morgan	151.0022159	646.637045	1.77160834
	152.007238	299.9266738	163.1817641		2,172	Morrow	615.1156759	2,787.41	7.63673056
524.6040856	321.9428577	485.3510363	150.2948329		3,360	Muskingum	1482.192813	4,841.93	13.2655659
2.939495987	59.97498011	81.11747091			782	Noble	144.031947	925.816053	2.53648234
711.3403814	162.9654471	1071.021152	1228.602043		1,617	Ottawa	3173.929024	4,791.23	13.1266491
	83.22030632	428.4262237	362.8227987		690	Paulding	874.4693288	1,564.03	4.28502456
708.7918698	99.22558878	185.1562381	82.80474106		848	Perry	1075.978438	1,924.30	5.27206004
274.9901235	134.16487	675.5302024	685.7922232	631.8553036	2,098	Pickaway	2402.332723	4,500.39	12.3298431

2005 Annual Emissions from Midwest RPO (TPY)									
Non-EGU Point	Area Sources	Nonroad	Maritime/Air/Rail	EGU Point	Onroad	County	Summartion without mobile	Summation with mobile	Tons Per Day
335.1993205	119.8190129	197.2095617	559.2183709		1,036	Pike	1211.446266	2,247.04	6.15626624
83.18772038	559.8557184	1184.57576	908.7988608		4,978	Portage	2736.418059	7,714.76	21.1363177
1.272785349	171.6673839	449.2283154	296.6961079		1,760	Preble	918.8645925	2,679.03	7.33980776
9.734819195	137.7765653	675.0518049	573.2587706		902	Putnam	1395.82196	2,297.43	6.29433665
1693.736603	355.0891578	788.2836611	299.2424956	564.4177735	4,199	Richland	3700.769691	7,900.24	21.6444873
3400.962017	276.0035179	452.8888844	695.9138696		2,523	Ross	4825.768289	7,349.01	20.1342743
3353.105403	235.7187958	741.3561226	520.8759637		3,359	Sandusky	4851.056285	8,209.88	22.4928326
570.1214548	240.8618702	324.8902171	1337.517096		2,103	Scioto	2473.390638	4,576.28	12.5377641
5503.88451	240.6112606	645.7561067	1963.572565		1,467	Seneca	8353.824442	9,821.27	26.9076009
295.2411452	137.9300787	731.0728696	463.4166749	0.529136119	2,004	Shelby	1628.189904	3,631.72	9.94992865
1129.413792	1313.878263	2801.964836	537.267988		8,504	Stark	5782.52488	14,286.07	39.1399208
1456.663696	2034.664912	2953.589491	762.0531911		14,892	Summit	7206.97129	22,098.99	60.5451823
1252.079436	621.3177188	1218.281146	604.1369763	4153.711771	5,687	Trumbull	7849.527048	13,536.96	37.0875552
482.3332019	331.2304234	508.6101089	144.01079	312.4415839	3,457	Tuscarawas	1778.626108	5,235.30	14.3432791
32.41341828	175.0259817	981.3806085	125.2186975		1,958	Union	1314.038706	3,271.74	8.96367659
129.7373322	108.6436242	504.1831282	5.485450994		1,077	Van_Wert	748.0495356	1,825.44	5.00121108
48.11593825	52.21160509	53.10635269	7.223384108		397	Vinton	160.6572801	557.354421	1.52699841
1024.950145	426.5709613	1789.966237	96.06858229		5,736	Warren	3337.555925	9,073.35	24.8585052
1748.861488	168.437964	425.9692113	500.77715	16137.08583	2,191	Washington	18981.13165	21,171.65	58.0045091
1245.639215	458.1771919	1006.943998	352.3206864	1998.958305	3,560	Wayne	5062.039396	8,621.92	23.6216952
55.07181539	164.8581838	538.5139282	957.3288528	0.848733327	1,776	Williams	1716.621514	3,492.71	9.56907384
1238.443105	435.7094076	1248.685016	1624.466501		6,478	Wood	4547.30403	11,025.26	30.2062012
176.8985233	98.65752561	432.4747005	353.9503472		1,384	Wyandot	1061.981097	2,445.85	6.70096527

2005 Annual Emissions from Midwest RPO (TPY)									
Non-EGU Point	Area Sources	Nonroad	Maritime/Air/ Rail	EGU Point	Onroad	County	Summartion without mobile	Summation with mobile	Tons Per Day
<b>VOC</b>									
22.90728143	891.504573	146.4595177	7.603215987	239.2732695	533	Adams	1307.747858	1,840.77	5.04321259
1050.533666	2303.931579	601.4106735	19.83524403		2,628	Allen	3975.711162	6,604.08	18.0933602
10.37924765	1360.629947	3515.896202	14.7611699		1,288	Ashland	4901.666567	6,189.37	16.9571884
277.3375269	2264.981098	2707.657076	88.26044876	0.199175465	1,815	Ashtabula	5338.435325	7,153.28	19.5980232
46.69387826	1202.364917	198.1547824	4.457329462		1,079	Athens	1451.670908	2,530.34	6.93244924
291.8631452	1530.765753	493.0895025	8.216465767	1.004879063	1,012	Auglaize	2324.939745	3,336.87	9.14209712
56.71036431	1725.563492	424.0936989	7.157978637	0.36894177	1,673	Belmont	2213.894476	3,886.45	10.6477968
24.67511018	1208.65071	149.4544675	5.998244871		821	Brown	1388.778533	2,209.36	6.0530511
1298.679816	4449.404871	1608.191259	55.03428043	5.715143185	5,014	Butler	7417.025369	12,431.09	34.0577767
37.58912029	660.5221527	303.8929428	1.977508779		441	Carroll	1003.981725	1,444.88	3.95858475
0.626449039	1168.985357	225.1195026	2.482517489		673	Champaign	1397.213826	2,069.97	5.6711403
114.1895276	3058.284328	631.7287356	19.58116085		1,806	Clark	3823.783752	5,629.51	15.4233253
80.34756471	2593.897721	1007.200733	6.608729592	168.7037443	2,682	Clermont	3856.758492	6,538.96	17.9149649
	1347.446559	382.5071545	15.62846489		1,379	Clinton	1745.582178	3,124.71	8.56084134
67.63996193	1999.610398	892.3170654	41.24536472		2,152	Columbiana	3000.81279	5,153.09	14.1180681
130.4084871	808.0692495	236.8206467	6.305863033	130.8013911	771	Coshocton	1312.405637	2,082.92	5.70664092
77.98790678	1345.197607	292.6492941	35.64673775		876	Crawford	1751.481546	2,627.35	7.1982169
1080.409449	17218.74911	11077.45259	325.026597	0.169309082	8,948	Cuyahoga	29701.80706	38,649.67	105.889513
157.7748155	1715.001292	317.0107588	10.4733573		950	Darke	2200.260224	3,149.90	8.6298561
798.122448	913.6863801	518.3110405	40.21259838	3.136102035	817	Defiance	2273.468569	3,090.30	8.4665621
108.6059804	2325.272421	1348.823443	44.66621883		2,812	Delaware	3827.368062	6,638.98	18.188997
319.0490489	1598.060858	2501.478797	65.33250648		1,988	Erie	4483.92121	6,471.47	17.7300669
74.26182592	2383.986796	573.6911662	4.466982413		2,218	Fairfield	3036.406771	5,254.89	14.3969571
131.5931098	954.2099035	170.1148665	1.497049201		1,023	Fayette	1257.414929	2,280.19	6.24708579
855.2632896	18258.98522	5421.205773	183.6910401		20,582	Franklin	24719.14532	45,301.57	124.113884
351.2425929	3144.743962	653.3971344	45.99191259		1,170	Fulton	4195.375602	5,365.13	14.698992
	720.0424452	185.9969649	8.32674845	339.7040873	703	Gallia	1254.070246	1,956.67	5.36074231
1.043627509	4067.99509	1342.968746	0.170660188		761	Geauga	5412.178123	6,172.83	16.9118615
20.13767936	2084.605497	748.6247585	3.766384703		1,603	Greene	2857.13432	4,459.95	12.2190369
102.5270867	1094.954326	607.1608654	0.666093115		1,522	Guernsey	1805.308371	3,327.75	9.11713191
852.5772704	12283.36497	4071.787792	71.19351563	98.78611357	13,416	Hamilton	17377.70966	30,793.82	84.3666259
680.0372707	2823.582338	515.858763	33.46827457		2,076	Hancock	4052.946646	6,128.87	16.7914205

2005 Annual Emissions from Midwest RPO (TPY)									
Non-EGU Point	Area Sources	Nonroad	Maritime/Air/ Rail	EGU Point	Onroad	County	Summartion without mobile	Summation with mobile	Tons Per Day
	1302.267588	195.5633395	8.721215071		572	Hardin	1506.552143	2,078.55	5.69466469
	420.6816583	319.7269415	3.226661411		377	Harrison	743.6352612	1,120.33	3.06940414
97.46671569	1221.033551	664.3222092	27.13060646		776	Henry	2009.953082	2,786.39	7.6339475
43.79368662	1372.567136	344.0394569	1.543234728		666	Highland	1761.943515	2,428.26	6.6527662
5.311704834	781.4350063	361.982333	13.8429171		466	Hocking	1162.571961	1,628.62	4.46196079
10.51129939	1670.070597	385.8683813	2.605990715		608	Holmes	2069.056268	2,676.85	7.33384239
1361.424469	2110.836291	592.6521577	63.02689454		1,127	Huron	4127.939812	5,254.90	14.3969869
80.54542689	762.7216092	311.2288603	1.359530318		712	Jackson	1155.855427	1,868.34	5.11872749
254.4092492	1102.832784	468.5481986	11.73838044	141.0603023	1,402	Jefferson	1978.588915	3,381.02	9.26307972
0.556423081	1465.494392	372.6004492	0.51387705		853	Knox	1839.165141	2,692.57	7.37691462
270.3785038	3542.718507	3408.521363	54.83943302	4.825311297	1,703	Lake	7281.283118	8,984.61	24.6153621
66.37376724	978.1256948	164.9536829	27.51889298		985	Lawrence	1236.972038	2,222.25	6.08836215
186.0751368	3255.442799	855.1901945	1.315817141		2,895	Licking	4298.023948	7,193.44	19.708042
0.109379991	2745.094461	653.4992264	22.06051713		891	Logan	3420.763584	4,311.88	11.8133654
914.0748727	4428.021139	3685.093739	86.11261863	51.96794125	2,082	Lorain	9165.270311	11,247.42	30.8148479
2672.977521	6714.897221	2858.470498	59.83158278	0.506923067	8,396	Lucas	12306.68375	20,702.19	56.7183174
37.97630401	1144.647727	346.2510702	10.35752303		1,306	Madison	1539.232624	2,845.01	7.79454564
245.940918	4462.588232	1175.95219	31.16901449		4,233	Mahoning	5915.650355	10,148.69	27.8046384
406.7128259	1866.621831	302.3441999	60.23025213		1,406	Marion	2635.909109	4,042.30	11.0747987
241.9272396	2854.495085	1392.76988	19.08582312		1,662	Medina	4508.278028	6,170.01	16.904124
	501.5407955	164.4803773	13.38931909		418	Meigs	679.4104919	1,097.43	3.00665539
	1213.889018	338.9593161	0.351820723		934	Mercer	1553.200155	2,487.40	6.81480099
36.81461515	2326.339994	626.436395	15.42507989		1,892	Miami	3005.016084	4,897.27	13.4171804
85.17718205	497.5297297	148.184742	6.602755521		425	Monroe	737.4944093	1,162.60	3.1852153
1220.696829	9370.132173	2512.893006	97.92863556	11.06144572	6,303	Montgomery	13212.71209	19,515.96	53.4683936
	434.0542019	85.57511385			339	Morgan	519.6293157	858.923424	2.35321486
	1046.655897	280.4161384	8.75337733		1,191	Morrow	1335.825413	2,527.18	6.92377877
160.7163695	1918.324491	520.2146638	6.506121676		2,096	Muskingum	2605.761646	4,701.44	12.8806457
22.50350125	382.1863306	82.32850581			393	Noble	487.0183377	880.508797	2.41235287
17.98798543	1004.079423	2570.131529	66.40842958		912	Ottawa	3658.607366	4,570.77	12.5226632
1.531319873	688.1123772	760.3036115	19.52034364		461	Paulding	1469.467652	1,930.57	5.28923635
161.3777558	709.8177978	113.6655386	3.976044769		573	Perry	988.837137	1,561.52	4.27812875
438.4500475	1266.136425	355.8122246	36.92162	3.808537616	1,369	Pickaway	2101.128855	3,469.79	9.50626985



2005 Annual Emissions from Midwest RPO (TPY)									
Non-EGU Point	Area Sources	Nonroad	Maritime/Air/Rail	EGU Point	Onroad	County	Summartion without mobile	Summation with mobile	Tons Per Day
17.57147189	1635.865076	319.0839812	29.71393503		615	Pike	2002.234464	2,616.88	7.16952133
283.9084474	2405.223071	1802.593626	48.92655459		1,937	Portage	4540.651699	6,478.06	17.7481034
44.21934725	1250.861973	335.1054331	15.94814247		986	Preble	1646.134896	2,631.97	7.21087097
15.72961497	1685.217393	278.0642663	30.54358046		613	Putnam	2009.554854	2,622.45	7.18478626
240.692048	2920.885793	770.086338	20.9549728	1.888116797	2,641	Richland	3954.507269	6,595.93	18.0710375
321.8204408	2563.760703	294.4125198	39.11239865		1,552	Ross	3219.106063	4,771.27	13.0719776
510.3475154	2761.858766	994.5219426	29.21903444		1,856	Sandusky	4295.947258	6,152.06	16.8549622
209.8741396	1469.673781	600.8049125	56.90192705		1,386	Scioto	2337.25476	3,722.95	10.1998628
89.26860703	2076.695289	455.2949723	106.2504597		1,025	Seneca	2727.509328	3,752.94	10.2820147
674.4929858	1520.011257	334.6864757	24.47584541	0.0099837	1,167	Shelby	2553.676547	3,720.47	10.1930626
696.6357949	8049.436125	3013.401752	27.76430052		5,295	Stark	11787.23797	17,082.29	46.800789
410.0552853	7111.347571	3060.821771	54.37742525		6,104	Summit	10636.60205	16,740.18	45.8634986
3678.887056	4391.341684	954.3922783	40.32221684	26.09604986	3,701	Trumbull	9091.039285	12,792.49	35.0479132
416.4589247	1783.147467	466.9221558	6.557251136	1.531137754	2,062	Tuscarawas	2674.616936	4,737.07	12.9782698
131.5123778	4113.14651	482.5857355	8.335771089		1,073	Union	4735.580394	5,808.80	15.9145094
35.07480007	1463.401542	145.0859056	0.682640071		607	Van_Wert	1644.244887	2,251.72	6.16910136
2.548404335	363.6008481	54.80387417	0.428171375		229	Vinton	421.381298	650.067827	1.78100775
182.0413477	3120.264209	1135.147727	5.079305805		2,625	Warren	4442.53259	7,067.84	19.3639412
570.2900355	1217.273069	441.824919	12.7802928	117.8177133	1,409	Washington	2359.98603	3,769.44	10.3272409
257.3854145	2838.895202	763.4052128	23.5532185	5.738727565	2,344	Wayne	3888.977776	6,233.32	17.0775896
279.3916585	1302.050295	727.1476114	51.53741074	0	962	Williams	2360.126975	3,321.94	9.10120036
180.3169838	2933.400315	726.2169312	92.63222145		3,811	Wood	3932.566452	7,743.35	21.214671
436.5337664	864.2882119	138.0910666	18.50939477		744	Wyandot	1457.42244	2,201.25	6.03081197

## **Meteorology**

Ohio is located in what is meteorologically termed the Mid-Latitudes. For pollutant dispersion, the most important meteorological parameter is wind speed and wind direction. In this region, surface weather systems predominantly travel from west to east, guided by either the sub-tropical or polar jet streams. The resulting surface transport winds associated with these systems will generally have a western component with additional southern components in the summer and northern components in the winter, although, on any given day, winds can blow from any direction.

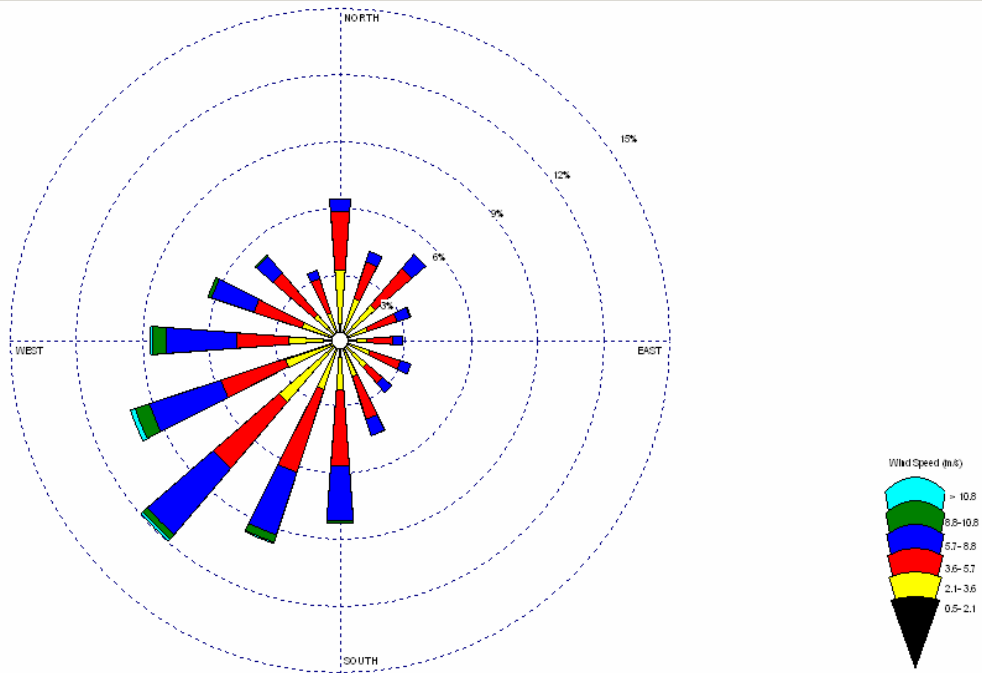
Below are representative wind roses for several locations in-and-around Ohio. The regional nature of mid-latitude wind distributions may best be represented by the Columbus and Dayton airport wind roses. Columbus and Dayton are located in a relatively flat area in the central part of the state, generally unaffected by significant orographic or other surface features (e.g., Lake Erie).

These general wind patterns can be modified by two general geographic features. Ohio is bounded on the north by Lake Erie which can provide localized modifications to the general flow, primarily by the introduction of land breezes and lake breezes along the Lake during periods of low synoptic wind speeds. These effects would best be represented by the Toledo and Cleveland airport wind roses.

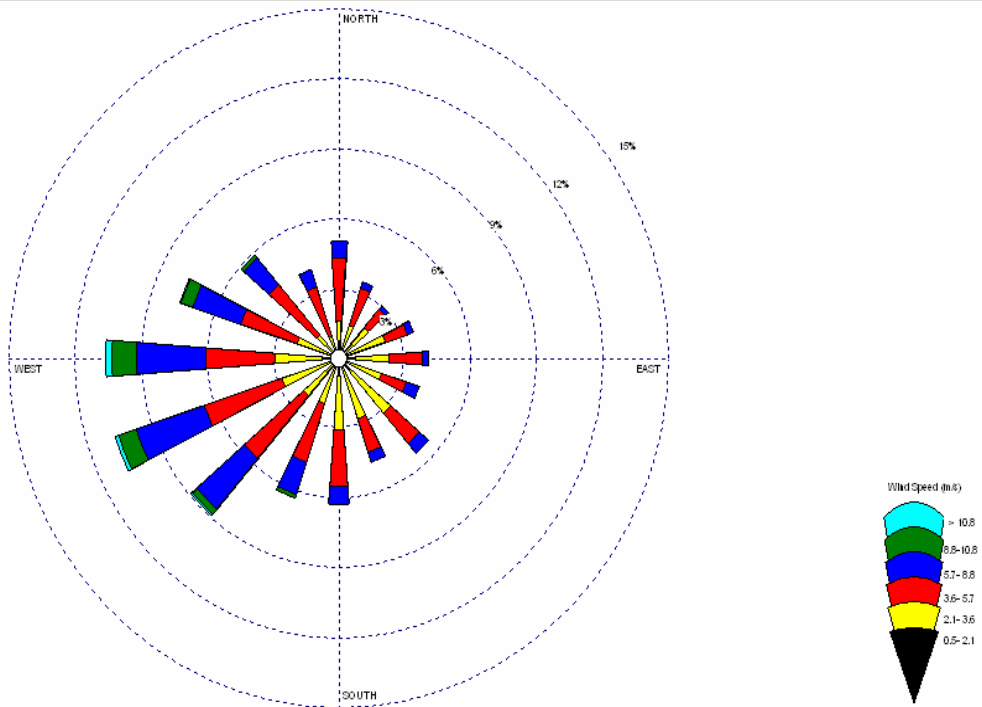
The second major geographic feature affecting winds in Ohio is the hilly terrain located in the east, south and southeast portions of the state. While the remainder of the state is primarily agricultural, these portions of the state, which represent the foot hills of the Appalachians, have significant forested areas which modify the surface roughness lengths and can impact wind speed and wind direction. The Covington, Huntington and Pittsburgh airport wind roses best illustrate the range of deviations that can occur as compared to the Columbus and Dayton examples.

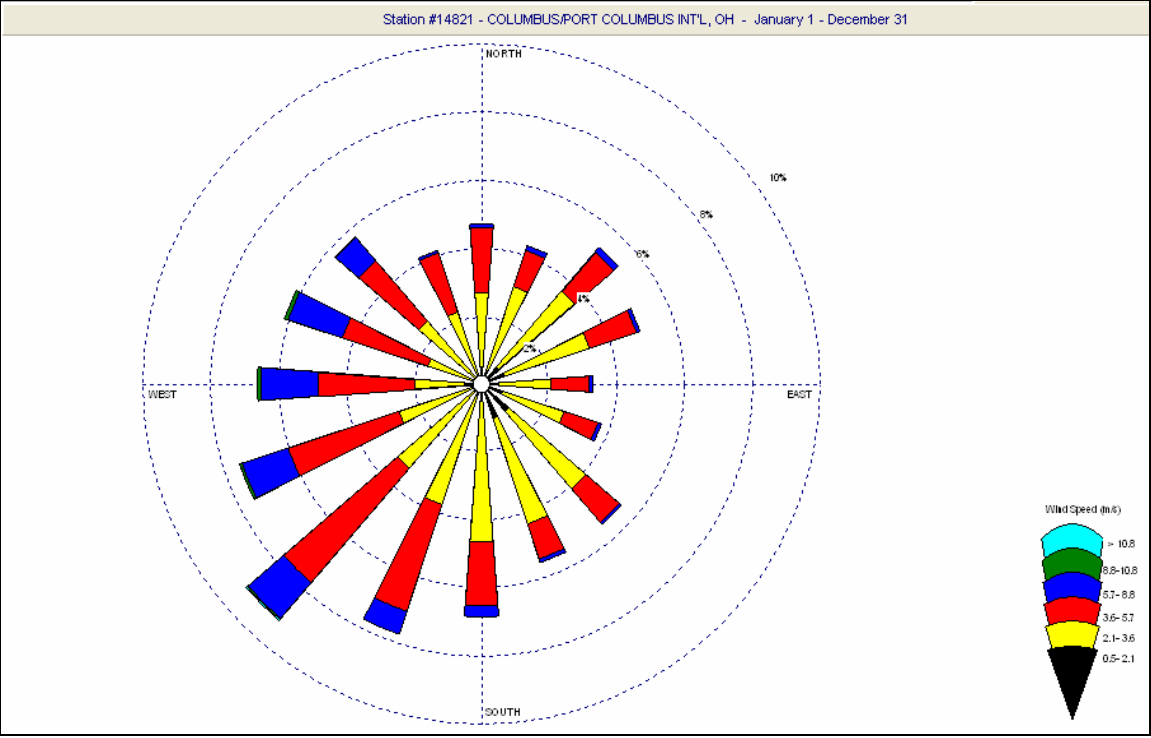
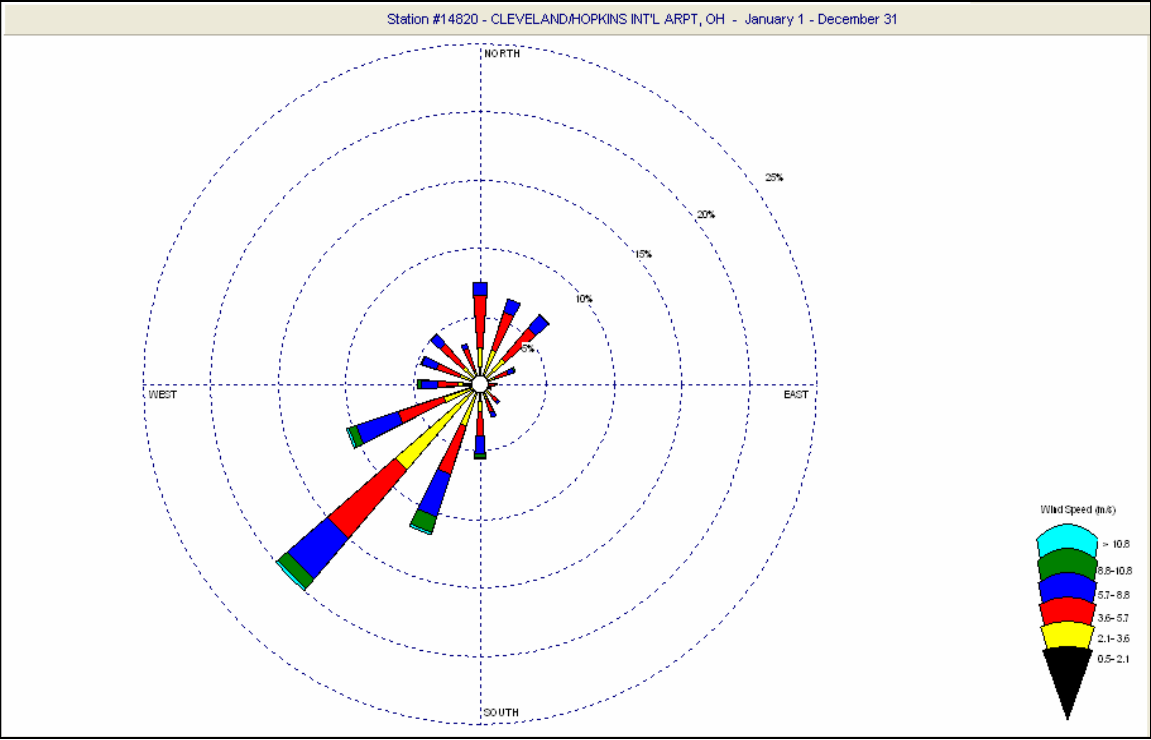
While, as stated above, at any location within the state, winds can blow from any direction. A given 8-hour period could have average winds from any direction, thus making counties in all directions from the urban industrial core area potentially important emission source areas.

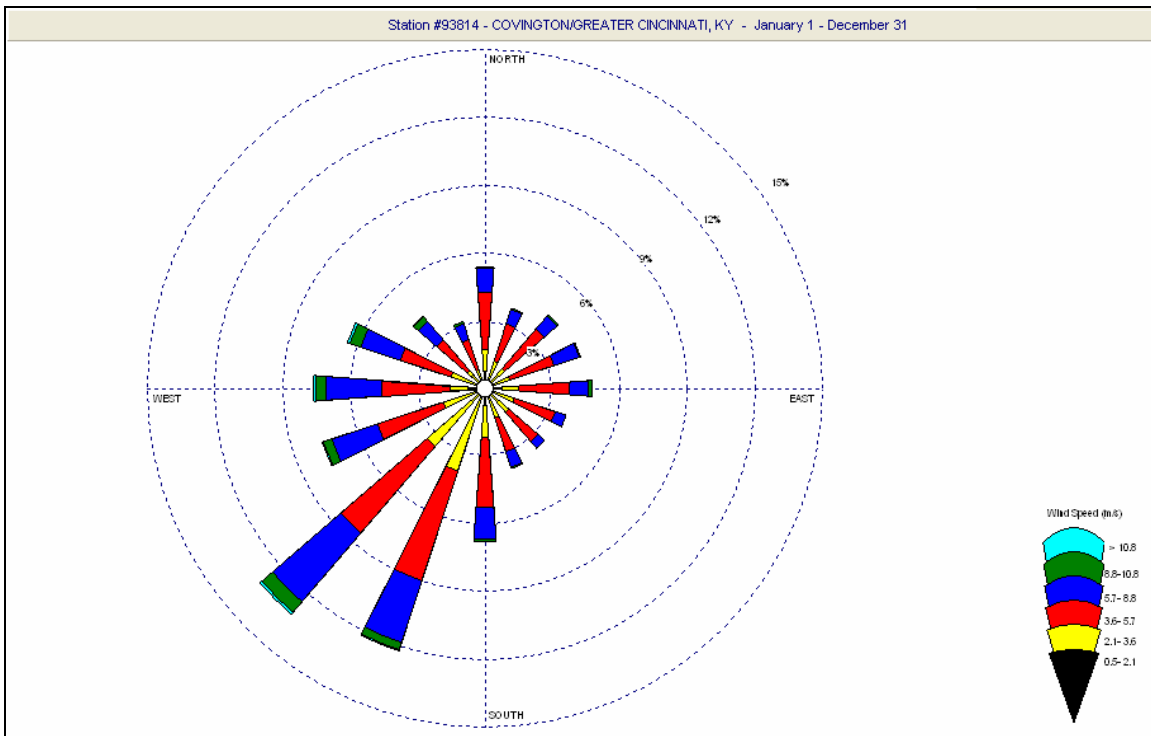
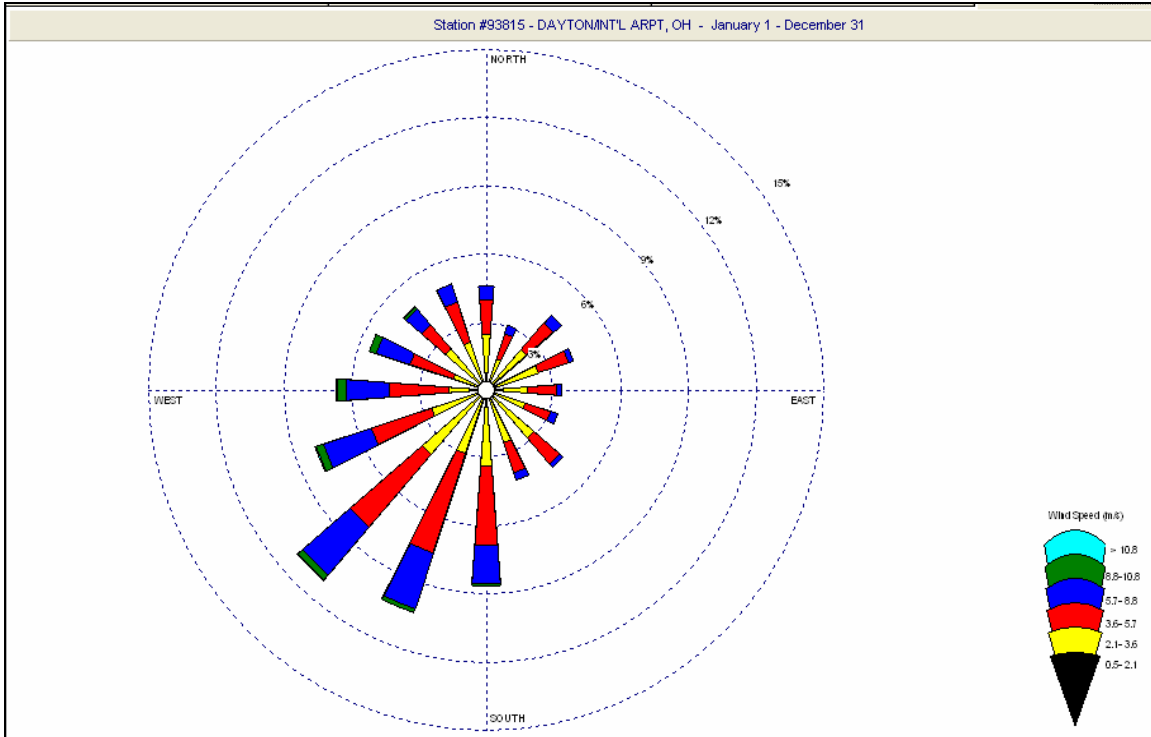
Station #14895 - AKRON/AKRON-CANTON REGIONAL, OH - January 1 - December 31

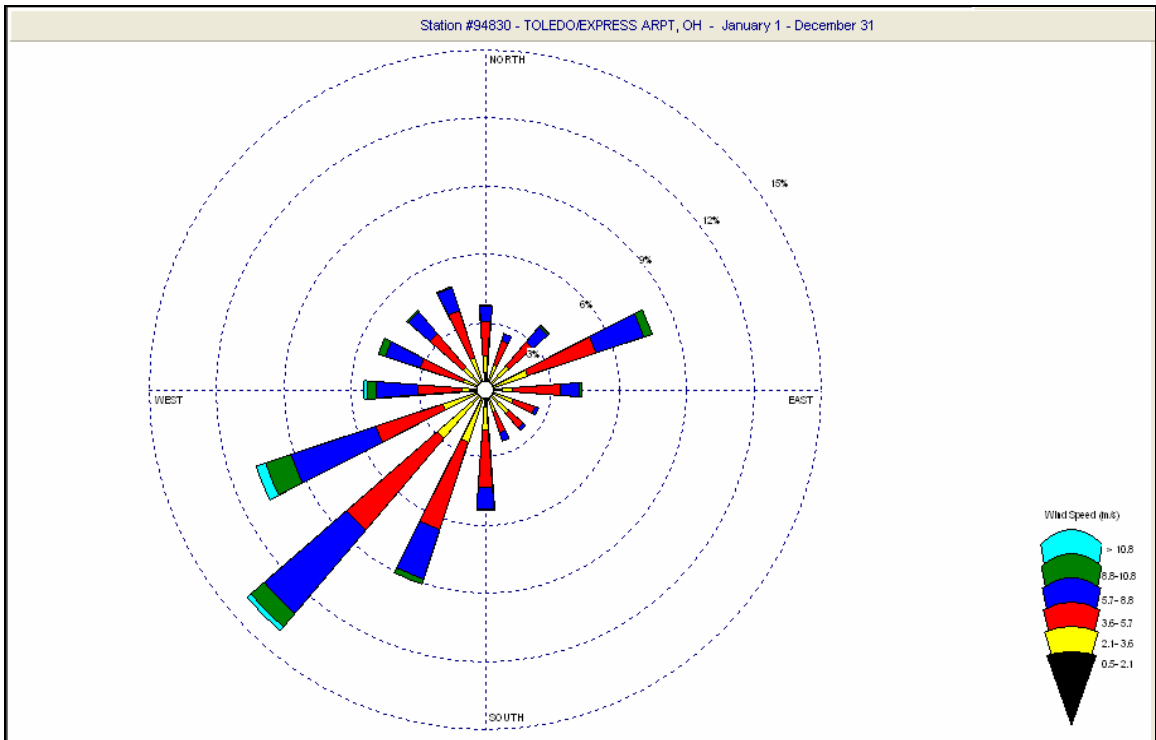
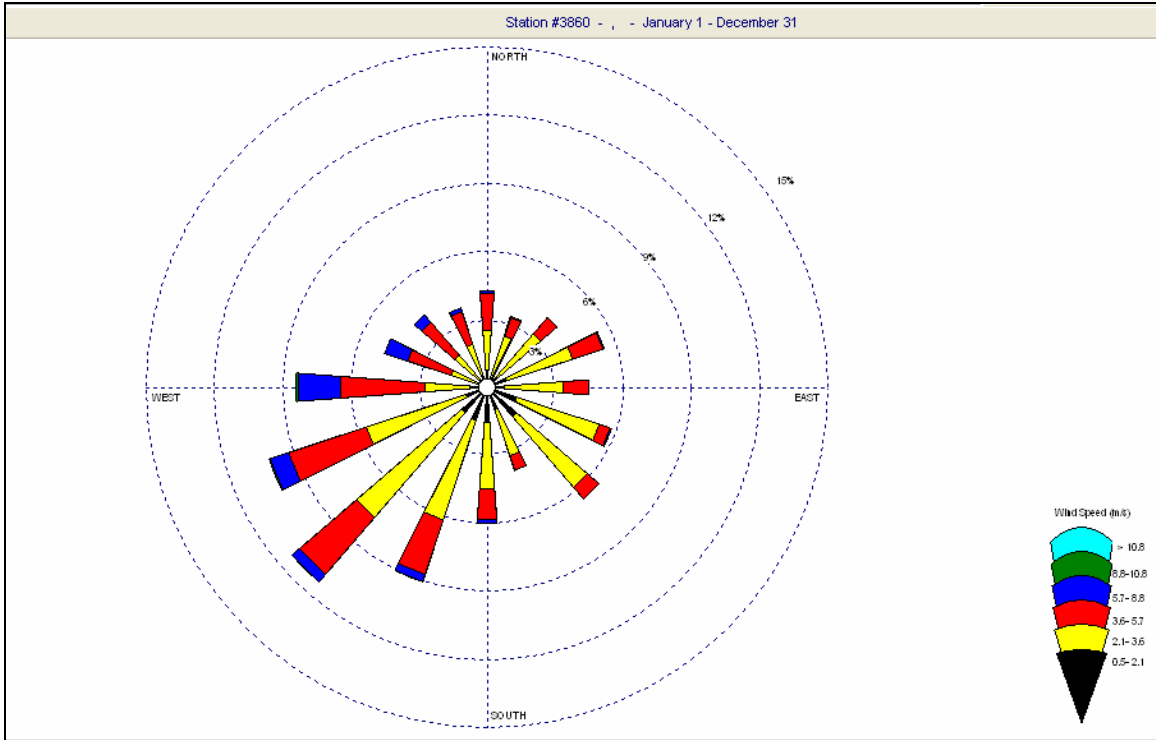


Station #94823 - PITTSBURGH/WSOM 2 AIRPORT, PA - January 1 - December 31

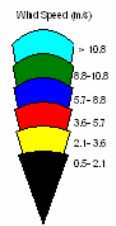
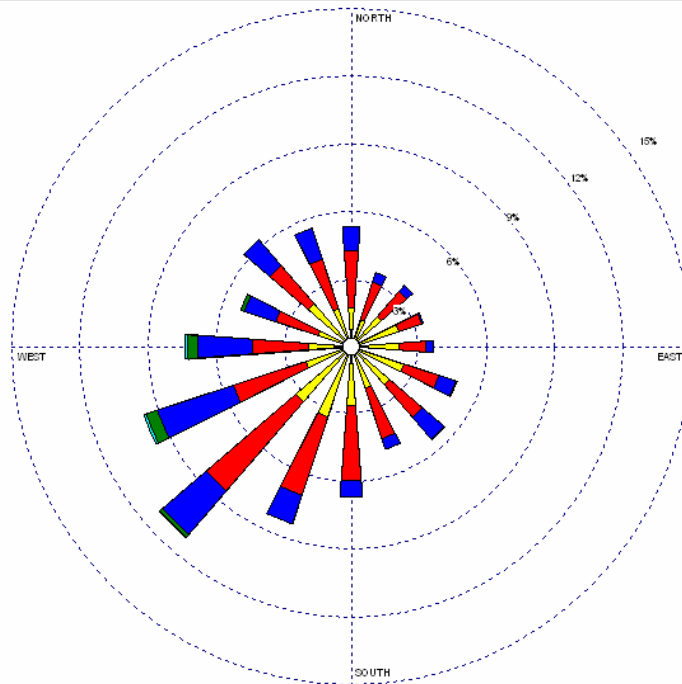




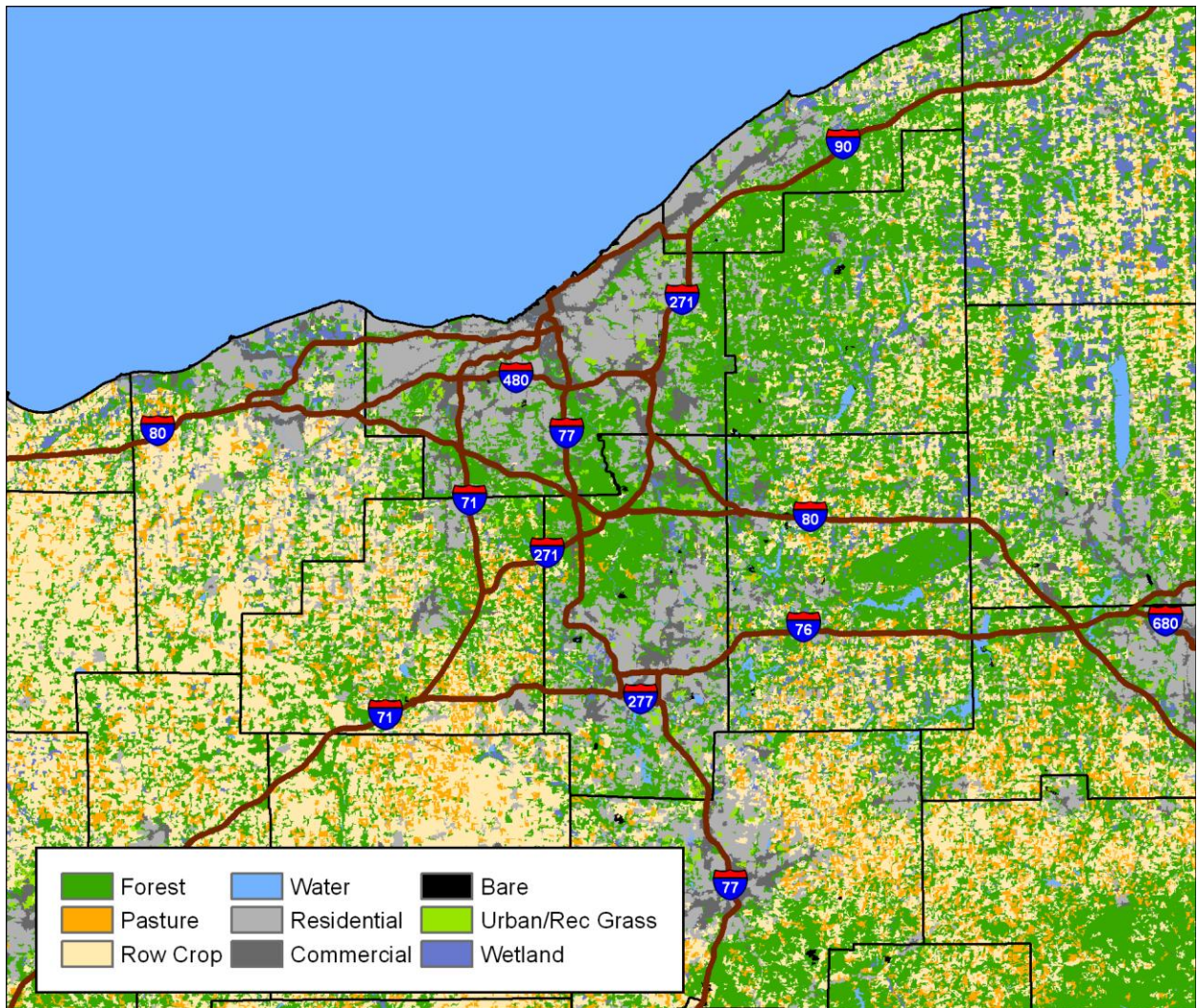




Station #14852 - YOUNGSTOWN/MUNICIPAL ARPT, OH - January 1 - December 31

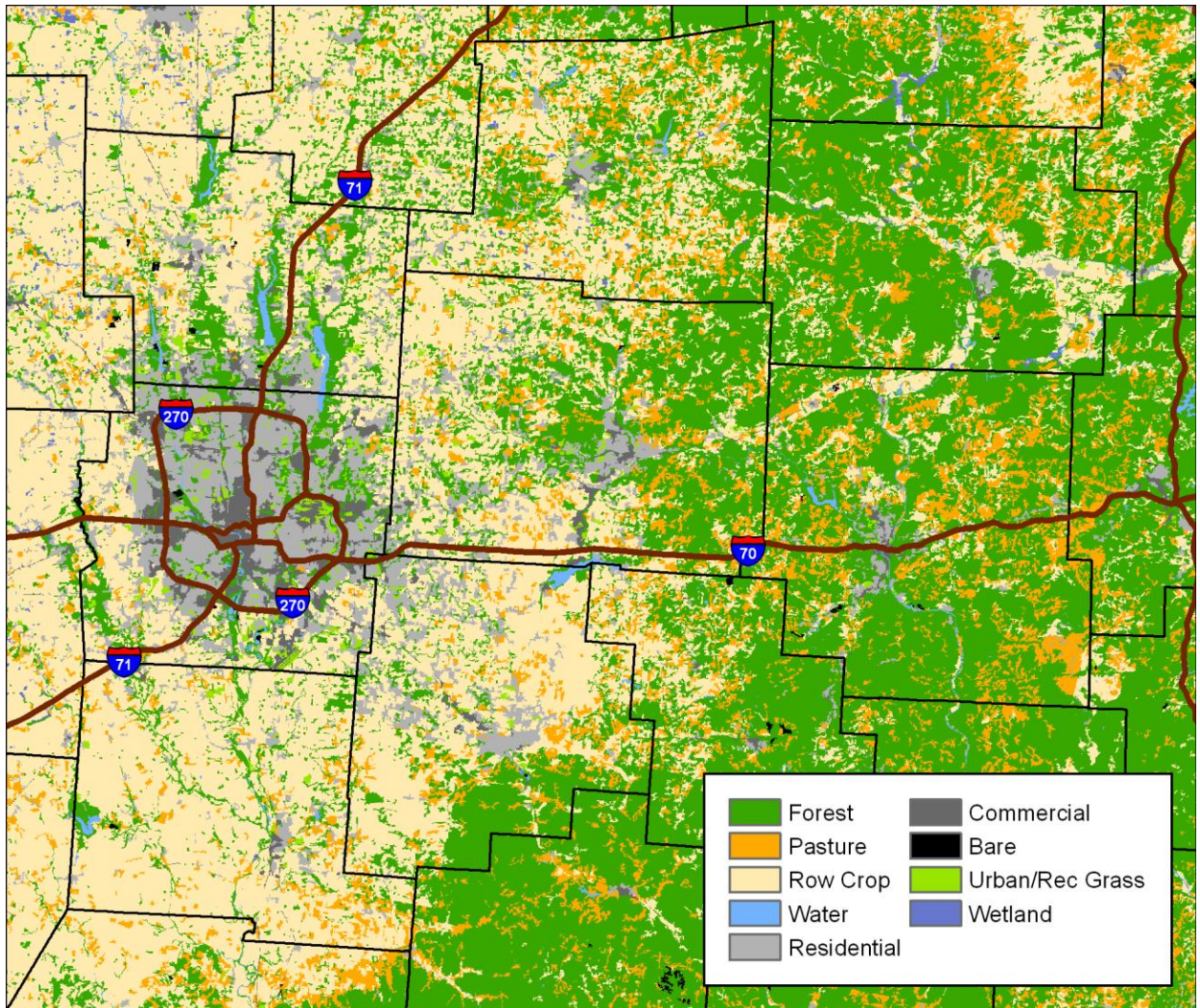


## Cleveland-Akron area



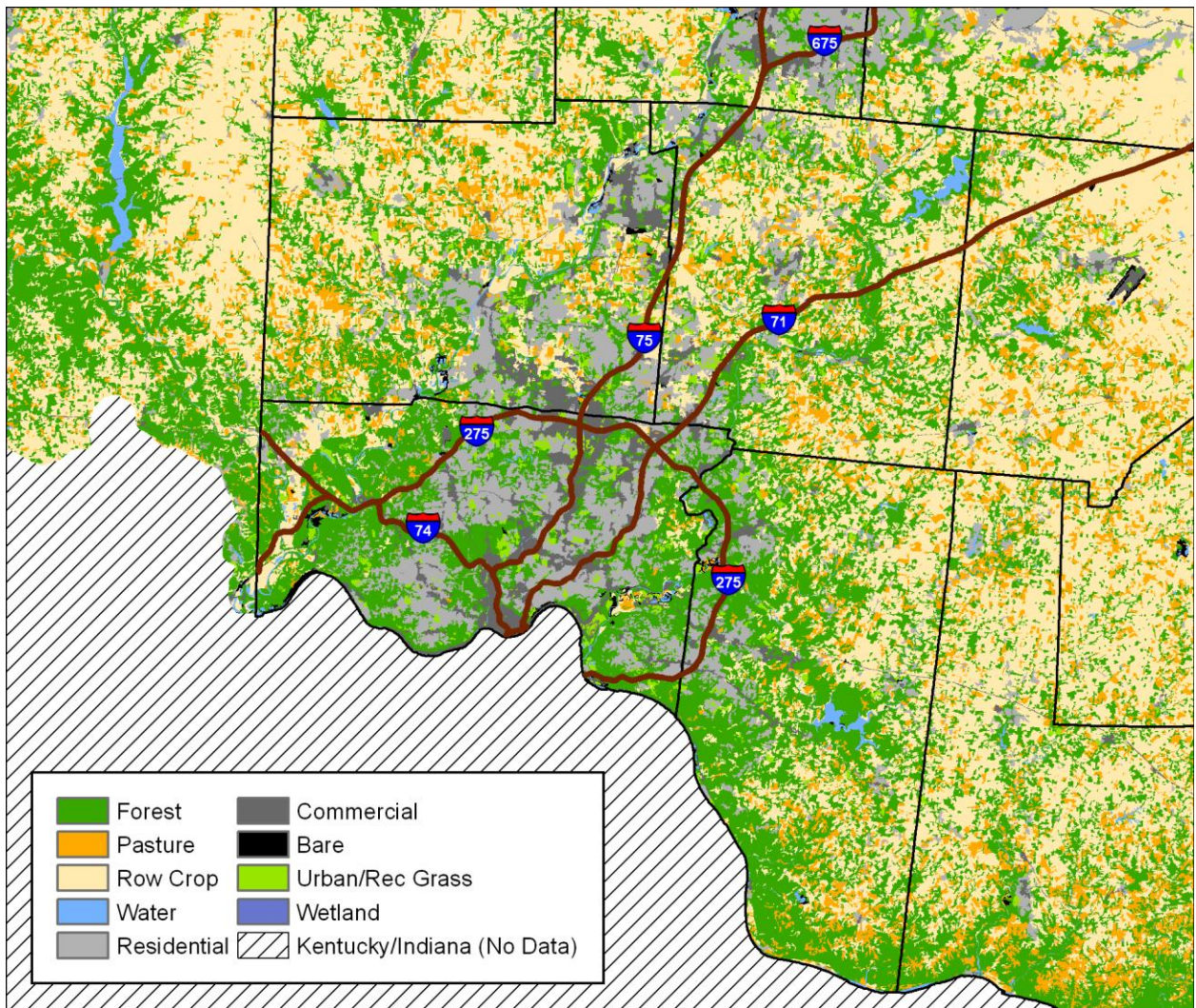


## Columbus area



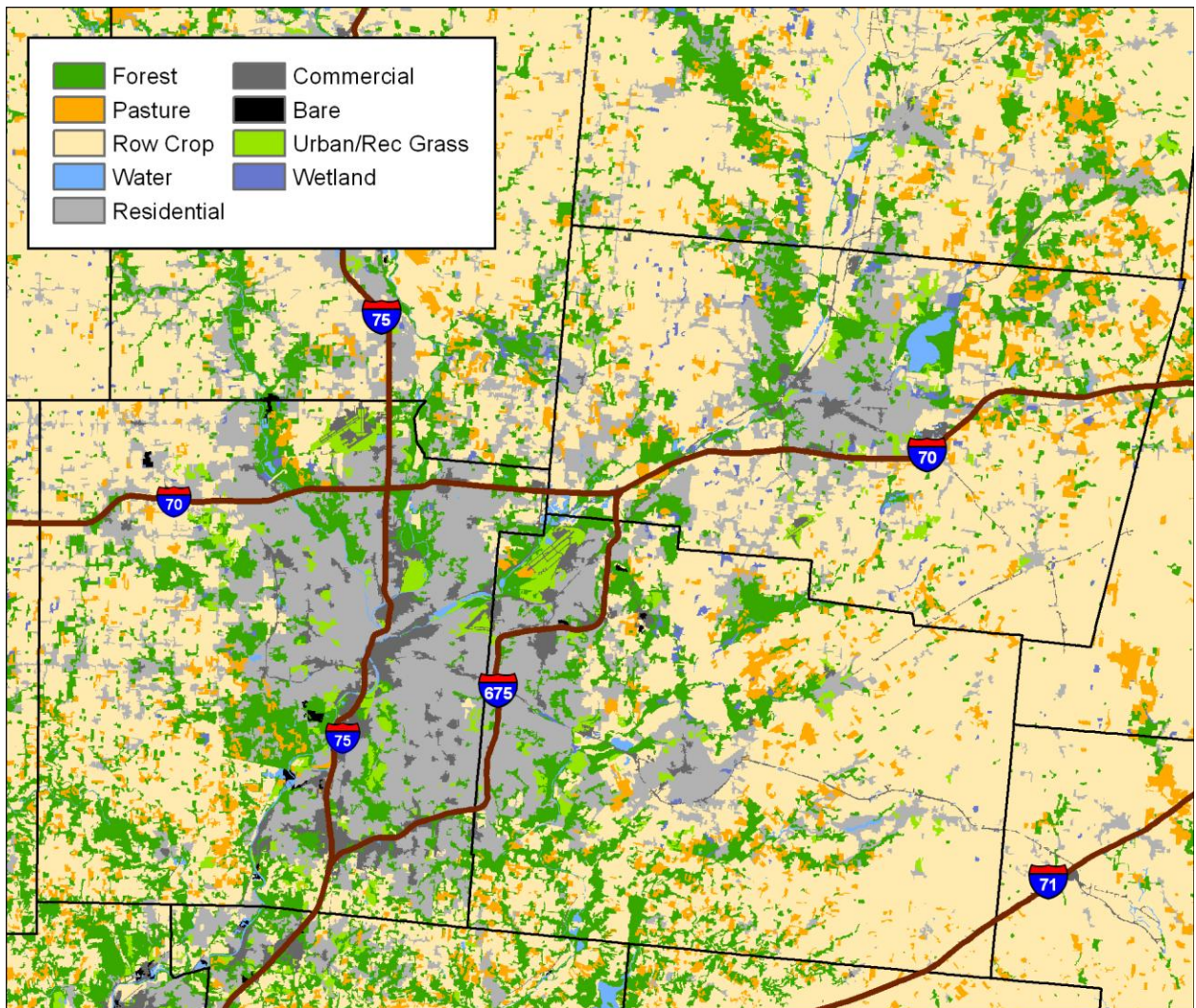


## Cincinnati area (Ohio portion)

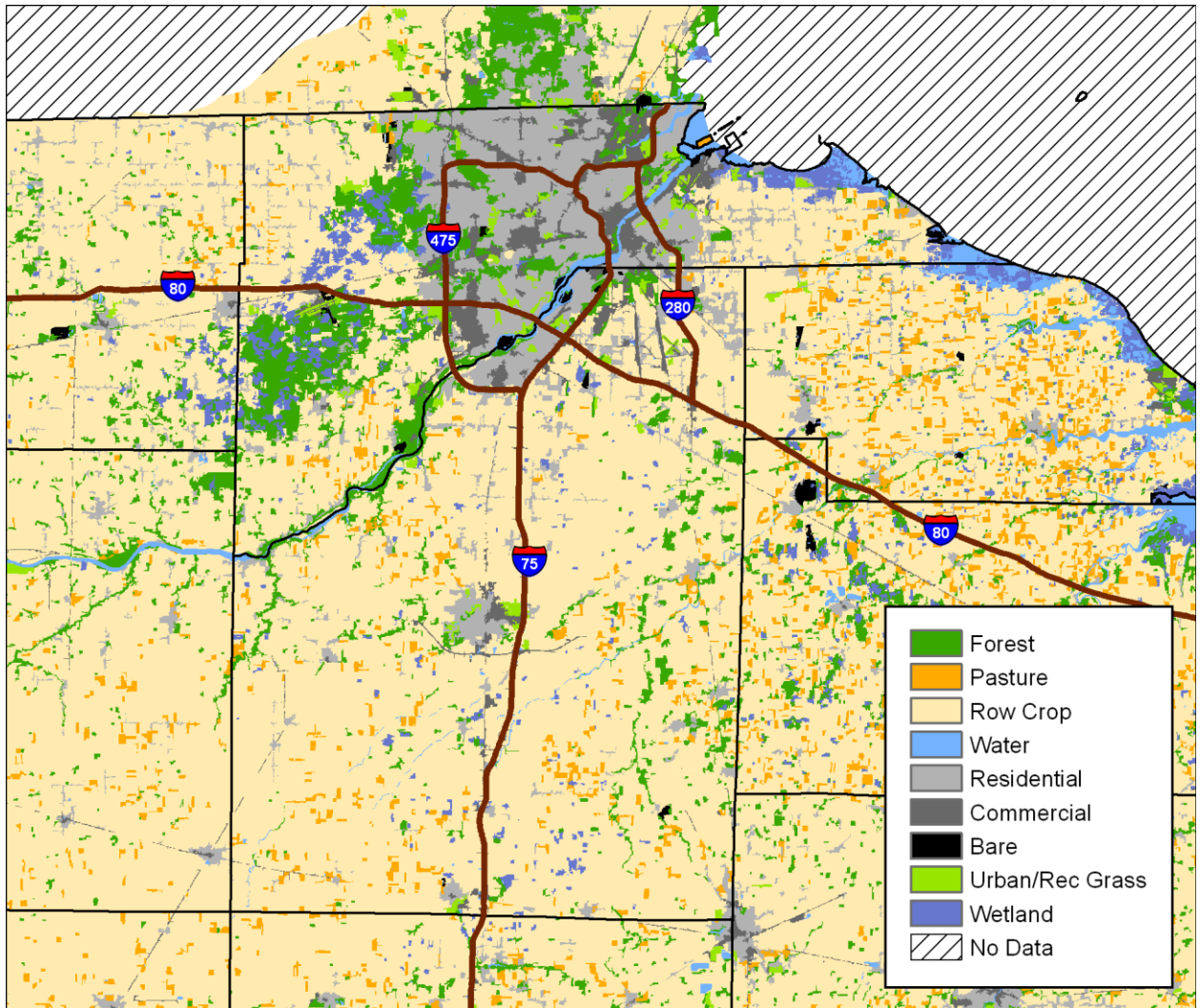




## Dayton-Springfield area

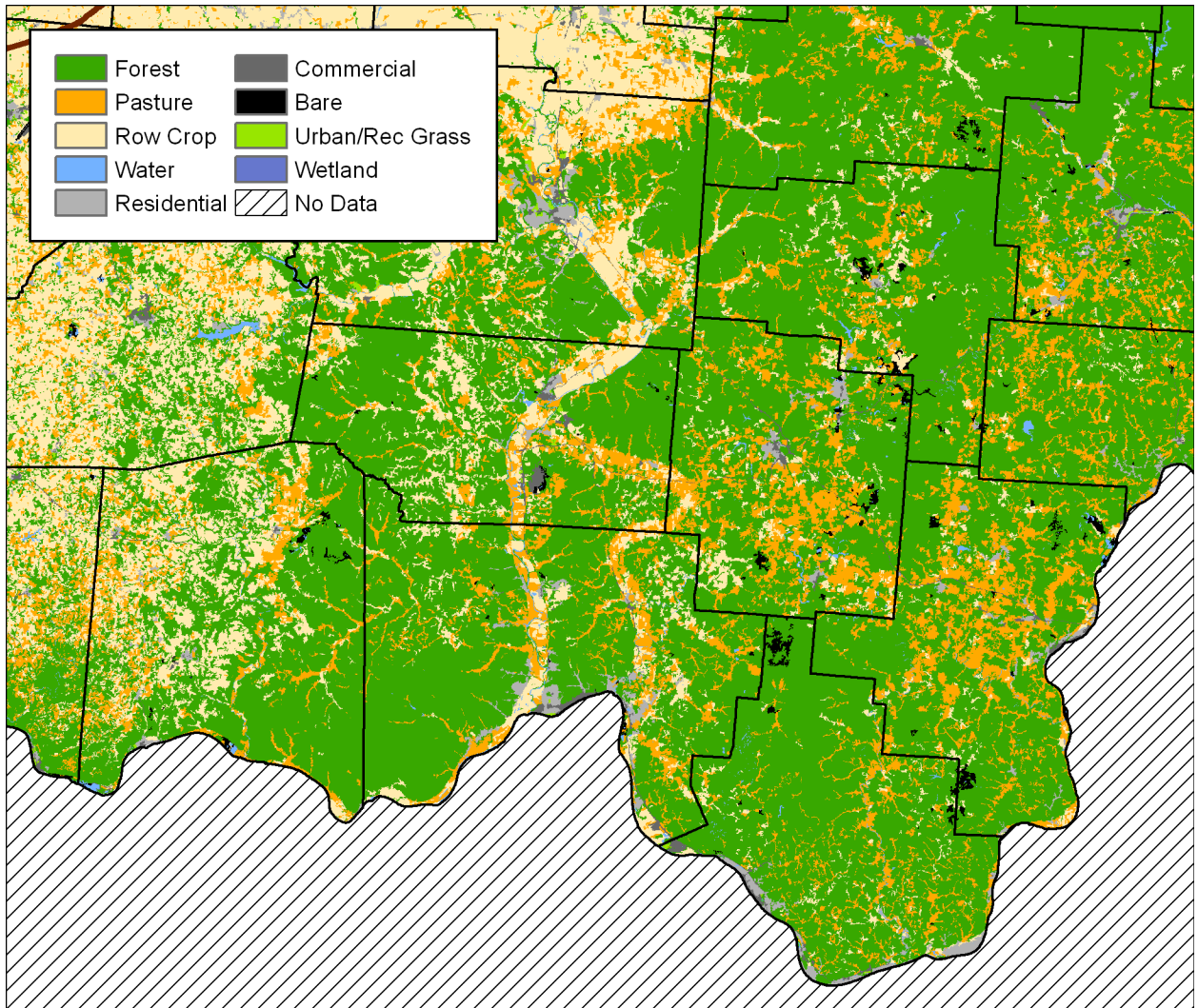


## Toledo area

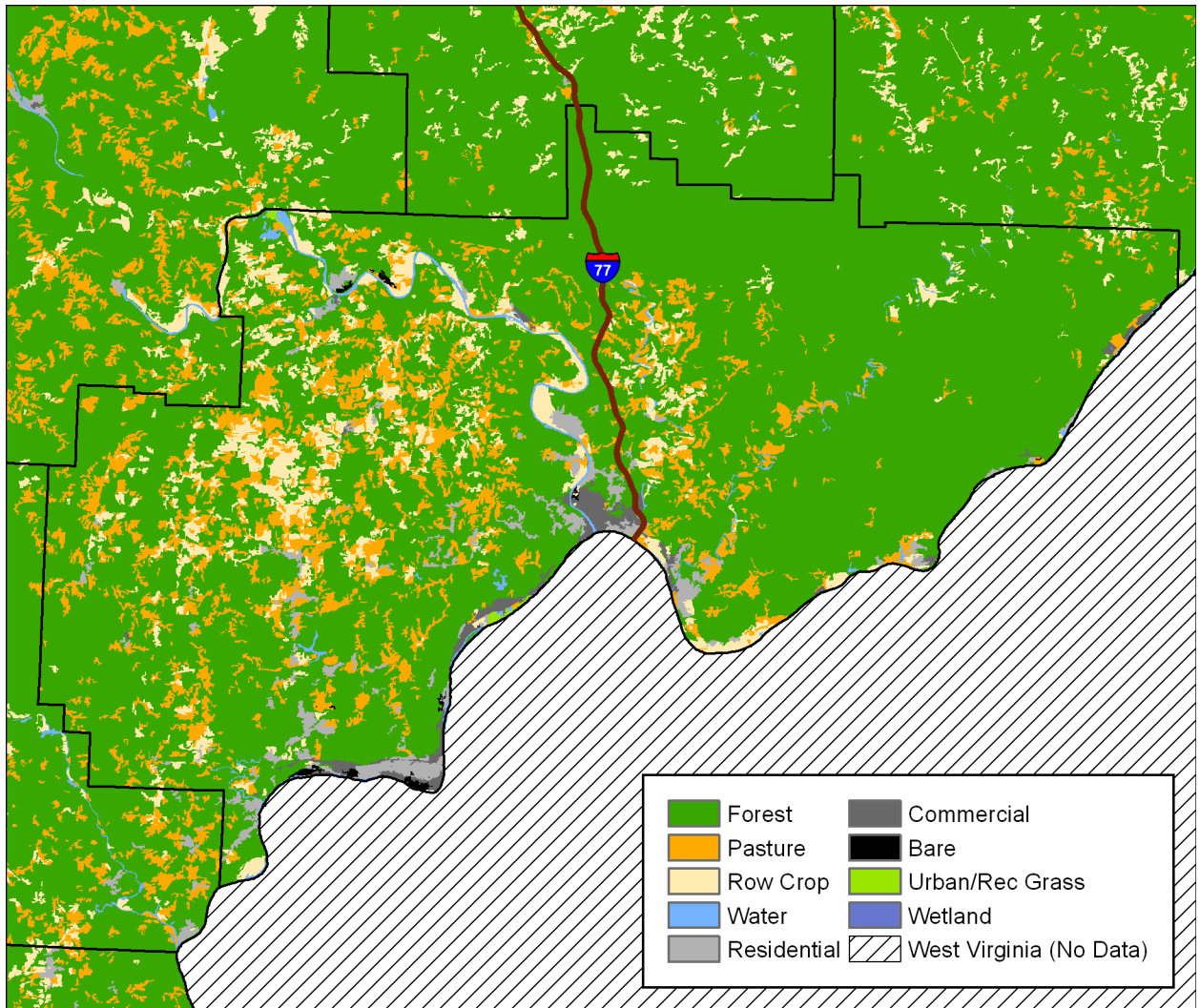




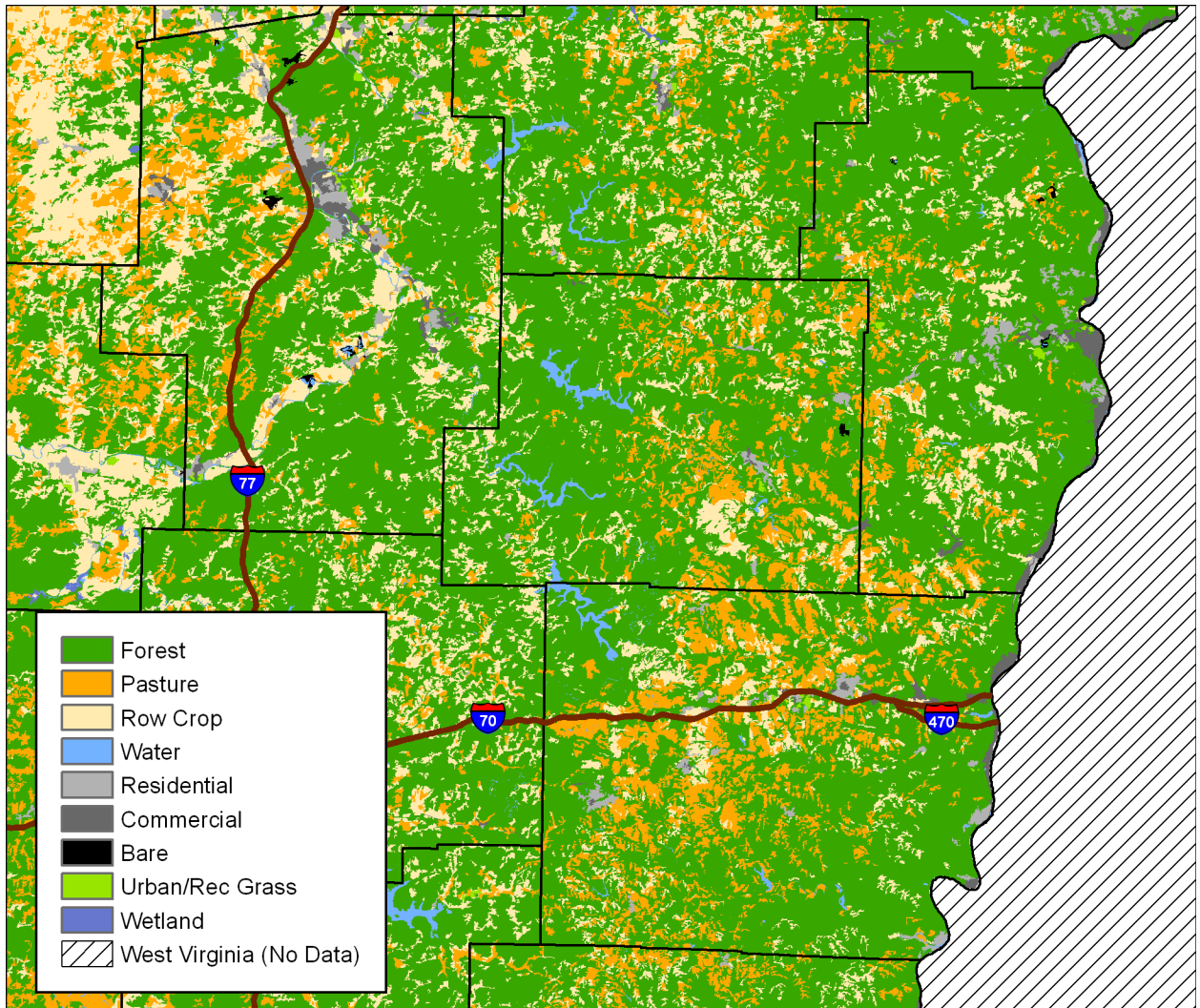
## Huntington-Ashland area (Ohio portion)



**Parkersburg-Marietta area (Ohio portion)**

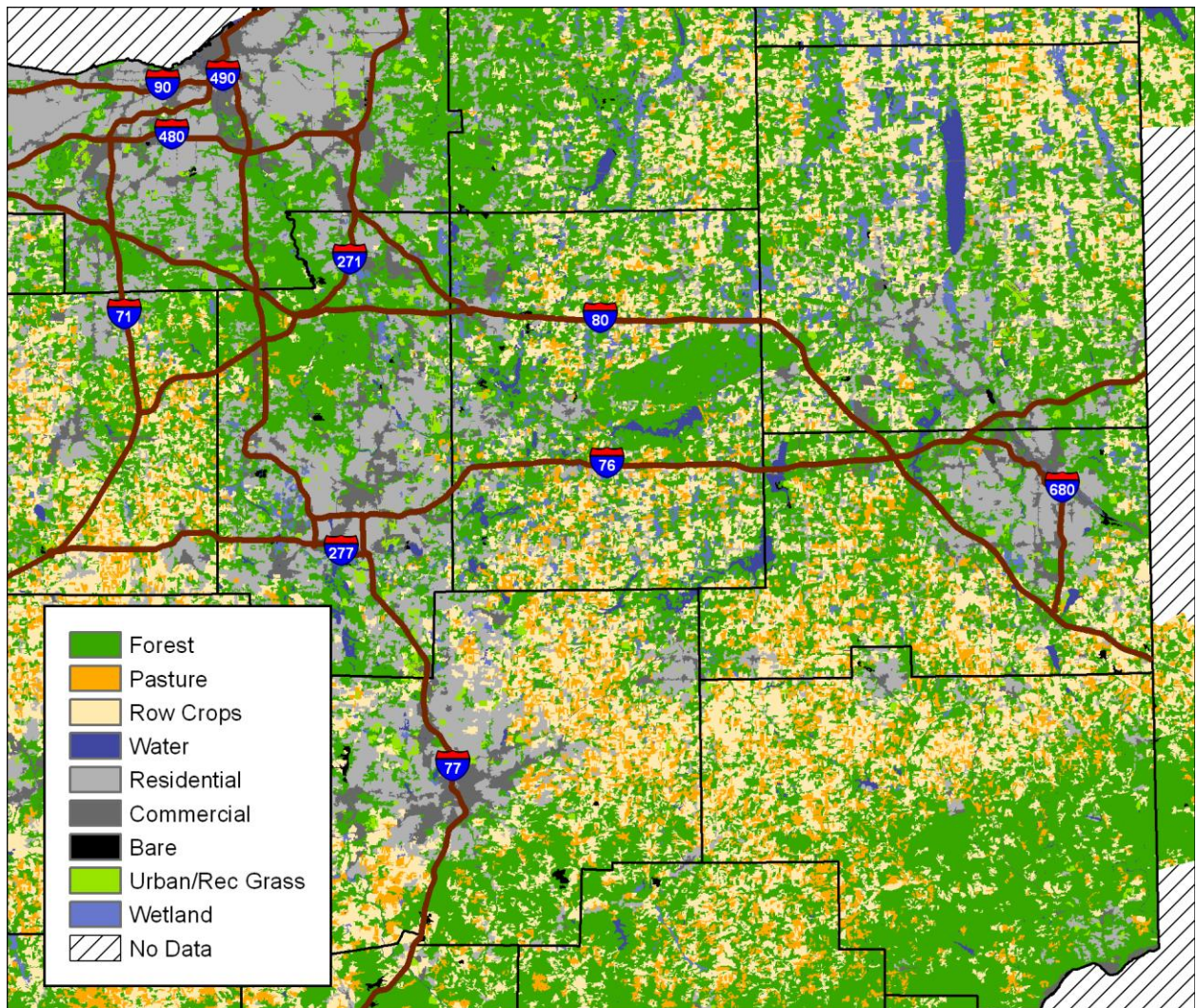


**Weirton-Steubenville area (Ohio portion)**



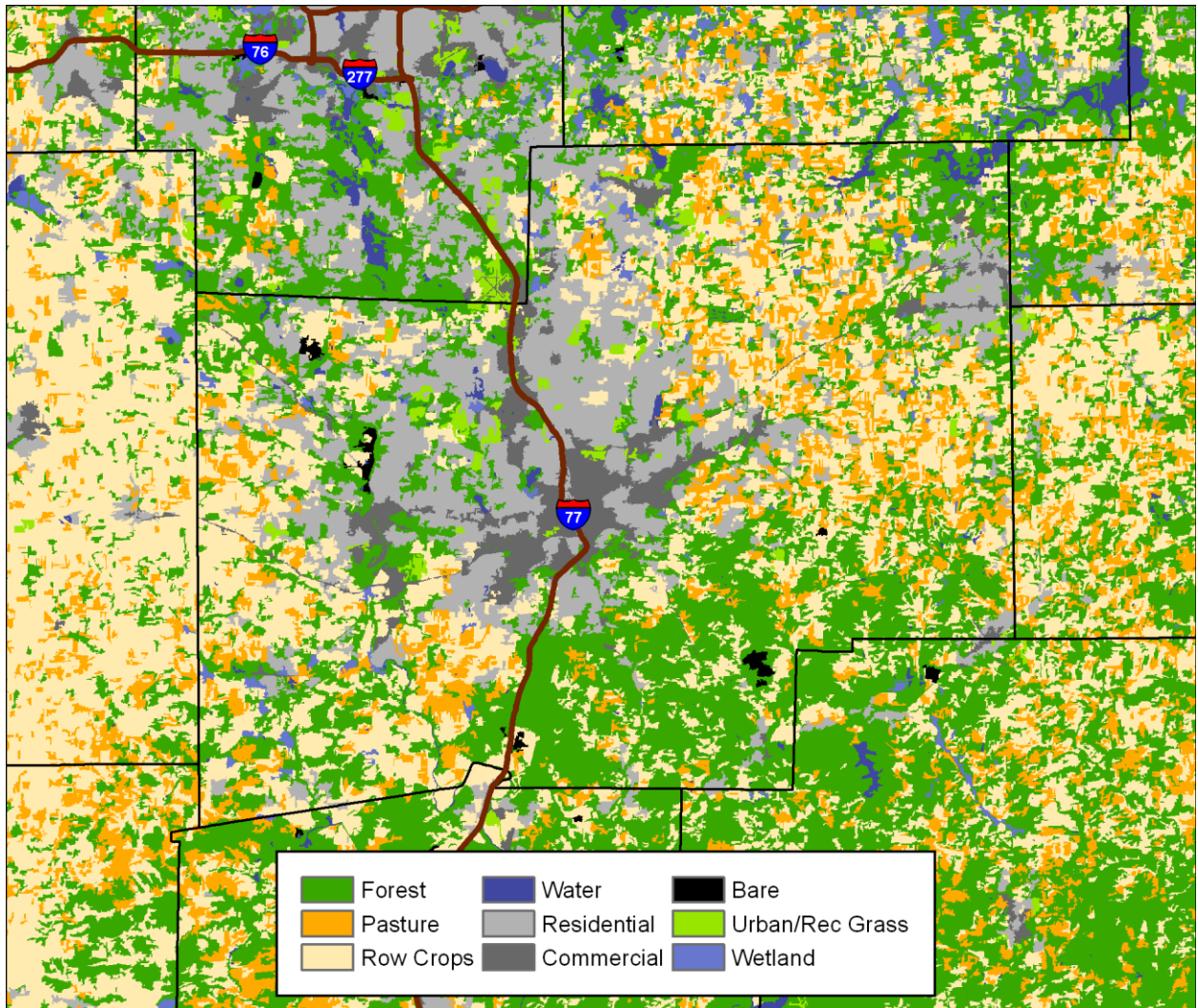


Youngstown-Warren area (Ohio portion)

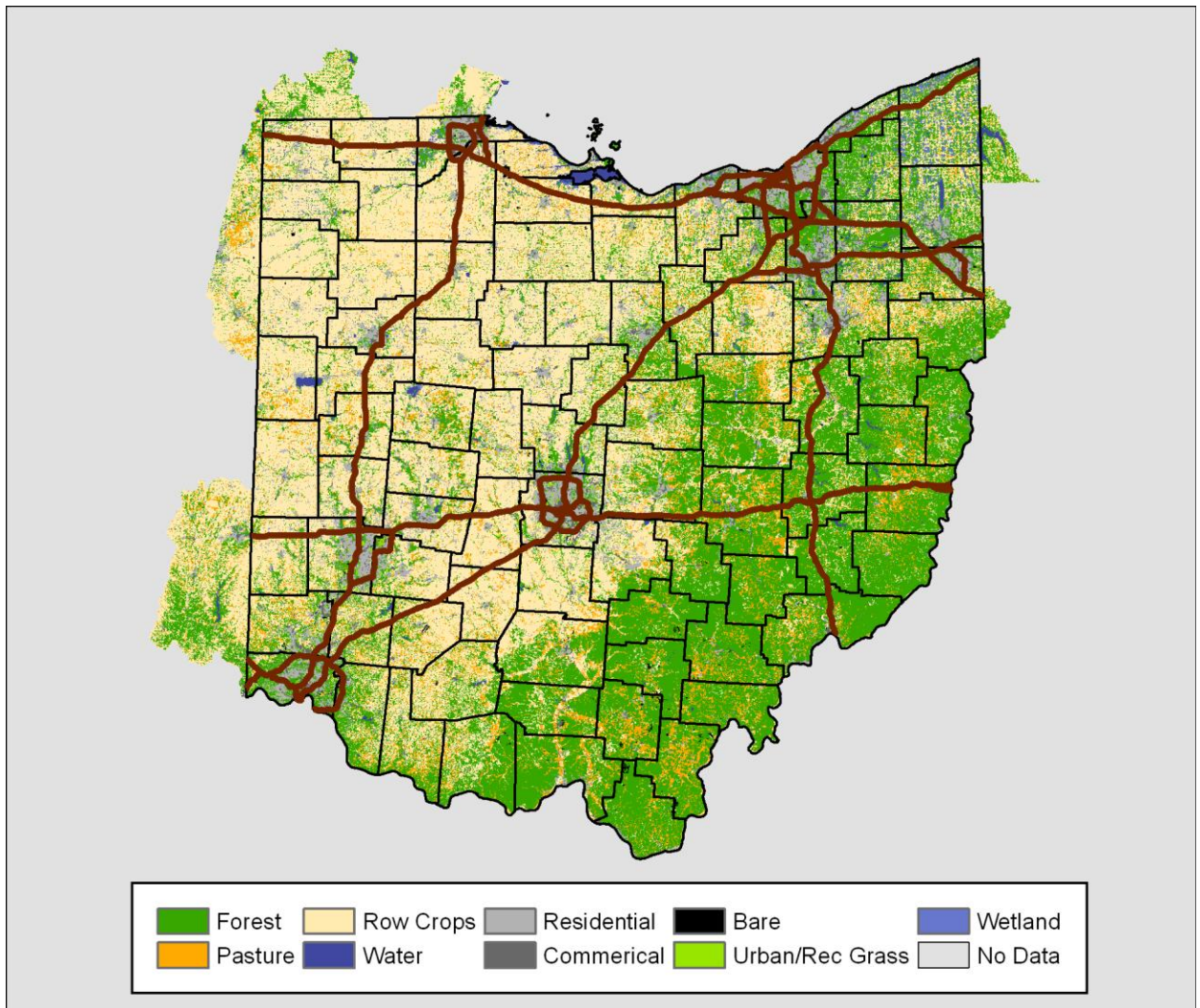




## Canton-Massillon area



## Ohio

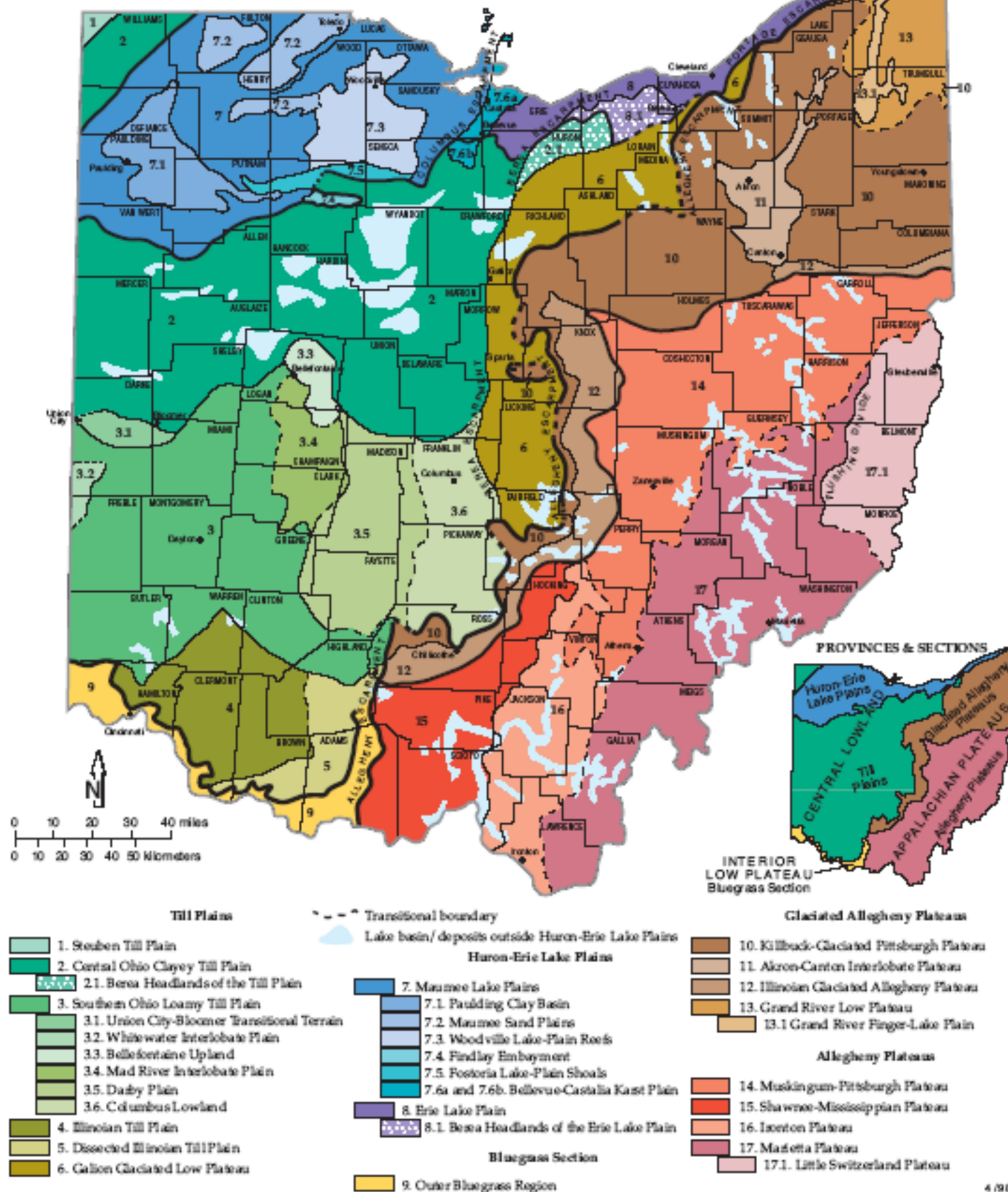




# PHYSIOGRAPHIC REGIONS OF OHIO

by C. Scott Brockman

Derived from Ohio ecoregions mapping project funded by U.S. Forest Service

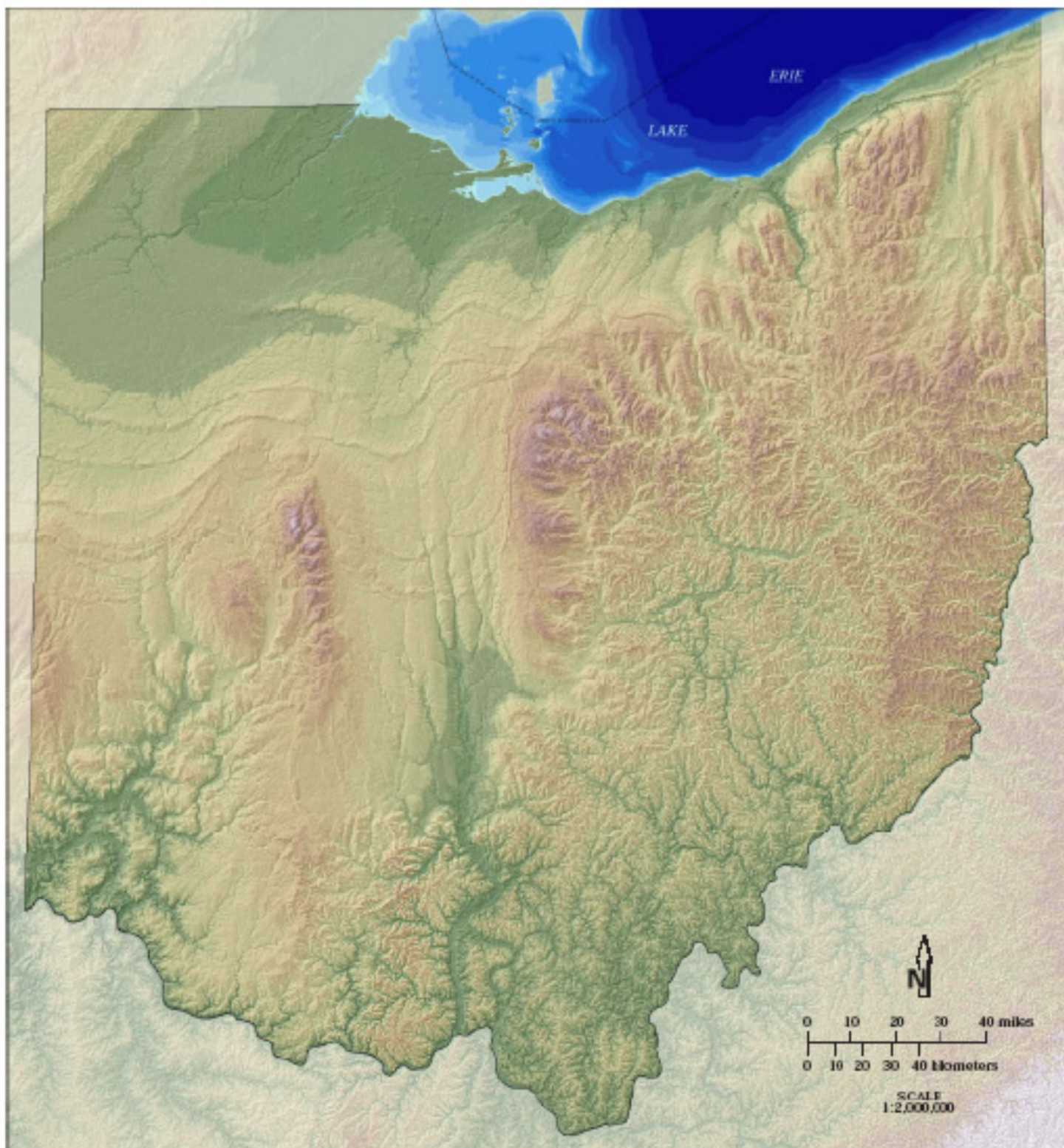


# PHYSIOGRAPHIC REGIONS OF OHIO

Major Divisions	Provinces	CENTRAL LOWLAND		Major Divisions	Provinces	CENTRAL LOWLAND			
		Till Plains	Huron-Erie Lake Plains			Till Plains	Huron-Erie Lake Plains		
DISTINGUISHING CHARACTERISTICS OF REGIONS & DISTRICTS				GEOLOGY					
1. <b>Steuben Till Plain.</b> Hummocky terrain with rolling hills, interspersed flats and closed depressions; wetlands, few streams, deranged drainage; only a small part of the region is in Ohio; elevation 950'-1100', moderately low relief (60')				Wisconsinan age (latest Ice Age) loamy till from a northern source (Saginaw glacial lobe) over Mississippian-age Ordovician Shale					
2. <b>Central Ohio Clayey Till Plain.</b> Surface of clayey till, well-defined moraines with intervening flat-lying ground moraine and intermoraine lake basins; no boulder belts, about a dozen silt-, clay- and till-filled lake basins range in area from a few to 200 square miles, few large streams, limited sand & gravel outwash; elevation 700'-1150', moderate relief (100')				Clayey, high-lime Wisconsinan-age till from a northeastern source (Berie glacial lobe) and lacustrine materials over Lower Paleozoic-age carbonate rocks and, In the east, shales; loess thin to absent					
2.1. <b>Berea Headlands of the Till Plain.</b> Gently rolling to flat terrain of thin drift descending to Lake Erie; punctuated by more than 20 streamlined, "whalebacks" of Berea Sandstone, 0.5 to 2.5 miles long, 30'-60' high; somewhat poorly drained; elevation 800'-1000', low relief (20')				Thin, clayey, medium-lime Wisconsinan-age till over resistant Mississippian-age Berea Sandstone					
3. <b>Southern Ohio Loamy Till Plain.</b> Surface of loamy till; end and recessional moraines, commonly associated with boulder belts, between relatively flat-lying ground moraine, cut by steep-valleyed large streams; stream valleys filled with outwash and alternate between broad floodplains and narrow, buried valleys common; elevation 530'-1150', moderate relief (200')				Loamy, high-lime Wisconsinan-age till, outwash, and loess over Lower Paleozoic-age carbonate rocks and, In the east, shales					
3.1. <b>Union City-Bloomer Transitional Terrain.</b> Well-defined moraines with low-relief, hummocky ground moraine like the Central Ohio Clayey Till Plain to the north, loamy till with loess cap like Southern Ohio Loamy Till Plain to the south; elevation 920'-1075', moderately low relief (30')				Loamy, high-lime Wisconsinan-age till with thin loess cap over Silurian-age dolomites					
3.2. <b>Whitewater Interlobate Plain.</b> An upland between two converging glacial lobes with hummocky moraines, moraine complexes, kames, boulder belts, and broad outwash trains/plains; contains highest elevations in Indiana (1257') and in adjacent Ohio counties (1240'); elevation in Ohio 980'-1240', moderate relief (150')				Loamy, high-lime Wisconsinan-age till and sand and gravel outwash over resistant Silurian-age carbonate rocks (north) and less resistant Ordovician-age shales and limestones (south)					
3.3. <b>Bellefontaine Upland.</b> Moderately high relief (250') dissected topography with moraine complexes, boulder belts, high-gradient major streams, caves and sinkholes; few glacial depressions/kettles compared to surrounding areas; elevation 1100'-1549'; includes highest elevation in Ohio (Campbell Hill, 1549')				Loamy, high-lime Wisconsinan-age till over generally deeply buried Silurian- to Devonian-age carbonate rocks and Ohio Shale					
3.4. <b>Mad River Interlobate Plain.</b> Area between two major converging glacial lobes with extensive outwash, outwash terraces, and bordering moraines; springs and cool, ground-water-fed surface waters; elevation 800'-1350', moderate relief (200')				Loamy, high-lime Wisconsinan-age till and sand and gravel outwash over Silurian- to Devonian-age carbonate rocks and Ohio Shale					
3.5. <b>Darby Plain.</b> Moderately low relief (25'), broadly hummocky ground moraine with several broad, indistinct recessional moraines; between hummocks are broad, poorly drained swales which held wet prairies/meadows in pioneer days, few large streams; elevation 750'-1100'				Loamy, high-lime Wisconsinan-age till and sparse outwash over Silurian- and Devonian-age carbonate rocks and Ohio Shale in the southeast					
3.6. <b>Columbus Lowland.</b> Lowland surrounded in all directions by relative uplands, having a broad regional slope toward the Scioto Valley; many larger streams; elevation 600'-850' (950' near Powell Moraine), moderately low relief (25')				Loamy, high-lime (west) to medium-lime (east) Wisconsinan-age till and extensive outwash in Scioto Valley over deep Devonian- to Mississippian-age carbonate rocks, shales, and siltstones					
4. <b>Illinoian Till Plain.</b> Rolling ground moraine of older till generally lacking ice-constructural features such as moraines, kames, and eskers; many buried valleys; modern valleys alternating between broad floodplains and bedrock gorges; elevation 600'-1100', moderately low relief (50')				Silt-loam, high-lime, Illinoian-age till with loess cap; soils leached several feet, underlain by Ordovician- and Silurian-age carbonate rocks and calcareous shales					
5. <b>Dissected Illinoian Till Plain.</b> Hilly former till plain in which glacial deposits have been eroded from many valley sides; relatively high stream density; elevation 600'-1340', moderate relief (200')				Hilltops of high-lime Illinoian-age till with loess cap; slopes of bedrock- and till-derived colluvium and Ordovician- and Silurian-age carbonate rocks and calcareous shales					
6. <b>Galion Glaciated Low Plateau.</b> Rolling upland transitional between the gently rolling Till Plain and the hilly glaciated Allegheny Plateau; mantled with thin to thick drift; elevation 800'-1400', moderate relief (100')				Medium- to low-lime Wisconsinan-age till over Mississippian-age shales and sandstones					
7. <b>Maumee Lake Plains.</b> Flat-lying Ice-Age lake basin with beach ridges, bars, dunes, deltas, and clay flats; contained the former Black Swamp; slightly dissected by modern streams; elevation 570'-800', very low relief (5')				Pleistocene-age silt, clay, and wave-planed clayey till over Silurian- and Devonian-age carbonate rocks and shales					
7.1. <b>Paulding Clay Basin.</b> Nearly flat lacustrine plain; most clayey of all Lake Plain subregions; low-gradient, highly meandering streams; easily ponded soils; elevation 700'-725', extremely low relief (less than 5')				Pleistocene-age lacustrine clay over clay till and Silurian-age dolomites					
7.2. <b>Maumee Sand Plains.</b> Lacustrine plain mantled by sand; includes low dunes, inter-dunal pans, beach ridges, and sand sheets of glacial lakeshores; well to poorly drained; elevation 600'-800', very low relief (10')				Late Wisconsinan-age sand over clay till and lacustrine deposits; Silurian- and Devonian-age carbonate rocks and shales buried deeply					
7.3. <b>Woodville Lake-Plain Reefs.</b> Very low relief (10') lacustrine plain with low dunes and lake-margin features, punctuated by more than 75 ancient bedrock reefs rising 10' to 40' above the level of the plain and ranging in area from 0.1 to 3.0 square miles; the oblong reefs are thinly draped with drift; elevation 600'-775'				Thin to absent Wisconsinan-age wave-planed clay till, lacustrine deposits, and sand over Silurian-age reefal Lockport Dolomite					
7.4. <b>Findlay Embayment.</b> Very low relief (10'), broadly rolling lacustrine plain; embayment of ancestral Lake Erie in which relatively coarse lacustrine sediments collected; elevation 775'-800'				Silty to gravelly Wisconsinan-age lacustrine deposits and wave planed clay till over Silurian-age Lockport Dolomite					
7.5. <b>Postoria Lake-Plain Shoals.</b> Portion of the Defiance Moraine lightly eroded by shallow Lake Maumee with low north-south trending hillocks and shallow, closed depressions, many sandy areas; elevation 750'-825', low relief, decreasing westward (10'-15')				Silty to gravelly Wisconsinan-age lacustrine deposits and wave-planed clay till over deeply covered Silurian-age dolomite					
7.6a and 7.6b. <b>Bellevue-Castalia Karst Plain.</b> Hummocky plain of rock knobs and numerous sinkholes, large solution features, and caves; large springs; thinly mantled by drift; region straddles both Lake Plain (7.6a) and Till Plain (7.6b); 7.6a has greatest relief of any Lake Plain region (25'); elevation 570'-825'				Columbus and Delaware Limestones overlain by thin clay till in 7.6b, and thin silt and sandy Wisconsinan-age lacustrine deposits and wave-planed clay till in 7.6a					
8. <b>Erie Lake Plain.</b> Edge of very low relief (10') Ice-Age lake basin separated from modern Lake Erie by shoreline cliffs; major streams in deep gorges; elevation 570'-800'				Pleistocene-age lacustrine sand, silt, clay, and wave-planed till over Devonian- and Mississippian-age shales and sandstones					
8.1 <b>Berea Headlands of the Erie Lake Plain.</b> Portion of the Erie Lake Plain underlain by resistant Berea Sandstone; several large sandstone headlands jut into the Ice-Age lake basin; contains several streamlined "whalebacks" of Berea Sandstone, 0.5 to 2.0 miles long, 20'-35' high; poorly drained; elevation 670'-800', very low relief (10')				Thin lacustrine deposits over thin, wave-planed, clayey, medium-lime Wisconsinan-age till; underlain by resistant Berea Sandstone					
9. <b>Outer Bluegrass Region.</b> Moderately high relief (300') dissected plateau of carbonate rocks; in east, caves and other karst features relatively common; in west, thin, early drift caps narrow ridges; elevation 455'-1120'				Ordovician- and Silurian-age dolomites, limestones, and calcareous shales; thin pre-Wisconsinan drift on ridges in west; silt-loam colluvium					
10. <b>Killbuck-Glaciated Pittsburgh Plateau.</b> Ridges and flat uplands generally above 1200', covered with thin drift and dissected by steep valleys; valley segments alternate between broad drift-filled and narrow rock-walled reaches; elevation 600'-1505', moderate relief (200')				Thin to thick Wisconsinan-age clay to loam till over Mississippian- and Pennsylvanian-age shales, sandstones, conglomerates and coals					
11. <b>Akron-Canton Interlobate Plateau.</b> Hummocky area between two converging glacial lobes dominated by kames, kame terraces, eskers, kettles, kettle lakes, and bays/fens; deranged drainage with many natural lakes; elevation 900'-1200', moderate relief (200')				Sandy Wisconsinan-age and older drift over Devonian- to Pennsylvanian-age sandstones, conglomerates and shales					
12. <b>Illinoian Glaciated Allegheny Plateau.</b> Dissected, rugged hills; loess and older drift on ridgetops, but absent on bedrock slopes; dissection similar to unglaciated regions of the Allegheny Plateau; elevation 600'-1400', moderate relief (200')				Colluvium and Illinoian-age till over Devonian- to Pennsylvanian-age shales, siltstones and sandstones					
13. <b>Grand River Low Plateau.</b> Gently rolling ground and end moraine having thin to thick drift; poorly drained areas and wetlands relatively common; elevation 760'-1260', low relief (20') except near Grand River Valley (200')				Clayey, low-lime Wisconsinan-age till over deeply buried, soft Devonian-age shales and near-surface Mississippian-age sandstones and shales					
13.1. <b>Grand River Finger-Lake Plain.</b> Very low relief (10') lake deposits in steep-sided troughs (200' relief) within the Grand River Low Plateau; cut by glacial and stream erosion; extensive wetlands; elevation 800'-900'				Surficial lacustrine clay and drift over deeply buried, soft Devonian-age shales					
14. <b>Muskingum-Pittsburgh Plateau.</b> Moderately high in high relief (300'-600') dissected plateau having broad major valleys that contain outwash terraces, and tributaries with lacustrine terraces; medium-grained bedrock sequences coarser than those in Marietta Plateau (17) but finer than those in Fronton Plateau (16); remnants of ancient Teays-age drainage system uncommon; elevation 650'-1400'				Mississippian and Pennsylvanian-age siltstones, shales, sandstones and economically important coals and claystones; Wisconsinan-age sand, gravel, and lacustrine silt; silt-loam colluvium					
15. <b>Shawnee-Mississippian Plateau.</b> High relief (400'-800'), highly dissected plateau of coarse and fine grained rock sequences; most rugged area in Ohio; remnants of ancient lacustrine clay-filled Teays drainage system are extensive in lowlands, absent in uplands; elevation 990'-1340'				Devonian- and Mississippian-age shales, siltstones, and locally thick sandstones; Pleistocene-age sandy outwash in Scioto River; Teays-age Minford Clay, silt-loam and channelry colluvium					
16. <b>Fronton Plateau.</b> Moderately high relief (300') dissected plateau; coarser grained coal-bearing rock sequences more common than in other regions of the Allegheny Plateau; common lacustrine clay-filled Teays Valley remnants; elevation 515'-1060'				Pennsylvanian-age (Pottsville, Allegheny and Conemaugh Groups) cycles of sandstones, siltstones, shales and economically important coals; Pleistocene (Teays)-age Minford Clay, silt-loam and channelry colluvium					
17. <b>Marietta Plateau.</b> Dissected, high-relief (generally 350', to 600' near Ohio River) plateau; mostly fine-grained rocks; red shales and red soils relatively common; landslides common, remnants of ancient lacustrine clay-filled Teays drainage system common; elevation 515'-1400'				Pennsylvanian-age Upper Conemaugh Group through Permian-age Dunkard Group cyclic sequences of red and gray shales, and siltstones, sandstones, limestones and coals; Pleistocene (Teays)-age Minford Clay, red and brown silty clay loam colluvium, landslide deposits					
17.1. <b>Little Switzerland Plateau.</b> Highly dissected, high-relief (generally 450', to 750' along Ohio River) plateau; mostly fine-grained rocks; red shales and red soils relatively common; landslides common; high gradient shale bottomed streams subject to flash flooding; no remnants of ancient Teays drainage system; elevation 540'-1400'				Similar to Marietta Plateau but lacking Pleistocene (Teays)-age Minford Clay					

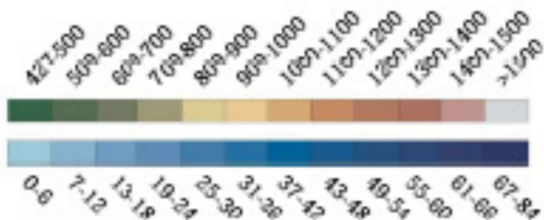


# SHADED ELEVATION MAP OF OHIO



Land elevation in feet

Lake Erie water depth in feet





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

DEC - 4 2008

OFFICE OF  
AIR AND RADIATION

**MEMORANDUM**

**SUBJECT:** Area Designations for the 2008 Revised Ozone National Ambient Air Quality Standards

**FROM:** Robert J. Meyers   
Principal Deputy Assistant Administrator

**TO:** Regional Administrators, Regions I-X

This memorandum provides information on the timeline for designating areas for the purpose of implementing the 2008 revised primary and secondary ozone National Ambient Air Quality Standards (NAAQS). In addition, this memorandum identifies important factors states and tribes should consider in making recommendations for area designations. Please share this information with the state and tribal agencies in your Region.

The U.S. Environmental Protection Agency (EPA) revised the ozone NAAQS on March 12, 2008 (73 FR 16436; March 27, 2008). The new primary ozone standard was lowered from 0.08 parts per million (ppm) to a level of 0.075 ppm based on numerous epidemiological studies conducted during the past decade in which many of the health effects associated with ozone exposure were identified. These studies showed health effects at and below the level of the 0.08 ppm standard, which was promulgated in 1997. Prolonged (i.e., 8-hour) exposure to ozone is associated with increased mortality and a range of serious morbidity health effects, including aggravation of a variety of respiratory symptoms and lung impairment, asthma attacks, respiratory hospital admissions and emergency department visits, and cardiovascular problems. In March 2008, EPA also strengthened the secondary ozone standard to provide increased protection against adverse public welfare effects including impacts on vegetation and forested ecosystems. EPA made the secondary standard identical in all respects to the revised primary standard.

Section 107(d) of the Clean Air Act (CAA) governs the process for area designations following the establishment of new or revised NAAQS. Under section 107(d), states are required to submit recommendations on designations for their areas to EPA not later than one year after the promulgation of a new or revised standard. If, after careful consideration of the recommendations, EPA intends to promulgate a designation that deviates from a state recommendation, EPA must notify the state at least 120 days prior to promulgating the final designation, and EPA must provide the state an opportunity to demonstrate why the potential



modification is inappropriate. The CAA requires EPA to complete the designation process within two years of promulgation of a new or revised NAAQS unless the Administrator has insufficient information to make these decisions. In such a case, EPA may take up to an additional year to make the designations. While the language of section 107 specifically addresses states, EPA intends to follow the same process for tribes to the extent practicable, pursuant to section 301(d) of the CAA and the Tribal Authority Rule, or TAR (see 63 FR 7254).

Accordingly, state designation recommendations for the 2008 revised ozone standards should be submitted to the Administrator no later than March 12, 2009. Areas should be identified as attainment, nonattainment, or unclassifiable on the basis of available information. We will notify states by letter no later than November 12, 2009 if we plan to modify a state's recommendation. In order to consider public input in the designation process, we plan to provide a 30-day public comment period immediately following issuance of EPA's response letters to the states and tribes; we anticipate the comment period would conclude in mid-December 2009. If a state or tribe has additional information that they want EPA to consider with respect to a designation recommendation EPA plans to modify, we would request such information be submitted by January 12, 2010. This will ensure that EPA can fully consider any such information as we move forward to issue designations by March 12, 2010. Because the 2008 revised primary and secondary ozone NAAQS are identical, EPA expects that each area will have the same designation and boundary for both standards.

We recommend that states and tribes identify violating areas using the most recent three consecutive years of quality-assured, certified air quality data. In most cases, we expect these to be data from 2005-2007 or 2006-2008 (if these 2006-2008 data have been certified more quickly than is required) that are stored in the EPA Air Quality System (AQS).<sup>1</sup> In general, violations are identified using data from Federal reference method (FRM) and Federal equivalent method (FEM) monitors that are sited and operated in accordance with 40 CFR Part 58. Special Purpose Monitors (SPM) using an FRM or FEM which have operated for more than 24 months are eligible for comparison to the relevant NAAQS, subject to the requirements given in the October 17, 2006 Revision to Ambient Air Monitoring Regulations (71 FR 61236). Procedures for using the air quality data to determine whether a violation has occurred are given in 40 CFR Part 50 Appendix P, as revised on March 27, 2008 (73 FR 16511). We expect to base the final designations in March 2010 on the most recent quality-assured data which would be from 2006-2008 or 2007-2009.

Air quality monitoring data affected by exceptional events may be excluded from use in identifying a violation if they meet the criteria for exclusion, as specified in the Final Rule on the Treatment of Data Influenced by Exceptional Events (72 FR 13560; March 22, 2007). We recently issued a direct final rule to provide schedules for flagging exceptional event data and submitting documentation specifically for ozone data collected from 2005 through 2009 that are used in the designations process for the 2008 ozone NAAQS. (See 73 FR 58042; October 6, 2008). These schedules reflect our interest in assuring that the exceptional events claims can be fully considered by EPA in the final designations.

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<sup>1</sup> This information is available on EPA's website at [www.epa.gov/ttn/airs/airsaqs/](http://www.epa.gov/ttn/airs/airsaqs/).

Section 107(d)(1) of the CAA defines an area as nonattainment if it is violating the NAAQS or if it is contributing to a violation in a nearby area. Ground-level ozone and ozone precursor emissions are pervasive and readily transported. Therefore, EPA believes it is important to examine ozone-contributing emissions across a relatively broad geographic area. Accordingly, we recommend that the Core Based Statistical Area (CBSA) or Combined Statistical Area (which includes 2 or more adjacent CBSA's) associated with the violating monitor(s) serve as the starting point or "presumptive" boundary for evaluating the geographic boundaries of an ozone nonattainment area. CBSA is a collective term that refers to both metropolitan and micropolitan statistical areas, which are distinguished based on population size.<sup>2</sup> Each CBSA consists of a county or counties containing at least one urban core plus adjacent counties that have a high degree of social and economic integration with the urban core as measured by commuting ties.<sup>3</sup> EPA recommends starting with this presumption because the factors used to establish the CBSAs and CSAs are similar to the factors EPA plans to consider in determining whether a nearby area is contributing to the violation(s) of the standard. EPA used this same conceptual approach in the designations process for the 1997 ozone NAAQS.<sup>4,5</sup> Where a violating monitor is not located in a CBSA or CSA, we recommend that the boundary of the county containing the monitor serve as the starting point for considering the extent of the nonattainment area.

EPA believes that each potential nonattainment area should be evaluated on a case-by-case basis and recognizes that these area-specific analyses conducted by states, tribes, and/or EPA may support nonattainment area boundaries that are larger or smaller than the presumptive area starting point. As a framework for area-specific analyses, we recommend that states and tribes base their boundary recommendations on an evaluation of the 9 factors listed in attachment 2. These factors are consistent with those used in the designations process for the 1997 ozone standard and are factors EPA plans to consider in evaluating and making decisions on the nonattainment area boundaries for the 2008 ozone standards. Additionally, states and tribes may

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<sup>2</sup> The Office of Management and Budget (OMB) delineates CBSAs (metropolitan and micropolitan statistical areas) and CSAs. OMB adopted new standards for defining metropolitan and micropolitan statistical areas on December 27, 2000 (65 FR 82229). A micropolitan statistical area has a population of at least 10,000 but less than 50,000. A metropolitan statistical area has a population of at least 50,000.

<sup>3</sup> For lists of the CBSAs and CSAs and their geographic components see [www.census.gov/population/www/metroareas/metrodef.html](http://www.census.gov/population/www/metroareas/metrodef.html). EPA recommends using the most recent available updated lists of the statistical areas. The lists are updated annually to reflect the most recent Census Bureau population estimates.

<sup>4</sup> Memorandum from John S. Seitz, Director of Office of Air Quality Planning and Standards to Air Directors, Regions I-X, "Boundary Guidance on Air Quality Designations for the 8-Hour Ozone National Ambient Air Quality Standards," March 23, 2000.

<sup>5</sup> In addition, CAA section 107(d)(4) established the consolidated metropolitan statistical area or metropolitan statistical area as the presumptive boundary for the most polluted areas that were designated nonattainment by operation of law in 1991 for the 1-hour ozone NAAQS.



identify and evaluate other relevant factors or circumstances specific to a particular area.

In addition to nearby areas with sources contributing to nonattainment, ozone concentrations in a local area may be affected by long-range transport of ozone and its precursors (notably nitrogen oxides). In certain parts of the country, such as the eastern United States, ozone is a widespread problem. Where this is the case, the CAA does not require that all contributing areas be designated nonattainment, only the nearby areas. Regional strategies, such as those employed in the Ozone Transport Region and EPA's NO<sub>x</sub> SIP Call are needed to address the long-range transport component of ozone nonattainment, while the local component must be addressed through local planning in and around the designated nonattainment area.

This memorandum provides EPA's current views on how boundaries should be determined for ozone designations. The guidance is not binding on states, tribes, the public, or EPA. Issues concerning nonattainment area boundaries will be addressed in EPA's action to designate areas under the 2008 ozone standard. When EPA promulgates designations, those determinations will be binding on states, tribes, the public, and EPA as a matter of law. Ozone nonattainment areas will be classified at the time of designation. The approach EPA will use to classify nonattainment areas under the 2008 revised ozone NAAQS will be established through a separate notice-and-comment rulemaking. Information related to the designations for the 2008 revised ozone NAAQS will be provided on EPA's website at [www.epa.gov/ozonedesignations](http://www.epa.gov/ozonedesignations).

Attachment 1 is a timeline of important dates in the designation process for the revised 2008 ozone NAAQS designation process. Attachment 2 provides the list of nine factors that EPA plans to consider in evaluating and making decisions on nonattainment area boundaries.

Staff in EPA's Office of Air Quality Planning and Standards are available for assistance and consultation throughout the designation process. Questions on this guidance may be directed to Carla Oldham at 919-541-3347.

#### Attachments (2)

cc: Air Division Directors, Regions I-X  
Greg Green, OAQPS  
Bill Harnett, OAQPS  
Brian McLean, OAP  
Margo Oge, OTAQ  
Stephen D. Page, OAQPS  
Peter Tsirigotis, OAQPS  
Richard Wayland, OAQPS  
Lydia Wegman, OAQPS

## ATTACHMENT 1

<b>TIMELINE FOR REVISED 2008 OZONE NAAQS DESIGNATION PROCESS*</b>	
<b>Milestone</b>	<b>Date</b>
EPA promulgated revised ozone NAAQS	March 12, 2008
State and tribal recommendations due for ozone designations	No later than March 12, 2009
EPA notifies states and tribes concerning any modifications to their recommendations (120-day letters).	No later than November 12, 2009 (120 days prior to final designations)
EPA publishes public notice of state recommendations and EPA's proposed modifications and initiates 30-day public comment period.	Mid-November 2009
End of 30-day public comment period.	Mid-December 2009
States and Tribes submit additional information to demonstrate why an EPA modification is inappropriate.	No later than January 12, 2010
EPA promulgates final ozone designations.	No later than March 12, 2010

\* This schedule assumes EPA has sufficient information to promulgate designations within 2 years. In the event EPA determines that insufficient information is available to do so, the designation process could be extended up to one year, but no later than March 12, 2011.

## ATTACHMENT 2

### **Factors EPA Plans to Consider in Determining Nonattainment Area Boundaries in Designations for the 2008 Ozone NAAQS**

EPA recommends that the Core Based Statistical Area (CBSA) or Combined Statistical Area (CSA) (which includes 2 or more adjacent CBSA's) serve as the starting point or "presumptive" boundary for considering what should be the geographic boundaries of an ozone nonattainment area.<sup>6</sup> Where a violating monitor is not located in a CBSA or CSA, we recommend that the boundary of the county containing the monitor serve as the presumptive boundary for the nonattainment area. As a framework for area-specific analyses to support nonattainment area boundary recommendations and final boundary determinations, we recommend an evaluation of the 9 factors listed below:

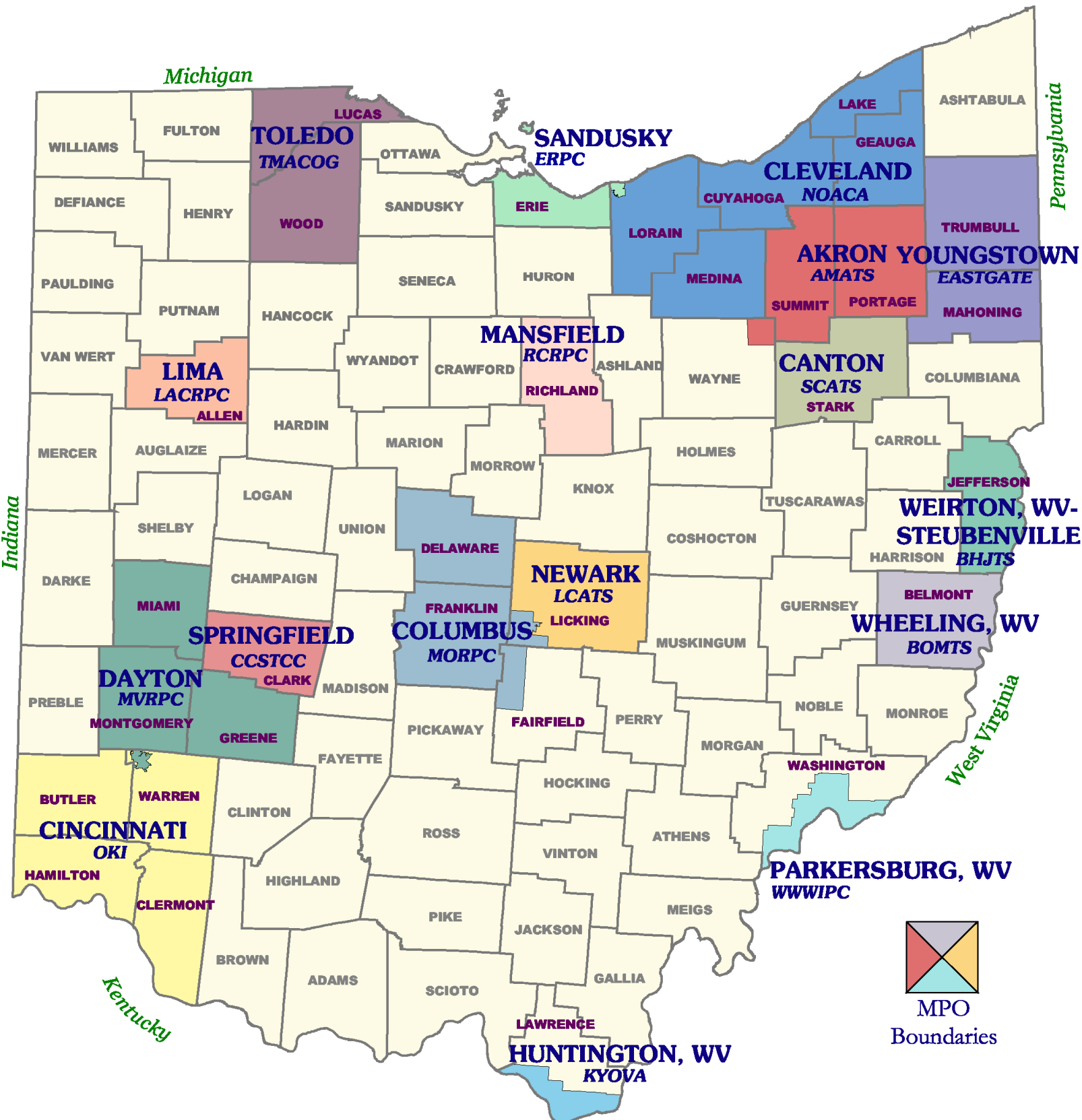
- Air quality data
- Emissions data (location of sources and contribution to ozone concentrations)
- Population density and degree of urbanization (including commercial development)
- Traffic and commuting patterns
- Growth rates and patterns
- Meteorology (weather/transport patterns)
- Geography/topography (mountain ranges or other air basin boundaries)
- Jurisdictional boundaries (e.g., counties, air districts, existing nonattainment areas, Reservations, metropolitan planning organizations (MPOs))
- Level of control of emission sources

Analysis of these factors may support nonattainment boundaries that are either larger or smaller than the presumptive boundary. EPA plans to consider these factors, along with any other relevant information, in determining whether to make modifications to the boundary recommendations from states and tribes. The factors listed above, while generally comprehensive, are not intended to be exhaustive. States and tribes may submit additional information they believe is relevant for EPA to consider. In general, a state's or tribe's demonstration supporting their boundary recommendation for an area should show that: 1) violations are not occurring in nearby portions that are excluded from the recommended area, and 2) the excluded nearby portions do not contain emission sources that contribute meaningfully to the observed violations. While states are not bound to use the approach outlined here, EPA plans to evaluate a state recommendation and determine whether to modify such recommendation based on the above factors and any other information the Agency determines is relevant.

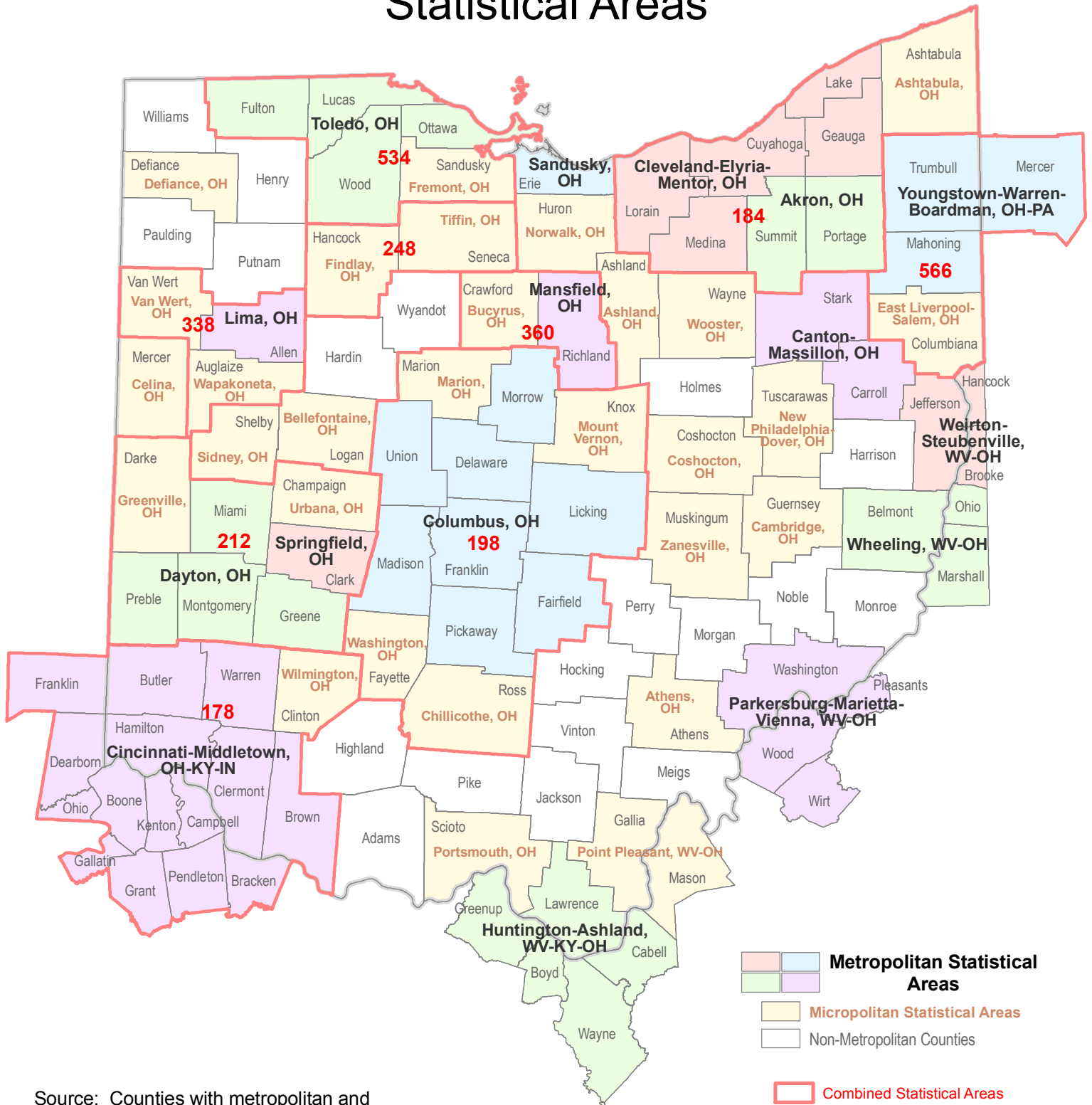
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<sup>6</sup> For lists of the CBSAs and CSAs and their geographic components see [www.census.gov/population/www/metroareas/metrodef.html](http://www.census.gov/population/www/metroareas/metrodef.html).

# Ohio MPO Boundaries



# Ohio Metropolitan, Micropolitan and Combined Statistical Areas



Source: Counties with metropolitan and micropolitan statistical area codes, Dec. 2006  
Excel file obtained from [www.census.gov/population/www/estimates/metrodef.html](http://www.census.gov/population/www/estimates/metrodef.html)

Prepared by: Ohio Department of Development  
Office of Strategic Research (July 2007)

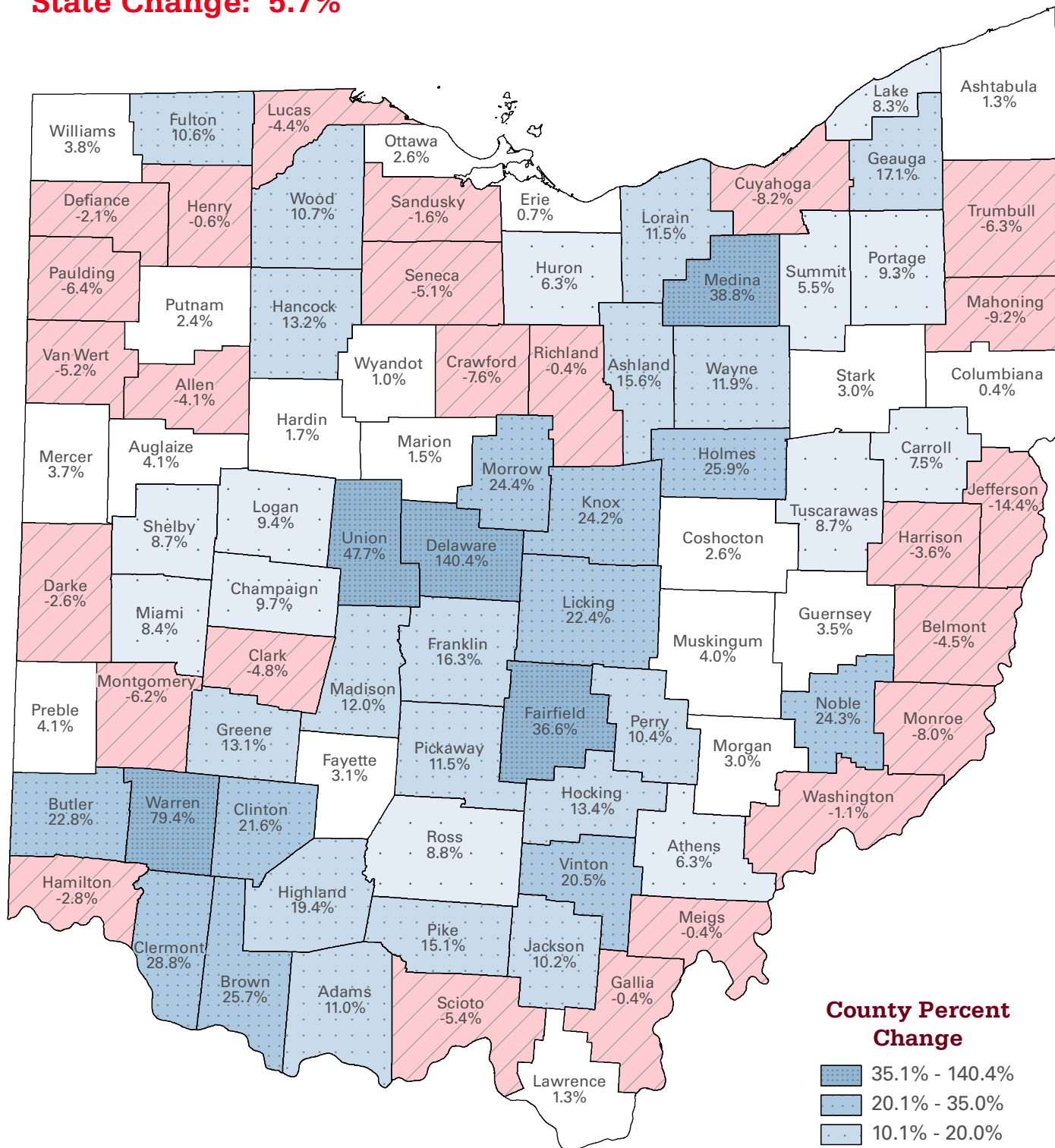
178 Cincinnati-Middletown-Wilmington, OH-KY-IN  
184 Cleveland-Akron-Elyria, OH  
198 Columbus-Marion-Chillicothe, OH  
212 Dayton-Springfield-Greenville, OH  
248 Findlay-Tiffin, OH  
338 Lima-Van Wert-Wapakoneta, OH  
360 Mansfield-Bucyrus, OH  
534 Toledo-Fremont, OH  
566 Youngstown-Warren-East Liverpool, OH-PA



# Percent Population Change 1990 to 2007

State Change: 5.7%

# Ohio

Department of  
Development

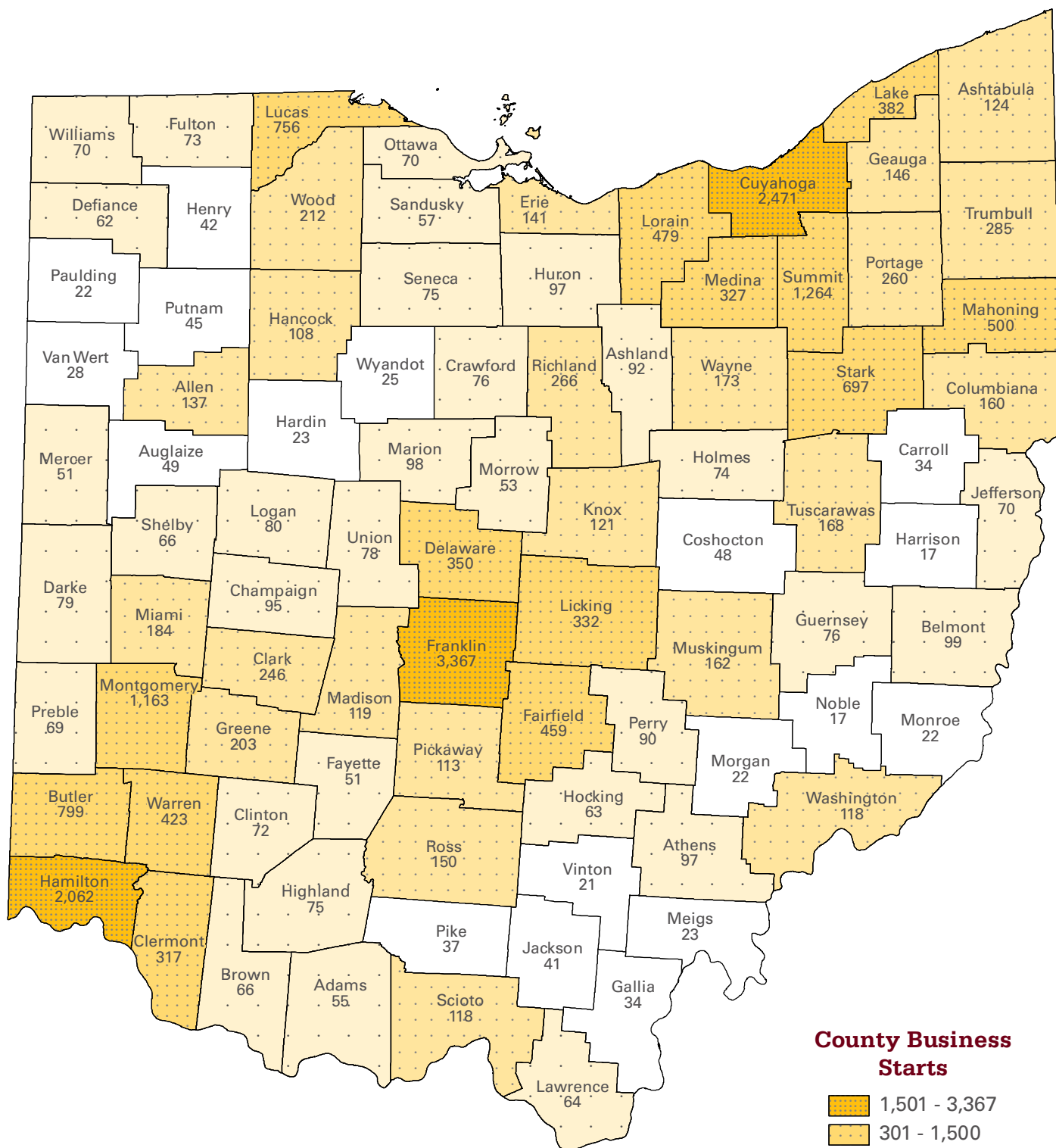
Source: U.S. Census Bureau

Prepared by: Ohio Department of Development,  
Policy Research and Strategic Planning (June 2008)

R050808A

# Business Starts 2007

State Total: 25,054

Department of  
Development

Source: Ohio Bureau of Workers' Compensation

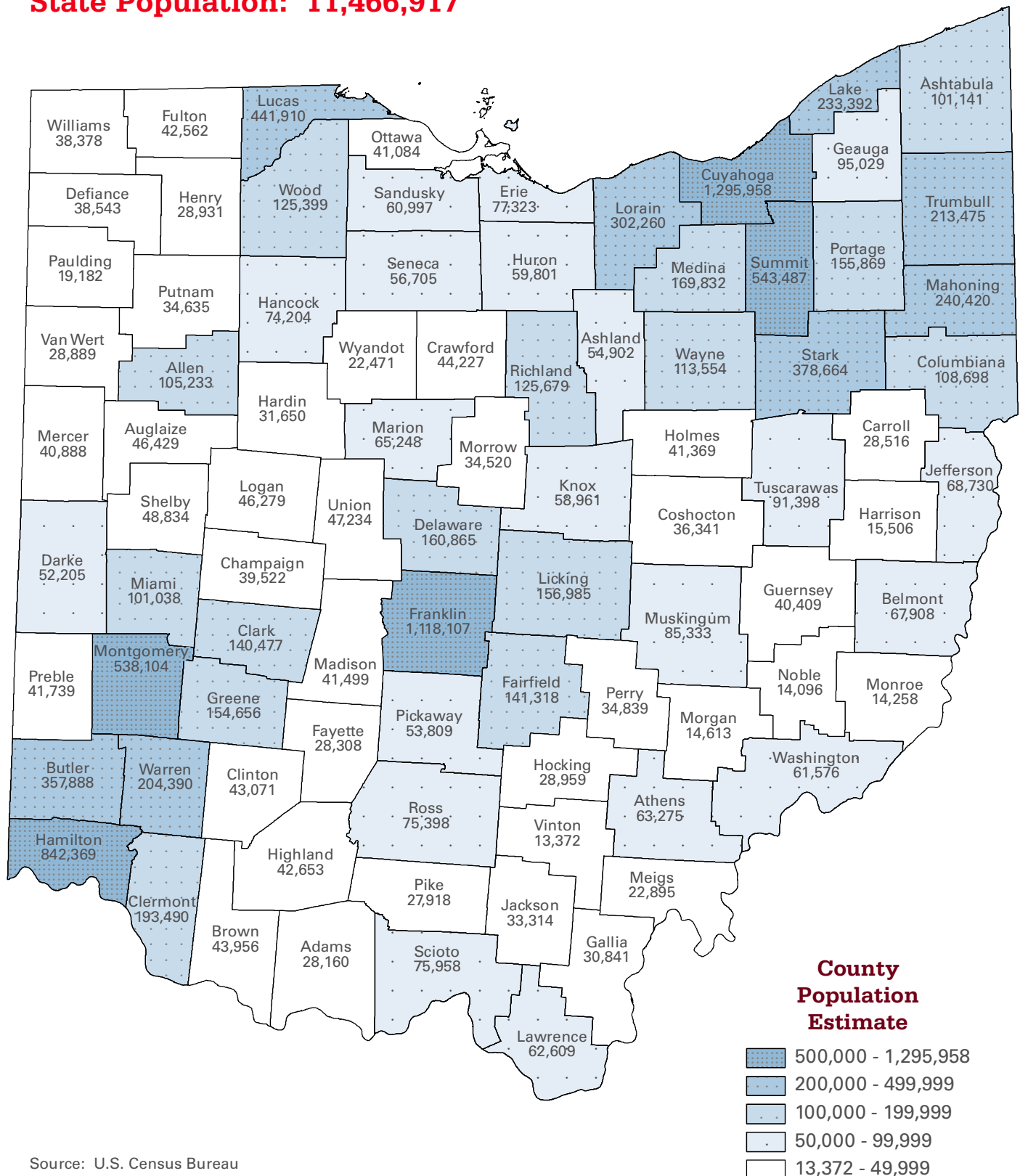
Prepared by: Ohio Department of Development,  
Policy Research and Strategic Planning (June 2008)

# Population Distribution 2007

State Population: 11,466,917



Department of  
Development



Source: U.S. Census Bureau

Prepared by: Ohio Department of Development,  
Policy Research and Strategic Planning (June 2008)

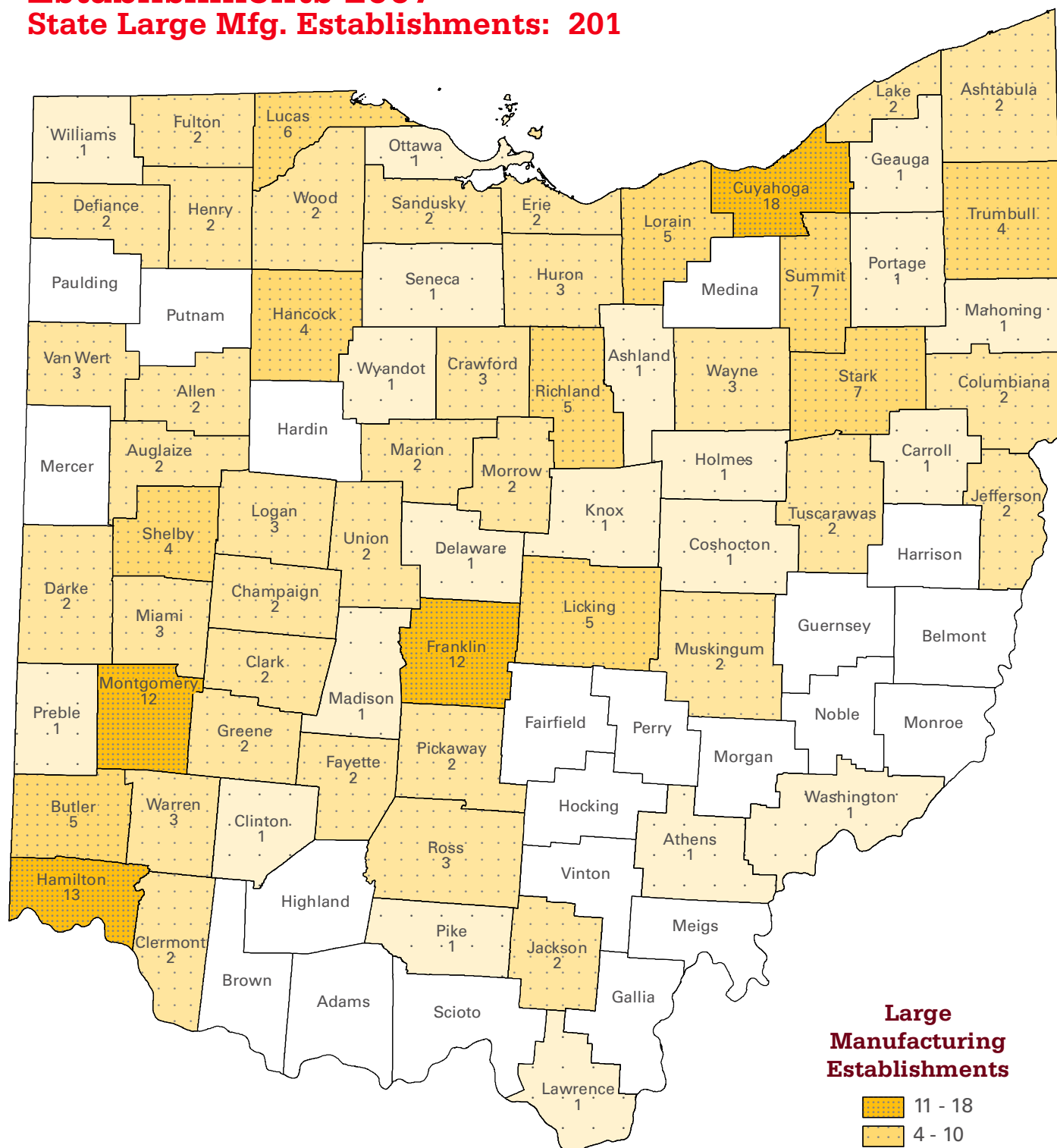


# Distribution of the Largest Manufacturing Establishments 2007

State Large Mfg. Establishments: 201



Department of  
Development



Source: Selectory® Business Database,  
Harris InfoSource

Prepared by: Ohio Department of Development,  
Policy Research and Strategic Planning (June 2008)

R050808A

## Commuter Patterns

Adams	Percent of workers that work outside the county -		40.1%
	Average commute time in minutes -		36.8
Number of workers 16+ years of age living in Adams County			11,133
Commute Out To	Number	Percent	
Hamilton Co. OH	935	8.4%	
Brown Co. OH	793	7.1%	
Clermont Co. OH	527	4.7%	
Highland Co. OH	523	4.7%	
Mason Co. KY	412	3.7%	
Clinton Co. OH	293	2.6%	
Scioto Co. OH	126	1.1%	
Warren Co. OH	118	1.1%	
Boone Co. KY	105	0.9%	
Montgomery Co. OH	76	0.7%	
Percent is of workers living in county.			
Number of workers 16+ years of age working in Adams County			7,882
Commute In From	Number	Percent	
Brown Co. OH	252	3.2%	
Scioto Co. OH	223	2.8%	
Highland Co. OH	196	2.5%	
Mason Co. KY	124	1.6%	
Pike Co. OH	67	0.9%	
Carter Co. KY	54	0.7%	
Clermont Co. OH	52	0.7%	
Fleming Co. KY	28	0.4%	
Franklin Co. OH	22	0.3%	
Hamilton Co. OH	21	0.3%	
Percent is of workers working in county.			

Allen	Percent of workers that work outside the county -		15.7%
	Average commute time in minutes -		18.4
Number of workers 16+ years of age living in Allen County			47,096
Commute Out To	Number	Percent	
Auglaize Co. OH	1,537	3.3%	
Hancock Co. OH	1,169	2.5%	
Shelby Co. OH	1,002	2.1%	
Van Wert Co. OH	919	2.0%	
Putnam Co. OH	910	1.9%	
Hardin Co. OH	514	1.1%	
Defiance Co. OH	147	0.3%	
Logan Co. OH	137	0.3%	
Mercer Co. OH	89	0.2%	
Montgomery Co. OH	65	0.1%	
Percent is of workers living in county.			
Number of workers 16+ years of age working in Allen County			54,177
Commute In From	Number	Percent	
Auglaize Co. OH	3,928	7.3%	
Putnam Co. OH	3,186	5.9%	
Van Wert Co. OH	1,947	3.6%	
Hardin Co. OH	1,495	2.8%	
Hancock Co. OH	1,074	2.0%	
Logan Co. OH	509	0.9%	
Mercer Co. OH	478	0.9%	
Shelby Co. OH	269	0.5%	
Paulding Co. OH	116	0.2%	
Wood Co. OH	101	0.2%	
Percent is of workers working in county.			

Ashland	Percent of workers that work outside the county -		32.2%
	Average commute time in minutes -		20.3
Number of workers 16+ years of age living in Ashland County			24,737
Commute Out To	Number	Percent	
Richland Co. OH	2,673	10.8%	
Wayne Co. OH	1,712	6.9%	
Medina Co. OH	720	2.9%	
Lorain Co. OH	648	2.6%	
Cuyahoga Co. OH	448	1.8%	
Holmes Co. OH	437	1.8%	
Number of workers 16+ years of age working in Ashland County			21,760
Commute In From	Number	Percent	
Richland Co. OH	2,467	11.3%	
Wayne Co. OH	565	2.6%	
Holmes Co. OH	352	1.6%	
Medina Co. OH	307	1.4%	
Knox Co. OH	271	1.2%	
Huron Co. OH	264	1.2%	

Huron Co. OH	388	1.6%
Summit Co. OH	153	0.6%
Crawford Co. OH	130	0.5%
Franklin Co. OH	108	0.4%

Percent is of workers living in county.

Crawford Co. OH	110	0.5%
Lorain Co. OH	91	0.4%
Lawrence Co. OH	58	0.3%
Summit Co. OH	46	0.2%

Percent is of workers working in county.

<b>Ashtabula</b>	Percent of workers that work outside the county -	27.9%
	Average commute time in minutes -	23.9

### Number of workers 16+ years of age living in Ashtabula County 45,689

Commute Out To	Number	Percent
Lake Co. OH	5,775	12.6%
Cuyahoga Co. OH	2,683	5.9%
Geauga Co. OH	2,265	5.0%
Trumbull Co. OH	485	1.1%
Erie Co. PA	412	0.9%
Mahoning Co. OH	151	0.3%
Lorain Co. OH	134	0.3%
Summit Co. OH	113	0.2%
Portage Co. OH	100	0.2%
Crawford Co. PA	91	0.2%

Percent is of workers living in county.

### Number of workers 16+ years of age working in Ashtabula County 37,925

Commute In From	Number	Percent
Lake Co. OH	1,200	3.2%
Trumbull Co. OH	892	2.4%
Crawford Co. PA	644	1.7%
Erie Co. PA	569	1.5%
Cuyahoga Co. OH	397	1.0%
Geauga Co. OH	257	0.7%
Summit Co. OH	196	0.5%
Mercer Co. PA	146	0.4%
Lorain Co. OH	138	0.4%
Portage Co. OH	127	0.3%

Percent is of workers working in county.

<b>Athens</b>	Percent of workers that work outside the county -	16.8%
	Average commute time in minutes -	21.7

### Number of workers 16+ years of age living in Athens County 25,586

Commute Out To	Number	Percent
Franklin Co. OH	712	2.8%
Hocking Co. OH	580	2.3%
Wood Co. WV	563	2.2%
Washington Co. OH	462	1.8%
Fairfield Co. OH	431	1.7%
Vinton Co. OH	149	0.6%
Meigs Co. OH	142	0.6%
Jackson Co. OH	130	0.5%
Perry Co. OH	123	0.5%
Ross Co. OH	112	0.4%

Percent is of workers living in county.

### Number of workers 16+ years of age working in Athens County 26,145

Commute In From	Number	Percent
Meigs Co. OH	1,334	5.1%
Hocking Co. OH	945	3.6%
Vinton Co. OH	420	1.6%
Morgan Co. OH	380	1.5%
Jackson Co. OH	220	0.8%
Washington Co. O	208	0.8%
Gallia Co. OH	165	0.6%
Fairfield Co. OH	142	0.5%
Wood Co. WV	116	0.4%
Perry Co. OH	110	0.4%

Percent is of workers working in county.

<b>Auglaize</b>	Percent of workers that work outside the county -	39.3%
	Average commute time in minutes -	18.1

### Number of workers 16+ years of age living in Auglaize County 23,282

Commute Out To	Number	Percent
Allen Co. OH	3,928	16.9%

### Number of workers 16+ years of age working in Auglaize County 21,159

Commute In From	Number	Percent
Mercer Co. OH	2,981	14.1%

Shelby Co. OH	3,002	12.9%
Mercer Co. OH	930	4.0%
Logan Co. OH	277	1.2%
Miami Co. OH	200	0.9%
Darke Co. OH	121	0.5%
Montgomery Co. OH	113	0.5%
Van Wert Co. OH	94	0.4%
Hardin Co. OH	90	0.4%
Hancock Co. OH	51	0.2%

Percent is of workers living in county.

Allen Co. OH	1,537	7.3%
Shelby Co. OH	1,370	6.5%
Darke Co. OH	278	1.3%
Van Wert Co. OH	130	0.6%
Miami Co. OH	126	0.6%
Hardin Co. OH	90	0.4%
Putnam Co. OH	85	0.4%
Logan Co. OH	84	0.4%
Montgomery Co. C	54	0.3%

Percent is of workers working in county.

<b>Belmont</b>		Percent of workers that work outside the county -	36.0%
		Average commute time in minutes -	23.5
<b>Number of workers 16+ years of age living in Belmont County</b>		<b>27,889</b>	
Commute Out To	Number	Percent	
Ohio Co. WV	4,603	16.5%	
Jefferson Co. OH	1,129	4.0%	
Marshall Co. WV	1,064	3.8%	
Monroe Co. OH	626	2.2%	
Guernsey Co. OH	466	1.7%	
Harrison Co. OH	280	1.0%	
Wetzel Co. WV	227	0.8%	
Allegheny Co. PA	206	0.7%	
Franklin Co. OH	141	0.5%	
Washington Co. PA	138	0.5%	
<b>Number of workers 16+ years of age working in Belmont County</b>		<b>23,944</b>	
Commute In From	Number	Percent	
Ohio Co. WV	1,876	7.8%	
Jefferson Co. OH	1,236	5.2%	
Marshall Co. WV	858	3.6%	
Monroe Co. OH	596	2.5%	
Harrison Co. OH	361	1.5%	
Guernsey Co. OH	318	1.3%	
Brooke Co. WV	155	0.6%	
Noble Co. OH	103	0.4%	
Washington Co. P.	75	0.3%	
Muskingum Co. OH	38	0.2%	

Percent is of workers living in county.

Percent is of workers working in county.

<b>Brown</b>		Percent of workers that work outside the county -	63.8%
		Average commute time in minutes -	35.0
<b>Number of workers 16+ years of age living in Brown County</b>		<b>18,691</b>	
Commute Out To	Number	Percent	
Clermont Co. OH	4,802	25.7%	
Hamilton Co. OH	3,945	21.1%	
Mason Co. KY	780	4.2%	
Clinton Co. OH	466	2.5%	
Butler Co. OH	414	2.2%	
Warren Co. OH	347	1.9%	
Highland Co. OH	305	1.6%	
Adams Co. OH	252	1.3%	
Boone Co. KY	157	0.8%	
Kenton Co. KY	133	0.7%	
<b>Number of workers 16+ years of age working in Brown County</b>		<b>9,569</b>	
Commute In From	Number	Percent	
Adams Co. OH	793	8.3%	
Clermont Co. OH	529	5.5%	
Highland Co. OH	337	3.5%	
Mason Co. KY	316	3.3%	
Hamilton Co. OH	173	1.8%	
Clinton Co. OH	90	0.9%	
Fleming Co. KY	68	0.7%	
Kenton Co. KY	58	0.6%	
Warren Co. OH	47	0.5%	
Lewis Co. KY	44	0.5%	

Percent is of workers living in county.

Percent is of workers working in county.

<b>Butler</b>		Percent of workers that work outside the county -	43.6%
		Average commute time in minutes -	23.0

Number of workers 16+ years of age living in Butler County 160,314		
Commute Out To	Number	Percent
Hamilton Co. OH	47,984	29.9%
Warren Co. OH	11,133	6.9%
Montgomery Co. OH	4,635	2.9%
Clermont Co. OH	1,072	0.7%
Boone Co. KY	857	0.5%
Kenton Co. KY	696	0.4%
Greene Co. OH	400	0.2%
Campbell Co. KY	318	0.2%
Preble Co. OH	239	0.1%
Clinton Co. OH	209	0.1%

Percent is of workers living in county.

Number of workers 16+ years of age working in Butler County 133,727		
Commute In From	Number	Percent
Hamilton Co. OH	18,452	13.8%
Warren Co. OH	8,586	6.4%
Clermont Co. OH	2,912	2.2%
Montgomery Co. C	2,622	2.0%
Preble Co. OH	2,575	1.9%
Kenton Co. KY	908	0.7%
Dearborn Co. IN	750	0.6%
Union Co. IN	698	0.5%
Franklin Co. IN	677	0.5%
Campbell Co. KY	652	0.5%

Percent is of workers working in county.

Carroll		Percent of workers that work outside the county -	57.0%
		Average commute time in minutes -	27.5
Number of workers 16+ years of age living in Carroll County 12,882		Number of workers 16+ years of age working in Carroll County 7,947	
Commute Out To	Number	Percent	
Stark Co. OH	5,125	39.8%	
Tuscarawas Co. OH	840	6.5%	
Columbiana Co. OH	297	2.3%	
Summit Co. OH	271	2.1%	
Jefferson Co. OH	178	1.4%	
Harrison Co. OH	160	1.2%	
Cuyahoga Co. OH	73	0.6%	
Wayne Co. OH	73	0.6%	
Mahoning Co. OH	47	0.4%	
Portage Co. OH	37	0.3%	
Commute In From	Number	Percent	
Stark Co. OH	956	12.0%	
Columbiana Co. O	453	5.7%	
Tuscarawas Co. O	289	3.6%	
Jefferson Co. OH	265	3.3%	
Harrison Co. OH	188	2.4%	
Holmes Co. OH	76	1.0%	
Mahoning Co. OH	44	0.6%	
Mercer Co. PA	16	0.2%	
Clark Co. OH	13	0.2%	
Geauga Co. OH	12	0.2%	

Percent is of workers living in county.

Percent is of workers working in county.

Champaign		Percent of workers that work outside the county -	53.1%
		Average commute time in minutes -	25.0
Number of workers 16+ years of age living in Champaign County 18,905		Number of workers 16+ years of age working in Champaign Coun 12,897	
Commute Out To	Number	Percent	
Clark Co. OH	3,493	18.5%	
Union Co. OH	1,802	9.5%	
Logan Co. OH	1,118	5.9%	
Franklin Co. OH	886	4.7%	
Miami Co. OH	827	4.4%	
Montgomery Co. OH	662	3.5%	
Shelby Co. OH	354	1.9%	
Madison Co. OH	265	1.4%	
Greene Co. OH	239	1.3%	
Summit Co. OH	47	0.2%	
Commute In From	Number	Percent	
Clark Co. OH	1,299	10.1%	
Logan Co. OH	707	5.5%	
Montgomery Co. C	675	5.2%	
Miami Co. OH	426	3.3%	
Franklin Co. OH	163	1.3%	
Greene Co. OH	121	0.9%	
Shelby Co. OH	104	0.8%	
Madison Co. OH	91	0.7%	
Union Co. OH	80	0.6%	
Jefferson Co. OH	42	0.3%	

Percent is of workers living in county.

Percent is of workers working in county.

Clark		Percent of workers that work outside the county -	31.5%
		Average commute time in minutes -	21.6
Number of workers 16+ years of age living in Clark County		65,887	
Commute Out To	Number	Percent	
Montgomery Co. OH	7,856	11.9%	
Greene Co. OH	5,508	8.4%	
Franklin Co. OH	1,437	2.2%	
Champaign Co. OH	1,299	2.0%	
Miami Co. OH	1,240	1.9%	
Madison Co. OH	1,092	1.7%	
Union Co. OH	775	1.2%	
Hamilton Co. OH	205	0.3%	
Logan Co. OH	186	0.3%	
Shelby Co. OH	132	0.2%	
Percent is of workers living in county.			
Number of workers 16+ years of age working in Clark County		57,637	
Commute In From	Number	Percent	
Champaign Co. OH	3,493	6.1%	
Montgomery Co. C	2,517	4.4%	
Greene Co. OH	2,516	4.4%	
Miami Co. OH	882	1.5%	
Franklin Co. OH	446	0.8%	
Madison Co. OH	373	0.6%	
Logan Co. OH	256	0.4%	
Preble Co. OH	142	0.2%	
Warren Co. OH	125	0.2%	
Fayette Co. OH	124	0.2%	
Percent is of workers working in county.			

Clermont		Percent of workers that work outside the county -	59.9%
		Average commute time in minutes -	28.2
Number of workers 16+ years of age living in Clermont County		88,372	
Commute Out To	Number	Percent	
Hamilton Co. OH	40,090	45.4%	
Warren Co. OH	3,269	3.7%	
Butler Co. OH	2,912	3.3%	
Kenton Co. KY	1,630	1.8%	
Boone Co. KY	1,422	1.6%	
Campbell Co. KY	744	0.8%	
Brown Co. OH	529	0.6%	
Montgomery Co. OH	433	0.5%	
Clinton Co. OH	403	0.5%	
Dearborn Co. IN	154	0.2%	
Percent is of workers living in county.			
Number of workers 16+ years of age working in Clermont County		55,884	
Commute In From	Number	Percent	
Hamilton Co. OH	8,240	14.7%	
Brown Co. OH	4,802	8.6%	
Warren Co. OH	1,448	2.6%	
Butler Co. OH	1,072	1.9%	
Kenton Co. KY	761	1.4%	
Campbell Co. KY	579	1.0%	
Adams Co. OH	527	0.9%	
Clinton Co. OH	483	0.9%	
Highland Co. OH	427	0.8%	
Boone Co. KY	350	0.6%	
Percent is of workers working in county.			

Clinton		Percent of workers that work outside the county -	30.4%
		Average commute time in minutes -	23.8
Number of workers 16+ years of age living in Clinton County		19,949	
Commute Out To	Number	Percent	
Hamilton Co. OH	1,498	7.5%	
Warren Co. OH	1,079	5.4%	
Montgomery Co. OH	782	3.9%	
Highland Co. OH	534	2.7%	
Clermont Co. OH	483	2.4%	
Greene Co. OH	451	2.3%	
Fayette Co. OH	351	1.8%	
Number of workers 16+ years of age working in Clinton County		24,277	
Commute In From	Number	Percent	
Highland Co. OH	3,789	15.6%	
Fayette Co. OH	1,229	5.1%	
Warren Co. OH	1,038	4.3%	
Greene Co. OH	808	3.3%	
Brown Co. OH	466	1.9%	
Montgomery Co. C	419	1.7%	
Clermont Co. OH	403	1.7%	





Huron Co. OH	400	1.9%
Seneca Co. OH	323	1.5%
Morrow Co. OH	301	1.4%
Franklin Co. OH	292	1.4%
Delaware Co. OH	117	0.5%
Ashland Co. OH	110	0.5%
Hancock Co. OH	39	0.2%

Percent is of workers living in county.

Wyandot Co. OH	365	2.0%
Seneca Co. OH	284	1.5%
Huron Co. OH	141	0.8%
Ashland Co. OH	130	0.7%
Delaware Co. OH	51	0.3%
Wayne Co. OH	50	0.3%
Lorain Co. OH	33	0.2%

Percent is of workers working in county.

<b>Cuyahoga</b>	Percent of workers that work outside the county -	9.1%
	Average commute time in minutes -	24.4

**Number of workers 16+ years of age living in Cuyahoga County 622,876**

Commute Out To	Number	Percent
Lake Co. OH	15,692	2.5%
Summit Co. OH	14,207	2.3%
Lorain Co. OH	9,289	1.5%
Medina Co. OH	4,795	0.8%
Geauga Co. OH	2,973	0.5%
Portage Co. OH	2,632	0.4%
Stark Co. OH	565	0.1%
Franklin Co. OH	524	0.1%
Ashtabula Co. OH	397	0.1%
Cook Co. IL	298	0.0%

Percent is of workers living in county.

**Number of workers 16+ years of age working in Cuyahoga County 748,630**

Commute In From	Number	Percent
Lorain Co. OH	36,888	4.9%
Lake Co. OH	36,741	4.9%
Summit Co. OH	34,476	4.6%
Medina Co. OH	26,572	3.5%
Geauga Co. OH	16,676	2.2%
Portage Co. OH	11,934	1.6%
Ashtabula Co. OH	2,683	0.4%
Stark Co. OH	2,443	0.3%
Trumbull Co. OH	1,976	0.3%
Wayne Co. OH	1,193	0.2%

Percent is of workers working in county.

<b>Darke</b>	Percent of workers that work outside the county -	36.8%
	Average commute time in minutes -	22.8

**Number of workers 16+ years of age living in Darke County 25,303**

Commute Out To	Number	Percent
Montgomery Co. OH	2,557	10.1%
Miami Co. OH	2,429	9.6%
Shelby Co. OH	1,131	4.5%
Randolph Co. IN	582	2.3%
Mercer Co. OH	545	2.2%
Preble Co. OH	468	1.8%
Wayne Co. IN	455	1.8%
Auglaize Co. OH	278	1.1%
Greene Co. OH	154	0.6%
Clark Co. OH	115	0.5%

Percent is of workers living in county.

**Number of workers 16+ years of age working in Darke County 19,871**

Commute In From	Number	Percent
Miami Co. OH	813	4.1%
Randolph Co. IN	659	3.3%
Montgomery Co. C	647	3.3%
Mercer Co. OH	519	2.6%
Preble Co. OH	311	1.6%
Shelby Co. OH	238	1.2%
Auglaize Co. OH	121	0.6%
Wayne Co. IN	109	0.5%
Greene Co. OH	58	0.3%
Clark Co. OH	58	0.3%

Percent is of workers working in county.

<b>Defiance</b>	Percent of workers that work outside the county -	33.4%
	Average commute time in minutes -	19.2

**Number of workers 16+ years of age living in Defiance County 19,540**

**Number of workers 16+ years of age working in Defiance County 19,013**



Commute Out To	Number	Percent
Williams Co. OH	2,247	11.5%
Fulton Co. OH	1,270	6.5%
Henry Co. OH	817	4.2%
Allen Co. IN	608	3.1%
DeKalb Co. IN	538	2.8%
Paulding Co. OH	366	1.9%
Lucas Co. OH	168	0.9%
Wood Co. OH	65	0.3%
Putnam Co. OH	60	0.3%
Steuben Co. IN	42	0.2%

Percent is of workers living in county.

Commute In From	Number	Percent
Paulding Co. OH	1,817	9.6%
Henry Co. OH	1,327	7.0%
Putnam Co. OH	875	4.6%
Williams Co. OH	677	3.6%
Lucas Co. OH	234	1.2%
Fulton Co. OH	217	1.1%
Wood Co. OH	172	0.9%
Allen Co. IN	156	0.8%
Allen Co. OH	147	0.8%
Van Wert Co. OH	54	0.3%

Percent is of workers working in county.

<b>Delaware</b>	Percent of workers that work outside the county -	63.5%
	Average commute time in minutes -	26.5
<b>Number of workers 16+ years of age living in Delaware County 57,840</b>		
Commute Out To	Number	Percent
Franklin Co. OH	31,708	54.8%
Union Co. OH	1,782	3.1%
Marion Co. OH	839	1.5%
Licking Co. OH	374	0.6%
Knox Co. OH	218	0.4%
Logan Co. OH	200	0.3%
Morrow Co. OH	172	0.3%
Madison Co. OH	111	0.2%
Fairfield Co. OH	102	0.2%
Richland Co. OH	63	0.1%
Percent is of workers living in county.		
<b>Number of workers 16+ years of age working in Delaware County 43,463</b>		
Commute In From	Number	Percent
Franklin Co. OH	14,222	32.7%
Morrow Co. OH	1,983	4.6%
Marion Co. OH	1,609	3.7%
Licking Co. OH	900	2.1%
Union Co. OH	890	2.0%
Knox Co. OH	831	1.9%
Fairfield Co. OH	395	0.9%
Madison Co. OH	174	0.4%
Richland Co. OH	129	0.3%
Crawford Co. OH	117	0.3%
Percent is of workers working in county.		

<b>Erie</b>	Percent of workers that work outside the county -	25.3%
	Average commute time in minutes -	18.8
<b>Number of workers 16+ years of age living in Erie County 37,016</b>		
Commute Out To	Number	Percent
Lorain Co. OH	3,923	10.6%
Huron Co. OH	2,358	6.4%
Cuyahoga Co. OH	985	2.7%
Sandusky Co. OH	768	2.1%
Ottawa Co. OH	530	1.4%
Lucas Co. OH	183	0.5%
Seneca Co. OH	89	0.2%
Richland Co. OH	63	0.2%
Wood Co. OH	60	0.2%
Summit Co. OH	39	0.1%
Percent is of workers living in county.		
<b>Number of workers 16+ years of age working in Erie County 37,497</b>		
Commute In From	Number	Percent
Huron Co. OH	4,048	10.8%
Sandusky Co. OH	1,659	4.4%
Lorain Co. OH	1,594	4.3%
Ottawa Co. OH	1,107	3.0%
Seneca Co. OH	317	0.8%
Cuyahoga Co. OH	286	0.8%
Richland Co. OH	94	0.3%
Hamilton Co. OH	80	0.2%
Lucas Co. OH	71	0.2%
Summit Co. OH	47	0.1%
Percent is of workers working in county.		

<b>Fairfield</b>	Percent of workers that work outside the county -	55.8%
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Fairfield		Average commute time in minutes -		27.7
Number of workers 16+ years of age living in Fairfield County			60,465	
Commute Out To	Number	Percent		
Franklin Co. OH	28,259	46.7%		
Licking Co. OH	1,563	2.6%		
Pickaway Co. OH	1,289	2.1%		
Delaware Co. OH	395	0.7%		
Hocking Co. OH	361	0.6%		
Perry Co. OH	273	0.5%		
Ross Co. OH	255	0.4%		
Muskingum Co. OH	158	0.3%		
Athens Co. OH	142	0.2%		
Union Co. OH	91	0.2%		
Percent is of workers living in county.				
Number of workers 16+ years of age working in Fairfield County			36,957	
Commute In From	Number	Percent		
Franklin Co. OH	3,261	8.8%		
Perry Co. OH	1,980	5.4%		
Hocking Co. OH	1,897	5.1%		
Licking Co. OH	915	2.5%		
Athens Co. OH	431	1.2%		
Pickaway Co. OH	349	0.9%		
Muskingum Co. OH	211	0.6%		
Ross Co. OH	191	0.5%		
Delaware Co. OH	102	0.3%		
Vinton Co. OH	78	0.2%		
Percent is of workers working in county.				

Fayette			Percent of workers that work outside the county -			35.1%					
			Average commute time in minutes -			24.4					
Number of workers 16+ years of age living in Fayette County			13,433								
Commute Out To		Number	Percent			Commute In From		Number	Percent		
Franklin Co. OH		1,250	9.3%			Highland Co. OH		645	5.7%		
Clinton Co. OH		1,229	9.1%			Ross Co. OH		503	4.4%		
Madison Co. OH		563	4.2%			Clinton Co. OH		351	3.1%		
Highland Co. OH		457	3.4%			Greene Co. OH		350	3.1%		
Pickaway Co. OH		248	1.8%			Pickaway Co. OH		244	2.1%		
Greene Co. OH		190	1.4%			Franklin Co. OH		152	1.3%		
Ross Co. OH		153	1.1%			Madison Co. OH		145	1.3%		
Clark Co. OH		124	0.9%			Montgomery Co. C		55	0.5%		
Montgomery Co. OH		78	0.6%			Clark Co. OH		54	0.5%		
Hamilton Co. OH		52	0.4%			Pike Co. OH		34	0.3%		
Percent is of workers living in county.						Percent is of workers working in county.					

Franklin		Percent of workers that work outside the county -		7.3%
		Average commute time in minutes -		21.9
Number of workers 16+ years of age living in Franklin County			548,655	
Commute Out To	Number	Percent		
Delaware Co. OH	14,222	2.6%		
Union Co. OH	4,527	0.8%		
Licking Co. OH	4,089	0.7%		
Fairfield Co. OH	3,261	0.6%		
Madison Co. OH	1,903	0.3%		
Pickaway Co. OH	1,517	0.3%		
Montgomery Co. OH	612	0.1%		
Marion Co. OH	590	0.1%		
Hamilton Co. OH	552	0.1%		
Number of workers 16+ years of age working in Franklin County			652,261	
Commute In From	Number	Percent		
Delaware Co. OH	31,708	4.9%		
Fairfield Co. OH	28,259	4.3%		
Licking Co. OH	23,755	3.6%		
Pickaway Co. OH	9,613	1.5%		
Madison Co. OH	7,921	1.2%		
Union Co. OH	5,473	0.8%		
Morrow Co. OH	3,108	0.5%		
Knox Co. OH	3,014	0.5%		
Perry Co. OH	2,433	0.4%		

Logan Co. OH	506	0.1%
Percent is of workers living in county.		

Ross Co. OH	2,335	0.4%
Percent is of workers working in county.		

Fulton	Percent of workers that work outside the county -		39.0%
	Average commute time in minutes -		21.3
Number of workers 16+ years of age living in Fulton County			20,855
Commute Out To	Number	Percent	
Lucas Co. OH	5,203	24.9%	
Williams Co. OH	677	3.2%	
Henry Co. OH	659	3.2%	
Wood Co. OH	622	3.0%	
Lenawee Co. MI	233	1.1%	
Defiance Co. OH	217	1.0%	
Monroe Co. MI	122	0.6%	
Wayne Co. MI	30	0.1%	
Hillsdale Co. MI	29	0.1%	
Sandusky Co. OH	29	0.1%	
Percent is of workers living in county.			
Number of workers 16+ years of age working in Fulton County			21,516
Commute In From	Number	Percent	
Henry Co. OH	1,981	9.2%	
Lucas Co. OH	1,957	9.1%	
Williams Co. OH	1,810	8.4%	
Defiance Co. OH	1,270	5.9%	
Lenawee Co. MI	639	3.0%	
Wood Co. OH	269	1.3%	
Hillsdale Co. MI	156	0.7%	
Paulding Co. OH	134	0.6%	
Monroe Co. MI	87	0.4%	
Sandusky Co. OH	72	0.3%	
Percent is of workers working in county.			

Gallia	Percent of workers that work outside the county -		25.2%
	Average commute time in minutes -		28.1
Number of workers 16+ years of age living in Gallia County			11,813
Commute Out To	Number	Percent	
Mason Co. WV	669	5.7%	
Jackson Co. OH	595	5.0%	
Franklin Co. OH	218	1.8%	
Cabell Co. WV	190	1.6%	
Meigs Co. OH	187	1.6%	
Athens Co. OH	165	1.4%	
Lawrence Co. OH	111	0.9%	
Ross Co. OH	108	0.9%	
Kanawha Co. WV	96	0.8%	
Jackson Co. WV	71	0.6%	
Percent is of workers living in county.			
Number of workers 16+ years of age working in Gallia County			12,073
Commute In From	Number	Percent	
Mason Co. WV	1,358	11.2%	
Meigs Co. OH	844	7.0%	
Jackson Co. OH	403	3.3%	
Lawrence Co. OH	164	1.4%	
Putnam Co. WV	51	0.4%	
Vinton Co. OH	45	0.4%	
Athens Co. OH	44	0.4%	
Franklin Co. OH	37	0.3%	
Scioto Co. OH	36	0.3%	
Cabell Co. WV	35	0.3%	
Percent is of workers working in county.			

Geauga	Percent of workers that work outside the county -		57.2%
	Average commute time in minutes -		27.0
Number of workers 16+ years of age living in Geauga County			44,499
Commute Out To	Number	Percent	
Cuyahoga Co. OH	16,676	37.5%	
Lake Co. OH	5,276	11.9%	
Summit Co. OH	1,130	2.5%	
Portage Co. OH	1,002	2.3%	
Trumbull Co. OH	310	0.7%	
Number of workers 16+ years of age working in Geauga County			34,417
Commute In From	Number	Percent	
Trumbull Co. OH	3,900	11.3%	
Lake Co. OH	3,147	9.1%	
Cuyahoga Co. OH	2,973	8.6%	
Ashtabula Co. OH	2,265	6.6%	
Portage Co. OH	1,989	5.8%	

Ashtabula Co. OH	257	0.6%
Mahoning Co. OH	105	0.2%
Stark Co. OH	82	0.2%
Lorain Co. OH	68	0.2%
Medina Co. OH	43	0.1%

Percent is of workers living in county.

Summit Co. OH	563	1.6%
Mahoning Co. OH	107	0.3%
Lorain Co. OH	70	0.2%
Mercer Co. PA	40	0.1%
Medina Co. OH	32	0.1%

Percent is of workers working in county.

<b>Greene</b>	Percent of workers that work outside the county -	44.5%
	Average commute time in minutes -	20.3

### Number of workers 16+ years of age living in Greene County 72,958

Commute Out To	Number	Percent
Montgomery Co. OH	24,925	34.2%
Clark Co. OH	2,516	3.4%
Clinton Co. OH	808	1.1%
Warren Co. OH	797	1.1%
Hamilton Co. OH	610	0.8%
Miami Co. OH	522	0.7%
Franklin Co. OH	441	0.6%
Butler Co. OH	358	0.5%
Fayette Co. OH	350	0.5%
Champaign Co. OH	121	0.2%

Percent is of workers living in county.

### Number of workers 16+ years of age working in Greene County 76,312

Commute In From	Number	Percent
Montgomery Co. C	24,214	31.7%
Clark Co. OH	5,508	7.2%
Miami Co. OH	1,514	2.0%
Warren Co. OH	1,321	1.7%
Clinton Co. OH	451	0.6%
Butler Co. OH	400	0.5%
Hamilton Co. OH	245	0.3%
Champaign Co. OH	239	0.3%
Franklin Co. OH	236	0.3%
Preble Co. OH	220	0.3%

Percent is of workers working in county.

<b>Guernsey</b>	Percent of workers that work outside the county -	26.4%
	Average commute time in minutes -	23.7

### Number of workers 16+ years of age living in Guernsey County 16,644

Commute Out To	Number	Percent
Muskingum Co. OH	1,815	10.9%
Noble Co. OH	438	2.6%
Franklin Co. OH	396	2.4%
Belmont Co. OH	318	1.9%
Tuscarawas Co. OH	249	1.5%
Coshocton Co. OH	210	1.3%
Licking Co. OH	127	0.8%
Stark Co. OH	88	0.5%
Summit Co. OH	81	0.5%
Cuyahoga Co. OH	52	0.3%

Percent is of workers living in county.

### Number of workers 16+ years of age working in Guernsey County 15,528

Commute In From	Number	Percent
Noble Co. OH	1,069	6.9%
Muskingum Co. OH	793	5.1%
Belmont Co. OH	466	3.0%
Tuscarawas Co. OH	153	1.0%
Coshocton Co. OH	94	0.6%
Monroe Co. OH	84	0.5%
Washington Co. OH	83	0.5%
Morgan Co. OH	80	0.5%
Perry Co. OH	56	0.4%
Franklin Co. OH	39	0.3%

Percent is of workers working in county.

<b>Hamilton</b>	Percent of workers that work outside the county -	15.6%
	Average commute time in minutes -	23.0

### Number of workers 16+ years of age living in Hamilton County 398,465

Commute Out To	Number	Percent
Butler Co. OH	18,452	4.6%

### Number of workers 16+ years of age working in Hamilton County 519,981

Commute In From	Number	Percent
Butler Co. OH	47,984	9.2%

Warren Co. OH	9,303	2.3%
Clermont Co. OH	8,240	2.1%
Kenton Co. KY	7,937	2.0%
Boone Co. KY	6,505	1.6%
Campbell Co. KY	2,739	0.7%
Montgomery Co. OH	1,747	0.4%
Dearborn Co. IN	1,335	0.3%
Franklin Co. OH	472	0.1%
Ripley Co. IN	295	0.1%

Percent is of workers living in county.

Clermont Co. OH	40,090	7.7%
Warren Co. OH	21,347	4.1%
Kenton Co. KY	20,200	3.9%
Campbell Co. KY	14,946	2.9%
Boone Co. KY	8,351	1.6%
Dearborn Co. IN	7,672	1.5%
Brown Co. OH	3,945	0.8%
Montgomery Co. C	2,698	0.5%
Franklin Co. IN	1,880	0.4%

Percent is of workers working in county.

## Hancock

Percent of workers that work outside the county - 18.7%

Average commute time in minutes - 17.5

### Number of workers 16+ years of age living in Hancock County 35,845

Commute Out To	Number	Percent
Wood Co. OH	1,603	4.5%
Seneca Co. OH	1,296	3.6%
Allen Co. OH	1,074	3.0%
Lucas Co. OH	607	1.7%
Wyandot Co. OH	491	1.4%
Putnam Co. OH	382	1.1%
Hardin Co. OH	379	1.1%
Sandusky Co. OH	126	0.4%
Ottawa Co. OH	50	0.1%
Van Wert Co. OH	49	0.1%

Percent is of workers living in county.

### Number of workers 16+ years of age working in Hancock County 41,331

Commute In From	Number	Percent
Seneca Co. OH	3,118	7.5%
Wood Co. OH	2,177	5.3%
Putnam Co. OH	1,722	4.2%
Allen Co. OH	1,169	2.8%
Wyandot Co. OH	1,107	2.7%
Hardin Co. OH	1,082	2.6%
Lucas Co. OH	514	1.2%
Sandusky Co. OH	191	0.5%
Henry Co. OH	189	0.5%
Franklin Co. OH	91	0.2%

Percent is of workers working in county.

## Hardin

Percent of workers that work outside the county - 38.3%

Average commute time in minutes - 21.8

### Number of workers 16+ years of age living in Hardin County 14,390

Commute Out To	Number	Percent
Allen Co. OH	1,495	10.4%
Hancock Co. OH	1,082	7.5%
Logan Co. OH	964	6.7%
Union Co. OH	542	3.8%
Wyandot Co. OH	460	3.2%
Marion Co. OH	178	1.2%
Franklin Co. OH	121	0.8%
Shelby Co. OH	96	0.7%
Auglaize Co. OH	90	0.6%
Summit Co. OH	57	0.4%

Percent is of workers living in county.

### Number of workers 16+ years of age working in Hardin County 11,044

Commute In From	Number	Percent
Allen Co. OH	514	4.7%
Hancock Co. OH	379	3.4%
Logan Co. OH	303	2.7%
Wyandot Co. OH	288	2.6%
Marion Co. OH	156	1.4%
Auglaize Co. OH	90	0.8%
Union Co. OH	82	0.7%
Putnam Co. OH	35	0.3%
Crawford Co. OH	29	0.3%
Delaware Co. OH	28	0.3%

Percent is of workers working in county.

## Harrison

Percent of workers that work outside the county - 52.4%

Average commute time in minutes - 28.8

Number of workers 16+ years of age living in Harrison County 6,585		
Commute Out To	Number	Percent
Tuscarawas Co. OH	1,410	21.4%
Jefferson Co. OH	593	9.0%
Belmont Co. OH	361	5.5%
Stark Co. OH	292	4.4%
Carroll Co. OH	188	2.9%
Ohio Co. WV	83	1.3%
Brooke Co. WV	65	1.0%
Wayne Co. OH	62	0.9%
Holmes Co. OH	34	0.5%
Allegheny Co. PA	33	0.5%

Percent is of workers living in county.

Number of workers 16+ years of age working in Harrison County 4,416		
Commute In From	Number	Percent
Jefferson Co. OH	383	8.7%
Belmont Co. OH	280	6.3%
Tuscarawas Co. O	182	4.1%
Carroll Co. OH	160	3.6%
Guernsey Co. OH	52	1.2%
Holmes Co. OH	41	0.9%
Stark Co. OH	27	0.6%
Brooke Co. WV	18	0.4%
Allegheny Co. PA	13	0.3%
Hamilton Co. OH	12	0.3%

Percent is of workers working in county.

Henry		Percent of workers that work outside the county -	43.0%
		Average commute time in minutes -	21.4
Number of workers 16+ years of age living in Henry County 13,911		Number of workers 16+ years of age working in Henry County 11,170	
Commute Out To	Number	Percent	
Fulton Co. OH	1,981	14.2%	
Defiance Co. OH	1,327	9.5%	
Lucas Co. OH	952	6.8%	
Wood Co. OH	865	6.2%	
Williams Co. OH	295	2.1%	
Hancock Co. OH	189	1.4%	
Putnam Co. OH	138	1.0%	
Allen Co. OH	38	0.3%	
Lenawee Co. MI	23	0.2%	
Monroe Co. MI	18	0.1%	
Commute In From	Number	Percent	
Defiance Co. OH	817	7.3%	
Fulton Co. OH	659	5.9%	
Williams Co. OH	406	3.6%	
Lucas Co. OH	365	3.3%	
Wood Co. OH	359	3.2%	
Putnam Co. OH	206	1.8%	
Paulding Co. OH	105	0.9%	
Hancock Co. OH	43	0.4%	
Seneca Co. OH	34	0.3%	
Webb Co. TX	26	0.2%	

Percent is of workers living in county.

Percent is of workers working in county.

Highland		Percent of workers that work outside the county -	43.2%
		Average commute time in minutes -	29.3
Number of workers 16+ years of age living in Highland County 17,662		Number of workers 16+ years of age working in Highland County 13,240	
Commute Out To	Number	Percent	
Clinton Co. OH	3,789	21.5%	
Hamilton Co. OH	656	3.7%	
Fayette Co. OH	645	3.7%	
Clermont Co. OH	427	2.4%	
Ross Co. OH	347	2.0%	
Brown Co. OH	337	1.9%	
Franklin Co. OH	254	1.4%	
Warren Co. OH	221	1.3%	
Montgomery Co. OH	217	1.2%	
Adams Co. OH	196	1.1%	
Commute In From	Number	Percent	
Ross Co. OH	671	5.1%	
Clinton Co. OH	534	4.0%	
Adams Co. OH	523	4.0%	
Fayette Co. OH	457	3.5%	
Brown Co. OH	305	2.3%	
Clermont Co. OH	148	1.1%	
Pike Co. OH	126	1.0%	
Hamilton Co. OH	80	0.6%	
Scioto Co. OH	47	0.4%	
Warren Co. OH	35	0.3%	

Percent is of workers living in county.

Percent is of workers working in county.



Hocking			Percent of workers that work outside the county -		51.4%
			Average commute time in minutes -		35.9
Number of workers 16+ years of age living in Hocking County			11,829		
Commute Out To	Number	Percent			
Franklin Co. OH	1,977	16.7%			
Fairfield Co. OH	1,897	16.0%			
Athens Co. OH	945	8.0%			
Pickaway Co. OH	564	4.8%			
Ross Co. OH	126	1.1%			
Licking Co. OH	94	0.8%			
Perry Co. OH	79	0.7%			
Delaware Co. OH	51	0.4%			
Vinton Co. OH	41	0.3%			
Madison Co. OH	23	0.2%			
Percent is of workers living in county.					

Number of workers 16+ years of age working in Hocking County			7,632		
Commute In From	Number	Percent			
Athens Co. OH	580	7.6%			
Fairfield Co. OH	361	4.7%			
Perry Co. OH	305	4.0%			
Vinton Co. OH	121	1.6%			
Ross Co. OH	67	0.9%			
Pickaway Co. OH	62	0.8%			
Franklin Co. OH	39	0.5%			
Jackson Co. OH	36	0.5%			
Montgomery Co. C	31	0.4%			
Stark Co. OH	25	0.3%			
Percent is of workers working in county.					

Holmes			Percent of workers that work outside the county -		26.1%
			Average commute time in minutes -		21.6
Number of workers 16+ years of age living in Holmes County			16,456		
Commute Out To	Number	Percent			
Wayne Co. OH	2,411	14.7%			
Tuscarawas Co. OH	538	3.3%			
Ashland Co. OH	352	2.1%			
Stark Co. OH	200	1.2%			
Summit Co. OH	104	0.6%			
Carroll Co. OH	76	0.5%			
Medina Co. OH	72	0.4%			
Knox Co. OH	70	0.4%			
Coshocton Co. OH	68	0.4%			
Richland Co. OH	64	0.4%			
Percent is of workers living in county.					

Number of workers 16+ years of age working in Holmes County			17,493		
Commute In From	Number	Percent			
Tuscarawas Co. O	1,983	11.3%			
Wayne Co. OH	1,247	7.1%			
Coshocton Co. OH	774	4.4%			
Stark Co. OH	480	2.7%			
Ashland Co. OH	437	2.5%			
Knox Co. OH	106	0.6%			
Richland Co. OH	96	0.5%			
Summit Co. OH	39	0.2%			
Harrison Co. OH	34	0.2%			
Carroll Co. OH	27	0.2%			
Percent is of workers working in county.					

Huron			Percent of workers that work outside the county -		33.6%
			Average commute time in minutes -		20.2
Number of workers 16+ years of age living in Huron County			27,571		
Commute Out To	Number	Percent			
Erie Co. OH	4,048	14.7%			
Lorain Co. OH	1,501	5.4%			
Sandusky Co. OH	1,025	3.7%			
Richland Co. OH	900	3.3%			
Cuyahoga Co. OH	399	1.4%			
Seneca Co. OH	282	1.0%			
Ashland Co. OH	264	1.0%			

Number of workers 16+ years of age working in Huron County			26,012		
Commute In From	Number	Percent			
Erie Co. OH	2,358	9.1%			
Sandusky Co. OH	1,305	5.0%			
Richland Co. OH	1,244	4.8%			
Seneca Co. OH	954	3.7%			
Lorain Co. OH	421	1.6%			
Crawford Co. OH	400	1.5%			
Ashland Co. OH	388	1.5%			

Crawford Co. OH	141	0.5%
Ottawa Co. OH	111	0.4%
Medina Co. OH	102	0.4%

Percent is of workers living in county.

Ottawa Co. OH	151	0.6%
Delaware Co. OH	45	0.2%
Wood Co. OH	43	0.2%

Percent is of workers working in county.

<b>Jackson</b>	Percent of workers that work outside the county -	32.5%
	Average commute time in minutes -	28.3

#### Number of workers 16+ years of age living in Jackson County 13,026

Commute Out To	Number	Percent
Pike Co. OH	957	7.3%
Ross Co. OH	917	7.0%
Franklin Co. OH	540	4.1%
Gallia Co. OH	403	3.1%
Vinton Co. OH	356	2.7%
Athens Co. OH	220	1.7%
Scioto Co. OH	211	1.6%
Pickaway Co. OH	108	0.8%
Muskingum Co. OH	44	0.3%
Fairfield Co. OH	38	0.3%

Percent is of workers living in county.

#### Number of workers 16+ years of age working in Jackson County 11,892

Commute In From	Number	Percent
Vinton Co. OH	773	6.5%
Gallia Co. OH	595	5.0%
Scioto Co. OH	428	3.6%
Ross Co. OH	325	2.7%
Pike Co. OH	229	1.9%
Lawrence Co. OH	179	1.5%
Meigs Co. OH	164	1.4%
Athens Co. OH	130	1.1%
Mason Co. WV	57	0.5%
Franklin Co. OH	42	0.4%

Percent is of workers working in county.

<b>Jefferson</b>	Percent of workers that work outside the county -	31.3%
	Average commute time in minutes -	22.2

#### Number of workers 16+ years of age living in Jefferson County 28,793

Commute Out To	Number	Percent
Brooke Co. WV	2,377	8.3%
Belmont Co. OH	1,236	4.3%
Allegheny Co. PA	1,094	3.8%
Hancock Co. WV	784	2.7%
Ohio Co. WV	706	2.5%
Columbiana Co. OH	632	2.2%
Harrison Co. OH	383	1.3%
Carroll Co. OH	265	0.9%
Stark Co. OH	195	0.7%
Beaver Co. PA	154	0.5%

Percent is of workers living in county.

#### Number of workers 16+ years of age working in Jefferson County 25,922

Commute In From	Number	Percent
Brooke Co. WV	1,296	5.0%
Belmont Co. OH	1,129	4.4%
Hancock Co. WV	1,007	3.9%
Harrison Co. OH	593	2.3%
Columbiana Co. O	517	2.0%
Ohio Co. WV	436	1.7%
Carroll Co. OH	178	0.7%
Allegheny Co. PA	175	0.7%
Washington Co. P.	171	0.7%
Marshall Co. WV	147	0.6%

Percent is of workers working in county.

<b>Knox</b>	Percent of workers that work outside the county -	29.5%
	Average commute time in minutes -	25.8

#### Number of workers 16+ years of age living in Knox County 25,064

Commute Out To	Number	Percent
Franklin Co. OH	3,014	12.0%
Licking Co. OH	1,304	5.2%
Richland Co. OH	865	3.5%

#### Number of workers 16+ years of age working in Knox County 20,823

Commute In From	Number	Percent
Licking Co. OH	744	3.6%
Richland Co. OH	550	2.6%
Morrow Co. OH	426	2.0%



Delaware Co. OH	831	3.3%
Ashland Co. OH	271	1.1%
Morrow Co. OH	220	0.9%
Holmes Co. OH	106	0.4%
Cuyahoga Co. OH	89	0.4%
Wayne Co. OH	74	0.3%
Coshocton Co. OH	71	0.3%

Percent is of workers living in county.

Franklin Co. OH	404	1.9%
Delaware Co. OH	218	1.0%
Coshocton Co. OH	100	0.5%
Ashland Co. OH	83	0.4%
Holmes Co. OH	70	0.3%
Wayne Co. OH	60	0.3%
Muskingum Co. OH	59	0.3%

Percent is of workers working in county.

<b>Lake</b>	Percent of workers that work outside the county -	37.6%
	Average commute time in minutes -	22.9

#### Number of workers 16+ years of age living in Lake County 116,830

Commute Out To	Number	Percent
Cuyahoga Co. OH	36,741	31.4%
Geauga Co. OH	3,147	2.7%
Ashtabula Co. OH	1,200	1.0%
Summit Co. OH	1,157	1.0%
Portage Co. OH	307	0.3%
Lorain Co. OH	277	0.2%
Trumbull Co. OH	119	0.1%
Stark Co. OH	108	0.1%
Medina Co. OH	65	0.1%
Franklin Co. OH	43	0.0%

Percent is of workers living in county.

#### Number of workers 16+ years of age working in Lake County 102,913

Commute In From	Number	Percent
Cuyahoga Co. OH	15,692	15.2%
Ashtabula Co. OH	5,775	5.6%
Geauga Co. OH	5,276	5.1%
Summit Co. OH	1,148	1.1%
Portage Co. OH	436	0.4%
Lorain Co. OH	342	0.3%
Medina Co. OH	307	0.3%
Stark Co. OH	142	0.1%
Trumbull Co. OH	135	0.1%
Erie Co. PA	62	0.1%

Percent is of workers working in county.

<b>Lawrence</b>	Percent of workers that work outside the county -	58.0%
	Average commute time in minutes -	24.1

#### Number of workers 16+ years of age living in Lawrence County 23,136

Commute Out To	Number	Percent
Cabell Co. WV	7,179	31.0%
Boyd Co. KY	2,926	12.6%
Greenup Co. KY	715	3.1%
Wayne Co. WV	622	2.7%
Scioto Co. OH	616	2.7%
Jackson Co. OH	179	0.8%
Kanawha Co. WV	175	0.8%
Gallia Co. OH	164	0.7%
Putnam Co. WV	95	0.4%
Franklin Co. OH	82	0.4%

Percent is of workers living in county.

#### Number of workers 16+ years of age working in Lawrence County 12,671

Commute In From	Number	Percent
Cabell Co. WV	626	4.9%
Boyd Co. KY	540	4.3%
Scioto Co. OH	455	3.6%
Greenup Co. KY	443	3.5%
Wayne Co. WV	400	3.2%
Gallia Co. OH	111	0.9%
Carter Co. KY	58	0.5%
Lewis Co. KY	36	0.3%
Jackson Co. OH	31	0.2%
Lawrence Co. KY	31	0.2%

Percent is of workers working in county.

<b>Licking</b>	Percent of workers that work outside the county -	40.4%
	Average commute time in minutes -	24.8

#### Number of workers 16+ years of age living in Licking County 71,213

#### Number of workers 16+ years of age working in Licking County 56,215

Commute Out To	Number	Percent
Franklin Co. OH	23,755	33.4%
Muskingum Co. OH	1,100	1.5%
Fairfield Co. OH	915	1.3%
Delaware Co. OH	900	1.3%
Knox Co. OH	744	1.0%
Perry Co. OH	107	0.2%
Coshocton Co. OH	92	0.1%
Union Co. OH	69	0.1%
Ross Co. OH	52	0.1%
Pickaway Co. OH	48	0.1%

Percent is of workers living in county.

Commute In From	Number	Percent
Franklin Co. OH	4,089	7.3%
Muskingum Co. OH	2,667	4.7%
Perry Co. OH	1,656	2.9%
Fairfield Co. OH	1,563	2.8%
Knox Co. OH	1,304	2.3%
Coshocton Co. OH	536	1.0%
Delaware Co. OH	374	0.7%
Morgan Co. OH	157	0.3%
Guernsey Co. OH	127	0.2%
Hocking Co. OH	94	0.2%

Percent is of workers working in county.

<b>Logan</b>	Percent of workers that work outside the county -	31.2%
	Average commute time in minutes -	22.0
<b>Number of workers 16+ years of age living in Logan County 21,962</b>		
Commute Out To	Number	Percent
Union Co. OH	2,470	11.2%
Shelby Co. OH	1,151	5.2%
Champaign Co. OH	707	3.2%
Franklin Co. OH	570	2.6%
Allen Co. OH	509	2.3%
Hardin Co. OH	303	1.4%
Clark Co. OH	256	1.2%
Montgomery Co. OH	173	0.8%
Miami Co. OH	117	0.5%
Auglaize Co. OH	84	0.4%
Percent is of workers living in county.		
<b>Number of workers 16+ years of age working in Logan County 20,355</b>		
Commute In From	Number	Percent
Champaign Co. OH	1,118	5.5%
Hardin Co. OH	964	4.7%
Union Co. OH	869	4.3%
Franklin Co. OH	506	2.5%
Shelby Co. OH	307	1.5%
Auglaize Co. OH	277	1.4%
Marion Co. OH	251	1.2%
Delaware Co. OH	200	1.0%
Clark Co. OH	186	0.9%
Allen Co. OH	137	0.7%
Percent is of workers working in county.		

<b>Lorain</b>	Percent of workers that work outside the county -	33.2%
	Average commute time in minutes -	22.8
<b>Number of workers 16+ years of age living in Lorain County. 132,895</b>		
Commute Out To	Number	Percent
Cuyahoga Co. OH	36,888	27.8%
Medina Co. OH	1,874	1.4%
Erie Co. OH	1,594	1.2%
Summit Co. OH	970	0.7%
Huron Co. OH	421	0.3%
Lake Co. OH	342	0.3%
Portage Co. OH	182	0.1%
Ashtabula Co. OH	138	0.1%
Franklin Co. OH	135	0.1%
Lucas Co. OH	113	0.1%
Percent is of workers living in county.		
<b>Number of workers 16+ years of age working in Lorain County 108,001</b>		
Commute In From	Number	Percent
Cuyahoga Co. OH	9,289	8.6%
Erie Co. OH	3,923	3.6%
Huron Co. OH	1,501	1.4%
Medina Co. OH	1,418	1.3%
Ashland Co. OH	648	0.6%
Summit Co. OH	588	0.5%
Lake Co. OH	277	0.3%
Portage Co. OH	152	0.1%
Wayne Co. OH	145	0.1%
Ashtabula Co. OH	134	0.1%
Percent is of workers working in county.		

<b>Lucas</b>	Percent of workers that work outside the county -	15.5%
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Lucas			Average commute time in minutes - 20.5		
Number of workers 16+ years of age living in Lucas County 207,585			Number of workers 16+ years of age working in Lucas County 226,840		
Commute Out To	Number	Percent	Commute In From	Number	Percent
Wood Co. OH	17,054	8.2%	Wood Co. OH	19,504	8.6%
Monroe Co. MI	4,456	2.1%	Monroe Co. MI	12,654	5.6%
Fulton Co. OH	1,957	0.9%	Fulton Co. OH	5,203	2.3%
Wayne Co. MI	1,906	0.9%	Ottawa Co. OH	3,418	1.5%
Washtenaw Co. MI	867	0.4%	Lenawee Co. MI	1,557	0.7%
Ottawa Co. OH	738	0.4%	Sandusky Co. OH	1,537	0.7%
Lenawee Co. MI	583	0.3%	Henry Co. OH	952	0.4%
Hancock Co. OH	514	0.2%	Wayne Co. MI	922	0.4%
Sandusky Co. OH	418	0.2%	Hancock Co. OH	607	0.3%
Oakland Co. MI	375	0.2%	Seneca Co. OH	480	0.2%
Percent is of workers living in county.			Percent is of workers working in county.		

Madison			Percent of workers that work outside the county - 57.5%		
			Average commute time in minutes - 25.8		
Number of workers 16+ years of age living in Madison County 17,828			Number of workers 16+ years of age working in Madison County 13,180		
Commute Out To	Number	Percent	Commute In From	Number	Percent
Franklin Co. OH	7,921	44.4%	Franklin Co. OH	1,903	14.4%
Union Co. OH	763	4.3%	Clark Co. OH	1,092	8.3%
Clark Co. OH	373	2.1%	Fayette Co. OH	563	4.3%
Delaware Co. OH	174	1.0%	Union Co. OH	439	3.3%
Pickaway Co. OH	172	1.0%	Pickaway Co. OH	392	3.0%
Fayette Co. OH	145	0.8%	Ross Co. OH	289	2.2%
Greene Co. OH	107	0.6%	Champaign Co. OH	265	2.0%
Champaign Co. OH	91	0.5%	Delaware Co. OH	111	0.8%
Montgomery Co. OH	79	0.4%	Greene Co. OH	71	0.5%
Licking Co. OH	73	0.4%	Montgomery Co. OH	66	0.5%
Percent is of workers living in county.			Percent is of workers working in county.		

Mahoning			Percent of workers that work outside the county - 29.7%		
			Average commute time in minutes - 21.5		
Number of workers 16+ years of age living in Mahoning County 109,102			Number of workers 16+ years of age working in Mahoning County 102,992		
Commute Out To	Number	Percent	Commute In From	Number	Percent
Trumbull Co. OH	19,210	17.6%	Trumbull Co. OH	12,003	11.7%
Columbiana Co. OH	3,684	3.4%	Columbiana Co. OH	7,371	7.2%
Stark Co. OH	2,548	2.3%	Lawrence Co. PA	1,620	1.6%
Portage Co. OH	1,171	1.1%	Stark Co. OH	1,158	1.1%
Cuyahoga Co. OH	1,117	1.0%	Mercer Co. PA	1,083	1.1%
Summit Co. OH	1,096	1.0%	Portage Co. OH	603	0.6%
Lawrence Co. PA	718	0.7%	Summit Co. OH	460	0.4%
Mercer Co. PA	624	0.6%	Cuyahoga Co. OH	268	0.3%
Allegheny Co. PA	508	0.5%	Beaver Co. PA	172	0.2%

Beaver Co. PA	224	0.2%
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Percent is of workers living in county.

Allegheny Co. PA	159	0.2%
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Percent is of workers working in county.

<b>Marion</b>	Percent of workers that work outside the county -	22.1%
	Average commute time in minutes -	21.5

### Number of workers 16+ years of age living in Marion County 29,138

Commute Out To	Number	Percent
Delaware Co. OH	1,609	5.5%
Franklin Co. OH	1,371	4.7%
Union Co. OH	1,041	3.6%
Morrow Co. OH	585	2.0%
Crawford Co. OH	513	1.8%
Wyandot Co. OH	305	1.0%
Logan Co. OH	251	0.9%
Hardin Co. OH	156	0.5%
Richland Co. OH	153	0.5%
Seneca Co. OH	46	0.2%

Percent is of workers living in county.

### Number of workers 16+ years of age working in Marion County 29,138

Commute In From	Number	Percent
Morrow Co. OH	1,565	5.4%
Crawford Co. OH	1,060	3.6%
Delaware Co. OH	839	2.9%
Wyandot Co. OH	729	2.5%
Franklin Co. OH	590	2.0%
Union Co. OH	508	1.7%
Richland Co. OH	312	1.1%
Hardin Co. OH	178	0.6%
Montgomery Co. C	47	0.2%
Seneca Co. OH	41	0.1%

Percent is of workers working in county.

<b>Medina</b>	Percent of workers that work outside the county -	53.4%
	Average commute time in minutes -	26.4

### Number of workers 16+ years of age living in Medina County 76,548

Commute Out To	Number	Percent
Cuyahoga Co. OH	26,572	34.7%
Summit Co. OH	8,647	11.3%
Wayne Co. OH	1,726	2.3%
Lorain Co. OH	1,418	1.9%
Stark Co. OH	445	0.6%
Portage Co. OH	322	0.4%
Ashland Co. OH	307	0.4%
Lake Co. OH	307	0.4%
Richland Co. OH	148	0.2%
Franklin Co. OH	84	0.1%

Percent is of workers living in county.

### Number of workers 16+ years of age working in Medina County 55,311

Commute In From	Number	Percent
Summit Co. OH	5,248	9.5%
Cuyahoga Co. OH	4,795	8.7%
Wayne Co. OH	4,667	8.4%
Lorain Co. OH	1,874	3.4%
Stark Co. OH	770	1.4%
Ashland Co. OH	720	1.3%
Portage Co. OH	314	0.6%
Huron Co. OH	102	0.2%
Richland Co. OH	89	0.2%
Holmes Co. OH	72	0.1%

Percent is of workers working in county.

<b>Meigs</b>	Percent of workers that work outside the county -	51.7%
	Average commute time in minutes -	31.8

### Number of workers 16+ years of age living in Meigs County 8,752

Commute Out To	Number	Percent
Athens Co. OH	1,334	15.2%
Gallia Co. OH	844	9.6%
Mason Co. WV	564	6.4%
Washington Co. OH	340	3.9%
Wood Co. WV	293	3.3%

### Number of workers 16+ years of age working in Meigs County 5,031

Commute In From	Number	Percent
Mason Co. WV	199	4.0%
Gallia Co. OH	187	3.7%
Athens Co. OH	142	2.8%
Vinton Co. OH	59	1.2%
Washington Co. O	27	0.5%

Jackson Co. WV	292	3.3%
Franklin Co. OH	171	2.0%
Jackson Co. OH	164	1.9%
Vinton Co. OH	114	1.3%
Fairfield Co. OH	51	0.6%

Percent is of workers living in county.

Muskingum Co. OH	19	0.4%
Wood Co. WV	18	0.4%
Carter Co. KY	18	0.4%
Tyler Co. WV	16	0.3%
Jackson Co. WV	13	0.3%

Percent is of workers working in county.

<b>Mercer</b>	Percent of workers that work outside the county -	34.1%
	Average commute time in minutes -	19.9

### Number of workers 16+ years of age living in Mercer County 19,742

Commute Out To	Number	Percent
Auglaize Co. OH	2,981	15.1%
Van Wert Co. OH	814	4.1%
Shelby Co. OH	621	3.1%
Darke Co. OH	519	2.6%
Allen Co. OH	478	2.4%
Adams Co. IN	433	2.2%
Jay Co. IN	217	1.1%
Allen Co. IN	101	0.5%
Montgomery Co. OH	62	0.3%
Miami Co. OH	55	0.3%

Percent is of workers living in county.

### Number of workers 16+ years of age working in Mercer County 15,850

Commute In From	Number	Percent
Auglaize Co. OH	930	5.9%
Darke Co. OH	545	3.4%
Jay Co. IN	362	2.3%
Van Wert Co. OH	203	1.3%
Shelby Co. OH	103	0.6%
Adams Co. IN	101	0.6%
Randolph Co. IN	101	0.6%
Allen Co. OH	89	0.6%
Miami Co. OH	34	0.2%
Lake Co. IN	34	0.2%

Percent is of workers working in county.

<b>Miami</b>	Percent of workers that work outside the county -	37.4%
	Average commute time in minutes -	20.1

### Number of workers 16+ years of age living in Miami County 49,799

Commute Out To	Number	Percent
Montgomery Co. OH	11,368	22.8%
Shelby Co. OH	2,438	4.9%
Greene Co. OH	1,514	3.0%
Clark Co. OH	882	1.8%
Darke Co. OH	813	1.6%
Champaign Co. OH	426	0.9%
Hamilton Co. OH	142	0.3%
Preble Co. OH	130	0.3%
Auglaize Co. OH	126	0.3%
Butler Co. OH	95	0.2%

Percent is of workers living in county.

### Number of workers 16+ years of age working in Miami County 44,378

Commute In From	Number	Percent
Montgomery Co. OH	4,722	10.6%
Darke Co. OH	2,429	5.5%
Shelby Co. OH	1,902	4.3%
Clark Co. OH	1,240	2.8%
Champaign Co. OH	827	1.9%
Greene Co. OH	522	1.2%
Auglaize Co. OH	200	0.5%
Preble Co. OH	182	0.4%
Hamilton Co. OH	120	0.3%
Logan Co. OH	117	0.3%

Percent is of workers working in county.

<b>Monroe</b>	Percent of workers that work outside the county -	38.5%
	Average commute time in minutes -	30.8

### Number of workers 16+ years of age living in Monroe County 5,768

Commute Out To	Number	Percent
Belmont Co. OH	596	10.3%

### Number of workers 16+ years of age working in Monroe County 5,346

Commute In From	Number	Percent
Belmont Co. OH	626	11.7%

Wetzel Co. WV	532	9.2%
Washington Co. OH	237	4.1%
Marshall Co. WV	145	2.5%
Noble Co. OH	132	2.3%
Ohio Co. WV	111	1.9%
Guernsey Co. OH	84	1.5%
Tyler Co. WV	57	1.0%
Wood Co. WV	46	0.8%
Franklin Co. OH	29	0.5%

Percent is of workers living in county.

Wetzel Co. WV	447	8.4%
Washington Co. O	221	4.1%
Marshall Co. WV	122	2.3%
Tyler Co. WV	102	1.9%
Noble Co. OH	67	1.3%
Ohio Co. WV	36	0.7%
Lucas Co. OH	33	0.6%
Franklin Co. OH	28	0.5%
Montgomery Co. C	15	0.3%

Percent is of workers working in county.

<b>Montgomery</b>		Percent of workers that work outside the county -	18.6%
		Average commute time in minutes -	21.2
<b>Number of workers 16+ years of age living in Montgomery County</b>		<b>259,419</b>	
Commute Out To	Number	Percent	
Greene Co. OH	24,214	9.3%	
Miami Co. OH	4,722	1.8%	
Warren Co. OH	4,488	1.7%	
Hamilton Co. OH	2,698	1.0%	
Butler Co. OH	2,622	1.0%	
Clark Co. OH	2,517	1.0%	
Franklin Co. OH	1,022	0.4%	
Preble Co. OH	933	0.4%	
Champaign Co. OH	675	0.3%	
Darke Co. OH	647	0.2%	
<b>Number of workers 16+ years of age working in Montgomery Coui</b>		<b>288,140</b>	
Commute In From	Number	Percent	
Greene Co. OH	24,925	8.7%	
Miami Co. OH	11,368	3.9%	
Warren Co. OH	11,325	3.9%	
Clark Co. OH	7,856	2.7%	
Preble Co. OH	4,837	1.7%	
Butler Co. OH	4,635	1.6%	
Darke Co. OH	2,557	0.9%	
Hamilton Co. OH	1,747	0.6%	
Clinton Co. OH	782	0.3%	
Champaign Co. OH	662	0.2%	

Percent is of workers living in county.

Percent is of workers working in county.

<b>Morgan</b>		Percent of workers that work outside the county -	47.0%
		Average commute time in minutes -	36.2
<b>Number of workers 16+ years of age living in Morgan County</b>		<b>5,858</b>	
Commute Out To	Number	Percent	
Muskingum Co. OH	707	12.1%	
Washington Co. OH	501	8.6%	
Athens Co. OH	380	6.5%	
Franklin Co. OH	307	5.2%	
Perry Co. OH	225	3.8%	
Licking Co. OH	157	2.7%	
Guernsey Co. OH	80	1.4%	
Fairfield Co. OH	68	1.2%	
Wood Co. WV	51	0.9%	
Pickaway Co. OH	29	0.5%	
<b>Number of workers 16+ years of age working in Morgan County</b>		<b>3,632</b>	
Commute In From	Number	Percent	
Muskingum Co. OH	211	5.8%	
Washington Co. O	125	3.4%	
Athens Co. OH	54	1.5%	
Perry Co. OH	52	1.4%	
Guernsey Co. OH	21	0.6%	
Noble Co. OH	13	0.4%	
Brooke Co. WV	10	0.3%	
Jackson Co. WV	7	0.2%	
Virginia Beach city	7	0.2%	
Tuscarawas Co. O	6	0.2%	

Percent is of workers living in county.

Percent is of workers working in county.

<b>Morrow</b>		Percent of workers that work outside the county -	67.0%
		Average commute time in minutes -	30.4



Number of workers 16+ years of age living in Morrow County 15,083		
Commute Out To	Number	Percent
Franklin Co. OH	3,108	20.6%
Delaware Co. OH	1,983	13.1%
Marion Co. OH	1,565	10.4%
Richland Co. OH	1,519	10.1%
Crawford Co. OH	882	5.8%
Knox Co. OH	426	2.8%
Union Co. OH	131	0.9%
Licking Co. OH	82	0.5%
Ashland Co. OH	45	0.3%
Huron Co. OH	34	0.2%
Percent is of workers living in county.		

Number of workers 16+ years of age working in Morrow County 6,803		
Commute In From	Number	Percent
Marion Co. OH	585	8.6%
Crawford Co. OH	301	4.4%
Richland Co. OH	293	4.3%
Knox Co. OH	220	3.2%
Delaware Co. OH	172	2.5%
Franklin Co. OH	110	1.6%
Ashland Co. OH	32	0.5%
Logan Co. OH	25	0.4%
Licking Co. OH	22	0.3%
Hardin Co. OH	15	0.2%
Percent is of workers working in county.		

Muskingum		Percent of workers that work outside the county -	20.9%
		Average commute time in minutes -	24.2
Number of workers 16+ years of age living in Muskingum County			37,774
Commute Out To	Number	Percent	
Licking Co. OH	2,667	7.1%	
Franklin Co. OH	2,078	5.5%	
Guernsey Co. OH	793	2.1%	
Perry Co. OH	570	1.5%	
Coshocton Co. OH	464	1.2%	
Fairfield Co. OH	211	0.6%	
Morgan Co. OH	211	0.6%	
Delaware Co. OH	80	0.2%	
Noble Co. OH	76	0.2%	
Washington Co. OH	72	0.2%	
Percent is of workers living in county.			

Number of workers 16+ years of age working in Muskingum Coun			37,875
Commute In From	Number	Percent	
Guernsey Co. OH	1,815	4.8%	
Perry Co. OH	1,451	3.8%	
Coshocton Co. OH	1,393	3.7%	
Licking Co. OH	1,100	2.9%	
Morgan Co. OH	707	1.9%	
Franklin Co. OH	275	0.7%	
Noble Co. OH	274	0.7%	
Fairfield Co. OH	158	0.4%	
Tuscarawas Co. O	124	0.3%	
Belmont Co. OH	92	0.2%	
Percent is of workers working in county.			

Noble		Percent of workers that work outside the county -	45.3%
		Average commute time in minutes -	26.7
Number of workers 16+ years of age living in Noble County			5,028
Commute Out To	Number	Percent	
Guernsey Co. OH	1,069	21.3%	
Washington Co. OH	453	9.0%	
Muskingum Co. OH	274	5.4%	
Belmont Co. OH	103	2.0%	
Franklin Co. OH	79	1.6%	
Monroe Co. OH	67	1.3%	
Wood Co. WV	27	0.5%	
Licking Co. OH	24	0.5%	
Summit Co. OH	21	0.4%	
Stark Co. OH	19	0.4%	
Percent is of workers living in county.			

Number of workers 16+ years of age working in Noble County			3,796
Commute In From	Number	Percent	
Guernsey Co. OH	438	11.5%	
Washington Co. O	197	5.2%	
Monroe Co. OH	132	3.5%	
Muskingum Co. OH	76	2.0%	
Belmont Co. OH	70	1.8%	
Morgan Co. OH	25	0.7%	
Wood Co. WV	21	0.6%	
Cuyahoga Co. OH	19	0.5%	
Franklin Co. OH	15	0.4%	
Logan Co. OH	10	0.3%	
Percent is of workers working in county.			

<b>Ottawa</b>		Percent of workers that work outside the county -	43.8%
		Average commute time in minutes -	22.5
Number of workers 16+ years of age living in Ottawa County		19,434	
Commute Out To	Number	Percent	
Lucas Co. OH	3,418	17.6%	
Wood Co. OH	1,652	8.5%	
Sandusky Co. OH	1,299	6.7%	
Erie Co. OH	1,107	5.7%	
Cuyahoga Co. OH	155	0.8%	
Huron Co. OH	151	0.8%	
Monroe Co. MI	90	0.5%	
Seneca Co. OH	81	0.4%	
Wayne Co. MI	75	0.4%	
Lorain Co. OH	71	0.4%	
Number of workers 16+ years of age working in Ottawa County		15,208	
Commute In From	Number	Percent	
Sandusky Co. OH	1,426	9.4%	
Wood Co. OH	760	5.0%	
Lucas Co. OH	738	4.9%	
Erie Co. OH	530	3.5%	
Seneca Co. OH	177	1.2%	
Huron Co. OH	111	0.7%	
Monroe Co. MI	68	0.4%	
Hancock Co. OH	50	0.3%	
Lorain Co. OH	43	0.3%	
Franklin Co. OH	32	0.2%	
Percent is of workers living in county.		Percent is of workers working in county.	

<b>Paulding</b>		Percent of workers that work outside the county -	52.9%
		Average commute time in minutes -	24.6
Number of workers 16+ years of age living in Paulding County		9,640	
Commute Out To	Number	Percent	
Defiance Co. OH	1,817	18.8%	
Allen Co. IN	1,484	15.4%	
Van Wert Co. OH	478	5.0%	
Williams Co. OH	280	2.9%	
DeKalb Co. IN	230	2.4%	
Putnam Co. OH	198	2.1%	
Fulton Co. OH	134	1.4%	
Allen Co. OH	116	1.2%	
Henry Co. OH	105	1.1%	
Steuben Co. IN	27	0.3%	
Number of workers 16+ years of age working in Paulding County		5,752	
Commute In From	Number	Percent	
Defiance Co. OH	366	6.4%	
Van Wert Co. OH	316	5.5%	
Allen Co. IN	166	2.9%	
Putnam Co. OH	158	2.7%	
DeKalb Co. IN	35	0.6%	
Williams Co. OH	34	0.6%	
Adams Co. IN	25	0.4%	
Allen Co. OH	23	0.4%	
Mercer Co. OH	21	0.4%	
Steuben Co. IN	13	0.2%	
Percent is of workers living in county.		Percent is of workers working in county.	

<b>Perry</b>		Percent of workers that work outside the county -	58.4%
		Average commute time in minutes -	33.5
Number of workers 16+ years of age living in Perry County		14,385	
Commute Out To	Number	Percent	
Franklin Co. OH	2,433	16.9%	
Fairfield Co. OH	1,980	13.8%	
Licking Co. OH	1,656	11.5%	
Muskingum Co. OH	1,451	10.1%	
Hocking Co. OH	305	2.1%	
Athens Co. OH	110	0.8%	
Delaware Co. OH	58	0.4%	
Number of workers 16+ years of age working in Perry County		7,732	
Commute In From	Number	Percent	
Muskingum Co. OH	570	7.4%	
Fairfield Co. OH	273	3.5%	
Morgan Co. OH	225	2.9%	
Athens Co. OH	123	1.6%	
Licking Co. OH	107	1.4%	
Franklin Co. OH	105	1.4%	
Hocking Co. OH	79	1.0%	



Guernsey Co. OH	56	0.4%
Morgan Co. OH	52	0.4%
Pickaway Co. OH	51	0.4%

Percent is of workers living in county.

Knox Co. OH	36	0.5%
Pickaway Co. OH	24	0.3%
New York Co. NY	23	0.3%

Percent is of workers working in county.

<b>Pickaway</b>		Percent of workers that work outside the county -	55.4%
		Average commute time in minutes -	26.7
Number of workers 16+ years of age living in Pickaway County		21,921	
Commute Out To	Number	Percent	
Franklin Co. OH	9,613	43.9%	
Ross Co. OH	847	3.9%	
Madison Co. OH	392	1.8%	
Fairfield Co. OH	349	1.6%	
Fayette Co. OH	244	1.1%	
Licking Co. OH	86	0.4%	
Hocking Co. OH	62	0.3%	
Union Co. OH	60	0.3%	
Delaware Co. OH	58	0.3%	
Clinton Co. OH	51	0.2%	
Number of workers 16+ years of age working in Pickaway County		17,332	
Commute In From	Number	Percent	
Ross Co. OH	2,617	15.1%	
Franklin Co. OH	1,517	8.8%	
Fairfield Co. OH	1,289	7.4%	
Hocking Co. OH	564	3.3%	
Fayette Co. OH	248	1.4%	
Pike Co. OH	241	1.4%	
Madison Co. OH	172	1.0%	
Vinton Co. OH	128	0.7%	
Jackson Co. OH	108	0.6%	
Delaware Co. OH	55	0.3%	
Percent is of workers living in county.		Percent is of workers working in county.	

<b>Pike</b>		Percent of workers that work outside the county -	34.7%
		Average commute time in minutes -	29.6
Number of workers 16+ years of age living in Pike County		10,208	
Commute Out To	Number	Percent	
Ross Co. OH	1,450	14.2%	
Franklin Co. OH	544	5.3%	
Scioto Co. OH	504	4.9%	
Pickaway Co. OH	241	2.4%	
Jackson Co. OH	229	2.2%	
Highland Co. OH	126	1.2%	
Adams Co. OH	67	0.7%	
Hamilton Co. OH	65	0.6%	
Clinton Co. OH	39	0.4%	
Fayette Co. OH	34	0.3%	
Number of workers 16+ years of age working in Pike County		11,837	
Commute In From	Number	Percent	
Scioto Co. OH	2,453	20.7%	
Ross Co. OH	1,071	9.0%	
Jackson Co. OH	957	8.1%	
Vinton Co. OH	139	1.2%	
Greenup Co. KY	110	0.9%	
Adams Co. OH	59	0.5%	
Gallia Co. OH	54	0.5%	
Lawrence Co. OH	41	0.3%	
Highland Co. OH	40	0.3%	
Lewis Co. KY	32	0.3%	
Percent is of workers living in county.		Percent is of workers working in county.	

<b>Portage</b>		Percent of workers that work outside the county -	49.6%
		Average commute time in minutes -	25.1
Number of workers 16+ years of age living in Portage County		78,023	
Commute Out To	Number	Percent	
Summit Co. OH	19,049	24.4%	
Cuyahoga Co. OH	11,934	15.3%	
Geauga Co. OH	1,989	2.5%	
Number of workers 16+ years of age working in Portage County		60,123	
Commute In From	Number	Percent	
Summit Co. OH	9,702	16.1%	
Cuyahoga Co. OH	2,632	4.4%	
Stark Co. OH	2,256	3.8%	

Stark Co. OH	1,578	2.0%
Trumbull Co. OH	1,449	1.9%
Mahoning Co. OH	603	0.8%
Lake Co. OH	436	0.6%
Medina Co. OH	314	0.4%
Columbiana Co. OH	182	0.2%
Lorain Co. OH	152	0.2%

Percent is of workers living in county.

Trumbull Co. OH	1,863	3.1%
Mahoning Co. OH	1,171	1.9%
Geauga Co. OH	1,002	1.7%
Medina Co. OH	322	0.5%
Columbiana Co. O	316	0.5%
Lake Co. OH	307	0.5%
Lorain Co. OH	182	0.3%

Percent is of workers working in county.

<b>Preble</b>	Percent of workers that work outside the county -	54.1%
	Average commute time in minutes -	26.7

#### Number of workers 16+ years of age living in Preble County 20,226

Commute Out To	Number	Percent
Montgomery Co. OH	4,837	23.9%
Butler Co. OH	2,575	12.7%
Wayne Co. IN	1,499	7.4%
Hamilton Co. OH	388	1.9%
Warren Co. OH	336	1.7%
Darke Co. OH	311	1.5%
Greene Co. OH	220	1.1%
Miami Co. OH	182	0.9%
Clark Co. OH	142	0.7%
Union Co. IN	50	0.2%

Percent is of workers living in county.

#### Number of workers 16+ years of age working in Preble County 12,119

Commute In From	Number	Percent
Montgomery Co. C	933	7.7%
Wayne Co. IN	588	4.9%
Darke Co. OH	468	3.9%
Butler Co. OH	239	2.0%
Miami Co. OH	130	1.1%
Randolph Co. IN	66	0.5%
Greene Co. OH	58	0.5%
Hamilton Co. OH	50	0.4%
Warren Co. OH	35	0.3%
Union Co. IN	35	0.3%

Percent is of workers working in county.

<b>Putnam</b>	Percent of workers that work outside the county -	42.8%
	Average commute time in minutes -	21.1

#### Number of workers 16+ years of age living in Putnam County 16,905

Commute Out To	Number	Percent
Allen Co. OH	3,186	18.8%
Hancock Co. OH	1,722	10.2%
Defiance Co. OH	875	5.2%
Van Wert Co. OH	395	2.3%
Henry Co. OH	206	1.2%
Paulding Co. OH	158	0.9%
Lucas Co. OH	116	0.7%
Wood Co. OH	109	0.6%
Auglaize Co. OH	85	0.5%
Allen Co. IN	51	0.3%

Percent is of workers living in county.

#### Number of workers 16+ years of age working in Putnam County 12,059

Commute In From	Number	Percent
Allen Co. OH	910	7.5%
Hancock Co. OH	382	3.2%
Van Wert Co. OH	244	2.0%
Paulding Co. OH	198	1.6%
Henry Co. OH	138	1.1%
Defiance Co. OH	60	0.5%
Summit Co. OH	40	0.3%
Wood Co. OH	36	0.3%
Hardin Co. OH	36	0.3%
Mercer Co. OH	36	0.3%

Percent is of workers working in county.

<b>Richland</b>	Percent of workers that work outside the county -	16.4%
	Average commute time in minutes -	20.2

#### Number of workers 16+ years of age living in Richland County 57,131

#### Number of workers 16+ years of age working in Richland County 59,733

Commute Out To	Number	Percent
Ashland Co. OH	2,467	4.3%
Crawford Co. OH	1,584	2.8%
Huron Co. OH	1,244	2.2%
Franklin Co. OH	890	1.6%
Knox Co. OH	550	1.0%
Wayne Co. OH	443	0.8%
Marion Co. OH	312	0.5%
Morrow Co. OH	293	0.5%
Cuyahoga Co. OH	208	0.4%
Delaware Co. OH	129	0.2%

Percent is of workers living in county.

Commute In From	Number	Percent
Crawford Co. OH	3,790	6.3%
Ashland Co. OH	2,673	4.5%
Morrow Co. OH	1,519	2.5%
Huron Co. OH	900	1.5%
Knox Co. OH	865	1.4%
Wayne Co. OH	297	0.5%
Franklin Co. OH	180	0.3%
Marion Co. OH	153	0.3%
Medina Co. OH	148	0.2%
Lucas Co. OH	127	0.2%

Percent is of workers working in county.

<b>Ross</b>	Percent of workers that work outside the county -	29.6%
	Average commute time in minutes -	25.9
<b>Number of workers 16+ years of age living in Ross County 30,409</b>		
Commute Out To	Number	Percent
Pickaway Co. OH	2,617	8.6%
Franklin Co. OH	2,335	7.7%
Pike Co. OH	1,071	3.5%
Highland Co. OH	671	2.2%
Fayette Co. OH	503	1.7%
Jackson Co. OH	325	1.1%
Madison Co. OH	289	1.0%
Clinton Co. OH	222	0.7%
Fairfield Co. OH	191	0.6%
Vinton Co. OH	97	0.3%
Percent is of workers living in county.		
<b>Number of workers 16+ years of age working in Ross County 28,140</b>		
Commute In From	Number	Percent
Pike Co. OH	1,450	5.2%
Jackson Co. OH	917	3.3%
Pickaway Co. OH	847	3.0%
Vinton Co. OH	538	1.9%
Franklin Co. OH	497	1.8%
Scioto Co. OH	494	1.8%
Highland Co. OH	347	1.2%
Fairfield Co. OH	255	0.9%
Fayette Co. OH	153	0.5%
Hocking Co. OH	126	0.4%
Percent is of workers working in county.		

<b>Sandusky</b>	Percent of workers that work outside the county -	31.1%
	Average commute time in minutes -	19.4
<b>Number of workers 16+ years of age living in Sandusky County 29,971</b>		
Commute Out To	Number	Percent
Erie Co. OH	1,659	5.5%
Lucas Co. OH	1,537	5.1%
Ottawa Co. OH	1,426	4.8%
Wood Co. OH	1,408	4.7%
Huron Co. OH	1,305	4.4%
Seneca Co. OH	1,217	4.1%
Hancock Co. OH	191	0.6%
Fulton Co. OH	72	0.2%
Cuyahoga Co. OH	59	0.2%
Monroe Co. MI	44	0.1%
Percent is of workers living in county.		
<b>Number of workers 16+ years of age working in Sandusky County 28,184</b>		
Commute In From	Number	Percent
Seneca Co. OH	2,735	9.7%
Ottawa Co. OH	1,299	4.6%
Huron Co. OH	1,025	3.6%
Erie Co. OH	768	2.7%
Wood Co. OH	587	2.1%
Lucas Co. OH	418	1.5%
Hancock Co. OH	126	0.4%
Lorain Co. OH	71	0.3%
Franklin Co. OH	51	0.2%
Wyandot Co. OH	45	0.2%
Percent is of workers working in county.		

<b>Scioto</b>	Percent of workers that work outside the county -	22.7%
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Scioto

Average commute time in minutes -

26.0

Number of workers 16+ years of age living in Scioto County

28,356

Commute Out To

Number

Percent

Pike Co. OH

2,453

8.7%

Franklin Co. OH

540

1.9%

Ross Co. OH

494

1.7%

Lawrence Co. OH

455

1.6%

Jackson Co. OH

428

1.5%

Boyd Co. KY

390

1.4%

Greenup Co. KY

332

1.2%

Adams Co. OH

223

0.8%

Cabell Co. WV

108

0.4%

Hamilton Co. OH

99

0.3%

Percent is of workers living in county.

Number of workers 16+ years of age working in Scioto County

25,573

Commute In From

Number

Percent

Greenup Co. KY

1,252

4.9%

Lawrence Co. OH

616

2.4%

Pike Co. OH

504

2.0%

Lewis Co. KY

341

1.3%

Jackson Co. OH

211

0.8%

Boyd Co. KY

166

0.6%

Adams Co. OH

126

0.5%

Ross Co. OH

92

0.4%

Wayne Co. WV

73

0.3%

Franklin Co. OH

38

0.1%

Percent is of workers working in county.

Seneca		Percent of workers that work outside the county -		37.2%
		Average commute time in minutes -		20.5
Number of workers 16+ years of age living in Seneca County			28,274	
Commute Out To	Number	Percent		
Hancock Co. OH	3,118	11.0%		
Sandusky Co. OH	2,735	9.7%		
Wood Co. OH	1,019	3.6%		
Huron Co. OH	954	3.4%		
Wyandot Co. OH	781	2.8%		
Lucas Co. OH	480	1.7%		
Erie Co. OH	317	1.1%		
Crawford Co. OH	284	1.0%		
Ottawa Co. OH	177	0.6%		
Allen Co. OH	68	0.2%		
Percent is of workers living in county.				

Number of workers 16+ years of age working in Seneca County			23,261	
Commute In From	Number	Percent		
Hancock Co. OH	1,296	5.6%		
Sandusky Co. OH	1,217	5.2%		
Wood Co. OH	889	3.8%		
Wyandot Co. OH	675	2.9%		
Crawford Co. OH	323	1.4%		
Huron Co. OH	282	1.2%		
Lucas Co. OH	138	0.6%		
Erie Co. OH	89	0.4%		
Ottawa Co. OH	81	0.3%		
Franklin Co. OH	48	0.2%		
Percent is of workers working in county.				

Shelby

Percent of workers that work outside the county -

22.9%

Average commute time in minutes -

17.4

Number of workers 16+ years of age living in Shelby County

23,582

Commute Out To	Number	Percent
Miami Co. OH	1,902	8.1%
Auglaize Co. OH	1,370	5.8%
Montgomery Co. OH	592	2.5%
Logan Co. OH	307	1.3%
Allen Co. OH	269	1.1%
Darke Co. OH	238	1.0%
Champaign Co. OH	104	0.4%
Mercer Co. OH	103	0.4%
Clark Co. OH	99	0.4%

Number of workers 16+ years of age working in Shelby County

29,169

Commute In From	Number	Percent
Auglaize Co. OH	3,002	10.3%
Miami Co. OH	2,438	8.4%
Logan Co. OH	1,151	3.9%
Darke Co. OH	1,131	3.9%
Allen Co. OH	1,002	3.4%
Mercer Co. OH	621	2.1%
Montgomery Co. C	530	1.8%
Champaign Co. OH	354	1.2%
Clark Co. OH	132	0.5%

Union Co. OH	49	0.2%
Percent is of workers living in county.		

Hardin Co. OH	96	0.3%
Percent is of workers working in county.		

Stark	Percent of workers that work outside the county -		20.7%
	Average commute time in minutes -		21.3
Number of workers 16+ years of age living in Stark County			177,234
Commute Out To	Number	Percent	
Summit Co. OH	21,094	11.9%	
Wayne Co. OH	3,026	1.7%	
Cuyahoga Co. OH	2,443	1.4%	
Portage Co. OH	2,256	1.3%	
Tuscarawas Co. OH	1,679	0.9%	
Mahoning Co. OH	1,158	0.7%	
Carroll Co. OH	956	0.5%	
Medina Co. OH	770	0.4%	
Columbiana Co. OH	640	0.4%	
Holmes Co. OH	480	0.3%	
Percent is of workers living in county.			
Number of workers 16+ years of age working in Stark County			171,642
Commute In From	Number	Percent	
Summit Co. OH	7,665	4.5%	
Tuscarawas Co. O	5,707	3.3%	
Carroll Co. OH	5,125	3.0%	
Columbiana Co. O	3,306	1.9%	
Mahoning Co. OH	2,548	1.5%	
Wayne Co. OH	1,672	1.0%	
Portage Co. OH	1,578	0.9%	
Cuyahoga Co. OH	565	0.3%	
Medina Co. OH	445	0.3%	
Harrison Co. OH	292	0.2%	
Percent is of workers working in county.			

Summit	Percent of workers that work outside the county -		25.0%
	Average commute time in minutes -		22.4
Number of workers 16+ years of age living in Summit County			258,414
Commute Out To	Number	Percent	
Cuyahoga Co. OH	34,476	13.3%	
Portage Co. OH	9,702	3.8%	
Stark Co. OH	7,665	3.0%	
Medina Co. OH	5,248	2.0%	
Lake Co. OH	1,148	0.4%	
Wayne Co. OH	1,095	0.4%	
Lorain Co. OH	588	0.2%	
Geauga Co. OH	563	0.2%	
Mahoning Co. OH	460	0.2%	
Trumbull Co. OH	447	0.2%	
Percent is of workers living in county.			
Number of workers 16+ years of age working in Summit County			270,431
Commute In From	Number	Percent	
Stark Co. OH	21,094	7.8%	
Portage Co. OH	19,049	7.0%	
Cuyahoga Co. OH	14,207	5.3%	
Medina Co. OH	8,647	3.2%	
Wayne Co. OH	3,948	1.5%	
Lake Co. OH	1,157	0.4%	
Geauga Co. OH	1,130	0.4%	
Mahoning Co. OH	1,096	0.4%	
Trumbull Co. OH	1,038	0.4%	
Lorain Co. OH	970	0.4%	
Percent is of workers working in county.			

Trumbull	Percent of workers that work outside the county -		27.1%
	Average commute time in minutes -		21.0
Number of workers 16+ years of age living in Trumbull County			97,485
Commute Out To	Number	Percent	
Mahoning Co. OH	12,003	12.3%	
Geauga Co. OH	3,900	4.0%	
Mercer Co. PA	2,457	2.5%	
Cuyahoga Co. OH	1,976	2.0%	
Portage Co. OH	1,863	1.9%	
Number of workers 16+ years of age working in Trumbull County			100,101
Commute In From	Number	Percent	
Mahoning Co. OH	19,210	19.2%	
Mercer Co. PA	2,805	2.8%	
Columbiana Co. O	1,719	1.7%	
Portage Co. OH	1,449	1.4%	
Lawrence Co. PA	653	0.7%	

Summit Co. OH	1,038	1.1%
Ashtabula Co. OH	892	0.9%
Columbiana Co. OH	344	0.4%
Lawrence Co. PA	251	0.3%
Stark Co. OH	202	0.2%

Percent is of workers living in county.

Ashtabula Co. OH	485	0.5%
Summit Co. OH	447	0.4%
Geauga Co. OH	310	0.3%
Cuyahoga Co. OH	281	0.3%
Stark Co. OH	172	0.2%

Percent is of workers working in county.

<b>Tuscarawas</b>	Percent of workers that work outside the county -	26.8%
	Average commute time in minutes -	21.6

#### Number of workers 16+ years of age living in Tuscarawas County 42,093

Commute Out To	Number	Percent
Stark Co. OH	5,707	13.6%
Holmes Co. OH	1,983	4.7%
Coshocton Co. OH	709	1.7%
Wayne Co. OH	688	1.6%
Summit Co. OH	606	1.4%
Carroll Co. OH	289	0.7%
Harrison Co. OH	182	0.4%
Guernsey Co. OH	153	0.4%
Cuyahoga Co. OH	128	0.3%
Muskingum Co. OH	124	0.3%

Percent is of workers living in county.

#### Number of workers 16+ years of age working in Tuscarawas Cour 37,247

Commute In From	Number	Percent
Stark Co. OH	1,679	4.5%
Harrison Co. OH	1,410	3.8%
Carroll Co. OH	840	2.3%
Coshocton Co. OH	780	2.1%
Holmes Co. OH	538	1.4%
Guernsey Co. OH	249	0.7%
Summit Co. OH	150	0.4%
Wayne Co. OH	125	0.3%
Jefferson Co. OH	89	0.2%
Belmont Co. OH	73	0.2%

Percent is of workers working in county.

<b>Union</b>	Percent of workers that work outside the county -	42.7%
	Average commute time in minutes -	23.0

#### Number of workers 16+ years of age living in Union County 20,416

Commute Out To	Number	Percent
Franklin Co. OH	5,473	26.8%
Delaware Co. OH	890	4.4%
Logan Co. OH	869	4.3%
Marion Co. OH	508	2.5%
Madison Co. OH	439	2.2%
Hardin Co. OH	82	0.4%
Champaign Co. OH	80	0.4%
Licking Co. OH	54	0.3%
Summit Co. OH	41	0.2%
Knox Co. OH	38	0.2%

Percent is of workers living in county.

#### Number of workers 16+ years of age working in Union County 26,376

Commute In From	Number	Percent
Franklin Co. OH	4,527	17.2%
Logan Co. OH	2,470	9.4%
Champaign Co. OH	1,802	6.8%
Delaware Co. OH	1,782	6.8%
Marion Co. OH	1,041	3.9%
Clark Co. OH	775	2.9%
Madison Co. OH	763	2.9%
Hardin Co. OH	542	2.1%
Morrow Co. OH	131	0.5%
Fairfield Co. OH	91	0.3%

Percent is of workers working in county.

<b>Van Wert</b>	Percent of workers that work outside the county -	34.5%
	Average commute time in minutes -	19.0

#### Number of workers 16+ years of age living in Van Wert County 14,375

Commute Out To	Number	Percent
Allen Co. OH	1,947	13.5%

#### Number of workers 16+ years of age working in Van Wert County 12,653

Commute In From	Number	Percent
Allen Co. OH	919	7.3%



Adams Co. IN	858	6.0%
Allen Co. IN	843	5.9%
Paulding Co. OH	316	2.2%
Putnam Co. OH	244	1.7%
Mercer Co. OH	203	1.4%
Auglaize Co. OH	130	0.9%
Defiance Co. OH	54	0.4%
Wells Co. IN	35	0.2%
DeKalb Co. IN	34	0.2%

Percent is of workers living in county.

Mercer Co. OH	814	6.4%
Paulding Co. OH	478	3.8%
Putnam Co. OH	395	3.1%
Allen Co. IN	132	1.0%
Auglaize Co. OH	94	0.7%
Adams Co. IN	92	0.7%
Hancock Co. OH	49	0.4%
Franklin Co. OH	34	0.3%
Shelby Co. OH	30	0.2%

Percent is of workers working in county.

<b>Vinton</b>		Percent of workers that work outside the county -	59.7%
		Average commute time in minutes -	37.0
<b>Number of workers 16+ years of age living in Vinton County</b>		<b>4,795</b>	
Commute Out To	Number	Percent	
Jackson Co. OH	773	16.1%	
Ross Co. OH	538	11.2%	
Franklin Co. OH	456	9.5%	
Athens Co. OH	420	8.8%	
Pike Co. OH	139	2.9%	
Pickaway Co. OH	128	2.7%	
Hocking Co. OH	121	2.5%	
Fairfield Co. OH	78	1.6%	
Meigs Co. OH	59	1.2%	
Gallia Co. OH	45	0.9%	
<b>Number of workers 16+ years of age working in Vinton County</b>		<b>2,800</b>	
Commute In From	Number	Percent	
Jackson Co. OH	356	12.7%	
Athens Co. OH	149	5.3%	
Meigs Co. OH	114	4.1%	
Ross Co. OH	97	3.5%	
Gallia Co. OH	42	1.5%	
Hocking Co. OH	41	1.5%	
Lawrence Co. OH	14	0.5%	
Licking Co. OH	13	0.5%	
Perry Co. OH	13	0.5%	
Washington Co. O	9	0.3%	

Percent is of workers living in county.

Percent is of workers working in county.

<b>Warren</b>		Percent of workers that work outside the county -	61.5%
		Average commute time in minutes -	24.0665
<b>Number of workers 16+ years of age living in Warren County</b>		<b>76,548</b>	
Commute Out To	Number	Percent	
Hamilton Co. OH	21,347	27.9%	
Montgomery Co. OH	11,325	14.8%	
Butler Co. OH	8,586	11.2%	
Clermont Co. OH	1,448	1.9%	
Greene Co. OH	1,321	1.7%	
Clinton Co. OH	1,038	1.4%	
Boone Co. KY	337	0.4%	
Franklin Co. OH	286	0.4%	
Kenton Co. KY	249	0.3%	
Clark Co. OH	125	0.2%	
<b>Number of workers 16+ years of age working in Warren County</b>		<b>62,714</b>	
Commute In From	Number	Percent	
Butler Co. OH	11,133	17.8%	
Hamilton Co. OH	9,303	14.8%	
Montgomery Co. C	4,488	7.2%	
Clermont Co. OH	3,269	5.2%	
Clinton Co. OH	1,079	1.7%	
Greene Co. OH	797	1.3%	
Brown Co. OH	347	0.6%	
Preble Co. OH	336	0.5%	
Campbell Co. KY	322	0.5%	
Kenton Co. KY	297	0.5%	

Percent is of workers living in county.

Percent is of workers working in county.

<b>Washington</b>		Percent of workers that work outside the county -	29.2%
		Average commute time in minutes -	22.5

Number of workers 16+ years of age living in Washington County 28,171		
Commute Out To	Number	Percent
Wood Co. WV	5,927	21.0%
Pleasants Co. WV	378	1.3%
Monroe Co. OH	221	0.8%
Athens Co. OH	208	0.7%
Noble Co. OH	197	0.7%
Morgan Co. OH	125	0.4%
Franklin Co. OH	124	0.4%
Jackson Co. WV	95	0.3%
Guernsey Co. OH	83	0.3%
Tyler Co. WV	71	0.3%

Percent is of workers living in county.

Number of workers 16+ years of age working in Washington County 26,792		
Commute In From	Number	Percent
Wood Co. WV	3,316	12.4%
Morgan Co. OH	501	1.9%
Athens Co. OH	462	1.7%
Noble Co. OH	453	1.7%
Pleasants Co. WV	391	1.5%
Meigs Co. OH	340	1.3%
Monroe Co. OH	237	0.9%
Ritchie Co. WV	137	0.5%
Franklin Co. OH	84	0.3%
Tyler Co. WV	81	0.3%

Percent is of workers working in county.

Wayne		Percent of workers that work outside the county -	27.1%
		Average commute time in minutes -	19.4
Number of workers 16+ years of age living in Wayne County 54,487		Number of workers 16+ years of age working in Wayne County 52,259	
Commute Out To	Number	Percent	
Medina Co. OH	4,667	8.6%	
Summit Co. OH	3,948	7.2%	
Stark Co. OH	1,672	3.1%	
Holmes Co. OH	1,247	2.3%	
Cuyahoga Co. OH	1,193	2.2%	
Ashland Co. OH	565	1.0%	
Richland Co. OH	297	0.5%	
Lorain Co. OH	145	0.3%	
Tuscarawas Co. OH	125	0.2%	
Franklin Co. OH	76	0.1%	
Commute In From	Number	Percent	
Stark Co. OH	3,026	5.8%	
Holmes Co. OH	2,411	4.6%	
Medina Co. OH	1,726	3.3%	
Ashland Co. OH	1,712	3.3%	
Summit Co. OH	1,095	2.1%	
Tuscarawas Co. O	688	1.3%	
Richland Co. OH	443	0.8%	
Coshocton Co. OH	178	0.3%	
Cuyahoga Co. OH	163	0.3%	
Franklin Co. OH	146	0.3%	

Percent is of workers living in county.

Percent is of workers working in county.

Williams		Percent of workers that work outside the county -	23.7%
		Average commute time in minutes -	18.0
Number of workers 16+ years of age living in Williams County 19,641		Number of workers 16+ years of age working in Williams County 19,714	
Commute Out To	Number	Percent	
Fulton Co. OH	1,810	9.2%	
Defiance Co. OH	677	3.4%	
Steuben Co. IN	505	2.6%	
DeKalb Co. IN	467	2.4%	
Henry Co. OH	406	2.1%	
Lucas Co. OH	185	0.9%	
Hillsdale Co. MI	161	0.8%	
Allen Co. IN	133	0.7%	
Lenawee Co. MI	49	0.2%	
Paulding Co. OH	34	0.2%	
Commute In From	Number	Percent	
Defiance Co. OH	2,247	11.4%	
Fulton Co. OH	677	3.4%	
Hillsdale Co. MI	408	2.1%	
Henry Co. OH	295	1.5%	
Paulding Co. OH	280	1.4%	
Lucas Co. OH	211	1.1%	
Steuben Co. IN	153	0.8%	
DeKalb Co. IN	94	0.5%	
Lenawee Co. MI	61	0.3%	
Allen Co. IN	57	0.3%	

Percent is of workers living in county.

Percent is of workers working in county.



<b>Wood</b>		Percent of workers that work outside the county -	44.3%
		Average commute time in minutes -	20.1
<b>Number of workers 16+ years of age living in Wood County</b>		<b>61,207</b>	
Commute Out To	Number	Percent	
Lucas Co. OH	19,504	31.9%	
Hancock Co. OH	2,177	3.6%	
Seneca Co. OH	889	1.5%	
Ottawa Co. OH	760	1.2%	
Sandusky Co. OH	587	1.0%	
Monroe Co. MI	384	0.6%	
Henry Co. OH	359	0.6%	
Wayne Co. MI	307	0.5%	
Fulton Co. OH	269	0.4%	
Defiance Co. OH	172	0.3%	
Percent is of workers living in county.			

<b>Number of workers 16+ years of age working in Wood County</b>		<b>60,992</b>	
Commute In From	Number	Percent	
Lucas Co. OH	17,054	28.0%	
Ottawa Co. OH	1,652	2.7%	
Hancock Co. OH	1,603	2.6%	
Sandusky Co. OH	1,408	2.3%	
Seneca Co. OH	1,019	1.7%	
Henry Co. OH	865	1.4%	
Monroe Co. MI	778	1.3%	
Fulton Co. OH	622	1.0%	
Lenawee Co. MI	128	0.2%	
Putnam Co. OH	109	0.2%	

Percent is of workers working in county.

<b>Wyandot</b>		Percent of workers that work outside the county -	33.6%
		Average commute time in minutes -	20.0
<b>Number of workers 16+ years of age living in Wyandot County</b>		<b>11,317</b>	
Commute Out To	Number	Percent	
Hancock Co. OH	1,107	9.8%	
Marion Co. OH	729	6.4%	
Seneca Co. OH	675	6.0%	
Crawford Co. OH	365	3.2%	
Hardin Co. OH	288	2.5%	
Franklin Co. OH	96	0.8%	
Wood Co. OH	72	0.6%	
Lucas Co. OH	60	0.5%	
Allen Co. OH	59	0.5%	
Sandusky Co. OH	45	0.4%	
Percent is of workers living in county.			

<b>Number of workers 16+ years of age working in Wyandot County</b>		<b>10,338</b>	
Commute In From	Number	Percent	
Seneca Co. OH	781	7.6%	
Crawford Co. OH	519	5.0%	
Hancock Co. OH	491	4.7%	
Hardin Co. OH	460	4.4%	
Marion Co. OH	305	3.0%	
Wood Co. OH	41	0.4%	
Allen Co. OH	37	0.4%	
Sandusky Co. OH	29	0.3%	
Van Wert Co. OH	20	0.2%	
Delaware Co. OH	16	0.2%	

Percent is of workers working in county.

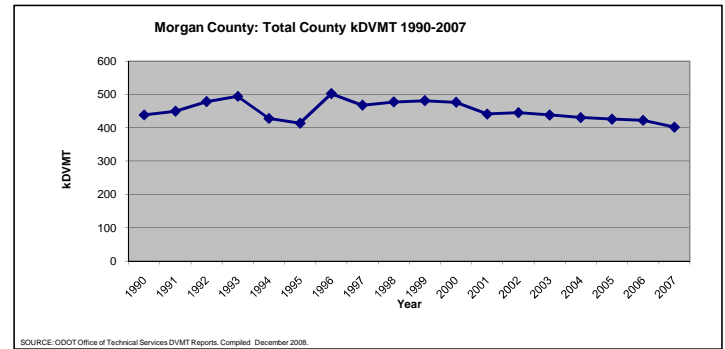
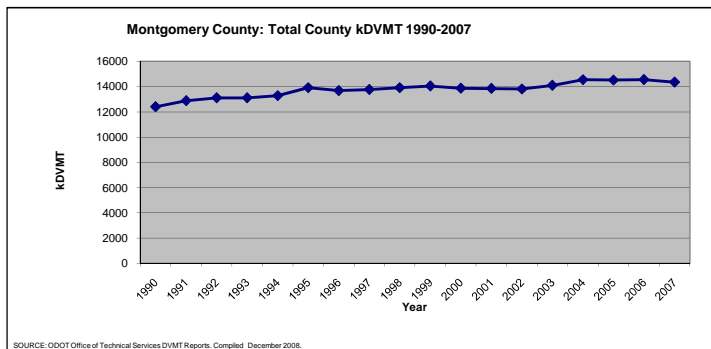
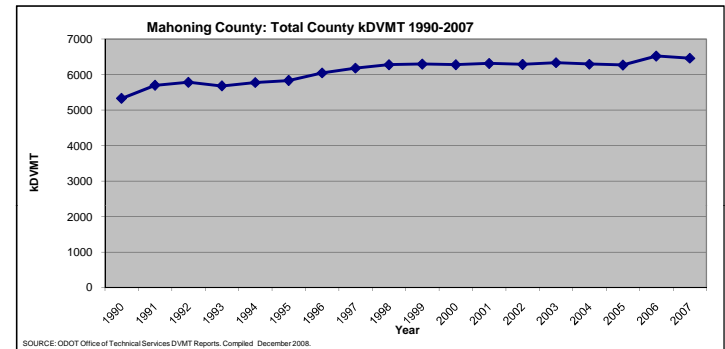
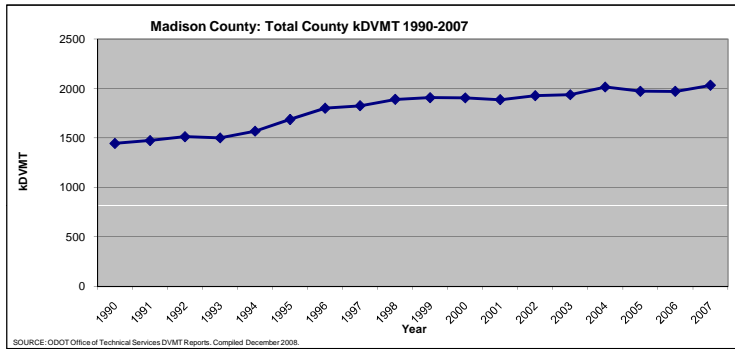
# TOTAL kDVMT BY COUNTY, 1990-2007

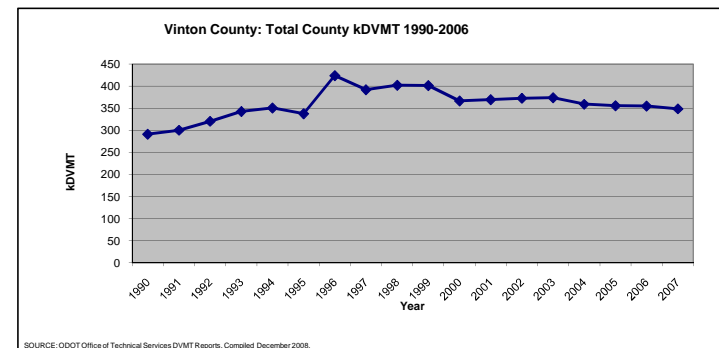
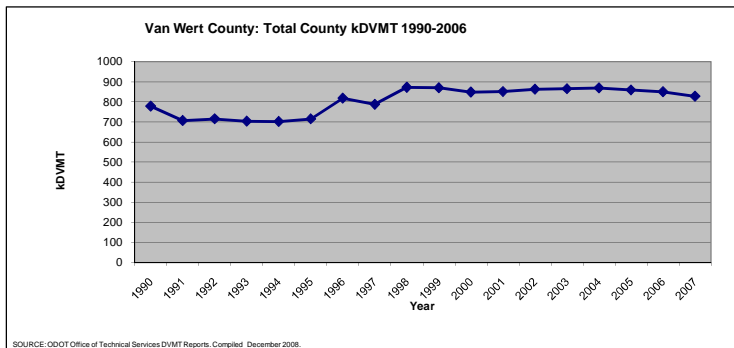
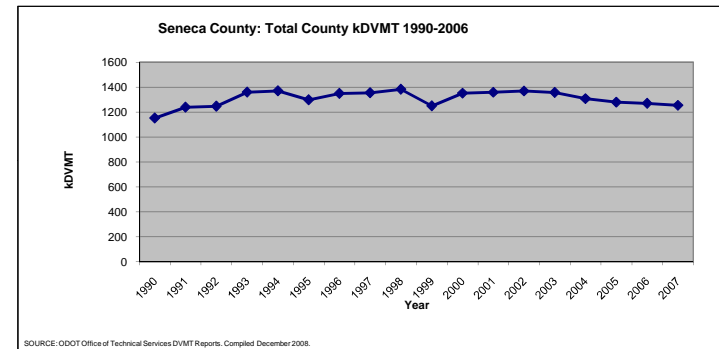
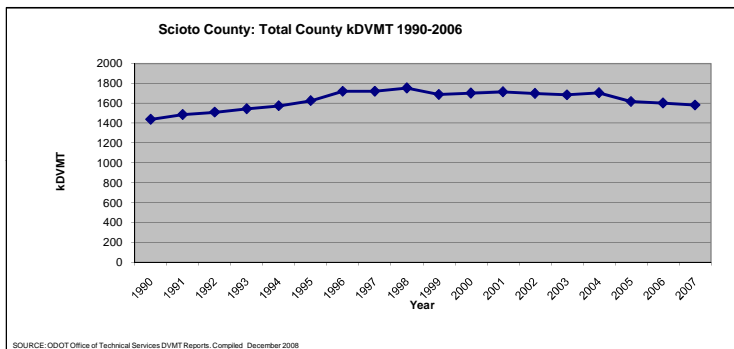
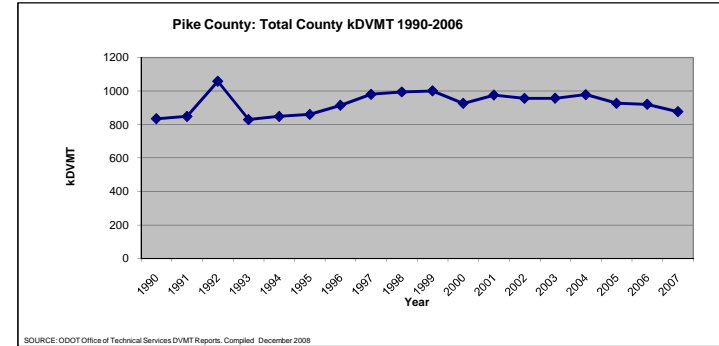
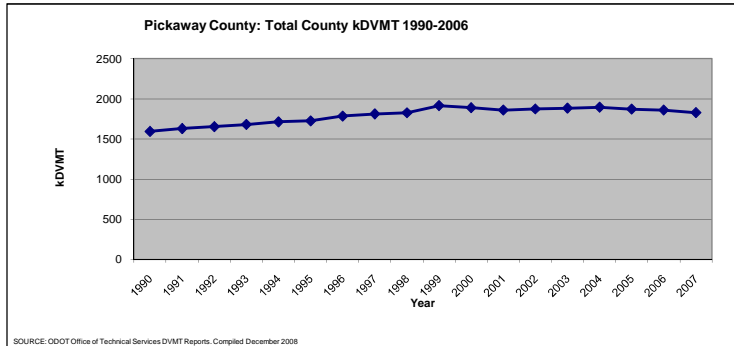
(kDVMT=T housands of Daily Vehicle Miles Traveled)

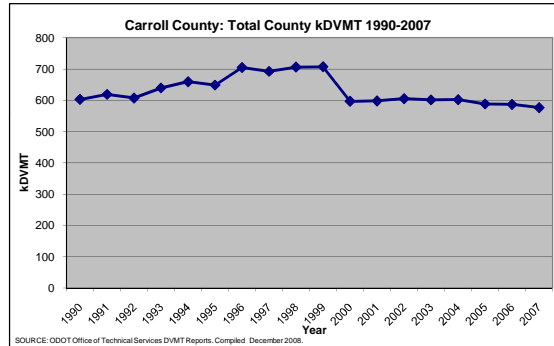
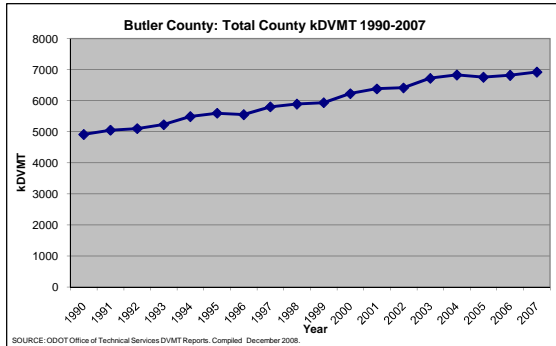
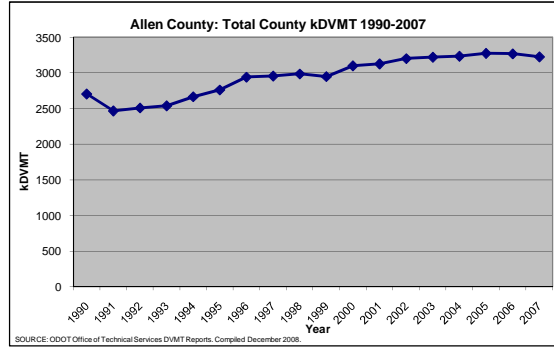
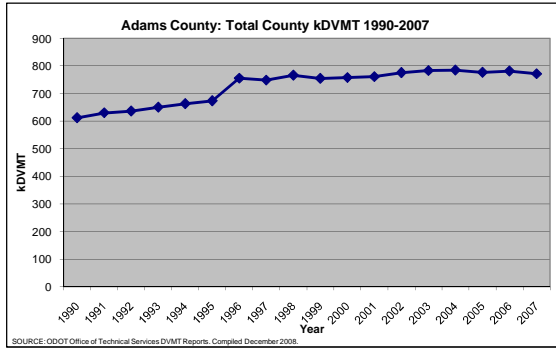
COUNTY NAME	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
ADAMS	611.99	629.87	636.29	650.29	662.63	673.13	755.03	748.25	766.26	754.76	757.56	760.76	775.23	782.7	784.37	776.36	781	771.09
ALLEN	2703.82	2467.39	2508.35	2537.78	2665.38	2760.4	2939.87	2956.48	2984.59	2947.81	3099.07	3124.6	3200.17	3220.42	3232.55	3272.43	3266.03	3222.82
ASHLAND	1425.3	1454	1537.11	1561.93	1588.37	1626.15	1766.6	1813.4	1847.91	1870.28	1843.03	1846.39	1881.84	1874.77	1891.52	1870.39	1848.53	1834.02
ASHTABULA	2682.87	2747.55	2789.53	2767.31	2830.35	2689.49	2779.28	2829.97	2887.97	2912.87	2892.79	2908.38	2941.44	2897.16	2914.48	2887.77	2959.53	2927.21
ATHENS	1209.81	1235.67	1292.93	1268.76	1291.49	1325.31	1460.78	1496.83	1528.53	1533.89	1455.76	1466.96	1477.74	1506.59	1551.84	1511.92	1530.52	1508.93
AUGLAIZE	1174.83	1198.85	1225.22	1219.68	1224.7	1251.69	1349.63	1357.62	1439.55	1468.89	1486.55	1484.63	1502.69	1502.76	1399.42	1370.16	1365.73	1494.43
BELMONT	2236.43	2290.39	2291.46	2318.25	2366.02	2441.29	2438.01	2352.33	2419.76	2436.64	2350.21	2361.02	2393.04	2433.81	2467.06	2491.98	2493.01	2456.95
BROWN	993.01	1011.76	1020.79	896	912.86	922.54	1040.44	1031.71	1055.45	1055.31	1170.32	1175.52	1217.74	1195.21	1204.46	1162.8	1160.37	1147.39
BUTLER	4910.25	5047.24	5099.07	5225.09	5484.21	5595.87	5549.99	5799.95	5888.11	5934.42	6228.22	6380.99	6414.46	6721.08	6828.95	6757.61	6820.28	6921.88
CARROLL	602.76	618.91	607.01	639.36	659.49	648.6	704.61	692.25	706.29	706.94	596.63	598.21	605.34	601.4	602.15	588.35	586.54	576.76
CHAMPAIGN	729.78	750.56	759.39	764.79	842.97	852.7	892.78	896.14	874.83	850.26	907.31	912.82	920.08	902.82	907.36	886.6	881.67	872.23
CLARK	3458.29	3515.51	3583.67	3656.99	3746.49	3823.91	3898.09	3925.52	3856.36	4080.66	4222.08	4206.19	4256.6	4424.74	4453.71	4498.94	4475.04	4477.6
CLERMONT	3404.53	3477.08	3539.48	3441.06	3623.91	3672.9	3892.28	4160.73	4209.57	4224.11	4182.12	4050.7	4073.06	4067.16	4099.71	4054.08	4140.62	4107.12
CLINTON	1224.75	1263.85	1290.51	1348.44	1384.67	1381.13	1447.99	1562.29	1602.58	1620.64	1840.96	1850.7	1871.77	1860.3	1833.82	1809.75	1802.55	1855.89
COLUMBIANA	2480.76	2550	2695.36	2671.49	2703.22	2749.19	2615.42	2580.21	2623.3	2645.42	2597.35	2609.49	2626.48	2742.38	2488.69	2462.15	2378.86	2350.21
COSHOCTON	843.88	862.72	885.72	896.3	919.03	920.85	1024.61	1004.09	1020.1	1009.3	983.02	970.39	964.81	925.05	981.85	972.44	965.56	983.76
CRAWFORD	874.14	903.45	911	859.69	874.21	975.29	926.79	942.73	977.13	940.46	990.96	1031.6	1040.02	1052.42	1049.54	1064.76	1082.69	1075.6
CUYAHOGA	26015.07	26465.7	26917.5	27216.62	27879.15	29174.82	28453.82	28907.65	29303.4	29167.72	28797.64	27596.78	27621.69	27764.59	28660.23	28333.57	28744.18	28652.94
DARKE	1142.54	1178.72	1186.14	1184.6	1145.38	1170.96	1269.07	1253.89	1279.73	1305.03	1289.6	1288.59	1299.12	1277.63	1334.46	1319.59	1308.51	1308.49
DEFIANCE	987.68	972	980.31	977.56	953.08	992.11	1016.85	1049.73	1055.91	1031.48	1067.95	1074.69	1082.68	1055.07	1057.63	1042.83	1013.25	999.59
DELAWARE	2528.43	2581.38	2651.23	2597.68	2626.73	2913.16	3104.51	3119.98	3191.19	3363	3593.47	3617.8	3800.75	4134.84	4264.16	4211.03	4207.91	4175.9
ERIE	2501.05	2532.73	2577.88	2666.1	2693.82	2779.95	2792.63	2713.15	2794.69	2869.74	2934.84	3003.74	3040.74	3042.34	3059.65	3063.74	2907.6	2864.67
FAIRFIELD	2166.3	2210.73	2292.66	2266.05	2317.41	2337.07	2490.78	2530.77	2572.25	2553.86	2577.72	2586.79	2601.72	2816.52	3045.87	3060.66	2916.9	2899.88
FAYETTE	1078.23	1098.71	1120.76	1141.4	1162.67	1229.39	1294.29	1299.38	1290.21	1386.3	1349.81	1323.92	1372.3	1348.51	1440.72	1421.65	1419.55	1432.57
FRANKLIN	20632.62	21084.11	21513.59	22249.12	22565.36	23649.96	24538.07	25300.81	25570.03	25361.03	25556.42	26720.56	26827.83	28372.81	30154.82	29924.29	30097.22	29828.31
FULTON	1274.31	1296.46	1327.26	1471.96	1503.75	1397.09	1460.49	1488.89	1530.38	1560.88	1639.51	1644.87	1644.42	1621.7	1639.24	1637.05	1639.18	1606.65
GALLIA	871.67	898.41	1028.69	1167.98	1003.23	1050.62	1090.89	1080.69	1108.85	1113.94	967.3	972.65	978.78	995.2	1007.72	997.03	968.24	957.3
GEAUGA	1798.75	1876.4	1828.85	1887.39	1878.67	1941.43	2017.06	2005.79	2136.85	2066.75	2056.84	2026.9	2038.91	2051.47	2114.92	2130.5	2118.2	2091.63
GREENE	3403.99	3371.37	3437.08	3080.26	3236.11	3397.36	3751.02	3521.94	3621.81	3652.96	3644.38	3690.89	3717.24	3783.87	4276.57	4238.33	4281.29	4218.93
GUERNSEY	1875.05	1913.29	1931.5	1940.09	1981.08	2007.22	2081.06	2114.06	2163.43	2150.86	2178.86	2188.86	2221.38	2234.12	2256.86	2271.98	2254.55	2221.26
HAMILTON	19044.96	19279.18	19913.04	19292.96	20124.31	20303.97	19476.59	20013.97	20166.15	20252.73	19941.76	19986.05	20131.85	20364.66	20588.43	20957.26	21006.83	20721.96
HANCOCK	2243.31	2097.35	2136.76	2148.86	2165.65	2234.88	2394.99	2399.8	2538.78	2566.14	2616.98	2580.45	2649.4	2680.83	2900.9	2866.29	2861.8	2777.05
HARDIN	766.21	712.1	715.87	718.51	687.12	699.97	769.77	752.65	766.54	793.43	789.09	775.67	783.56	794.79	768.59	759.78	749.92	774.34
HARRISON	468.44	476.7	454.18	447.08	454.94	490.53	490.19	524.12	537.18	518.94	502.2	504.3	507.96	507.55	509.74	522.22	511.2	505.24
HENRY	870.86	883.67	894.64	903.91	922.6	925.05	996.38	997.86	1019.37	979.05	1030.6	1042.51	1046.75	1025.22	1050.12	1039.24	1026.35	1007.09
HIGHLAND	723.8	750.94	758.31	718.09	734	754.83	828.12	837.89	855.95	846.02	939.11	942.27	950.42	969.8	964.26	953.14	917.15	902.79
HOCKING	735.27	751.97	810.59	660.25	668.32	633.3	697.72	712.93	728.41	734.08	716.33	785.61	788.85	789.35	833.51	823.4	823.55	851.87
HOLMES	659.86	679.32	707.99	793.92	804.81	790.94	795.54	829.43	846.35	853.25	844.49	846.62	855.75	852.85	832.95	824.54	816.84	802.52
HURON	1328.86	1359.43	1368.15	1287.21	1310.11	1351.9	1453.45	1456.3	1480.21	1478.68	1498.81	1509.23	1484.41	1470.26	1470.28	1372.84	1365.3	1347.21
JACKSON	782.08	797.44	806.51	795.47	811.85	827.33	958.52	930.61	948.62	1100.78	1038.08	1018.33	1033.02	1023.83	1045.69	1033.12	1030.26	1008.4
JEFFERSON	1717.89	1768.75	1829.3	1779	1832.23	1803.39	1942.83	1759.75	1795.88	1800.26	1852.04	1863.41	1813.59	1873.12	1884.67	1801.26	1801.73	1839.71

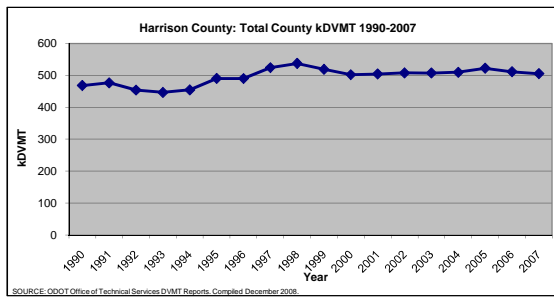
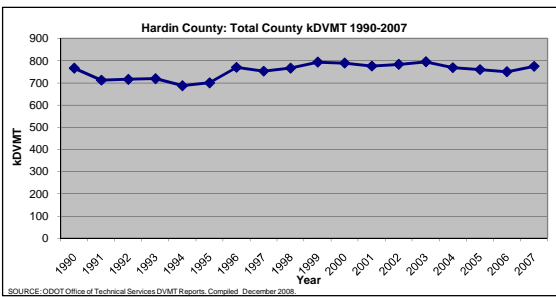
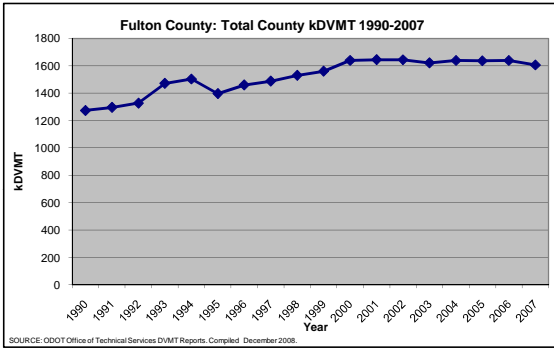
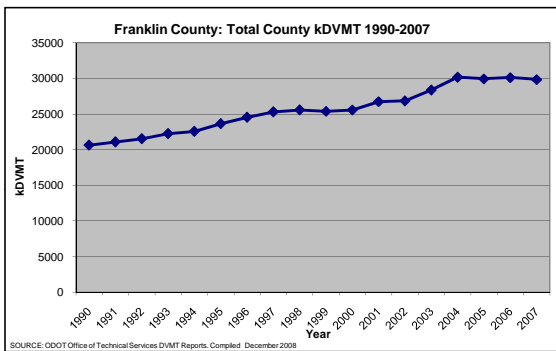
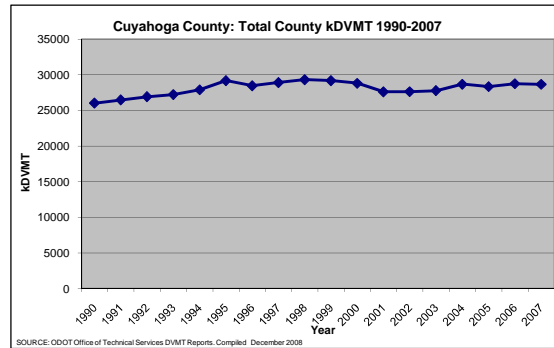
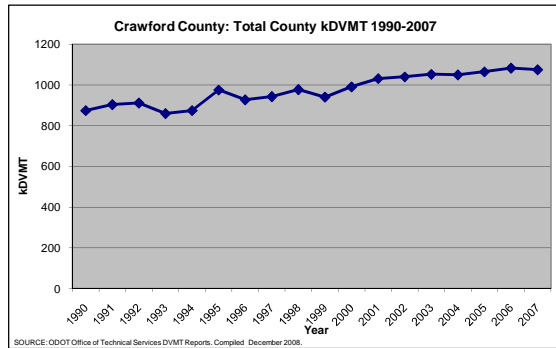
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LAKE	4850.11	4919.63	5044	5114.28	5204.51	5401.25	5620.33	5752.31	5830.28	5831.67	5510.03	5520.71	5550.27	5821.3	5911.07	5903.28	5980.35	5897.34
LAWRENCE	1467.32	1515.49	1540.03	1497.83	1353.82	1448.15	1514.97	1512.34	1543.26	1558.99	1557.84	1517.8	1524.22	1530.77	1272.93	1315.02	1345.98	1331.95
LICKING	3730.63	3801.75	4029.35	3941.75	4022.79	4124.89	4119.35	4307.51	4416.89	4465.04	4471.78	4515.28	4886.64	5031.03	5009.4	5030.04	4994.54	4933.41
LOGAN	936.86	961.45	986.48	977.1	1004.07	1020.92	1112.87	1148.59	1235.65	1210.84	1242.66	1250.35	1265.66	1279.36	1285.14	1295.32	1289.14	1278.49
LORAIN	5488.95	5541.26	5535.57	5638.82	5762.76	5937.56	6079.68	6189.63	6260.25	6169.18	6268.77	6315.78	6360.54	6578.11	6657.44	6568.15	6514.41	6460.55
LUCAS	9372.54	9539.74	9766.64	9785.22	9986.33	10513.01	10715.27	10925.66	10964.69	10938.34	11176.46	11293.59	11305.93	11783.81	12032.29	11895.43	11980.01	11638.02
MADISON	1446.73	1474.75	1514.45	1501.88	1569.46	1687.33	1801.24	1825.77	1889.38	1907.01	1904.9	1887.38	1927.14	1936.73	2013.98	1971.49	1970.93	2031.16
MAHONING	5327.5	5697.07	5780.56	5679.87	5772.08	5831.56	6044.92	6180.83	6274.99	6294.37	6275.51	6310.61	6285.64	6334.29	6291.38	6268.65	6519.37	6460.68
MARION	1425.38	1465.91	1484.19	1457.17	1485.68	1488.14	1564.84	1565.1	1595.84	1593.57	1758.36	1769.18	1793.67	1818.82	1819.15	1798.75	1793.51	1769.62
MEDINA	3115.73	3070.86	3132.86	3446.93	3518.56	3634.79	3680.3	3788.98	3862.23	3886.08	4042.2	4067.77	4078.56	4064.82	4212.94	4146.97	4289.86	4324.9
MEIGS	526.79	540.33	546.55	562.44	573.81	579.97	662.27	612.75	626.15	600.57	501.95	548.35	561.37	554.78	588.52	619.53	617.53	609.69
MERCER	1039.13	1068.49	1078.59	1055.01	1080.83	1077.41	1121.99	1124.28	1142.52	1147.04	1223.33	1226.25	1235.54	1169.64	1168.67	1150.52	1167.9	1163.67
MIAMI	2346.28	2391.92	2446.91	2505.57	2806.69	2876.68	2909.02	2941.92	2994.25	3017.64	3014.33	3010.31	3048.93	3129.9	3243.01	3211.95	3110.98	3072.25
MONROE	568.19	578.45	612.06	628.52	545.38	560.64	651.9	637.36	651.38	657.51	591.64	593.83	597.75	573.2	575.35	569.63	600.06	590.58
MONTGOMERY	12401.77	12874.59	13102.95	13105.78	13271.4	13904.25	13674.87	13767.45	13901.91	14036.93	13866.74	13847.63	13799.46	14093.11	14537.46	14506.09	14541.39	14345.87
MORGAN	439.07	450.02	479.07	494.75	428.51	414.24	502.71	468.13	477.93	481.98	476.91	441.68	445.81	438.91	430.92	426.43	422.76	402.49
MORROW	1219.58	1243.53	1273.44	1293.59	1320.06	1433.88	1496.96	1540.66	1527.55	1546.61	1673.84	1654.63	1685.46	1691.14	1725.57	1703.58	1697.03	1670.99
MUSKINGUM	2535.13	2598.09	2631.93	2749.99	2812.97	2822.41	2877.85	2924.26	2974.86	3025.1	2729.09	2879.07	2990.15	2904.66	2900.08	2866.52	2824.84	2791
NOBLE	520.2	526.37	576.06	587.78	553.26	558.43	612.71	587.09	586.93	592.99	592.54	583.74	593.48	588.99	639.25	629.96	625.29	621.98
OTTAWA	1143.39	1148.11	1169.11	1210.17	1232.88	1297.55	1288.22	1392.33	1431.12	1411.63	1326.49	1307.93	1341.12	1390.63	1382.95	1375.25	1244.3	1225.74
PAULDING	547.96	521.1	526.13	524.72	513.5	526.07	564.86	576.54	589.29	579.12	621.61	624.12	628.94	604.72	606.37	599.93	581.53	575.59
PERRY	825.5	845.36	837.39	836.64	862.5	862.44	945.24	901.31	916.37	916.71	793.84	798.07	805.85	800.52	799.91	791.26	744.49	732.17
PICKAWAY	1596.41	1632.34	1655.56	1682.2	1714.58	1726.7	1785.98	1812.16	1827.67	1915.63	1890.49	1861.16	1874.64	1884.55	1895.73	1873.26	1861.37	1829.2
PIKE	834.84	849.07	1057.66	830.27	849.17	860.95	914.83	980.44	994.39	1001.02	926.33	975.68	956.23	956.75	978.37	927.28	920.49	876.78
PORTAGE	3919.19	3989.96	4051.53	4246.27	4338.03	4328.08	4426.2	4387.23	4606.53	4783.64	4579.73	4504.64	4561.07	4575.32	4654.36	4609.22	4644.6	4659.45
PREBLE	1095.92	1120.08	1143.66	1159.07	1172.23	1165.98	1255.14	1318.59	1352.66	1375.61	1392.59	1400.67	1434.91	1436.38	1559.28	1496.2	1432.92	1412.27
PUTNAM	879.99	843.59	849.19	848.33	820.85	834.49	851.72	885.24	902.88	894.71	831.35	833.88	835.17	831.49	919.82	847.87	840.11	828.32
RICHLAND	2817.12	2882.11	2966.27	3102.37	3149.85	3281.28	3391.31	3446.64	3514.86	3510.97	3367.83	3391.69	3424.35	3490.17	3529.89	3473.05	3492.22	3447.98
ROSS	1864.99	1915.6	1947.74	2332.76	2382.75	2431.5	2474.3	2490.41	2569.43	2550.71	2185.64	2199.28	2213.86	2143.99	2339.46	2264.49	2189.2	2169.06
SANDUSKY	2262.41	2285.68	2321.24	2308.49	2360.28	2373.62	2521.07	2604.96	2689.17	2617.15	2629.1	2647.96	2693.17	2660.02	2751.89	2762.48	2632.8	2585.04
SCIOTO	1438.39	1485.27	1510.38	1543.3	1574.3	1626.03	1720.51	1720.38	1753.17	1688.12	1702.16	1715.4	1698.24	1684.65	1705.15	1616.94	1602.83	1581.51
SENECA	1152.28	1238.79	1246.61	1359.31	1369.78	1298.11	1349.23	1353.29	1381.38	1248.53	1350.29	1357.43	1367.6	1356.56	1306.61	1278.29	1269.44	1253.14
SHELBY	1426.9	1455.51	1485.03	1497.02	1611.44	1645.35	1690.63	1691.68	1729.71	1754.21	1597.06	1683.83	1710.03	1708.83	1736.62	1715.15	1713.44	1722.56
STARK	6139.17	6652.18	6735.68	7145.76	7231.85	7428.85	7308.14	7233.54	7303.4	7295.72	7770.04	7808.46	7856.26	8144.36	8191.93	8136.66	8405.65	8315.26
SUMMIT	12036.67	11942.81	12133.28	13120.07	13414.05	13577.1	13313.58	13821.17	13992.69	14011.87	14104.33	14139.4	14049.13	14497.16	14898.72	14751.41	15549.13	15367.21
TRUMBULL	5065.58	5208.33	5286.46	5267.78	5360.5	5415.58	5692.16	5612.67	5774.14	5851.41	6117.07	6167.29	6131.36	6224.61	6219.79	6147.35	6260.72	6184.11
TUSCARAWAS	2681.98	2737.11	2703.71	2676.35	2541.96	2537.2	2642.87	2703.05	2749.2	2765.58	2820.5	2836.83	2868.19	2923.15	2940.02	2907.78	2835.37	2803.41
UNION	1105.43	1131.28	1141.64	1171.69	1185.45	1233.97	1384.99	1333.21	1366.73	1656.75	1640.77	1636.16	1680.13	1718.51	1750.81	1728.72	1734.56	1722.58
VANWERT	778	706.97	715.28	703.77	702.22	715.11	817.95	787.07	871.72	869.56	848.28	850.85	862.36	864.8	868.79	858.79	849.7	827.29
VINTON	291.58	300.44	320.67	342.98	350.95	337.9	423.96	392.2	402.16	401.83	366.82	369.62	372.94	374.06	359.3	356.04	355.26	348.99
WARREN	3199.37	3239.97	3267.44	3391.28	3618.46	3639.46	3851.68	3858.04	3906.69	3973.04	3878.03	4238.46	4313.59	4394.07	4355.41	4292.77	4660.34	4620.95
WASHINGTON	1595.55	1634.29	1680.58	1757.07	1796.3	1785.34	1929.1	1940.34	1979.3	1955.89	1937.99	1951.1	1983.64	1972.32	1982.19	1939.15	1949.44	1922.07
WAYNE	2816.87	2872.12	2915.66	3122.57	3240.44	3337.92	2987.36	3000.46	3058.49	3060.98	2999.57	2996.8	3023.64	3059.29	3065.97	3111.7	3003.18	2954.55
WILLIAMS	1197	1224.65	1253.97	1285.63	1307.74	1264.98	1288.97	1323.78	1359.91	1351.57	1382.47	1388.3	1382.55	1381.56	1399.61	1360.52	1361.8	1341.87
WOOD	3757.59	3904.71	4039.08	4040.56	4164.25	4235.35	4421.29	4635.52	4696.89	4617.46	4830.39	4858.96	5010.19	5053.51	5316.14	5228.79	5179.89	5055.96
WYANDOT	882.79	836.07	851.38	855.18	864.68	869.82	976.73	959.85	971.87	947.48	971.32	1011.39	1019.88	1007.83	1083.49	1069.81	1067.2	1027.35
TOTAL	250,146.04	254,798.97	260,167.11	263,471.90	269,036.04	276,132.03	281,668.49	285,747.42	290,490.01	291,525.52	291,852.60	293,201.95	295,582.23	301,113.08	307,912.48	305575.06	307,117.58	304,284.36

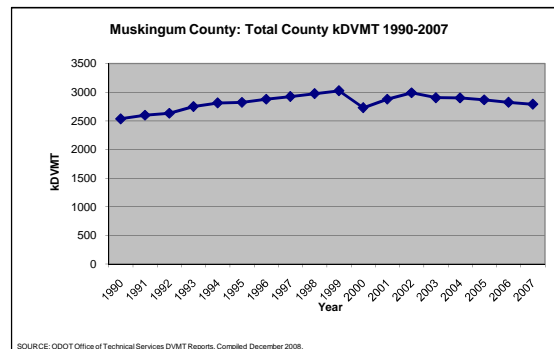
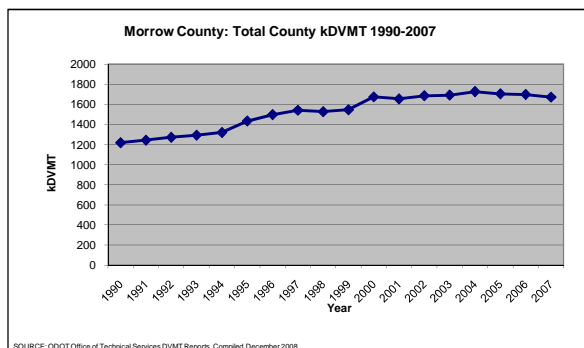
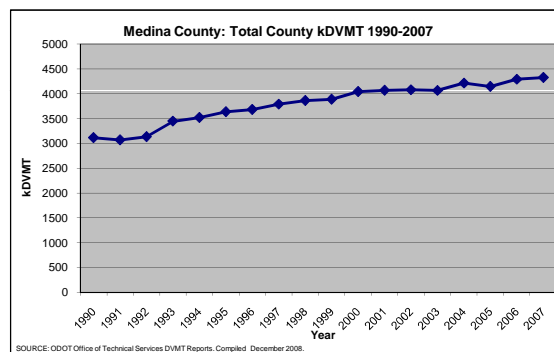
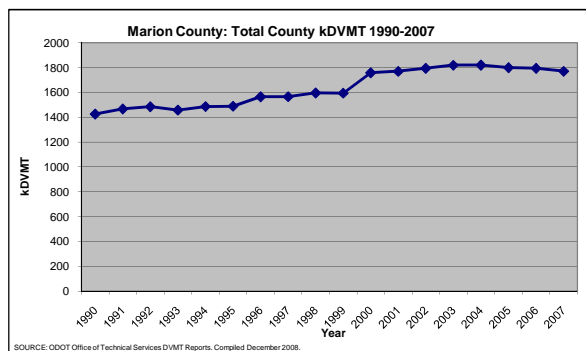
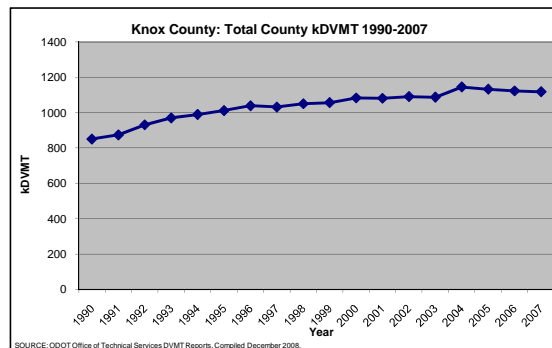
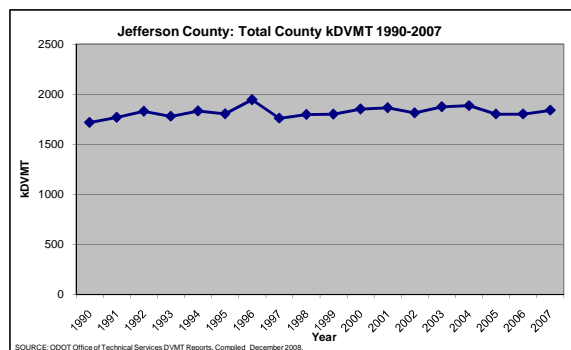
Please be aware that the numbers are estimates only. The factoring process used annual, estimated, and statewide ADT (Average Daily Traffic) growth factors, derived from the output of a limited number of traffic counting stations around the state. Although the growth factors are available by functional class, they are more reliable for major roads such as interstates or expressways, which are relatively well-sampled, than for local roads or collectors. The numbers also do not allow for periodic, large-scale functional reclassification actions which reassign selected roads or road segments from one functional class to another. The Ohio Department of Transportation therefore does not warrant the accuracy, completeness, or reliability of these estimates for your research. We also do not assume responsibility for any incorrectness that may occur.





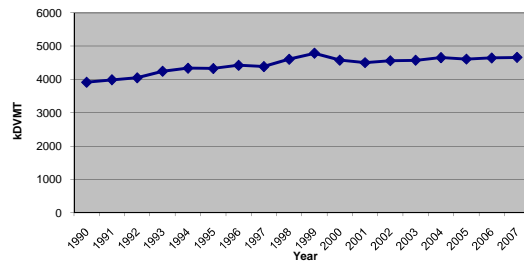






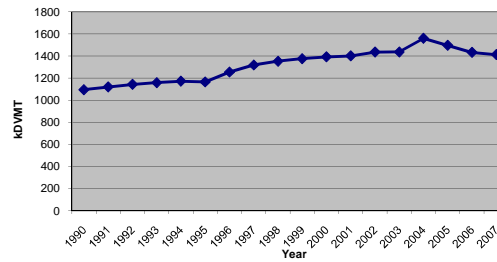


**Portage County: Total County kDVT 1990-2007**



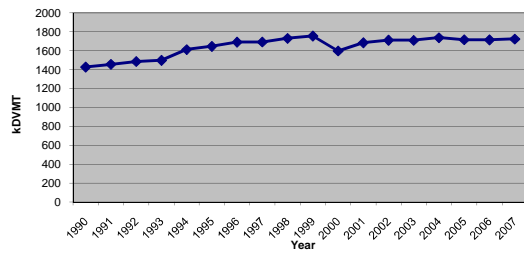
SOURCE: ODOT Office of Technical Services DVT Reports, Compiled December 2008.

**Preble County: Total County kDVT 1990-2007**



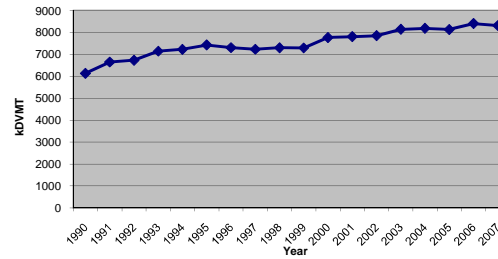
SOURCE: ODOT Office of Technical Services DVT Reports, Compiled December 2008.

**Shelby County: Total County kDVT 1990-2007**



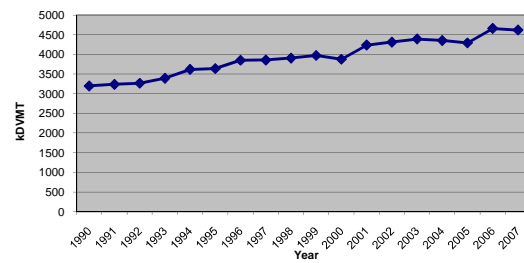
SOURCE: ODOT Office of Technical Services DVT Reports, Compiled December 2008.

**Stark County: Total County kDVT 1990-2007**



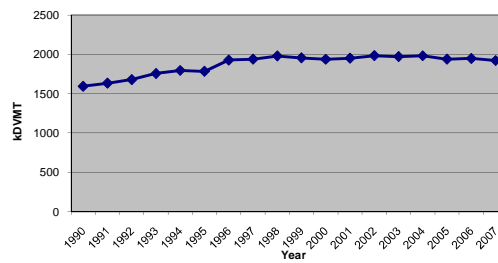
SOURCE: ODOT Office of Technical Services DVT Reports, Compiled December 2008.

**Warren County: Total County kDVT 1990-2007**

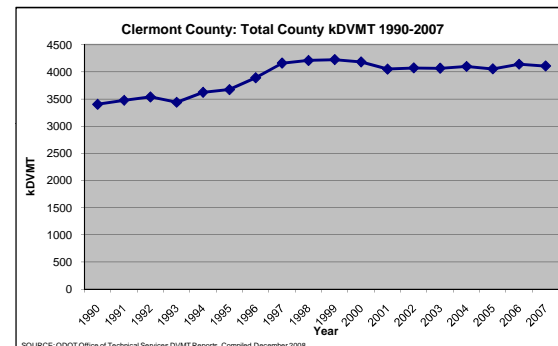
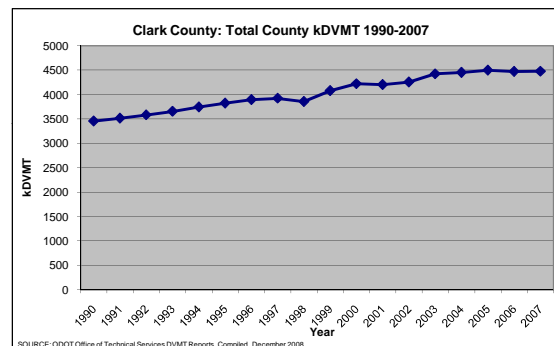
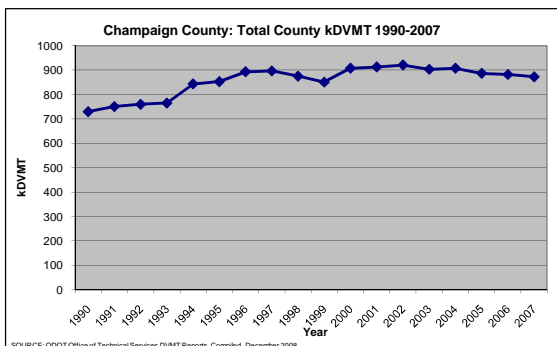
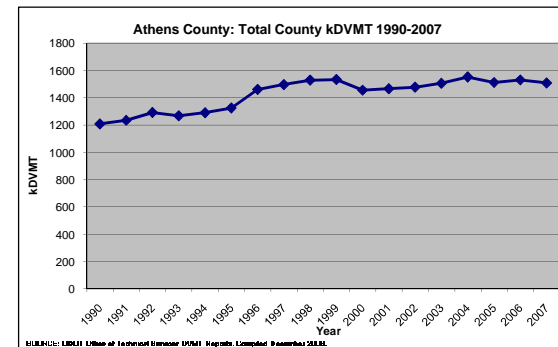
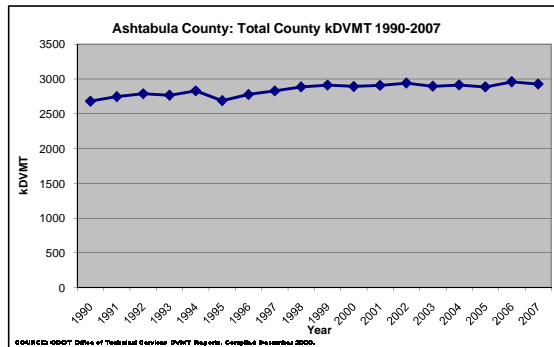
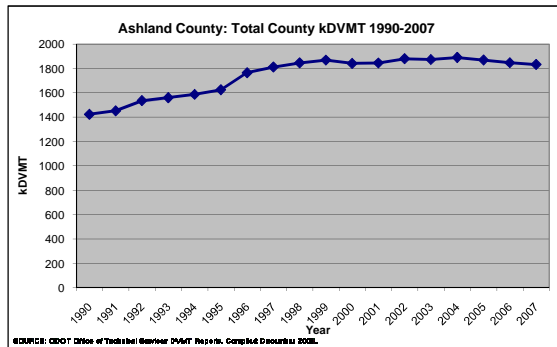


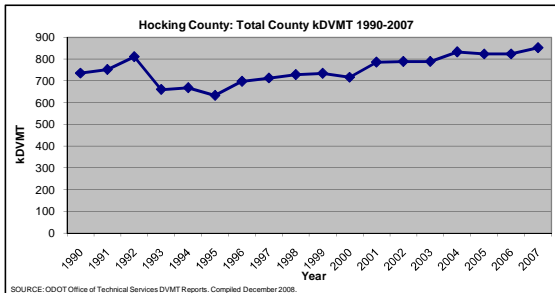
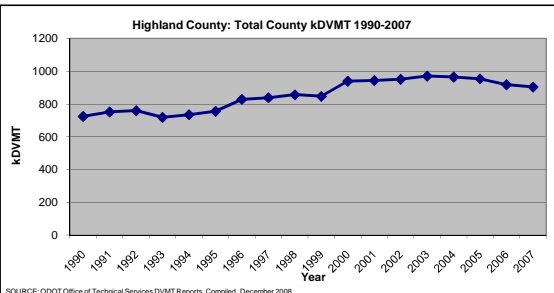
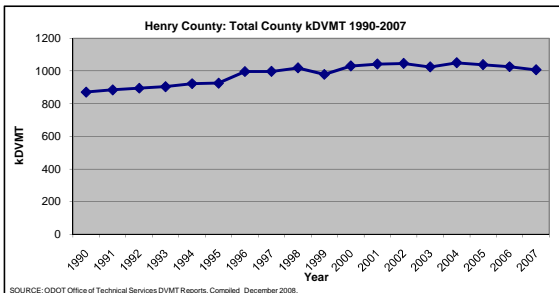
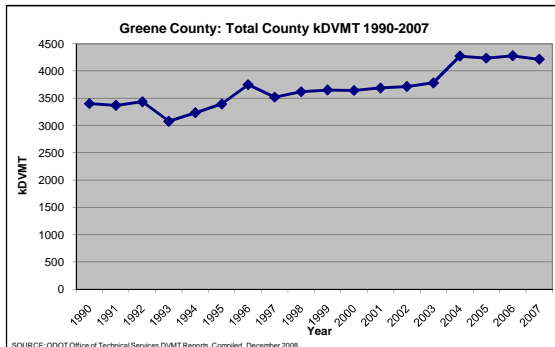
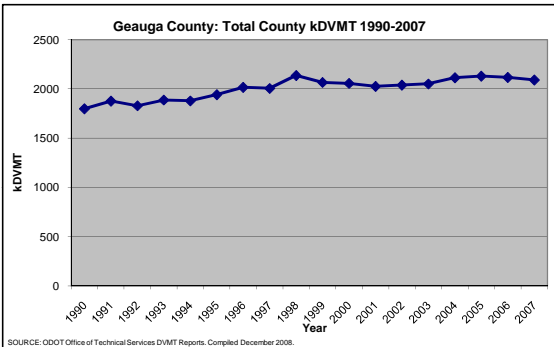
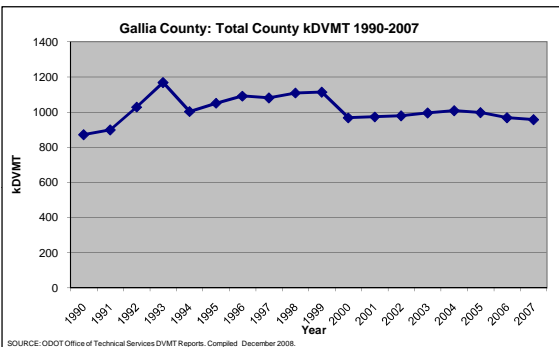
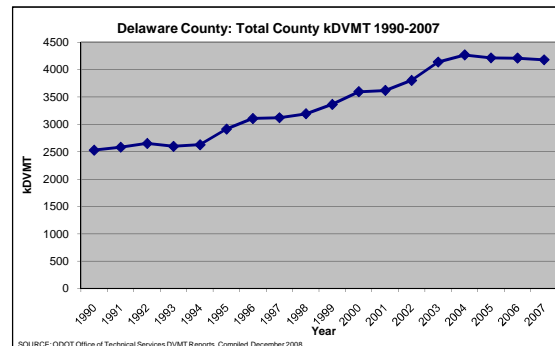
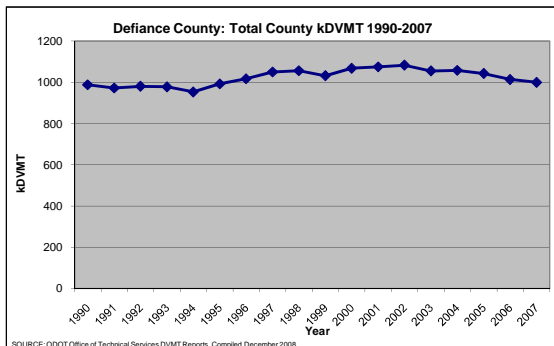
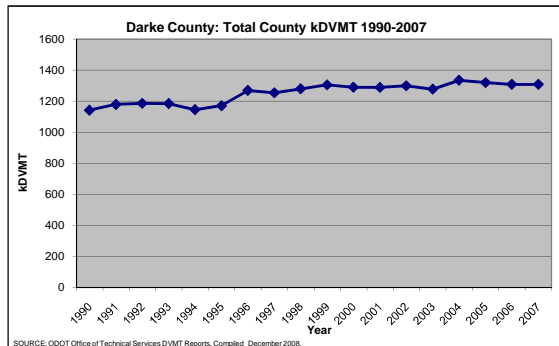
SOURCE: ODOT Office of Technical Services DVT Reports, Compiled December 2008.

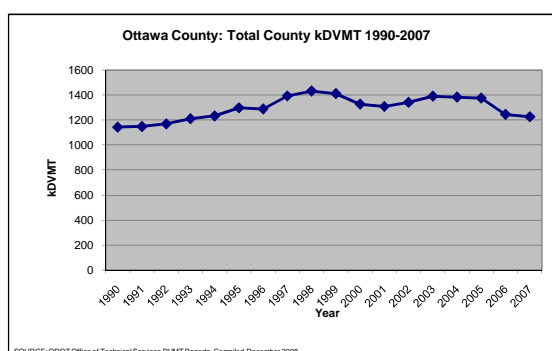
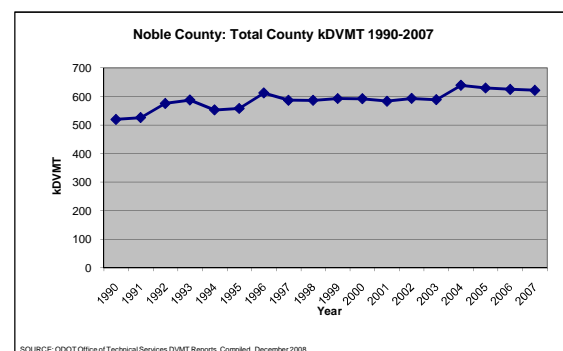
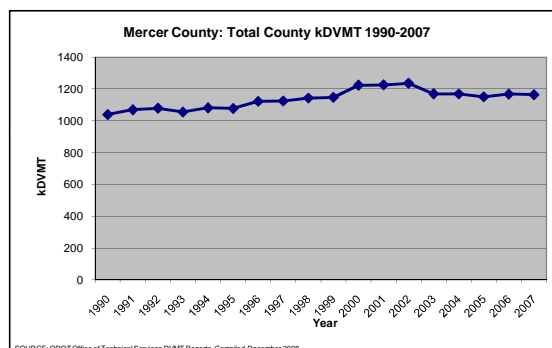
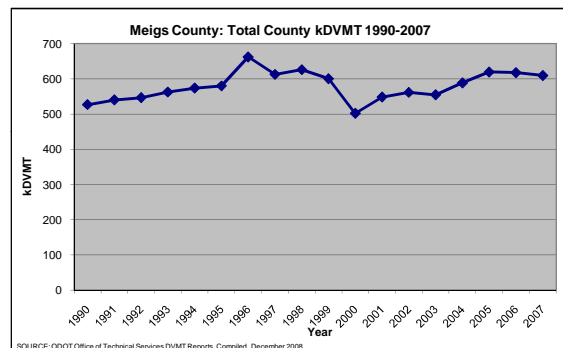
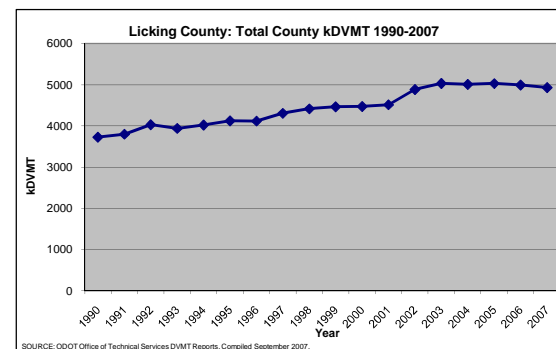
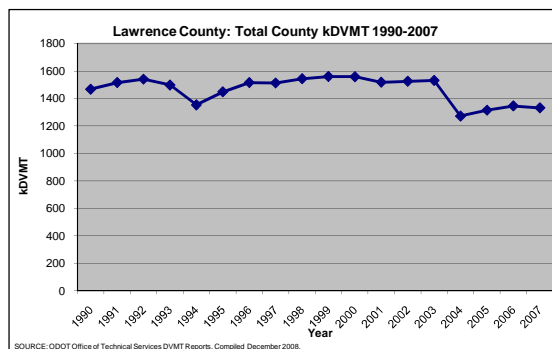
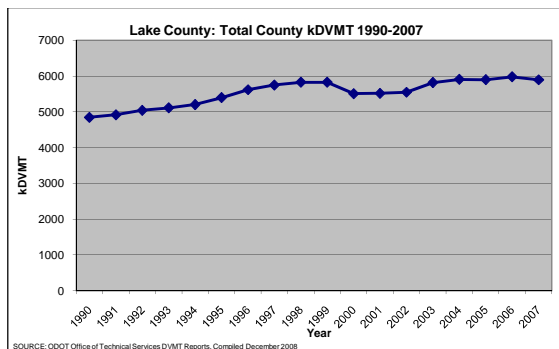
**Washington County: Total County kDVT 1990-2007**



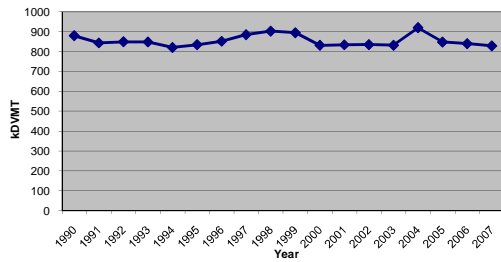
SOURCE: ODOT Office of Technical Services DVT Reports, Compiled December 2008.





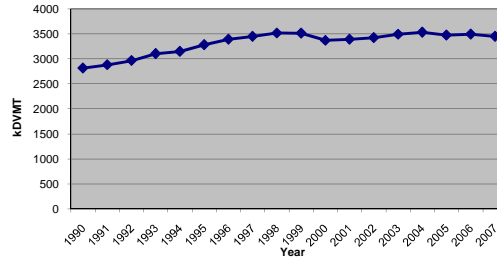


**Putnam County: Total County kDVT 1990-2007**



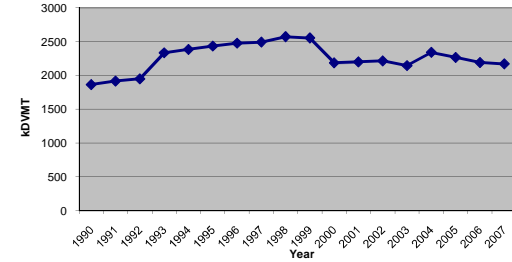
SOURCE: ODOT Office of Technical Services DVT Reports, Compiled December 2008.

**Richland County: Total County kDVT 1990-2007**



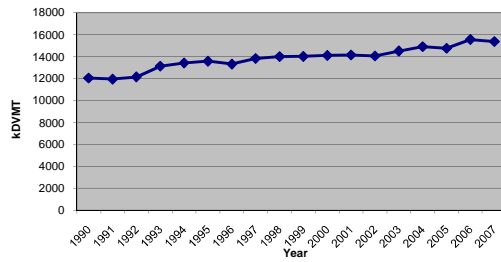
SOURCE: ODOT Office of Technical Services DVT Reports, Compiled December 2008.

**Ross County: Total County kDVT 1990-2007**



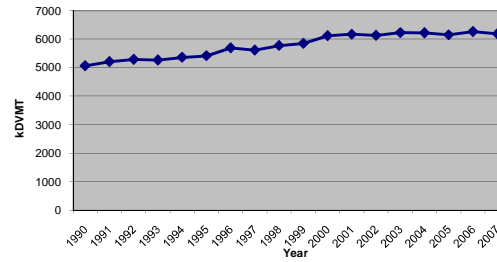
SOURCE: ODOT Office of Technical Services DVT Reports, Compiled December 2008.

**Summit County: Total County kDVT 1990-2007**



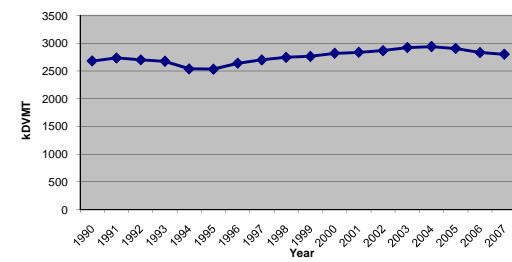
SOURCE: ODOT Office of Technical Services DVT Reports, Compiled December 2008.

**Trumbull County: Total County kDVT 1990-2007**



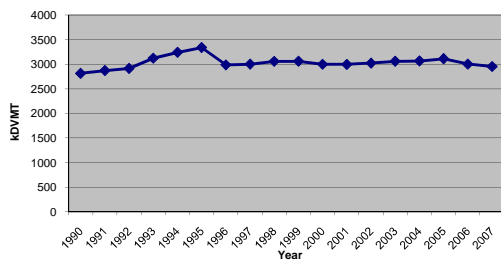
SOURCE: ODOT Office of Technical Services DVT Reports, Compiled December 2008.

**Tuscarawas County: Total County kDVT 1990-2007**



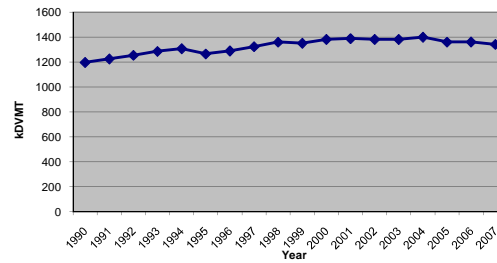
SOURCE: ODOT Office of Technical Services DVT Reports, Compiled December 2008.

**Wayne County: Total County kDVT 1990-2007**



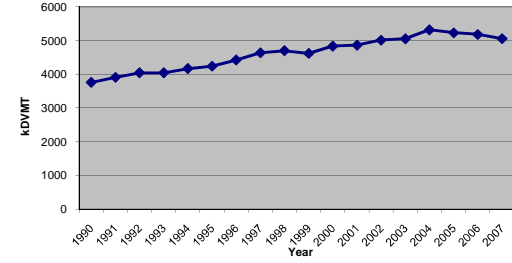
SOURCE: ODOT Office of Technical Services DVT Reports, Compiled December 2008.

**Williams County: Total County kDVT 1990-2007**

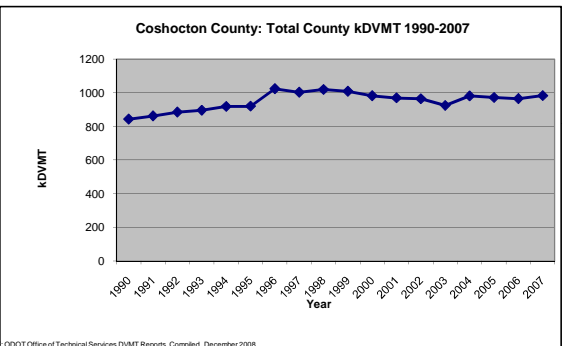
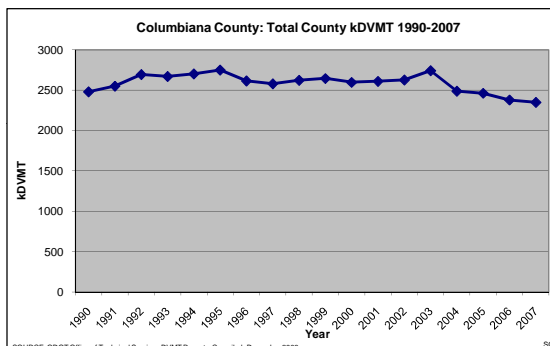
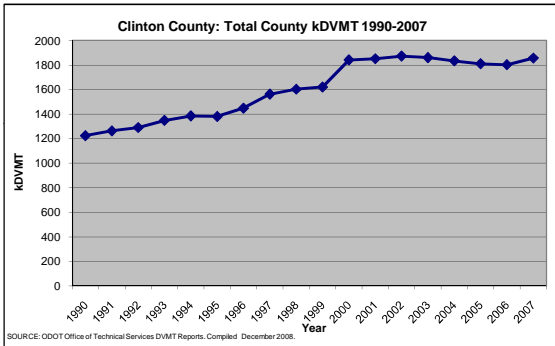
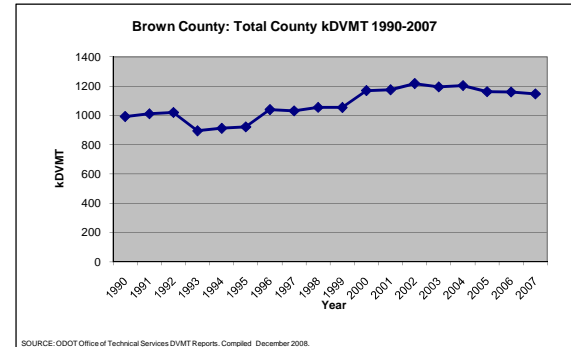
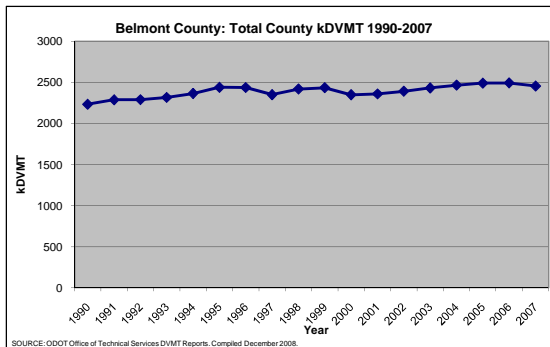
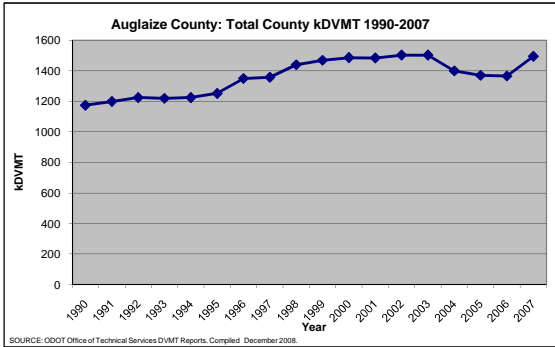


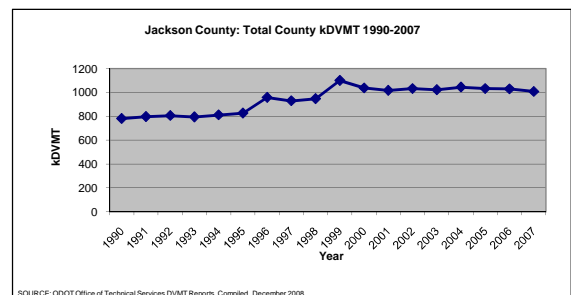
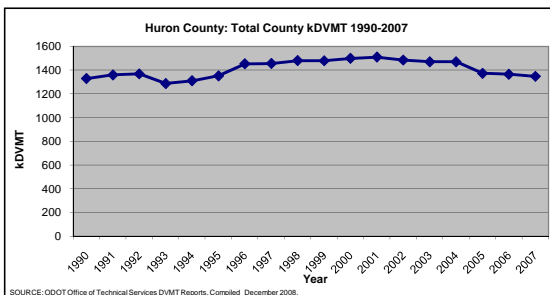
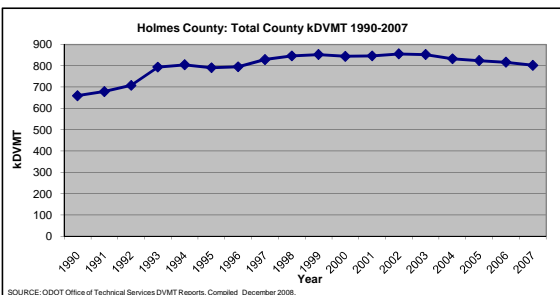
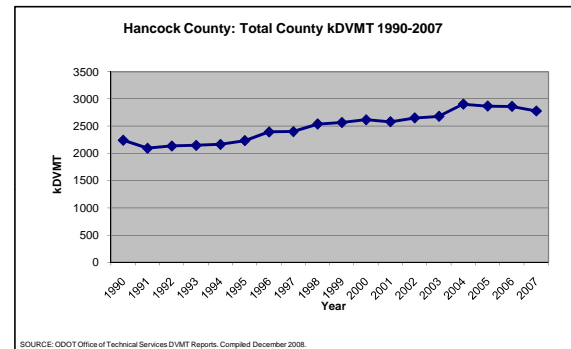
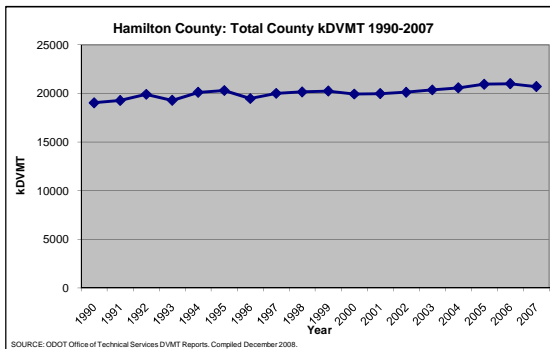
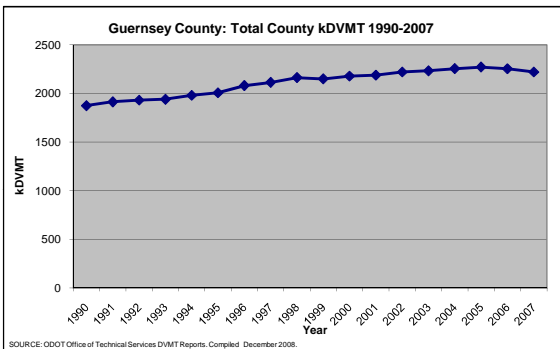
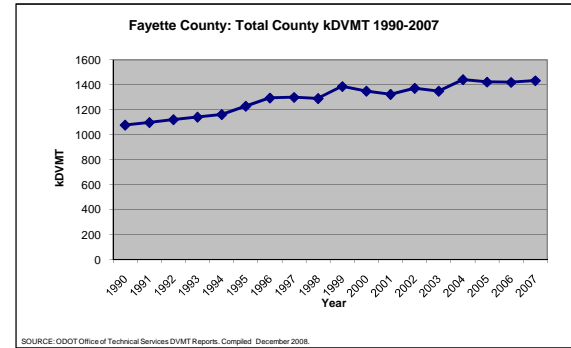
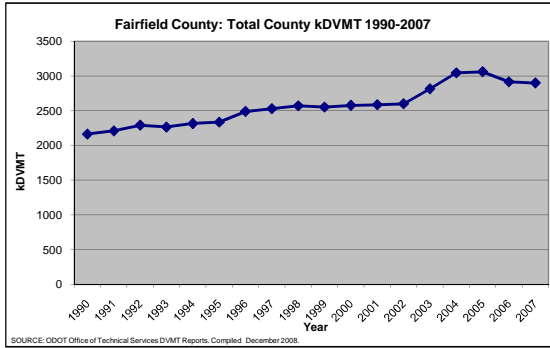
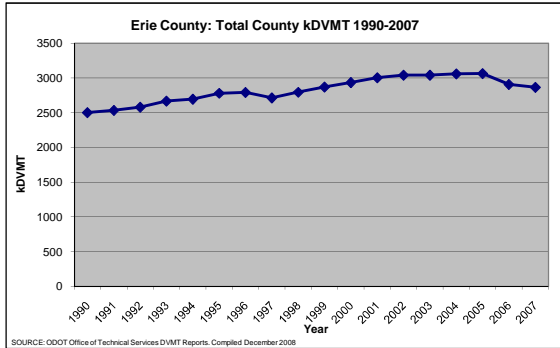
SOURCE: ODOT Office of Technical Services DVT Reports, Compiled December 2008.

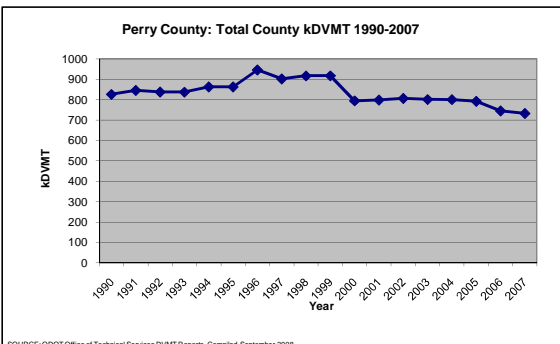
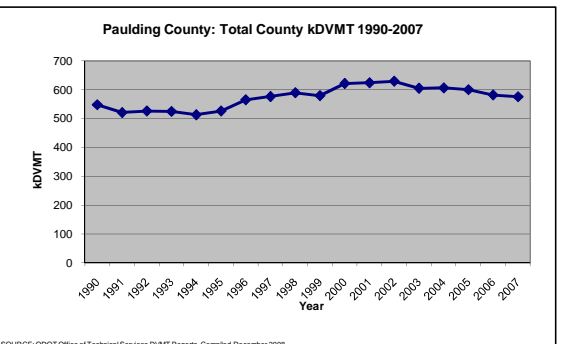
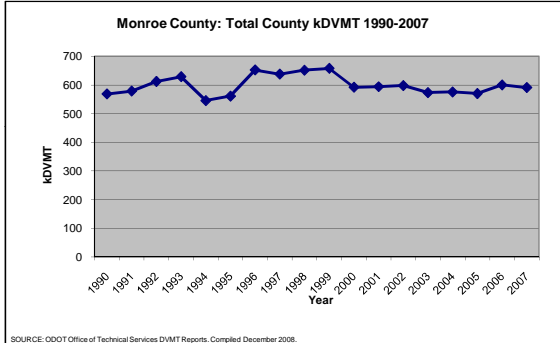
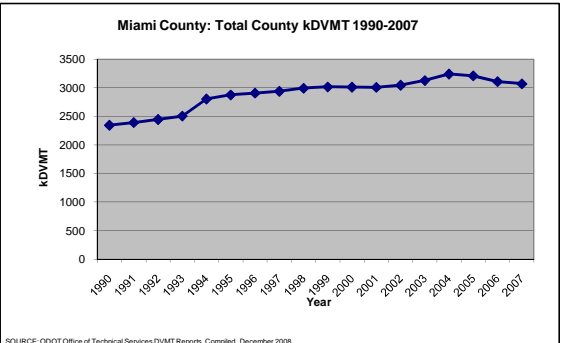
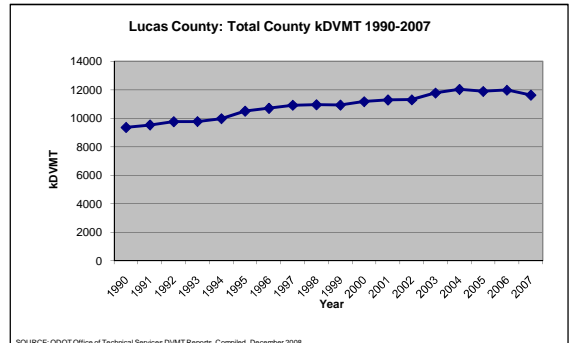
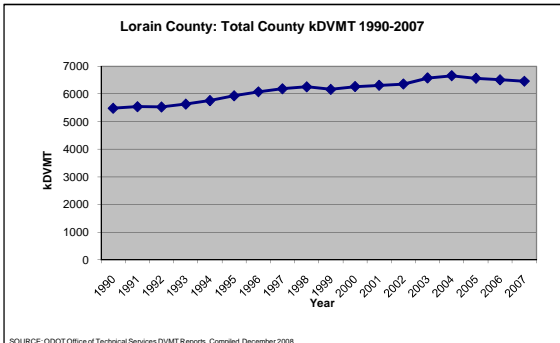
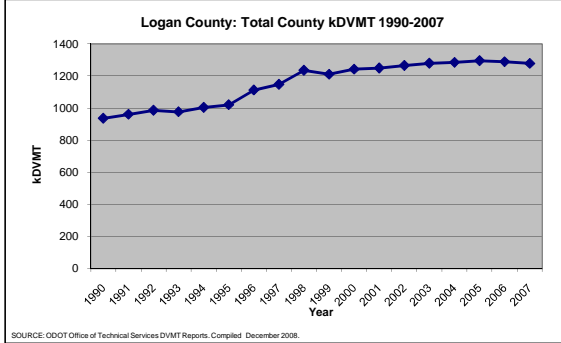
**Wood County: Total County kDVT 1990-2007**



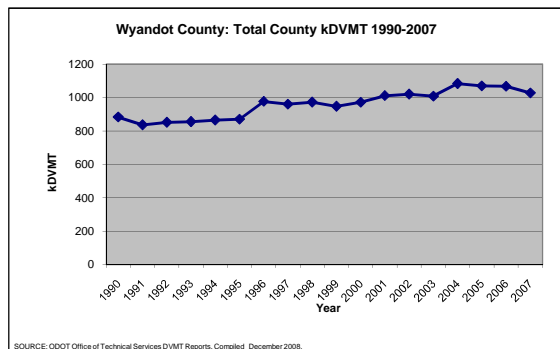
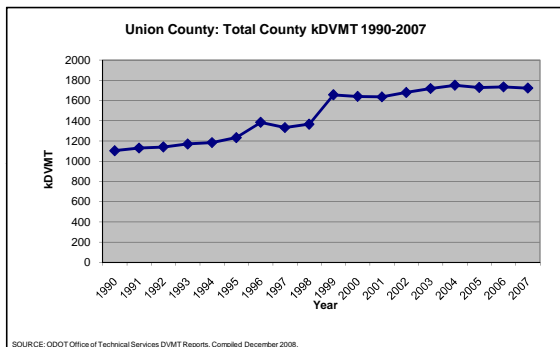
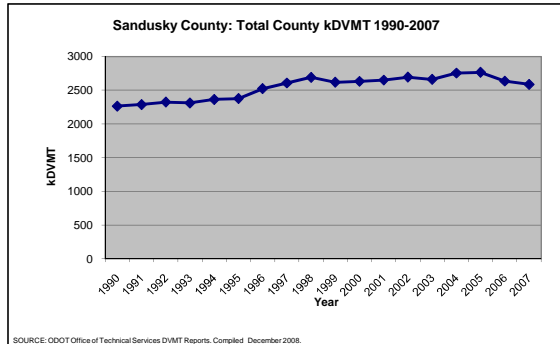
SOURCE: ODOT Office of Technical Services DVT Reports, Compiled December 2008.













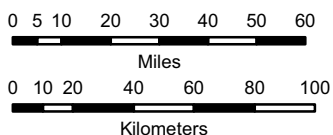


# Fortune 1000 Companies Headquartered in Ohio (2007 Edition)

## Key

-  Fortune 1000 Headquarters
-  City
-  Interstate Highway
-  Other Highway

Source: *The Fortune 1000, Ranked by Revenue*, [www.fortune.com](http://www.fortune.com), April 2007

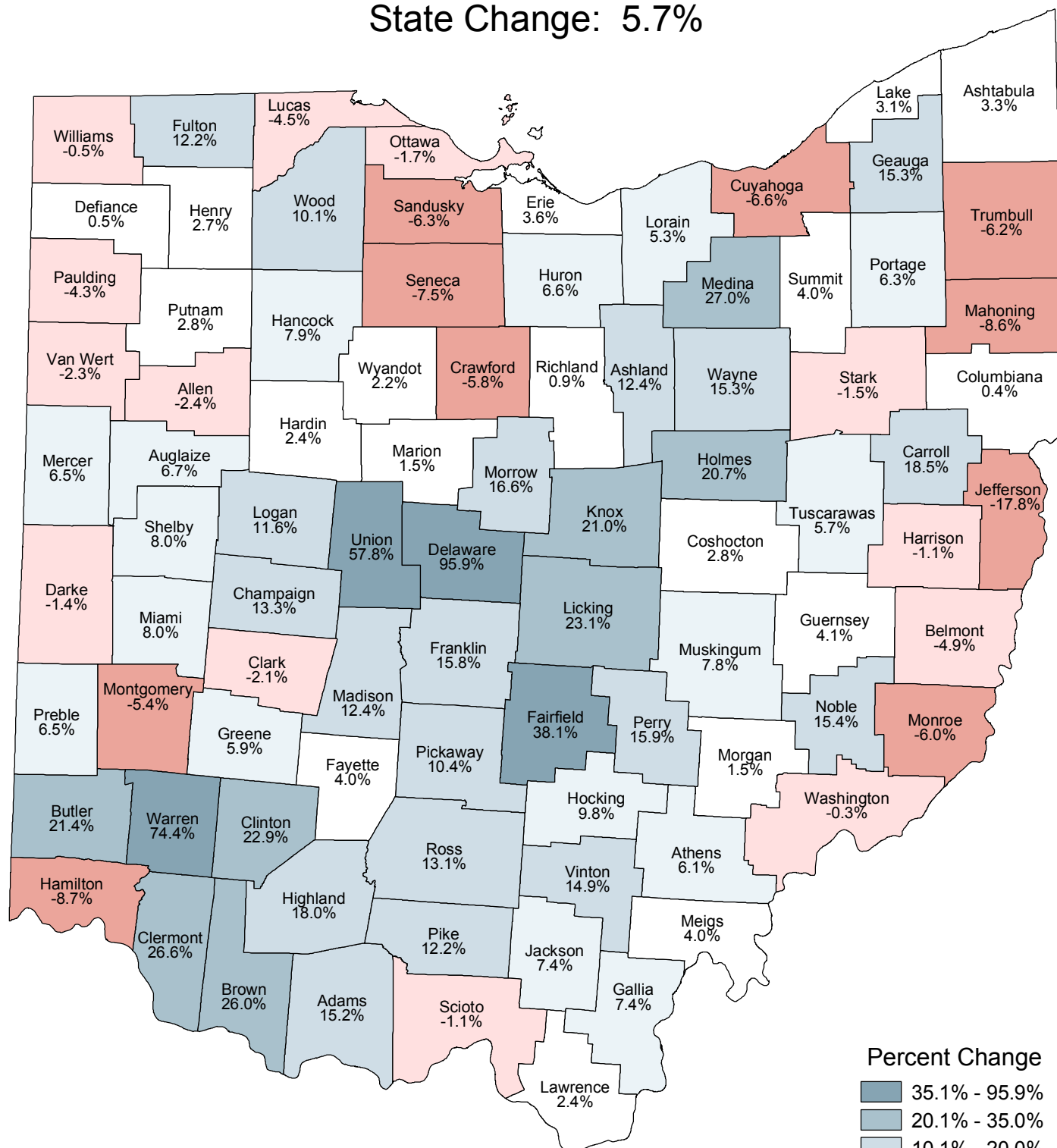


Ohio Department of Development  
Economic Development Division  
77 South High Street  
Columbus, Ohio 43215  
1-877-466-4551  
[www.odod.state.oh.us](http://www.odod.state.oh.us)



# Projected Percent Population Change 2000 to 2020

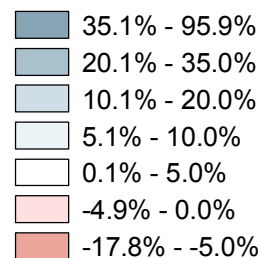
State Change: 5.7%



Source: Ohio Department of Development,  
Office of Strategic Research

Prepared by: Ohio Department of Development,  
Office of Strategic Research (June 2007)

## Percent Change



Ohio Department of Development  
Office of Strategic Research

<http://www.odod.state.oh.us/research/files/s0.htm>

**Public Notice**  
**Ohio Environmental Protection Agency**  
**Designation of Nont attainment Area Boundaries for Ozone (O<sub>3</sub>)**

The Ohio Environmental Protection Agency (Ohio EPA) is soliciting comments regarding the extent of Ohio's nonattainment areas for the revised ozone National Ambient Air Quality Standard (NAAQS) which lowered the 8-hour standard from 0.08 parts per million (ppm) to 0.075 ppm. The United States Environmental Protection Agency (U.S. EPA) adopted this revised ozone standard effective on March 12, 2008. The comments received will be used to formulate the State's formal recommendation proposal to U.S. EPA. Ohio EPA's preliminary recommendations are as follows:

- Recommend that the following current ozone nonattainment areas be designated nonattainment for the revised ozone standard: Ashtabula, Butler, Clermont, Clinton, Cuyahoga, Delaware, Fairfield, Franklin, Geauga, Hamilton, , Knox, Lake, Licking, Lorain, Madison, Medina, Portage, Summit, and, Warren;
- Recommend that the following current attainment ozone area be designated nonattainment for the revised ozone standard: Belmont, Clark, Greene, Jefferson, Mahoning, Miami, Montgomery, Lawrence, Stark, Trumbull, and Washington.

These actions must be noticed to allow public comment and to satisfy U.S. EPA requirements for public involvement in state implementation plan related activities. Comments should be submitted on or before February 16, 2009 at the following address:

E-mail: [sarah.vanderwielen@epa.state.oh.us](mailto:sarah.vanderwielen@epa.state.oh.us)

Mailing address: Sarah VanderWielen  
Ohio Environmental Protection Agency, DAPC  
Lazarus Government Center  
P.O. Box 1049  
Columbus, Ohio 43216-1049  
Phone: (614) 728-1743

Pursuant to Section 119.03 of the Ohio Revised Code, a public hearing on these recommendations will be conducted on: February 12, 2009 at 3:00 PM, Conference Room B, at Ohio EPA, 50 West Town Street, Suite 700, Columbus, Ohio. All interested persons are entitled to attend or be represented at the hearing and give written or oral comments on these recommendations. All oral comments presented at the hearing, and all written statements submitted at the hearing or to the above address by the close of business on February 16, 2009, will be considered by Ohio EPA prior to final action on these recommendations. Written statements submitted after February 16, 2009, may be considered as time and circumstances permit, but will not be part of the official record of the hearing.

The ozone designation recommendation documentation is available on Ohio EPA DAPC's web page for electronic downloading by clicking on "State Implementation Plans" under the "topics" drop-down box. The URL is:

<http://www.epa.state.oh.us/dapc/SIP/Nonattain/nonattain.html>

Questions regarding accessing the web site should be directed to Arunee Niamlarb at (614) 728-1342; other questions or comments about this document should be directed to either Sarah VanderWielen, (614) 644-3632, [sarah.vanderwielen@epa.state.oh.us](mailto:sarah.vanderwielen@epa.state.oh.us) or Jennifer Hunter at (614) 644-3696, [Jennifer.hunter@epa.state.oh.us](mailto:Jennifer.hunter@epa.state.oh.us) or mailed to Sarah VanderWielen or Jennifer Hunter at the above address.

BEFORE THE OHIO ENVIRONMENTAL PROTECTION AGENCY

IN RE: DAPC  
DESIGNATION OF  
NONATTAINMENT AREA  
BOUNDARIES FOR OZONE  
HEARING

- - -

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MAR 02 2009  
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- - -

Transcript of proceedings taken before Mary McCarron, Hearing Officer, Ohio Environmental Protection Agency, taken before Margaret A. Marsh, a Registered Professional Reporter and Notary Public in and for the State of Ohio, commencing at 3:03 p.m., on the 12th day of February, 2009, at the Ohio Environmental Protection Agency, 50 West Town Street, Sixth Floor, Room B, Columbus, Ohio.

- - -



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Columbus, Ohio  
(614) 228-0018

Thursday Afternoon Session  
February 12, 2009  
3:03 p.m.

- - -

HEARING OFFICER MCCARRON: Hello. My name is Mary McCarron. I'm the Public Involvement Manager for Ohio EPA's Public Interest Center, and I'll be presiding over today's public hearing.

Thank you for taking the time to attend the hearing. The purpose of the hearing today is to obtain written comments from any interested person regarding Ohio EPA's draft recommendation for US EPA to designate 31 counties as nonattainment under the new ozone standard.

US EPA adopted a new, more stringent ozone standard on March 12, 2008. States must submit recommended nonattainment areas to US EPA in March 2009. US EPA will finalize nonattainment designations by March 2010. By 2013 the State will have to develop plans to implement air pollution control strategies to bring these areas into compliance with the standard.

All interested persons are entitled to attend or be represented and to present oral and/or written comments concerning the recommendation. All written and oral comments received as part of the official



1 record will be considered by the Director of Ohio EPA.

2 To be included in the official record,  
3 written comments must be received by Ohio EPA by the  
4 close of business February 16, 2009. These comments  
5 may be filed with me today or e-mailed to Sarah  
6 Vanderwielen at sarahvanderwielen@epa.state.oh.us or  
7 Jennifer Hunter at jenniferhunter@epa.state.oh.us or  
8 mailed to Sarah VanderWielen or Jennifer Hunter at Ohio  
9 EPA, Division of Air Pollution Control, PO Box 1049,  
10 Columbus, Ohio 43216-1049.

11 All written comments submitted for the record  
12 receive the same consideration as any oral testimony  
13 given today. Written statements submitted after today  
14 may be considered as time and circumstances permit but  
15 will not be part of the official record of the hearing.

16 Again, if you wish to present oral testimony,  
17 I ask that you have signed in. I'm going to read folks  
18 in the order that they have signed in. If you don't  
19 want to submit testimony, go ahead and say pass. If  
20 you do want to submit testimony, I'd just ask that you  
21 state and spell your name and proceed with your  
22 comments. And again, I'll be bringing the tape  
23 recorder over to you so if you can pause for a second.

24 Nate. And I always butcher your last name.

1 MR. OROSZ: Nate Orosz.

2 HEARING OFFICER MCCARRON: Orosz.

3 MR. OROSZ: Pass.

4 HEARING OFFICER MCCARRON: Pass. Okay. And  
5 it's N-A-T-E, O-R-O-S-Z. And David Celebrezze. Okay.  
6 Hold on a second.

7 MR. CELEBREZZE: I can come over there.

8 HEARING OFFICER MCCARRON: No. I can bring  
9 it over. Hold on. I like to be as awkward as  
10 possible.

11 MR. CELEBREZZE: At least I don't have to  
12 like sit in the middle.

13 HEARING OFFICER MCCARRON: Right. Go ahead  
14 and state your name and spell it for the court  
15 reporter, and then you can proceed with your testimony.

16 MR. CELEBREZZE: My name is David Celebrezze,  
17 C-E-L-E-B-R-E-Z-Z-E. I'm with the Ohio Environmental  
18 Council, and we appreciate this opportunity to comment  
19 on the Ohio EPA's proposed recommendations for the  
20 eight-hour ozone nonattainment designations.

21 On behalf of over 100 community groups and  
22 thousands of members throughout the great state of  
23 Ohio, the OEC submits these comments to the Ohio EPA  
24 for your consideration.

1           OEC, in general, supports the efforts by the  
2 Ohio EPA in requesting that over one-third of Ohio's  
3 counties be considered in nonattainment for the  
4 eight-hour ozone standard. The OEC understands that  
5 the old standard, .08 ppm, has been revised to  
6 .075 ppm. The Clean Air Scientific Advisory Committee  
7 recommended that the US EPA adopt a standard between  
8 .06 ppm and .07 ppm. Although the US EPA did not take  
9 this recommendation, we encourage the Ohio EPA to aim  
10 for the .07 ppm in order to minimize the health impacts  
11 from ozone.

12           Failure to meet the new standard not only  
13 affects our economic growth, it impacts our health.  
14 Ozone pollution is described as "sun bum" on the lungs.  
15 Ozone pollution has been connected with chest pain,  
16 coughing, throat irritation, congestion, aggravated  
17 asthma, chronic lung disease, and reduced lung  
18 function.

19           Citizens must take precautions on ozone alert  
20 days by limiting their activities outside. Sensitive  
21 populations are especially impacted: The elderly,  
22 children, and those with respiratory ailments. Ozone  
23 pollution generally decreases our quality of life.

24           The Agency identifies several actions that

1 will help get us into attainment. These actions  
2 include: Federal Motor Vehicle Control Program;  
3 on-road and off-road diesel control programs; NOx SIP  
4 Call rules (emissions trading program) for electric  
5 generating units (EGUs) and internal combustion engines  
6 (ICEs); Clean Air Interstate Rule (CAIR); RACT rules  
7 for various VOC source categories; Portable Fuel  
8 Containers requirements; Architectural and Industrial  
9 Maintenance (AIM) Coatings rules; Consumer Products  
10 rules; Aerosol Coatings rules; Ohio Clean Diesel  
11 Initiative; US EPA and State enforcement activities at  
12 major facilities.

13           However, we are concerned that some of these  
14 actions may not be long term. The CAIR rule is only a  
15 temporary solution as the US EPA works to develop  
16 another program because the current rule was struck  
17 down by the US Supreme Court.

18           The Agency also mentions the Ohio Clean  
19 Diesel Initiative. One of the two state programs, the  
20 Diesel Emission Reduction Grant Program, is in serious  
21 jeopardy of not being funded to an adequate level by  
22 the State. The first round saw \$42 million asked for,  
23 and only about \$8 million was awarded. Will the Ohio  
24 EPA fight for funding for this program?

1           This program, if well funded, will make a  
2 difference. According to the US EPA, 51 percent of  
3 Ohio's NOx emission sources are from mobile-, gas-, and  
4 diesel-powered vehicles.

5           Additional steps the Agency should take to  
6 get us to attainment include implementing an opacity  
7 program for long-haul trucks. This can be administered  
8 at truck weigh stations. The fine can be \$1,000,  
9 similar to the Maryland program. If there is a  
10 10-percent failure rate, which is the national average,  
11 this could generate \$19 million to go toward  
12 implementing the program and other emission reduction  
13 programs.

14           Furthermore, the Agency should support a  
15 state-wide no-idling policy. This policy would limit  
16 idling on all vehicles to no more than 5 minutes in a  
17 60-minute time period. If the temperature is below  
18 32 degrees Farenheit, then no more than 10 minutes in a  
19 60-minute time period. There would be exemptions to  
20 this rule. And for those exemptions, please refer to  
21 the US EPA's model no-idling regulations.

22           The Agency has made good strides in  
23 addressing ozone pollution. We encourage the Agency to  
24 continue this pattern so that one day all of Ohio's

1 counties are in attainment.

2 Again, we appreciate this opportunity to  
3 comment on this issue.

4 HEARING OFFICER MCCARRON: Thank you. At  
5 this time we do not have anybody else who would like to  
6 submit testimony so we're going to go off the record to  
7 see if anybody shows up a little bit late. Thanks.  
8 Excellent. Thank you.

9 (Recess taken.)

10 HEARING OFFICER MCCARRON: At this time  
11 nobody else has arrived to testify so we're going to go  
12 ahead and close the hearing. The time is now  
13 3:30 p.m., and this hearing is adjourned.

14 - - -

15 Thereupon, at 3:30 p.m., on  
16 Thursday, February 12, 2009, the hearing was adjourned.

17 - - -

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## C E R T I F I C A T E

- - -

STATE OF OHIO :  
COUNTY OF FRANKLIN : SS:

I, Margaret A. Marsh, Registered Professional Reporter, do hereby certify that the foregoing is a true, correct, and complete transcript of the proceedings in this matter before the Ohio Environmental Protection Agency, as reported by me in stenotype and transcribed from my stenographic notes.

DATED this 27th day of February, 2009.

*Margaret A. Marsh (sm)*  
MARGARET A. MARSH, RPR

FRALEY, COOPER &amp; ASSOCIATES

(800) 852-6163

(614) 228-0018

(740) 345-8556

<p><b>A</b></p> <p>about 6:23</p> <p>According 7:2</p> <p>actions 5:24 6:1 6:14</p> <p>activities 5:20 6:11</p> <p>Additional 7:5</p> <p>addressing 7:23</p> <p>adequate 6:21</p> <p>adjourned 8:13 8:16</p> <p>administered 7:7</p> <p>adopt 5:7</p> <p>adopted 2:14</p> <p>Advisory 5:6</p> <p>Aerosol 6:10</p> <p>affects 5:13</p> <p>after 3:13</p> <p>Afternoon 2:1</p> <p>again 3:16,22 8:2</p> <p>Agency 1:1,10 1:14 5:24 6:18 7:5,14,22,23 9:10</p> <p>aggravated 5:16</p> <p>ahead 3:19 4:13 8:12</p> <p>ailments 5:22</p> <p>aim 5:9 6:9</p> <p>air 2:19 3:9 5:6 6:6</p> <p>alert 5:19</p> <p>Although 5:8</p> <p>always 3:24</p> <p>and/or 2:22</p> <p>another 6:16</p> <p>anybody 8:5,7</p> <p>appreciate 4:18 8:2</p> <p>Architectural 6:8</p> <p>AREA 1:4</p> <p>areas 2:16,20</p> <p>arrived 8:11</p> <p>asked 6:22</p> <p>asthma 5:17</p> <p>attainment 6:1 7:6 8:1</p> <p>attend 2:8,21</p> <p>average 7:10</p> <p>awarded 6:23</p> <p>awkward 4:9</p> <p><b>B</b></p> <p>B 1:15</p> <p>before 1:1,8,10 9:9</p> <p>behalf 4:21</p> <p>being 6:21</p> <p>below 7:17</p> <p>between 5:7</p> <p>bit 8:7</p>	<p><b>BOUNDARIES</b></p> <p>1:4</p> <p>Box 3:9</p> <p>bring 2:20 4:8</p> <p>bringing 3:22</p> <p>bum 5:14</p> <p>business 3:4</p> <p>butcher 3:24</p> <p><b>C</b></p> <p>C 9:1,1</p> <p>CAIR 6:6,14</p> <p>Call 6:4</p> <p>categories 6:7</p> <p>Celebrezze 4:5,7 4:11,16,16</p> <p>Center 2:6</p> <p>certify 9:7</p> <p>chest 5:15</p> <p>children 5:22</p> <p>chronic 5:17</p> <p>circumstances 3:14</p> <p>Citizens 5:19</p> <p>Clean 5:6 6:6,10 6:18</p> <p>close 3:4 8:12</p> <p>Coatings 6:9,10</p> <p>Columbus 1:15 3:10</p> <p>combustion 6:5</p> <p>come 4:7</p> <p>commencing 1:12</p> <p>comment 4:18 8:3</p> <p>comments 2:10 2:23,24 3:3,4 3:11,22 4:23</p> <p>Committee 5:6</p> <p>community 4:21</p> <p>complete 9:8</p> <p>compliance 2:20</p> <p>concerned 6:13</p> <p>concerning 2:23</p> <p>congestion 5:16</p> <p>connected 5:15</p> <p>consideration 3:12 4:24</p> <p>considered 3:1 3:14 5:3</p> <p>Consumer 6:9</p> 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## **Division of Air Pollution Control**

### **Ohio's Eight-Hour 2008 Ozone Standard Draft Area Designation Recommendation**

#### **Agency Contact for this Package**

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Ohio EPA held a public hearing in Columbus, OH on February 12, 2009, regarding the 2008 8-hour ozone national ambient air quality standard designation recommendations for the State of Ohio. This document summarizes the comments and questions received at the public hearing and during the associated comment period, which ended on February 16, 2009.

Ohio EPA reviewed and considered all comments received during the public comment period. By law, Ohio EPA has authority to consider specific issues related to protection of the environment and public health.

In an effort to help you review this document, the questions are grouped by topic and organized in a consistent format. The name of the commenter follows the comment

#### **General/Overall Concerns**

**Comment 1:** Today, I read that Ashtabula County is above air limits. This is rural county with no real industry. If not for I-90 we would be below the limits. There are a lot of trucks on this highway as well as cars and it seems to me were being punished for this. Perhaps the EPA should check the cars and trucks using I-90 instead of the people who live here. (C Collins)

I've lived in the Akron Canton area since 1959 and our air is just fine. I can remember when as you crossed the old Viaduct Bridge into Akron you hit the wall of stink and knew you were in Akron. Now you could drive blindfolded from Boston Heights to Canton and unless someone told you you'd never know you passed through Akron. I do not think it is fair to any section of the developed northeast quadrant to have to meet a clean air standard set by an almost uninhabited region like the state of Washington. Here in Summit County we have as many people as in North and South Dakota combined, and we have 87 counties left. We do not need tougher clean air standards what we really need is tougher vehicle mileage standards.

**Your policies and the financial health of this country and its people are seriously in conflict. One last thought, if your agency had actually been doing its job the whole S.U.V craze would never have seen the light of day. What we need is a moratorium on freeway construction. And a return to building only two lane 50mph highways with intersections and traffic controls. Thank you. (Ray Crim)**

Response 1: U.S. EPA promulgated the revised 8-hour ozone standard in March of 2008. Ohio EPA is required to prepare recommendations based on nine factors, including current air quality data from monitors all over the state. The nine factors are discussed in the SIP document for which comments were taken. Mobile source emissions are one of the nine factors considered by the Ohio EPA when recommending a county be designated nonattainment. The Ohio Division of Transportation (ODOT) provides Ohio EPA with future year predicted vehicle emissions. By March 2010 U.S. EPA will make a final determination on which counties will be nonattainment for this new standard. Over the next several years, Ohio EPA will be required to implement programs to bring these nonattainment areas into compliance with the new standard. During that process, Ohio EPA will prepare plans for public notice and public comment. These plans and programs for achieving attainment will take into consideration mobile sources. We urge the commenters to continue to participate by submitting comments on Ohio's future plans for achieving attainment.

**Comment 2: The commenter is concerned about the air quality in Summit County, Ohio. Specifically, open burning by others in her community which she reports to the local air quality control in Akron. (Beverly Richards)**

Response 2: Thank you for your comment concerning the air quality in your region. The Ohio EPA strives to constantly improve air quality for all Ohio citizens. Ohio EPA encourages the commenter to continue to contact Akron Local Air Agency about concerns regarding open burning as you witness them occurring.

**Comment 3: The commenter supports the Ohio EPA ozone designation recommendations and would like Ohio EPA to achieve ozone levels of .07ppm or below. The commenter would also like Ohio EPA to implement opacity and anti-idling programs throughout the state, and encouraged Ohio EPA to continue the Diesel Emission Reduction Grant Program. (David Celebrezze representing the Ohio Environmental Council)**

Response 3: Thank you for your support of the Ohio EPA recommended ozone designations. In the near future, Ohio EPA will begin development of plans to bring the nonattainment areas into attainment with the revised standard of 0.075 ppb. Quite often these plans result in achieving even lower monitored values, indicating even greater improvements in air quality than expected. As Ohio EPA begins the process of exploring methods to achieve this revised standard, and other standards, it will likely be necessary to implement additional controls within Ohio. We urge the commenter to continue to participate by submitting comments on Ohio's future plans for achieving attainment.

**Comment 4: The commenter supports the Ohio EPA recommendation to designate Clark, Greene, and Montgomery Counties as non-attainment and Miami County as attainment. (John Paul representing the Regional Air Pollution Control Agency in Dayton, Ohio)**

Response 4: Thank you for your support of the Ohio EPA recommended ozone designations for the Dayton area.