



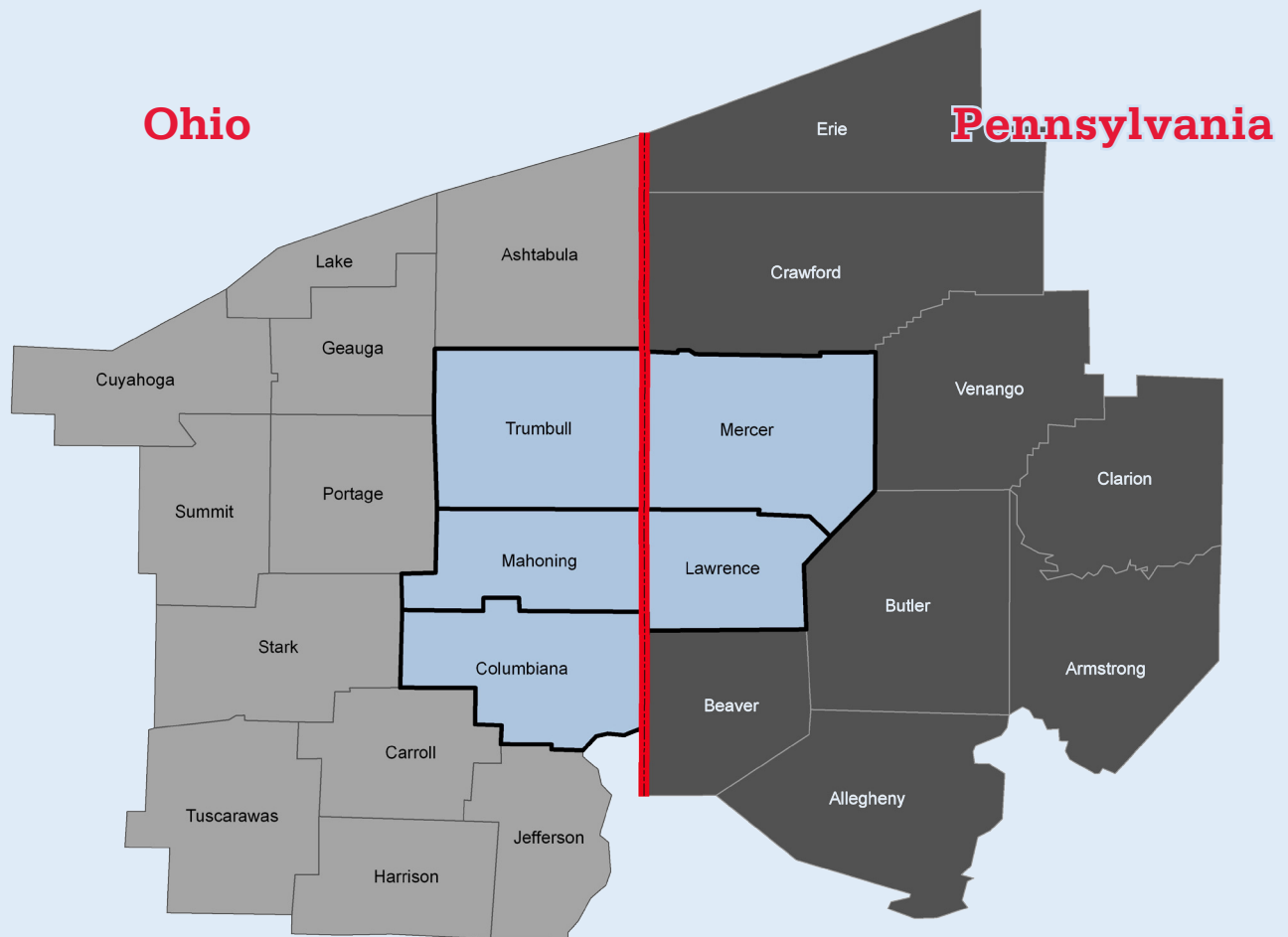
Department of  
Job and Family Services

TO STRENGTHEN OHIO'S FAMILIES WITH SOLUTIONS TO TEMPORARY CHALLENGES

# 2009

# Workforce Analysis

Ohio & Pennsylvania's  
Five-County Interstate Region



# Workforce Analysis

## Ohio/Pennsylvania Five-County Interstate WIA

### *Table of Contents*

Preface .....	2
Highlights.....	3
I. Understanding the Local Labor Market.....	4
II. Key Trends.....	6
Population.....	6
Employment .....	7
Unemployment.....	8
Per Capita Income .....	9
III. Industry Analysis.....	10
Employment by Sector .....	10
Industry Employment Prospects.....	12
Average Weekly Earnings.....	13
Occupational Employment Projections .....	14
IV. Educational Infrastructure.....	16
V. Conclusion.....	17
Technical Notes.....	18
References .....	19
Appendix A: Map of Five-County Interstate Region.....	20
Appendix B: Detailed County-to-County Commuting Patterns .....	21
Appendix C: Postsecondary Institutions .....	23
Appendix D: Degree Completions by Program Class .....	24

## **Preface**

In continuing cooperation with the Pennsylvania Department of Labor & Industry's Center for Workforce Information and Analysis, the Ohio Department of Job and Family Services, Bureau of Labor Market Information proudly presents this updated Workforce Analysis for the Ohio/Pennsylvania Five-County Interstate Region. This Workforce Investment Area (WIA) recognizes that workforce development issues rarely confine themselves to existing political boundaries. Cooperation and coordination between multiple counties and states is often necessary to adequately address the needs of the local labor market.

The Ohio/Pennsylvania Five-County Interstate Region covers five counties: Columbiana, Mahoning, and Trumbull Counties in Ohio and Lawrence and Mercer Counties in Pennsylvania. This workforce analysis report provides a summary snapshot of this area's economy and examines some of the key economic and demographic trends over the past decade. The first section begins with a brief review of the area's basic demographic and economic characteristics. The second section shows longitudinal trends in important statistics in the region, including population, employment, unemployment rates, and income. A detailed examination of the area's employment profile follows in the third section. The fourth and final section looks briefly at the area's educational characteristics.

A careful review of this information can yield important insights about the local economy. One may assess the health of the local economy by examining key economic trends and comparing them to a broader geographic region. Or an examination of industry composition will yield insights into the strengths and weaknesses that local economic development policy might address. Please refer to the technical notes and references sections at the end of this publication for reference and documentation of the wide variety of statistical data presented.

Keith Ewald, Ph.D.  
Bureau of Labor Market Information  
Office of Workforce Development  
Ohio Department of Job and Family Services

## Highlights

- This Workforce Investment Area includes Columbiana, Mahoning, and Trumbull Counties in Ohio and Lawrence and Mercer Counties in Pennsylvania.
- The Five-County region also contains the entire Youngstown-Warren-Boardman Metropolitan Statistical Area.
- This is a net out-commuter region, with a net flow of 18,309 workers leaving the area to work. About 11.9 percent of employed residents must commute out.
- Demographically, the Five-County region has an older age distribution than the rest of the country.
- While population in Ohio and Pennsylvania rose 2.9 and 3.1 percent between 1995 and 2007, respectively, the labor market area's population fell 6.5 percent.
- Total payroll employment has dropped 8.6 percent since 2000, compared with a 3.8 percent drop in Ohio and a 1.7 percent increase in Pennsylvania. County unemployment rates in 2008 ranged from 6.3 to 7.5 percent.
- Nominal per capita income in the Five-County region had a combined 3.2 percent annual compound rate of growth from 1995 to 2007, compared with a 2.4 percent increase in the consumer price index.
- The three largest employment supersectors in the region in 2007 were trade, transportation, and utilities; education and health services; and manufacturing. Manufacturing, though having shed nearly 22,000 jobs since 2000, is an important export industry.
- Health care and social assistance; administrative and waste services; educational services; mining; and real estate and rental and leasing all added jobs between 2000 and 2007.
- Utilities; management of companies and enterprises; and federal government had the region's highest average weekly earnings.
- Total employment is projected to grow 1.2 percent from 2006 to 2016 in the Youngstown area. Occupations in community and social services are expected to have the most growth.
- The Five-County region has lower postsecondary educational attainment levels than the rest of the country, but higher high school completion rates.

## I. Understanding the Local Labor Market

Labor economists define a *labor market* as a geographic area in which both the demand and supply for labor are met primarily within that region.<sup>1</sup> In other words, it is an area where there are jobs and the majority of workers needed for those jobs. An important first step in identifying local labor markets is to examine the commuting patterns of individuals who live or work in the area. These patterns are one of the primary factors used to define metropolitan and micropolitan areas.

Local commuting patterns are shown in figure 1 below. Please note that the totals at the bottom of the table do not include commuting within the workforce area. The high percentages of commuting in and out of the counties indicate a large degree of churn within the region but comparatively little entering and exiting the area. In net, about 18,300 workers commute out of the WIA to work.

**Figure 1: Regional Commuting Patterns**

County	In-Commuters			Out-Commuters			Net Comparisons	
	Working in the County	In-Commuters	Percent of In-Commuters	Employed Living in the County	Out-Commuters	Percent of Out-Commuters	Net Flow of Commuters	Percent of Total Commuters
Columbiana, OH	37,705	7,790	20.7%	49,461	19,546	39.5%	-11,756	-43.0%
Mahoning, OH	102,992	26,310	25.5%	109,102	32,420	29.7%	-6,110	-10.4%
Trumbull, OH	100,101	29,040	29.0%	97,485	26,424	27.1%	2,616	4.7%
Lawrence, PA	35,728	8,192	22.9%	40,285	12,749	31.6%	-4,557	-21.8%
Mercer, PA	50,986	10,667	20.9%	51,120	10,801	21.1%	-134	-0.6%
<b>WIA Region</b>	<b>327,512</b>	<b>23,091</b>	<b>7.1%</b>	<b>347,453</b>	<b>41,400</b>	<b>11.9%</b>	<b>-18,309</b>	<b>-28.4%</b>

Source: U.S. Census Bureau, *County-to-County Worker Flow Files*.

Detailed commuting tables are shown for each of the area's five counties in appendix B at the end of this report. While a majority of daily commuting stays within state lines, a significant proportion—roughly five percent—cross between Ohio and Pennsylvania to work. Individual counties have commuting patterns that do not appear heavily linked with the Youngstown metropolitan statistical area (MSA). One would normally expect Mahoning County to have the largest number and percentage of in-commuters, containing the MSA's central city. Instead, Trumbull County appears to have the greatest degree of in-commuting and is the only county in the area with a positive net flow of commuters. (Youngstown does, however, sit right on the border between the two counties.)

Figure 2 on the next page summarizes age demographics in the area and compares them with national age demographics. In general, this region is much older than the rest of the country, with a higher proportion of the population 45 or older (45.3%). The age group that comprises the prime-age working population—25 to 64 years—is slightly smaller in this region than nationally: 52.5 percent locally versus 53.0 percent nationally.

<sup>1</sup> Goldstein, 10.

**Figure 2: Age Demographics, 2007**

	Columbiana	Mahoning	Trumbull	Lawrence	Mercer	WIA	Percent	U.S. Percent
<b>Total</b>	<b>108,698</b>	<b>240,420</b>	<b>213,475</b>	<b>90,991</b>	<b>116,809</b>	<b>770,393</b>	<b>100.0%</b>	<b>100.0%</b>
0 to 14	19,156	42,486	38,118	15,569	20,054	135,383	17.6%	20.2%
15 to 24	13,061	32,240	26,271	11,853	16,507	99,932	13.0%	14.2%
25 to 34	14,276	26,453	24,567	10,146	12,649	88,091	11.4%	13.2%
35 to 44	14,646	29,364	27,662	11,168	14,918	97,758	12.7%	14.4%
45 to 54	17,544	38,638	33,198	14,377	17,887	121,644	15.8%	14.6%
55 to 64	13,272	30,188	28,190	11,182	14,051	96,883	12.6%	10.8%
65 plus	16,743	41,051	35,469	16,696	20,743	130,702	17.0%	12.5%

Source: U.S. Census Bureau, *Annual County Resident Population Estimates*.

Finally, figure 3 below reviews area employment by supersector in the workforce area, including changes from 2000 to 2007. In the past, manufacturing was the region's largest employer; it has dropped to third place behind trade, transportation, and utilities and education and health services, following strong employment losses during the period of analysis (-31.4%). Education and health services was the only supersector to experience significant employment growth during this period (13.5%).

**Figure 3: Regional Employment by Supersector**

Supersector	2000 Empl.	2007 Empl.	Net Change	Percent Change
<b>Total, All Industries</b>	<b>323,758</b>	<b>295,879</b>	<b>-27,879</b>	<b>-8.6%</b>
Natural Resources and Mining	1,526	1,373	-153	-10.0%
Construction	14,009	12,471	-1,538	-11.0%
Manufacturing	68,750	47,168	-21,582	-31.4%
Trade, Transportation, and Utilities	68,020	62,879	-5,141	-7.6%
Information	4,413	4,005	-408	-9.2%
Financial Activities	12,231	11,786	-445	-3.6%
Professional and Business Services	25,184	25,358	174	0.7%
Education and Health Services	46,935	53,284	6,349	13.5%
Leisure and Hospitality	29,749	28,251	-1,498	-5.0%
Other Services	10,843	9,554	-1,289	-11.9%
Government	41,938	39,704	-2,234	-5.3%

Note: Columns may not total due to rounding and unclassified establishments

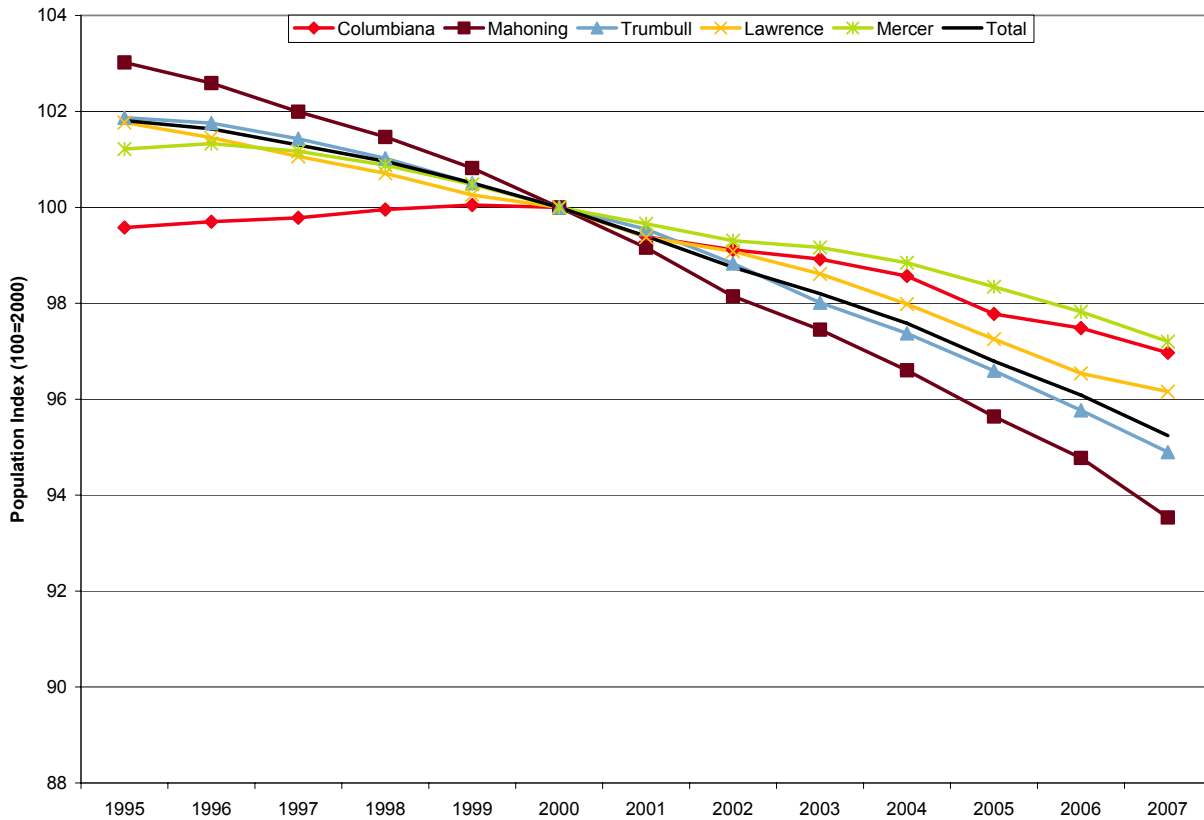
Source: U.S. Bureau of Labor Statistics [BLS], *Quarterly Census of Employment and Wages*.

## II. Key Trends

### Population

Both Ohio and Pennsylvania had general population increases between 1995 and 2007 — 2.9 percent and 3.1 percent, respectively. However, every county in the five-county region lost residents during this period, as figure 4 below shows. Total population fell from 823,520 in 1995 to 770,393 in 2007 (-6.5%). Mahoning County had the area's greatest population loss: 9.2 percent.

**Figure 4: Population Trends, 1995 to 2007**

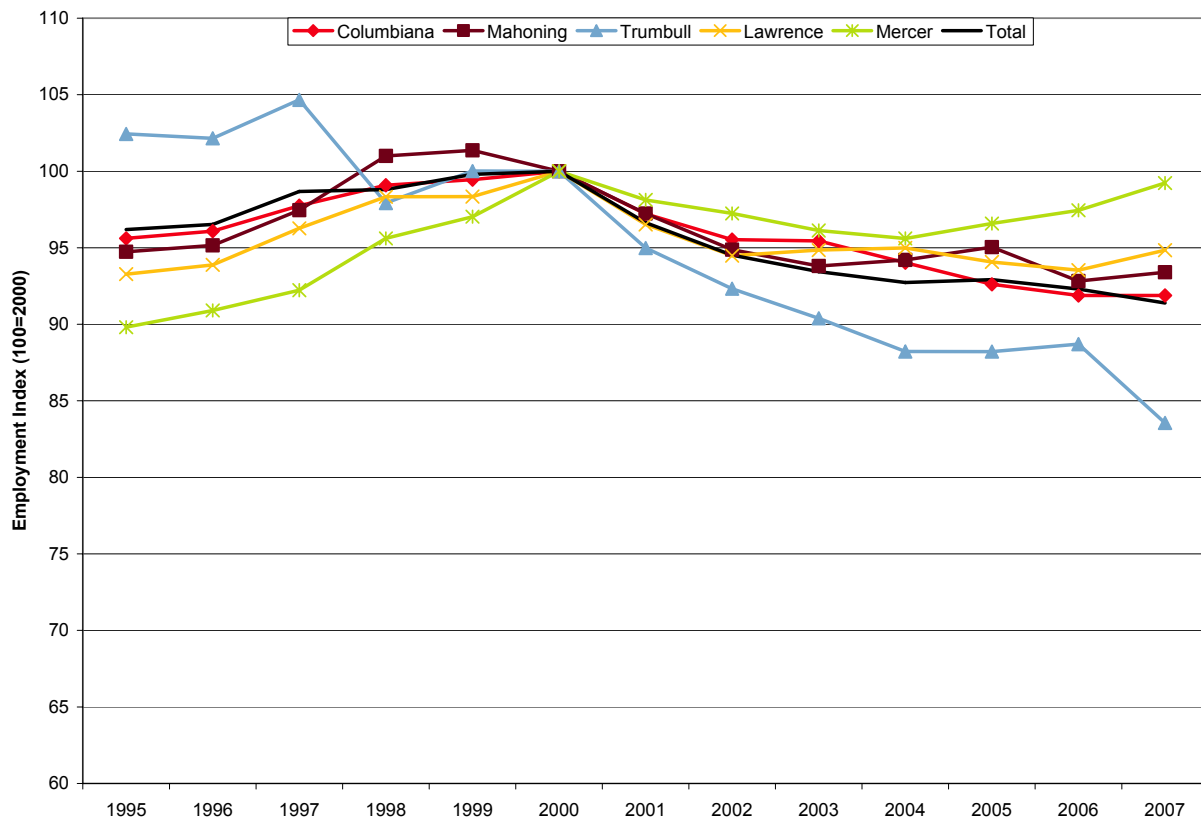


Source: U.S. Census Bureau, *Annual County Resident Population Estimates*.

## Employment

Both Ohio and Pennsylvania sustained heavy job losses following the 2001 recession. Total payroll employment over the last 12 years is shown in figure 5 below. In the five-county region, payroll employment has dropped 8.6 percent since the peak in 2000, compared with a 3.8 percent decline in Ohio. Pennsylvania's employment levels recovered during that time period for an increase of 1.7 percent. (Effects from the current recession will not be captured until the 2008 data.) Trumbull County sustained the worst employment losses—15,595 workers since 2000 (-16.4%). The two Pennsylvania counties has the smallest losses since 2000—5.2 percent and 0.8 percent, respectively.

**Figure 5: Payroll Employment Trends, 1995-2007**



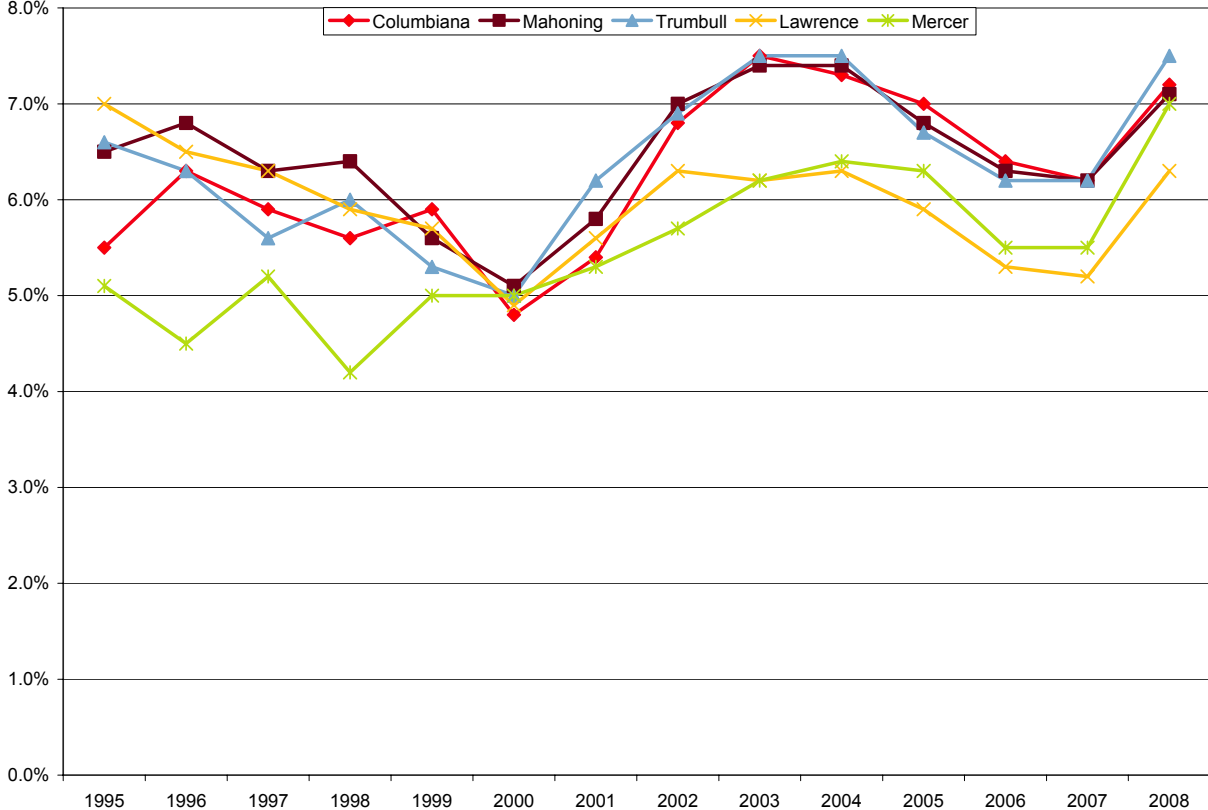
Source: BLS, *Quarterly Census of Employment and Wages*.



**Unemployment**

Local unemployment rates for the Five-County region are shown in figure 6 below. (An area-wide unemployment rate is not available.) Following the 2001 recession, the two Pennsylvania counties had a less dramatic increase in unemployment than the three Ohio counties. Unemployment rates in the region for 2008 range from 6.3 percent in Lawrence County to 7.5 percent in Trumbull County. In the last year, unemployment rates across the area jumped significantly as the current recession began to have an effect on the workforce. Mercer County had the greatest jump—1.5 percentage points—while Mahoning County had the smallest jump—less than one point.

**Figure 6: Unemployment Rate Trends, 1995-2007**

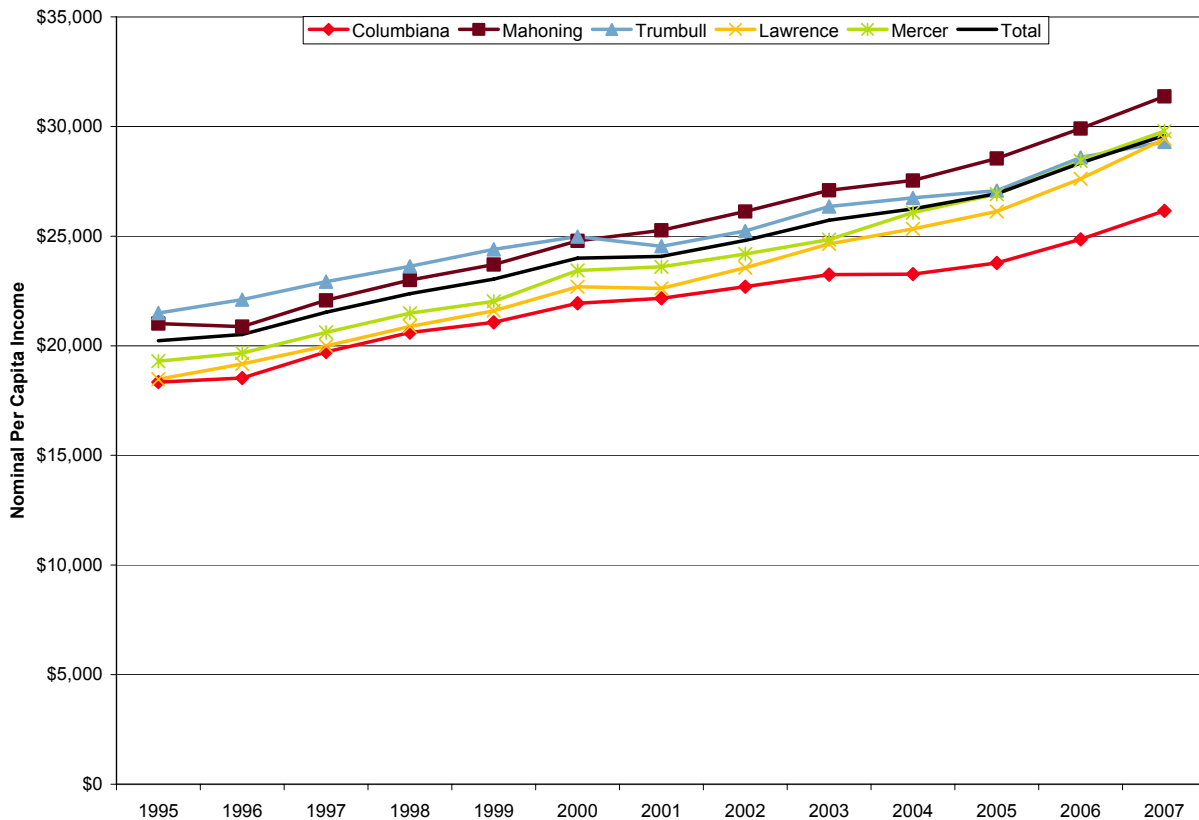


Source: BLS, Local Area Unemployment Statistics.

## Per Capita Income

Growth in per capita income is shown in figure 7 below. Throughout the period of analysis, Mahoning and Trumbull Counties had the highest per capita income levels of the area, though Lawrence and Mercer Counties have overtaken Trumbull County in the last two years. Columbiana County has generally had the lowest income levels. Per capita income in each of the counties rose in real terms as well. Income across the region grew at a compound annual rate of 3.2 percent from 1995 to 2007, compared with a compound annual growth rate of 2.4 percent in the consumer price index during the same period.<sup>2</sup>

**Figure 7: Per Capita Income Trends, 1995-2007**



Source: Bureau of Economic Analysis, "Local Area Personal Income."

<sup>2</sup> BLS, Consumer Price Index.

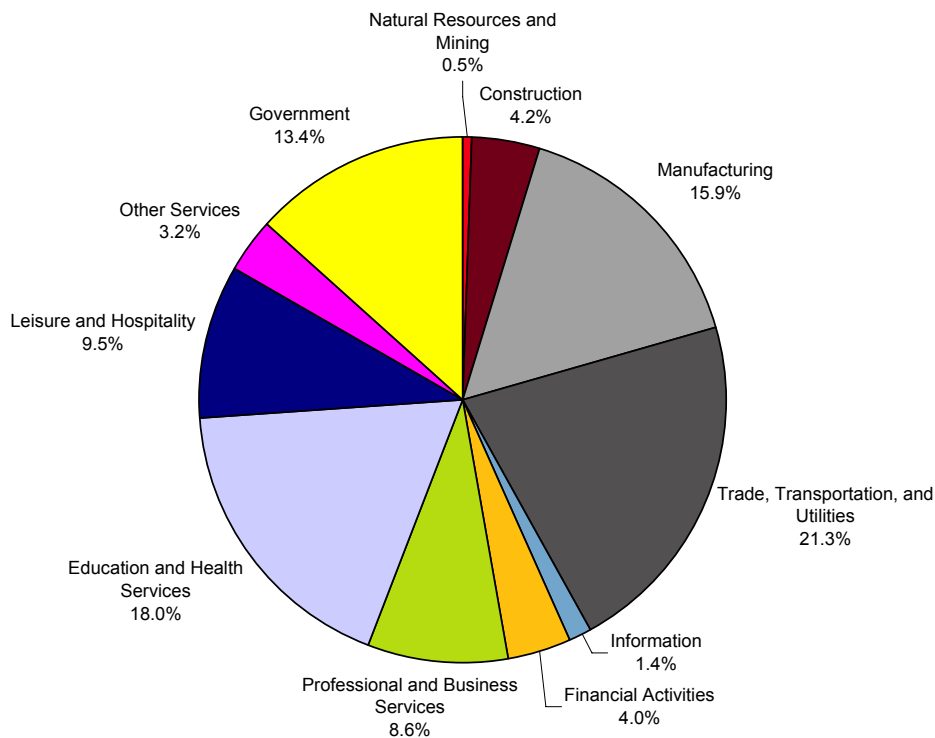
### III. Industry Analysis

#### Employment by Sector

Figure 8 below shows the distribution of industry employment in 2007 for the Five-County area. These statistics do not generally include farmers, self-employed workers, and others not covered by unemployment insurance. The three largest supersectors shown here, together accounting for 55.2 percent of all local covered employment, are trade, transportation, and utilities, which includes retail stores and trucking; education and health services, including private hospitals and schools; and manufacturing.

Other supersectors represented on this chart are government, including public schools and hospitals (13.4%); leisure and hospitality, which includes restaurants and hotels (9.5%); professional and business services, including law and accounting firms, corporate offices, and administrative support (8.6%); construction (4.2%); financial activities such as banking, insurance, and real estate (4.0%); other defined service industries like laundries, repair shops, and certain non-profit organizations (3.2%); information, which includes publishing and telecommunications (1.4%); and finally a small number of covered workers in natural resources and mining (0.5%).

**Figure 8: Employment by Supersector, 2007**



Source: BLS, *Quarterly Census of Employment and Wages*.

Figure 9 on the next page shows more detailed information about sector employment in the Five-County region and how it compares with the rest of the U.S. In addition to local employment levels and proportions, this table also shows sectors' location quotients (LQs)—the ratio of local employment distribution to national employment distribution. An industry or sector with an LQ of 1.2 or more—that is, local distribution is at least 20

percent higher than national distribution—is considered an “export industry,” or important to the local economy.<sup>3</sup>

The one sector that stands out the most in this regard is manufacturing, which has an LQ of 1.56. Two other prospective export industries in this area are health care and social assistance (1.50) and retail trade (1.21). Conversely, professional, scientific, and technical services is one of the region’s least-concentrated sectors with an LQ of only 0.41.

**Figure 9: Employment by Industry Sector, 2007**

Industry Sector	Local Employment	Percent Distrib.	U.S. Employment	Location Quotient
<b>Total, All Industries</b>	<b>295,879</b>	<b>100.0%</b>	<b>135,366,106</b>	<b>1.00</b>
Natural Resources and Mining	1,373	0.5%	1,826,609	0.34
Agriculture, Forestry, Fishing, and Hunting	519	0.2%	1,166,333	0.20
Mining	853	0.3%	660,276	0.59
Construction	12,471	4.2%	7,562,732	0.75
Manufacturing	47,168	15.9%	13,833,022	1.56
Trade, Transportation, and Utilities	62,879	21.3%	26,338,207	1.09
Wholesale Trade	10,942	3.7%	5,987,206	0.84
Retail trade	40,900	13.8%	15,509,017	1.21
Transportation and Warehousing	9,990	3.4%	4,292,445	1.06
Utilities	1,048	0.4%	549,539	0.87
Information	4,005	1.4%	3,029,789	0.60
Financial Activities	11,786	4.0%	8,145,981	0.66
Finance and Insurance	8,401	2.8%	5,992,373	0.64
Real Estate and Rental and Leasing	3,385	1.1%	2,153,608	0.72
Professional and Business Services	25,358	8.6%	17,859,796	0.65
Professional, Scientific, and Technical Services	6,909	2.3%	7,635,062	0.41
Management of Companies and Enterprises	2,285	0.8%	1,839,616	0.57
Administrative and Waste Services	16,163	5.5%	8,385,118	0.88
Education and Health Services	53,284	18.0%	17,433,162	1.40
Educational Services	3,781	1.3%	2,284,556	0.76
Health Care and Social Assistance	49,503	16.7%	15,148,606	1.50
Leisure and Hospitality	28,251	9.5%	13,327,559	0.97
Arts, Entertainment, and Recreation	2,688	0.9%	1,953,899	0.63
Accommodation and Food Services	25,564	8.6%	11,373,660	1.03
Other Services	9,554	3.2%	4,438,439	0.98
Government	39,704	13.4%	21,353,885	0.85
Federal Government	3,067	1.0%	2,726,300	0.51
State Government	6,313	2.1%	4,611,395	0.63
Local Government	30,324	10.2%	14,016,190	0.99

Source: BLS, *Quarterly Census of Employment and Wages*.

Figure 9 also shows that many of the supersectors are dominated by specific sectors. For example, employment in trade, transportation, and utilities consists mostly of retail trade, and most government employment in the area is in local government (e.g. school districts, sheriff’s offices, or township operations).

<sup>3</sup> Ohio Department of Job and Family Services [ODJFS], *Inroads*, 20.

## Industry Employment Prospects

Figure 10 below looks at industry classifications and is color-coded to quickly identify those sectors most important to the region. The left column ranks twenty-two sectors by their employment levels in 2007. Sectors with high employment levels are often a major source of job openings, because approximately two-thirds of all openings are to meet replacement needs.<sup>4</sup> The top ten sectors in this first column are printed in blue. The right column ranks sectors by the number of new jobs created since 2000. The growth sectors in this second column are printed in red. Sectors that appear at the top of both lists are printed in purple. Sectors for which a growth rate could not be established due to confidentiality requirements are printed in italics.

2007 marks a significant change from the past in that manufacturing is no longer the region's largest employment sector, the result of severe job losses in this industry in recent years. Health care and social assistance now employs the greatest number of workers and also had the area's strongest job growth. Administrative and waste services was the only other large sector to have added jobs during this period. The only other sectors to add jobs were educational services (private), mining, and real estate and rental and leasing.

**Figure 10: Employment Prospects by Industry Sector**

2007 Employment	New Jobs, 2000-2007
Health Care and Social Assistance	Health Care and Social Assistance
Manufacturing	Administrative and Waste Services
Retail trade	Educational Services
Local Government	Mining
Accommodation and Food Services	Real Estate and Rental and Leasing
Administrative and Waste Services	Agriculture, Forestry, Fishing, and Hunting
Construction	Information
Wholesale Trade	State Government
Transportation and Warehousing	Finance and Insurance
Other Services	Arts, Entertainment, and Recreation
Finance and Insurance	Federal Government
Professional, Scientific, and Technical Services	Accommodation and Food Services
State Government	Local Government
Information	Other Services
Educational Services	Construction
Real Estate and Rental and Leasing	Retail trade
Federal Government	Manufacturing
Arts, Entertainment, and Recreation	<i>Wholesale Trade</i>
Management of Companies and Enterprises	<i>Transportation and Warehousing</i>
Utilities	<i>Professional, Scientific, and Technical Services</i>
Mining	<i>Management of Companies and Enterprises</i>
Agriculture, Forestry, Fishing, and Hunting	<i>Utilities</i>

Source: BLS, *Quarterly Census of Employment and Wages*.

<sup>4</sup> Dohm and Shniper, 86-87.

## Average Weekly Earnings

Figure 11 below ranks the sectors in the Five-County area by their average weekly earnings—total wages or salary regardless of hours worked—and shows how much employment has grown or fallen since 2000. This table also uses the same color-coding system as figure 10 on the previous page, with sectors printed in purple being large sectors with growth.

Average weekly earnings across all industries in this region were \$653 in 2007. The area’s highest-paying sector was utilities, where the average worker earned \$1,309 per week. This was followed by management of companies at \$1,066, federal government at \$1,061, and manufacturing, the highest-paying large sector, at \$1,053 per week. The highest-paying sector to have added jobs since 2000 was mining, with average weekly earnings at \$958. Health care and social assistance, the fastest-growing sector, had average earnings of \$622 per week.

**Figure 11: Sectors Ranked by 2007 Average Weekly Earnings**

Industry Sector	2000 Employment	2007 Employment	Net Change	Percent Change	Average Weekly Earnings
Utilities	NA	1,048	NA	NA	\$1,309
Management of Companies and Enterprises	NA	2,285	NA	NA	\$1,066
Federal Government	3,646	3,067	-579	-15.9%	\$1,061
<b>Manufacturing</b>	68,750	47,168	-21,582	-31.4%	\$1,053
<b>Mining</b>	693	853	160	23.1%	\$958
<b>Wholesale Trade</b>	NA	10,942	NA	NA	\$853
State Government	6,726	6,313	-413	-6.1%	\$841
Finance and Insurance	8,873	8,401	-472	-5.3%	\$820
<b>Construction</b>	14,009	12,471	-1,538	-11.0%	\$787
Information	4,413	4,005	-408	-9.2%	\$776
Professional, Scientific, and Technical Services	NA	6,909	NA	NA	\$739
<b>Transportation and Warehousing</b>	NA	9,990	NA	NA	\$738
<b>Local Government</b>	31,566	30,324	-1,242	-3.9%	\$687
<b>Health Care and Social Assistance</b>	43,382	49,503	6,121	14.1%	\$622
<b>Educational Services</b>	3,553	3,781	228	6.4%	\$516
<b>Real Estate and Rental and Leasing</b>	3,359	3,385	26	0.8%	\$495
<b>Administrative and Waste Services</b>	15,434	16,163	729	4.7%	\$450
<b>Retail trade</b>	46,608	40,900	-5,708	-12.2%	\$405
Agriculture, Forestry, Fishing, and Hunting	832	519	-313	-37.6%	\$388
<b>Other Services</b>	10,843	9,554	-1,289	-11.9%	\$371
Arts, Entertainment, and Recreation	3,180	2,688	-492	-15.5%	\$247
<b>Accommodation and Food Services</b>	26,569	25,564	-1,005	-3.8%	\$214

NA-Data not available due to confidentiality requirements. See technical notes.

Source: BLS, *Quarterly Census of Employment and Wages*.

Actual wages may vary greatly based on the specific work being done and hours worked.

## Occupational Employment Projections

Both ODJFS and the Pennsylvania Department of Labor & Industry have published long-term occupational employment projections from 2006 to 2016 for state and substate

areas. Projected growth rates for both, by occupational group, are shown in figure 12 below. As mentioned earlier, the Youngstown MSA includes three of the five counties in the Five-County WIA and accounts for about four-fifths of total area employment. West Central Pennsylvania includes both of the interstate WIA's Pennsylvania counties. Looking at these growth rates, we can get a fair idea how the combined region can be expected to grow through 2016.

**Figure 12: Occupational Employment Projections for the Youngstown-Warren-Boardman MSA and West Central Pennsylvania, 2006-2016**

Occupational Group	Youngstown MSA	W. Central PA
<b>Total, All Occupations</b>	<b>1.2%</b>	<b>5.0%</b>
Management	-3.4%	3.0%
Business & Financial	7.6%	8.2%
Computer & Mathematical	12.7%	5.4%
Architecture & Engineering	-8.6%	6.5%
Life, Physical & Social Science	0.0%	7.9%
Community & Social Services	22.2%	18.0%
Legal	0.0%	4.2%
Education, Training & Library	1.2%	2.0%
Arts, Design, Ent., Sports & Media	0.0%	0.0%
Healthcare Practitioners & Tech.	15.3%	16.9%
Healthcare Support	20.7%	22.0%
Protective Service	6.0%	11.9%
Food Prep. & Serving Rel.	8.1%	6.8%
Bldg. & Grounds Cleaning & Maint.	2.6%	11.1%
Personal Care & Service	0.1%	16.3%
Sales & Related	3.2%	0.7%
Office & Administrative Support	-1.1%	0.4%
Farming, Fishing & Forestry	-2.6%	6.5%
Construction & Extraction	3.2%	2.6%
Installation, Maint. & Repair	-0.2%	4.3%
Production	-18.5%	-2.8%
Transp. & Material Moving	-3.8%	-0.3%

Source: ODJFS, *2016 Job Outlook*, 2; Pennsylvania Department of Labor and Industry, *Occupational Employment & Projections*.

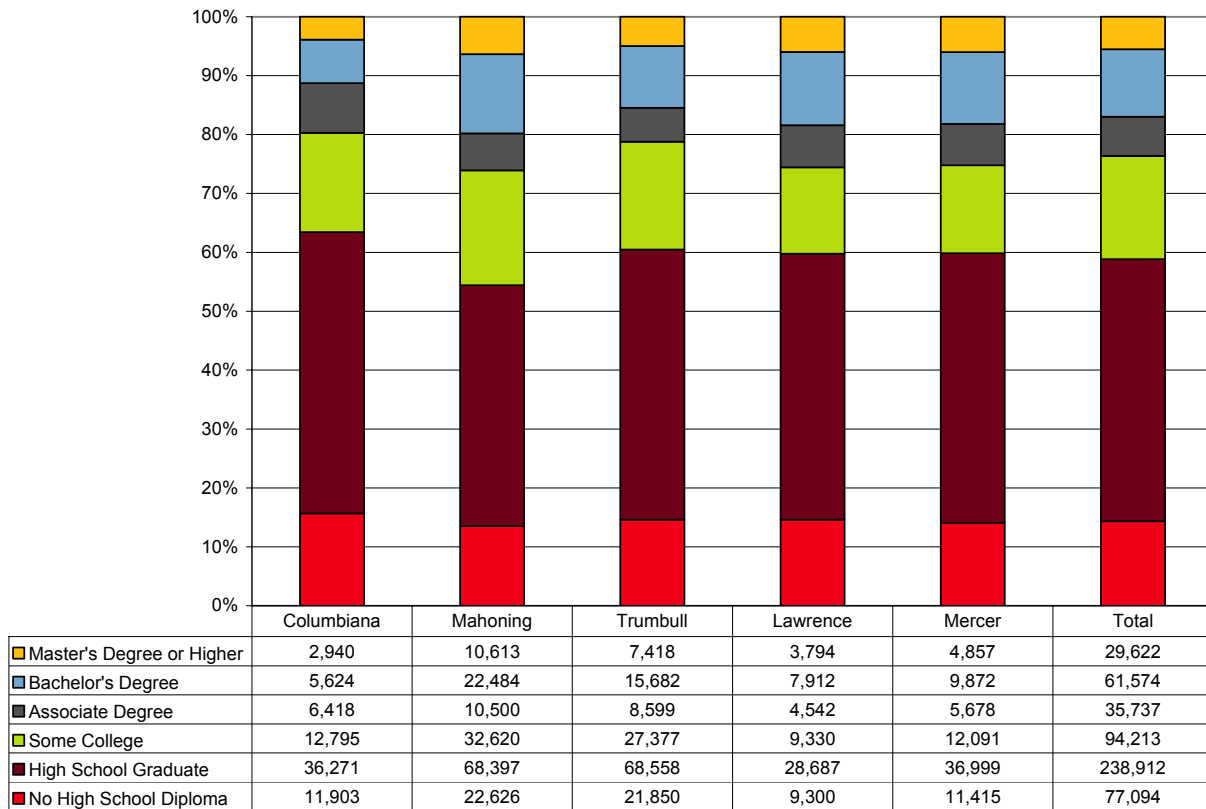
Total employment in the MSA is expected to grow 1.2 percent between 2006 and 2016 while West Central Pennsylvania will grow 5.0 percent. For comparison, national employment is projected to grow 10.4 percent over the same period.<sup>5</sup> Some groups expected to show strong growth in both areas, including healthcare support (20.7% and 22.0%); community and social services (22.2% and 18.0%); and healthcare practitioners and technical (15.3% and 16.9%). There are, however, major differences in the degree to which certain groups are expected to decline. Both production and architecture and engineering occupations are expected to fall significantly in the Youngstown area, while neither will show any significant change in West Central Pennsylvania.

<sup>5</sup> Dohm and Shniper, 106.

## IV. Educational Infrastructure

Figure 13 below shows educational attainment levels for persons 25 and older in the area, using data from the American Community Survey. This chart shows that, within the region, the greatest county-to-county differences lie in postsecondary education attainment. Mahoning County has the largest proportion of adults with at least some college education and the smallest proportion with no high school diploma. Conversely, Columbiana has the smallest proportion of adults with some college education. In total, 19.7 percent of adults in the region have an associate degree or better, compared with 30.3 percent in Ohio, 32.6 percent in Pennsylvania, and 34.4 percent nationally. About 15.7 percent of adults have no high school diploma—higher than the totals for Ohio and Pennsylvania, but below the national average 16.0 percent.

**Figure 13: Educational Attainment**



Source: U.S. Census Bureau, "Sex by Educational Attainment for the Population 25 Years and Older."

The Five-County area has 31 postsecondary education and training providers offering about 592 different programs: 2 public adult schools with occupational programs; 9 two-year, technical, and community colleges; 7 four-year colleges and universities; 6 private business and technical schools; and 2 hospital-based nursing programs. (See appendix C at the end of this report for a full list with contact information.) Figure 14 on the next page shows that over 6,200 postsecondary awards and certificates were granted in the 2006-07 school year. When examining a local labor market such as this, however, one should bear in mind that people with bachelors degrees and higher tend to be more geographically mobile than those with less education and thus may seek employment elsewhere.



Likewise, bachelors degree holders from other areas may seek employment here. To look strictly at the *local* supply of trained workers, one should primarily consider awards below the baccalaureate level—about 3,156 in 2007.

**Figure 14: Degree Completions by Level and County, 2006-07**

<b>Award Type</b>	<b>Columbiana</b>	<b>Mahoning</b>	<b>Trumbull</b>	<b>Lawrence</b>	<b>Mercer</b>	<b>Total</b>
<b>Postsec., &lt; 1 yr.</b>	470	511	83	97	31	1,192
<b>Postsec., 1-2 yrs.</b>	79	211	73	117	47	527
<b>Associate</b>	302	314	284	234	118	1,252
<b>Postsec., 2-4 yrs.</b>		86	49	50		185
<b>Bachelors</b>	31	1,472		312	879	2,694
<b>Postbacc. Cert.</b>		13				13
<b>Master's</b>		306		36		342
<b>Doctoral</b>		5				5
<b>TOTAL</b>	<b>882</b>	<b>2,918</b>	<b>489</b>	<b>846</b>	<b>1,075</b>	<b>6,210</b>

Source: U.S. Department of Education, "IPEDS Data Center."

Appendix D at the end of this report breaks down degree completions for the 2006-07 school year by program group. Looking only at awards and degrees below the baccalaureate level, most degrees were awarded in health professions and related clinical sciences (1,020); transportation and materials moving (386); family and consumer sciences (337); business, management, marketing, and related support services (285); and engineering technologies (267). The predominance of health care training in this region is consistent with this industry's continued rapid growth and labor shortages in some related occupations.<sup>6</sup>

If one looks at all awards and degrees, health professions and related clinical sciences is still the largest program group (1,230), but the second largest program group is now education (697). This is because few education degrees are offered below the bachelor's level.

---

· ODJFS, *Ohio Health Care Employment*, 16-17.

## **V. Conclusion**

The Five-County region has seen some major changes since 2000. Total employment declined following the 2001 recession and has not returned to prerecession levels. This overall decline was led by a major decline in manufacturing employment. Between 2000 and 2007, manufacturing went from being the largest industry sector in terms of employment to the third largest sector. This represents a loss of well-paying jobs and money following into the region from the sale of products. Total population for the region has declined as well, and the population that remains tends to be older.

The future of the region will depend on how it responds to the changing employment situation, especially the decline in manufacturing employment. Many growth occupations require postsecondary education, but the region has a lower-than-average proportion of the population with some postsecondary education. It is possible the region could capitalize on its wealth of manufacturing talent to become a producer of green energy products.

## Technical Notes

All population and demographic figures, including educational attainment estimates, are from the U.S. Census Bureau. These figures are estimates only and not true census counts. Commuting data are estimates from the 2000 Decennial Census and were tabulated by ODJFS staff.

All employment data were obtained from the Quarterly Census of Employment and Wages (QCEW), from the BLS and administered by the Ohio Bureau of Labor Statistics and Pennsylvania Center for Workforce Information and Analysis. The data are based on reports filed by employers subject to unemployment compensation law in Ohio and Pennsylvania, as well as those covered by Unemployment Compensation for Federal Employees, by place of work. All employment establishments are classified under the North American Industrial Classification System (NAICS). Visit <http://www.census.gov/eos/www/naics/> for details. Because data for some industry sectors and supersectors in some counties were suppressed due to confidentiality requirements, we were not able to print data for those sectors in the area. Total employment may include employment and wage data for suppressed sectors and non-classifiable establishments.

Unemployment rates are from the Local Area Unemployment Statistics (LAUS) program from the BLS, administered by the Ohio Bureau of Labor Statistics and Pennsylvania Center for Workforce Information and Analysis. An unemployment rate estimate for the combined Five-County area has not yet been calculated.

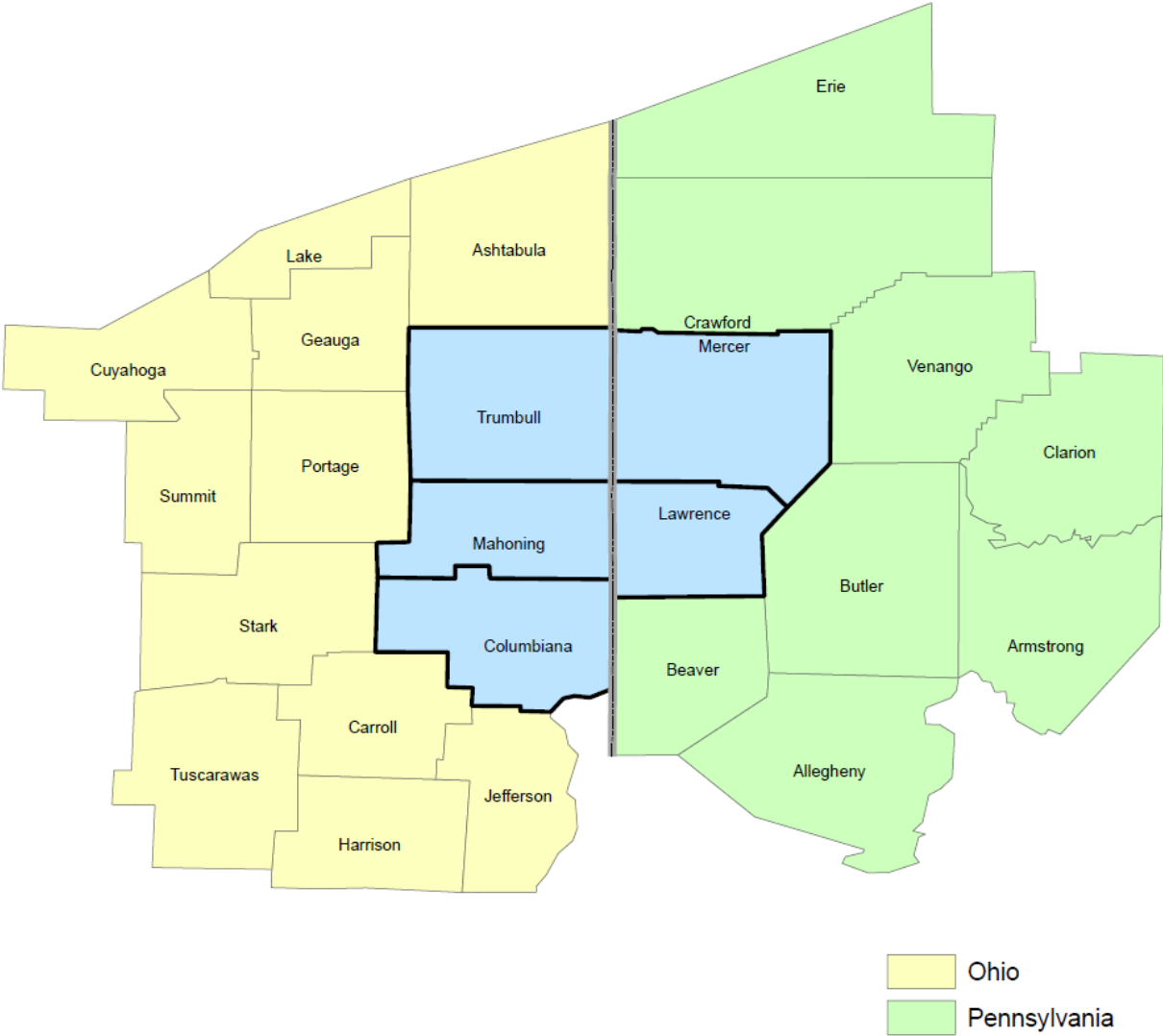
Employment projections for the Youngstown-Warren-Boardman Metropolitan Statistical Area were calculated by the Ohio Bureau of Labor Statistics, ODJFS. Staff developed these projections using shift-share techniques that related metropolitan area industry employment to statewide industry employment over the last decade, then matching industries to occupations using industry staffing patterns. Occupational classifications used in figure 12 are from the Standard Occupational Classifications (SOC) system. Visit <http://www.bls.gov/soc/socguide.htm> for details.

Degree completion figures are from the Integrated Postsecondary Education Data System (IPEDS), operated by the U.S. Department of Education. These data are derived from reports from individual educational institutions. Programs are classified using Classification of Instructional Programs (CIP). Visit <http://nces.ed.gov/pubs2002/cip2000/> for details.

## References

- Dohm, Arlene and Lynn Shniper. "Occupational employment projections to 2016." *Monthly Labor Review* 130, no. 11 (2007): 86-125. <http://www.bls.gov/opub/mlr/2007/11/art5full.pdf>
- Goldstein, Harvey. *Projecting State and Area Industry Employment*. Salt Lake City, UT: Projections Workgroup, 2005. [http://dev.projectionscentral.com/ltip/downloads/2005\\_LT\\_%20Projections\\_Manual.pdf](http://dev.projectionscentral.com/ltip/downloads/2005_LT_%20Projections_Manual.pdf).
- Ohio Department of Job and Family Services. *2016 Job Outlook: Youngstown-Warren-Boardman Metropolitan Statistical Area*. Columbus, OH: State Printing & Mail Services, 2009. <http://ohiolmi.com/proj/projections/MSA/Youngstown.pdf>.
- Ohio Department of Job and Family Services. *Inroads: Strategies for Economic Growth*. Columbus, OH: State Printing & Mail Services, 2004.
- Ohio Department of Job and Family Services. *Ohio Health Care Employment: Labor Market Trends and Challenges*. Columbus, OH: State Printing & Mail Services, 2008. <http://ohiolmi.com/research/Healthcare.pdf>.
- Pennsylvania Department of Labor & Industry. "West Central Workforce Investment Area." Occupational Employment and Projections. 2009.
- U.S. Bureau of Economic Analysis. "Local Area Personal Income." *Regional Economic Accounts*. <http://www.bea.gov/regional/reis/default.cfm?selTable=CA1-3&section=2>.
- U.S. Bureau of Labor Statistics. *Consumer Price Index*. <http://www.bls.gov/cpi/#data>.
- U.S. Bureau of Labor Statistics. *Local Area Unemployment Statistics*. <http://www.bls.gov/lau/#data>.
- U.S. Bureau of Labor Statistics. *Quarterly Census of Employment and Wages*. <http://www.bls.gov/cew/#databases>.
- U.S. Census Bureau. "Sex by Educational Attainment for the Population 25 Years and Older." *2005-2007 American Community Survey 3-Year Estimates*. <http://factfinder.census.gov>.
- U.S. Census Bureau. *Annual County Resident Population Estimates by Age, Sex, Race, and Hispanic Origin: April 1, 2000 to July 1, 2007*. <http://www.census.gov/popest/datasets.html>.
- U.S. Census Bureau. *County-to-County Worker Flow Files*. <http://www.census.gov/population/www/cen2000/commuting.html>.
- U.S. Department of Education. "IPEDS Data Center." *The Integrated Postsecondary Education Data System*. <http://nces.ed.gov/ipeds/datacenter/>.

# Appendix A: Map of Five-County Interstate Region



## Appendix B: Detailed County-to-County Commuting Patterns

<b>Columbiana</b>			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 county			49,461			Number of workers 16+ years of age working in county			37,705		
Commuting Out To		Number	Percent	Commuting In From		Number	Percent				
Mahoning Co. OH	7,371	14.9%	Mahoning Co. OH	3,684	9.8%						
Stark Co. OH	3,306	6.7%	Hancock Co. WV	831	2.2%						
Beaver Co. PA	1,889	3.8%	Stark Co. OH	640	1.7%						
Trumbull Co. OH	1,719	3.5%	Jefferson Co. OH	632	1.7%						
Hancock Co. WV	1,488	3.0%	Beaver Co. PA	443	1.2%						
Allegheny Co. PA	735	1.5%	Trumbull Co. OH	344	0.9%						
Jefferson Co. OH	517	1.0%	Carroll Co. OH	297	0.8%						
Summit Co. OH	464	0.9%	Portage Co. OH	182	0.5%						
Carroll Co. OH	453	0.9%	Lawrence Co. PA	152	0.4%						
Portage Co. OH	316	0.6%	Allegheny Co. PA	88	0.2%						

<b>Mahoning</b>			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 county			109,102			Number of workers 16+ years of age working in county			102,992		
Commuting Out To		Number	Percent	Commuting In From		Number	Percent				
Trumbull Co. OH	19,210	38.8%	Trumbull Co. OH	12,003	31.8%						
Columbiana Co. OH	3,684	7.4%	Columbiana Co. OH	7,371	19.5%						
Stark Co. OH	2,548	5.2%	Lawrence Co. PA	1,620	4.3%						
Portage Co. OH	1,171	2.4%	Stark Co. OH	1,158	3.1%						
Cuyahoga Co. OH	1,117	2.3%	Mercer Co. PA	1,083	2.9%						
Summit Co. OH	1,096	2.2%	Portage Co. OH	603	1.6%						
Lawrence Co. PA	718	1.5%	Summit Co. OH	460	1.2%						
Mercer Co. PA	624	1.3%	Cuyahoga Co. OH	268	0.7%						
Allegheny Co. PA	508	1.0%	Beaver Co. PA	172	0.5%						
Beaver Co. PA	224	0.5%	Allegheny Co. PA	159	0.4%						

<b>Trumbull</b>			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 county			97,485			Number of workers 16+ years of age working in county			100,101		
Commuting Out To		Number	Percent	Commuting In From		Number	Percent				
Mahoning Co. OH	12,003	24.3%	Mahoning Co. OH	19,210	50.9%						
Geauga Co. OH	3,900	7.9%	Mercer Co. PA	2,805	7.4%						
Mercer Co. PA	2,457	5.0%	Columbiana Co. OH	1,719	4.6%						
Cuyahoga Co. OH	1,976	4.0%	Portage Co. OH	1,449	3.8%						
Portage Co. OH	1,863	3.8%	Lawrence Co. PA	653	1.7%						
Summit Co. OH	1,038	2.1%	Ashtabula Co. OH	485	1.3%						
Ashtabula Co. OH	892	1.8%	Summit Co. OH	447	1.2%						
Columbiana Co. OH	344	0.7%	Geauga Co. OH	310	0.8%						
Lawrence Co. PA	251	0.5%	Cuyahoga Co. OH	281	0.7%						
Stark Co. OH	202	0.4%	Stark Co. OH	172	0.5%						

<b>Lawrence</b>			Percent of workers that work outside the county		31.6%
			Average commute time in minutes		21.3
Number of workers 16+ years of age living in county			40,285		
Number of workers 16+ years of age working in county			35,728		
Commuting Out To			Number	Percent	
Beaver Co. PA	2,717	6.7%	Beaver Co. PA	2,003	5.6%
Butler Co. PA	2,366	5.9%	Mercer Co. PA	1,743	4.9%
Mercer Co. PA	2,300	5.7%	Butler Co. PA	1,013	2.8%
Allegheny Co. PA	2,043	5.1%	Allegheny Co. PA	736	2.1%
Mahoning Co. OH	1,620	4.0%	Mahoning Co. OH	718	2.0%
Trumbull Co. OH	653	1.6%	Chester Co. PA	706	2.0%
Columbiana Co. OH	152	0.4%	Trumbull Co. OH	251	0.7%
Westmoreland Co. PA	103	0.3%	Westmoreland Co. PA	165	0.5%
Venango Co. PA	102	0.3%	Washington Co. PA	69	0.2%
Washington Co. PA	53	0.1%	Columbiana Co. OH	66	0.2%

<b>Mercer</b>			Percent of workers that work outside the county		21.1%
			Average commute time in minutes		19.6
Number of workers 16+ years of age living in county			51,120		
Number of workers 16+ years of age working in county			50,986		
Commuting Out To			Number	Percent	
Trumbull Co. OH	2,805	7.0%	Trumbull Co. OH	2,457	6.9%
Lawrence Co. PA	1,743	4.3%	Lawrence Co. PA	2,300	6.4%
Butler Co. PA	1,282	3.2%	Butler Co. PA	1,628	4.6%
Crawford Co. PA	1,172	2.9%	Crawford Co. PA	1,393	3.9%
Mahoning Co. OH	1,083	2.7%	Venango Co. PA	783	2.2%
Venango Co. PA	738	1.8%	Mahoning Co. OH	624	1.7%
Allegheny Co. PA	616	1.5%	Beaver Co. PA	280	0.8%
Ashtabula Co. OH	146	0.4%	Allegheny Co. PA	230	0.6%
Erie Co. PA	134	0.3%	Clarion Co. PA	143	0.4%
Beaver Co. PA	114	0.3%	Erie Co. PA	84	0.2%

Source: U.S. Census Bureau, *County-to-County Worker Flow Files*.

## Appendix C: Postsecondary Institutions

Name	Address	Phone	Web
Allegheny Wesleyan College	2161 Woodsdale Rd., Salem, OH 44460	(330) 337-6403	awc.edu
Casal Aveda Institute	6000 Mahoning Ave., Youngstown, OH 44515	(330) 792-6504	
Choffin Career and Technical Center	200 E. Wood St., Youngstown, OH 44503	(330) 744-8710	www.choffincareer.com
Columbiana County Vocational School	9364 St. Rt. 45, Lisbon, OH 44432	(330) 424-9561	www.ccctc.k12.oh.us/
Erie Business Center-South	170 Cascade Galleria, New Castle, PA 16101	(724) 658-9066	www.eriebc.edu/newcastle
ETI Technical College	2076 Youngstown-Warren Rd, Niles, OH 44446	(330) 652-9919	eticollege.edu
Grove City College	100 Campus Dr., Grove City, PA 16127	(724) 458-2000	www.gcc.edu
Hannah E Mullins School of Practical Nursing	230 North Lincoln Ave., Suite 3, Salem, OH 44460	(330) 332-8940	www.salem.k12.oh.us/mullins/mullins.html
ITT Technical Institute-Youngstown	1030 N. Meridian Rd., Youngstown, OH 44509	(330) 270-1600	www.itt-tech.edu
Jameson Health System	1211 Wilmington Ave., New Castle, PA 16105	(724) 656-4052	www.jamesonhealth.com
Kent State University-East Liverpool Campus	400 E. 4th St., East Liverpool, OH 43920	(330) 382-7400	www.eliv.kent.edu
Kent State University-Salem Campus	2491 St. Rt. 45 S., Salem, OH 44460	(330) 332-0361	www.salem.kent.edu
Kent State University-Trumbull Campus	4314 Mahoning Ave. N.W., Warren, OH 44483	(330) 847-0571	www.trumbull.kent.edu
Laurel Technical Institute	335 Boyd Dr., Sharon, PA 16146	(724) 983-0700	www.laurel.edu
Lawrence County Career and Technical Center	750 Phelps Way, New Castle, PA 16101	(724) 658-3583	www.lcvct.tec.pa.us
Mahoning County Career and Technical Center	7300 N. Palmyra Rd., Canfield, OH 44406	(330) 729-4100	www.mahoningctc.com
Mercer County Career Center	776 Greenville Rd., Mercer, PA 16137	(724) 662-3000	www.mccc.tec.pa.us
New Castle School of Beauty Culture	314 Washington St., New Castle, PA 16101	(724) 287-0708	
New Castle School of Trades	4164 U.S. Rt. 422, Pulaski, PA 16143	(724) 964-8811	www.ncstrades.com
Ohio Valley College of Technology	16808 Saint Clair Ave., East Liverpool, OH 43920	(330) 385-1070	
Pennsylvania State University-Shenango	147 Shenango Ave., Sharon, PA 16146	(724) 983-2803	www.shenango.psu.edu
Raphaels School of Beauty Culture	1324 Youngstown-Warren Rd., Niles, OH 44446	(330) 652-1559	www.raphaelsbeautyschool.com
Raphaels School of Beauty Culture	5311 Market St., Boardman, OH 44512	(330) 782-3395	www.raphaelsbeautyschool.com
Sharon Regional Health System School of Nursing	740 E. State St., Sharon, PA 16146	(724) 983-3988	
Slippery Rock University of Pennsylvania*	1 Morrow Way, Slippery Rock, PA 16057	(724) 738-9000	www.sru.edu
TCTC Adult Training Center	528 Educational Highway, Warren, OH 44483	(330) 847-0503	www.tctcadulttraining.org
TDDS Technical Institute	1688 North Pricetown Rd., Lake Milton, OH 44429	(330) 538-2216	www.tdds.edu
Thiel College	75 College Ave., Greenville, PA 16125	(724) 589-2000	www.thiel.edu
Tri-State College of Massotherapy	9159 Market St., Ste. 26, North Lima, OH 44452	(330) 629-9998	www.tristatemasso.com
Trumbull Business College	3200 Ridge Rd., Warren, OH 44484	(330) 369-3200	www.tbc-trumbullbusiness.com
Westminster College	319 S. Market St., New Wilmington, PA 16172	(724) 946-8761	www.westminster.edu
Youngstown State University	One University Plaza, Youngstown, OH 44555	(877) 468-6978	www.ysu.edu

\*Slippery Rock University of Pennsylvania lies slightly outside the Five-County area, in Butler Co., Pennsylvania. This institution's completion statistics were not included in figure 14 or appendix D, but due to its proximity and size, it may be regarded as an important training provider in the local labor market and was thus included in this list.

Source: U.S. Department of Education, "IPEDS Data Center."



## Appendix D: Degree Completions by Program Class

Program Group	Postsec. < 1 yr.	Postsec. 1-2 yrs.	Associate	Postsec. 2-4 yrs.	Bachelors	Post Bacc.	Total
Agriculture, Agriculture Operations & Rel. Sciences			6				6
Natural Resources & Conservation					6		6
Area, Ethnic, Cultural & Gender Studies					1	3	4
Communication, Journalism & Rel. Programs					100		100
Computer & Information Sciences & Support Services	4		146		73	3	226
Personal & Culinary Services	75	43		135			253
Education	1		21		492	183	697
Engineering			9		118	8	135
Engineering Technologies/Technicians	50	1	216		25		292
Foreign Languages, Literatures & Linguistics					51		51
Family & Consumer Sciences/Human Sciences	316		21		22		359
Legal Professions & Studies			23				23
English Language & Literature/Letters					107	16	123
Liberal Arts & Sciences, Gen. Studies & Humanities			66		62		128
Biological & Biomedical Sciences		1	2		156	13	172
Mathematics & Statistics					44	10	54
Multi/Interdisciplinary Studies					6	3	9
Parks, Recreation, Leisure & Fitness Studies					31		31
Philosophy & Religious Studies					49	1	50
Theology & Religious Vocations					11		11
Physical Sciences					68	8	76
Psychology	6				118		124
Security & Protective Services	35		27		113	10	185
Public Administration & Social Service Professions			4		33	6	43
Social Sciences		8			169	6	183
Construction Trades	6		15				21
Mechanic & Repair Technologies/Trades		71	76				147
Precision Production	19	44	18				81
Transportation & Materials Moving	386						386
Visual & Performing Arts					75	10	85
Health Professions & Rel. Clinical Sciences	239	357	374	50	176	34	1,230
Business, Mgt., Marketing & Rel. Support Services	55	2	228		507	40	832
History					81	6	87
<b>TOTAL</b>	<b>1,192</b>	<b>527</b>	<b>1,252</b>	<b>185</b>	<b>2,694</b>	<b>360</b>	<b>6,210</b>

Source: U.S. Department of Education, "IPEDS Data Center."

**Office of Workforce Development  
P.O. Box 1618  
Columbus, OH 43216-1618**

**Bureau of Labor Market Information  
Business Principles for Workforce Development**

Partner with the workforce and economic development community.

Develop and deploy new information solution tools and systems for the workforce and economic development community.

Provide products and services that are customer and demand driven.

Be known as an important and reliable source for information solutions that support workforce development goals and outcomes.

**Acknowledgements:** Labor Market Analyst Jonathan Calig prepared this report under the direction of Bureau Chief Keith Ewald, Assistant Bureau Chief Rudy Wilkinson, and Workforce Research Chief Lewis Horner. The Ohio Bureau of Labor Market Information would like to thank the Pennsylvania Department of Labor and Industry Center for Workforce Information and Analysis for providing Pennsylvania employment projections. For further information, visit <http://OhioLMI.com> or call the Ohio Bureau of Labor Market Information at 1-888-296-7541 or 614-752-9494.

**Ted Strickland**, Governor  
State of Ohio

**Douglas E. Lumpkin**, Director  
Ohio Department of Job and Family Services

Office of Workforce Development  
Bureau of Labor Market Information  
(7/2009)

Equal Opportunity Employer and Service Provider