Miami Valley Industrial Development Assessment

2008

Miami Valley Regional Planning Commission

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Miami Valley Regional Planning Commission (MVRPC) is a voluntary association of governmental and non-governmental organizations serving as a forum and resource where regional partners identify priorities, develop public policy, and implement strategies to improve the quality of life and economic vitality throughout the Miami Valley Region.

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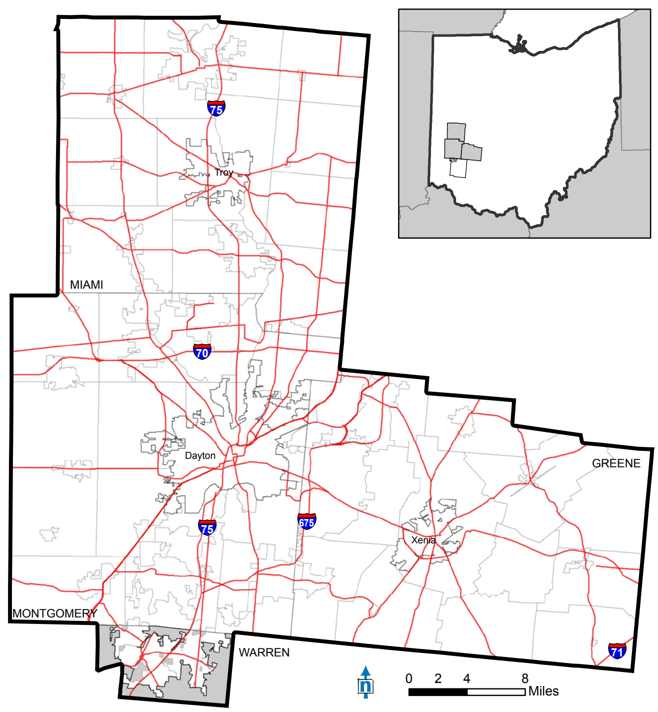
Purpose

The Miami Valley Region has had a rich history of industrial activity. National Cash Register (NCR) and Dayton Engineering Laboratories Company (DELCO) are just two of the many prominent industrial firms that have called this Region home. Throughout the 1800's and well into the 1900's, the economy of the Miami Valley Region was increasingly dominated by industrial firms. However, in the later 1900's, the prominence of industry in the regional economy declined rapidly, as it did in many regions in the United States. The ease of transporting goods around the world and the availability of inexpensive labor in other countries has made the Miami Valley Region a comparatively less desirable location for manufacturing firms, although other sectors of the economy have been growing.

Figure 1. Study Area



The Miami Valley Regional Planning Commission (MVRPC) conducted the Miami Valley Industrial Development Assessment as part of the existing conditions phase of "Going Places - An Integrated Land Use Vision for the Miami Valley Region." The purpose of this report is to evaluate the current status of industrial development in the Miami Valley Region and to gauge what the future may hold for this sector.

Study Area

The study area covers a three county region in the Dayton Metropolitan area, along with three cities in northern Warren County, located in southwest Ohio (Figure 1). It includes Greene, Miami, and Montgomery counties along with the cities of Carlisle, Franklin, and Springboro in Warren County, covering approximately 1,313 square miles with three interstates, I-70, I-75, and I-675.

Report Structure

This report begins with the definition of industrial land use used for this report and descriptions of the sources and general methodology used. The evaluation of the current status of industrial development includes explorations of the Region's industrial land, space, and employment, followed by a discussion of future industrial development in the Region.

Acknowledgements

This study was made possible by datasets that were available from various sources listed throughout this report. MVPRC is grateful for this data and would like to thank those organizations for making the data available.

Definition

Industrial Land Use is defined as "the land and improvements to land used for manufacturing, processing, or refining foods and materials, and warehouses used in connection therewith" (State of Ohio Classification of Real Property). Using the Land Use Codes as defined by the State of Ohio, industrial land use includes:

- Industrial Vacant Land
- Food and Drink Processing Plants and Storage
- Foundries and Heavy Manufacturing Plants
- Manufacturing and Assembly, Medium
- Manufacturing and Assembly, Light
- Industrial Warehouses
- Industrial Truck Terminals
- Small Shops (Machine, Tool & Die, etc.)
- Other Industrial Structures

Standard Industrial Classification (SIC) codes corresponding to the manufacturing sector were used for the examination of employment data.

Data Sources and Analysis Framework

For this study, both spatial and non-spatial socio-economic data were collected and developed for various geographic levels. More specifically, geographic data were developed at the parcel, tract, and Traffic Analysis Zone (TAZ) levels and employment data at the county and TAZ levels.

Parcel level data were gathered from each of the county auditor's offices during the summer of 2007.

Vacancy data were gathered from the US Department of Housing and Urban Development and the Gem Real Estate Group.

Employment data, including projections, were based on information gathered from a variety of sources, including the State of Ohio's Quarterly Census of Employment and Wages, employment data purchased from Woods & Poole Economics, Inc, and the Ohio Job and Family Services' *Job Outlook to 2014* report.

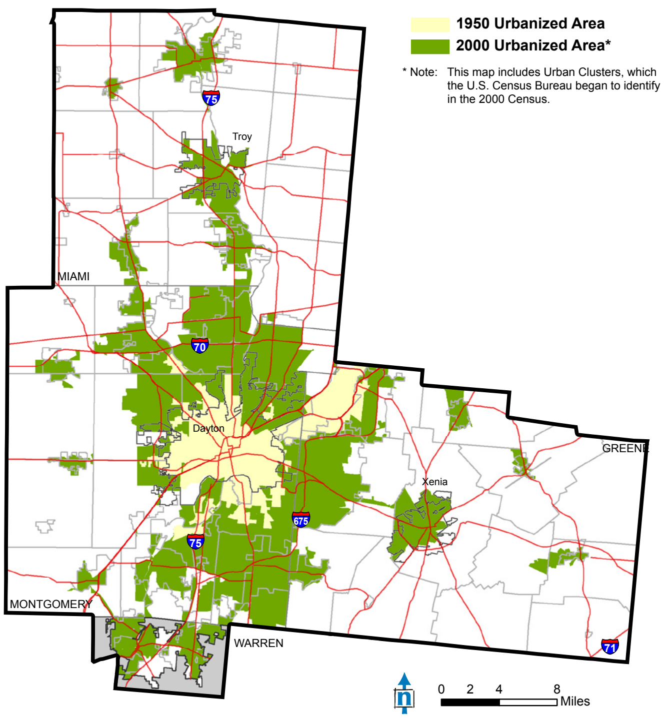
The data in this report are examined geographically, graphically, and in tabular form. For the most part, tabular and graphic analyses occurred at the regional and county levels, while geographic analyses were conducted at both the parcel and TAZ levels. The analyses are both land-based and structure-based.

Historic Industrial Land Use

The urbanized areas in the Region have greatly expanded between 1950 and 2000 (Figure 2). In 1950 the urbanized area was concentrated around the City of Dayton and Wright Patterson Air Force Base. By the year 2000, the urbanized area covered almost all of eastern Montgomery County, extended into Miami and Warren counties, and expanded into larger portions of western Greene County, going as far east as the City of Xenia.

In terms of industrial development, the Region as a whole gained almost 2,000 acres of industrial land between 1975 and 2000 (Table 1). Greene County was the only county in the Region to lose industrial land, with the loss totalling 250 acres. Miami and Montgomery counties gained around 1,000 acres each.

Figure 2. Urbanization Trends from 1950 to 2000



Source: U.S. Census Bureau, 1950 and 2000

In contrast, non-industrial development increased by almost 66,000 acres regionally. All three counties had increases in this category, the largest of which (27,312 acres) occurred in Greene County, although Miami County had the largest percent increase. This shows that while industrial development has not declined in the Region overall, it has constitued only a very small portion of the development that has occurred in the Region since 1975. In 1975, industrial development accounted for around 7% of the total developed acreage. In 2000, that number was down to around 5%.

Table 1. Historic Land Use (in acres) for 1975 and 2000

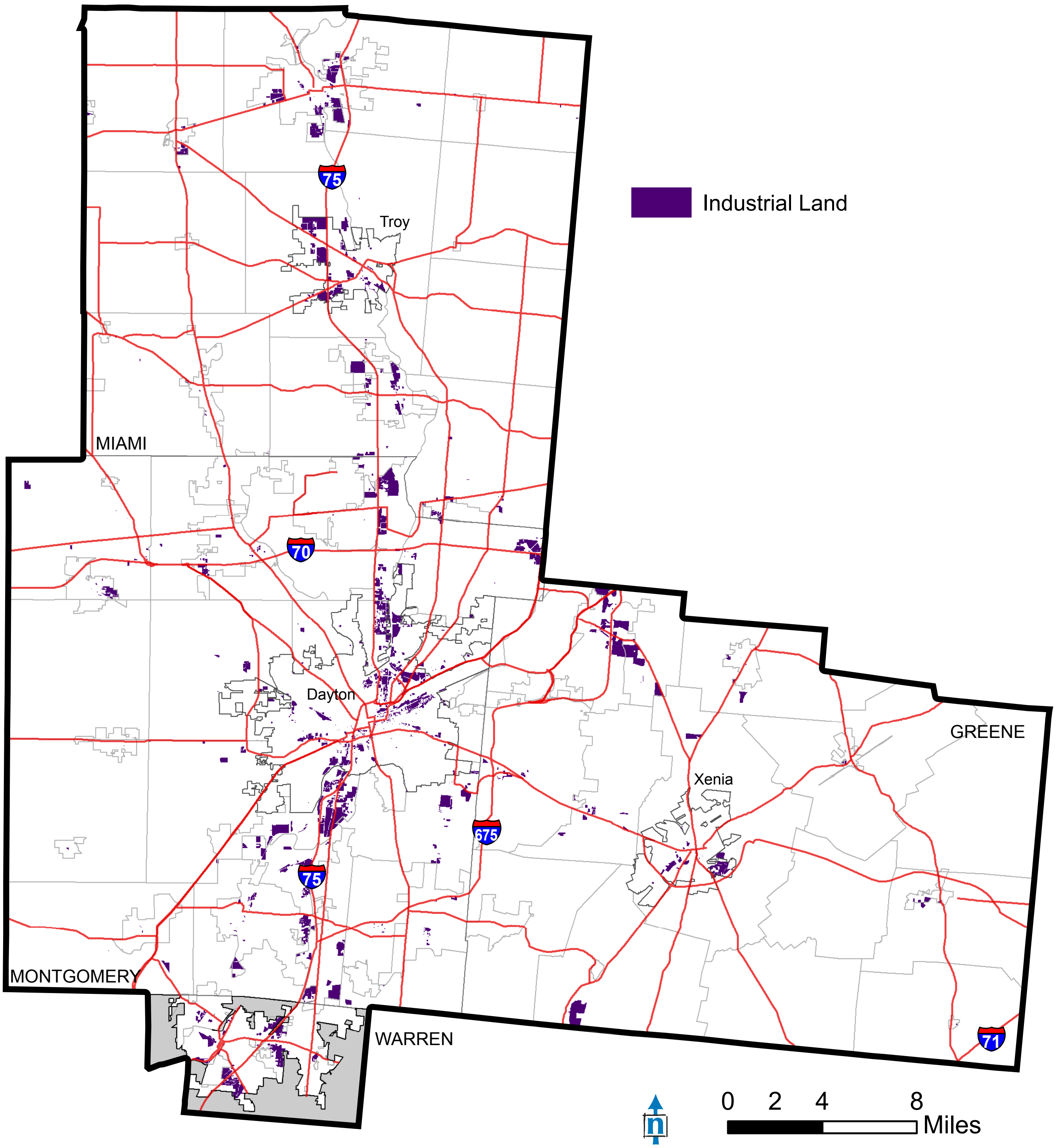
	Industrial Land			Non-Industrial Developed Land		
	1975	2000	% Change	1975	2000	% Change
Region	8,551	10,428	22.0%	102,234	168,107	64.4%
Greene	2,344	2,094	-10.7%	26,188	53,500	104.3%
Miami	1,411	2,565	81.8%	9,893	22,694	129.4%
Montgomery	4,796	5,769	20.3%	66,152	91,913	38.9%

Source: Ohio Department of Natural Resources; MVRPC
Note: Warren County data are not shown because they are not available

Current Industrial Land Use and Gross Floor Area

For the most part, in 2007, industrial land was concentrated within the Region's larger cities and along its major highways (Figure 3). The City of Dayton contains the largest concentration of industrial land among the Region's cities, while, among the Region's interstates, I-75 attracts the most industrial land. Unfortunately, due to differences in collection techniques and base data, comparisons with historic land use data are impossible for this assessment.

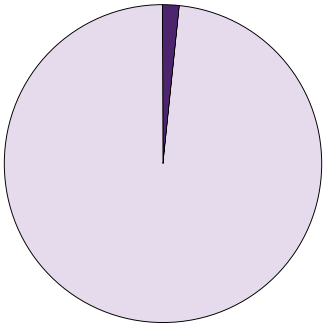
Figure 3. Industrial Land in the Miami Valley Region in 2007



Source: Greene, Miami, Montgomery, and Warren counties, 2007

In terms of all developed and non-developed land in the Region, 1.7% is designated as industrial land (Figure 4). Only Montgomery County and northern Warren County rise above the regional percentage in terms of industrial acreage. Greene County has the lowest percentage of land designated as industrial, with less than one percent (Table 2).

Figure 4. Regional Industrial Land Share (in acres) for 2007



Source: Greene, Miami, Montgomery, and Warren counties, 2007

For this report, industrial land has been divided into eight categories:

- Food and Drink Processing Plants and Storage
- Foundries and Heavy Manufacturing Plants
- Light to Medium Manufacturing and Assembly Plants
- Industrial Warehouses and Truck Terminals
- Small Shops (Machine, Tool & Die, etc.)
- Other Industrial Structures
- Unclassified: These are parcels that were not classified by their respective counties but have been determined to be industrial.
- Vacant - Unbuilt: These are industrial parcels that do not contain any structures.

Table 2. Industrial Land in 2007 by County (in acres)

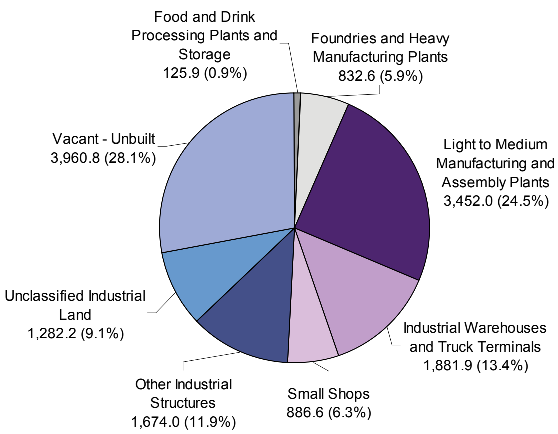
	Industrial Land	Non-Industrial Land	Total Land
Greene	2,469 (0.9%)	263,720 (99.1%)	266,189
Miami	3,069 (1.2%)	259,212 (98.8%)	262,281
Montgomery	7,474 (2.5%)	289,747 (97.5%)	297,221
Warren*	1,083 (7.5%)	13,271 (92.5%)	14,355

Source: Greene, Miami, Montgomery, and Warren counties, 2007
Note: *Warren County includes only the cities of Carlisle, Franklin, and Springboro

The largest category in the Region, in terms of land, is the Vacant - Unbuilt category with 28.1% of the regional industrial land (Figure 5). The second largest is the Light to Medium Manufacturing and Assembly Plants category with 24.5%. The smallest category is Food and Drink Processing Plants and Storage, comprising only 0.9% of the regional industrial acreage.

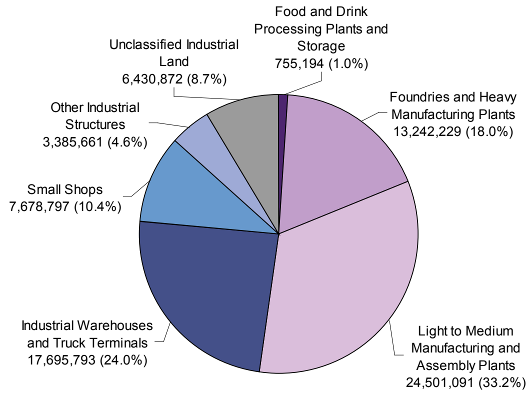
Light to Medium Manufacturing and Assembly Plants make up the largest portion (33.2%) of regional industrial gross floor area (GFA) (Figure 6). Since properties in the Vacant - Unbuilt category have no structures, that category is not included in this analysis. Industrial Warehouses and Truck Terminals are the second largest category, with 24.0% of the regional industrial square footage. Food and Drink Processing Plants and Storage is again the smallest category (1.0%).

Figure 5. Industrial Land by Category (in acres) for 2007



Source: Greene, Miami, Montgomery, and Warren counties, 2007

Figure 6. Industrial GFA by Category (in square feet) for 2007



Source: Greene, Miami, Montgomery, and Warren counties, 2007; Carlisle, Franklin, and Springboro, 2007

Industrial Vacancy

Determining the exact number of vacant industrial properties, with and without structures, has proved a difficult process. The Vacant - Unbuilt category from the parcel data includes only those parcels that do not have structures. Table 3 gives the business vacancy rate by county based on Department of Housing and Urban Development (HUD) information on business vacancies in the Region as of March 31, 2008. As the business vacancies are not split between industrial and commercial, it is impossible to tell how many belong in which category. Miami and Montgomery counties have close to the same vacancy rate, although the total number of vacant business structures is much lower in Miami County than it is in Montgomery County. Northern Warren County has the lowest business vacancy rate at 6.4%.

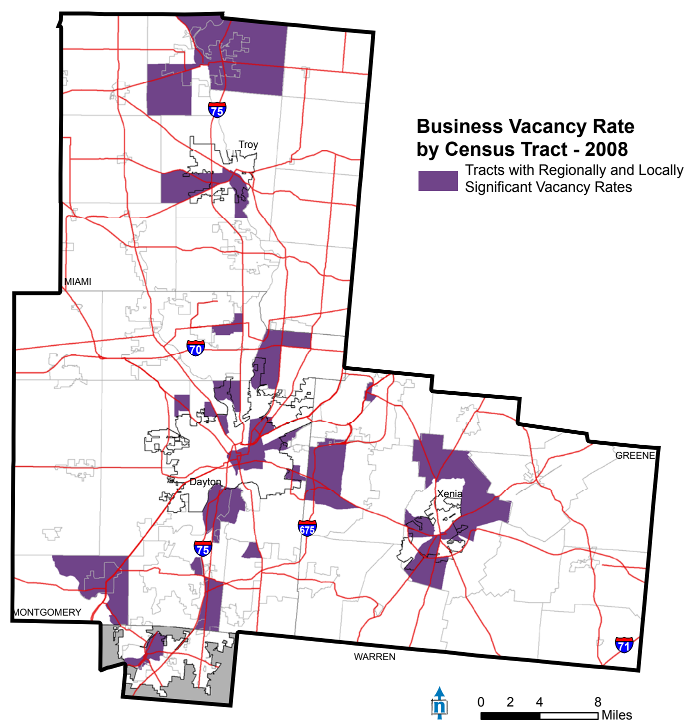
Table 3. Business Vacancy Rate by County - March 2008

	Greene	Miami	Montgomery	Warren*	Region
Businesses	6,028	3,151	19,543	1,264	29,986
Vacant Businesses	491	389	2,430	81	3,391
Vacancy Rate	8.2%	12.4%	12.4%	6.4%	11.3%

Source: Department of Housing and Urban Development, 2008
Note: * Warren County includes only the cities of Carlisle, Franklin, and Springboro

Figure 7 is a map of HUD information on business vacancies in the Region by Census tract. The map highlights those areas which have higher than average tract-level vacany rates (tract-level number of vacancies divided by the total number of business within that tract) and the tracts with higher than average regional vacancy rates (tract-level number of vacancies divided by the total number of business in the Region). Most of the tracts with regionally and locally significant vacancy rates are located near to the Region's major highways, especially along I-75. Many of the tracts also seem centered around the cities of Dayton, Xenia, and Piqua.

Figure 7. Census Tracts with High Vacancy Rates - March 2008



Source: Department of Housing and Urban Development, 2008

Table 4. Regional Estmate of Vacant Industrial Space (in square feet)

	Total GFA	Total Vacant GFA	Percent Vacant
Gem Survey	18,983,087	3,655,962	19.3%
MVRPC Estimate	73,689,637	14,191,923	19.3%

Source: Gem Real Estate Group, 2007; Greene, Miami, Montgomery, and Warren counties, 2007; Cities of Carlisle, Franklin, and Springboro

The closest estimate of vacant industrial structures comes from the Gem Real Estate Group, which estimated in its *2007 Greater Dayton Industrial-Warehouse Market Survey* that, of the 290 industrial buildings surveyed in the Region, 19.3% of the industrial GFA is vacant. Table 4 is the result of using the Gem Real Estate Group's percentage and applying it to the total regional industrial square footage to estimate the total vacant industrial square footage in the Region.

In this section, the analysis is focused on the Region's industrial land. The data is analyzed at the regional and county levels, with geographic information at the parcel and TAZ levels. Figure 8 shows a map of the Region with the industrial land divided into the eight categories presented in the previous section.

The insets in Figure 9 offer more detailed information about the distribution of industrial land throughout the Region and highlight the fact that many of the Region's industrial areas consist of a mixture of different types of industrial development. There are some areas, however, where a particular type of industrial development seems to be more prominent than others. For example, in northern Montgomery County, just to the east of I-75, Industrial Warehouses and Truck Terminals and Small Shops seem to be the most prominent categories, while to the southeast of I-75 in northern Warren County, Medium to Light Manufacturing and Assembly Plants seem to be more prevalent.

The Region has a total of 75,836 industrial employees occupying 14,096 acres of industrial land, which translates to an average of 0.19 acres of industrial land per employee (Table 5). However, as illustrated in the table, there are some variations in this measure between the counties. Greene County and northern Warren County have the highest amounts of industrial land per employee with 0.46 and 0.33 acres, respectively. Montgomery County has the lowest, with 0.14 acres.

Table 5. Industrial Land Per Employee (in acres)

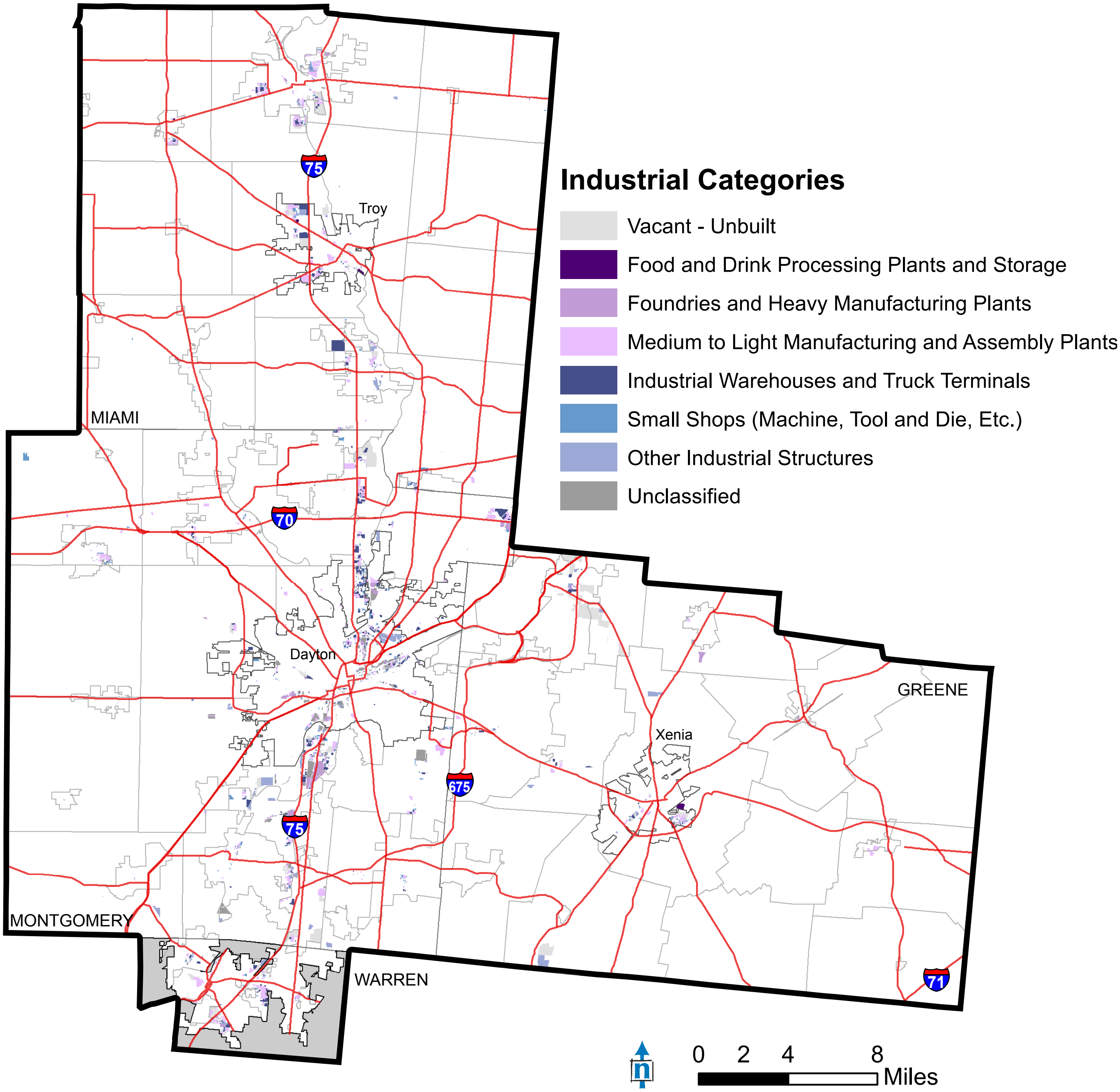
	Land	Employees	Land Per Employee
Region	14,096.0	75,836	0.19
Greene	2,469.4	5,384	0.46
Miami	3,069.6	14,727	0.21
Montgomery	7,473.8	52,454	0.14
Warren*	1,083.2	3,271	0.33

Source: Greene, Miami, Montgomery, and Warren counties, 2007; MVRPC, 2008
Note: This table compares 2005 employment data with 2007 land use data.

Table 6 summarizes the industrial land acreage data by industrial category at the county level. In addition, the table provides percent share information at the county level and at the regional level in order to present more detailed information pertaining to the composition of each county's industrial land by industrial category and each county's share of regional land for each industrial category.

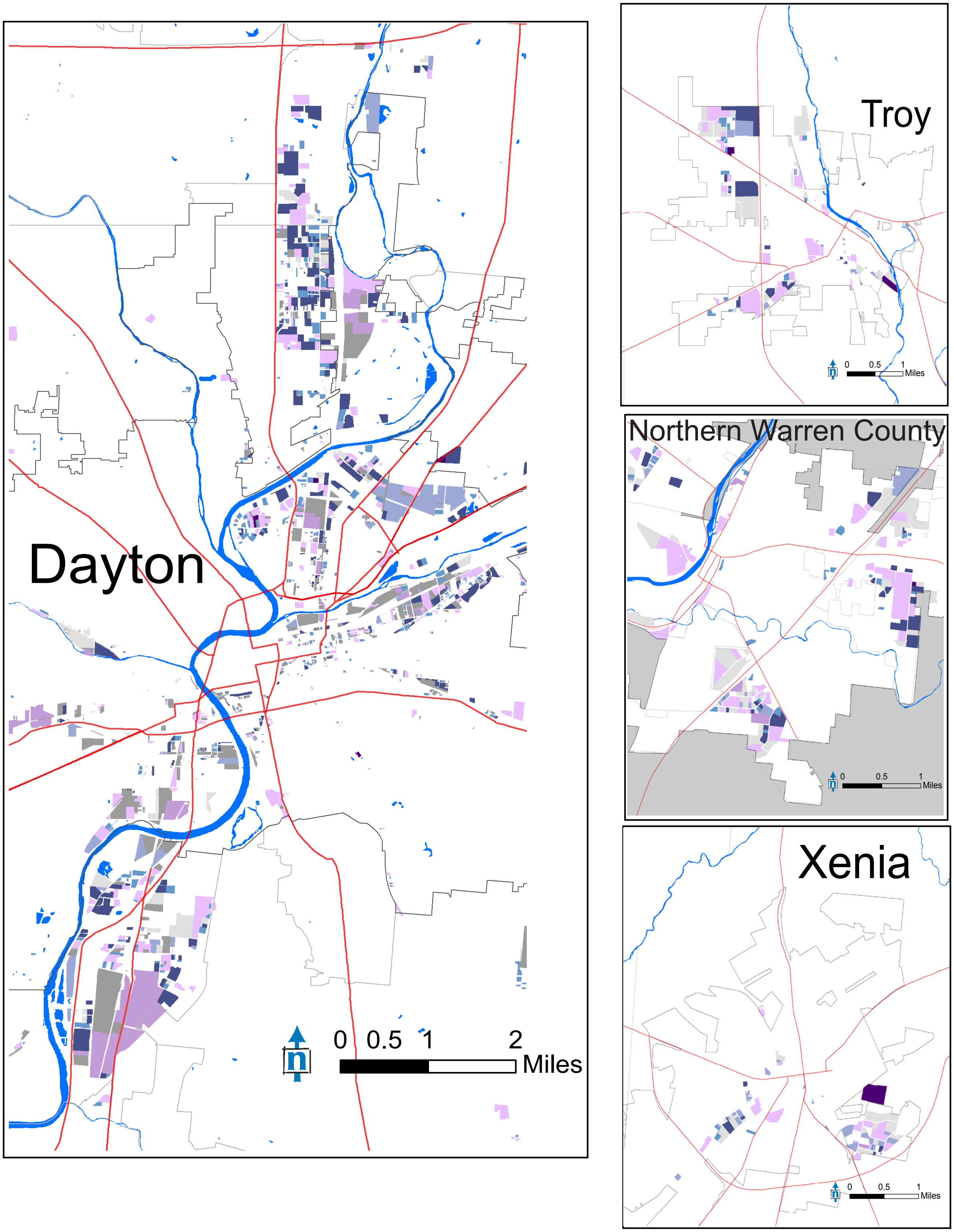
Montgomery County has the largest portion of the Region's industrial acreage (53%) followed by Miami (21.8%) and Greene (17.5%) counties. In terms of each industry's regional acreage, Montgomery County leads in all categories except two: Food and Drink Processing Plants and Vacant - Unbuilt, both of which have their highest percentages in Greene County (40.8% and 38.6%, respectively). Also, Greene County's share is larger than Miami County's in Foundries and Heavy Manufacturing Plants and Other Industrial Structures, while Miami County has larger portions of Light to Medium Manufacturing and Assembly Plants, Industrial Warehouses and Truck Terminals, and Small Shops than Green County.

Figure 8. Distribution of Industrial Land by Category for 2007



Source: Greene, Miami, Montgomery, and Warren counties, 2007

Figure 9. Distribution of Industrial Land by Category for Dayton, Troy, Northern Warren County, and Xenia for 2007



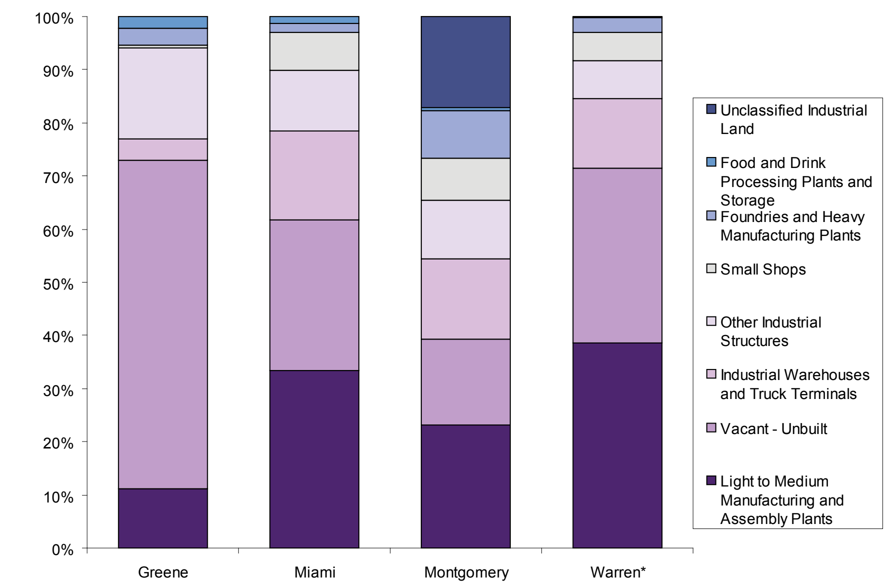
Source: Greene, Miami, Montgomery, and Warren Counties, 2007

Table 6. Industrial Land by Category by County for 2007 (in acres)

	Greene	Miami	Montgomery	Warren*	Region
Total Industrial Land	2,469.4	3,069.6	7,473.8	1,083.2	14,096.0
% Share of Regional Industrial Land	17.5%	21.8%	53.0%	7.7%	100.00%
Food and Drink Processing Plants and Storage	51.4	36.7	36.3	1.6	125.9
% Share of County Industrial Land	2.1%	1.2%	0.5%	0.1%	0.89%
% Share of Regional Category Land	40.8%	29.1%	28.8%	1.2%	100.0%
Foundries and Heavy Manufacturing Plants	78.8	52.3	670.5	30.9	832.6
% Share of County Industrial Land	3.2%	1.7%	9.0%	2.9%	5.9%
% Share of Regional Category Land	9.5%	6.3%	80.5%	3.7%	100.0%
Light to Medium Manufacturing and Assembly Plants	275.6	1,025.7	1,732.7	418.0	3,452.0
% Share of County Industrial Land	11.2%	33.4%	23.2%	38.6%	24.5%
% Share of Regional Category Land	8.0%	29.7%	50.2%	12.1%	100.0%
Industrial Warehouses and Truck Terminals	98.8	515.9	1,124.9	142.3	1,881.9
% Share of County Industrial Land	4.0%	16.8%	15.1%	13.1%	13.4%
% Share of Regional Category Land	5.2%	27.4%	59.8%	7.6%	100.0%
Small Shops	14.1	220.2	595.9	56.4	886.6
% Share of County Industrial Land	0.6%	7.2%	8.0%	5.2%	6.3%
% Share of Regional Category Land	1.6%	24.8%	67.2%	6.4%	100.0%
Other Industrial Structures	422.1	347.0	826.8	78.1	1,674.0
% Share of County Industrial Land	17.1%	11.3%	11.1%	7.2%	11.9%
% Share of Regional Category Land	25.2%	20.7%	49.4%	4.7%	100.0%
Unclassified Industrial Land	1.5	1.9	1,278.5	0.2	1,282.2
% Share of County Industrial Land	0.1%	0.1%	17.1%	0.0%	9.1%
% Share of Regional Category Land	0.1%	0.1%	99.7%	0.0%	100.0%
Vacant - Unbuilt	1,527.0	869.9	1,208.3	355.7	3,960.8
% Share of County Industrial Land	61.8%	28.3%	16.2%	32.8%	28.1%
% Share of Regional Category Land	38.6%	22.0%	30.5%	9.0%	100.0%

Source: Greene, Miami, Montgomery, and Warren counties, 2007
Note: * Warren County includes only the cities of Carlisle, Franklin, and Springboro

Figure 10. County Percent Distribution of Industrial Land by Category for 2007



Source: Greene, Miami, Montgomery, and Warren counties, 2007
Note: * Warren County includes only the cities of Carlisle, Franklin, and Springboro

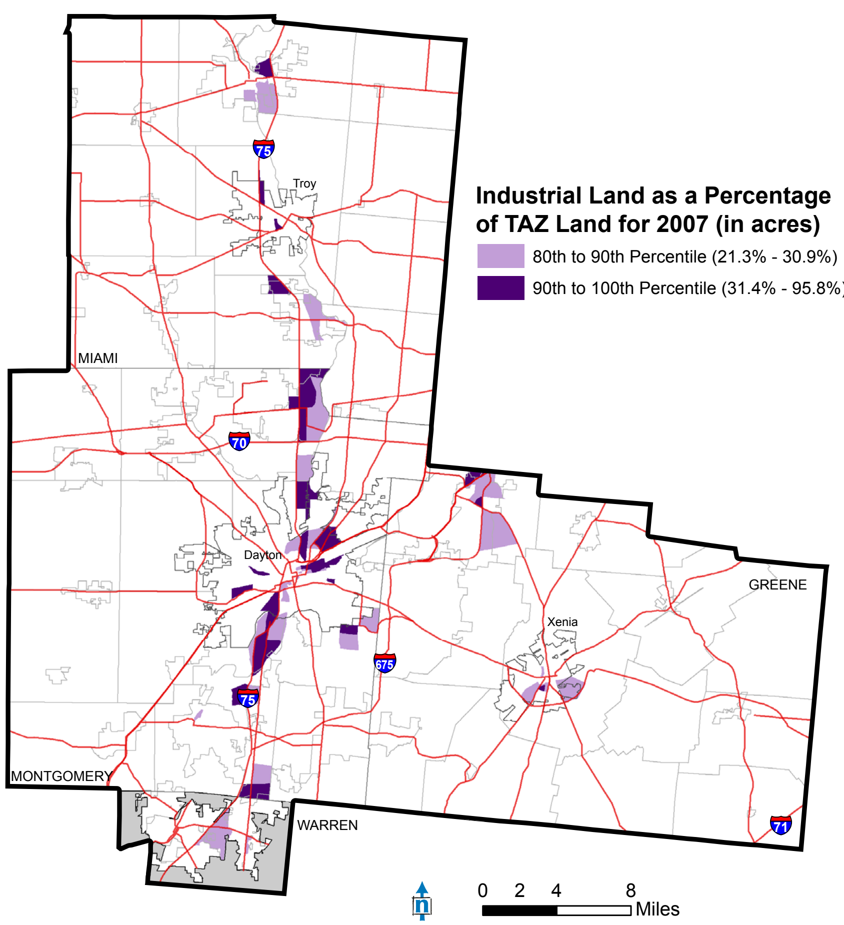
The bar chart presented in Figure 10 illustrates the composition of each county's industrial land by category.

In three out of the four counties in the Region, the Light to Medium Manufacturing and Assembly Plants category shares the largest portion of each county's industrial land. In Greene County, however, the Vacant - Unbuilt category is dominant with 61.8% of the county's industrial land. The share of the Light to Medium Manufacturing and Assembly Plants category in Greene County is rather small, with only an 11.2% share.

In addition, while the share of Industrial Warehouses and Truck Terminals in Miami, Montgomery, and northern Warren counties is around 15% (16.8%, 15.1%, and 13.1%, respectively), the share of the same industry is only 4% in Greene County

Figure 11 is a map showing the areas in the Region with the highest percentages of their land devoted to industrial development. The dark purple areas fall into the top 10% of all areas based on their industrial land percentages. The light purple areas fall into the top 10 to 20% of all areas. Most of the areas highlighted in this map are adjacent or very near to I-75, emphasizing this interstate's importance to regional industrial development. Other highlighted areas are located near Wright Patterson Air Force Base and the City of Xenia.

Figure 11. Industrial Development Concentrations for 2007



Source: Greene, Miami, Montgomery, and Warren counties, 2007

This section of the report focuses on industrial GFA, reported in square footage. Due to the lack of GFA data in Montgomery County, GFA was estimated based on the assumption that most industrial structures are one story.

In contrast to the land per employee figures in Table 5, in terms of GFA per employee Montgomery County has the highest number, although Greene County's GFA per employee is a very close second (Table 7). The Region as a whole averages 972 square feet per employee. Northern Warren County has the lowest GFA per employee, with only 406 square feet per employee.

Table 7. Industrial GFA per Employee (in square feet)

	GFA	Employees	GFA Per Employee
Region	73,689,637	75,836	972
Greene	5,649,562	5,384	1,049
Miami	11,527,833	14,727	783
Montgomery	55,182,873	52,454	1,052
Warren*	1,329,369	3,271	406

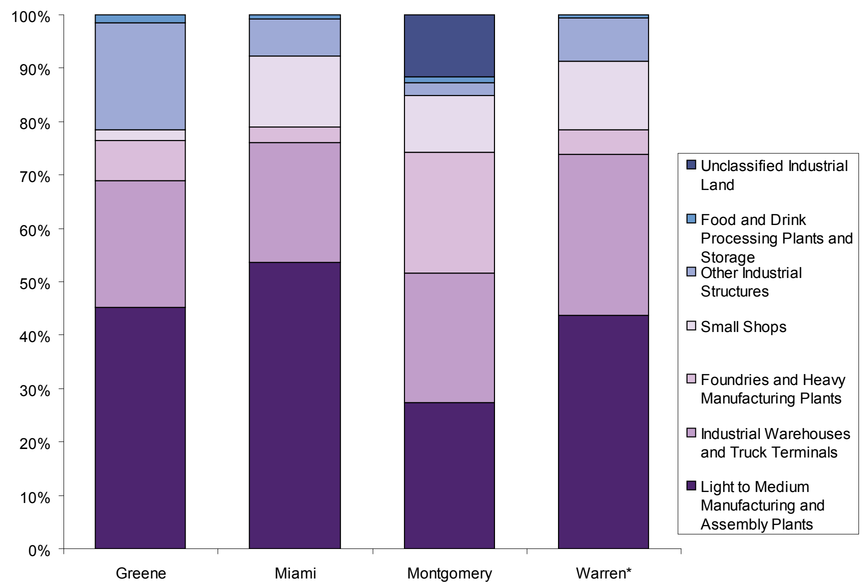
Source: Greene, Miami, Montgomery, and Warren counties; MVRPC; cities of Carlisle, Franklin, and Springboro, 2007
Note: * Warren County includes only the cities of Carlisle, Franklin, and Springboro
This table compares 2005 employment data with 2007 land use data.

Similar to Table 6, Table 8 summarizes the industrial GFA data by industrial category at the county level with percent share information at the county and regional levels.

At the regional level, Montgomery County consistently dominates in every category (Table 8). Overall, Montgomery County contains 74.9% of the Region's total GFA. Also, Foundries and Heavy Manufacturing Plants and Food and Drink Processing Plants and Storage are heavily concentrated in Montgomery County, with 93.8% and 77.9%, respectively.

At the county level, Light to Medium Manufacturing and Assembly Plants comprise the largest category, followed by Industrial Warehouses and Truck Terminals (Figure 12). Combined, these two categories total approximately 70% of each of Greene, Miami, and northern Warren County's total GFA (69%, 76.1%, and 74%, respectively). Also, in comparison to other counties, the share of Small Shops in Greene County was significantly smaller while the GFA share in Other Industrial Structures was much larger.

Figure 12. County Percent Distribution of Industrial GFA by Category for 2007



Source: Greene, Miami, Montgomery, and Warren counties, 2007; cities of Carlisle, Franklin, and Springboro, 2007
Note: * Warren County includes only the cities of Carlisle, Franklin, and Springboro

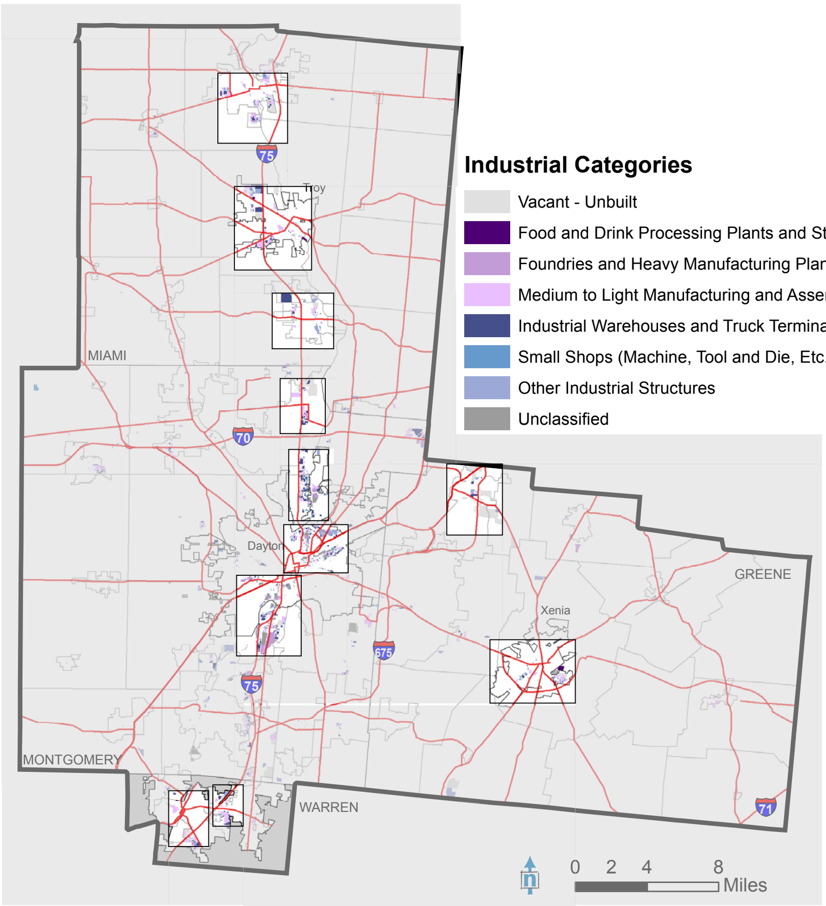
Table 8. Industrial GFA by Category by County for 2007 (in square feet)

	Greene	Miami	Montgomery	Warren*	Region
Total Industrial GFA	5,649,562	11,527,833	55,182,873	1,329,369	73,689,637
% Share of Regional Industrial GFA	7.7%	15.6%	74.9%	1.8%	100.0%
Food and Drink Processing Plants and Storage	76,187	82,983	587,944	8,080	755,194
% Share of County Industrial GFA	1.3%	0.7%	1.1%	0.6%	1.0%
% Share of Regional Category GFA	10.1%	11.0%	77.9%	1.1%	100.0%
Foundries and Heavy Manufacturing Plants	418,660	338,685	12,423,866	61,018	13,242,229
% Share of County Industrial GFA	7.4%	2.9%	22.5%	4.6%	18.0%
% Share of Regional Category GFA	3.2%	2.6%	93.8%	0.5%	100.0%
Light to Medium Manufacturing and Assembly Plants	2,558,607	6,196,320	15,165,130	581,034	24,501,091
% Share of County Industrial GFA	45.3%	53.8%	27.5%	43.7%	33.2%
% Share of Regional Category GFA	10.4%	25.3%	61.9%	2.4%	100.0%
Industrial Warehouses and Truck Terminals	1,338,816	2,571,871	13,382,600	402,506	17,695,793
% Share of County Industrial GFA	23.7%	22.3%	24.3%	30.3%	24.0%
% Share of Regional Category GFA	7.6%	14.5%	75.6%	2.3%	100.0%
Small Shops	116,805	1,523,588	5,868,206	170,198	7,678,797
% Share of County Industrial GFA	2.1%	13.2%	10.6%	12.8%	10.4%
% Share of Regional Category GFA	1.5%	19.8%	76.4%	2.2%	100.0%
Other Industrial Structures	1,136,611	814,384	1,328,133	106,533	3,385,661
% Share of County Industrial GFA	20.1%	7.1%	2.4%	8.0%	4.6%
% Share of Regional Category GFA	33.6%	24.1%	39.2%	3.1%	100.0%
Unclassified Industrial Land	3,876	2	6,426,994	0	6,430,872
% Share of County Industrial GFA	0.1%	0.0%	11.6%	0.0%	8.7%
% Share of Regional Category GFA	0.1%	0.0%	99.9%	0.0%	100.0%

Source: Greene, Miami, Montgomery, and Warren counties, 2007; cities of Carlisle, Franklin, and Springboro, 2007
Note: * Warren County includes only the cities of Carlisle, Franklin, and Springboro

In 2007, over 69% of the Region's industrial land was located within one mile of a major highway. Interstate 75 has captured a majority of that figure, with 49.5% of the Region's industrial land located within one mile of the interstate. The Region's major cities contain 75.8% of the Region's industrial land. Of all the major cities, however, the City of Dayton has the largest concentration of industrial land (13%).

Figure 13. Industrial Market Clusters



In order to better analyze the distribution of industrial development throughout the Region, eleven industrial markets, based on markets of industrial land, have been identified (Figure 13):

- Northeast Greene County
- Franklin
- Montgomery County/ North I-75
- North Dayton
- East Dayton
- North Miami County
- South Dayton/Moraine
- Springboro
- South Miami County
- Central Miami County
- Central Greene County

Within each of the markets, the percentage of land per category illustrates that while some markets show a bias towards one category of industrial development, very few are dominated by that category (Table 9). Of the eleven markets, nine have categories containing over 30% of their industrial land. Only three of those nine markets have categories containing more than 40%. Franklin has two categories exceeding 40%: Light to Medium Manufacturing and Assembly Plants and Vacant-Unbuilt. The two markets that have more than 50% of their industrial land in one category both have the most land in the Vacant - Unbuilt category. The Montgomery County/North I-75 market has 51.2% of its industrial land in this category, while the Northeast Greene County market has 89.5% of its industrial land in this category.

In terms of GFA, eight markets have more than 40% of their industrial GFA in one category (Table 10). Five markets have more than 50% of their industrial GFA in one category. Franklin and Springboro have less than 60% of their industrial GFA in one category (Light to Medium Manufacturing and Assembly Plants and Industrial Warehouses and Truck Terminals, respectively. The Montgomery County/North I-75, North Miami County, and South Miami County markets have more than 60% of their industrial GFA in the Light to Medium Manufacturing and Assembly Plants category.

Table 9. Industrial Land by Market and Category (in acres) for 2007

	Food and Drink Processing Plants and Storage	Foundries and Heavy Manufacturing Plants	Light to Medium Manufacturing and Assembly Plants	Industrial Warehouses and Truck Terminals	Small shops	Other Industrial Structures	Unclassified	Vacant - Unbuilt
NE Greene County	0.0 (0.0%)	3.7 (0.3%)	11.0 (0.9%)	44.0 (3.7%)	0.0 (0.0%)	66.7 (5.6%)	0.0 (0.0%)	1,063.5 (89.5%)
Franklin	0.0 (0.0%)	24.7 (4.8%)	208.0 (40.5%)	31.6 (6.2%)	22.1 (4.3%)	18.9 (3.7%)	0.2 (0.1%)	207.7 (40.5%)
Montgomery County/North I-75	0.0 (0.0%)	0.0 (0.0%)	189.1 (25.1%)	107.5 (14.3%)	31.2 (4.1%)	14.1 (1.9%)	25.3 (3.4%)	386.0 (51.2%)
North Dayton	0.0 (0.0%)	60.6 (7.0%)	198.3 (22.9%)	252.1 (29.1%)	83.1 (9.6%)	56.5 (6.5%)	163.4 (18.9%)	52.8 (6.1%)
East Dayton	11.4 (1.0%)	45.1 (3.9%)	186.9 (16.1%)	204.0 (17.6%)	111.2 (9.6%)	114.2 (9.9%)	457.5 (39.5%)	29.6 (2.6%)
N. Miami County	1.1 (0.1%)	52.3 (5.1%)	433.9 (42.6%)	82.5 (8.1%)	48.9 (4.8%)	86.3 (8.5%)	0.0 (0.0%)	314.7 (30.9%)
South Dayton/Moraine	0.1 (0.0%)	395.2 (26.1%)	218.5 (14.4%)	183.6 (12.1%)	69.4 (4.6%)	89.4 (5.9%)	404.0 (26.7%)	155.7 (10.3%)
Springboro	1.6 (0.3%)	0.0 (0.0%)	170.8 (37.1%)	88.7 (19.2%)	21.0 (4.6%)	43.3 (9.4%)	0.0 (0.0%)	135.0 (29.4%)
S. Miami County	1.6 (0.3%)	0.0 (0.0%)	101.2 (19.7%)	194.7 (37.9%)	22.6 (4.4%)	108.5 (21.1%)	0.0 (0.0%)	85.7 (16.7%)
Central Miami County	29.8 (2.7%)	0.0 (0.0%)	348.4 (31.2%)	210.4 (18.9%)	66.1 (5.9%)	90.7 (8.1%)	1.8 (0.2%)	368.7 (33.0%)
Central Greene County	51.4 (13.2%)	4.5 (1.2%)	109.9 (28.1%)	19.9 (5.1%)	10.1 (2.6%)	73.5 (18.8%)	0.0 (0.0%)	121.4 (31.1%)

Source: Greene, Miami, Montgomery, and Warren counties, 2007

Table 10. Industrial GFA by Market and Category (in square feet) for 2007

	Food and Drink Processing Plants and Storage	Foundries and Heavy Manufacturing Plants	Light to Medium Manufacturing and Assembly Plants	Industrial Warehouses and Truck Terminals	Small shops	Other Industrial Structures	Unclassified
NE Greene County	0 (0.0%)	48,706 (6.6%)	355,129 (48.2%)	286,986 (39.0%)	0 (0.0%)	45,419 (6.2%)	0 (0.0%)
Franklin	0 (0.0%)	52,920 (9.3%)	312,849 (55.0%)	19,850 (3.5%)	95,908 (16.9%)	87,203 (15.3%)	0 (0.0%)
Montgomery County/North I-75	0 (0.0%)	0 (0.0%)	2,395,655 (74.7%)	617,160 (19.2%)	116,486 (3.6%)	17,077 (0.5%)	61,562 (1.9%)
North Dayton	0 (0.0%)	632,993 (8.6%)	1,792,181 (24.2%)	2,906,392 (39.3%)	730,592 (9.9%)	17,194 (0.2%)	1,323,149 (17.9%)
East Dayton	131,077 (1.0%)	817,807 (6.0%)	2,690,792 (19.6%)	2,200,000 (16.0%)	1,523,889 (11.1%)	404,546 (3.0%)	5,955,938 (43.4%)
N. Miami County	2,688 (0.1%)	338,685 (8.0%)	2,661,776 (62.7%)	578,503 (13.6%)	395,265 (9.3%)	267,847 (6.3%)	0 (0.0%)
South Dayton/Moraine	4,373 (0.0%)	6,222,317 (33.0%)	1,994,556 (10.6%)	3,484,581 (18.5%)	802,403 (4.3%)	769,701 (4.1%)	5,576,526 (29.6%)
Springboro	8,080 (1.3%)	0 (0.0%)	229,068 (35.9%)	371,781 (58.3%)	28,690 (4.5%)	0 (0.0%)	0 (0.0%)
S. Miami County	0 (0.0%)	0 (0.0%)	1,043,338 (63.6%)	129,864 (7.9%)	195,413 (11.9%)	270,961 (16.5%)	0 (0.0%)
Central Miami County	80,295 (1.9%)	0 (0.0%)	1,671,190 (39.7%)	1,781,179 (42.3%)	513,199 (12.2%)	160,599 (3.8%)	0 (0.0%)
Central Greene County	76,187 (2.6%)	58,949 (2.6%)	782,930 (34.6%)	758,076 (33.5%)	46,924 (2.1%)	537,542 (23.8%)	0 (0.0%)

Source: Greene, Miami, Montgomery, and Warren counties, 2007; cities of Carlisle, Franklin, and Springboro, 2007

In the period from 1980 to 2000, Montgomery County was the only county to show a decrease in manufacturing employment (Table 11). That decrease was enough to cause a decrease at the regional level between 1980 and 1990. Between 1990 and 2000, however, gains in manufacturing employment by Greene and Miami counties were enough to bring the regional total up slightly. However, between 2000 and 2005 that total decreased again, taking the regional industrial employment total to its lowest level since 1980.

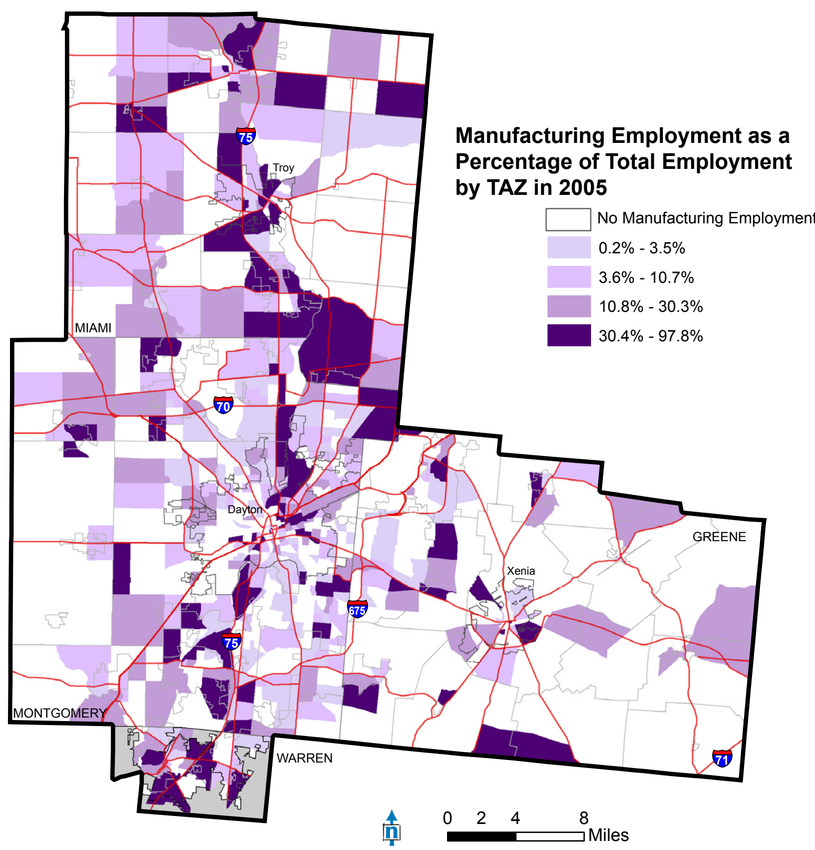
Table 11. Manufacturing Employment from 1980 to 2005

	1980	1990	2000	2005
Greene	3,852	4,248	5,343	5,384
Miami	14,390	13,700	15,323	14,727
Montgomery	65,461	59,865	59,165	52,454
Warren*			3,287	3,271
Regional Total**	83,703	77,813	79,831	72,565

Source: MVRPC, 2008; Ohio-Kentucky-Indiana Council of Governments, 2008
Note: * No data available for Carlisle, Franklin, and Springboro for 1980 and 1990
** The 2000 regional total does not include data from Warren County

Manufacturing employment in 2005 was scattered throughout the Region, although the largest concentrations occur in Miami and Montgomery counties (Figure 14). Greene County has a few small areas where there are higher concentrations of manufacturing employment, but they are mostly concentrated along the western section of US 35 and in and around the City of Xenia. Most of northern Warren County has high concentrations of manufacturing employment. In Montgomery County the highest concentrations are located, for the most part, west of I-75 in the southern portion of the County and east of I-75 in the northern portion. The Miami County side of the border between Miami and Montgomery counties has some heavier concentrations, as well as a few scattered areas in northern Miami County. Otherwise, in Miami County, the highest concentrations follow I-75 through the middle portion of the county.

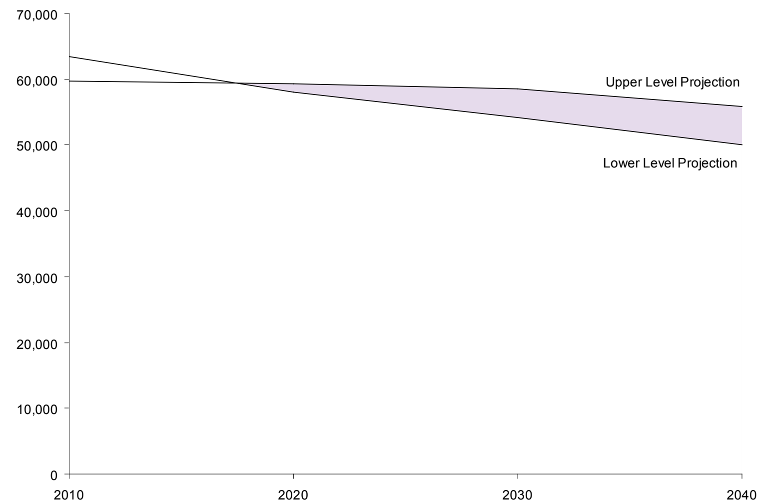
Figure 14. Manufacturing Employment Concentrations for 2005



Source: MVRPC, 2008; Ohio-Kentucky-Indiana Council of Governments, 2008

MVRPC staff have developed manufacturing sector employment projections to 2040 (Figure 15). In doing so, MVRPC staff developed upper and lower level projections in order to provide insight as to what the manufacturing employment range could be in the future. In both cases, manufacturing employment is projected to decrease between 2010 and 2040.

Figure 15. Manufacturing Employment Projection Range



Source: MVRPC, 2008; Ohio-Kentucky-Indiana Council of Governments, 2008

In the upper level projection numbers, it is expected that there will be a regional decrease of almost 4,000 employees (Table 12). Greene County and northern Warren County both are expected to increase during the projection period, but the decreases in Miami and Montgomery counties bring the 2040 total down from its 2010 level.

In the case of the lower level projection numbers, the regional total is expected to decrease by 13,421 (Table 13). The only county in this projection that is not expected to register a decrease during the projection period is northern Warren County.

Table 12. Upper Level Industrial Employment Projections

	2010	2020	2030	2040
Greene	4,055	4,157	4,189	4,125
Miami	11,318	11,368	11,142	10,742
Montgomery	40,553	39,390	37,900	34,890
Warren*	3,741	4,449	5,331	6,097
Regional Total	59,667	59,363	58,562	55,854

Source: MVRPC, 2008; Ohio-Kentucky-Indiana Council of Governments, 2008
Note: * Warren County includes only the cities of Carlisle, Franklin, and Springboro

Table 13. Lower Level Industrial Employment Projections

	2010	2020	2030	2040
Greene	4,329	4,057	3,845	3,642
Miami	12,084	11,095	10,228	9,484
Montgomery	43,295	38,446	34,789	30,804
Warren*	3,741	4,449	5,331	6,097
Regional Total	63,448	58,046	54,193	50,027

Source: MVRPC, 2008; Ohio-Kentucky-Indiana Council of Governments, 2008
Note: * Warren County includes only the cities of Carlisle, Franklin, and Springboro

Industrial development in the Miami Valley Region has been, and is expected to continue to be, on the decline, both in terms of land use and employment. While the developed areas in the Region have expanded, the share of that land allocated for industrial uses has declined. Employment has also declined by over 11,000 jobs between 1980 and 2005, and is expected to decrease even further by 2040.

Overall, industrial development comprises a very small portion of the Region's developed land. Less than 2% of the Region's developed land is classified industrial and, of that, almost 30% is vacant and contains no structures. Industrial development in the Region is largely concentrated in the Region's major cities and along its major highways, especially along I-75

Currently, the largest type of industrial development in the Region is Light to Medium Manufacturing and Assembly Plants, followed by Industrial Warehouses and Truck Terminals. These two categories of industrial development occupy the largest amounts of land (excepting the Vacant-Unbuilt category) and GFA.

Montgomery County has the largest amount of industrial land and employment, although Miami County has been the fastest growing county in the Region in terms of industrial development. Montgomery County has lost the most industrial employment, however, while Miami and Greene counties have managed in increase their industrial employment.

Although the exact number of industrial vacancies is unknown, it is estimated that almost 20% of the Region's industrial GFA is vacant. If the industrial vacancies follow the same pattern as the total business vacancies reported by the Department of Housing and Urban Development, Montgomery County should contain the largest number of vacancies and Montgomery and Miami counties should have a similar percentage of vacant businesses as compared to the total number of businesses in each county.

In the future, industrial development will most likely play a much different role in our Region than it has in the past. It has been less and less of a driving force in terms of the regional economy in recent years and its influence is projected to continue to decline. Vacant industrial properties, while currently a local issue for some of the Region's communities, will likely become more of a regional issue in the future. These are issues that will require some future study, both at the local and regional levels, and will need to be incorporated into future industrial development planning.

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Greene County Land and GFA by Jurisdiction

	Land (acres)	GFA (square feet)
Bath Twp	623.1	19,800.0
Beavercreek	76.5	560,475.0
Beavercreek Twp	113.0	809,746.0
Bellbrook	0.0	0.0
Bowersville	2.0	0.0
Caesarscreek Twp	0.0	0.0
Cedarville	13.1	117,450.0
Cedarville Twp	8.7	0.0
Clifton	0.0	0.0
Fairborn	656.4	736,240.0
Jamestown	58.3	386,149.0
Jefferson Twp	89.9	0.0
Miami Twp	57.9	193,555.0
New Jasper Twp	0.0	0.0
Ross Twp	0.0	0.0
Silvercreek Twp	20.1	44,540.0
Spring Valley	0.0	0.0
Spring Valley Twp	338.5	8,154.0
Sugarcreek Twp	0.0	0.0
WPAFB	0.0	0.0
Xenia	332.5	2,132,729.0
Xenia Twp	135.3	127,879.0
Yellow Springs	34.0	512,845.0

Miami County Land and GFA by Jurisdiction

	Land (acres)	GFA (square feet)
Bethel Twp	134.8	500,314.0
Bradford	23.3	22,939.0
Brown Twp	10.5	45,278.0
Butler Twp	0.0	0.0
Casstown	0.0	0.0
Concord Twp	79.3	60,658.0
Covington	109.7	451,141.0
Elizabeth Twp	0.0	0.0
Fletcher	0.0	0.0
Huber Heights	421.1	57,470.0
Laura	0.3	28,160.0
Lostcreek Twp	0.0	0.0
Ludlow Falls	0.0	0.0
Monroe Twp	67.1	266,971.0
Newberry Twp	10.2	23,446.0
Newton Twp	0.0	0.0
Piqua	961.4	4,159,810.0
Pleasant Hill	1.0	8,504.0
Potsdam	0.0	0.0
Springcreek Twp	55.9	17,165.0
Staunton Twp	3.0	14,572.0
Tipp City	504.0	1,553,095.0
Troy	1,035.1	4,134,240.0
Union	11.4	15,132.0
Union Twp	15.8	59,428.0
Washington Twp	0.0	0.0
West Milton	14.1	75,982.0

Montgomery County Land and GFA by Jurisdiction

	Land (acres)	GFA (square feet)
Brookville	156.4	890,814.8
Butler Twp	52.0	207,914.5
Centerville	58.5	503,172.8
Clay Twp	84.7	184,778.6
Clayton	6.0	53,327.2
Dayton	2,239.0	24,640,490.6
Englewood	147.6	1,000,923.3
Farmersville	3.4	23,071.1
German Twp	41.9	14,345.8
Germantown	24.1	157,354.4
Harrison Twp	393.3	3,521,863.6
Huber Heights	408.9	1,487,436.3
Jackson Twp	0.0	0.0
Jefferson Twp	91.8	195,610.7
Kettering	412.9	4,385,171.8
Miami Twp	338.6	280,766.6
Miamisburg	563.8	2,367,912.6
Monroe Twp	0.0	0.0
Moraine	1,011.9	11,388,482.1
New Lebanon	0.8	10,219.0
Oakwood	0.0	0.0
Perry Twp	0.0	0.0
Phillipsburg	1.3	13,416.9
Riverside	48.5	250,375.7
Springboro	166.4	365,148.6
Trotwood	100.4	415,235.9
Union	7.8	52,932.2
Vandalia	899.4	5,153,983.0
Washington Twp	45.5	162,975.9
West Carrollton	402.2	2,603,860.0

Warren County Land and GFA by Jurisdiction

	Land (acres)	GFA (square feet)
Carlisle	63.6	81,090.0
Franklin	650.6	621,082.0
Springboro	367.1	626,697.0