AEP
INDIANA MICHIGAN POWER®

Regional Competitive Assessment:

Data Centers

Prepared by:
THOMAS P. MILLER & ASSOCIATES

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Regional Competitive Assessment:
Data Centers

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A unit of American Electric Power

By:

THOMAS P. MILLER & ASSOCIATES

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Introduction

Thomas P. Miller and Associates (TPMA) was requested to complete a Competitive Assessment of Indiana Michigan Power's service areas to analyze the key strengths, weaknesses, opportunities, and challenges facing six service territories of Indiana Michigan Power. The regions' performance – as measured by a variety of demographic, economic, and quality of life indicators - are benchmarked against five peer regions with which the service territories compete for jobs and workers. The goals of the Competitive Assessment are to provide data, analysis, and strategy for future economic development investments, strengthen the regions' competitiveness, and understand the gaps for improvement. This Data Centers report is the fifth of five reports that will assist Indiana Michigan Power in its planning efforts as it seeks to increase business recruitment efforts, regional competitiveness, and overall economic prosperity.

Based on the top ten site location factors identified from Area Development's Annual Corporate and Consultants Survey (2014), Thomas P. Miller and Associates (TPMA) gathered quantitative data, reviewed past reports, surveyed local and regional economic development organizations, and interviewed businesses that have recently relocated or expanded in each of the six Indiana Michigan Power service territories identified in the report.

Geographical Area

TPMA gathered quantitative and qualitative data for each of the following service territories: Benton Harbor, Michigan; Elkhart, Indiana; Fort Wayne, Indiana; Marion, Indiana; Muncie, Indiana; and South Bend, Indiana. For comparison, TPMA assessed five competitor cities: Chattanooga, Tennessee; Des Moines, Iowa; Milwaukee, Wisconsin; Rockford, Illinois; and Toledo, Ohio. In regards to the data centers sector, Chattanooga, Des Moines, and Milwaukee were emphasized due to the regions having a strong presence of data centers as well as their proximity to similar markets.

Data Centers Data Points

According to the Industry Research Monitor on Data Centers report generated by GE Capital, the industry is poised to continue growing due to consumer mobile broadband expansion, cloud computing development, the growth of social media, and an emphasis on big data analytics. Globally, demand continues to outpace supply, and top U.S. markets are continuing to demonstrate high utilization rates by third party, multi-tenant data center operators.[1]

[1] http://www.americas.gecapital.com/GECA_Document/Data_Center_Monitor_September_2013.pdf

Important factors for data centers looking to expand and/or relocate:

- Low cost, redundant power
- Proximity to Chicago and other large metropolitan areas
- Labor availability, quality, and cost
- Availability of certified cites
- Location outside of natural disaster areas (tornados, hurricanes, earthquakes, etc.)

Within each industry, the following data were gathered:

- Labor information, including total employment and unemployment
- Demographic information
- Cost of Living
- Taxes (property and income)
- Electric Power per kWh
- Available incentives

Competitive Advantages for the Indiana Michigan Power Regions

Overall, both quantitative and qualitative data analyzed for the six Indiana Michigan Power regions show that the service communities have a strong competitive advantage over peer communities and markets. Notable strengths include:

- Significantly less expensive annual costs for electrical rates in Indiana as compared to Milwaukee and Chattanooga;
- Fort Wayne and South Bend have a large number of employees and establishments in the data centers sector;
- Fort Wayne and Elkhart have seen the highest amount of population growth and are projected to see continued growth;
- Indiana Michigan Power service territories have the lowest average wage of all competitive regions;
- Average building cost per square foot is lower than most competitive regions;
- Average annual cost for corporate income taxes are significantly less expensive than the comparison communities;
- Strong work ethic identified throughout all Indiana Michigan Power communities; and
- A strong pool of available labor, especially in Marion, Indiana.

Definition of Data Centers (NAICS 518)

The primary NAICS for this industry is 518, Data Processing, Hosting and Related Services. Companies in this sector are primarily engaged in providing infrastructure for hosting or data processing services. Services may include specialized hosting activities, such as web hosting, streaming services or application hosting. They may also provide application service provisioning as well as general time-share mainframe facilities to clients. Those within data processing provide complete processing and specialized reports from data supplied by clients or provide automated data processing and data entry services (From US Census NACIS definitions).

Nationally, there are over 15,350 data center establishments employing over 270,000 workers. Across the six Indiana Michigan Power service territories, there are 31 establishments employing over 500 workers. The communities with the largest number of employees include: South Bend and Marion.

Region	Establishments	Employees
United States	15,350	271,876
Benton Harbor	NA	NA
Elkhart	5	18
Fort Wayne	14	146
Marion	1	86
Muncie	NA	NA
South Bend	11	275
Total for I&M Region	**31**	**525**

Source: Hoovers

Note that data centers can also be classified as secondary operations within a primary business. For example, while data is not available for NAICS 518 for Muncie and Benton Harbor, both communities do have data centers. First Merchant's Bank headquartered in Muncie has a large data center in the area. However, the primary NAICS code for First Merchant's is 52211, Commercial Banking. Thus, employment for the center is likely reported by this NAICS code and industry.

Major Data Center Establishments Currently in Indiana Michigan Power Service Territories

Data center representation in Indiana Michigan Power territories appears low, though processes in maintaining such a site are highly automated. South Bend and Fort Wayne employ the most data center employees, followed by Muncie.

Company	Employees	Region
NCR Corporation	33	South Bend, IN
Automatic Data Processing	15	Fort Wayne
Qumulus Solutions, LLC	6	South Bend, IN
Blue Pony Digital	5	Fort Wayne, IN
nHarmony, Inc.	4	Muncie, IN
A to Z Data Processing	4	Fort Wayne, IN
Data Realty Northern IN	3	South Bend, IN

Source: Hoovers

Interviews

In order to provide an accurate assessment of a region's economic strengths and opportunities, quantitative data gathering must be combined with input and research conducted via interviews and surveys with economic development organizations and businesses within each service territory. Stakeholder interviews included 7 local and regional economic development organizations and 9 local businesses. Each discussion covered topics on workforce, education/training, quality of place, and business climate, and were conducted telephonically or electronically.

Top executives at companies--mainly manufacturers--located throughout each Indiana Michigan Power service territory were interviewed to gather input and perspective on the strengths, assets, challenges, and opportunities of operating in each region. TPMA contacted companies that had recently expanded and/or relocated to each service territory in order to provide a comprehensive view of the competitive relocation environment.

Workforce

When TPMA inquired about the quality and availability of workforce for each region, manufacturers had similar experience in the challenge of finding workers with technical skills, especially as it relates to CNC machining, welders, maintenance technicians, and electrical engineers. One Fort Wayne manufacturer cited other companies within the industry leaving the region in order to find a bigger pool of qualified workers.

Another factor impacting the quality and availability of skilled workers is increased automation of manufacturing processes. Research over the past few years indicate that manufacturers throughout the U.S. are experiencing common issues with the current labor pool not having strong technical skills needed to fill jobs that are intensely technological and robotic.

Recruitment strategies of the manufacturers interviewed covered a wide range of sources including: word-of-mouth; the public workforce system; local universities, colleges, and community colleges; and staffing agencies. Interestingly, some manufacturers referenced a focus on a collaborative partnership with the K-12 education system in their region, helping to create a pipeline of talent to be fed into the region.

When asked to provide an overall assessment of their region's availability and quality of the labor force, most manufacturers stated the quality as "average" as compared to the rest of the U.S. Interviewees cited a lack in both technical and soft skills (i.e. communication, critical thinking, team-work, etc.) along with a shortage of training programs such as internships and apprenticeships that compound the issue.

An overwhelming majority of executives interviewed conduct their training in-house, while some mentioned the development of emerging partnerships and programs with local community colleges and high schools. While several companies cited good relationships with education partners, every respondent emphasized the need for stronger partnerships and programs between industry, post-secondary schools, and college institutions.

Overall, the companies interviewed indicated that most of their talent was pulled directly within the region. While a few companies attempt to recruit management or engineering positions from outside of their respective regions, companies tend to recruit from the Midwest, ensuring candidates are familiar with the quality of life, climate, and assets of the location.

Labor Information

Metro	Labor Force (45 Mi. Radius)	Unemployment Rate
Benton Harbor	364,896	5.4%
Elkhart	471,278	4.8%
Fort Wayne	472,115	4.8%
Marion	499,454	7.7%
Muncie	568,784	6.2%
South Bend	625,220	5.8%
Chattanooga	441,905	6.2%
Des Moines	460,188	4.0%
Milwaukee	1,098,954	5.3%

Source: BLS Local Area Unemployment Statistics, Oct. 2014

Cost Data

In order to provide further perspective and detail on cost data within the Indiana Michigan Power region, the data below assumes a hypothetical data center employing 35 employees, requiring a 50,000 sq. ft. building, and purchasing 20 acres of land.

The data was benchmarked with the following competitive metropolitan areas: Chattanooga, TN; Des Moines, IA; and Milwaukee, WI. All three areas have a strong existing cluster of data center employees. It is likely that Indiana Michigan metropolitan areas would be competing with data centers looking to serve the Midwest.

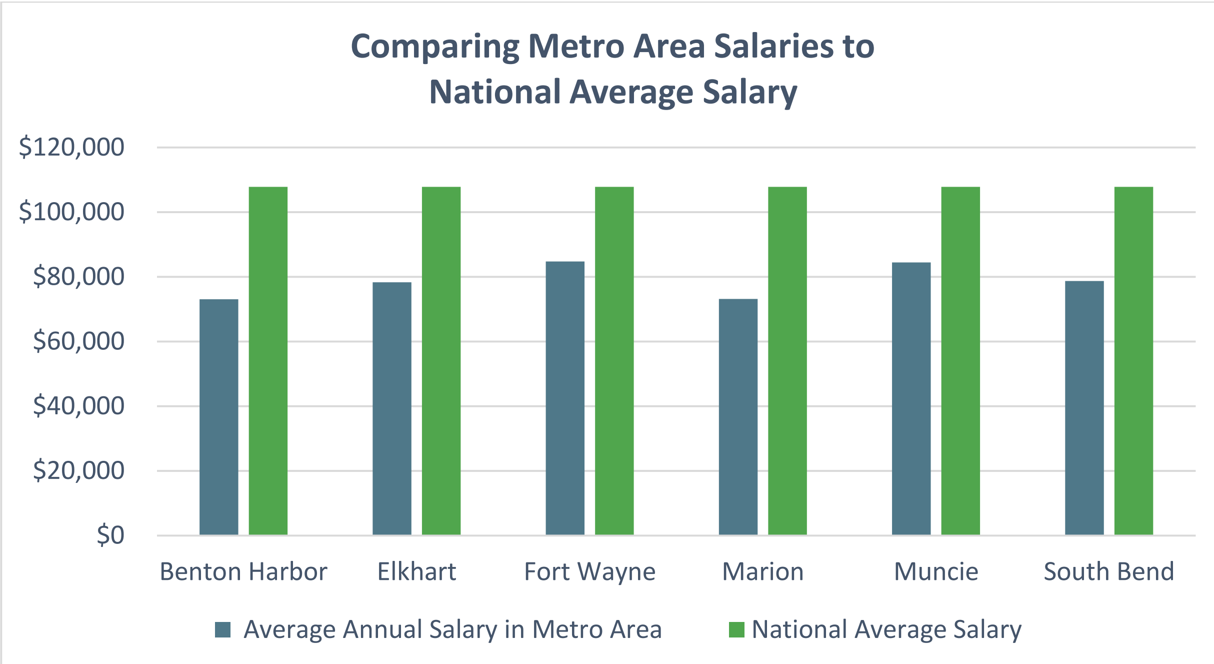
Personnel

Most occupations within data centers fall under the Standard Occupational Classification code as 15-1100, which is computer and mathematical occupations. There are six main occupations that fall under this code. Since the majority of data center occupations are classified within these six occupations, the average salary for the six occupations was analyzed for each Indiana Michigan Power community and compared with the competitive regions.

The national average annual salary for computer and mathematical occupations is $79,310. The average annual salary across the Indiana Michigan Power region is $57,902. Employee-related business expenses increase labor costs (e.g. health, disability, FICA, etc.) increase labor costs by additional 36%. Thus, the national average is $107,862, while the Indiana Michigan Power average is 37% lower, averaging $78,747. A data center locating in the region could save on average over $1 million in personnel costs—an attractive asset of the Indiana Michigan Power service territories.

Across the Indiana Michigan Power regions, Benton Harbor and Marion currently have the lowest wages.

Indiana Michigan Power Regions



Source: EMSI Analyst 2014.3

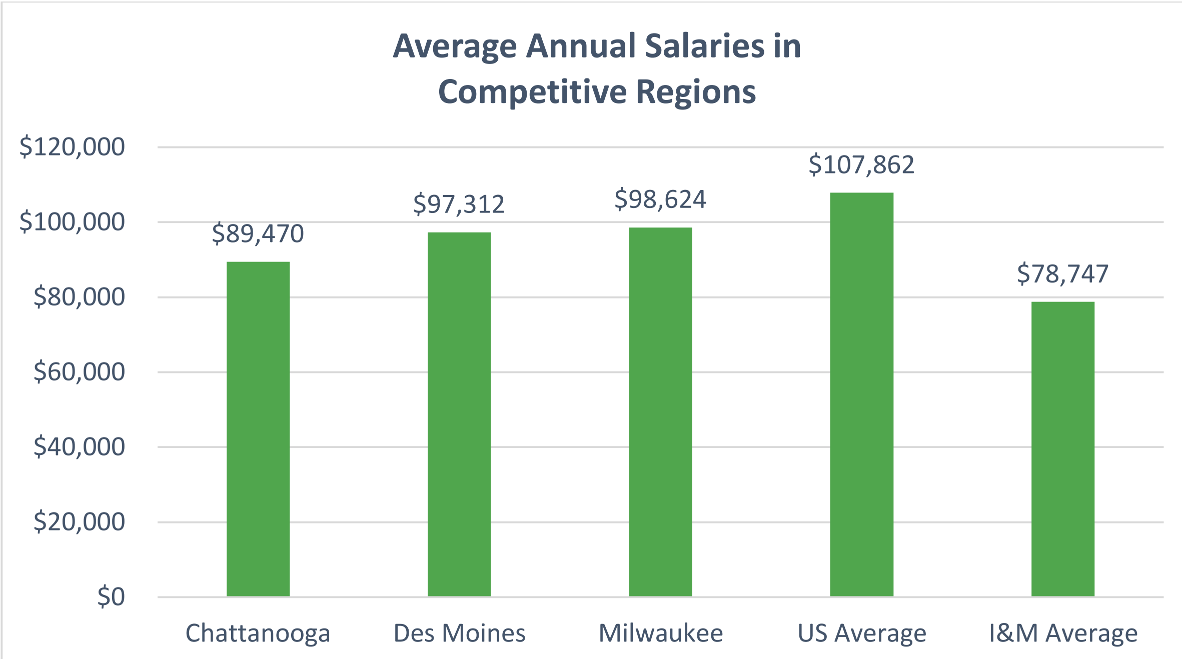
The table below is a breakdown of the total cost (per 35 employees) in personnel per each Indiana Michigan metropolitan area. A data center located in the region could save on average $1 million in personnel, compared to the national average.

Metro	Average Annual Salary	Total Cost (35 Employees)
Benton Harbor	$73,061	$2,557,120
Elkhart	$78,336	$2,741,760
Fort Wayne	$84,754	$2,966,384
Marion	$73,145	$2,560,071
Muncie	$84,419	$2,954,675
South Bend	$78,754	$2,756,373
Average Cost for Entire I&M Region	**$78,747**	**$2,756,147**

Source: EMSI Analyst 2014.3

Competitive Regions

Compared with Chattanooga, Des Moines and Milwaukee all Indiana Michigan Power communities have significantly lower wages. Due to labor costs typically being the largest share of business expenses, the wage levels of the Indiana Michigan Power service territories provide an attractive opportunity for companies relocating or expanding.



Metro	Average Annual Salary	Total Cost (35 Employees)
Chattanooga	$89,470	$3,131,461
Des Moines	$97,312	$3,405,923
Milwaukee	$98,624	$3,451,857
US Average	$107,862	$3,775,156
Average Wage for I&M	**$78,747**	**$2,756,147**

Source: EMSI Analyst 2014.3

Building and Land Cost

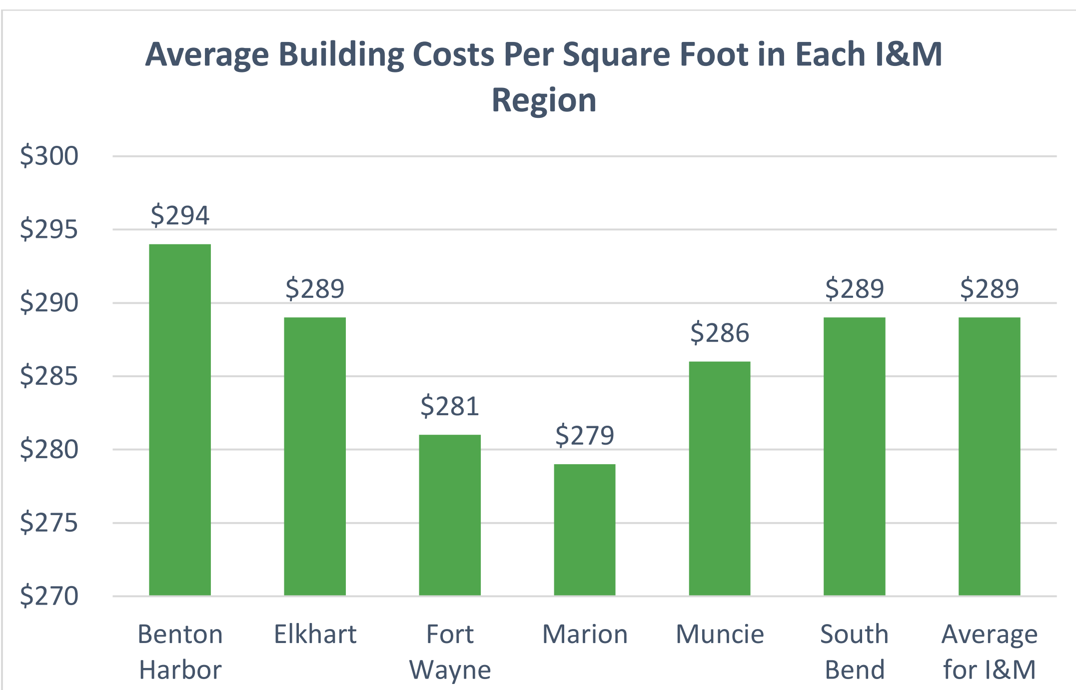
The national average to build a data center facility is $314 per square foot. Assuming 50,000 square feet (a larger data processing facility), the cost to build will be around $15,700,000. The average across the Indiana Michigan Power region is around $289 per square foot, which is nearly 9% lower than the national average. Thus, the average total cost in the Indiana Michigan Power region is $14,326,250. This represents a potential savings of around $1,300,000.

Across the region, building costs are mostly uniform, with the lowest costs existing in Marion and the highest in Benton Harbor.

Businesses and economic development organizations cited that an overwhelming majority of companies looking to relocate or expand were interested in existing facility space—not greenfield sites to build new facilities. Most executives stated that suitable existing facilities were somewhat difficult to find, and many available sites were not shovel-ready for development. While some communities did have a pipeline of spec buildings in process, other communities described a shortage of spec buildings and product. When interviewed, most companies interviewed cited they expanded their existing facility to accommodate business growth.

Indiana Michigan Power Regions

Benton Harbor has the highest average data center cost at $294 per square foot, while Fort Wayne and Marion have the lowest costs at $281 and $279, respectively. Elkhart and Muncie building costs are both comparable to the I&M region average of $289.

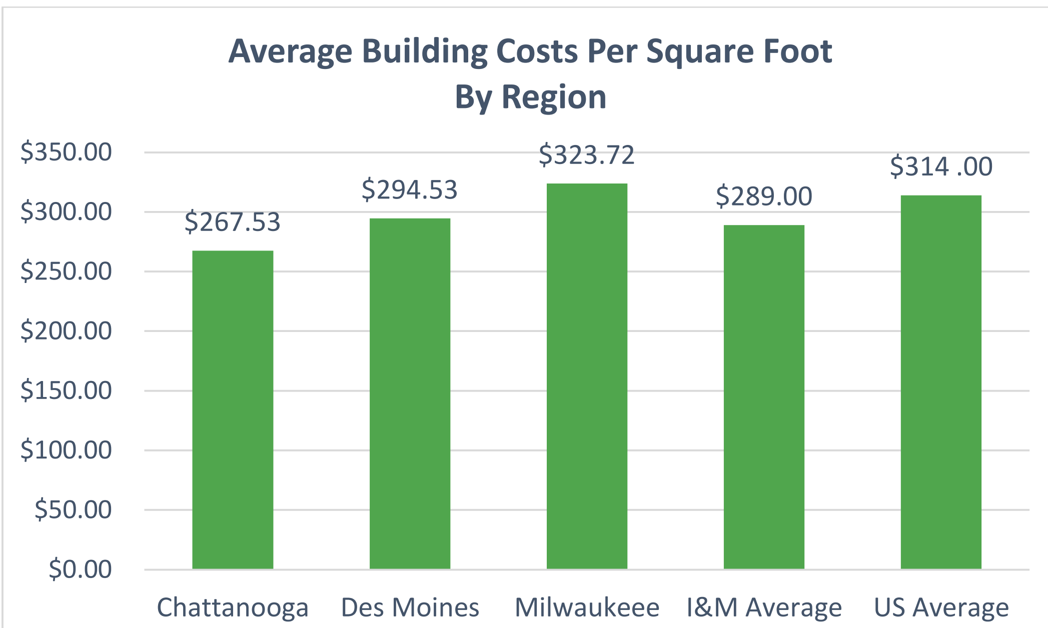


Metro	Cost/Sq. Ft.	Total Cost (50k Building)
Benton Harbor	$294	$14,710,900
Elkhart	$289	$14,459,700
Fort Wayne	$281	$14,051,500
Marion	$279	$13,973,000
Muncie	$286	$14,302,700
South Bend	$289	$14,459,700
Average Sq. Ft. Cost for I&M	**$289**	**$14,326,250**

Source: RSMeans, Total cost is not a 100% match due to rounding

Competitive Regions

Data center building costs within the Indiana Michigan Power communities are lower than Milwaukee, higher than Chattanooga, and in line with Des Moines.

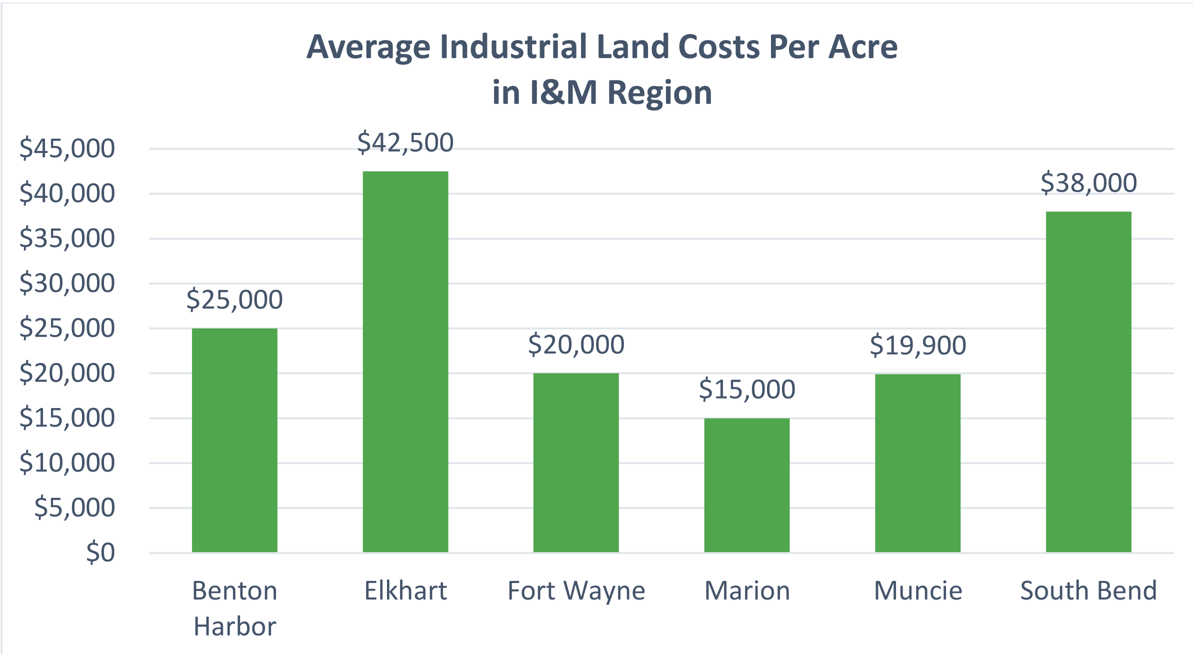


Metro	Total Cost (50k Building)
Chattanooga	$13,376,400
Des Moines	$14,726,600
Milwaukee	$16,186,700
US Average	$15,700,000
I&M Average	**$14,326,250**

Source: RSMeans

Industrial Land Costs

Industrial land costs across the Indiana Michigan Power region vary from $15,000 per acre in Muncie to $42,500 per acre in Elkhart. *(*Note - this is for sites with a minimum of 20 acres)*



Source: Local and regional economic development websites

Indiana Michigan Power Regions

Metro	Total Cost (20 Acres)
Benton Harbor	$500,000
Elkhart	$850,000
Fort Wayne	$400,000
Marion	$300,000
Muncie	$398,000
South Bend	$760,000
Average Cost for I&M	**$534,667**

Source: Local and regional economic development websites

Competitive Regions

Metro	Cost/Acre	Total Cost (20 Acres)
Chattanooga	$30,000	$600,000
Des Moines	$20,000	$400,000
Milwaukee	$80,000	$1,600,000

Source: Local and regional economic development websites

Costs in the Indiana Michigan Power region are comparable to Des Moines; however, they are significantly lower than Milwaukee and Chattanooga.

Combined Building and Land Costs

Indiana Michigan Power Regions

Metro	Total Combined Cost
Benton Harbor	$15,210,900
Elkhart	$15,309,700
Fort Wayne	$14,451,500
Marion	$14,273,000
Muncie	$14,700,700
South Bend	$15,219,700
Average Cost for the I&M Region	**$14,860,917**

Source: RSMeans and local and regional economic development websites

Competitive Regions

Metro	Total Combined Cost
Chattanooga	$13,976,400
Des Moines	$15,126,600
Milwaukee	$17,786,700
I&M Region	$14,860,917

Source: RSMeans and local and regional economic development websites

Annual Cost

In order to compare building and land costs on an annual basis with wages, electrical rates, and taxes we have provided an estimated annual fee based on a 6% interest rate and monthly amortization over 8 years.

Indiana Michigan Power Region

Metro	Annual Cost
Benton Harbor	$2,398,716
Elkhart	$2,414,296
Fort Wayne	$2,278,961
Marion	$2,250,812
Muncie	$2,318,259
South Bend	$2,400,104
Average Annual Cost for the I&M Region	**$2,343,524**

Source: RSMeans and local and regional economic development resources

Competitive Regions

Metro	Annual Cost
Chattanooga	$2,204,039
Des Moines	$2,385,422
Milwaukee	$2,804,912

Source: RSMeans and local and regional economic development resources

Available Buildings

The Industria Centre site in Muncie, IN is certified as a qualified data center site by Biggins, Lacy, Shapiro & Company. The site includes 100,000 square feet of white space on 97 available acres and is ideal for “free cooling” of a data center operation. The Industria Centre is located in close proximity to several long-haul fiber carriers, and Muncie is a major fiber connection to multiple networks. More information on this site is available in Appendix A.

Electric Rates

Electrical rates in the Indiana Michigan Power communities located in Indiana are significantly lower than those in Michigan and the other comparison regions. Electrical costs are significantly higher for data centers versus other types of facilities. Thus, electrical costs are a significant cost factor for data center facilities. The table below estimates annual electrical costs assuming an average 1,460,000 kWh monthly load.

I&M Regions

Metro	Cost/kWh	Total Annual Cost
Benton Harbor	$.0771	$1,226,400
Elkhart	$.0589	$1,031,928
Fort Wayne	$.0589	$1,031,928
Marion	$.0589	$1,031,928
Muncie	$.0589	$1,031,928
South Bend	$.0589	$1,031,928
Average Sq. Ft. Cost for I&M	**$.0615**	**$1,077,480**

Source: Indiana Michigan Power

Compared to Indiana Michigan Power communities, electrical rates in the comparison regions are lower with the exception of Milwaukee, which has the highest rates among all regions. However, Des Moines has the lowest electrical rate $.0477 per kWh.

Comparison Regions

Metro	Cost/kWh	Total Annual Cost
Chattanooga	$.0535	$937,320
Des Moines	$.0477	$835,704
Milwaukee	$.0755	$1,322,760

Source: State Average to Industrial Users, U.S. Energy Information Administration, October 2014

Corporate Income Tax

Across the comparison regions, the corporate income tax rate is lowest in Benton Harbor at 6.0%. Hypothetically, a data center could save $60,000 in corporate income tax over an Indiana location. However, the State of Indiana is in the process of lowering its corporate income tax rate annually over the next several years, beginning with a rate reduction to 6.5% effective July 1, 2015. By 2018, its rate will be comparable to the Michigan rate, and by 2022 it is expected to be at 4.9% - lowest among all communities analyzed.

I&M Regions

Metro	Tax Rate (State)	Total State Taxes ($5 million income)
Benton Harbor	6.0%	$300,000
Elkhart	7.0%	$350,000
Fort Wayne	7.0%	$350,000
Marion	7.0%	$350,000
Muncie	7.0%	$350,000
South Bend	7.0%	$350,000

Source: The Tax Foundation – "Facts and Figures 2015"

Comparison Regions

Corporate income tax rates are higher in both Des Moines and Milwaukee. The rate for Chattanooga falls between the rates for Michigan and Indiana.

Metro	Tax Rate (State)	Total State Taxes ($5 million income)
Chattanooga	6.5%	$325,000
Des Moines	7.9%	$395,000
Milwaukee	9.5%	$475,000

Source: The Tax Foundation – "Facts and Figures 2015"

Totals

Adding the total costs together, the average annual cost using the variables above for the Indiana Michigan Power region is $6,177,151. All of the Indiana Michigan Power communities are competitive with the comparison regions with the exception of Milwaukee, which is significantly more expensive.

I&M Regions

Metro	Total Combined Cost
Benton Harbor	$6,482,236
Elkhart	$6,537,984
Fort Wayne	$6,627,273
Marion	$6,192,811
Muncie	$6,654,862
South Bend	$6,538,405
I&M Average	$6,177,151

Comparison Regions

Metro	Total Combined Cost
Chattanooga	$6,597,820
Des Moines	$7,022,049
Milwaukee	$8,054,529

Business Factors

Infrastructure

Road Systems & Major Interstate Highway Connections

The strongest road systems are in Benton Harbor, South Bend, Elkhart, and Fort Wayne. In Benton Harbor, there is easy access and proximity to I-94, I-196, and US-31. This allows a data center to have access to the workforce to both Chicago and several large communities in Michigan, including Grand Rapids, Kalamazoo, Battle Creek, and Detroit. Several communities have easy access to or are within proximity of I-80/I-90, including South Bend and Elkhart. This allows for a data center operation to have access to Chicago and several markets across northern Indiana and into Ohio, including Toledo and Cleveland, as well as east coast ports such as Boston and New York. Fort Wayne, Muncie, and Marion offer access to the I-69 corridor, providing a route to numerous markets in Michigan via I-94 and I-96, as well as Indianapolis and its connections to I-65 (Louisville, Nashville, and Mobile), I-70 (Columbus, Pittsburgh, and Baltimore), and I-74 (Cincinnati and Peoria).

Rail

All communities offer rail access in the region, which is primarily serviced by Norfolk Southern. Communities that are serviced by Norfolk Southern include Benton Harbor, Elkhart, Fort Wayne, Muncie, and South Bend. A table below outlines which companies serve the different regions.

Metro Area	Railway Organization
Benton Harbor, MI	Norfolk Southern
Elkhart, IN	Norfolk Southern, CSX Transportation, Elkhart & Western, Grand Elk Railroad
Fort Wayne, IN	Norfolk Southern, Chicago Railway, Ft. Wayne & Eastern Railroad
Marion, IN	Central Railroad Co. of Indianapolis, Norfolk Southern, US Rail Corporation
Muncie, IN	Norfolk Southern, CSX Transportation
South Bend, IN	Norfolk Southern, Canadian National, Chicago Southshore, South Bend Railroad

Source: Local Economic Development Organization websites and Common Carrier Websites

Air

While all of the Indiana Michigan Power regions have airports, only South Bend and Fort Wayne offer daily, non-stop passenger flights, though to a limited number of destinations. The availability of passenger service is not as crucial for a data center operation. However, it does become a factor when recruiting a headquarters facility with several executives, as noted in interviews conducted with company executives.

South Bend Airport Locations:

Atlanta, Chicago (O'Hare), Detroit, Las Vegas, Minneapolis, Newark/New York, Orlando/Sanford, Phoenix/Mesa, Punta Gorda/SW Florida, and St. Petersburg/Clearwater/Tampa Bay

Fort Wayne International Locations:

Atlanta, Charlotte, Chicago, Dallas, Detroit, Fort Myers, Minneapolis, Myrtle Beach, Orlando, Philadelphia, Phoenix, Tampa

Air cargo services (UPS & FedEx) are available at Fort Wayne International, South Bend Airport, and Southwest Michigan Airport (Benton Harbor).

Water

Water availability is robust in the Indiana Michigan Power region. The Port of Indiana at Burns Harbor, Indiana is the closest port, with Benton Harbor being only 62 miles from the port and South Bend is only 50 miles away. In addition, its I & M communities boast strong current and excess capacity levels for water and sewer flow, ample for businesses. Detailed capacity levels are outlined in the table below.

Water Availability

Region	Daily Water Flow	Water Excess Capacity	Daily Waste Flow	Waste Excess Capacity	Approx. Water Cost/Mo.*	Approx. Sewer Cost/Mo.**
Benton Harbor	1 mgd	2 mgd	8 mgd	7 mgd	$115.50***	$156.00
Elkhart	9 mgd	10 mgd	15 mgd	5 mgd	$49.38	$183.56
Ft. Wayne	50 mgd	22 mgd	45 mgd	25 mgd	$194.00	$271.32
Marion	6.3 mgd	11 mgd	8 mgd	4 mgd	$109.71	$152.44
Muncie	9 mgd	2 mgd	17 mgd	8 mgd	$69.07	$219.50
South Bend	30 mgd	30 mgd	32 mgd	16 mgd	$117.95	$298.50

Sources: Local Economic Development Organization websites

*Assumes 2” meter and 5,000 CCF rate per month inside city limits

**Assumes 5,000 CCF rate per month inside city limits

***Does not include monthly 2” meter fee

Market Proximity

All locations are located within close proximity to several major markets, including Chicago, Cincinnati, Cleveland, Columbus, Detroit, and Indianapolis. Benton Harbor, Elkhart, and South Bend are within the closest proximity to Chicago, so data center companies looking to serve the Chicago market may benefit from a location in this part of the Indiana Michigan region. Fort Wayne is centrally located between Chicago, Detroit, and Indianapolis. Marion and Muncie benefit from close proximity to Indianapolis and Southern Ohio. Close proximity to major markets, favorable electricity rates, and a low risk for natural disasters, are important factors for data centers looking to expand relocate in the I&M region.

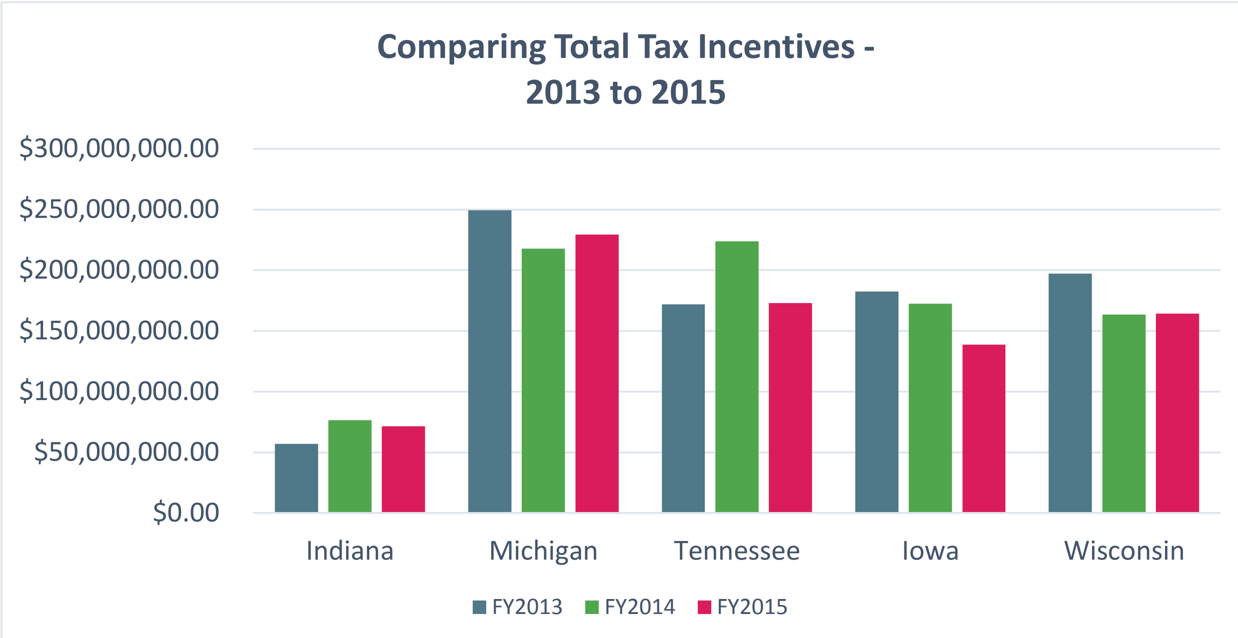
Tax Environment

According to The Tax Foundation, the nation's leading independent tax policy research organization, both Michigan and Indiana rank favorably in terms of overall tax environment. For 2015, Michigan is ranked 13th, while Indiana is ranked 8th. By comparison, Tennessee, Iowa and Wisconsin rank 15th, 41st and 43rd, respectively. Of note, Michigan and Tennessee's corporate tax rates are more attractive than the other regions identified.

State	Overall Rank	Corporate Tax Rank	Individual Income Tax Rank	Sales Tax Rank	Property Tax Rank
Illinois	31	47	11	34	44
Indiana	8	22	10	10	5
Michigan	13	10	14	7	27
Ohio	44	26	47	32	20
Tennessee	15	15	8	47	37
Wisconsin	43	33	43	14	31

Source: The Tax Foundation

Total Tax Incentives – By State



Overall, Michigan offers the largest amount of tax incentives in the comparison regions, while Indiana offers the fewest by far with only $71.5 million in incentives in FY2015. In FY2014, Tennessee offered more tax incentives than Michigan.

All states offer a variety of incentives; most are available at the state level while some are tailored specifically by the local governing bodies. Some states allow tax credit carryovers to years in which the corporation has higher tax liability, though this may only be a consideration for those companies with large projected tax liabilities allowing the full credit to be utilized in the future.

Tax Credits and Exemptions by Region

Indiana: Headquarters Relocation Tax Credit; Research and Development Tax Credit; Patent Income Exemption; Research and Development Activities Sales Tax Exemption; Research and Development Equipment Sales Tax Exemption; Small Business Development Fund; Indiana Angel Network Fund (IAN Fund); Capital Access Program; Industrial Development Grant Funds; Skills Enhancement Fund; Hoosier Business Investment Fund; Economic Development for a Growing Economy (EDGE) Tax Credit

Michigan: Brownfield Redevelopment; Industrial Facilities Tax Abatement; Community Development Block Grants; Industrial Development Revenue Bonds; Michigan Economic Growth Authority (MEGA) and Hi-Tech MEGA Credit; Economic Development Job Training; Michigan Technical Education Center

Tennessee: FastTrack Economic Development Fund; Rural Small Business and Entrepreneurship Loan Fund; Carbon Charge Tax Credit; Green Island Corridor Grant Program; FastTrack Infrastructure Development Program (FIDP); State Industrial Access Program; the INCITE Co-Investment Fund; Jobs Tax Credit; Rural Opportunity Initiative Enhanced Job Tax Credit; Industrial Machinery Tax Credit; Data Center

Tax Credit; Integrated Supplier and Integrated Consumer Tax Credit; Headquarters Tax Credit; Sales and Use Tax Credit for Qualified Facility to Support Emerging Industries

Iowa: Endow Iowa Tax Credit Program; Renewable Energy Tax Credits; Economic Development Set-Aside; Qualifying Businesses Tax Credit; Community-Based Seed Capital Funds Tax Credit; Iowa Fund of Funds; Iowa Innovation Acceleration Fund; Iowa Capital Access Program (ICAP); Iowa Small Business Loan Support Program; Angel Investor Tax Credits; EB-5 Iowa Regional Center; Employee Stock Ownership Plan; High Quality Jobs Program; Innovation Fund Tax Credit; New Jobs Tax Credit; Research Activities Credit; Targeted Jobs Withholding Tax Credit Pilot Program

Wisconsin: Wisconsin Main Street Program; Research Expense Credit; Job Creation Deduction; Manufacturing and Agriculture Credit; Training Grants; TAG-SBIR Grant Program; New Markets Tax Credits (NMTC) Program; Renewable Energy Sales Tax Exemptions; Wisconsin Equity Investment Fund; Wisconsin Venture Debt Fund

Indiana Sales Tax and Business Property Tax Exemptions

Enterprise information technology equipment is exempt from Indiana business personal property tax per Indiana Code section 6-1.1-10-44. That section outlines all of the requirements for the exemption, including a threshold investment amount of $10,000,000 in real and personal property aggregated between the business entity, the lessor of qualified property, and the lessees of qualified property. The entity must also be located in an area designated as a high technology district area and provide an average wage at least 125% of the county average wage.[1]

Senate Bill 359 exempts certain enterprise technology equipment from sales tax if the investment amount in the equipment is greater than $100,000,000. Other restrictions on the exemption apply, such as application, review, and approval by the Indiana Economic Development Corporation (IEDC) before an exemption will be granted. That bill was referred to the Indiana House in February 2015 and is currently under review in the Ways and Means Committee.[2]

Free Cooling

Data centers in I&M regions are well positioned to take advantage of "free cooling" options to reduce Power Usage Effectiveness (PUE), a measurement of total energy load to IT load. According to the Data Center Site Qualification Program Phase I Report presented to AEP in 2012, a survey of 25 data centers revealed an average PUE of 1.83, with an ideal PUE of 1.0.[3] Free cooling is achieved through air, water, or refrigerant, and I&M region data centers can take advantage of lower outdoor air temperatures by pumping large volumes of air into the data center to reduce ambient temperatures. Both Indiana and Michigan provide over 8,000 hours of ideal air temperature for free cooling, which the report designates as an excellent rating.

[1] http://www.in.gov/legislative/ic/2010/title6/ar1.1/ch10.html
[2] https://iga.in.gov/legislative/2015/bills/senate/359#
[3] Data Center Site Qualification Program Phase 1 Report – October 2012 (Provided by I&M Power)

Cost of Living

The cost of living across the Indiana Michigan Power and benchmark communities is fairly uniform, though it is highest in Fort Wayne. However, Fort Wayne has the highest median household income within the Indiana Michigan region. Outside the Indiana Michigan Power region, Des Moines has a significantly higher median household income, along with a relatively low cost of living. Thus, Des Moines likely has a competitive advantage in this area as compared with the Indiana Michigan Power communities.

Metro	Cost of Living Index	Job Growth	Median Household Income	Income Growth
Benton Harbor	NA	(6.8%)	$42,488	10.6%
Elkhart	91.9	(20.6%)	$47,308	8.1%
Fort Wayne	93.4	(5.8%)	$49,808	10.5%
Marion	NA	NA	NA	NA
Muncie	89.7	(14.3%)	$38,730	15.1%
South Bend	91.2	(8.2%)	$45,226	14.1%

Source: Bureau of Labor Statistics, C2ER, Census Bureau, Martin Prosperity Institute

Metro	Cost of Living Index	Job Growth	Median Household Income	Income Growth
Chattanooga, TN	92.4	(5.2%)	$44,164	16.0%
Des Moines, IA	91.3	1.5%	$59,381	15.1%
Milwaukee, WI	NA	NA	NA	NA

Source: Bureau of Labor Statistics, C2ER, Census Bureau, Martin Prosperity Institute

Quality of Life

Quality of life is defined as the general well-being of individuals and societies. Although quality of life is difficult to quantify and measure, the communities within Indiana Michigan Power's service territory offer a variety of recreational, and cultural amenities for their residents.

Benton Harbor is considered by some to be a suburb of Chicago, thus offering easy access to all cultural, entertainment, and recreational opportunities that a metropolitan city affords. Within Benton Harbor, residents have the opportunity to visit the Sarett Nature Center or the Love Creek County Park and Nature Center for outdoor recreation. Annual festivals in the area include: Coloma Glad-Peach Festival, Berrien County Youth Fair, BBQ, Blues, & Bluegrass Festival, and Magical Ice. They also collaborate with St. Joseph County and host the annual Blossomtime Festival. Benton Harbor residents can also enjoy the Morton House Museum and Mary's City of David Museum and Tour as other cultural amenities.

South Bend offers a multitude of recreational options, including the East Race Waterway, Howard Park, Kennedy Water Playground, and Military Honor Park. Sports fans can appreciate South Bend as the home of the University Notre Dame, as well as the South Bend Cubs (minor league baseball). Arts and music festivals in the area include: the Reggae Music Festival, World Pulse Festival, and South by South Bend Music Festival. There are also numerous family-friendly activities in South Bend, such as Healthworks Kids' Museum, Potawatomi Zoo, the Studebaker National Museum, and the South Bend Museum of Art.

Elkhart residents can enjoy unique amenities like the Woodlawn Nature Center. Elkhart also offers different cultural activities, such as the Midwest Museum of American Art, National New York Central Railroad Museum, Elkhart Jazz Festal, and Rhapsody in Green Festival. Another unique activity for residents to enjoy is the Elkhart Air Show.

Fort Wayne residents have access to outdoor activities such as: Bass Playground, Bloomingdale Park, Camp Allen Park, East Central Playlot, and the Baer Field Heritage Air Park. Cultural activities in the area are: Three Rivers Festival, BBQ Rib Fest, Johnny Appleseed Festival, and the Fort Wayne Museum of Art. Fort Wayne also has a few semi-professional sports team – Fort Wayne comets (hockey), Fort Wayne Mad Ants (basketball), and the Fort Wayne Tincaps (baseball). A family-friendly activity for residents to engage in is the Fort Wayne Children's Zoo.

Marion has limited recreational, cultural, and arts amenities for its residents. Residents have access to the Cardinal Greenway. Cultural activities in the area include the Mississinewa 1812 Festival and historical points of interest are the Quilters Hall of Fame and the Grant County Courthouse.

Muncie is the home to Ball State University and has other amenities for residents, such as the Cardinal Greenway and Tuhey Park for outdoor amenities. Cultural activities in the area include: The Civic Theater, Artist Within, MuncieGras, and Muncie Music Fest.

Industry-Specific Information

Employment Trends for NAICS 518 – Data Processing, Hosting and Related Services

5-Year Employment Trends

Across the Indiana Michigan Metropolitan Areas, primary data center employment is present within South Bend, IN, Fort Wayne, IN and to a lesser degree Marion, IN and Elkhart, IN. Marion and South Bend have experienced the highest recent growth.

Metro	2009 Jobs	2014 Jobs	2009 - 2014 Change	2009 - 2014 % Change	2014 Location Quotient
Benton Harbor, MI	<10	<10	NA	NA	0.02
Elkhart, IN	<10	18	NA	NA	0.08
Fort Wayne, IN	163	146	(17)	(10%)	0.36
Marion, IN	14	86	72	514%	1.54
Muncie, IN	<10	<10	NA	NA	0.01
South Bend, IN	177	275	98	55%	1.08
Totals	363	529	166	46%	

Metro	Ind. Mix Effect	Nat'l Growth Effect	Expected Change	Competitive Effect
Benton Harbor, MI	0	0	0	(1)
Elkhart, IN	0	0	0	13
Fort Wayne, IN	6	8	14	(30)
Marion, IN	0	1	1	71
Muncie, IN	0	0	0	0
South Bend, IN	6	9	15	83
Totals	12	18	31	136

Competitive Regions 5-Year Employment Trends

For the benchmark communities, Milwaukee and Chattanooga have experienced employment growth.

Metro	2009 Jobs	2014 Jobs	2009 - 2014 Change	2014 - 2019 % Change	2019 Location Quotient
Chattanooga, TN	237	357	120	51%	0.79
Des Moines, IA	2,529	1,715	(814)	(32%)	2.55
Milwaukee, WI	4,637	4,841	204	4%	3.10
National	250,912	271,876	20,964	8%	

Metro	Ind. Mix Effect	Nat'l Growth Effect	Expected Change	Competitive Effect
Chattanooga, TN	257	362	619	(1,108)
Des Moines, IA	88	124	212	(1,026)
Milwaukee, WI	161	227	388	(184)
National	8,698	12,266	20,964	

5-Year Projected Employment

Looking at employment projections over the next five years, both Elkhart and Marion are expected to see continued growth, albeit not at the same pace as the previous five years.

Metro	2014 Jobs	2019 Jobs	2014 - 2019 Change	2014 - 2019 % Change	2019 Location Quotient
Benton Harbor, MI	<10	<10	NA	NA	0.02
Elkhart, IN	433	584	151	35%	0.91
Fort Wayne, IN	146	77	(69)	(47%)	0.19
Marion, IN	86	129	43	50%	2.18
Muncie, IN	<10	<10	NA	NA	0.00
South Bend, IN	275	276	1	0%	1.08
Totals	529	505	(24)	(5%)	

Metro	Ind. Mix Effect	Nat'l Growth Effect	Expected Change	Competitive Effect
Benton Harbor, MI	0	0	0	0
Elkhart, IN	0	1	1	1
Fort Wayne, IN	(3)	8	5	(73)
Marion, IN	(2)	5	3	41
Muncie, IN	0	0	0	0
South Bend, IN	(6)	14	8	(7)
Totals	(11)	28	17	(40)

Competitive Regions 5-Year Projected Employment

Over the next five years, all competitive regions are expected to experience growth.

Metro	2014 Jobs	2019 Jobs	2014 - 2019 Change	2014 - 2019 % Change	2019 Location Quotient
Chattanooga, TN	357	396	39	11%	0.88
Des Moines, IA	1,715	1,770	55	3%	2.51
Milwaukee, WI	4,841	5,389	548	11%	3.41
National	271,876	279,912	8,036	3%	

Metro	Ind. Mix Effect	Nat'l Growth Effect	Expected Change	Competitive Effect
Chattanooga, TN	(8)	19	11	28
Des Moines, IA	(40)	90	50	5
Milwaukee, WI	(112)	255	143	405
National	(6,262)	14,299	8,037	

Demographic Info

Population Trends

Of the Indiana Michigan Power metropolitan areas, Fort Wayne and Elkhart have experienced the greatest population growth over the past five years. The populations for Benton Harbor and Marion have been in decline. The population in Muncie and South Bend have been and are projected to stay flat. Fort Wayne and Elkhart have seen the most growth and are projected to see continued gain.

Metro	2009 Population	2014 Population	2024 Population
Benton Harbor, MI	157,063	155,099	153,825
Elkhart, IN	197,519	201,266	206,593
Fort Wayne, IN	414,458	426,072	438,929
Marion, IN	70,191	69,118	67,981
Muncie, IN	117,473	118,750	118,073
South Bend, IN	319,196	318,910	319,131

Metro	09-14 Change	09-14 % Change	14-24 Change	14-24 % Change
Benton Harbor, MI	(1,964)	(1.25%)	(1,274)	(0.82%)
Elkhart, IN	3,747	1.90%	5,327	2.65%
Fort Wayne, IN	11,614	2.80%	12,857	3.02%
Marion, IN	(1,073)	(1.53%)	(1,137)	(1.65%)
Muncie, IN	1,277	1.09%	(677)	(0.57%)
South Bend, IN	(286)	(0.09%)	221	0.07%

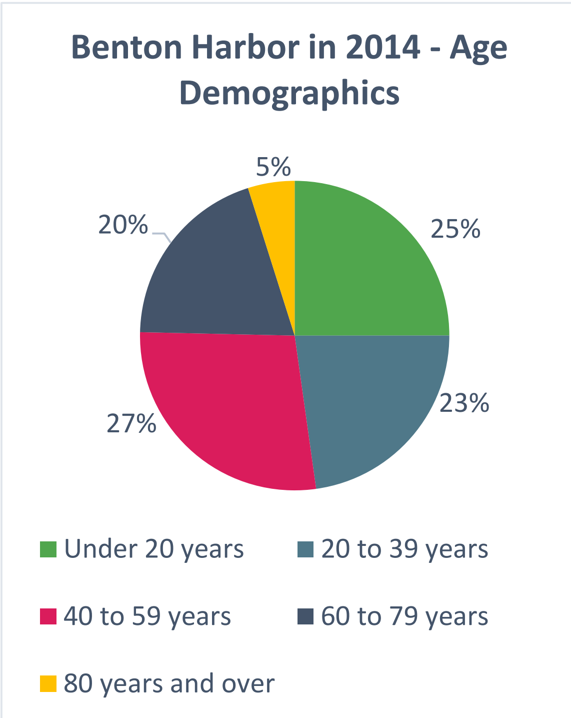
Population Trends for Competitive Regions

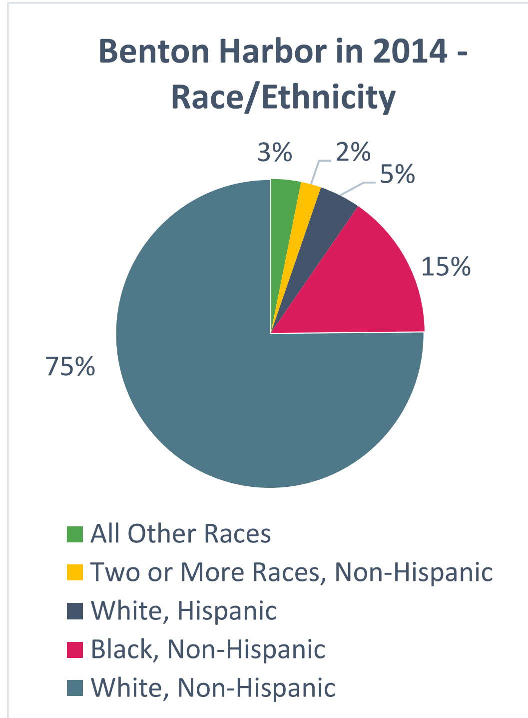
Recent and projected growth have occurred and are projected to occur for all of the benchmark communities.

Metro	2009 Population	2014 Population	2024 Population
Chattanooga, TN	524,079	547,643	572,074
Des Moines, IA	562,637	606,337	649,823
Milwaukee, WI	1,549,625	1,580,422	1,619,164
National	306,771,529	319,076,238	332,026,922

Metro	09-14 Change	09-14 % Change	14-24 Change	14-24 % Change
Chattanooga, TN	23,564	4%	24,431	4%
Des Moines, IA	43,700	8%	43,486	7%
Milwaukee, WI	30,797	2%	38,742	2%
National	12,304,709	4%	12,950,684	4%

Benton Harbor Demographics

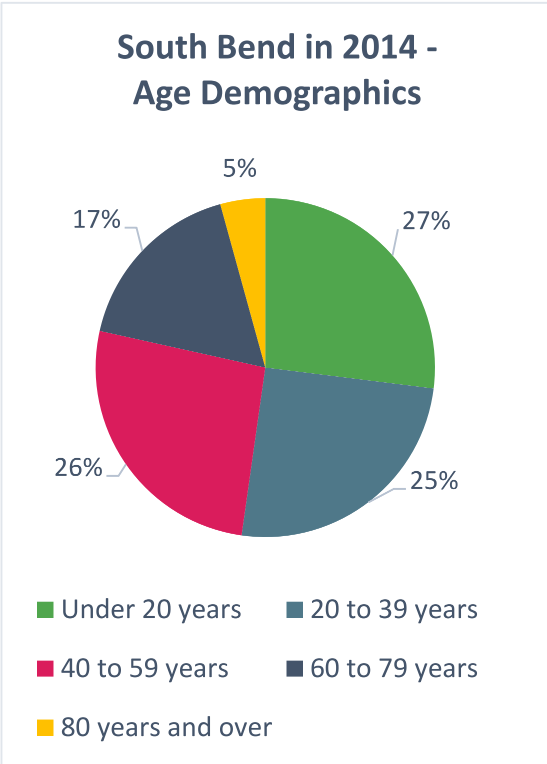


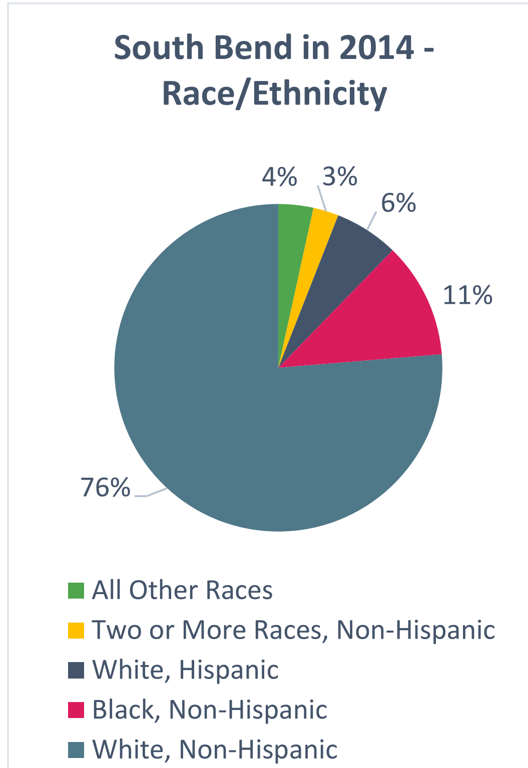


Source: QCEW Employees, Non-QCEW Employees & Self-Employed - EMSI 2014.3 Class of Worker

Education Level	2014 Population	2014 % of Population	2014 State % Population	2014 Nat. % Population
Less Than 9th Grade	3,652	3%	2%	5%
9th Grade to 12th Grade	11,095	10%	10%	11%
High School Diploma	34,031	31%	30%	28%
Some College	25,224	23%	24%	21%
Associate's Degree	9,153	8%	8%	7%
Bachelor's Degree	15,080	14%	16%	18%
Graduate Degree and Higher	9,826	9%	10%	10%
Total	108,060	100%	100%	100%

South Bend Demographics

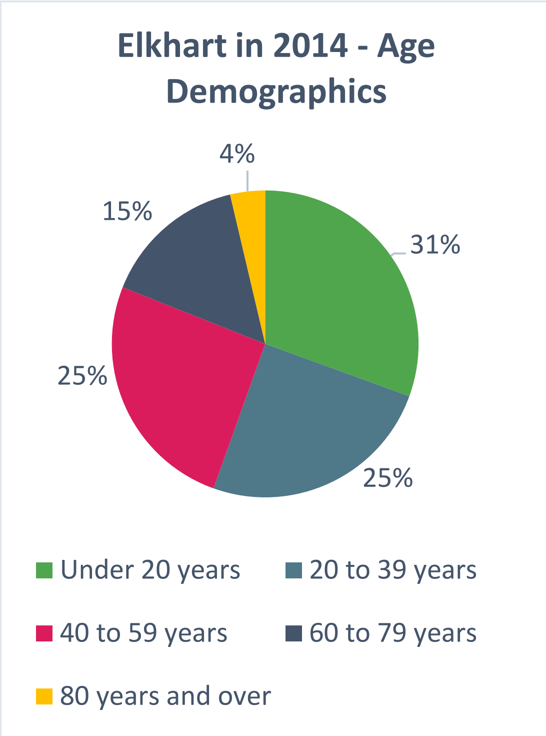


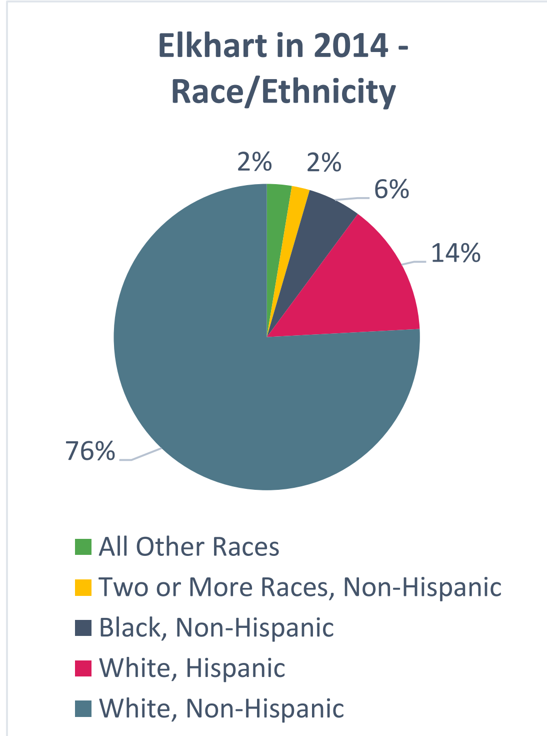


Source: QCEW Employees, Non-QCEW Employees & Self-Employed - EMSI 2014.3 Class of Worker

Education Level	2014 Population	2014 % of Population	2014 State % Population	2014 Nat. % Population
Less Than 9th Grade	4,325	2%	2%	5%
9th Grade to 12th Grade	24,448	12%	11%	11%
High School Diploma	72,304	35%	32%	28%
Some College	44,623	21%	23%	21%
Associate's Degree	14,980	7%	8%	7%
Bachelor's Degree	30,656	15%	15%	18%
Graduate Degree and Higher	17,835	9%	9%	10%
Total	209,170	100%	100%	100%

Elkhart Demographics

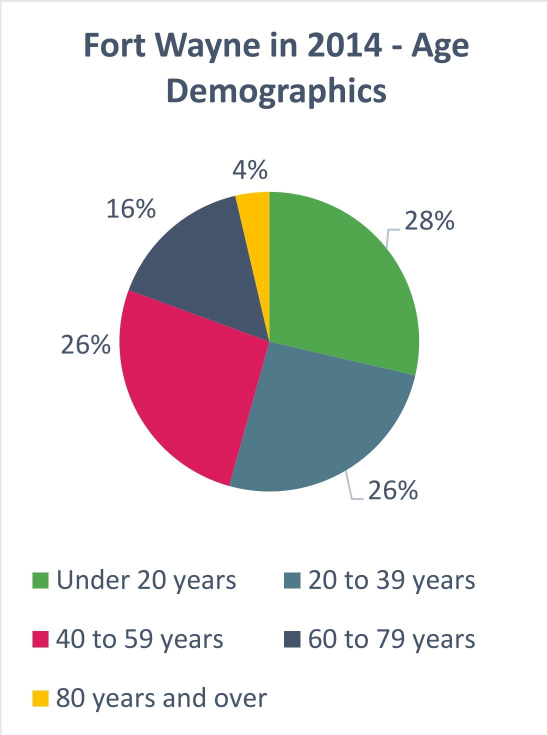


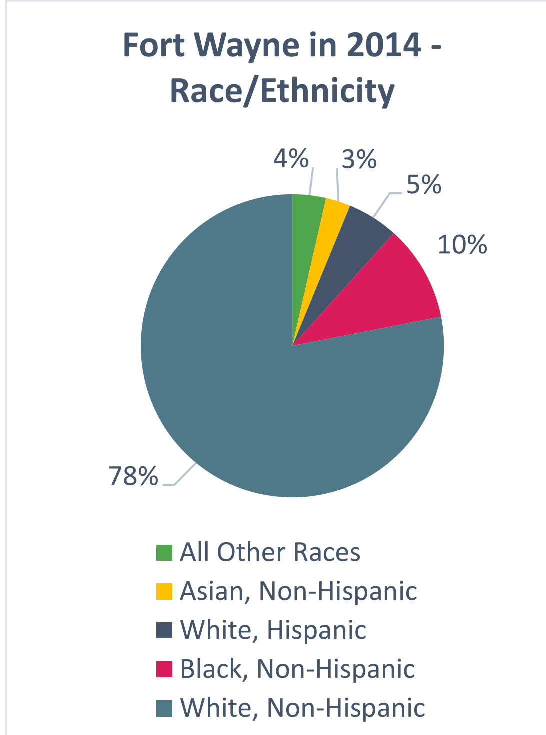


Source: QCEW Employees, Non-QCEW Employees & Self-Employed - EMSI 2014.3 Class of Worker

Education Level	2014 Population	2014 % of Population	2014 State % Population	2014 Nat. % Population
Less Than 9th Grade	5,701	4%	3%	5%
9th Grade to 12th Grade	21,549	17%	12%	11%
High School Diploma	45,353	36%	35%	28%
Some College	24,355	19%	20%	21%
Associate's Degree	7,644	6%	7%	7%
Bachelor's Degree	14,743	12%	15%	18%
Graduate Degree and Higher	7,749	6%	8%	10%
Total	127,093	100%	100%	100%

Fort Wayne Demographics

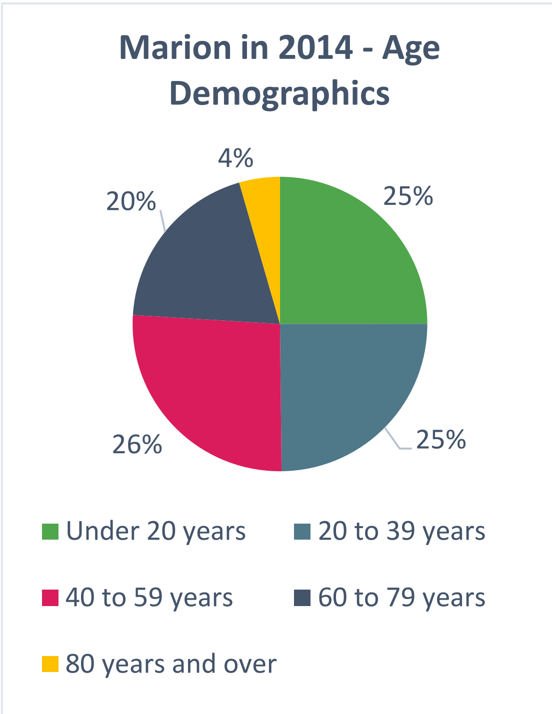


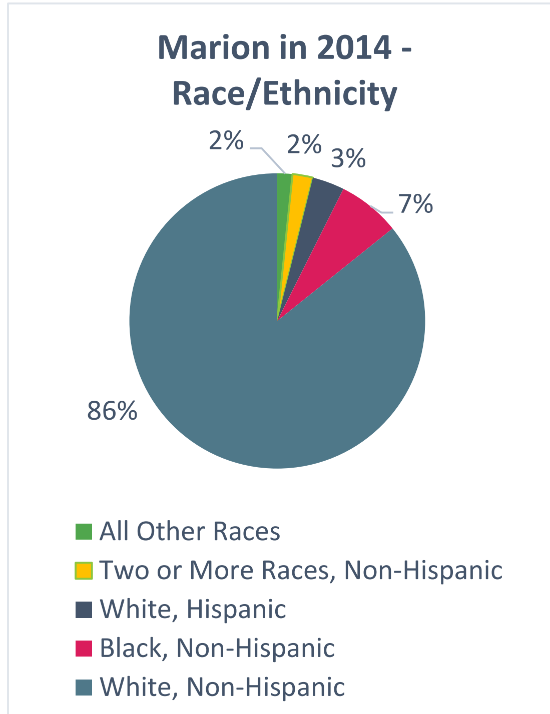


Source: QCEW Employees, Non-QCEW Employees & Self-Employed - EMSI 2014.3 Class of Worker

Education Level	2014 Population	2014 % of Population	2014 State % Population	2014 Nat. % Population
Less Than 9th Grade	7,360	3%	3%	5%
9th Grade to 12th Grade	25,466	9%	12%	11%
High School Diploma	88,432	32%	35%	28%
Some College	58,860	21%	20%	21%
Associate's Degree	26,114	9%	7%	7%
Bachelor's Degree	46,542	17%	15%	18%
Graduate Degree and Higher	23,394	8%	8%	10%
Total	276,168	100%	100%	100%

Marion Demographics

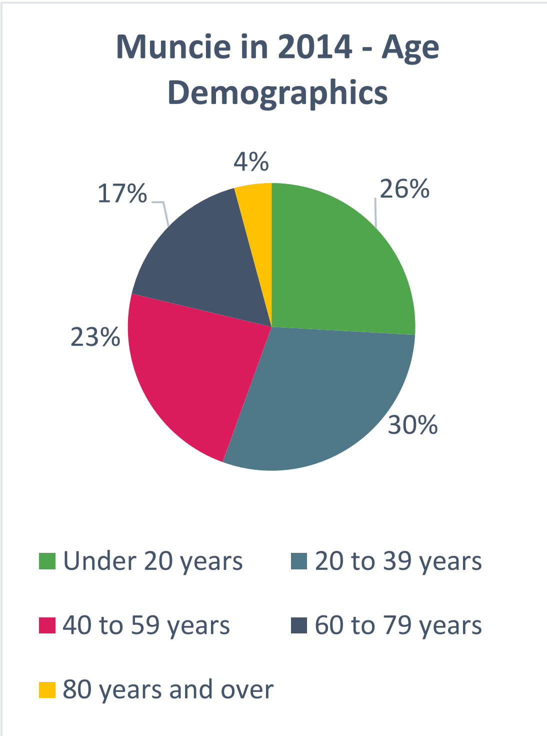


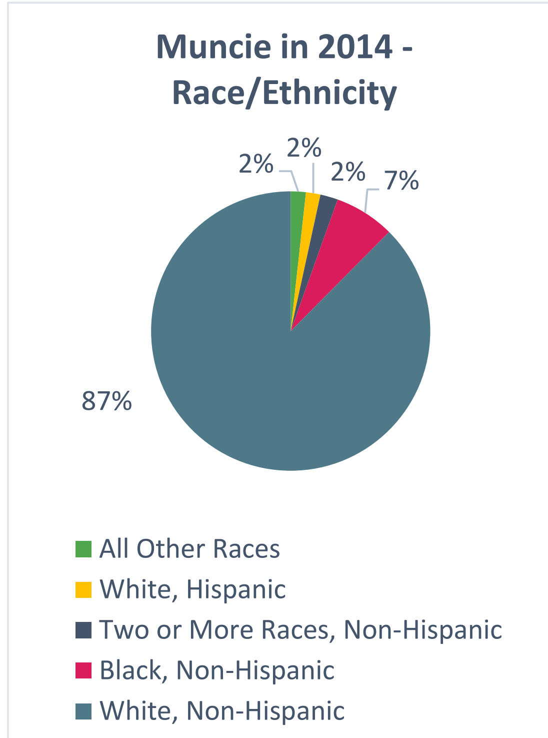


Source: QCEW Employees, Non-QCEW Employees & Self-Employed - EMSI 2014.3 Class of Worker

Education Level	2014 Population	2014 % of Population	2014 State % Population	2014 Nat. % Population
Less Than 9th Grade	1,347	3%	3%	5%
9th Grade to 12th Grade	7,363	16%	12%	11%
High School Diploma	19,508	43%	35%	28%
Some College	7,857	17%	20%	21%
Associate's Degree	3,371	7%	7%	7%
Bachelor's Degree	3,693	8%	15%	18%
Graduate Degree and Higher	2,474	5%	8%	10%
Total	45,614	100%	100%	100%

Muncie Demographics

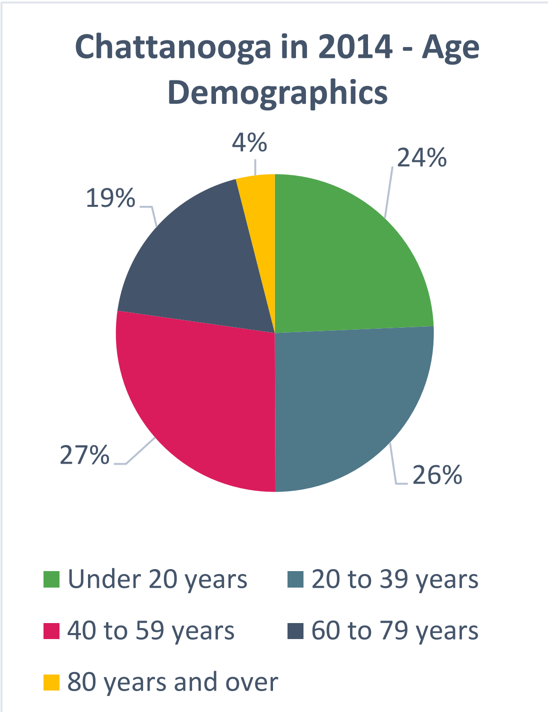


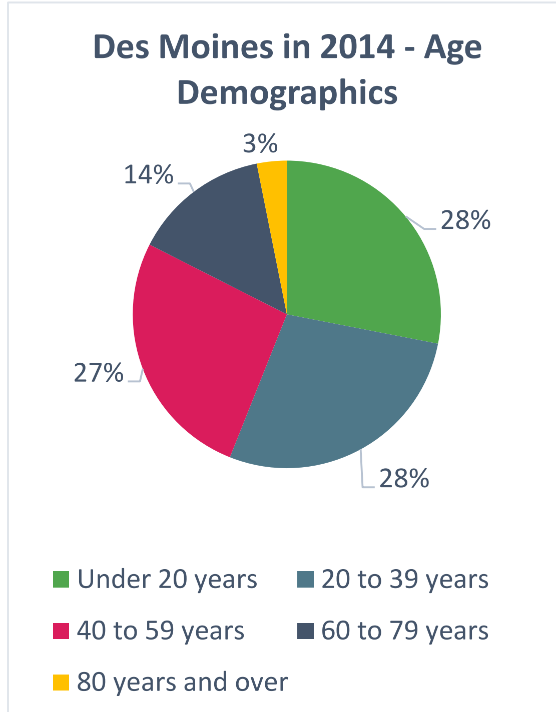


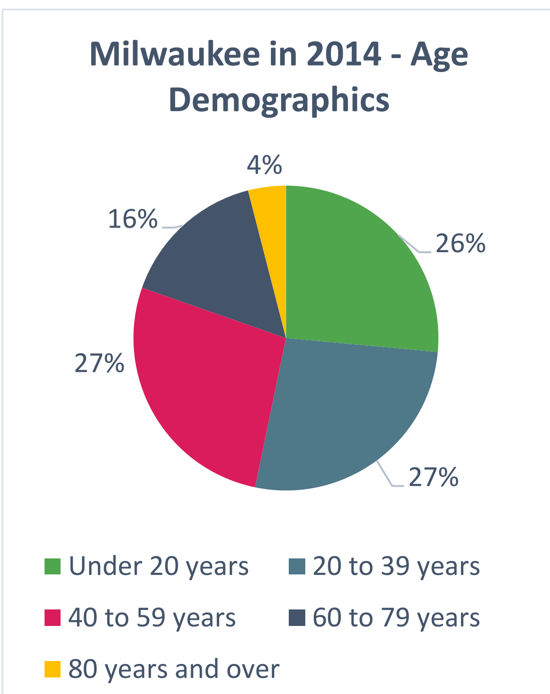
Source: QCEW Employees, Non-QCEW Employees & Self-Employed - EMSI 2014.3 Class of Worker

Education Level	2014 Population	2014 % of Population	2014 State % Population	2014 Nat. % Population
Less Than 9th Grade	1,660	2%	3%	5%
9th Grade to 12th Grade	9,867	14%	12%	11%
High School Diploma	25,212	35%	35%	28%
Some College	14,223	20%	20%	21%
Associate's Degree	4,520	6%	7%	7%
Bachelor's Degree	8,890	12%	15%	18%
Graduate Degree and Higher	7,042	10%	8%	10%
Total	71,414	100%	100%	100%

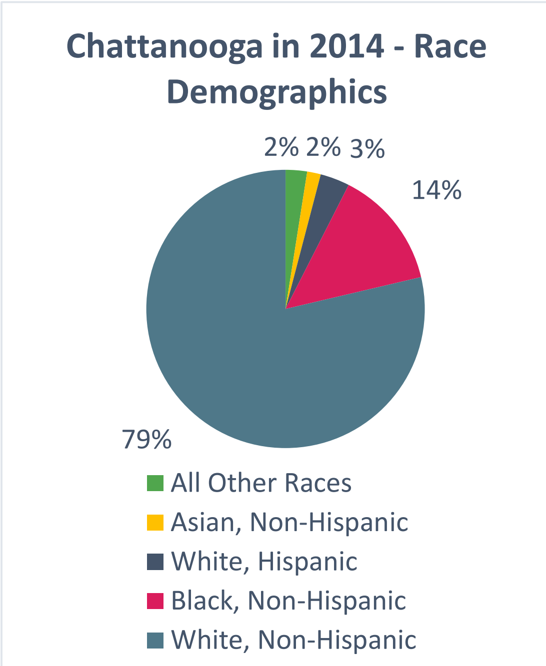
Competitive Regions Demographics – Age

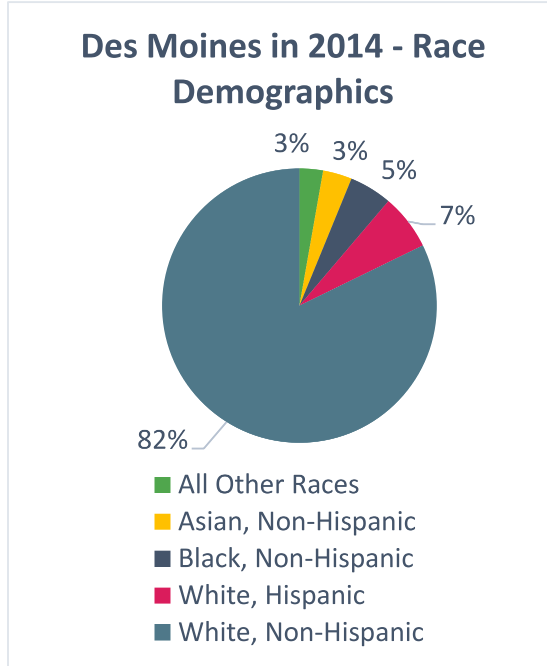


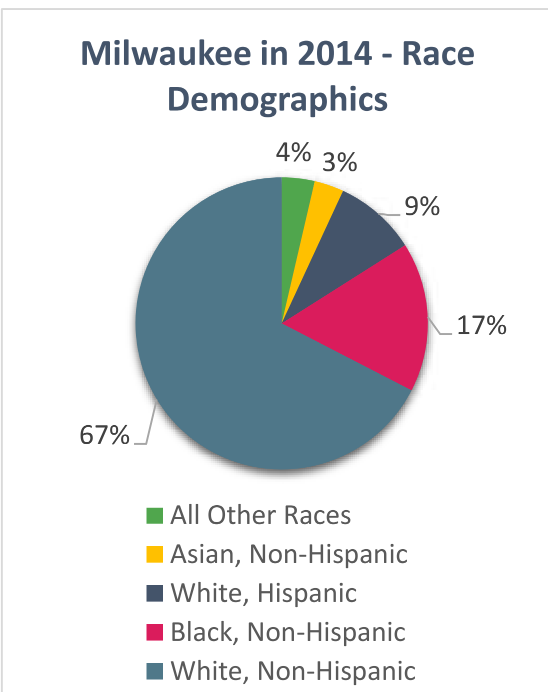




Competitive Regions Demographics – Race







Educational Attainment – Competitive Regions

Des Moines

Education Level	2014 Population	2014 % of Population
Less Than 9th Grade	9,719	2.4%
9th Grade to 12th Grade	27,968	7.0%
High School Diploma	108,627	27.2%
Some College	84,719	21.2%
Associate's Degree	39,151	9.8%
Bachelor's Degree	91,377	22.9%
Graduate Degree and Higher	37,452	9.4%

Chattanooga

Education Level	2014 Population	2014 % of Population
Less Than 9th Grade	15,101	4.0%
9th Grade to 12th Grade	54,945	14.5%
High School Diploma	111,352	29.4%
Some College	85,417	22.6%
Associate's Degree	26,098	6.9%
Bachelor's Degree	56,707	15.0%
Graduate Degree and Higher	28,981	7.7%

Milwaukee

Education Level	2014 Population	2014 % of Population
Less Than 9th Grade	30,960	2.9%
9th Grade to 12th Grade	92,962	8.8%
High School Diploma	297,735	28.2%
Some College	229,641	21.7%
Associate's Degree	81,095	7.7%
Bachelor's Degree	211,428	20.0%
Graduate Degree and Higher	112,724	10.7%

Source: EMSI Analyst 2014.3.

Conclusion

Due to increased expansion of consumer mobile broadband, cloud computing development, social media use, and big data analytics, data centers are projected to increase their footprint and grow throughout the country. Indiana Michigan Power's service territories all provide a business-friendly environment of low cost, redundant power; proximity to Chicago and other large metropolitan areas; access to a quality, low-cost workforce; availability of certified cites; and a prime location outside of natural disaster areas. For these reasons, the Indiana Michigan Power service territories largely present a competitive edge in the expansion and relocation of data centers compared to its competitor cities.

Appendix A

MUNCIE, INDIANA: THE ONLY QUALIFIED DATA CENTER SITE IN INDIANA

INDUSTRIA CENTRE SITE #17
SOUTH COWAN ROAD, MUNCIE, IN 47302

AEP QUALIFIED DATA CENTER SITE

- Third-party Verification by Biggins Lacy Shapiro & Co.
- Supportive of a 100,000 sq. ft. Raised Floor Mission Critical Facility
- Certified "favorable for data center development" appropriate for a stand-alone enterprise user or a co-location facility
- New Substation to be built on-site, served from 138 kV Transmission
- Served by Indiana Michigan Power: Indiana's lowest-cost provider of any investor-owned electric utility

PROPERTY DESCRIPTION:

The Industria Centre site's orientation is favorable for data center development. It offers strong utility infrastructure. The site is part of an industrial park with a total of 906 acres. ICS #17 has ≈97 acres of land available. Interstate 69 is 8 miles away and Interstate 70 is 23 miles away. Logistically, the Muncie area offers a temperate climate ideal for "free cooling" for data centers.

DATA CENTER MODELING:

The pre-qualification analysis modeled a data center with 100,000 square feet of white space. It has been deemed appropriate for co-location and enterprise users.

SITE DETAILS:

Available Acres: 97
Type of Site: Industrial Site
Zoning: Industrial Park
Topography: Flat
Setting: Industrial Park

STATE TAX STRUCTURE / INCENTIVES*:

Sales Tax – 7%
Business Personal Property Tax – Yes
Property Tax Abatements for Data Centers – Yes
Located in a CReED Zone – Yes
TIF Agreements – Yes, 1,476 Acre District
Job Training – Yes
* SUBJECT TO QUALIFICATIONS AND AVAILABILITY

LOCATION:

SITE LOGISTICS
- 48 miles northeast of Indianapolis
- Park bordered by industrial facilities, farmland and residential
- 488 of the park's 906 acres are currently developed
- State Rd. 67 (Muncie Bypass) ½ mile south
- I-69 is 8 miles west

PUBLIC TRANSPORTATION
- Delaware County Regional Airport – 6 miles
- Indianapolis International Airport – 74 miles

FIRE PROTECTION – Fire Stations 2 & 2.5 miles

AVAILABLE UTILITY RESOURCES

POWER
- Electric Service Provider: Indiana Michigan Power
- Cost of Power: $.0475/kWh (assumes 10 MW)
- 138kV Transmission service: 12-18 months delivery date
- Dual circuit 138kV service available
- 34kV service also available
- Data center analysis design load capacity in excess of 20MW

FIBER AND TELECOMMUNICATIONS
- Several long haul fiber carriers in close proximity
- Adequate bandwidth
- Muncie is a major fiber connection point for multiple networks
- Major points of presence (POPs) in downtown Muncie

GAS
- Gas Service Provider: Vectren Energy
- 4" medium pressure (50 PSI)

WATER
- Water Service Provider: Indiana American Water
- 12", 16" main. 8" distribution 55 PSI
- Capacity for park is 20 million GPD

SEWER
- Wastewater & Sewer Service Provider: Muncie Sanitary District
- Capacity in excess of 500,000 GPD

This designation has been provided without any representation regarding the suitability of the property for a particular project or with respect to compliance with applicable laws, or regarding the presence of infrastructure.

AEP INDIANA MICHIGAN POWER®
A unit of American Electric Power

▼ SCAN this QR code for more info

Rob Cleveland
Indiana Michigan Power
110 East Wayne Street
Fort Wayne, IN 46802
Phone: (260) 408-3453
E-mail: recleveland@aep.com
Web: indianamichiganed.com

THOMAS P. MILLER & ASSOCIATES

1630 N Meridian Street,
Suite 430
Indianapolis, IN 46202
(317) 894 - 5508