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A Competitive Realities Report & Target Industry Strategy for Erie County, Pennsylvania

April 15, 2019

Prepared for the:



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EXECUTIVE SUMMARY

In January 2019, the Erie Regional Chamber and Growth Partnership (Partnership or ERCGP) retained Garner Economics, LLC to help craft a Competitive Realities Report and Target Industry Strategy to focus its economic development efforts.

This engagement compiled data, analyzed qualitative and quantitative factors that impact the area’s competitiveness as a business location, and offers observations for the Partnership to understand the optimal targets that exist for the area and the value the region offers to those targets.

The resulting Target Industry Strategy details the product improvement, organizational changes and marketing to the targeted industries needed to ensure that the region strengthens its competitive position. The goal of the



Target Industry Strategy is to help Erie attract and retain businesses that will create jobs by focusing efforts that leverage the community’s assets and strengths.

Specifically, the scope of services for the overall project included:

- A comprehensive and holistic assessment of key forces driving Erie’s economy;
- An **Assets & Challenges Assessment (A&C)** of Erie and Erie County from the perspective of a site-location consultant that facilitates investment decisions;
- Recommendations for business targets suitable for Erie to pursue, based on our research and analysis; and finally,
- A set of implementable recommendations that the Partnership and other organizations may use to enhance the economic vitality of the Erie region.

FIGURE 1: PROJECT PROCESS



Assets & Challenges Assessment

Garner Economics conducted an Assets & Challenges Assessment (sometimes referred to as a SWOT analysis) of Erie County. This was done through a comprehensive tour of the area that assessed the County against a pre-determined list of investment factors. The evaluation was taken from a site-selection perspective. Garner Economics assessed the area based on the qualities, elements, and infrastructure that a business will examine when evaluating a location as a place for its operations or as an investment. The Assets & Challenges Assessment is both an objective and subjective evaluation of the area. The assessment allows us to document challenges that exist in the community that constitute potential barriers for successful targeted business recruitment to occur. By knowing what challenges or gaps exist, the region can take the steps necessary to mitigate the situation, strengthen its overall “product,” and be a more attractive business location for the targets. Likewise, by knowing its strengths, the Partnership can better leverage them in efforts to attract businesses.

Stakeholder Input

As a complement to the assessment of the physical structure of the region, Garner Economics conducted three focus groups of the region’s key economic development stakeholders. The purpose was to solicit perceptions of the area’s business climate from the region’s economic development partners’ perspective.

Target Industries Strategy (TIS)

The analysis in the above-mentioned workstreams revealed that the County has many assets upon which to build. The **TIS** identifies and provides the rationale for the target sectors that will both diversify the industry mix in the area as well as build on current areas of strengths. These targets are “best fits” for the area and are recommended, given the attributes and assets of Erie County as a whole.

The description of and rationale for the targets detailed in Chapter 3 will help the Partnership prioritize marketing resources and will identify areas where policymakers can act to increase the area’s competitive position in attracting and retaining these business sectors.

The identified target business sectors are:

-  Life Sciences
-  High Value-Added Manufacturing
-  Food & Beverage Processing/Agriculture & Aquaculture
-  High-Value Business Services
-  Tech/Gaming/Digital
-  Year-Round Experiential Recreation

Recommendations

Chapter 9 offers a set of implementable recommendations that will help Erie and the Partnership focus efforts to attract high-quality companies and talent. The recommendations reflect items that the County should undertake to highlight its value proposition to companies looking to invest in the area as well as tactics the Partnership can use to leverage strengths and effectively market the County to the recommended targets.

FIGURE 2: RECOMMENDATION SUMMARY

Asset Development (Product Improvement)
<ol style="list-style-type: none"> 1. Develop a sites and buildings inventory 2. Create a sustainable public funding stream for economic development infrastructure projects 3. Enhance the gateways and focus on community beautification
Communicate the Brand (Marketing)
<ol style="list-style-type: none"> 1. Develop a unified brand 2. Conduct external outreach to companies and consultants 3. Create a Lead Generation program 4. Revise the ERCGP website 5. Create a cadre of Economic Development Ambassadors
Execute Effectively (Organizational Enhancements)
<ol style="list-style-type: none"> 1. Augment ERCGP economic development staffing 2. Develop a workforce and talent attraction strategy

CHAPTER 1: WHAT STAKEHOLDERS THINK

Community input is a vital part of the economic development planning process. Feedback from stakeholders provides a context around the data accumulated and is a way to validate conclusions made therein. Similarly, the input often raises issues or nuances that are critical to understanding the community. These insights may or may not be discernible through desktop research and onsite tours.

Given this, Garner Economics held three focus group sessions on February 13, 2019, in Erie with 45 people participating. The focus groups were organized into the following categories: *Large Businesses*, *Small Businesses/Entrepreneurs*, and *Public Sector*. Participants were invited by the Partnership.

Key Themes

The following summarizes the key themes emerging from the focus group discussions and survey results. *Garner Economics recognizes that these are not necessarily statements of fact, but rather opinions and perceptions.*

A Community in Transition

Focus group participants frequently noted the area’s strong work ethic and welcoming community as strengths, as well as the ample water supply and tourist amenities. They noted the recent changes within the City, including an emphasis on diversifying the economic base and reinvigorating the downtown. However, all groups noted that the community often has a tendency to be somewhat pessimistic of its potential and is content with the status quo.

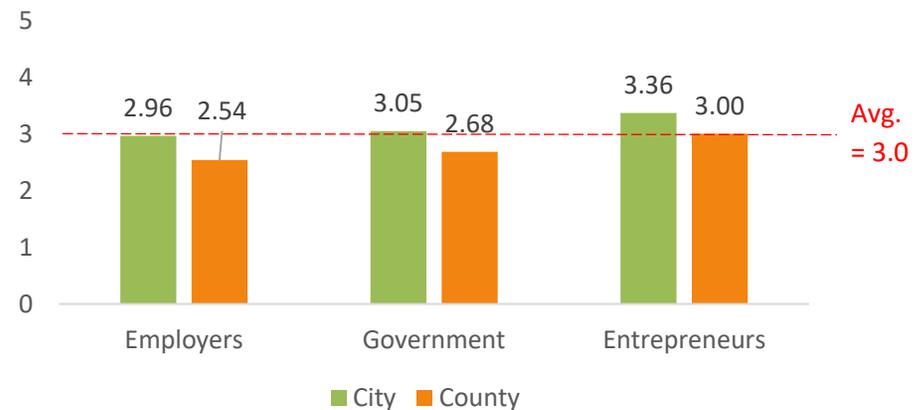
Several of the focus groups lauded the City’s efforts to be more inclusive and recognize that those efforts will make the City more attractive to potential investors.

Average Business Climate

When asked, focus group participants gave the City and County relatively average scores in terms of business climate. Larger businesses ranked both the City and County slightly below average; whereas, entrepreneurs gave both the highest scores (scoring the two 3.4 and 3.0, respectively on a scale of 1–5, with 3 being average and 5 being the best).

Participants noted the recent changes in the City as reasons for its higher score. Some suggested that the County tends to be focused on only a few priorities and too cost-sensitive. All of the groups noted the difficulty businesses have with permitting when working with Building Inspection Underwriters (the City’s vendor); however, all groups also noted the willingness of City staff to work with businesses to find solutions.

FIGURE 1.1: BUSINESS CLIMATE SCORES



Lack of a Cohesive Vision

When asked what initiatives could be taken to improve the City and County’s business climate, all focus groups noted the need to define and execute a cohesive vision for the area’s economic development priorities. The groups noted the often fractured and parochial nature of the region (owing in large part to the number of municipalities). They also suggest that having a vision and plan would help to counter the pessimism and create confidence in future changes.

Last, the groups noted how the lack of a consensus vision and agreement around economic development roles and responsibilities is hindering progress.

“LEAD is just a committee ... not an organization. There is no one to force people to do things together—it’s a friendly conversation, but there is no leadership structure or accountability.”

—Focus Group Participant

Workforce

All focus groups noted the workforce’s strong work ethic but noted the difficulty in recruiting and retaining professional talent. The groups noted that there is a perception that the region offers lower wage rates than surrounding areas (from the perspective of the employee). They also note the lack of strong public schools in the city of Erie as inhibitors in attracting talent. While there are efforts underway, several participants noted the lack of a having a public community college as a challenge to cultivating the region’s workforce. There are 14 public community colleges in the commonwealth and none serving Erie County.

A list of participants and a detailed summary of responses are provided in Appendices A and B.

“There is a comfort level in the status quo—we live isolated in a bubble.”

—Focus Group Participant

CHAPTER 2: ASSETS & CHALLENGES ASSESSMENT



Erie County offers a unique mix of assets for businesses that are contemplating relocation, expansion, or a startup. Our approach in conducting the Assets & Challenges Assessment (A&C) is to employ the same criteria and methodology we use when we

conduct a community evaluation for our corporate clients when exploring locations for investment. By understanding its assets and challenges from a location strategy perspective, we believe that the County will be better positioned to compete more effectively and to resolve area challenges that are likely inhibitors to investment projects. By recognizing and understanding strengths and opportunities, the County and the ERCGP will ultimately be able to determine the proper target audience of companies to which it should effectively communicate the area's assets.

Garner Economics analyzed 52 community factors as part of the assessment. Ratings were identified by evaluating the County's position for each of the factors against the Commonwealth of Pennsylvania and the United States. However, some of these ratings are more qualitative rather than quantitative. In the next chapter of analyzing the economic and demographic characteristics of the County, the County fares only moderately well with more Neutral rankings than either positive or negative ratings. Within this chapter are more qualitative factors for which the County rates more favorably, with more asset ratings than negatives or neutrals.

We define a Neutral rating as normal in the realm of economic development opportunity and competitiveness. An Asset rating indicates a positive feature of the County that would be evaluated and rated as a competitive strength versus the benchmark locations.

A Challenge rating identifies a factor that is considered a relative deficiency compared to other locations (or from the perspective of the consultants), which should be addressed with future remediation and may be an impediment to economic development if not resolved over time.

Of the 52 variables analyzed, 30 are considered an Asset (very positive for Erie) and 11 a Challenge (11 rated as Neutral). **Thirty Asset ratings show the competitive posture of Erie County as favorable in many categories, but any of the 11 Challenge ratings could cause the County to miss an investment opportunity of jobs and capital investment, especially as it relates to the availability of product.** The goal in the future will be for those policymakers engaged in local economic development to move the bar with the Neutral rankings from Neutral to an Asset, and the Challenge rankings to Neutral (or better).

To enable a summary overview of the report's main findings for readers, a set of dashboard icons is presented. Each finding has an accompanying icon to assist with interpretation. Readers are encouraged to review the supporting data in Appendix C to gain a more complete understanding of those areas of interest.

REPORT DASHBOARD



Indicates the County is better (more positive) compared to the benchmarked geographies or points to a positive trend or asset within the area.



Indicates the County is neutral or normal, neither positive nor negative. Indicator may represent an observation or be in the middle of the benchmarked geographies.



Indicates the County performs worse compared to the benchmarked geographies or points to a negative trend or challenge within the area.

Access to Markets

Geographic location and accessibility are critical components of any site-location process. Erie County rates exceptionally well in this category with seven of eight factors noted as an Asset. Only broadband (availability and speed) is considered neutral. Internet availability and speeds are strong within the city of Erie, but weak in the County’s more rural areas. The County’s market accessibility can compete with any geographic location: it is within a day’s drive of over 131 million people and is proximate to Canada, has a foreign trade zone, two Class 1 railroads and Amtrak passenger service, and Port Erie and the Erie International Airport.

Attribute	Rank
Centrally located for major regional market	 1
Centrally located for national market	 2
Well positioned to serve international markets	 3
Interstate highways	 4
Rail service	 5
Port facilities (inland and/or water)	 6
Within 1 hour of commercial air passenger service	 7
Broadband availability and speeds	 8

Labor

Talent attraction, retention, and skills development are three of the most important ways any community can enhance economic competitiveness. Of the 10 indicators evaluated within this category, five are considered an Asset, two a Challenge, and three are rated as a Neutral. Assets include the availability of skilled industrial and healthcare workers (with a location quotient higher than the national average), proximity to quality higher education institutions (five that grant bachelor’s degree or higher in Erie County), and the availability of Penn State Behrend’s and Gannon University’s engineering program. Challenges include the availability of engineers in the workforce and digital workers.

Attribute	Rank
Availability of skilled industrial workers	 9
Availability of skilled clerical workers	 10
Availability of engineers	 11
Availability of digital workers	 12
Availability of healthcare workers	 13
Wage rates (from the employers’ perspective)	 14
Level of unionization	 15
Availability of post-secondary vocational training	 16
Within ½ hour of major university/college	 17
Availability of an engineering program	 18

Access to Resources

The availability of agricultural products for food processing and the high concentration of manufacturers in the area puts Erie County in a favorable position to attract other related companies. Erie County ranks 23 out of 67 counties in Pennsylvania in the value of all ag products sold. Erie ranks #1 in the number of grapes produced and sold in the state. There are nearly 20,000 people employed in the manufacturing sector in Erie.

Attribute	Rank
Availability of agricultural products for food processing	 ¹⁹
Availability of manufacturing processes	 ²⁰
Availability of business and professional services	 ²¹

Lead Economic Development Program (Chamber)

With seven indicators measured, this category is a mixed bag for the Erie Regional Chamber and Growth Partnership. Two of the indicators are considered an Asset: the level of leadership support for the Chamber’s and other community economic development programs (public and private leadership) and the level of cooperation between the various organizations involved in economic development service delivery. Three are considered a Challenge: adequate level of professional staff within the Chamber’s economic development program, whether the organization has an economic development strategic action plan (it does not), and the level of funding for local economic development (outside of staffing, only \$30,000 is allocated for program related activities). According to a list provided by the ERCGP, there are no fewer than 48 local, regional, or state economic development organizations in Erie County that provide some form of economic development services, e.g., recruitment, retention, entrepreneurship, hospitality, downtown development, economic development financing, etc.

Attribute	Rank
Adequate level of professional staff	 ²²
Involvement of both public and private sectors	
Local economic development organization has a current strategic plan	 ²³
Level of leadership support of economic development program	 ²⁴
Level of cooperation among various organizations involved in economic development	 ²⁵
Level of awareness of community regarding economic development	 ²⁶
Level of funding for local economic development program	 ²⁷

Access to Space

The availability of industrial and office space and sites may be Erie’s most significant Achilles’ heel. There are few shovel-ready sites in excess of 50 acres, which has a direct impact on attracting large distribution centers and certain types of manufacturing facilities. There are limited office park developments that will allow for Class A office space development. The mantra of “no product—no project” is being realized in Erie until there is more investment in product.

Attribute	Rank
Availability of fully served and attractive industrial sites and buildings	 ²⁸
Availability of fully served and attractive office parks and buildings	 ²⁹

Access to Capital

There are a multitude of grant and loan programs offered for small businesses, primarily through the city of Erie. These programs and resources are rated as an Asset. Conversely, the availability of venture capital from local sources for business startups and early stage funding is virtually non-existent. As such, this variable is rated as a Challenge.

Attribute	Rank
Availability of low-interest loans and/or microgrants for small business	 ³⁰
Availability of venture capital from local sources for business startups or early stage funding	

Government Impact on Business

Of the seven variables measured, three are considered an Asset: availability and capacity of water and wastewater capacity (with 36 MGD in excess water and sewer capacity); the quality of post-secondary education in Erie, based on the feedback from the end user during our focus groups dialog, and; entrepreneurial opportunities, e.g., incubators. The Erie Innovation District (which includes an Accelerator) and the Erie Technology incubator are well designed initiatives. There are two additional manufacturing incubators in Girard and in Corry. Challenges include the business permitting procedures and costs within the city of Erie (per the vast majority of responses during the focus groups) and a high median property and effective tax rate in Erie County compared to other Pennsylvania counties.

Attribute	Rank
Availability/capacity of water and wastewater treatment	 31
Availability and type of local incentives	 32
Quality of local elementary and secondary education	 33
Ranking of post-secondary education	 34
Business permitting procedures and costs (city of Erie)	 35
Median property taxes of the County (compared to other counties in Pennsylvania)	 36
Entrepreneurial opportunities (e.g., incubators/accelerators)	 37

Quality of Place

Quality of Place is what differentiates a community. A community’s quality of place can have a positive or negative effect in its quest to attract and retain talent. Erie ranks high in Quality of Place. Of the 13 items measured, 10 are considered an Asset, with only one Challenge. Many times, a company investment may start out as a visit by an executive attending a convention or vacationing. Erie’s lack of any four-diamond or four-star (or higher) hotel properties was identified as Erie’s only Challenge. Housing options, cost of living, cultural and recreational activity, retail shopping, medical care, and the variety of local restaurants are all considered Assets.

Attribute	Rank
Availability of executive-level housing	 38
Availability of moderate-cost housing	 39
Availability of apartments	 40
Cost-of-Living index	 1
Level of crime	 42
Cultural activity	 43
Availability of recreational opportunities	 44
General appearance of the community	 45
Availability of major shopping facilities (surplus or gap of retail sales)	 46
Availability of adequate medical facilities	 47
Availability of four- or five-diamond/star hotels and resorts	 48
Variety of local restaurants	 49
Appearance of the Central Business District(s)	 50

CHAPTER 3: DASHBOARD INDICATORS SUMMARY

The following analysis examines the economic position and competitiveness of Erie County, Pennsylvania, located on the shore of Lake Erie. For context, this report compares Erie County to itself over time, the commonwealth of Pennsylvania, and the nation.

For analysis, Erie County was utilized for several indicators which were observed at the or metro level due to availability of county-level data. This report relies heavily on raw objective data collected by governmental or impartial third-party agencies. In all cases, the original and most currently available data for all geographies (as of February 2019) is used. Garner Economics conducted all unique calculations and computations from the original data.



Measurements

- Population Trends
- Age Distribution
- Diversity
- New Residents
- Educational Attainment
- Secondary School Performance
- Household & Individual Income
- Per Capita Income
- Poverty
- Crime Rate
- Cost of Living
- Labor Force Draw
- Labor Force Participation
- Commuting Patterns
- Enrollment & Degrees Granted
- Industry Sector Composition
- Estimated Average Annual Wage
- Unionization
- New Firms Startups
- Self-Employment
- Broadband Access
- Air Service
- Unions
- Retail Demand & Leakage
- Major Industry Sector Change
- Industry Earnings
- Occupational Change
- Occupational Earnings
- Local Specialization, Competitiveness & Growth



Demographic & Community Trends		
Population Change		Erie County is losing its population mainly through out-migration. The county is down 2.5 percent over the past five years, which is decreasing at a faster rate. Figures show out-migration of approximately 13,400 from 2010–2017.
Age Distribution		Erie County mirrors the state and nation in their age distribution with several high concentrations of those ages 60 to 69 years (13 percent) and a relatively strong showing in those ages 20 to 29 years (13.7 percent). The median age of 39.4 years is younger than Pennsylvania’s 40.8; however, it is older than the national median of 38.1. It is positive to see growth in the younger age groups, particularly the group with ages 20 to 39, which is a key labor force segment. Decline in the middle ages of 40 to 59 years is concerning since this is the age group most likely to contain the experienced workers for a variety of industries.

Demographic & Community Trends (continued)

<p>New Residents</p>		<p>Erie County gained most of its new residents through domestic migration—46.5 percent from another county within the same state and 41.9 percent from a different state. The percentages of the sources for new residents were not very different at the local, state, and national level.</p> <p>New resident migration has not been strong enough to overcome out-migration.</p>
<p>Educational Attainment</p>		<p>Educational attainment among Erie County’s population ages 25 and over is lower than the commonwealth and the nation, with 52 percent receiving some higher education experience.</p> <p>New residents to Erie County closely mirror existing educational attainment (Figure 4.11). <i>High School Degree</i> is the largest of all benchmarks, and Erie County is behind all other high degrees.</p>
<p>Secondary School Performance</p>		<p>The 5-year graduation rate for Erie County has been consistently above 87 percent for the past five years. This is well above all benchmarks.</p> <p>For 2017, Erie County had an ACT composite score of 20.9, just under the national average and well below Pennsylvania’s scores (Figure 4.13, Table 4.6). The County’s scores have been increasing since 2013 and are only one-tenth of a point behind the national average. A weighted average of all 13 school districts in Erie County was used for this measure.</p>
<p>Household Income</p>		<p>Erie County’s household income distribution has a higher emphasis on lower to middle range income with the highest percentage of households making \$100,000 and under. In 2017, Erie County’s median household income was \$50,614, lower than the Commonwealth and nation. The County grew its higher income brackets between 2012 and 2017.</p> <p>Median wages are used as a standard indicator, whereas the Personal Income indicator (below and on page 32) is an average used to compare resident income more closely with worker wages (page 43).</p>
<p>Personal Income</p>		<p>Erie County’s 2017 average individual income of \$54,216 ranks below the commonwealth and nation, which is the same for 2011. This personal income did increase 10 percent over the five-year period, a rate behind benchmark comparisons. This highlights the resident’s income compared to Annual Average Wages which are workplace based presented later in the report.</p> <p>The 2017 personal income distribution for Erie County shows a spike in the \$35,000–\$50,000 category with 24 percent of the working population earning an average income for that range.</p>

Demographic & Community Trends *(continued)*

Per Capita Income		Erie County's 2017 per capita income was \$27,295, ranking below the commonwealth and the nation. Per capita income increased a mere 12 percent over the past five years, again below other benchmarks.
Poverty		The measurement of poverty in the County helps to evaluate the well-being of the citizens and the state of the economy. Erie County has the highest poverty rate (24.9 percent) in comparison to Pennsylvania and the nation (Figure 4.17). Erie County's poverty rate for children under age 18 is higher than the commonwealth and nation at 16 percent.
Crime Rate		Erie County's 2017 <i>Property Crime Rate</i> is extremely low with 1,364.1 crimes reported per 100,000 residents. The <i>Violent Crime Rate</i> is also lower than the commonwealth and nation at 183.6 crimes reported per 100,000 residents. For a unilateral view of crime rates, research is based on crimes reported and published in the FBI Uniform Crime Report for 2017. Erie County's rates include local police office reports that are shared with the FBI.
Cost of Living		Erie County has a significantly lower cost of living than Pennsylvania and the national average. The composite Cost-of-Living Index for the City of Erie is 86 compared with 100 for the state, and a national average of 100. Erie has lower costs across the board compared to the commonwealth, and only two categories are above the national average of 100: <i>Transportation</i> and <i>Utilities</i> .

Labor Market Analysis & Employment Trends

<p>Labor Force Participation</p>		<p>Among residents ages 16 and over in Erie County in 2017, 59.2 percent participate in the labor force, a figure below all geographies. Unfortunately, the County is following the national trend of labor force decline between 2012 and 2017 with all areas in this study declining in Labor Force Participation. Erie County’s rate fell 3.3 percent, much more than the Commonwealth and the nation.</p>
<p>Labor Force</p>		<p>The 2018 preliminary workforce figures for Erie County show a labor force of 128,738, nine percent lower than its labor force for 2008. Both Erie County and Pennsylvania have seen decreasing workforce and low unemployment rates. The highest annual unemployment rate was 9.3 percent in 2010, and the lowest was 4.7 for 2018.</p>
<p>Labor Draw</p>		<p>A 45-minute drive-time analysis from Erie County enlarges the reach for possible commuters. The drive-time area labor force was 180,752 for 2018 which adds a small amount to the county’s labor force number of 128,738.</p>
<p>College Enrollment & Degrees Granted</p>		<p>Erie County colleges and universities have 27,358 students enrolled as of 2017 data. These institutions awarded 6,454 degrees or certificates in 2017. Erie’s largest schools are Edinboro University, Gannon University, and Penn State Behrend. Most of the degrees granted were bachelor’s level with 2,696 degrees conferred in the 2016–2017 school year.</p>
<p>Commuting Patterns</p>		<p>Erie County retains a majority of its residents for work within the County. In 2015, more than 91,000 Erie County residents lived and worked in the County. Only 19,771 residents commuted to jobs outside of the County while 21,680 commuters came into the County for work, leaving a net of 1,914 in-commuters. Commuting patterns have not altered a great deal over the past decade.</p>
<p>Average Wage</p>		<p>In 2018, the estimated average wage per job in Erie County equaled \$40,274 annually or \$775 weekly. Erie County’s average annual wage is the lowest among the benchmark geographies for both 2013 and 2018. Wages grew seven percent over the past five years, which was lower than the commonwealth and national growth rates, which were 11 and 12 percent respectively. Adjusted for inflation, Erie County took a downturn in 2015, after having previously followed the state and national trend of modest wage growth that started in 2012.</p> <p>This workplace-based wage level can be compared to the Average Personal Income of \$54,216 representing the income of Erie County residents regardless of where they work.</p>

Labor Market Analysis & Employment Trends <i>(continued)</i>		
Major Industry Composition		Erie County's largest sector of employment in 2018 was <i>Health Care & Social Assistance</i> , with 18.5 percent of the total employment. The three additional sectors with over 10 percent of total employment are <i>Manufacturing</i> (14.6 percent), <i>Government</i> (12.1 percent), and <i>Retail Trade</i> (11.3 percent).
Startups		<p>Measuring startups relative to population—the number of new firms per 100,000 people—helps to compare relative activity across different areas. Erie County had a lower rate compared to Pennsylvania and the nation. The trend shows a steeper decline than the comparison geographies.</p> <p>Another indicator to consider is the employment created by new firms. Erie County is increasing the number of people employed by new firms since 2013.</p>
Self-Employment		As of 2017, nearly eight percent of workers in Erie County were <i>Self-employed</i> . This rate is below Pennsylvania's and the nation's self-employment levels. Erie County and the United States' self-employment rate declined over the past five years, while Pennsylvania grew a very modest .2 percent.
Broadband		<p>Erie County is lacking access to high-speed broadband internet at the 250 megabits per second (Mbps) or higher levels. This access level is similar to Pennsylvania and higher than the nation.</p> <p>Erie County's average download speed is 32.63 Mbps, which is lower than the commonwealth and the nation. At least two providers advertise the availability of Gig service in the County.</p>
Airport Service		<p>Erie International Airport (ERI) is served by three major airline carriers and offers nonstop service to three destinations. Delta, American Airlines, and United fly into ERI and provide flights to major destinations including Detroit, Philadelphia, and Chicago O'Hare.</p> <p>The airport has a Fixed Base Operator (FBO) onsite, North Coast Air. A flight school is also operated at the airport by North Coast Flight School. With the longest runway of 6,500 feet, ERI's facilities can be an asset to Erie</p> <p>In 2018, Erie International Airport had 189,459 passenger enplanements, which have been on the rise since 2015.</p>

Labor Market Analysis & Employment Trends *(continued)*

<p>Unionization</p>		<p>In 2017, the rate of private worker unionization observed for Erie County was 3.3 percent, which is well under Pennsylvania and half of the national rate. Public unionization membership is very high in both Erie County (56.9 percent) and the commonwealth of Pennsylvania (49.8 percent). Total unionization rate for Erie is 9.8 percent, lower than both the state and nation. Pennsylvania is not a right to work state.</p> <p>Overall, the private and total unionization are relatively low; however, the high public sector unionization rate is a possible disruptor that could permeate the private sector as workers migrate to the private sector from public union jobs.</p>
<p>Retail</p>		<p>Retail sales in Erie County for 2017 were estimated to be nearly \$4 billion for retail trades, food, and drink sales. It is projected that residents in the County could spend approximately \$3.5 billion on retail purchases. Erie County is estimated to have more retail sales than resident demand and, therefore, will have a retail surplus of \$484 million.</p>

Local Specialization, Competitiveness & Growth

Below are general observations from an in-depth analysis of industry sectors and occupational groups. This information is not benchmarked.

<p>Major Industry Sector Change</p>	<ul style="list-style-type: none"> ✓ The largest absolute industry job gains in Erie County between 2013 and 2018 came from <i>Health Care & Social Assistance</i> gaining 1,047 jobs followed by <i>Accommodation & Food Services</i> (+714 jobs) and <i>Administrative & Support, Waste Management & Remediation</i> (556 Jobs). ✓ Overall, Erie County shows a net loss of 2,621 jobs taking into consideration covered, non-covered, and self-employed individuals. ✓ Gains and losses were evenly distributed with 10 sectors in each. The most severe loss occurred in <i>Manufacturing</i>, which lost 3,069 jobs between 2013 and 2018.
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Local Specialization, Competitiveness & Growth *(continued)*

<p>Industry Earnings</p>	<ul style="list-style-type: none"> ✓ A comparison of Erie County’s average industry earnings to national averages offers insights into areas of unique expertise and cost-saving opportunities. ✓ Overall, the average earnings per job in the County were \$40,274 in 2018, which is 25 percent below the national average of \$53,676. ✓ All industry sectors in the County showed earnings well below national averages. <i>Mining, Quarrying, Oil & Gas Extraction</i> and <i>Information</i> categories have annual average wages under 50 percent of the national level. ✓ The <i>Government</i> sector has the least amount of difference with the local Erie County annual average wage being 10 percent under the U.S. average.
<p>Major Occupational Change</p>	<ul style="list-style-type: none"> ✓ Over the last five years, seven major occupational categories in Erie County added jobs. The largest job gains were in <i>Personal Care & Service</i>, gaining 1,239 jobs. ✓ Other sectors with growth include <i>Food Preparation Serving Related</i> (+ 584 jobs) and <i>Healthcare Practitioners & Technical</i> (+ 323 jobs). ✓ The remainder of occupational categories experienced job losses. The most prominent loss occurred in the <i>Production</i> occupational category with more than a 1,700 net loss of employees. Several other occupational groups saw significant decrease in employment, including <i>Office & Administrative Support</i> (-842 jobs) and <i>Sales & Related</i> (-654 jobs).
<p>Occupational Earnings</p>	<ul style="list-style-type: none"> ✓ Occupational earnings compare slightly better than overall industry wages for Erie County and national level pay rates. The comparison revealed three categories that were higher than the national average wage rate. Military pay in Erie County was 47 percent higher than in the United States, while <i>Farming, Fishing & Forestry</i> and <i>Protective Service</i> occupations were 7 percent and 1 percent higher respectively. ✓ Other occupation groups were below national levels with <i>Arts, Design, Entertainment & Media</i> 23 percent below the national hourly wage. Occupations in <i>Construction</i> and <i>Healthcare</i> were more closely aligned with national pay rates, ranging from three to five percent under. ✓ The average wage for all occupations in Erie County was \$19.72 compared to \$23.21 for the national average hourly wage— differing 17 percent.

<p>Major Industry Sector Specialization & Growth</p>	<ul style="list-style-type: none"> ✓ Major industry sector specialization focuses on the geographic concentrations of similarly classified industries. For many industry sectors there exist interconnections between suppliers, occupations, and associated supporting institutions. ✓ Four industry sectors have a local specialization above 1 and experienced job growth in the past five years in Erie County. These comprise the <i>Competitive</i> category and are: <ul style="list-style-type: none"> • <i>Health Care & Social Assistance</i> (1.47 LQ) • <i>Accommodation & Food Services</i> (1.02 LQ) • <i>Educational Services</i> (1.72 LQ) • <i>Finance & Insurance</i> (1.02) ✓ Industries with job growth during the last five years, with local specialization below 1, are considered <i>Emerging</i>. Six industry sectors are in this category based on job growth between 2013 and 2018, including <i>Administration & Support, Waste Management & Remediation; Transportation & Warehousing, and Real Estate, Rental & Leasing</i>. ✓ Four industry sectors are losing jobs and have local specialization and are <i>At-Risk</i>. The most notable industry in this category is <i>Manufacturing</i>. With a loss of more than 3,000 jobs in the past five years, the high location quotient of 1.86 illustrates that this has been a strong industry in the area. <i>Manufacturing</i> is the second largest employment sector in Erie County, with 14.6 percent of the workforce. ✓ The six remaining sectors are classified as <i>Declining</i> due to job loss and low local specialization, including <i>Government</i> (-596 jobs), <i>Wholesale Trade</i> (-333 jobs), and <i>Information</i> (-225).
<p>Industry Competitiveness</p>	<p>The Competitiveness screen seeks to reveal local competitive advantages such as unique growth beyond predicted industry trends or underperforming sectors compared to expected national trends.</p> <p>By the Competitiveness measure, in the time frame examined, Erie County’s high-level industry sectors were deemed as underperforming compared to national trends. This includes sectors which have positive job growth locally.</p> <p>Eight industry sectors are considered to be underperforming compared to national trends with growth below the national trend. Large employment segments for Erie County in this group include (Table 7.6, Figure 7.6):</p> <ul style="list-style-type: none"> ✓ <i>Health Care & Social Assistance</i> ✓ <i>Accommodation & Food Services</i> ✓ <i>Administrative & Support, Waste Management & Remediation Services</i> ✓ <i>Educational Services</i>

<p>Industry Competitiveness (continued)</p>	<p>Twelve industries fell into the category of national losses and local performance behind the national level. Several of Erie’s sectors with significant employment appear on this list including:</p> <ul style="list-style-type: none"> ✓ <i>Manufacturing</i> ✓ <i>Government</i> ✓ <i>Retail Trade</i> <p>✓ This analysis suggests the County is lacking competitive advantages at the general, high-level industry divisions. Subsequent research for target identification will examine subsectors, which may uncover competitive lines of business within these groupings.</p>
<p>Major Occupational Sector Specialization and Growth</p>	<ul style="list-style-type: none"> ✓ Occupational groupings represent similar skills and educational qualifications, but not necessarily specific industry sectors. ✓ Four occupational groups have location quotients over 1, experienced some employment growth recently, and are considered <i>Competitive</i>: <ul style="list-style-type: none"> • <i>Personal Care & Services</i> • <i>Community & Social Services</i> • <i>Healthcare Practitioners & Technical</i> • <i>Food Preparation & Serving Related</i> ✓ Three occupational categories saw modest employment gains over the past five years but have concentrations (LQs) under 1. These <i>Emerging</i> sectors are: <ul style="list-style-type: none"> • <i>Building, Grounds Cleaning & Maintenance</i> • <i>Arts, Design, Entertainment, Sports & Media</i> • <i>Computer & Mathematical</i> ✓ Due to recent job loss, some occupations with LQs higher than 1 are <i>At-Risk</i>. <i>Production</i> occupations and <i>Office & Administrative Support</i> are the two biggest employment groups on this list. As the <i>Manufacturing</i> sector lost jobs in the past five years, <i>Production</i> employment has also dropped significantly (-1,732 jobs). ✓ The remaining occupational groups (12) are classified as <i>Declining</i> or having employment loss/no change along with local specialization under 1.

CHAPTER 4: DEMOGRAPHIC & COMMUNITY TRENDS



This chapter focuses on the residents of Erie County, Pennsylvania. The analysis explores population demographics, new residents, educational attainment, and secondary school performance. Income for households and individuals, per capita income, and poverty rates are key indicators of residents’ economic standing and are assessed. Several indicators affecting residents’ quality of life and opportunity, such as crime rates and cost of living, are also included in this chapter.

Population Trends

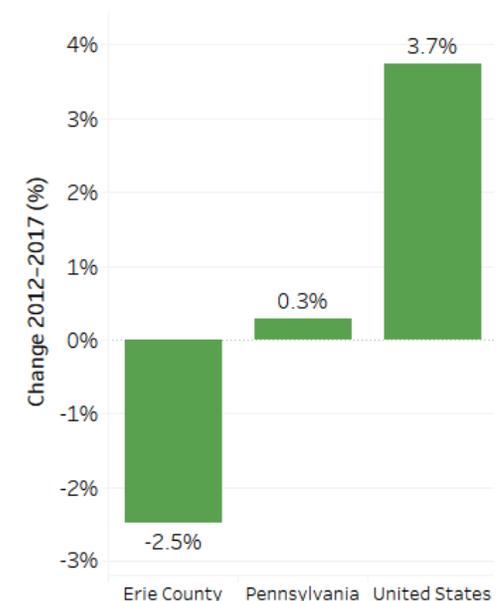
Population growth can be a significant factor in local economic health and is often a key consideration in business expansion and site-selection decisions. Population declines, very slow growth rates, or significant domestic out-migration cause companies to be wary of an area, favoring those locations that are dynamic and growing.

Erie County is experiencing a decline in population with a loss of nearly 7,000 people over the past five years, which is a 2.5 percent rate of change (Table 4.1, Figure 4.1). The County saw growth from 2007 to a peak of 281,503 in 2012, but then has been falling since 2013 (Figure 4.2, Figure 4.3). The Commonwealth of Pennsylvania shows weak population growth over the same timeframe while the nation grew eight percent in the last 10 years.

Table 4.1
Net Population Change
Highest Growth Rate Shaded

Geography	2007	2012	2017	Change 2012–2017	Change 2007–2017	% Change 2012– 2017	% Change 2007– 2017
Erie County	278,573	281,503	274,541	-6,962	-4,032	-2.5%	-1.4%
Pennsylvania	12,563,937	12,768,034	12,805,537	37,503	241,600	0.3%	1.9%
United States	301,231,207	313,993,272	325,719,178	11,725,906	24,487,971	3.7%	8.1%

Figure 4.1
Net Population Change
2007–2017



Source: U.S. Census Bureau, Garner Economics

Figure 4.2
Erie County Population Trend

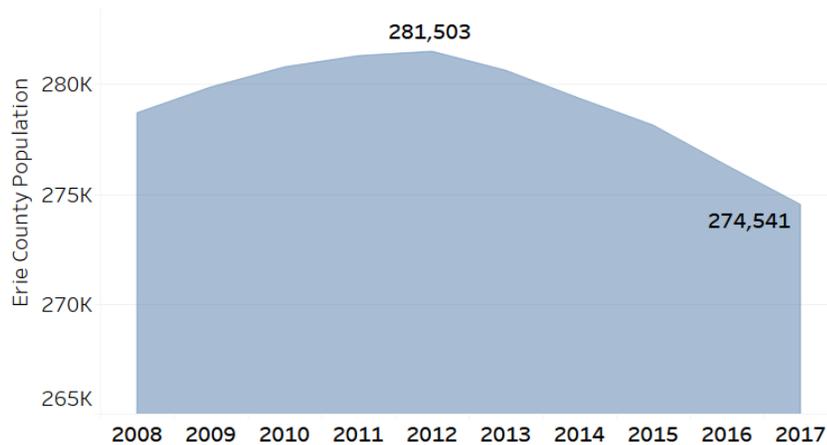
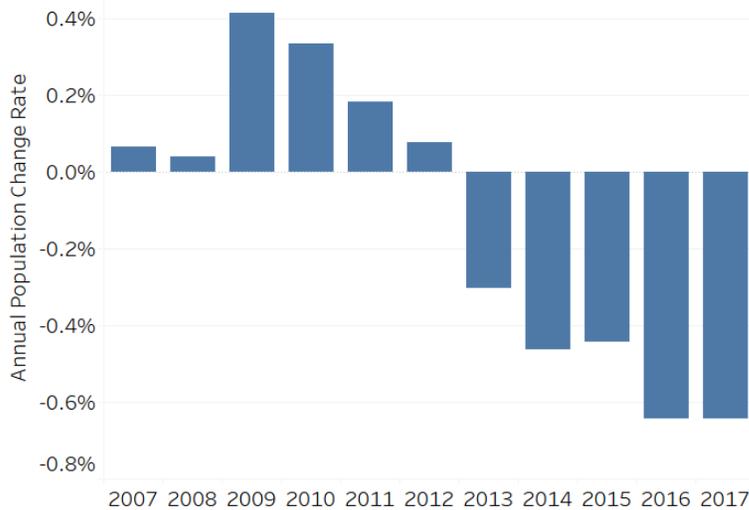


Figure 4.3
Erie County Annual Rate of Population Change



Source: U.S. Census Bureau, Garner Economics

Population growth has three major sources: 1) natural (births minus deaths), 2) domestic migration, and 3) international migration. Erie County’s population decline is mainly through domestic out-migration (Figure 4.4, Table 4.2). From 2010 to 2017, approximately 13,400 people left Erie County, international migration brought in nearly 5,000 people, and the natural increase was 2,500. Pennsylvania also had a sizable net domestic out-migration; however, it had enough influx through natural and international migration to have an overall population increase. Simply put, Erie County is not adding enough people to offset the net domestic out-migration deficit.

Figure 4.4
Components of Population Change 2010–2017

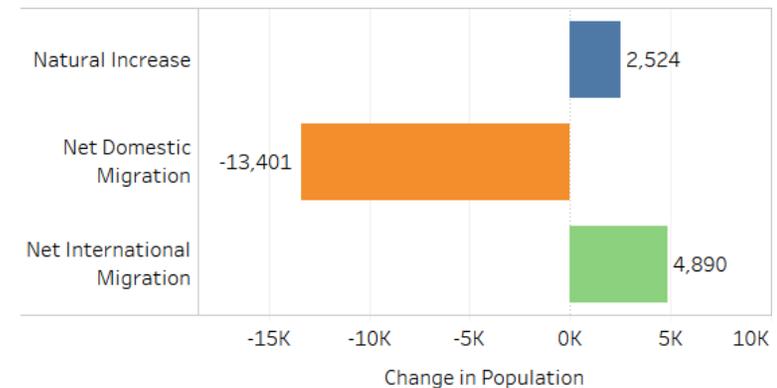


Table 4.2
Components of Population Change 2010–2017

Geography	Natural Increase	Net Domestic Migration	Net International Migration	Total Change (2010–2017)
Erie County	2,524	-13,401	4,890	-6,023
Pennsylvania	89,747	-214,426	234,870	102,680
United States	9,727,447	-	7,233,626	16,961,073

Source: U.S. Census Bureau, Garner Economics

Age

The age composition of a local population can be an important determinant in business decisions and competitiveness. The lack or underrepresentation of younger workers may deter firms from considering some communities for their long-term plans. Low proportions of middle-aged workers may prevent firms from initiating expansions requiring quick startup operations.

A high proportion of older workers may indicate certain incumbent skills or the need to replace soon-to-retire workers. With the current focus on retaining and attracting talent, an existing pool of younger people for both current and future workforce participation is essential in making a community attractive for companies and people alike.

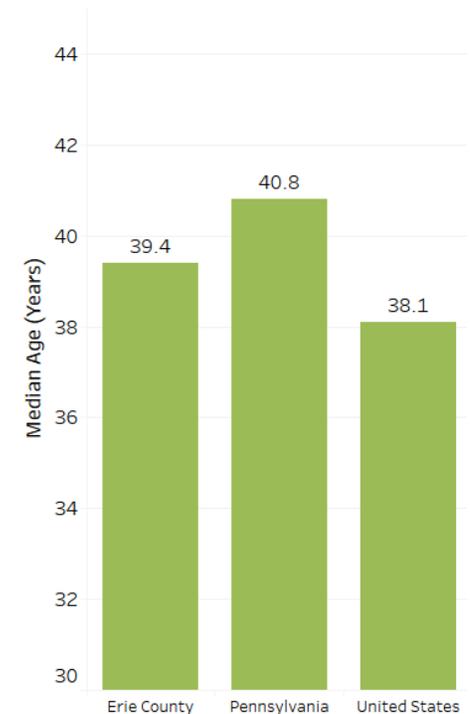
Erie County mirrors the state and nation in their age distribution (Table 4.2, Figure 4.6). The County has the highest concentration of those ages 60 to 69 years (13 percent of the total population) compared to the other benchmarks. Erie also has a relatively strong showing in those ages 20 to 29 years, at 13.7 percent, which is slightly behind the nation. Penn State Behrend’s campus location in Erie most likely contributes to this population group. The median age of 39.4 years is younger than Pennsylvania’s 40.8; however, it is older than the national median of 38.1 (Figure 4.5). Erie’s population is aging, although this is a widespread trend that is shared with many other states and communities.

Table 4.2
Percent of Population by Age Groups, 2017
Highest Percentage Shaded

Geography	<10 yrs	10–19 yrs	20–29 yrs	30–39 yrs	40–49 yrs	50–59 yrs	60–69 yrs	70–79 yrs	80+ yrs
Erie County	11.9%	12.9%	13.7%	12.0%	11.7%	13.2%	13.3%	6.8%	4.5%
Pennsylvania	11.0%	12.5%	13.3%	12.3%	12.1%	14.1%	12.7%	7.3%	4.7%
United States	12.3%	13.1%	13.8%	13.3%	12.5%	13.3%	11.4%	6.6%	3.7%

Source: U.S. Census Bureau, Garner Economics

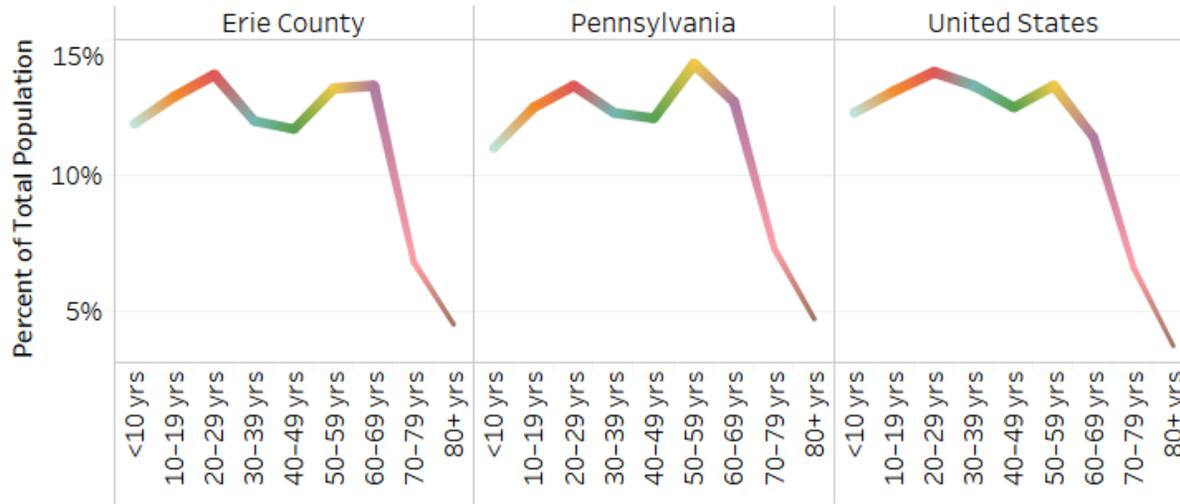
Figure 4.5
2017 Median Age



39.4

Erie County
2017 Median Age

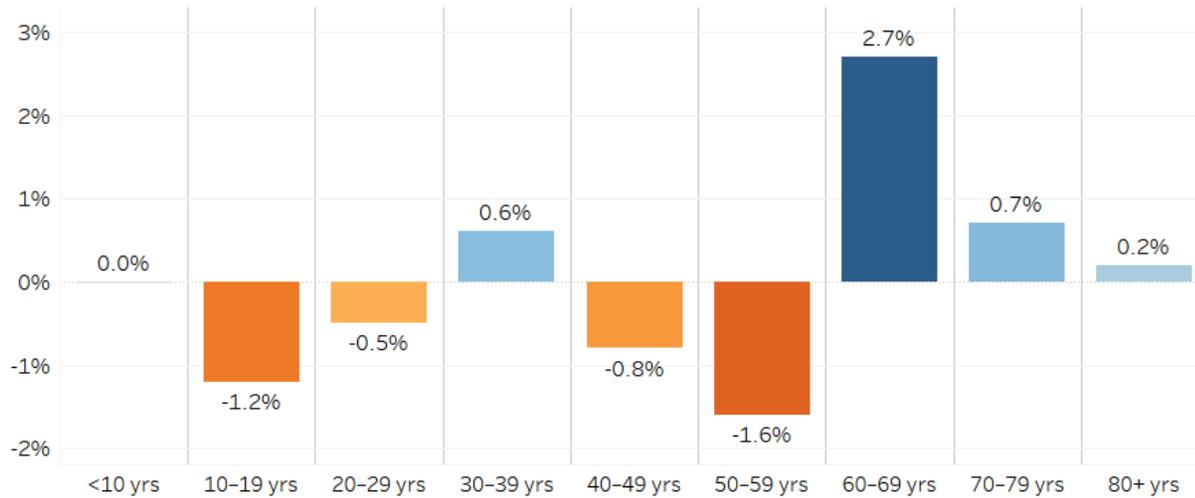
Figure 4.6: 2017 Age Distribution



Erie County’s shift in age groups from 2012 to 2017 reveals growth in both young and old, also shown as higher concentrations in Figure 4.6. The highest growth rates are seen in ages 30 to 39 years and in ages 60 to 69 years (Figure 4.7). The population from ages 40 to 59 has decreased since 2012.

It is positive to see growth in the younger age groups—particularly the group with ages 20 to 39, which is a key labor force segment. Decline in the middle ages of 40 to 59 years is concerning since this is the age group most likely to contain the experienced workers for a variety of industries.

Figure 4.7: Change in Age Groups, 2012–2017



Source: U.S. Census Bureau, Garner Economics

Diversity

By itself, racial diversity is not a determining factor in local economic competitiveness, although some firms may prefer higher rates of diversity to attract and retain certain workers. This is particularly true for multinational firms looking to attract workers from outside the United States. As talent attraction and retention are key factors in economic development today, there is a rising awareness by some companies with strong corporate cultures regarding diversity to seek areas that reflect or support inclusiveness and tolerance among many groups of people.

Erie County is primarily comprised of those who identify themselves as *White*, with 86 percent of the total population (Table 4.3). Approximately seven percent of the County’s population classify themselves as *Black or African American*. A growing number of people respond with *Two or More Races* as their ethnic identity, with Erie County mirroring the state and nation at about three percent. The *Hispanic or Latino* population is more than four percent of the total resident base of Erie County. This last group is not counted as a separate race, but rather as *Hispanic or Latino* of any race.

Table 4.3
Population Diversity, 2017
Highest Percentage Shaded

	White	Black or African American	Two or More Races	Asian	Other	Hispanic or Latino*
Erie County	86.29%	6.98%	3.18%	1.76%	1.79%	4.29%
Pennsylvania	80.74%	11.22%	2.46%	3.47%	2.11%	7.33%
United States	72.30%	12.71%	3.29%	5.59%	6.11%	18.07%

* Note: Hispanic or Latino is not counted as a race, but rather Hispanic or Latino origin of any race.

Source: U.S. Census Bureau, Garner Economics

New Residents

Attracting new residents from a diversity of outside locations can reflect the county’s broader appeal and provide an indicator of economic dynamism. This measure of new residents reflects the population that has moved within the past year **and does not show net migration, only incoming residents.**

Erie County gained most of its new residents through domestic migration—46.5 percent from another county within the same state and 41.9 percent from a different state (Table 4.4, Figure 4.8). The percentages of the sources for new residents were not very different at the local, state, and national level.

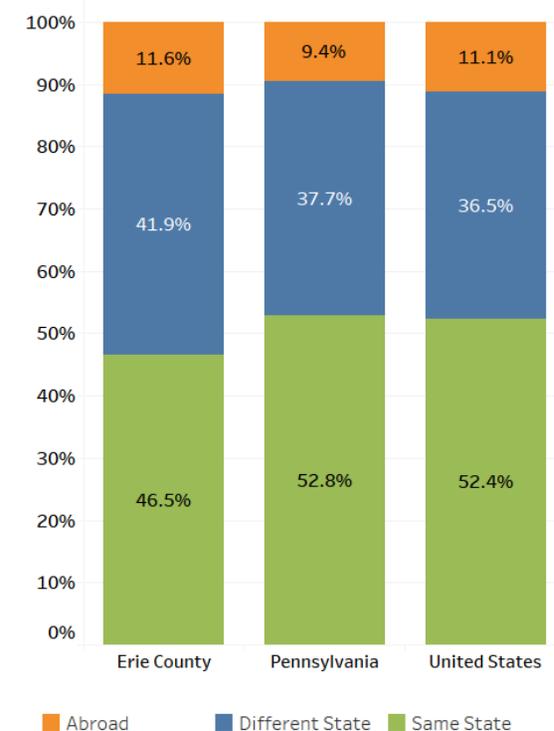
The 2017 median age of new residents to Erie County was 25 years or younger—the youngest compared to Pennsylvania and the United States. Income levels reported are very low and may be attributed to students who are not working full time.

Table 4.4
New Residents, 2017
Highest Percentage Shaded

	Erie County	Pennsylvania	United States
% New Residents	4.3%	5.3%	6.3%
# Total New Residents	11,709	671,756	20,285,649
Moved from Same State	46.5%	52.8%	52.4%
Same State: Median Age (Years)	23	27	28
Same State: Median Income	\$14,487	\$22,995	\$24,466
Moved from Different State	41.9%	37.7%	36.5%
Different State: Median Age (Years)	25.	28	29
Different State: Median Income	\$13,469	\$24,031	\$26,219
Moved from Abroad	11.6%	9.4%	11.1%
Abroad: Median Age (Years)	19	29	30
Abroad: Median Income	\$11,503	\$16,702	\$19,025

Source: U.S. Census Bureau, Garner Economics

Figure 4.8
Sources of New Residents, 2017



Source: U.S. Census Bureau, Garner Economics

Educational Attainment

The level of education of the county’s population is often a decisive factor in economic competitiveness. Firms understand the need to operate in areas with a sufficient supply of workers that meet or exceed their demands. They also know that the lack of an educated workforce can significantly affect business performance.

Educational attainment among Erie County’s population ages 25 and over is lower than the commonwealth and the nation, with 52 percent receiving some higher education experience (Figure 4.10).

New residents to Erie County closely mirror existing educational attainment (Figure 4.11). *High School Degree* is the largest of all benchmarks and Erie County is behind all other high degrees.

Figure 4.10
Educational Attainment, 2017

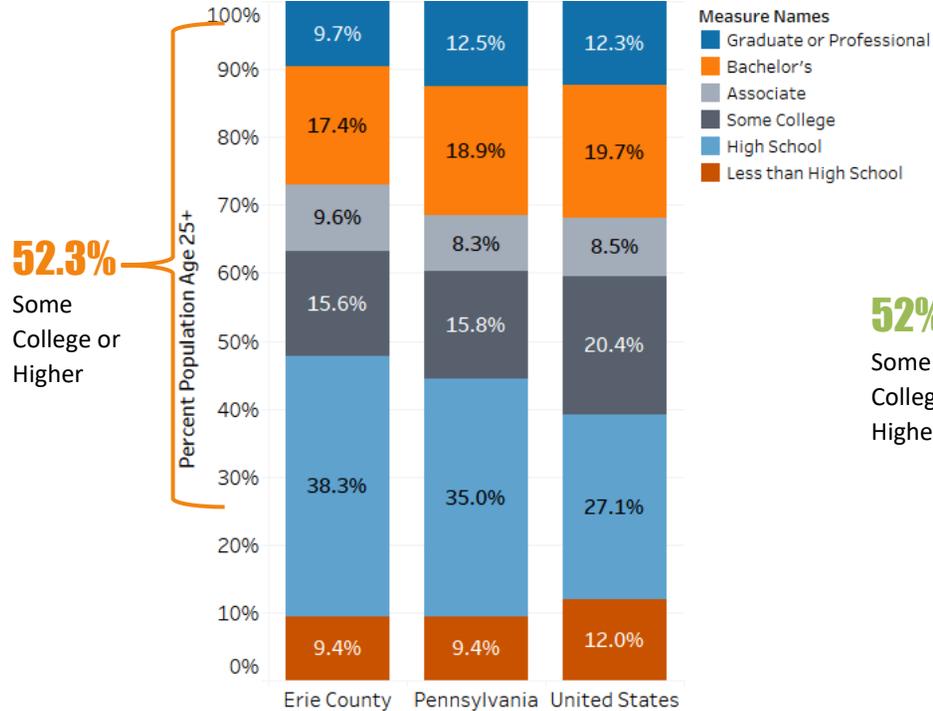
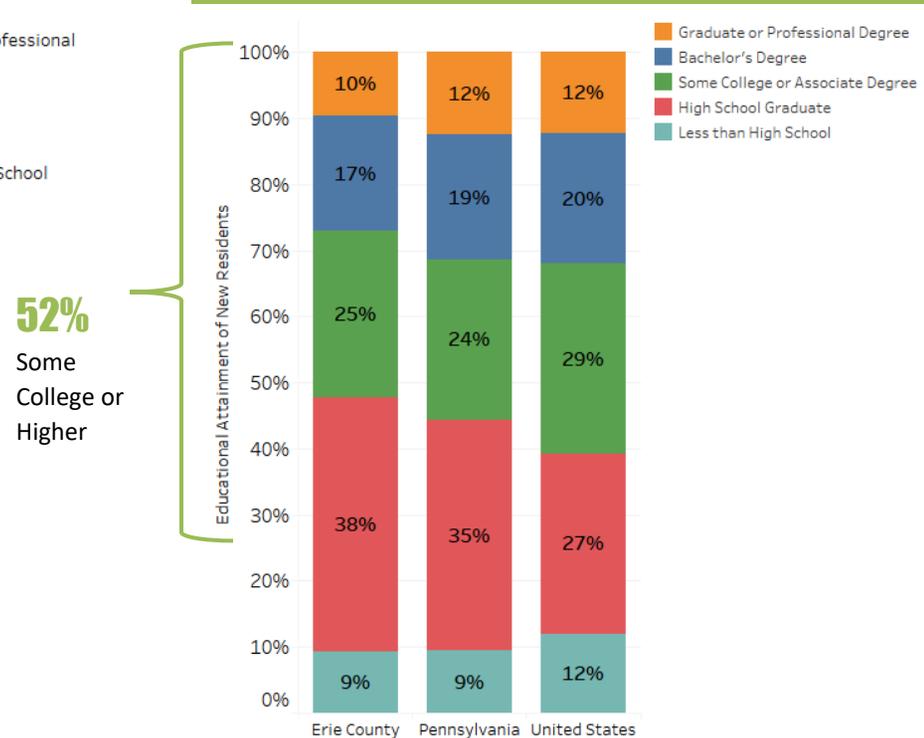


Figure 4.11
Educational Attainment of New Residents, 2017



Source: U.S. Census Bureau, Garner Economics

Secondary School Performance

Graduation Rate

The share of high school students that graduate within four years of beginning 9th grade is an important measure of the performance of local school districts.

The four-year graduation rate for Erie County has been consistently above 87 percent for the past five years (Figure 4.12, Table 4.5). This is well above all benchmarks. Rates for 2017 were not available for the United States; however, the national trend is to increase approximately one percentage point per year and would still be lower than Erie County.

Figure 4.12
4-Year Graduation Rates

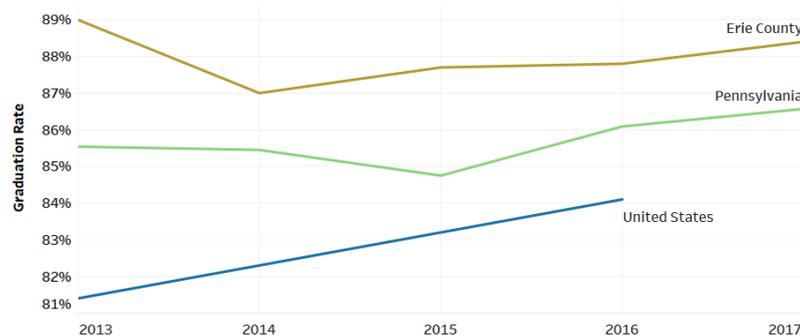


Table 4.5
4-Year Graduation Rates
Highest Rate Shaded

	2013	2014	2015	2016	2017
Erie County	89.0%	87.0%	87.7%	87.8%	88.4%
Pennsylvania	85.5%	85.5%	84.8%	86.1%	86.6%
United States	81.4%	82.3%	83.2%	84.1%	-

ACT Scores

The ACT standardized test, utilized for college admissions in the United States, is a widely accepted measure of education quality. Scores are especially relevant to businesses because they provide a measure of the “final product” of public schools and secondary school performance.

Erie County had a composite score for 2017 of 20.9, just under the national average and well below Pennsylvania’s scores (Figure 4.13, Table 4.6). The County’s scores have been increasing since 2013 and are only one-tenth of a point behind the national average. A weighted average of all 13 school districts in Erie County was used for this measure.

Figure 4.13
ACT Average Composite Scores

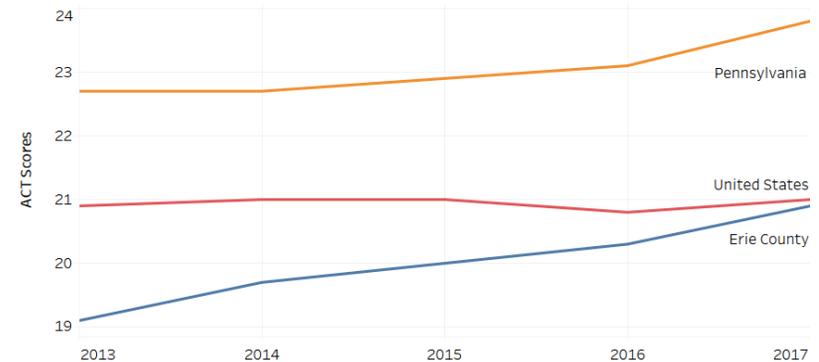


Table 4.6
ACT Average Composite Scores
Highest Score Shaded

	2013	2014	2015	2016	2017
Erie County	19.1	19.7	20.0	20.3	20.9
Pennsylvania	22.7	22.7	22.9	23.1	23.8
United States	20.9	21.0	21.0	20.8	21.0

Source: Pennsylvania Department of Education, Garner Economics

Household Income

Household income reflects income for residents regardless of where they work. Erie County’s household income distribution has a higher emphasis on lower to middle range income with the highest percentage of households making \$100,000 and under (Figure 4.13, Table 4.7). Erie County’s median household income in 2017 was \$50,614, lower than the Commonwealth and nation (Figure 4.14). On a positive note, the County grew its higher income brackets between 2012 and 2017 (Figure 4.15).

Figure 4.13
2016 Household Income Distribution

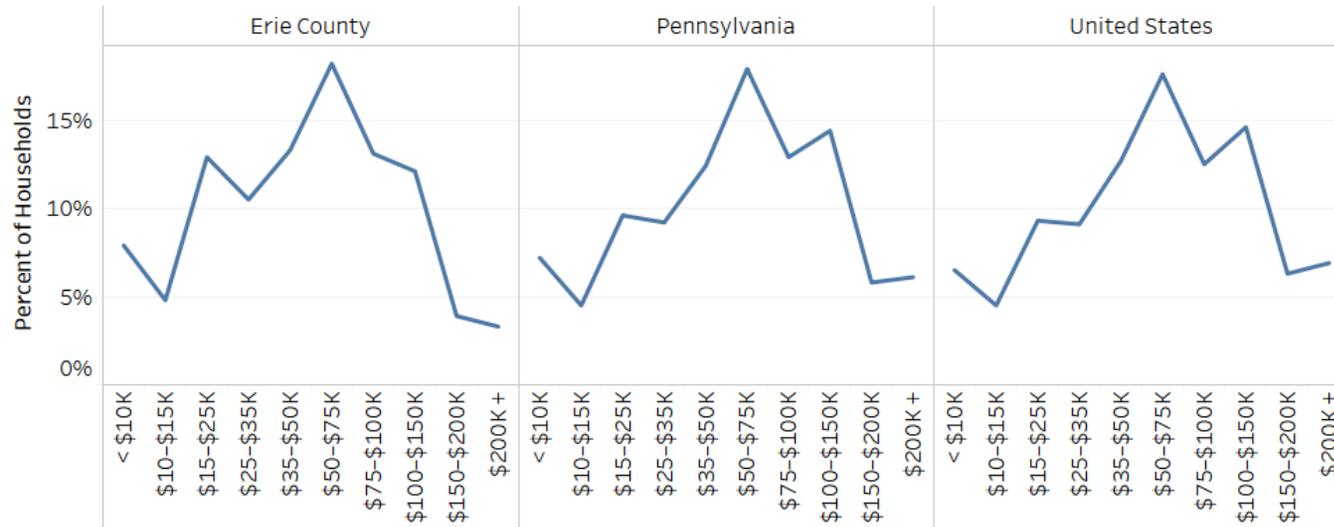


Figure 4.14
2017 Median Household Income



Figure 4.15
Change in Household Income Distribution
Erie County 2012–2017

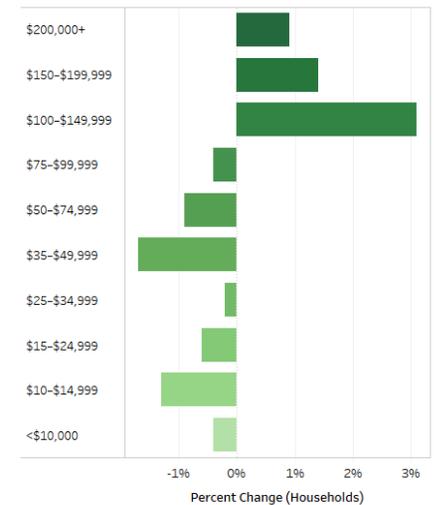


Table 4.7
2017 Household Income Distribution
Highest Percentage Shaded

Geography	< \$10K	\$10–\$15K	\$15–\$25K	\$25–\$35K	\$35–\$50K	\$50–\$75K	\$75–\$100K	\$100–\$150K	\$150–\$200K	\$200K +
Erie County	7.9%	4.8%	12.9%	10.5%	13.3%	18.2%	13.1%	12.1%	3.9%	3.3%
Pennsylvania	7.2%	4.5%	9.6%	9.2%	12.4%	17.9%	12.9%	14.4%	5.8%	6.1%
United States	6.5%	4.5%	9.3%	9.1%	12.7%	17.6%	12.5%	14.6%	6.3%	6.9%

Source: U.S. Census Bureau, Garner Economics

Personal Income

Earnings for individuals reflect the income for residents regardless of where they work or others’ earnings in their household. The data capture individuals ages 16 or over who are full-time, year-round workers with earnings.

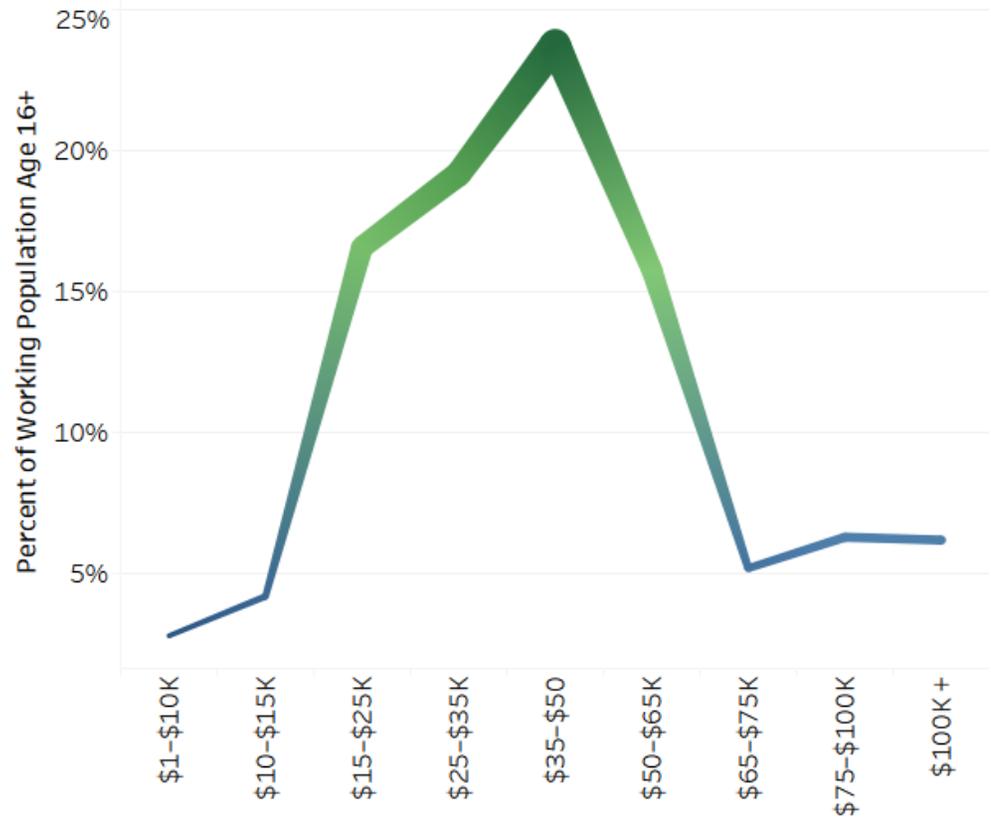
Erie County’s 2017 average individual income of \$54,216 ranks below the Commonwealth and nation, which is the same for 2011 (Table 4.7). This personal income did increase 10 percent over the five-year period, a rate behind benchmark comparisons.

The 2017 personal income distribution for Erie County shows a spike in the \$35-\$50,000 category with 24 percent of the working population earning an average income in that range (Figure 4.16).

Table 4.7
Average Personal Income
Highest Relative Figure Shaded

	2012	2017	% Change 2012–2017
Erie County	\$49,273	\$54,216	10.0%
Pennsylvania	\$56,795	\$63,840	12.4%
United States	\$57,099	\$64,010	12.1%

Figure 4.16
2017 Erie County Personal Income Distribution



Source: U.S. Census Bureau, Garner Economics

Per Capita Income

Per capita income is the average annual income computed for every man, woman, and child. It is derived by dividing aggregate income by total population. Per capita income is a measure for all residents regardless of where they work, their age, or whether they derive any income.

Erie County's 2017 per capita income was \$27,295, ranking below the commonwealth and the nation (Table 4.8). Per capita income increased a mere 12 percent over the past five years, again below other benchmarks.

Table 4.8
Per Capita Income
Highest Relative Figure Shaded

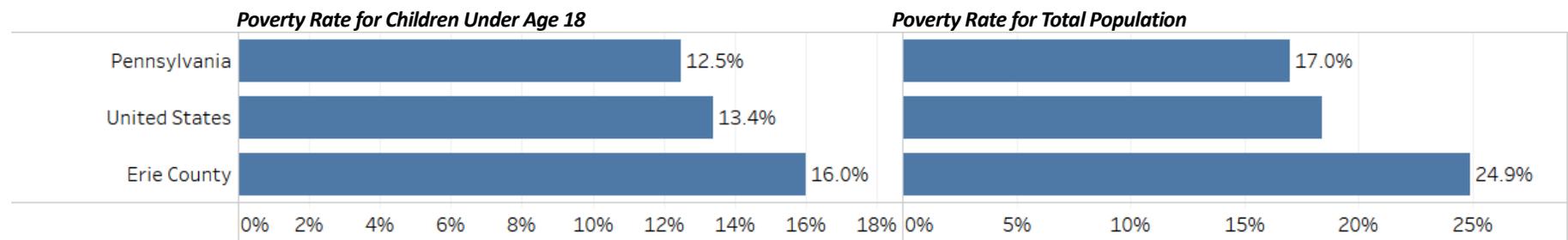
	2012	2017	% Change in Per Capita
Erie County	\$24,362	\$27,295	12.0%
Pennsylvania	\$27,774	\$32,711	17.8%
United States	\$27,319	\$32,397	18.6%

Source: U.S. Census Bureau, Garner Economics

Poverty

The measurement of poverty in the county helps to evaluate the well-being of the citizens and the state of the economy. Erie County has the highest poverty rate (24.9 percent) in comparison to Pennsylvania and the nation (Figure 4.17). Erie County's poverty rate for children under age 18 is higher than the commonwealth and nation at 16 percent.

Figure 4.17
Population in Poverty



Source: U.S. Census Bureau, Garner Economics

Crime

Crime rates may seem outside the typical measures of economic competitiveness, but these represent a widely accepted, objective gauge used by firms. Crime rates may reflect underlying economic conditions and may signal deeper systemic problems more so than standard economic measures show.

Erie County's 2017 *Property Crime Rate* is extremely low with 1,364.1 crimes reported per 100,000 residents (Table 4.9, Figure 4.18). The *Violent Crime Rate* is also lower than the commonwealth and nation at 183.6 crimes reported per 100,000 residents.

For a unilateral view of crime rates, research is based on crimes reported and published in the FBI Uniform Crime Report for 2017. Erie County's rates include local police office reports that are shared with the FBI.

Table 4.9
Crime Rates per 100,000 Residents

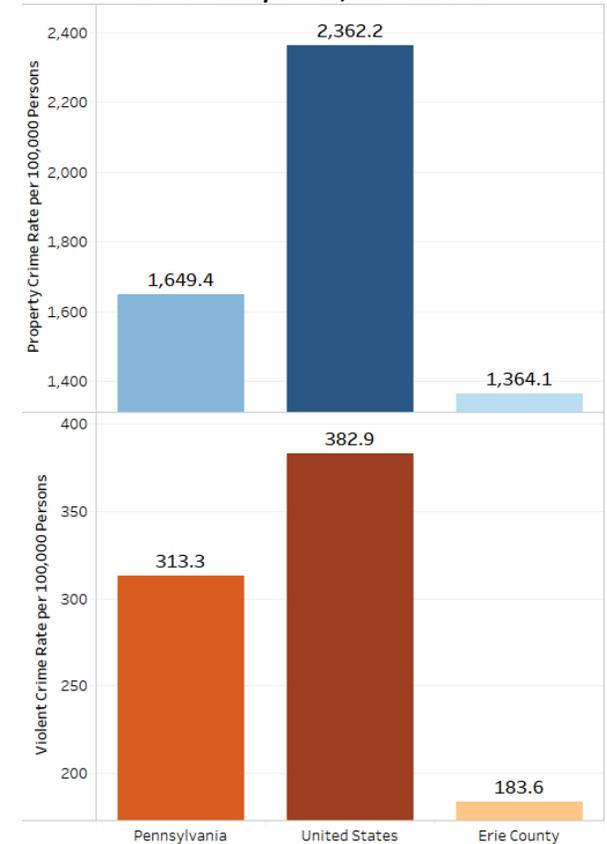
	Property Crime		Violent Crime	
	Crimes Reported	Crime Rate	Crimes Reported	Crime Rate
Erie County	3,745	1,364.1	504	183.6
Pennsylvania	211,220	1,649.4	40,120	313.3
United States	7,694,086	2,362.2	1,247,321	382.9

Sources:

Reports, FBI, Garner Economics

Uniform Crime

Figure 4.18
Crime Rates per 100,000 Residents



Cost of Living

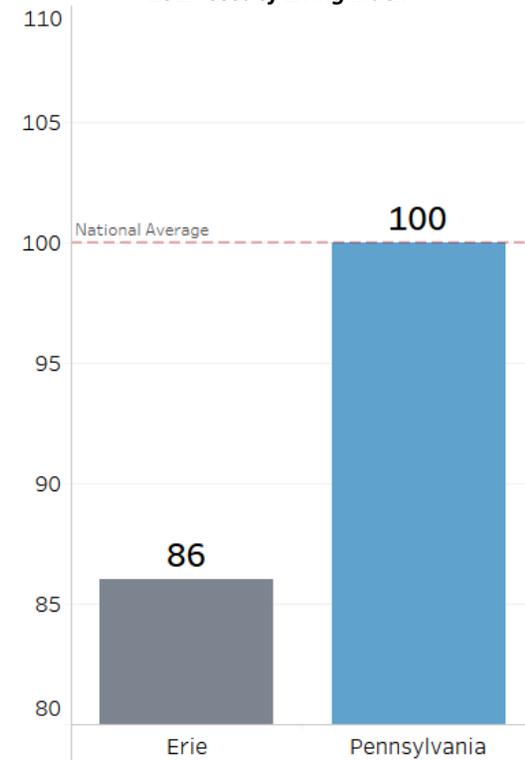
Cost-of-Living indicators for cities reflect the general cost of mid-management-level living in that area. The Cost-of-Living Index uses the national average of 100 for measuring the cost for a set basket of goods and services. Erie County has a significantly lower cost of living than Pennsylvania and the national average (Table 4.11, Figure 4.19).

The composite Cost-of-Living Index for the city of Erie is 86 compared with 100 for the state and a national average of 100. Erie has lower costs across the board compared to the commonwealth and only two categories are above the national average of 100: *Transportation* and *Utilities*.

Table 4.10
2017 Cost-of-Living Index

Index	Erie	Pennsylvania
Cost of Living Index	86	100
Goods & Services Index	98	100
Grocery Index	97	105
Healthcare Index	86	92
Housing Index	54	91
Transportation Index	103	108
Utilities Index	109	111

Figure 4.19
2017 Cost-of-Living Index



Source: AreaVibes.com derived from C2ER Index for 2017, Garner Economics

CHAPTER 5: ECONOMIC DYNAMICS & EMPLOYMENT TRENDS



This chapter focuses on the labor market of Erie County, Pennsylvania, beginning with the residents within the County, then exploring commuting patterns with the surrounding area and the full labor force draw of a 45-minute drive-time analysis. The data then transitions to employer-based information, including employment, industry composition, wage comparisons, and additional workplace statistics for those working in Erie County.

Labor Force Participation

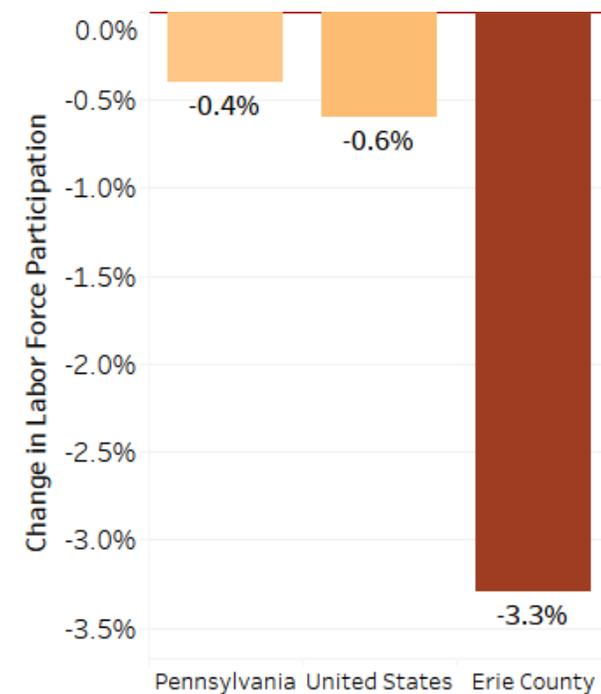
Among residents ages 16 and over in Erie County in 2017, 59.2 percent participated in the labor force, a figure below all geographies (Table 5.1). Unfortunately, the County is following the national trend of labor force decline between 2012 and 2017, with all areas in this study declining in *Labor Force Participation*. Erie County’s rate fell 3.3 percent, much more than the commonwealth and the nation (Figure 5.1).

Table 5.1
Labor Force Participation Rate
Highest Rate Shaded

	2012	2017	Change 2012–2017
Erie County	62.5%	59.2%	-3.3%
Pennsylvania	62.8%	62.4%	-0.4%
United States	63.8%	63.2%	-0.6%

Source: U.S. Census Bureau, Garner Economics

Figure 5.1
Change in Labor Force Participation, 2012–2017



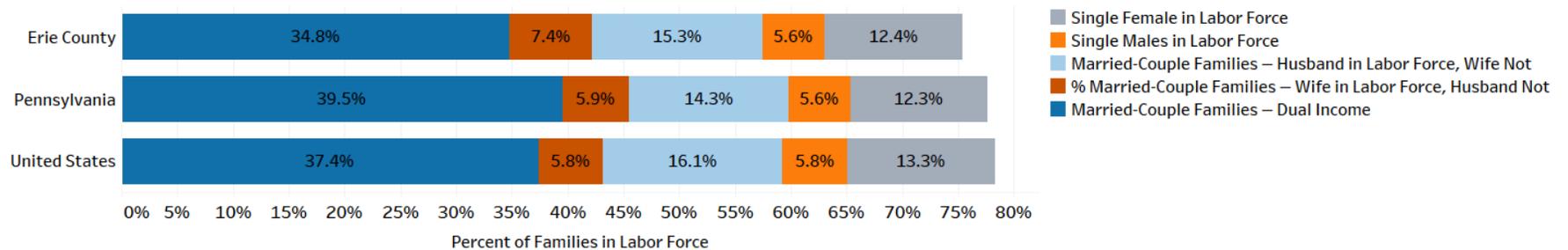
Labor Force Participation—Families

Among all families in Erie County, 74.4 percent have two income earners (*Married-Couple Families—Dual Income*), which is the biggest sector of families in the labor force (Table 5.2, Figure 5.2). Although Erie County does not have the highest percentage in any category, it does closely mirror the distribution of familial participation in the workforce at the state and national level.

Table 5.2
Labor Force Participation of Families 2017
Highest Rate Shaded

	Erie County	Pennsylvania	United States
Married-Couple families			
Married-Couple Families—Dual Income	74.4%	74.8%	73.6%
Married-couple families—Husband in Labor Force, Wife Not	34.8%	39.5%	37.4%
Married-Couple Families—Wife in Labor Force, Husband Not	15.3%	14.3%	16.1%
Other Families			
Single Female in Labor Force	12.4%	12.3%	13.3%
Single Males in labor force	5.6%	5.6%	5.8%
Total Families in Labor Force	75.4%	77.6%	78.3%

Figure 5.2
Labor Force Participation of Families, 2016



Source: U.S. Census Bureau, Garner Economics

Labor Force

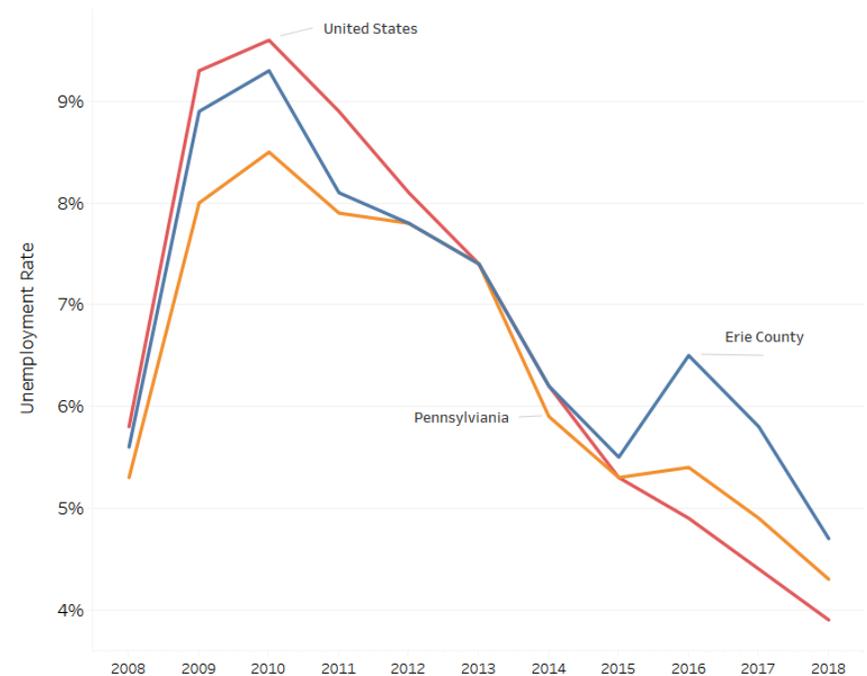
The 2018 preliminary workforce figures for Erie County show a labor force of 128,738, nine percent lower than its labor force for 2008 (Table 5.3). According to the Bureau of Labor Statistics both Erie County and Pennsylvania have seen decreasing workforce and low unemployment rates.

Table 5.3
Labor Force
Highest Rate of Change Shaded

	2008	2013	2018	5-year Change	10-Year Change
Erie County	141,912	136,002	128,738	-5%	-9%
Pennsylvania	6,451,535	6,442,411	6,408,890	-1%	-1%
United States	154,287,000	155,389,000	162,075,000	4%	5%

Unemployment, shown in Figure 5.3, has mirrored the commonwealth and the nation with a sharp increase in 2016 followed by a steep decline throughout 2018. The highest annual unemployment rate was 9.3 percent in 2010 and the lowest was 4.7 for 2018.

Figure 5.3
Unemployment rate 2008–2018



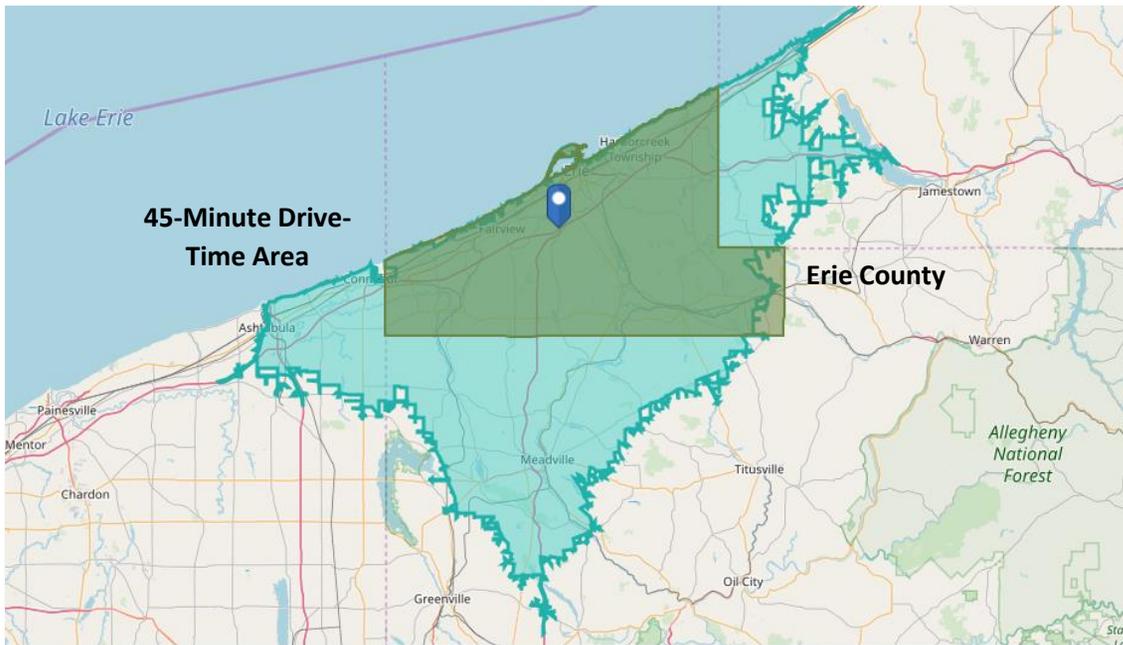
Source: Bureau of Labor Statistics, Garner Economics

Labor Force Draw

The effective labor draw considers the documented labor pool for a location based on the existing residential workforce and the local road network. The analysis considers the pool of active workers residing within the representative drive-time from a site.

A 45-minute drive-time analysis from Erie County enlarges the reach for possible commuters. The drive-time area labor force was 180,752 for 2018 which adds a small amount to the county’s labor force number of 128,738 (Figure 5.4).

Figure 5.4
45-Minute Drive-Time Analysis
Center: Crossroads of Interstate I-79 & I-90



376,936

Population

40.7

Median Age

180,752

Labor Force

169,911

Average Employment

6.0%

Unemployment Rate

Source: ESRI, 2017 data, Garner Economics

College Enrollment & Degrees Granted
Areas of Study

Erie County colleges and universities have 27,358 students enrolled as of 2017 data. These institutions awarded 6,454 degrees or certificates in 2017. Erie’s largest schools are Edinboro University, Gannon University, and Penn State Behrend. Most of the degrees granted were bachelor’s level with 2,696 degrees conferred in the 2016–2017 school year (Table 5.4)

Analyzing the areas of study for Erie County, the top fields are *Health Professions & Related Programs; Business, Management, Marketing & Related; Education; and Engineering* (Table 5.5).

Table 5.4
2017 Degrees Conferred by Award Level

Award Level	Degrees Granted
Certificates Below the Baccalaureate Total	692
Associate Degree	515
Bachelor’s Degree	2,696
Certificates Above the Baccalaureate Total	234
Master’s Degree	1,325
Doctorate Degree	992
Grand Total	6,454

Source: National Center for Educational Statistics, Garner Economics

Table 5.5
2017 Degrees Conferred by Area of Study

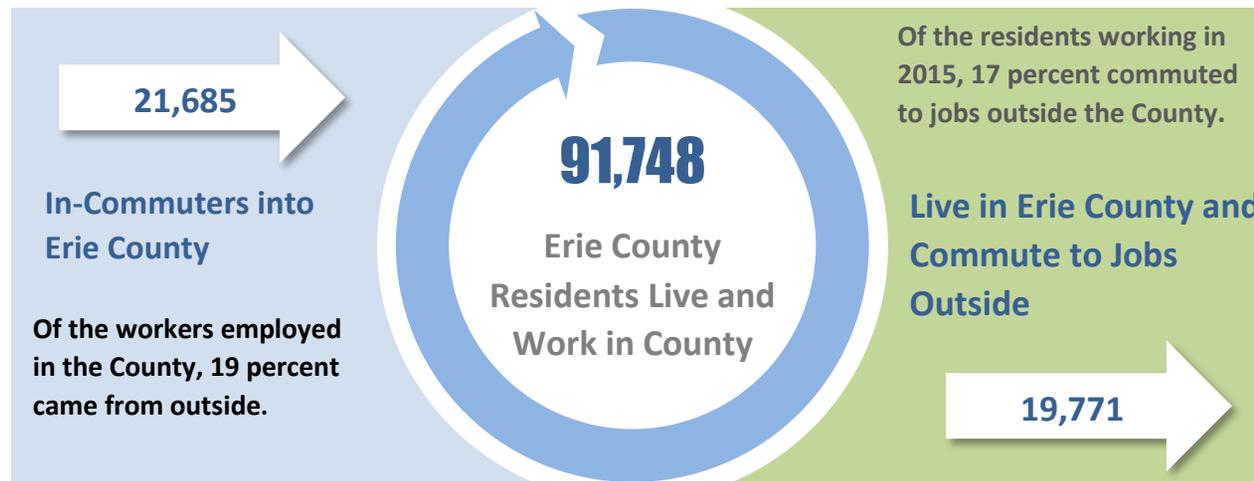
Area of Study	Degrees Conferred
Health Professions and Related Programs	2,231
Business, Management, Marketing, and Related	839
Education	518
Engineering	447
Engineering Technologies and Engineering-related Fields	308
Public Administration and Social Service Professions	243
Visual and Performing Arts	206
Homeland Security, Law Enforcement, Firefighting, and Related Protective Service	176
Computer and Information Sciences and Support Services	169
Psychology	166
Biological and Biomedical Sciences	163
Social Sciences	141
Communication, Journalism, and Related Programs	132
Liberal Arts and Sciences, General Studies and Humanities	109
Military Technologies and Applied Sciences	108
Parks, Recreation, Leisure and Fitness Studies	106
Physical Sciences	65
Personal and Culinary Services	60
English Language and Literature/Letters	50
Mechanic and Repair Technologies/Technicians	43
Multi/Interdisciplinary Studies	43
Construction Trades	28
History	23
Mathematics and Statistics	22
Precision Production	21

Commuting Patterns

Worker flows help define the size of a local economy’s labor draw, and trends help describe attraction and regional competition. Worker flows represent both daily commuters and short-term, away-from-home assignments (major construction projects, on-site consulting, etc.).

Erie County retains a majority of its residents for work within the County. In 2015, more than 91,000 Erie County residents lived and worked in the County (Figure 5.7). Only 19,771 residents commuted to jobs outside of the County while 21,680 commuters came into the County for work. Commuting patterns have not altered a great deal over the past decade (Figure 5.8)

Figure 5.7
Erie County 2015 Commuting Patterns



**The U.S. Census Bureau counts one primary job per worker.
Source: U.S. Census Bureau, Longitudinal Employer-Household Dynamics (LEHD), Garner Economics*

Figure 5.8
Erie County Commuting Patterns, 2006–2015

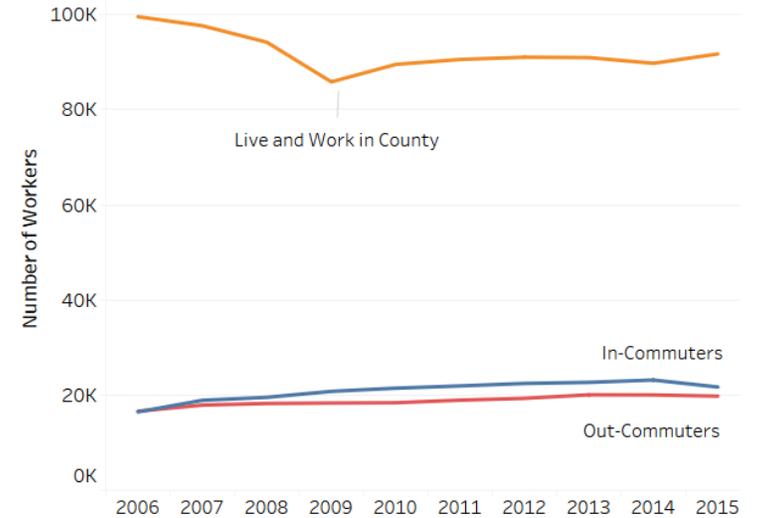


Figure 5.9

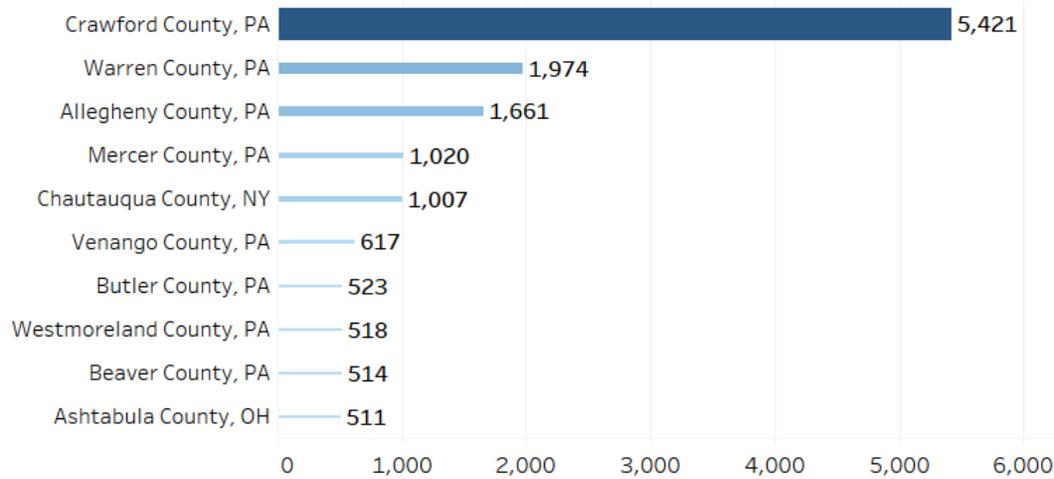
19.7

2017 Average Travel Time to Work Erie County

Source: U.S. Census Bureau

In-Commuter and Out-Commuter Counties

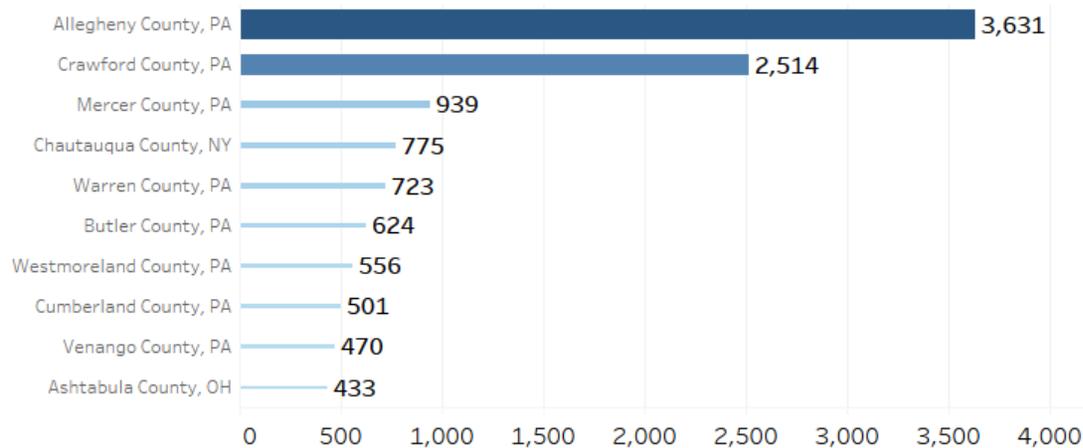
Figure 5.10
2015 Erie County In-Commuters



Erie County is fairly balanced in its commuting patterns with out-commuting closely matching the in-commuting. Overall, the County is left with a net total of 1,914 workers driving into Erie County for employment.

The majority of commuting is between Crawford County, Warren County, Allegheny County, and Mercer County. In-commuters primarily travel from Crawford County, with 5,421 people reported in 2015 to work in Erie County (Figure 5.10). Out-commuter travel is more distributed among two counties: Allegheny and Crawford (Figure 5.11).

Figure 5.11
2015 Erie County Out-Commuters



Source: U.S. Census Bureau, Longitudinal Employer-Household Dynamics (LEHD), Garner Economics

Estimated Annual Wages

In 2018, the estimated average wage per job in Erie County equaled \$40,274 annually (Figure 5.12), or \$775 weekly. It should be noted that wage applies only to **employment in Erie County** and does not measure wages for those workers who live in the County but commute outside the area (See Commuting earlier in Chapter 5). The annual average earnings for all County residents, whether they stay in the County for work or out-commute, is \$54,216 for 2017 (See Personal Income in Chapter 4).

Erie County’s average annual wage is the lowest among the benchmark geographies for both 2013 and 2018 (Table 5.6). Wages grew 7 percent over the past five years, which was lower than the commonwealth and national growth rates, which were 11 and 12 percent respectively. Adjusted for inflation, Erie County took a downturn in 2015, after having previously followed the state and national trend of modest wage growth that started in 2012 (Figure 5.13).

Figure 5.12
Estimated Annual Average Wages, 2018



Figure 5.13
Annual Wages Adjusted for Inflation

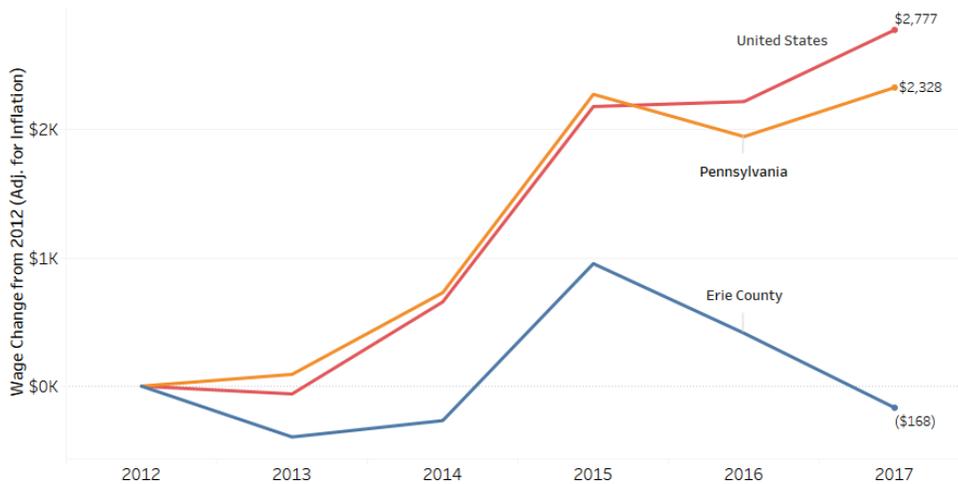


Table 5.6
Average Wages, 2013–2018
Highest Figure Shaded

	2013	2018	# Change	% Change
Erie County	\$37,567	\$40,274	\$2,707	7%
Pennsylvania	\$46,961	\$52,004	\$5,043	11%
United States	\$47,593	\$53,258	\$5,665	12%

Source: EMSI, Garner Economics

Major Industry Sector Composition

A comparison of major industry employment composition provides a broad relative assessment of differences among economies. Erie County’s largest sector of employment in 2018 was *Health Care & Social Assistance*, with 18.5 percent of the total employment (Table 5.7). Total employment, for this study, includes covered and uncovered employment as well as self-employed individuals.

The three additional sectors with over 10 percent of total employment are *Manufacturing* (14.6 percent), *Government* (12.1 percent), and *Retail Trade* (11.3 percent). Erie County has the highest percentage of the workforce in its top two sectors as well as *Retail Trade*, *Accommodation & Food Service*, and *Other Services* sectors compared to the state and nation. Erie County also ranks the highest among the benchmarks for *Arts, Entertainment & Recreation*.

Table 5.7
2018 Industry Sector Composition
Highest Relative Figure Shaded

Industry Sector	Erie County	Pennsylvania	USA
Health Care & Social Assistance	18.5%	16.2%	12.6%
Manufacturing	14.6%	8.9%	7.9%
Government	12.1%	11.3%	15.1%
Retail Trade	11.3%	10.1%	10.2%
Accommodation & Food Services	8.8%	7.5%	8.6%
Other Services	5.1%	4.9%	4.8%
Administrative & Support, Waste Management & Remediation	4.6%	5.3%	6.2%
Educational Services	4.4%	4.5%	2.6%
Finance & Insurance	4.1%	4.4%	4.0%
Construction	3.8%	5.0%	5.5%
Professional, Scientific & Technical Services	2.8%	6.2%	6.5%
Wholesale Trade	2.3%	3.5%	3.7%
Transportation & Warehousing	2.2%	4.3%	3.6%
Arts, Entertainment & Recreation	2.2%	1.8%	1.7%
Real Estate, Rental & Leasing	0.9%	1.2%	1.7%
Information	0.8%	1.4%	1.8%
Agriculture, Forestry, Fishing & Hunting	0.5%	0.7%	1.2%
Management of Companies & Enterprises	0.5%	2.1%	1.4%
Utilities	0.3%	0.4%	0.3%
Mining, Quarrying, Oil & Gas Extraction	0.0%	0.4%	0.4%

Source: EMSI, Garner Economics

New Firm Startups

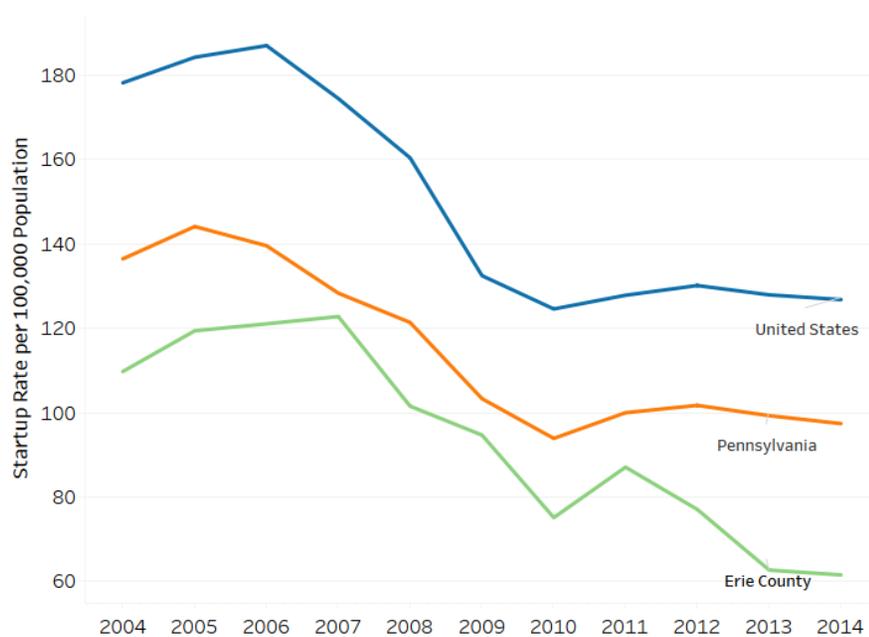
Tracking the rate of startup firms is another good measure of the entrepreneurial ecosystem of an area. The ability to create a new company establishes new jobs and helps bolster the local economy. Additionally, new firms contribute disproportionately to job creation and have an important role in employment growth.

Startup activity is viewed by both startup rate and employment by new firms. Measuring startups relative to population—the number of new firms per 100,000 people—helps to compare relative activity across

different areas. Erie County had a lower rate compared to Pennsylvania and the nation (Figure 5.14) and the trend shows a steeper decline than the comparison geographies.

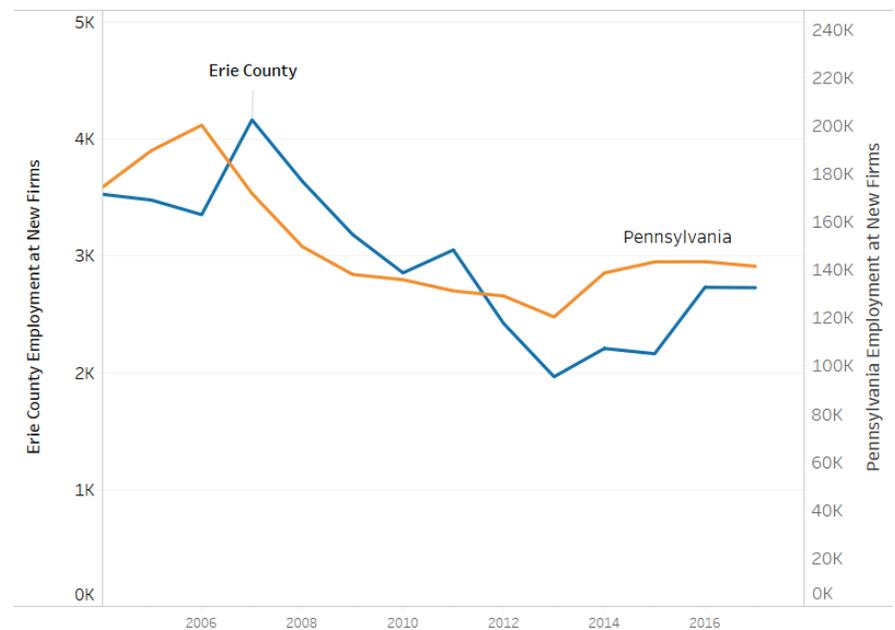
However, another indicator to consider is the employment created by new firms. At the local level, the number of people employed at firms that were newly established (0–1 year old) illustrates how startups add to the economy. Erie County has been increasing the number of people employed by new firms since 2013 (Figure 5.15).

Figure 5.14
Number of Startups per 100,000 Population



Source: U.S. Census Bureau, Business Dynamics Statistics, Garner Economics

Figure 5.15
Employment at New Firms



Source: U.S. Census Bureau, LEHD, Garner Economics

Self-Employment

Measuring the proportion of persons who are *Self-Employed* is a rough means to gauge entrepreneurial activity, which, in turn, can provide a view of local risk-taking and economic dynamism.

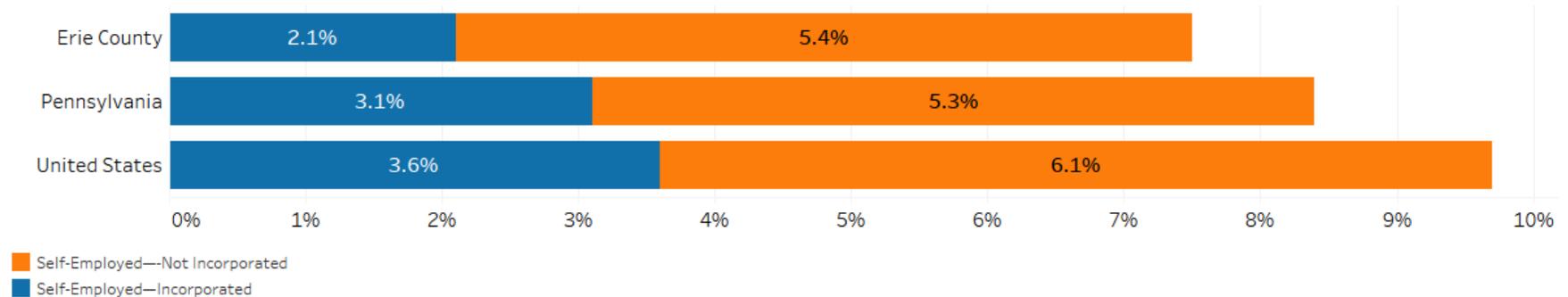
As of 2017, nearly 8 percent of workers in Erie County were *Self-Employed* (Table 5.8, Figure 5.16). This rate is below Pennsylvania’s and the nation’s self-employment levels.

Of those *Self-Employed*, a much higher share is in the category of *Not Incorporated*, which includes unpaid family workers, for all geographies versus *Incorporated* ventures. Erie County and the United States’ self-employment rate declined over the past five years, while Pennsylvania grew a very modest .2 percent.

Table 5.8
Self-Employed as a Percentage of Workers 16 Years+
(Highest Relative Number Shaded)

Geography	Self-Employed— Incorporated	Self-Employed— Not Incorporated	Total Self- Employed 2012	Self-Employed— Incorporated	Self-Employed— Not Incorporated	Total Self- Employed 2017	Change in Self- Employment
	Self-Employed 2012			Self-Employed 2017			2012–2017
Erie County	2.5%	5.3%	7.8%	2.1%	5.4%	7.5%	-0.3%
Pennsylvania	2.9%	5.3%	8.2%	3.1%	5.3%	8.4%	0.2%
United States	3.5%	6.3%	9.8%	3.6%	6.1%	9.7%	-0.1%

Figure 5.16
2017 Self-Employed as a Percentage of Workers 16 Years+



Source: U.S. Census Bureau American Community Survey; Garner Economics

Broadband Availability

Broadband access and speed have a big impact on the local economy in terms of supporting business, entrepreneurship, and educational opportunities.

Utilizing data reported to the FCC, we found that Erie County is lacking access to high-speed broadband internet at the 250 megabits per second (Mbps) or higher levels. More than 93 percent of households have access to broadband internet that is at least 100 Mbps. This access level is similar to Pennsylvania and higher than the nation (Table 5.9).

Average download speed was acquired from BROADBANDNOW, a national aggregator of internet access and speeds. Erie County’s average download speed is 32.63 mbps, which is lower than the commonwealth and the nation (Figure 5.17).

At least two providers advertise the availability of Gig service in the County. VNET Fiber has invested heavily in the city of Erie, enabling high speeds of up to 140 Mbps in January 2019 (Figure 5.18).

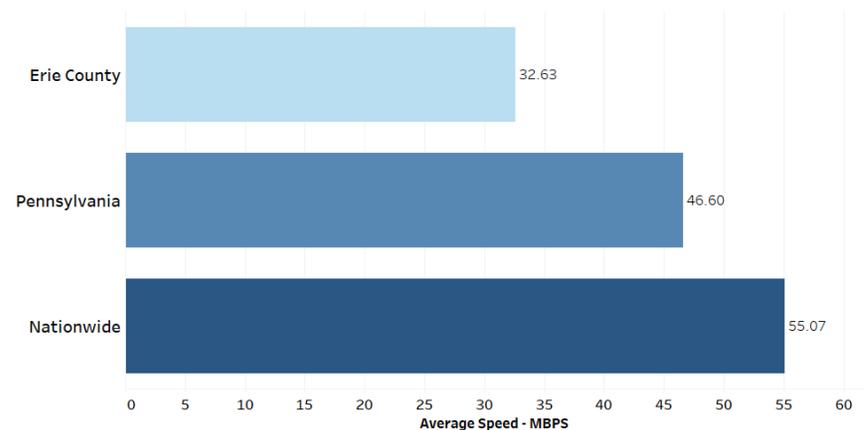
Table 5.9

2017 Broadband Access & Speed Available Percent of Population

	Erie County	Pennsylvania	USA
2017 Broadband Access (100 Mbps or faster)	93.2	93.5	83.2
2017 Broadband Access (250 Mbps or faster)	4.6	48.2	49.0
2017 Broadband Access (1 Gigabit)	0.0	14.6	12.7

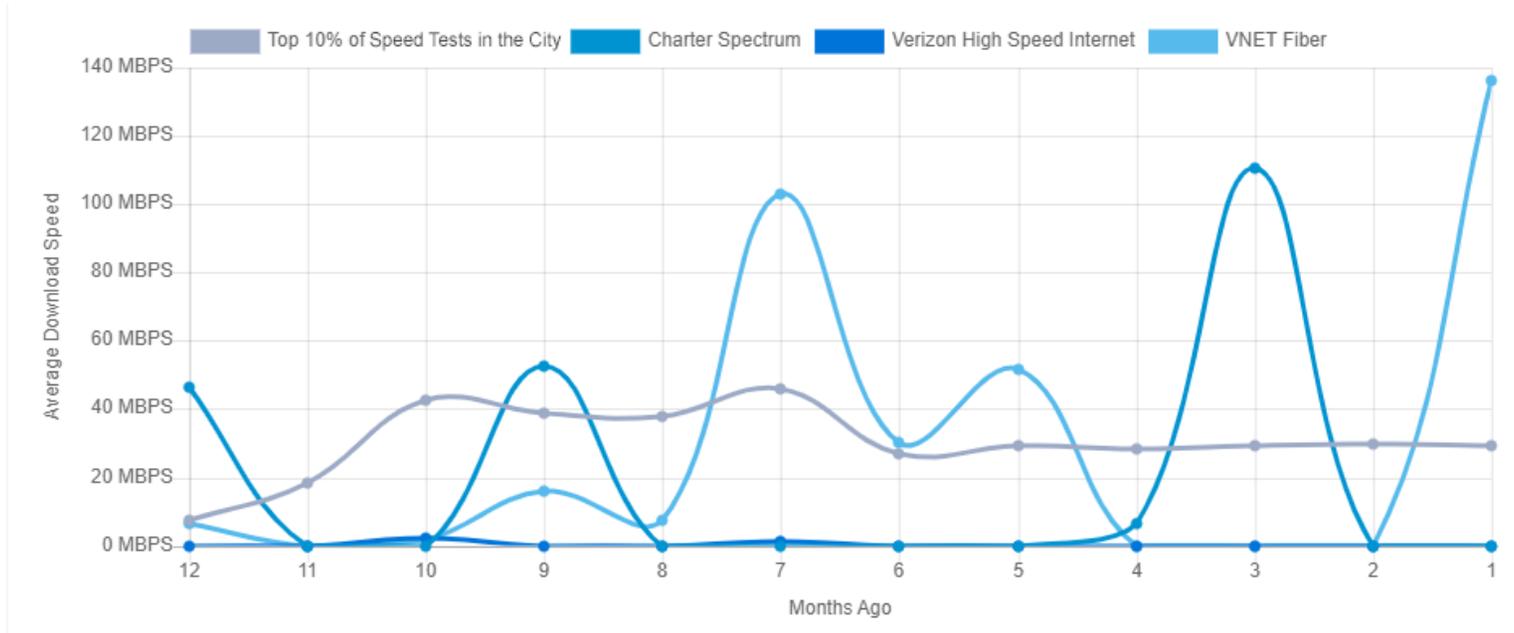
Source: Broadband Map as of June 2017

Figure 5.17
Average Download Speed



Source: BROADBANDNOW, 2019

Figure 5.18
City of Erie Download Speeds in Past 12 Months



This analysis is based on speed tests from IP verified users between February 2018 and January 2019. The city of Erie’s statistics are compiled from 234,360 speed tests, and national statistics are calculated from 326,854,501 speed tests (all taken between February 2018 and January 2019).

Source: BROADBANDNOW, 2019

Airport Service

The primary airport serving the area is the Erie International Airport (ERI). ERI is served by three major airline carriers and offers nonstop service to three destinations. Delta, American Airline,s and United fly into ERI and provide flights to major destinations including Detroit, Philadelphia, and Chicago O’Hare.

The airport has a Fixed Base Operator (FBO) onsite, North Coast Air. A flight school is also operated at the airport by North Coast Flight School. With the longest runway of 6,500 feet, ERI’s facilities can be an asset to Erie (Table 5.10)

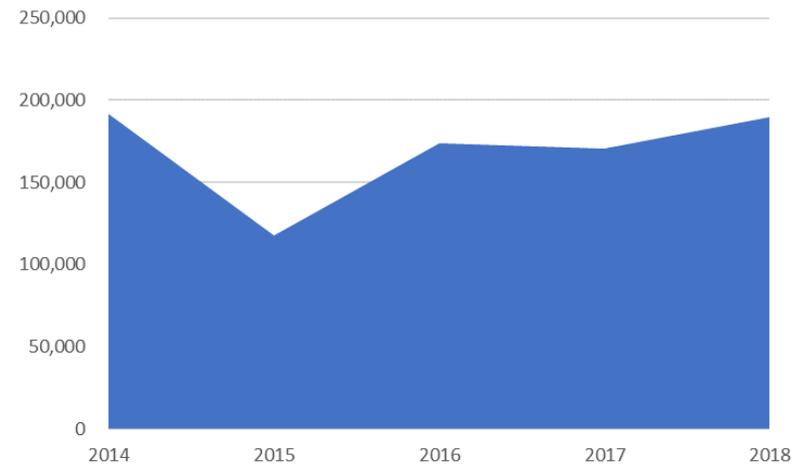
In 2018, Erie International Airport had 189,459 passenger enplanements, which have been on the rise since 2015 (Figure 5.18).

Table 5.10
Erie International Airport Overview

Airport	Erie International Airport
Code	ERI
Runways	2
Longest Runway (ft)	6500
ILS	Yes
Commercial Passenger Airlines Serving Airport	3
Air Cargo Serving Airport	3
Nonstop Destination	3

Source: Erie International Airport Web Site, Garner Economics

Figure 5.17
Passenger Enplanements at ERI 2014–2016



Source: Erie International Airport, Garner Economics

Unionization

Utilizing observations from the Bureau of Labor Statistics’ Current Population Survey, an estimate of the rate of private and public worker unionization at the metropolitan level can be constructed.

The rate of private employer worker unionization observed for Erie County in 2017 was 3.3 percent, which is well under Pennsylvania and half of the national rate (Table 4.9).

Public unionization membership is very high in both Erie County (56.9 percent) and the commonwealth of Pennsylvania (49.8 percent). Total

unionization rate for Erie is 9.8 percent, lower than both the state and nation (Figure 4.10).

Overall, the private and total unionization are relatively low; however, the high public sector unionization is considered a threat in today’s world. This high rate is a possible disruptor that could permeate the private sector as workers migrate to the private sector from union jobs.

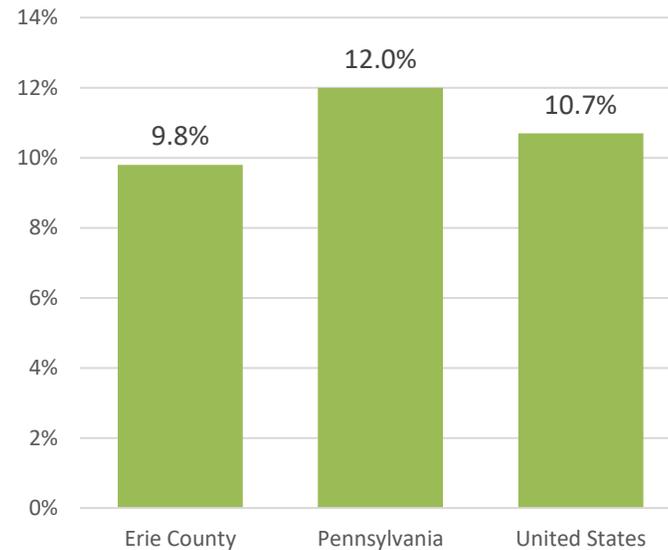
Table 4.9
2017 Unionization Rate

	Private	Public	Total
Erie County	3.3%	56.9%	9.8%
Pennsylvania	7.4%	49.8%	12.0%
United States	6.5%	34.4%	10.7%

Data only reported at the MSA level

Source: © 2018 by Barry T. Hirsch and David A. Macpherson, Garner Economics

Figure 4.10
2017 Total Unionization Rate



Source: © 2018 by Barry T. Hirsch and David A. Macpherson, Garner Economics



CHAPTER 6: RETAIL ANALYSIS

To determine specific industries with retail potential, a retail leakage or gap analysis was conducted. Leakage in an area represents a condition where demand exceeds supply. In other words, retailers outside the market area are fulfilling the demand for retail products, and demand is, therefore, "leaking" out of the trade area. If leakage is high, the County could potentially support more retail in that area.

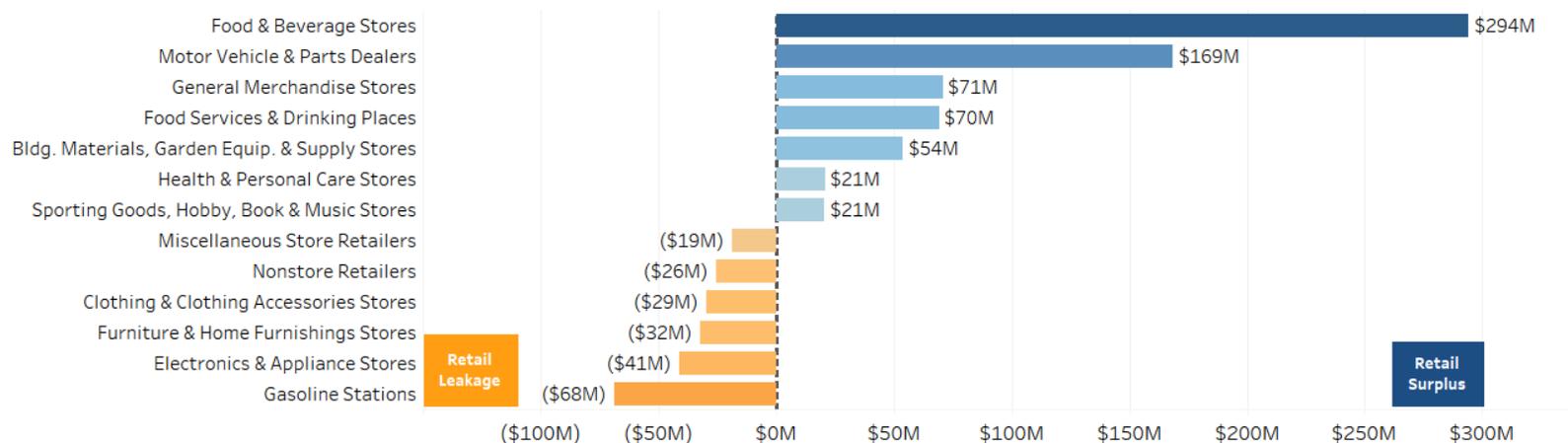
Retail sales in Erie County for 2017 were estimated to be nearly \$4 billion for retail trades, food, and drink sales. It is projected that residents in the County could spend approximately \$3.5 billion on retail purchases. This "retail demand" compared to the retail sales shows either a retail gap or surplus. Using estimated data, Erie County has more retail sales than resident demand and, therefore, has a retail surplus of \$484 million.

A review of 13 major retail categories reveals that two categories (*Food & Beverage Stores* and *Motor Vehicle & Parts Dealers*) out-sell local demand, and Erie County is attracting retail buyers into the area.

The graph below shows the gap analysis of major categories of retail, food, and beverage retail operations. The top category in Erie County is *Food & Beverage Stores*, showing \$294 million in surplus sales (Figure 6.1). This category includes grocery stores, specialty food, and beverage shops. The second highest category is *Motor Vehicle & Parts Dealers* sales with a surplus of \$169 million.

Other stores that sell more than estimated demand include *General Merchandise Stores*, *Food Services & Drinking Places*, and *Building Materials*. *Nonstore Retail* is often a category with significant leakage, which accounts for digital commerce as internet-based retail continues to thrive.

Figure 6.1
Erie County Retail Surplus/Leakage, 2017



Source: ESRI Retail MarketPlace Profile, Garner Economics

Table 6.1
Erie County Retail Surplus/Leakage, 2017

Industry Group	NAICS	Retail Potential (Demand)	Retail Sales (Supply)	Retail Gap
Motor Vehicle & Parts Dealers	441	\$684,896,086	\$853,565,372	\$168,669,286
Automobile Dealers	4411	\$558,501,768	\$713,137,606	\$154,635,838
Other Motor Vehicle Dealers	4412	\$72,830,338	\$75,147,137	\$2,316,799
Auto Parts, Accessories & Tire Stores	4413	\$53,563,980	\$65,280,629	\$11,716,649
Furniture & Home Furnishings Stores	442	\$112,020,784	\$80,022,648	(\$31,998,136)
Furniture Stores	4421	\$62,535,296	\$52,140,101	(\$10,395,195)
Home Furnishings Stores	4422	\$49,485,488	\$27,882,547	(\$21,602,941)
Electronics & Appliance Stores	443	\$102,556,128	\$61,478,334	(\$41,077,794)
Bldg. Materials, Garden Equip. & Supply Stores	444	\$210,012,450	\$264,019,465	\$54,007,015
Bldg. Material & Supplies Dealers	4441	\$192,180,984	\$210,346,260	\$18,165,276
Lawn & Garden Equip & Supply Stores	4442	\$17,831,466	\$53,673,205	\$35,841,739
Food & Beverage Stores	445	\$589,208,954	\$883,459,410	\$294,250,456
Grocery Stores	4451	\$536,262,275	\$815,966,921	\$279,704,646
Specialty Food Stores	4452	\$27,387,479	\$18,367,499	(\$9,019,980)
Beer, Wine & Liquor Stores	4453	\$25,559,200	\$49,124,990	\$23,565,790
Health & Personal Care Stores	446,4461	\$200,539,689	\$221,398,403	\$20,858,714
Gasoline Stations	447,4471	\$318,054,736	\$249,582,828	(\$68,471,908)
Clothing & Clothing Accessories Stores	448	\$173,597,556	\$144,106,250	(\$29,491,306)
Clothing Stores	4481	\$118,659,457	\$97,346,887	(\$21,312,570)
Shoe Stores	4482	\$25,903,360	\$22,707,647	(\$3,195,713)
Jewelry, Luggage & Leather Goods Stores	4483	\$29,034,739	\$24,051,716	(\$4,983,023)
Sporting Goods, Hobby, Book & Music Stores	451	\$90,551,414	\$111,232,715	\$20,681,301
Sporting Goods/Hobby/Musical Instr Stores	4511	\$78,536,503	\$98,389,958	\$19,853,455
Book, Periodical & Music Stores	4512	\$12,014,911	\$12,842,757	\$827,846

Industry Group	NAICS	Retail Potential (Demand)	Retail Sales (Supply)	Retail Gap
General Merchandise Stores	452	\$474,029,115	\$545,159,973	\$71,130,858
Department Stores Excluding Leased Depts.	4521	\$345,499,590	\$391,917,976	\$46,418,386
Other General Merchandise Stores	4529	\$128,529,525	\$153,241,997	\$24,712,472
Miscellaneous Store Retailers	453	\$144,410,739	\$125,730,302	(\$18,680,437)
Florists	4531	\$7,148,280	\$9,699,634	\$2,551,354
Office Supplies, Stationery & Gift Stores	4532	\$31,271,309	\$17,926,846	(\$13,344,463)
Used Merchandise Stores	4533	\$12,147,708	\$14,881,236	\$2,733,528
Other Miscellaneous Store Retailers	4539	\$93,843,442	\$83,222,586	(\$10,620,856)
Nonstore Retailers	454	\$67,064,919	\$41,380,400	(\$25,684,519)
Electronic Shopping & Mail-Order Houses	4541	\$50,373,013	\$30,864,476	(\$19,508,537)
Vending Machine Operators	4542	\$3,178,237	\$2,108,616	(\$1,069,621)
Direct Selling Establishments	4543	\$13,513,669	\$8,407,308	(\$5,106,361)
Food Services & Drinking Places	722	\$323,409,001	\$392,925,974	\$69,516,973
Special Food Services	7223	\$7,991,508	\$20,699,996	\$12,708,488
Drinking Places - Alcoholic Beverages	7224	\$17,511,642	\$34,642,651	\$17,131,009
Restaurants/Other Eating Places	7225	\$297,905,851	\$337,583,327	\$39,677,476

Source: ESRI Retail MarketPlace Profile, Garner Economics

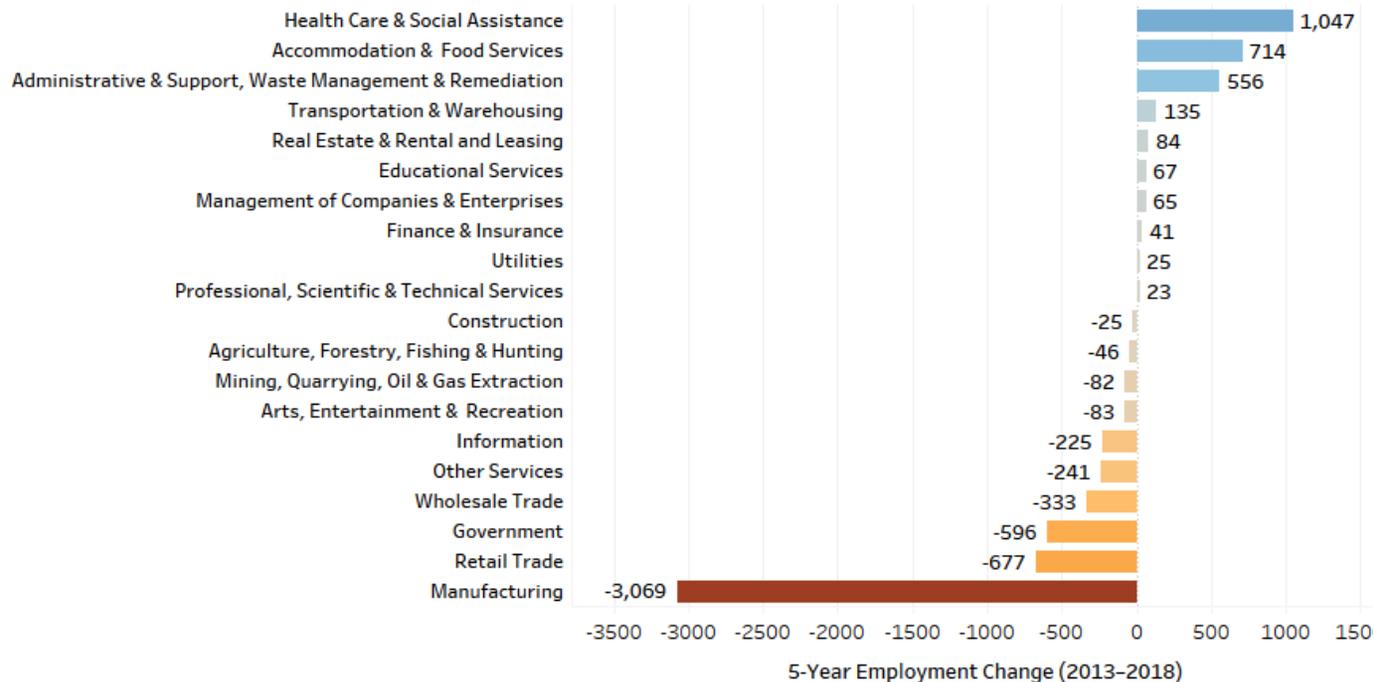
Note: Industries belonging to NAICS 722 (Food Services and Drinking Places) have been included as a convenience. Technically, these are not retail industries. Retail leakage is the value of retail goods that shoppers from your region buy from other regions. The "Demand" column represents the total amount that your residents spend on a particular industry, while the "Leakage" column represents how much of that spending happens outside of the region.

CHAPTER 7: LOCAL SPECIALIZATION, COMPETITIVENESS & GROWTH



The following section provides a more detailed and in-depth assessment of the Erie County economy. The analysis examines the local economy from several different perspectives, each adding a supporting layer of information. The assessment’s main goals are to provide historical context, reveal areas of unique specialization, gauge competitiveness, and help uncover emerging trends and opportunities. The two main areas of analysis are major industries and occupational groups. For each area, there are relative measures of specialization, growth, local competitiveness, and earnings.

Figure 7.1
2013–2018 Employment Change by Major Industry
Sorted by Absolute Change



Source: ESRI, Garner Economics

Major Industry Sector Change

The largest absolute industry job gains in Erie County between 2013 and 2018 came from *Health Care & Social Assistance*, gaining 1,047 jobs, followed by *Accommodation & Food Services* (+714 jobs) and *Administrative & Support, Waste Management & Remediation* (556 Jobs) (Figure 7.1, Table 7.1).

Overall, Erie County shows a net loss of 2,621 jobs taking into consideration covered, non-covered and self-employed individuals.

Gains and losses were evenly distributed with 10 sectors in each. The most severe loss occurred in *Manufacturing*, which lost 3,069 jobs between 2013 and 2018.

Figure 7.1
2013–2018 Employment Change by Major Industry
Sorted by Absolute Change

Description	2013 Jobs	2018 Jobs	5-Year Job Change	5-Year % Change
Health Care & Social Assistance	23,604	24,652	1,047	4%
Accommodation & Food Services	10,944	11,658	714	7%
Administrative & Support, Waste Management & Remediation	5,518	6,074	556	10%
Transportation & Warehousing	2,844	2,979	135	5%
Real Estate & Rental and Leasing	1,162	1,246	84	7%
Educational Services	5,804	5,871	67	1%
Management of Companies & Enterprises	591	655	65	11%
Finance & Insurance	5,454	5,495	41	1%
Utilities	396	421	25	6%
Professional, Scientific & Technical Services	3,669	3,692	23	1%
Construction	5,108	5,083	-25	0%
Agriculture, Forestry, Fishing & Hunting	743	697	-46	-6%
Mining, Quarrying, Oil & Gas Extraction	134	52	-82	-61%
Arts, Entertainment & Recreation	3,013	2,929	-83	-3%
Information	1,320	1,095	-225	-17%
Other Services	6,993	6,752	-241	-3%
Wholesale Trade	3,411	3,078	-333	-10%
Government	16,661	16,064	-596	-4%
Retail Trade	15,766	15,088	-677	-4%
Manufacturing	22,494	19,425	-3,069	-14%
Total/All Industries	135,628	133,007	-2,621	-2%

Source: EMSI, Garner Economics

Industry Earnings

A comparison of Erie County’s average industry earnings to national averages offers insights into areas of unique expertise and cost-saving opportunities.

Overall, the average earnings per job in the County were \$40,274 in 2018, which is 25 percent below the national average of \$53,676 (Table 7.2, Figure 7.2).

All industry sectors in the County showed earnings well below national averages. The *Mining, Quarrying, Oil & Gas Extraction* and *Information* categories have annual average wages under 50 percent of the national level.

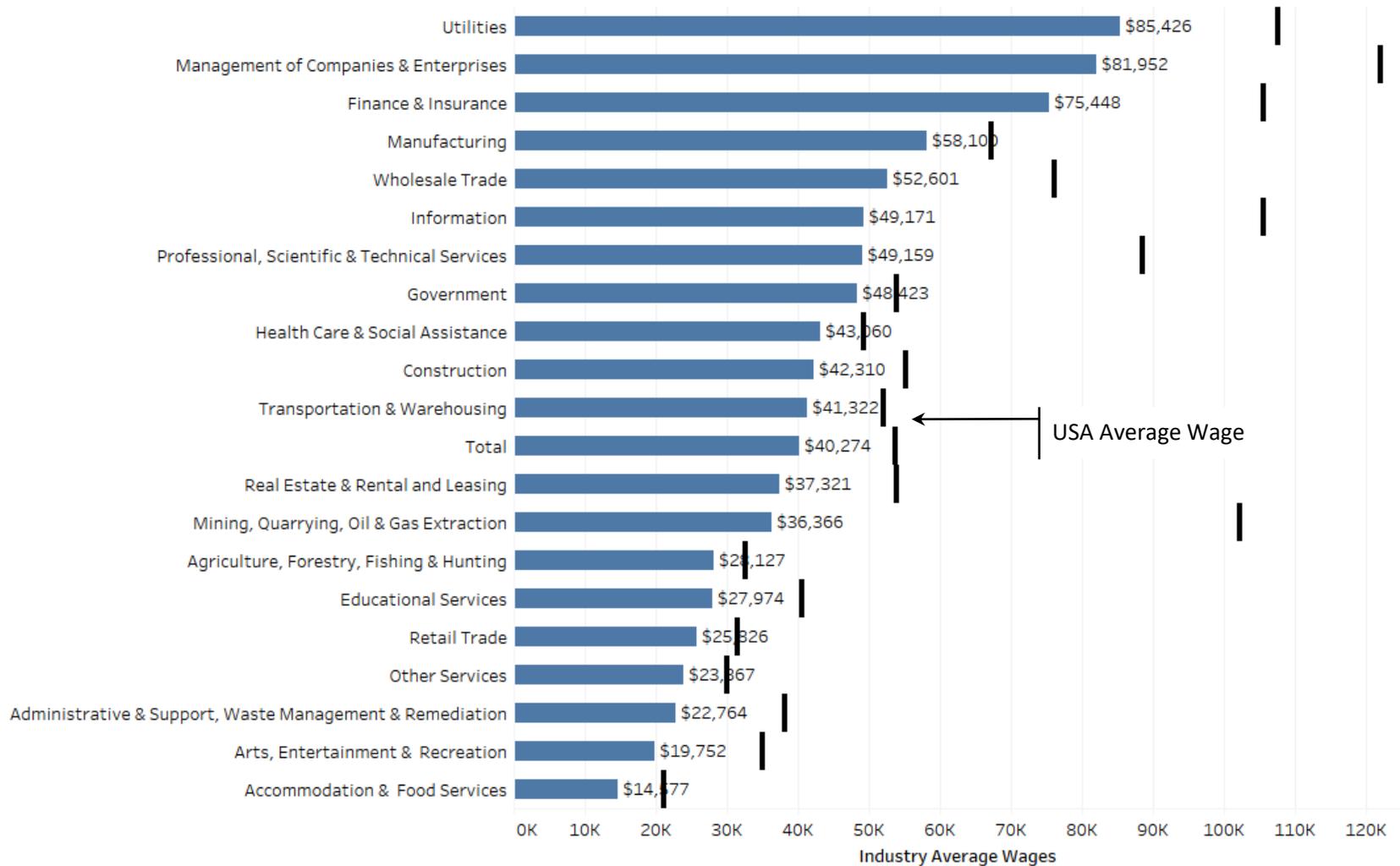
The *Government* sector has the least amount of difference with the local Erie County annual average wage at 10 percent under the U.S. average.

Table 7.2
2018 Average Annual Industry Salary Comparison
Average Wages Above National Level Shaded

NAICS	Description	2018 County Wages	2018 USA Wages	Percent Difference
11	Agriculture, Forestry, Fishing & Hunting	\$28,127	\$32,600	-14%
21	Mining, Quarrying, Oil & Gas Extraction	\$36,366	\$102,300	-64%
22	Utilities	\$85,426	\$107,518	-21%
23	Construction	\$42,310	\$55,095	-23%
31	Manufacturing	\$58,100	\$67,259	-14%
42	Wholesale Trade	\$52,601	\$76,083	-31%
44	Retail Trade	\$25,826	\$31,573	-18%
48	Transportation & Warehousing	\$41,322	\$51,992	-21%
51	Information	\$49,171	\$105,473	-53%
52	Finance & Insurance	\$75,448	\$105,501	-28%
53	Real Estate & Rental and Leasing	\$37,321	\$53,897	-31%
54	Professional, Scientific & Technical Services	\$49,159	\$88,459	-44%
55	Management of Companies & Enterprises	\$81,952	\$121,951	-33%
56	Administrative & Support, Waste Management & Remediation	\$22,764	\$38,231	-40%
61	Educational Services	\$27,974	\$40,598	-31%
62	Health Care & Social Assistance	\$43,060	\$49,214	-13%
71	Arts, Entertainment & Recreation	\$19,752	\$35,038	-44%
72	Accommodation & Food Services	\$14,577	\$21,160	-31%
81	Other Services	\$23,867	\$29,986	-20%
90	Government	\$48,423	\$53,859	-10%
Total/All Industries		\$40,274	\$53,676	-25%

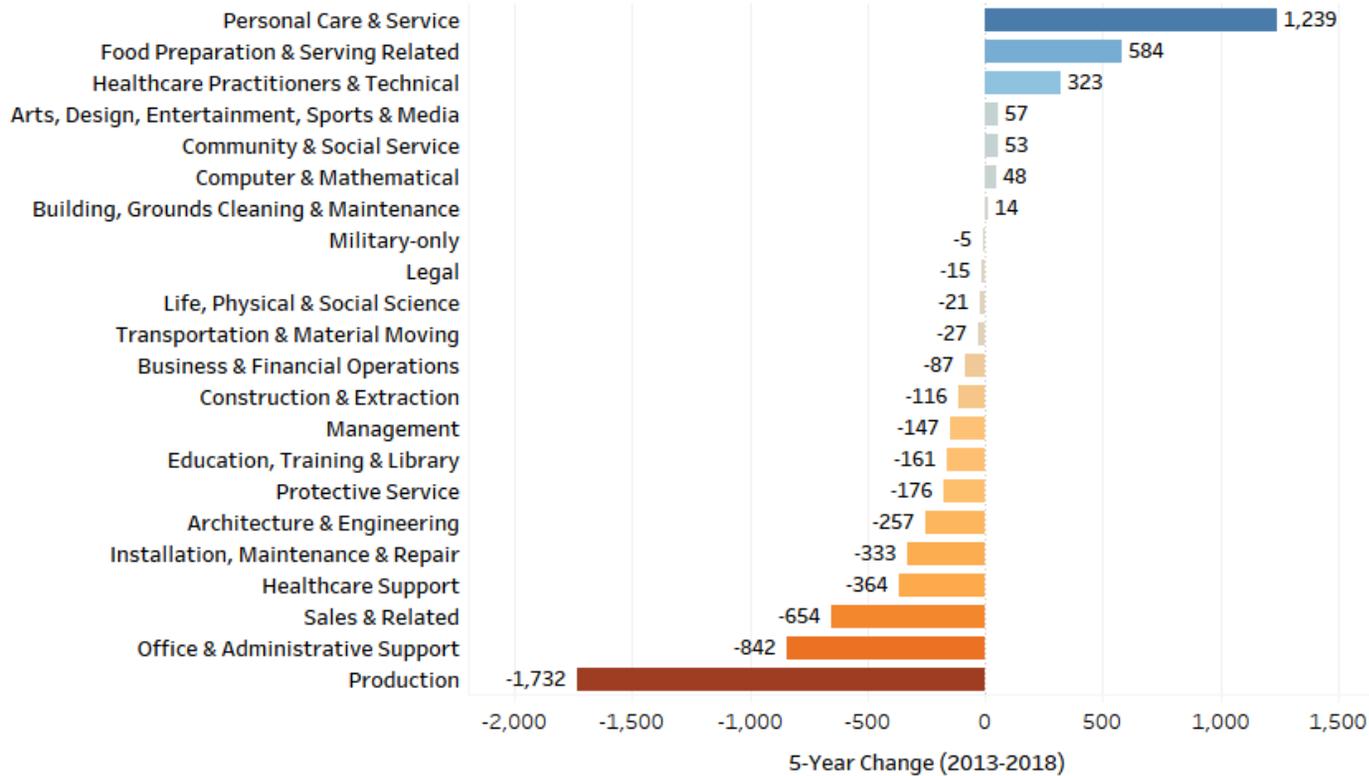
Source: ESRI, Garner Economics

Figure 7.2
2017 Average Annual Industry Salary Comparison



Source: EMSI, Garner Economics

Figure 7.3
2013–2018 Employment Change by Major Occupational Groups
Sorted by Absolute Change



Source: ESRI, Garner Economics

Major Occupational Change

Over the last five years, seven major occupational categories in Erie County added jobs. The largest job gains were in *Personal Care & Service*, gaining 1,239 jobs (Figure 7.3, Table 7.3).

Other sectors with growth include *Food Preparation & Serving Related* (+ 584 jobs) and *Healthcare Practitioners & Technical* (+ 323 jobs).

The remainder of the occupational categories experienced job losses. The most prominent loss occurred in the *Production* occupational category, with more than 1,700 net loss of employees. Several other occupational groups saw a significant decrease in employment including *Office & Administrative Support* (-842 jobs) and *Sales & Related* (-654 jobs).

Table 7.3
Employment Change by Major Occupational Groups
Sorted by Absolute Change

Description	2013 Jobs	2018 Jobs	5-Year Job Change	5-Year % Change
Personal Care & Service	7,004	8,243	1,239	18%
Food Preparation & Serving Related	12,060	12,644	584	5%
Healthcare Practitioners & Technical	8,985	9,308	323	4%
Arts, Design, Entertainment, Sports & Media	1,842	1,899	57	3%
Community & Social Service	2,930	2,983	53	2%
Computer & Mathematical	1,777	1,825	48	3%
Building, Grounds Cleaning & Maintenance	4,735	4,749	14	0%
Farming, Fishing & Forestry	424	424	0	0%
Military-only	316	311	-5	-2%
Legal	515	500	-15	-3%
Life, Physical & Social Science	591	570	-21	-4%
Transportation & Material Moving	7,181	7,154	-27	0%
Business & Financial Operations	4,593	4,506	-87	-2%
Construction & Extraction	4,581	4,465	-116	-3%
Management	5,277	5,129	-147	-3%
Education, Training & Library	8,070	7,909	-161	-2%
Protective Service	2,877	2,701	-176	-6%
Architecture & Engineering	1,801	1,544	-257	-14%
Installation, Maintenance & Repair	5,205	4,872	-333	-6%
Healthcare Support	4,948	4,584	-364	-7%
Sales & Related	13,609	12,956	-654	-5%
Office & Administrative Support	20,833	19,991	-842	-4%
Production	15,472	13,740	-1,732	-11%
Total/All Occupations	135,628	133,007	-2,621	-2%

Source: EMSI, Garner Economics

Occupational Earnings

Occupational earnings compare slightly better than overall industry wages for Erie County and national level pay rates. The comparison revealed three categories that were higher than the national average wage rate. *Military* pay in Erie County was 47 percent higher than the United States, while *Farming, Fishing & Forestry* and *Protective Service* occupations were seven percent and one percent higher, respectively (Table 7.4, Figure 7.4).

Other occupation groups were below national levels with *Arts, Design, Entertainment & Media* at 23 percent below the national hourly wage. Occupations in *Construction* and *Healthcare* were more closely aligned with national pay rates, ranging from three to five percent under.

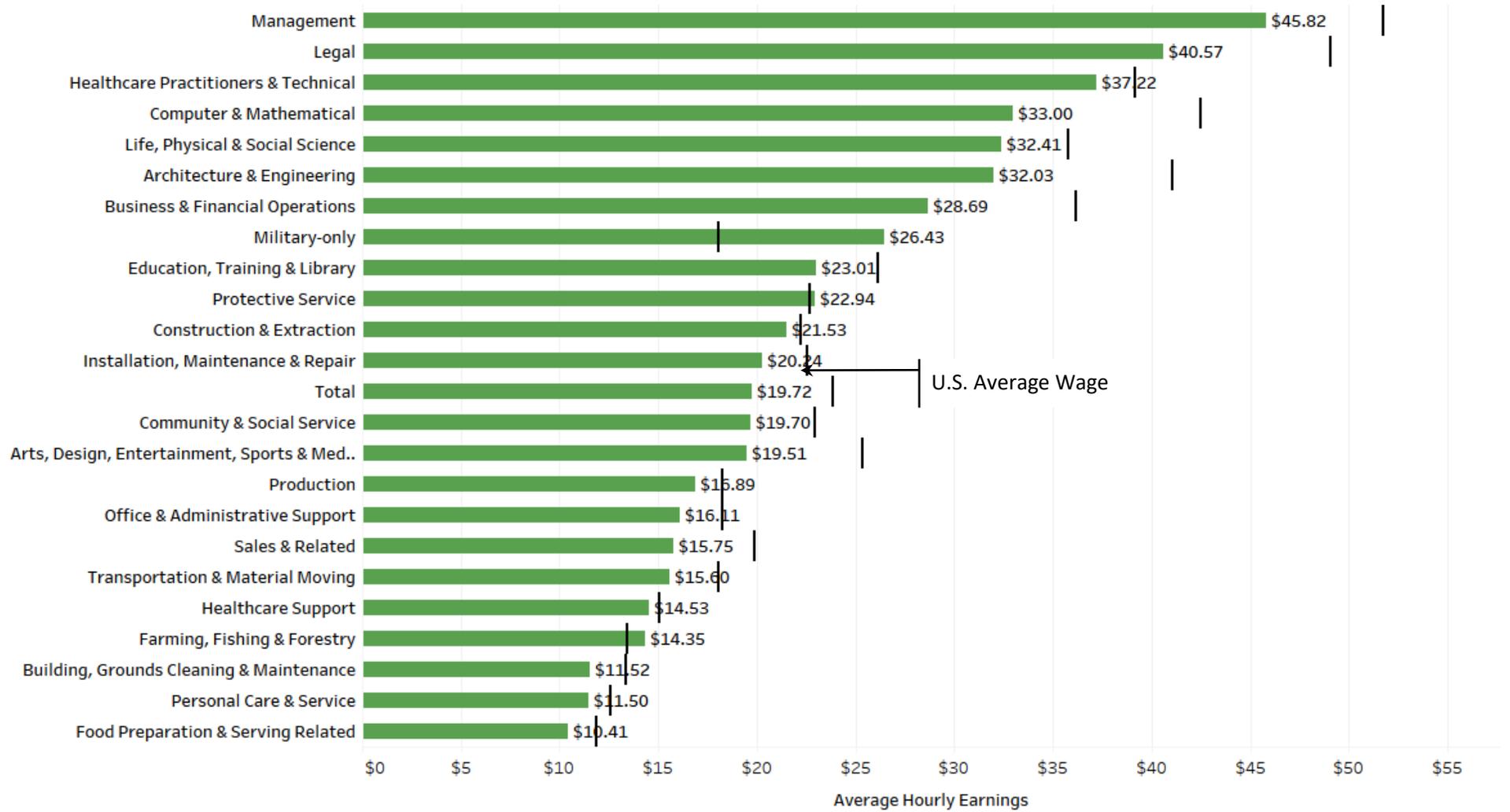
The average wage for all occupations in Erie County was \$19.72 compared to \$23.21 for the national average hourly wage, differing 17 percent.

Table 7.4
2017 Average Hourly Wage Comparison
Average Wages Above National Level Shaded

SOC Code	Description	2018 County Wages	2018 USA Wages	Percent Difference
11-0000	Management	\$45.82	\$51.76	-11%
23-0000	Legal	\$40.57	\$49.07	-17%
29-0000	Healthcare Practitioners & Technical	\$37.22	\$39.15	-5%
15-0000	Computer & Mathematical	\$33.00	\$42.49	-22%
19-0000	Life, Physical & Social Science	\$32.41	\$35.77	-9%
17-0000	Architecture & Engineering	\$32.03	\$41.05	-22%
13-0000	Business & Financial Operations	\$28.69	\$36.20	-21%
55-0000	Military-only	\$26.43	\$18.03	47%
25-0000	Education, Training & Library	\$23.01	\$26.13	-12%
33-0000	Protective Service	\$22.94	\$22.71	1%
47-0000	Construction & Extraction	\$21.53	\$22.25	-3%
49-0000	Installation, Maintenance & Repair	\$20.24	\$22.56	-10%
21-0000	Community & Social Service	\$19.70	\$22.93	-14%
27-0000	Arts, Design, Entertainment, Sports & Media	\$19.51	\$25.36	-23%
51-0000	Production	\$16.89	\$18.27	-8%
43-0000	Office & Administrative Support	\$16.11	\$18.25	-12%
41-0000	Sales & Related	\$15.75	\$19.87	-21%
53-0000	Transportation & Material Moving	\$15.60	\$18.04	-14%
31-0000	Healthcare Support	\$14.53	\$15.05	-3%
45-0000	Farming, Fishing & Forestry	\$14.35	\$13.45	7%
37-0000	Building, Grounds Cleaning & Maintenance	\$11.52	\$13.34	-14%
39-0000	Personal Care & Service	\$11.50	\$12.56	-8%
35-0000	Food Preparation & Serving Related	\$10.41	\$11.89	-12%
Total/All Occupations		\$19.72	\$23.21	-17%

Source: ESRI, Garner Economics

Figure 7.4
2018 Average Hourly Wage Comparison



Source: EMSI, Garner Economics

The following assessment tools include a series of bubble/scatter charts and tables. Axis and quadrant labels should be read as general guides resulting from purely quantitative analysis, not definitive conclusions. Each chart or table is meant as only one piece of a multiple-part analysis. To assist the reader in interpreting the bubble charts, each axis and quadrant is labeled with broad descriptives.

To measure local specialization, location quotients (LQs) for each occupation or industry are calculated. LQs are ratios of an area's distribution of employment for a specific occupation/industry compared to a reference or base area's distribution. In this analysis, the reference area is the United States. If an LQ is equal to 1, then the industry has the same share of its area employment as it does in the reference area. An LQ greater than 1 indicates an industry with a greater share of the local area employment than is the case in the reference area and implies local specialization. LQs are calculated by first dividing local industry employment by the all-industry total of local employment. Second, reference area industry employment is divided by the all-industry total for the reference area. Finally, the local ratio is divided by the reference area ratio.

Chart axis definitions:

- **Specialization:** Measured using location quotient (LQ). Reflects the level of relative concentration of a particular occupation/industry to the nation. In simple terms, a high LQ (above 1.2) indicates what a local economy is good at doing and implies there are unique skills, institutions, raw materials, etc., that support this position.
- **Industry Effect:** The portion of growth/decline attributed to a particular industry nationwide. For example, if hospital employment grew by 5 percent nationwide in 2011, we would expect to see the same percentage increase locally, assuming that the forces driving nationwide growth would have a similar local impact.
- **Local Effect:** The proportion of growth/decline not captured by the industry effect, indicating unique local performance. The local effect measures local activity outside the expected nationwide trend. A consistent positive local competitive effect signals superior local performance.

Chart quadrant label definitions:

At-Risk: Locally specialized and recent local job losses.

Competitive: Locally specialized and recent local job gains.

Declining: Not locally specialized and recent local job losses.

Emerging: Not locally specialized and recent local job gains.

- **Local Decline/National Growth:** Industry or occupation gains nationwide and local losses or gains below nationwide trend.
- **Local Growth/National Growth:** Industry or occupation gains nationwide and positive local gains or losses less than nationwide trend.
- **Local Growth/National Decline:** Industry or occupation losses nationwide and positive local gains or losses less than nationwide trend.
- **Local Decline/National Decline:** Industry or occupation losses nationwide and local losses or gains below nationwide trend.

Detailed industry and occupational information can be found in the Appendices.

Major Industry Sector Specialization & Growth

Major industry sector specialization focuses on the geographic concentrations of similarly classified industries. For many industry sectors there exist interconnections between suppliers, occupations, and associated supporting institutions.

Four industry sectors have a local specialization above 1 and experienced job growth in the past five years in Erie County (Table 7.5; Figure 7.5). These comprise the *Competitive* category and are:

- *Health Care & Social Assistance* (1.47 LQ)
- *Accommodation & Food Services* (1.02 LQ)
- *Educational Services* (1.72 LQ)
- *Finance & Insurance* (1.02)

Industries with job growth during the last five years with local specialization below 1 are considered *Emerging*. Six industry sectors are in this category based on job growth between 2013 and 2018, including *Administration & Support, Waste Management & Remediation; Transportation & Warehousing; and Real Estate, Rental & Leasing*.

Four industry sectors are losing jobs and have local specialization and are *At-Risk*. The most notable industry in this category is *Manufacturing*. With a loss of more than 3,000 jobs in the past five years, the high location quotient of 1.86 illustrates that this has been a strong industry in the area. *Manufacturing* is the second largest employment sector in Erie County with 14.6 percent of the workforce.

The six remaining sectors are classified as *Declining* due to job loss and low local specialization, including *Government* (-596 jobs), *Wholesale Trade* (-333 jobs), and *Information* (-225).

Table 7.5
2018 Industry Specialization and Growth

Industry Sector	2013–2018 Employment Change	2018 Location Quotient	2018 Jobs
Competitive			
Health Care & Social Assistance	1,047	1.47	24,652
Accommodation & Food Services	714	1.02	11,658
Educational Services	67	1.72	5,871
Finance & Insurance	41	1.02	5,495
Emerging			
Administrative & Support, Waste Management & Remediation	556	0.73	6,074
Transportation & Warehousing	135	0.62	2,979
Real Estate, Rental & Leasing	84	0.56	1,246
Management of Companies & Enterprises	65	0.35	655
Utilities	25	0.92	421
Professional, Scientific & Technical Services	23	0.43	3,692
At-Risk			
Arts, Entertainment & Recreation	-83	1.27	2,929
Other Services	-241	1.06	6,752
Retail Trade	-677	1.12	15,088
Manufacturing	-3,069	1.86	19,425
Declining			
Construction	-25	0.69	5,083
Agriculture, Forestry, Fishing & Hunting	-46	0.44	697
Mining, Quarrying, Oil & Gas Extraction	-82	0.10	52
Information	-225	0.45	1,095
Wholesale Trade	-333	0.62	3,078
Government	-596	0.80	16,064

Source: EMSI, Garner Economics

Table 7.5
2018 Industry Specialization and Growth

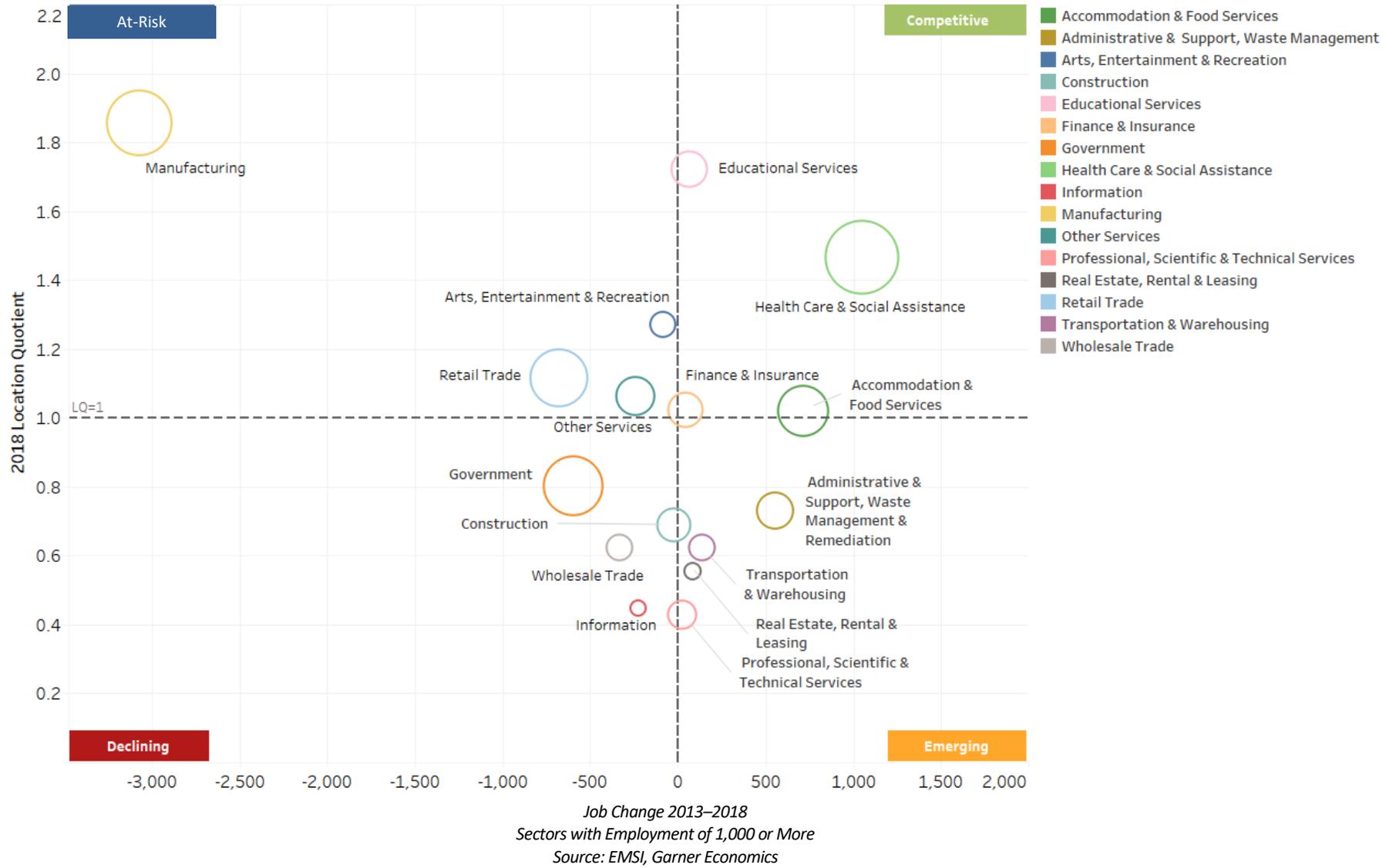


Table 7.6
2017 Industry Specialization and Growth

Industry Sector	Local Competitive Effect	Industry Mix Effect	2018 Jobs
Underperforming Sectors			
Management of Companies & Enterprises	-666	155	655
Transportation & Warehousing	-727	454	2,979
Arts, Entertainment & Recreation	-933	426	2,929
Professional, Scientific & Technical Services	-1,514	605	3,692
Accommodation & Food Services	-2,158	1,704	11,658
Educational Services	-2,285	1,444	5,871
Administrative & Support, Waste Management & Remediation	-3,250	737	6,074
Health Care & Social Assistance	-6,185	6,932	24,652
Underperforming Sectors Compared to National Losses			
Utilities	-62	-51	421
Agriculture, Forestry, Fishing & Hunting	-89	-89	697
Mining, Quarrying, Oil & Gas Extraction	-134	-21	52
Real Estate, Rental & Leasing	-381	-93	1,246
Finance & Insurance	-403	-282	5,495
Wholesale Trade	-866	-516	3,078
Other Services	-1,131	-354	6,752
Information	-1,293	-335	1,095
Construction	-1,336	-575	5,083
Government	-1,939	-2,189	16,064
Retail Trade	-2,758	-1,498	15,088
Manufacturing	-6,478	-5,732	19,425

Source: EMSI, Garner Economics

Industry Competitiveness

The Competitiveness screen seeks to reveal local competitive advantages such as unique growth beyond predicted industry trends or underperforming sectors compared to expected national trends.

By the Competitiveness measure, in the time frame examined, Erie County’s high-level industry sectors were deemed as underperforming compared to national trends. This includes sectors which have **positive job growth locally**.

Eight industry sectors are considered to be underperforming compared to national trends with growth below the national trend. Large employment segments for Erie County in this group include (Table 7.6, Figure 7.6):

- ✓ *Health Care & Social Assistance*
- ✓ *Accommodation & Food Services*
- ✓ *Administrative & Support, Waste Management & Remediation Services*
- ✓ *Educational Services*

Twelve industries fell into the category of national losses and local performance behind the national level. Several of Erie’s sectors with significant employment appear on this list including:

- ✓ *Manufacturing*
- ✓ *Government*
- ✓ *Retail Trade*

This analysis suggests the County is lacking competitive advantages at high-level industry divisions. Subsequent research for target identification will examine subsectors that may uncover competitive lines of business within these groupings.

Figure 7.6
2013–2018 Industry Relative Components of Growth



Sectors with Employment of 1,000 or More

Source: EMSI, Garner Economics

Table 6.8
Occupational Specialization and Growth, 2013–2018

Description	2013-2018 Change	2018 Location Quotient	2018 Jobs
Competitive			
Personal Care & Service	1,239	1.44	8,243
Community & Social Service	53	1.36	2,983
Healthcare Practitioners & Technical	323	1.26	9,308
Food Preparation & Serving Related	584	1.14	12,644
Emerging			
Building, Grounds Cleaning & Maintenance	14	0.97	4,749
Arts, Design, Entertainment, Sports & Media	57	0.77	1,899
Computer & Mathematical	48	0.48	1,825
At-Risk			
Production	-1,732	1.76	13,740
Healthcare Support	-364	1.27	4,584
Education, Training & Library	-161	1.05	7,909
Office & Administrative Support	-842	1.03	19,991
Declining			
Farming, Fishing & Forestry	0	0.42	424
Military-only	-5	0.45	311
Legal	-15	0.45	500
Life, Physical & Social Science	-21	0.52	570
Transportation & Material Moving	-27	0.79	7,154
Business & Financial Operations	-87	0.65	4,506
Construction & Extraction	-116	0.74	4,465
Management	-147	0.69	5,129
Protective Service	-176	0.91	2,701
Architecture & Engineering	-257	0.68	1,544
Installation, Maintenance & Repair	-333	0.94	4,872
Sales & Related	-654	0.98	12,956

Source: ESMI, Garner Economics

Occupational groupings represent similar skills and educational qualifications, but not necessarily specific industry sectors (Table 6.8, Figure 6.8).

Four occupational groups have location quotients over 1, experienced some employment growth recently, and are considered *Competitive*:

- ✓ *Personal Care & Services*
- ✓ *Community & Social Services*
- ✓ *Healthcare Practitioners & Technical*
- ✓ *Food Preparation & Serving Related*

Three occupational categories saw modest employment gains over the past five years but have concentrations (LQs) under 1. These *Emerging* sectors are:

- ✓ *Building, Grounds Cleaning & Maintenance*
- ✓ *Arts, Design, Entertainment, Sports & Media*
- ✓ *Computer & Mathematical*

Due to recent job loss, some occupations with higher than 1 LQs are *At-Risk*. *Production* occupations and *Office & Administrative Support* are the two biggest employment groups on this list. As the *Manufacturing* sector lost jobs in the past five years, *Production* employment has also dropped significantly (-1,732 jobs).

The remaining occupational groups (12) are classified as *Declining* or having employment loss/no change along with local specialization under 1.

Figure 7.7
2018 Occupational Specialization and Growth



CHAPTER 8: OPTIMAL BUSINESS TARGETS FOR ERIE COUNTY

The optimal business sectors selection is based on the specific characteristics of the economy and assets of Erie County. These recommended targets are designed to assist the County and its economic development organization in prioritizing resources and focusing on sectors in which the County holds a competitive advantage and/or has significant growth potential. This approach will help policymakers prioritize the County’s community and economic development strategy.

Garner Economics uses a desirability and feasibility screening matrix to determine the optimal targets. Desirability begins by considering the types of business sectors that stakeholders of Erie County would like to see in the community (Figure 8.1). Feasibility includes what the area can reasonably achieve in the short- to mid-term based on current or planned locational assets and on an analytical review of the regional economy.

Using results from the previously completed [COMPETITIVE REALITIES REPORT](#), the Assets & Challenges Assessment, focus groups, a community survey, and field visits, five business and industry families were chosen that best match Erie County’s unique competitive advantages to the needs of particular industry sectors. These targets are **Life Sciences, High Value-Added Manufacturing, Food & Beverage Processing/Agriculture, High-Value Business Services, and Tech/Gaming/Digital**—a subsector of High-Value Business Services.

In addition to these primary targets, a sixth **Hospitality/Quality of Place** target is presented to enhance year-round tourism and recreational opportunities in Erie County. This goal serves to cultivate retail options and experiential activities to increase year-round tourism and improve the visitor experience as well as invest in the quality of life for current and future residents.

For each targeted business sector, the community’s competitive advantages are presented, along with national trends and projections of the targets. In some cases, target sectors are flat or actually losing jobs nationally, but the particular set of economic development assets in Erie County position it to capture any growing demand.

For each target, a list of individual subsectors is provided with accompanying NAICS classifications. Also, each target profile contains a bulleted list of rationales that are presented and identified as appealing to the needs of **prospects (P)** or the **community (C)**. This material can be used in marketing and community support efforts or to help economic development personnel prioritize targeting efforts.

Figure 8.1:
Optimal Target
Screening Process



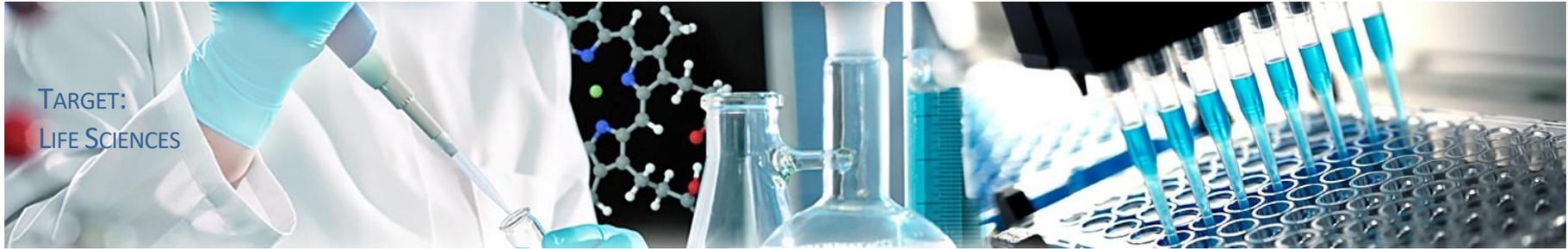
Optimal Targets

1. Life Sciences
2. High Value-Added Manufacturing
3. Food & Beverage Processing/
Agriculture & Aquaculture
4. High-Value Business Services
 - 4a. Tech/Gaming/Digital
5. Year-Round Experiential
Recreation

FIGURE 8.2: OPTIMAL TARGETS FOR ERIE COUNTY, PENNSYLVANIA

Life Sciences	High Value-Added Manufacturing	Food & Beverage Processing/ Agriculture & Aquaculture	High-Value Business Services		Year-Round Experiential Recreation (Hospitality/Quality of Place target)
<ul style="list-style-type: none"> • Pharmaceutical Mfg. & Distribution • Medical Device Mfg. • R&D in the Physical, Engineering & Life Sciences (including Clinical R&D) • Scientific & Technical Consulting Services • Medical & Diagnostic Laboratories 	<ul style="list-style-type: none"> • Plastics Mfg. • Plastic & Rubber Products Mfg. • Chemical Mfg. • Soap & Cleaning Compound Mfg. • Beauty & Personal Products Mfg. • Transportation Equipment & Suppliers • Automation & Production Technology • Electrical Equipment Mfg. • Metal Forging • Metal Fabrication & Metal Products 	<ul style="list-style-type: none"> • Aquaculture • Hydroponics/ Greenhouse Crops • Chocolate & Confectionery Mfg. • Frozen Foods • Fruit & Vegetable Processing • Meat Processing • Bread & Bakery Product Mfg. • Snack Foods • Flavoring, Seasoning & Dressing Mfg. • Soft Drink, Bottled Water & Ice Mfg. • Breweries, Distilleries & Wineries • Fertilizer & Agricultural Chemical Mfg. • Grocery & Farm Product Wholesalers • Cold Storage 	<ul style="list-style-type: none"> • Insure-Tech • Other Finance & Insurance Support Centers • Logistics • Back Office/Staff Operations • Office Administrative Services • Engineering Services & Consulting 	<p style="text-align: center;">Tech/Gaming/Digital</p> <ul style="list-style-type: none"> • Gaming/App Design/Custom Programming • Software Publishers • Computer Systems Design • Data Science & Analytics • Cybersecurity 	<ul style="list-style-type: none"> • Local or Unique/Boutique Retail • Outdoor/Indoor Year-Round Recreation • Ecotourism • Breweries, Distilleries & Wineries Tours • Traveler Accommodations (four-star/four-diamond or higher) • Spectator Sports • Performing Arts Companies • Performing Artists, Writers, & Performers

Editor's note: All large-parcel related targets are aspirational due to lack of shovel-ready sites. Product availability is essential to effectively target marketing and recruitment efforts. Entrepreneurial activity is applicable to all targets and is assumed to be woven throughout to support all business development.



Erie County is a great location for *Life Science* activity including clinical research and development, pharmaceutical operations, medical device manufacturing, medical and diagnostic laboratories, as well as related consulting firms. *Healthcare* companies figure prominently in the County’s major employers list. *Health Care and Social Services* is the County’s largest industry sector ranked by employment, and it grew by more than 1,000 in the past five years. With this existing talent plus adding in the higher education assets, *Life Sciences* is a good fit for Erie County.

Programs and research carried out at local colleges and universities is an important factor for the *Life Sciences* cluster to grow and thrive in Erie County. Not only do these local institutions have equipment and research capabilities, they also serve to develop talent for employment in the *Life Sciences* sector. The Lake Erie College of Osteopathic Medicine (LECOM) has a variety of specialties that support *Life Sciences*. In addition, Gannon University has programs in nanotechnology, health sciences, and additional tracks in a range of pre-professional programs offered in conjunction with LECOM. Edinboro University has the College of Science & Health Professionals, Mercyhurst University has its Zurn College of Natural and Health Sciences, and the Great Lakes Institute of Technology has a medical equipment program. Penn State Behrend has a program that brings together the predominance of plastics in the area to the *Life Sciences* field—the Medical Plastics Center of Excellence. The convergence of these two fields is a tremendous competitive advantage for Erie County.

Erie County colleges and universities were awarded a total of \$6.5 Million in research grants for 2017 from various federal sources. Subject areas for these funds include *Life Sciences, Physical Sciences, Engineering, Ocean & Marine Sciences, and Health Care & Social Sciences* to support research at schools in Erie County including Pennsylvania State University at Behrend, Gannon University, Lake Erie College of Osteopathic Medicine, and Mercyhurst University.

Life Sciences Rationales:

- Abundant medical facilities & healthcare employers (P)
- Medical Plastics Center of Excellence (Penn State Behrend) (P)
- Concentration of Medical Laboratories (LQ of 2.3) (P)
- Availability of healthcare workers (LQ 1.26) (P)
- High concentration of Health Technologists, All Other (LQ 4.8) (P)
- Centrally located for regional, national, and international markets (P) (C)
- Interstate highways I-90, 79, and 86 serve the region (P) (C)
- Erie International Airport has daily flights to DTW, CHI, and PHL (P) (C)
- Availability of skilled industrial workers (13,740 production workers) (P)
- Production occupations have an LQ of 1.76 (P)
- *Manufacturing* sector has an LQ of 1.86 (P)

Legend: Items appealing to needs of prospects (P) or community (C)

Life Sciences Rationales *(continued)*:

- Affordable cost of labor (P)
- Existing pool of high-demand occupations and skills transferability occupations (P)
- Within ½ hour of major university/college (P) (C)
- Availability of engineering programs (P) (C)
- Availability of manufacturing processes (P)
- Availability/capacity of water and wastewater treatment (P)
- Potential for large natural gas user (P) (C)
- Quality of post-secondary education (P) (C)
- Entrepreneurial opportunities (e.g., incubators/accelerators) (P) (C)
- Availability of executive-level, moderate-cost housing (P) (C)
- Availability of apartments (P) (C)
- Affordable cost of living (P) (C)
- Good quality of life (P) (C)
- Abundant cultural and recreational opportunities (P) (C)
- 4,376 degrees and certificates granted in majors related to target (P)
- Historical national job growth of 15 percent for past decade (P)(C)
- National job growth forecast of 15 percent (P)(C)
- National average wage: \$99,605 (C)

Legend: Items appealing to needs of prospects (P) or community (C)

The efficiency, cost, and availability of natural gas as well as the abundant capacity of water were mentioned as positive assets and desirable target factors during the stakeholder engagement process of this study. Many of these industry cluster operations tend to be big natural gas users—*Pharmaceutical Manufacturing* and *Plastic Medical Device Manufacturing*, for example. *Pharmaceutical* manufacturing also requires abundant water supply for operations.

The rich entrepreneurial ecosystem in Erie County, the commonwealth of Pennsylvania R&D tax credits, and the educational assets provide opportunity for *Life Sciences* companies to grow and thrive.

Table 8.1: Regional Degree Completions in Majors Related to Target, 2017

Program/Major	Degrees Granted
Health Professions & Related Programs	2,231
Business, Management, Marketing & Related Support Services	839
Engineering	447
Engineering Technologies & Engineering-related Fields	308
Computer, Information Sciences & Support Services	169
Biological & Biomedical Sciences	163
Communication, Journalism & Related Programs	132
Physical Sciences	65
Mathematics & Statistics	22
Total	4,376

Graduates from the following schools are included: Edinboro University of Pennsylvania, Gannon University, Penn State Erie-Behrend College, Lake Erie College of Osteopathic Medicine, Mercyhurst University, Fortis Institute-Erie, Erie Institute of Technology Inc, Great Lakes Institute of Technology, and Triangle Tech Inc-Erie.

Source: National Center for Education Statistics, Garner Economics

Table 8.2: Life Sciences Target Subsectors

NAICS	Description	2018 Jobs	2018 Wages	2008-2018 Change	2018-2028 Change
32541	Pharmaceutical & Medicine Mfg.	294,586	\$115,665	1%	3%
33911	Medical Equipment & Supplies Mfg.	320,787	\$75,009	0%	6%
42421	Drugs & Druggists' Sundries Merchant Wholesalers (Pharma Distribution)	221,381	\$117,811	6%	-3%
54169	Other Scientific & Technical Consulting Services	241,509	\$81,961	25%	13%
54171	Research & Development in the Physical, Engineering & Life Sciences	619,928	\$139,787	8%	17%
54199	All Other Professional, Scientific & Technical Services	264,518	\$57,240	80%	36%
62151	Medical & Diagnostic Laboratories	286,583	\$63,616	25%	26%
Total/Weighted Average		2,249,292	\$99,605	15%	15%

Certain subsectors included in target matrix (Figure 8.2) have different naming than NAICS code subsector and the business activity falls under NAICS listed above.

Source: EMSI, Garner Economics

Figure 8.3: Life Sciences Target Supply Chain Illustration

Key Economic Drivers

- R&D expenditure
- Total health expenditure
- Federal funding for Medicare/Medicaid
- Number of people with private health insurance
- Median age of population
- Corporate profit
- Demand from biotechnology
- Yield on 10-year treasury note
- Trade-weighted index



Supply Industries

- Biotechnology
- Chemical Product Mfg.
- Chemical Wholesaling
- Electrical Equipment Mfg.
- Glass Product Mfg.
- Glasses & Contact Lens Mfg.
- Inorganic Chemical Mfg.
- Medical Device Mfg.
- Medical Instrument & Supply Mfg.
- Navigational Instrument Mfg.
- Organic Chemical Mfg.
- Soap & Cleaning Compound Mfg.



Demand Industries

- Agriculture, Forestry, Fishing & Hunting
- Aircraft, Engine & Pats Mfg.
- Baking Mix & Prepared Food Production
- Computer Mfg.
- Drug, Cosmetic & Toiletry Wholesale
- Generic Pharmaceutical Mfg.
- Hospitals
- Pharmacies & Drug Stores
- Printing, Paper, Food, Textile & Other Machinery Mfg.
- Semiconductor Machinery Mfg.
- Supermarkets & Grocery Stores

Life Sciences

Source: IBIS World combination of R&D/Pharmaceutical Supply Chain, Garner Economics

Table 8.3: Existing Pool of High-Demand Occupations, 2018

SOC	Description	2018 Jobs	Bright Outlook
29-1141	Registered Nurses	2,835	Bright Outlook
43-4051	Customer Service Representatives	2,294	Bright Outlook
51-2098	Assemblers & Fabricators, All Other, Including Team Assemblers	1,859	
49-9071	Maintenance & Repair Workers, General	1,652	Bright Outlook
11-1021	General & Operations Managers	1,232	Bright Outlook
51-4011	Computer-Controlled Machine Tool Operators, Metal & Plastic	846	
31-9092	Medical Assistants	712	Bright Outlook
51-4041	Machinists	653	
29-1069	Physicians & Surgeons, All Other	603	Bright Outlook
51-9061	Inspectors, Testers, Sorters, Samplers & Weighers	599	
51-9111	Packaging & Filling Machine Operators & Tenders	451	
47-2111	Electricians	446	
51-4081	Multiple Machine Tool Setters, Metal & Plastic	436	
11-9111	Medical & Health Services Managers	366	Bright Outlook
29-2052	Pharmacy Technicians	350	Bright Outlook
51-2028	Electrical, Electronic & Electromechanical Assemblers	332	
51-4072	Molding, Coremaking & Casting Machine Setters, Metal & Plastic	319	
53-7061	Cleaners of Vehicles & Equipment	280	Bright Outlook
29-2018	Clinical Laboratory Technologists & Technicians	274	
13-1111	Management Analysts	251	Bright Outlook
29-1051	Pharmacists	240	
29-2034	Radiologic Technologists	237	Bright Outlook
29-1122	Occupational Therapists	231	Bright Outlook
29-1071	Physician Assistants	225	Bright Outlook
51-9011	Chemical Equipment Operators & Tenders	204	
13-1041	Compliance Officers	157	
51-9023	Mixing & Blending Machine Setters, Operators & Tenders	147	
31-9097	Phlebotomists	139	Bright Outlook
29-2099	Health Technologists & Technicians, All Other	105	Bright Outlook

*Bright Outlook noted according to O*Net occupations expected to grow rapidly in the next several years or have many job openings*

*Source: EMSI, O*Net, Garner Economics*

Skills Transferability for Sample

Life Sciences Occupations

Pharmacy Technicians

Multiple occupations including:

- Tellers
- Pharmacy Aides
- Veterinary Assistants
- Nursing Assistants
- Home Health Aides
- Hotel Desk Clerks
- Skincare Specialists

Maintenance & Repair Workers

Multiple occupations including:

- Outdoor Power Equipment and Small Engine Mechanic
- Photographic Process Workers
- Electronic Equipment Installer
- Installation Helpers
- Automotive Technician
- Molding and Casting Workers
- Print Binding and Finishing Workers

Source: EMSI, Garner Economics

Occupations with compatible index of 90 or above earning less than target occupation



TARGET:
HIGH VALUE-ADDED
MANUFACTURING

Manufacturing has been a large part of Erie County’s past and will continue to be a part of its future. Jobs in manufacturing have generally decreased as part of a global trend toward automation and other disruptions, and Garner Economics found this trend to be true in Erie County. More than 3,000 jobs were lost in the *Manufacturing* sector over the past five years. However, this study found that the *Manufacturing* assets and technologies present in the County are strong and warrant continued focus for target marketing.

Manufacturing is the second highest industry sector for employment with 19,000 workers and the second highest occupational category with more than 13,700 production workers as of 2018. *Manufacturing* concentration—measured as a location quotient (LQ) to gauge employment compared to the national level—is quite high for both the industry (LQ of 1.86) and production occupations (LQ of 1.76).

Similar findings statements from past reports support this finding by Garner Economics. In 2018, the Urban Land Institute stated, “while manufacturing jobs have fallen, it remains a key sector in Erie.” And in 2015, the Destination Erie Regional Economic & Workforce Strategy concluded, “Although manufacturing continues to play a key role in the local economy, it is creating fewer jobs and many of that demand much higher skills from its workforce.” The change in the types of workers has become a well understood factor for the future of *Manufacturing* in the United States, and the focus on talent, training, and innovation are key for a community to succeed.

The area has training institutions and programs that focus on *Manufacturing* skills and innovation. In 2017, Erie County colleges and universities awarded 755 degrees and certificates for *Engineering* and *Engineering Technologies* and 64 *Production or Mechanic & Repair Technology* certificates. A handful of institutions within the 45-minute drive-time area added 88 certificates awarded for *Production* or

Manufacturing Rationales:

- Availability of skilled industrial workers (13,740 production workers) (P)
- *Manufacturing* sector has an LQ of 1.86 (P)
- *Production* occupations have an LQ of 1.76 (P)
- High concentration in several industry subsectors:
 - Railroad Rolling Stock Mfg. (LQ 141)
 - Rubber Product Mfg. LQ (8.2)
 - Foundries (LQ 7.2)
 - Metalworking Machinery Mfg. (LQ 4.5)
- High concentration in several occupations:
 - Computer-Controlled Machine Tool Operators, Metal & Plastic. (LQ 6.8)
 - Tool & Die Makers (LQ 5.1)
 - Welders (LQ 4.2)
 - CNC Machine Programmers (LQ 4.1)
- Penn State—Polymer/Plastics Processing labs, training academy (P)
- Triangle Tech – CADD, 3-D Printing and Additive Mfg. Program (P)
- Affordable cost of labor (P)

Legend: Items appealing to needs of **prospects (P)** or **community (C)**

Manufacturing Rationales: *(continued):*

- Centrally located for major regional, national, and international markets (P) (C)
- Interstate highways I-90, 79, and 86 serve the region (P) (C)
- Erie International Airport (ERI) has daily flights to DTW, CHI, and PHL (P) (C)
- Two Class 1 railroads serve area (P)
- Port Erie & FTZ #247 (P)
- Existing pool of high-demand occupations and skills transferability occupations (P)
- Within ½ hour of major university/college (P) (C)
- Availability of engineering programs (P) (C)
- Availability of manufacturing processes (P)
- Availability/capacity of water and wastewater treatment (P)
- Potential for large natural gas user (P) (C)
- Quality of post-secondary education (P) (C)
- Entrepreneurial opportunities (e.g., incubators/accelerators) (P) (C)
- Availability of executive-level, moderate-cost housing (P) (C)
- Availability of apartments (P) (C)
- Affordable cost of living (P) (C)
- Good quality of life (P) (C)
- Abundant cultural/recreational opportunities (P) (C)
- 2,046 degrees and certificates granted in majors related to target (P)
- National average wage: \$71,846 (C)

Legend: Items appealing to needs of **prospects (P)**
or **community (C)**

Mechanic & Repair Technology programs. Efforts to improve these technical training programs, such as the community’s campaign to obtain a public community college, will enhance this sector. The ability to tell the story and provide proof of how the community is working on the pipeline of future talent is essential.

Erie County also has plenty of resources for innovation aiding in its effort to meet and lead in the *Manufacturing* sector. Penn State Behrend’s plastics-specific program is one of only four accredited plastics engineering technology programs in the United States along with a multimillion-dollar state-of-the-art processing lab. Another program of note is the CADD with Additive Manufacturing and 3D Printing Technology curriculum at Triangle Tech. Entrepreneurial activity such as Innovation Commons’ prototyping lab and engineering support adds to a well-rounded approach.

Several subsectors have a strong presence in Erie County already particularly relating to transportation. Donjon Shipbuilding controls the largest shipyard of its kind on the Great Lakes, and GE Transportation, recently acquired by Wabtec Corporation, is building locomotives in Erie. To complete the transportation picture, aerospace and automotive suppliers are also a fit for Erie County with the plastic, rubber, and metalworking assets.

Manufacturing has historically performed well in Erie County supported by the network of Interstates 90, 79, and 86 along with Port Erie and the presence of two Class 1 railroads. Rail service is particularly helpful for the subcategory targets of *Plastic and Chemical Manufacturing*. These transportation assets add to the potential for *Manufacturing* growth in Erie County. The strength of its *Manufacturing* history, talent, and specialized training make this a natural target for the County. *Manufacturing* may not be the labor-intensive industry it once was—particularly those that remain in the United States or reshore—however, the sector is growing domestically and has promise in Erie County.

Table 8.4: Regional Degree Completions in Majors Related to Target, 2017

Program	Degrees Granted	Program	Degrees Granted
Business, Management, Marketing & Related	839	Physical Sciences	65
Engineering	447	Mechanic & Repair Technologies/Technicians	43
Engineering Technologies & Engineering-related Fields	308	Mathematics & Statistics	22
Computer & Information Sciences & Support Services	169	Precision Production	21
Communication, Journalism & Related Programs	132	Total	2,046

Graduates from the following schools are included: Edinboro University of Pennsylvania, Gannon University, Penn State Erie-Behrend College, Lake Erie College of Osteopathic Medicine, Mercyhurst University, Fortis Institute-Erie, Erie Institute of Technology Inc, Great Lakes Institute of Technology, and Triangle Tech Inc-Erie.

Source: National Center for Education Statistics, Garner Economics

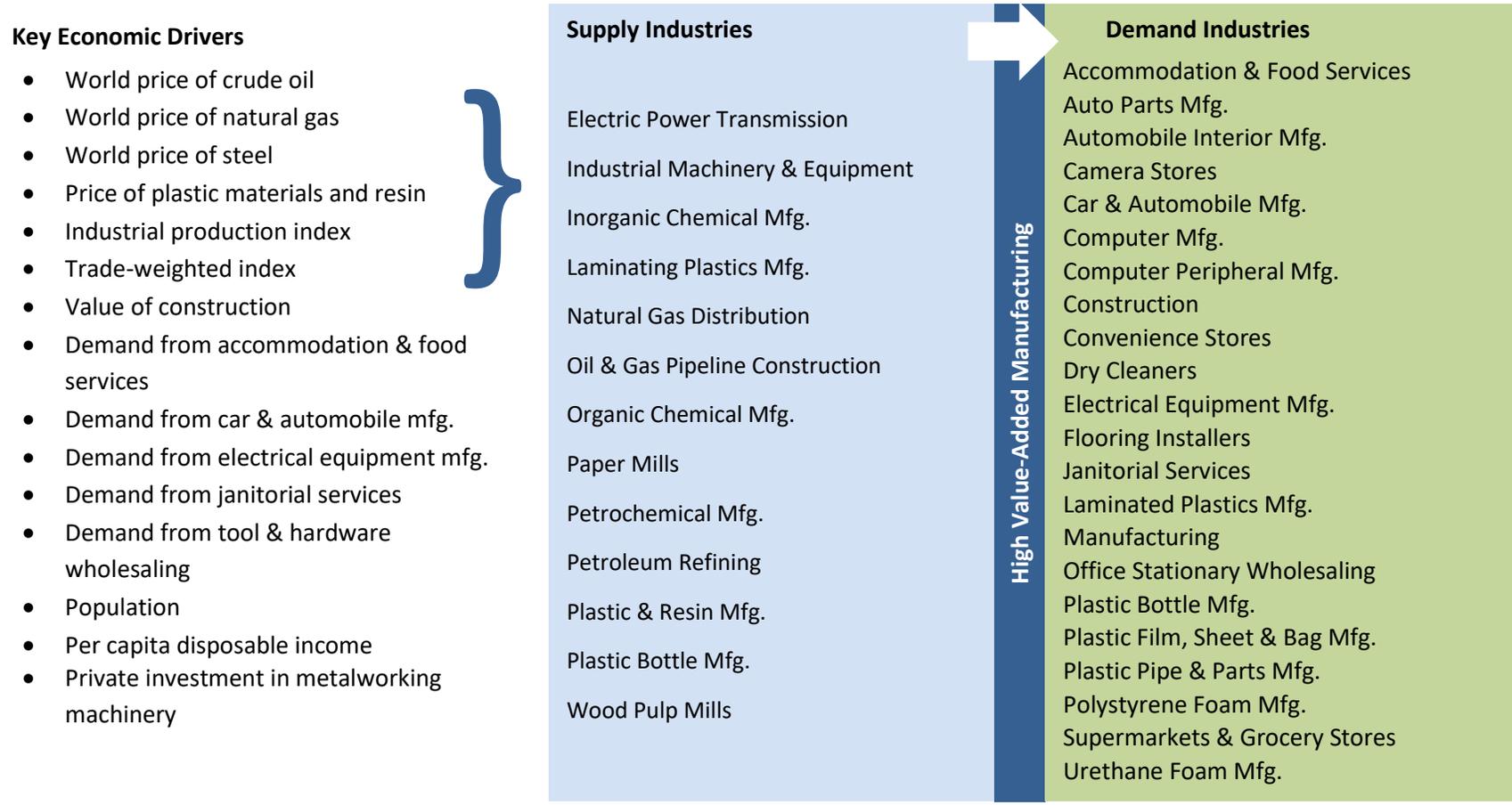
Table 8.5: High Value-Added Manufacturing Target Subsectors

NAICS	Description	2018 Jobs	2018 Wages	2008–2018 Change	2018–2028 Change
3251	Basic Chemical Mfg.	149,900	\$101,692	-2%	4%
3261	Plastics Product Mfg.	587,051	\$52,624	1%	-1%
3321	Forging and Stamping	98,798	\$57,811	-8%	-1%
3363	Motor Vehicle Parts Mfg.	598,751	\$59,716	10%	4%
32521	Resin and Synthetic Rubber Mfg.	67,892	\$98,185	-7%	-6%
32561	Soap and Cleaning Compound Mfg.	55,087	\$79,723	-1%	0%
32562	Toilet Preparation Mfg.	55,574	\$64,155	3%	-1%
33324	Industrial Machinery Mfg.	118,685	\$87,129	-3%	-5%
33351	Metalworking Machinery Mfg.	182,563	\$61,740	-5%	-3%
33531	Electrical Equipment Mfg.	139,917	\$71,267	-12%	-3%
33641	Aerospace Product and Parts Mfg.	492,470	\$103,050	-3%	2%
33651	Railroad Rolling Stock Mfg.	21,977	\$70,613	-22%	-1%
33661	Ship and Boat Building	137,871	\$63,303	-13%	-2%
33699	Other Transportation Equipment Mfg.	34,950	\$60,858	-14%	0%
Total/Weighted Average		2,741,486	\$71,846	-1%	0%

Certain subsectors included in target matrix (Figure 8.2) have different naming than NAICS code subsector and the business activity falls under NAICS listed above.

Source: EMSI, Garner Economics

Figure 8.4: High Value-Added Manufacturing Target Supply Chain Illustration



Source: IBIS World, Garner Economics

Including major subsectors of Chemical Mfg., Plastic & Resin Mfg., Plastic Product Mfg., and Metalworking as indicators of the supply chain

Table 8.6: Existing Pool of High-Demand Occupations, 2018

SOC	Description	2018 Jobs	Bright Outlook
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	1,916	Bright Outlook
51-2098	Assemblers and Fabricators, All Other, Including Team Assemblers	1,859	
49-9071	Maintenance and Repair Workers, General	1,652	Bright Outlook
51-4121	Welders, Cutters, Solderers, and Brazers	1,420	
43-5081	Stock Clerks and Order Fillers	1,396	Bright Outlook
11-1021	General and Operations Managers	1,232	Bright Outlook
41-4012	Sales Representatives, Wholesale and Manufacturing	1,128	Bright Outlook
51-1011	First-Line Supervisors of Production and Operating Workers	887	
51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic	846	
51-4041	Machinists	653	
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	599	
43-5071	Shipping, Receiving, and Traffic Clerks	549	
51-9198	Helpers--Production Workers	530	Bright Outlook
51-9111	Packaging and Filling Machine Operators and Tenders	451	
51-4081	Multiple Machine Tool Setters, Metal and Plastic	436	
51-4031	Cutting, Punching, and Press Machine Setters, Metal and Plastic	336	
51-2028	Electrical, Electronic, and Electromechanical Assemblers	332	
51-4072	Molding, Coremaking, and Casting Machine Setters, Metal and Plastic	319	
51-4111	Tool and Die Makers	313	
43-5061	Production, Planning, and Expediting Clerks	309	
13-1028	Buyers and Purchasing Agents	305	
17-2141	Mechanical Engineers	264	
49-9041	Industrial Machinery Mechanics	248	
51-4021	Extruding and Drawing Machine Setters, Metal and Plastic	218	
51-9011	Chemical Equipment Operators and Tenders	204	
11-3051	Industrial Production Managers	191	
17-2112	Industrial Engineers	166	Bright Outlook
51-9199	Production Workers, All Other	159	

*Bright Outlook noted according to O*Net occupations expected to grow rapidly in the next several years or higher.*

Source: EMSI, O*Net, Garner Economics

Skills Transferability for Sample Manufacturing Occupations

Machinists

Multiple occupations including:

- Machine Tool Setter (Metal & Plastic)
- Welders
- Printing Press Operator
- Maintenance & Repair Worker
- Automotive Technicians & Mechanics
- Carpenter
- Plumber
- Heating and Air-Conditioning Mechanics and Installers

Industrial Engineer

Multiple occupations including:

- General and Operations Managers
- Production, Planning & Expediting Clerks
- IT Project Manager
- Recycling Coordinator
- Civil Engineering Technicians
- Logistics Engineers



TARGET:
**FOOD & BEVERAGE PROCESSING/
AGRICULTURE & AQUACULTURE**

Erie County has multiple opportunities in the *Food and Beverage Processing* industry as well as the *Agriculture and Aquaculture* sectors. Erie County ranked first in Pennsylvania for grape production and fifth for aquaculture. The target family seeks to leverage natural assets with *Aquaculture* and extend growing with hydroponics and greenhouse crops for food processing.

The *Food & Beverage Processing* industry is undergoing a transition, with consumers increasingly choosing healthy, fresh, organic, local, and ready-to-eat alternatives over traditional products that are mass-produced, frozen, canned, etc. The rise of the “foodie culture” lends itself to the farm to table trend but also to the appreciation of various aspects of food.

Specialty foods, snack foods, and sauce manufacturing are three subsectors of the food processing industry that have seen a rise and are forecasted to grow. On the *Beverage Manufacturing* side, breweries, wineries, and distilleries are undergoing exceptional growth nationally. The latter three beverage categories are in Erie County’s targets twice—once for the production side in this industry family and again in the *Hospitality* target for their tasting rooms and retail/experiential offerings.

Welch’s production in the County takes advantage of the grape crops and a plethora of other firms produce prepared food products. Salad dressings, frozen foods, and seasonings are all made in Erie with high employment concentrations as high as 17.6 LQ. Other subsectors in this target are agricultural chemicals, grocery and farm wholesalers, and cold storage facilities.

As with the *High Value-Added Manufacturing* Target, the transportation network of interstates, port, and rail serve the *Food & Beverage Processing/Agriculture & Aquaculture* well. In 2017, Class 1 railroads moved 5.5 million carloads of grain, food products, and fertilizers.

**Food & Beverage Processing/
Agriculture & Aquaculture Rationales:**

- Availability of agricultural products for food processing (P)
- Availability of skilled industrial workers (13,740 production workers) (P)
- *Manufacturing* sector has an LQ of 1.86 (P)
- *Production* occupations have an LQ of 1.76 (P)
- High concentration in several industry subsectors:
 - Mayonnaise, Dressing, and Other Prepared Sauce Mfg. (LQ 17.6)
 - Frozen Specialty Food Mfg. (LQ 7.6)
 - Seasoning & Dressing Mfg. (LQ 7.3)
 - Fruit and Vegetable Canning (LQ 6.9)
- Centrally located for major regional, national and international markets (P) (C)
- Interstate highways I-90, 79, and 86 serve the region (P) (C)
- Erie International Airport (ERI) has daily flights to DTW, CHI, and PHL (P) (C)
- Rail service—two Class 1 railroads serve area

Legend: Items appealing to needs of **prospects (P)** or **community (C)**

Food & Beverage Processing/ Agriculture & Aquaculture Rationales: *(continued):*

- Existing pool of high-demand occupations and skills transferability occupations (P)
- Within ½ hour of major university/college (P) (C)
- Availability of engineering or related programs (P) (C)
- Availability of manufacturing processes (P)
- Availability/capacity of water and wastewater treatment (P)
- Sector or subsectors potential for large natural gas user (P) (C)
- Quality of post-secondary education (P) (C)
- Entrepreneurial opportunities (e.g., incubators/accelerators) (P) (C)
- Availability of executive-level, moderate-cost housing (P) (C)
- Availability of apartments (P) (C)
- Affordable cost of living (P) (C)
- Good quality of life (P) (C)
- Abundant cultural and recreational opportunities (P) (C)
- 4,324 degrees and certificates granted in majors related to target (P)
- Historical national job growth of 5 percent for past decade (P)(C)
- National job growth forecast of 3 percent (P)(C)

Legend: Items appealing to needs of **prospects (P)** or **community (C)**

Erie County’s workforce for Food & Beverage Processing shares many of the same occupations as the overall manufacturing sector with machining, material movement and processes with skills that apply to this sector. Erie County’s colleges and universities granted more than 4,300 degrees and certificates in majors related to Food & Beverage Processing as well as Agriculture and Aquaculture. Penn State Behrend also offers a Sustainable Food Systems Program with a food curriculum in development and a student farm.

The presence of existing companies in this sector along with the availability of water and sewer treatment capacity and cost-effective natural gas make this segment a viable target for Erie County.

Table 8.7: Regional Degree Completions in Majors Related to Target, 2017

Program	Degrees Granted
Health Professions & Related Programs	2,231
Business, Management, Marketing & Related Support Services	839
Engineering	447
Engineering Technologies & Engineering-related Fields	308
Biological & Biomedical Sciences	163
Communication, Journalism & Related Programs	132
Personal & Culinary Services	60
Mechanic & Repair Technologies/Technicians	43
Multi/Interdisciplinary Studies	43
Mathematics & Statistics	22
Precision Production	21
Natural Resources & Conservation	8
Family & Consumer Sciences/Human Sciences	7
Total	4,324

Graduates from the following schools are included: Edinboro University of Pennsylvania, Gannon University, Penn State Erie-Behrend College, Lake Erie College of Osteopathic Medicine, Mercyhurst University, Fortis Institute-Erie, Erie Institute of Technology Inc, Great Lakes Institute of Technology, and Triangle Tech Inc-Erie.

Source: National Center for Education Statistics, Garner Economics

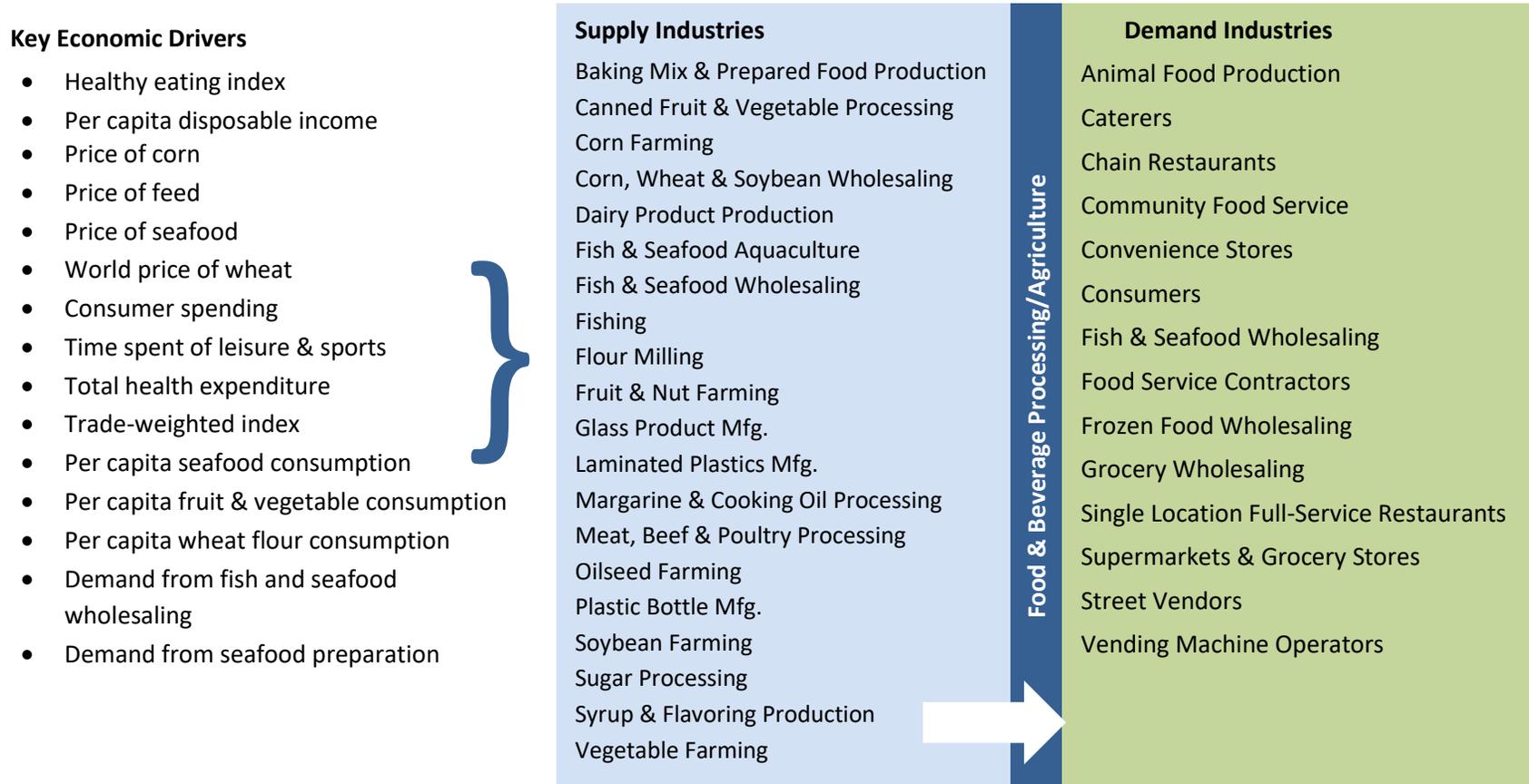
Table 8.8: Food & Beverage Processing/Agriculture Target Subsectors

NAICS	Description	2018 Jobs	2018 Wages	2008–2018 Change	2018–2028 Change
111	Crop Production (Including Grown Under Cover)	812,902	\$31,395	-1%	1%
112	Animal Production & Aquaculture	431,384	\$34,049	-5%	-5%
31134	Nonchocolate Confectionery Mfg.	21,756	\$51,489	31%	8%
31135	Chocolate & Confectionery Mfg.	41,749	\$46,136	0%	-3%
31141	Frozen Food Mfg.	90,090	\$46,591	4%	0%
31142	Fruit & Vegetable Canning, Pickling, Drying	82,326	\$53,962	-8%	-1%
31161	Animal Slaughtering & Processing	518,354	\$41,007	1%	4%
31181	Bread & Bakery Product Mfg.	254,584	\$36,091	17%	6%
31191	Snack Food Mfg.	57,416	\$51,314	27%	4%
31193	Flavoring Syrup & Concentrate Mfg.	11,657	\$158,340	16%	7%
31194	Seasoning & Dressing Mfg.	41,989	\$62,997	29%	12%
31211	Soft Drink & Ice Mfg.	104,217	\$55,091	3%	-2%
31212	Breweries	73,937	\$45,890	179%	32%
31213	Wineries	67,544	\$45,006	63%	14%
31214	Distilleries	15,026	\$67,179	110%	24%
3253	Pesticide, Fertilizer & Other Agricultural Chemical Mfg.	35,664	\$84,117	-4%	-6%
49312	Refrigerated Warehousing & Storage	61,749	\$49,756	27%	14%
49313	Farm Product Warehousing & Storage	11,336	\$47,269	19%	20%
Total/Weighted Average		2,733,680	\$40,081	5%	3%

Certain subsectors included in target matrix (Figure 8.2) have different naming than NAICS code subsector and the business activity falls under NAICS listed above.

Source: EMSI, Garner Economics

Figure 8.5: Food & Beverage Processing Target Supply Chain Illustration



Including major subsectors of Snack Food Processing, Frozen Food Mfg., Aquaculture, Seafood Preparation, Bread and Beverage Processing as indicators of the supply chain

Source: IBIS World, Garner Economics

Table 8.9: Existing Pool of High-Demand Occupations, 2018

SOC	Description	2018 Jobs	Bright Outlook
37-2011	Janitors and Cleaners	2,455	Bright Outlook
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	1,916	Bright Outlook
51-2098	Assemblers and Fabricators, All Other, Including Team Assemblers	1,859	
49-9071	Maintenance and Repair Workers, General	1,652	Bright Outlook
35-2014	Cooks, Restaurant	1,436	Bright Outlook
51-4121	Welders, Cutters, Solderers, and Brazers	1,420	
43-5081	Stock Clerks and Order Fillers	1,396	Bright Outlook
53-3032	Heavy and Tractor-Trailer Truck Drivers	1,320	Bright Outlook
11-1021	General and Operations Managers	1,232	Bright Outlook
51-1011	First-Line Supervisors of Production and Operating Workers	887	
53-3033	Light Truck or Delivery Services Drivers	765	Bright Outlook
51-4041	Machinists	653	
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	599	
43-5071	Shipping, Receiving, and Traffic Clerks	549	
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	479	Bright Outlook
35-2021	Food Preparation Workers	463	Bright Outlook
51-9111	Packaging and Filling Machine Operators and Tenders	451	
53-7051	Industrial Truck and Tractor Operators	410	
51-3092	Food Batchmakers	384	
53-7064	Packers and Packagers, Hand	356	Bright Outlook
53-7061	Cleaners of Vehicles and Equipment	280	Bright Outlook
53-3031	Driver/Sales Workers	272	
49-9041	Industrial Machinery Mechanics	248	
51-3011	Bakers	206	
51-9023	Mixing and Blending Machine Setters, Operators, and Tenders	147	
51-3093	Food Cooking Machine Operators and Tenders	62	
51-9012	Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters	49	
51-3021	Butchers and Meat Cutters	45	

*Bright Outlook noted according to O*Net occupations expected to grow rapidly in the next several years or have many job openings*

*Source: EMSI, O*Net, Garner Economics*

**Skills Transferability for Sample
Food & Beverage Processing/
Agriculture Occupations**

Food Batchmaker

Multiple occupations including:

- Laundry & Dry-Cleaning Workers
- Restaurant Cooks
- Food Servers
- Dishwashers
- Janitors & Cleaners
- Baristas
- Bakers

HVAC & Refrigeration Mechanics

Multiple occupations including:

- Maintenance & Repair Workers
- Automotive Mechanic
- Construction Carpenter
- Machinists
- Pipe Fitters & Steamfitters
- Electricians
- Manufacturing Production Technicians

*Source: EMSI, Garner Economics
Occupations with compatible index of 90 or
above earning less than target occupation*



High-Value Business Services covers myriad industries that could prosper in Erie County. The County can attract and grow several subsectors that focus on providing value to business and consumers. With good interstate access, commercial air service, and good quality of life, the County fares well in the ability to engage in commerce on a regional, national, and global level.

Erie is known for insurance with the name-sake Erie Insurance among the major employers of the County. This has attracted other insurance operations, which are reflected in the high concentration of Direct Insurance employment with an LQ 5.7. *Insurance* and *Finance* are strong sectors for Erie County and employ approximately 5,500 people.

Trends in the insurance business have led to new development—Insurtech. This “technology behind the insurance” will evolve to a new approach to insurance and consumer interactions and operations. The movement toward self-service by consumers calls for more technology to access and claims on different tools—online or phone apps. Additionally, customer self-service also leads to operations that support finance, insurance, and health services that require advanced skills and training. With the culture of self-service online and cost-effective products, the growth of centralized customer assistance centers will increase providing medical advising (nurse lines), investing advice, and many other facets of support.

Back office is a term enabling global companies to achieve efficiencies and cost savings by consolidating staff support functions such as accounting, customer service, information technology, legal, logistics, sales and marketing, or other support functions in one location. Being able to operate these business roles in lower labor and real estate markets opens opportunity for areas like Erie County to gain quality, high paying jobs.

High-Value Business Services Rationales:

- High concentration of Direct Insurance industry (LQ 5.7)
- Supply chain management programs at Penn State Behrend and Gannon University (P) (C)
- Centrally located for major regional, national, and international markets (P) (C)
- Interstate highways I-90, 79, and 86 serve the region (P) (C)
- Erie International Airport (ERI) has daily flights to DTW, CHI, and PHL (P) (C)
- Affordable cost of labor (P)
- Existing pool of high-demand occupations and skills transferability occupations (P)
- Within ½ hour of major university/college (P) (C)
- Availability of engineering or related programs (P) (C)
- Quality of post-secondary education (P) (C)
- Entrepreneurial opportunities (e.g., incubators/accelerators) (P) (C)

Legend: Items appealing to needs of **prospects (P)** or **community (C)**

High-Value Business Services Rationales:

(continued):

- Availability of executive-level, moderate-cost housing (P) (C)
- Availability of apartments P) (C)
- Affordable cost of living P) (C)
- Good quality of life (P) (C)
- Abundant cultural and recreational opportunities (P) (C)
- 4,702 degrees and certificates granted in majors related to target (P)
- Historical national job growth of 16 percent for past decade (P)(C)
- National job growth forecast of 16 percent (P)(C)
- National average wage: \$92,070 (C)

Logistics is another subsector that offers opportunity for Erie County. The knowledge of moving goods efficiently, especially in today’s “last mile” distribution model is in demand. Big box distribution may not be a fit for the County; however, the operations that advise and manage logistics, such as freight forwarding certainly are.

Penn State Behrend Black School of Business and other area universities have granted 839 degrees in 2018. Overall there were 4,700 degrees granted in 2015 related to *High-Value Business Services*.

Table 8.10: Regional Degree Completions in Majors Related to Target, 2017

Program	Degrees Granted
Health Professions & Related Programs	2,231
Business, Management, Marketing & Related Support Services	839
Engineering	447
Engineering Technologies & Engineering-related Fields	308
Public Administration & Social Service Professions	243
Computer & Information Sciences & Support Services	169
Social Sciences	141
Communication, Journalism & Related Programs	132
Liberal Arts & Sciences, General Studies & Humanities	109
English Language & Literature/Letters	50
Mathematics & Statistics	22
Legal Professions & Studies	8
Communications Technologies/Technicians & Support Services	3
Total	4,702

Graduates from the following schools are included: Edinboro University of Pennsylvania, Gannon University, Penn State Erie-Behrend College, Lake Erie College of Osteopathic Medicine, Mercyhurst University, Fortis Institute-Erie, Erie Institute of Technology Inc, Great Lakes Institute of Technology, and Triangle Tech Inc-Erie.

Source: National Center for Education Statistics, Garner Economics

Legend: Items appealing to needs of **prospects (P)** or **community (C)**

Table 8.11: High-Value Business Services Target Subsectors

NAICS	Description	2018 Jobs	2018 Wages	2008–2018 Change	2018–2028 Change
5239	Other Financial Investment Activities	546,902	\$204,918	25%	20%
5241	Insurance Carriers	1,263,064	\$93,703	-3%	4%
5412	Accounting, Tax Preparation, Bookkeeping & Payroll Services	1,180,557	\$69,312	6%	9%
5413	Architectural, Engineering & Related Services	1,544,339	\$87,555	0%	10%
5416	Management, Scientific & Technical Consulting Services	1,774,811	\$84,690	39%	23%
5611	Office Administrative Services	530,297	\$84,973	28%	24%
52429	Other Insurance Related Activities	392,359	\$74,529	36%	22%
522291	Consumer Lending	105,189	\$66,658	-9%	18%
522320	Financial Transactions Processing, Reserve & Clearinghouse Activities	135,498	\$106,039	20%	29%
523930	Investment Advice	226,273	\$160,406	31%	20%
541511	Custom Computer Programming Services	981,953	\$114,041	41%	22%
561422	Telemarketing Bureaus & Other Contact Centers	490,722	\$37,066	28%	28%
Total/Weighted Average		8,945,690	\$92,070	16%	16%

Certain subsectors included in target matrix (Figure 8.2) have different naming than NAICS code subsector and the business activity falls under NAICS listed above.

Source: EMSI, Garner Economics

Figure 8.6: High-Value Business Services Target Supply Chain Illustration

Key Economic Drivers

- Per capita disposable income
- Health expenditure
- Investor uncertainty
- National unemployment rate
- Prime rate
- Age of population
- Percentage of households with at least one computer
- E-commerce sales
- Percentage of services conducted online
- Government consumption and investment
- Aggregate household debt & private investment
- Consumer spending
- Corporate profit
- Crime rate
- Demand from data processing/hosting services
- Demand from finance and insurance
- Demand from postal service
- Demand from professional, scientific, and technical services
- Demand from retail trade
- External competition for Credit Unions industry
- New car sales



Including major subsectors of Business Services as an indicator of supply chain patterns

Source: IBIS World, Garner Economics

Table 8.12: Existing Pool of High-Demand Occupations, 2018

SOC	Description	2018 Jobs	Bright Outlook
43-9061	Office Clerks, General	3,454	Bright Outlook
43-6014	Secretaries and Administrative Assistants	2,320	Bright Outlook
43-4051	Customer Service Representatives	2,294	Bright Outlook
43-1011	First-Line Supervisors of Office and Administrative Support Workers	1,305	Bright Outlook
43-3031	Bookkeeping, Accounting, and Auditing Clerks	1,291	Bright Outlook
11-1021	General and Operations Managers	1,232	Bright Outlook
41-4012	Sales Representatives, Wholesale and Manufacturing	1,128	Bright Outlook
13-2011	Accountants and Auditors	937	Bright Outlook
41-3021	Insurance Sales Agents	591	Bright Outlook
43-3071	Tellers	496	
41-3099	Sales Representatives, Services, All Other	466	Bright Outlook
43-3021	Billing and Posting Clerks	431	Bright Outlook
15-1132	Software Developers & Programmers	390	Bright Outlook
13-1071	Human Resources Specialists	360	
15-1151	Computer User Support Specialists	340	Bright Outlook
11-3031	Financial Managers	314	Bright Outlook
13-1161	Market Research Analysts and Marketing Specialists	312	Bright Outlook
13-1028	Buyers and Purchasing Agents	305	
43-6011	Executive Secretaries and Executive Administrative Assistants	295	
15-1121	Computer Systems Analysts	266	
13-1111	Management Analysts	251	Bright Outlook
15-1143	Computer Network Architects	238	
13-2053	Insurance Underwriters	212	
13-1031	Claims Adjusters, Examiners, and Investigators	205	
43-9041	Insurance Claims and Policy Processing Clerks	202	Bright Outlook
27-1024	Graphic Designers	190	
13-1151	Training and Development Specialists	134	Bright Outlook

*Bright Outlook noted according to O*Net occupations expected to grow rapidly in the next several years or higher.*

Source: EMSI, O*Net, Garner Economics

Skills Transferability for Sample High-Value Business Services Occupations

Auditor

Multiple occupations including:

- Investment Fund Manager
- Survey Researchers
- Loan Interviewers & Clerks
- Energy Brokers
- Retail Supervisor
- Fundraisers

Computer Network Architect

Multiple occupations including:

- Remote Sensing Technicians
- Web Developers
- Electrical Engineering Technologists
- Industrial Engineering Technologists/Technicians
- Computer Network Support Specialists
- Security Management Specialists
- Logistics Analysts

Source: EMSI, Garner Economics

Occupations with compatible index of 90 or higher.

TARGET:
TECH/GAMING
DIGITAL



The *Tech/Gaming/Digital* target is an offshoot of *High-Value Business Services* but has a much narrower scope and different requirements. The presence of gaming and cybersecurity programs at local universities and the internet Gig service in downtown Erie open the door to more opportunities. Technology development and software development is at the heart of many operations today and is the focus of this target.

Edinboro University has a Game and Virtual World Development track plus Gannon University has a Cyber Engineering program at its Institute for Health and Cyber Knowledge (I Hack) to launch students into this area of development. Penn State Behrend has a game development minor along with its Information Technology, Management of Information Systems, and Computer Engineering programs. The Ridge College of Intelligence Studies at Mercyhurst University offers Cyber Security and Cyber Risk programs.

In 2017, Erie County colleges and universities granted 1,920 degrees in fields related to the *Tech/Gaming/Digital* target. It is worth noting that many professional or programming language certifications may not be reflected in these numbers. Online tools and programs not accessed through local universities will likely not be reported via this source.

Erie County has an excellent entrepreneurial ecosystem with the support network of incubators and accelerators. The Northwest Pennsylvania Innovation Beehive Network is constantly evolving, connecting various resources for entrepreneurs. Some of the establishments in place include:

- The Erie Innovation District (EID), which promotes startup incubation and investment, technology partnerships, and competition.
- Erie Technology Incubator at Gannon University
- Penn State Behrend Innovation Commons
- Singularity Secure Erie Accelerator focused on data, Insurtech, Blockchain, and Cybersecurity

Tech/Gaming/Digital Target Rationales:

- Edinboro University Game and Virtual World Development Track (P) (C)
- Gannon University Cyber Engineering and Institute for Health and Cyber Knowledge (I Hack) (P) (C)
- Penn State Behrend game development minor (P) (C)
- Entrepreneurial opportunities (e.g., incubators/accelerators) (P) (C)
- Centrally located for major regional, national, and international markets (P) (C)
- Interstate highways I-90, 79, and 86 serve the region (P) (C)
- Erie International Airport (ERI) has daily flights to DTW, CHI, and PHL (P) (C)
- Affordable cost of labor (P)
- Existing pool of high-demand occupations and skills transferability occupations (P)
- Within ½ hour of major university/college (P) (C)

Legend: Items appealing to needs of **prospects (P)** or **community (C)**

Tech/Gaming/Digital Target Rationales:
(continued):

- Availability of engineering or related programs (P) (C)
- Quality of post-secondary education (P) (C)
- Availability of executive-level, moderate-cost housing (P) (C)
- Availability of apartments (P) (C)
- Affordable cost of living (P) (C)
- Good quality of life (P) (C)
- Abundant cultural and recreational opportunities (P) (C)
- 1,920 degrees and certificates granted in majors related to target (P)
- Historical national job growth of 39 percent for past decade (P)(C)
- National job growth forecast of 22 percent (P)(C)
- National average wage: \$118,561 (C)

Legend: Items appealing to needs of **prospects (P)** or **community (C)**

Table 8.13: Regional Degree Completions in Majors Related to Target, 2017

Program	Degrees Granted
Business, Management, Marketing & Related Support Services	839
Engineering	447
Engineering Technologies & Engineering-related Fields	308
Computer & Information Sciences & Support Services	169
Communication, Journalism & Related Programs	132
Mathematics & Statistics	22
Communications Technologies/Technicians & Support Services	3
Total	1,920

Graduates from the following schools are included: Edinboro University of Pennsylvania, Gannon University, Penn State Erie-Behrend College, Lake Erie College of Osteopathic Medicine, Mercyhurst University, Fortis Institute-Erie, Erie Institute of Technology Inc, Great Lakes Institute of Technology, and Triangle Tech Inc-Erie.

Source: National Center for Education Statistics, Garner Economics

From entertainment to cybersecurity, this emerging sector will innovate and further develop technology for a variety of uses and industries. This sector is primarily made up of high paying jobs or entrepreneurial ventures, and the existences of training programs, incubators, accelerators, and venture capital make this a feasible and exciting target.

Table 8.14: Tech/Gaming/Digital Target Subsectors

NAICS	Description	2018 Jobs	2018 Wages	2008–2018 Change	2018–2028 Change
5112	Software Publishers	391,122	\$163,085	49%	23%
51211	Motion Picture & Video Production	292,820	\$84,321	21%	18%
5122	Sound Recording Industries	29,091	\$63,934	1%	5%
5182	Data Processing, Hosting & Related Services	329,857	\$115,985	25%	17%
51913	Internet Publishing, Broadcasting & Web Search Portals	246,481	\$225,359	178%	50%
54143	Graphic Design Services	134,745	\$43,224	-3%	1%
54149	Other Specialized Design Services	27,081	\$54,450	19%	21%
541511	Custom Computer Programming Services	981,953	\$114,041	41%	22%
541512	Computer Systems Design Services	1,053,798	\$106,951	47%	24%
541513	Computer Facilities Management Services	78,820	\$97,460	25%	29%
541519	Other Computer Related Services	126,547	\$110,271	4%	11%
Total/Weighted Average		3,692,315	\$118,561	39%	22%

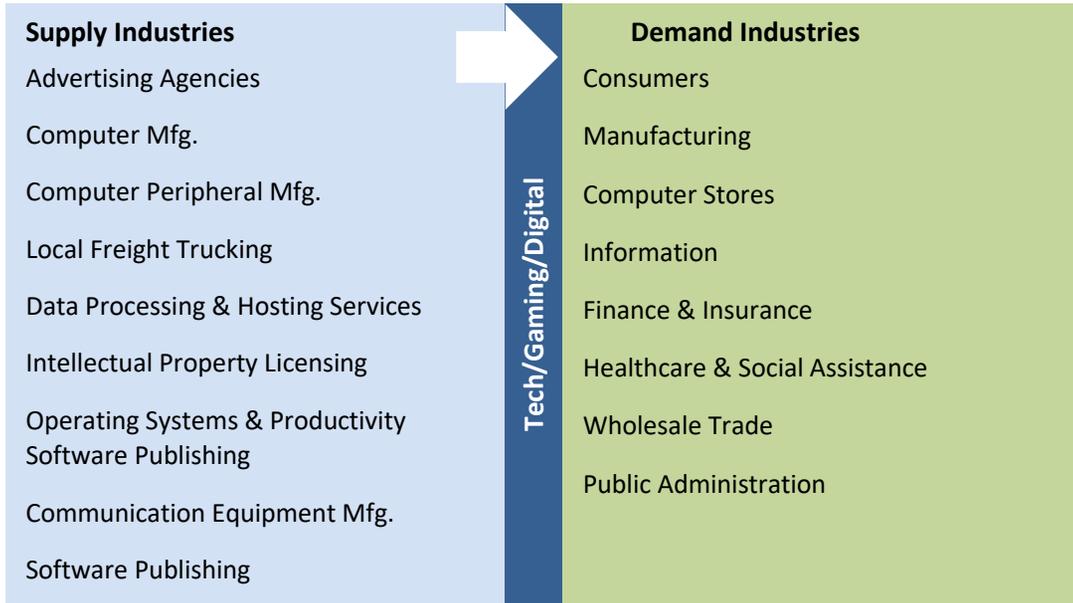
Certain subsectors included in target matrix (Figure 8.2) have different naming than NAICS code subsector and the business activity falls under NAICS listed above.

Source: EMSI, Garner Economics

Figure 8.7: Tech/Gaming/Digital Target Supply Chain Illustration

Key Economic Drivers

- Per capita disposable income
- Consumer Confidence Index
- Government consumption & investment
- Percentage of services conducted online
- Time spent of leisure & sports
- Trade-weighted index
- Private investment in computers/software
- Number of mobile internet connections
- Corporate profit
- Percent of households with at least one computer
- Crime rate



Including Major Subsectors of Video Games, Software Publishing, and IT Security Consulting as Indicators of the Supply Chain

Source: IBIS World, Garner Economics

Table 8.15: Existing Pool of High-Demand Occupations, 2018

SOC	Description	2018 Jobs	Bright Outlook
43-6014	Secretaries and Administrative Assistants	2,320	Bright Outlook
43-4051	Customer Service Representatives	2,294	Bright Outlook
43-1011	First-Line Supervisors of Office and Administrative Support Workers	1,305	Bright Outlook
11-1021	General and Operations Managers	1,232	Bright Outlook
13-2011	Accountants and Auditors	937	Bright Outlook
41-3099	Sales Representatives, Services, All Other	466	Bright Outlook
15-1130	Software Developers & Programmers	390	Bright Outlook
15-1151	Computer User Support Specialists	340	Bright Outlook
13-1161	Market Research Analysts and Marketing Specialists	312	Bright Outlook
15-1121	Computer Systems Analysts	266	
13-1111	Management Analysts	251	Bright Outlook
15-1143	Computer Network Architects	238	
13-1199	Business Operations Specialists, All Other	199	Bright Outlook
27-1024	Graphic Designers	190	
15-1142	Network and Computer Systems Administrators	186	
11-3020	Computer and Information Systems Managers	140	Bright Outlook
13-1151	Training and Development Specialists	134	Bright Outlook
15-1199	Computer, All Other	111	
27-2012	Producers and Directors	97	Bright Outlook
41-4011	Sales Representatives, Technical & Scientific Products	74	
27-3041	Editors	70	
27-3043	Writers and Authors	70	
15-1134	Web Developers	68	Bright Outlook
15-1152	Computer Network Support Specialists	62	
15-2031	Operations Research Analysts	61	Bright Outlook
27-4011	Audio and Video Equipment Technicians	59	Bright Outlook
27-3042	Technical Writers	47	Bright Outlook
15-1122	Information Security Analysts	40	Bright Outlook
27-1011	Art Directors	29	
43-6014	Secretaries and Administrative Assistants	2,320	Bright Outlook

*Bright Outlook noted according to O*Net occupations expected to grow rapidly in the next several years or have many job openings*

*Source: EMSI, O*Net, Garner Economics*

**Skills Transferability for Sample
Tech/Gaming/Digital Occupations**

Information Security Analyst

Multiple occupations including:

- Web Developer
- Compliance Manager
- Claims Examiners, Property & Casualty Insurance
- Clinical Data Managers
- Logistics Analysts
- Loan Interviewer and Clerks
- Computer User Support Specialists

Software Developers, Systems

Multiple occupations including:

- Electrical Drafters
- Tax Preparers
- Loan Counselors
- Brokerage Clerks
- Insurance Underwriters
- Document Management Specialists
- Statistical Assistants
- Bill and Account Collectors

Source: EMSI, Garner Economics

Occupations with compatible index of 90 or above earning less than target occupation



TARGET:
YEAR-ROUND EXPERIENTIAL RECREATION

The experiential economy is a big part of the growth in hospitality and recreation. From retailers to tour guides and restaurateurs to sports venues, the effort to give visitors an experience they can't get at home is key. Building on existing assets to create an elevated experience will enhance Erie County for visitors, residents, and future residents.

Erie County is a popular destination in warmer months drawing people to Lake Erie. One of the focus points in this target is to extend this activity and build year-round recreation opportunities. Various subsectors for this target include *Boutique Retail*, *Outdoor/Indoor Year-Round Recreation*, and *Ecotourism*. There is a need for creating more variety in traveler accommodation, particularly four-star/four-diamond or the next level of hotel product.

Breweries, Wineries, and Distilleries are growing rapidly nationwide and are a popular fixture in most cities and towns and offer different vibes for a mix of consumers. Retail in this target is meant to be boutique or specialty to offer buyers something that cannot be found or experienced shopping online.

Encouraging development of year-round entertainment will build on the vibrancy growing in Erie. Musicians, performing artists, and similar have the Warner Theatre, an arena, and smaller venues for shows.

There were approximately 1,500 degrees and certificates granted in 2017 for occupations and operations in this *Hospitality* target. Programs include Mercyhurst's culinary and hospitality management curriculum. A music technology school—Recording Connection—provides music production education. Penn State has the GEAR program, which allows for high-end equipment rental for filming productions.

This sector may not be in the traditional economic development wheelhouse; however, finding community partners to help establish and build a better sense of place is a great benefit to attracting and retaining talent.

**Year-Round Experiential
Recreation Target Rationales:**

- Centrally located for major regional, national, and international markets (P) (C)
- Interstate highways I-90, 79, and 86 serve the region (P) (C)
- Erie International Airport (ERI) has daily flights to DTW, CHI, and PHL (P) (C)
- Affordable cost of labor (P)
- Existing pool of high-demand occupations and skills transferability occupations (P)
- Within ½ hour of major university/college (P) (C)
- Quality of post-secondary education (P) (C)
- Entrepreneurial opportunities (e.g., incubators/accelerators) (P) (C)

Legend: Items appealing to needs of **prospects (P)** or **community (C)**

**Year-Round Experiential
Recreation Target Rationales: (continued)**

- Availability of executive-level, moderate-cost housing (P) (C)
- Availability of apartments (P) (C)
- Affordable cost of living (P) (C)
- Good quality of life (P) (C)
- Abundant cultural and recreational opportunities (P) (C)
- 1,523 degrees and certificates granted in majors related to target (P)
- Historical national job growth of 13 percent for past decade (P)(C)
- National job growth forecast of 10 percent (P)(C)
- Availability of major shopping facilities (P) (C)
- Variety of local restaurants (P) (C)

Legend: Items appealing to needs of **prospects (P)** or **community (C)**

Table 8.16: Regional Degree Completions in Majors Related to Target, 2017

Program	Degrees Granted
Business, Management, Marketing & Related Support Services	839
Visual & Performing Arts	206
Communication, Journalism & Related Programs	132
Liberal Arts & Sciences, General Studies & Humanities	109
Parks, Recreation, Leisure & Fitness Studies	106
Personal & Culinary Services	60
English Language & Literature/Letters	50
Natural Resources & Conservation	8
Family & Consumer Sciences/Human Sciences	7
Communications Technologies/Technicians & Support Services	3
Foreign Languages, Literatures & Linguistics	3
Total	1,523

Graduates from the following schools are included: Edinboro University of Pennsylvania, Gannon University, Penn State Erie-Behrend College, Lake Erie College of Osteopathic Medicine, Mercyhurst University, Fortis Institute-Erie, Erie Institute of Technology Inc, Great Lakes Institute of Technology, and Triangle Tech Inc-Erie.

Source: National Center for Education Statistics, Garner Economics

Table 8.17: Year-Round Experiential Recreation Target Subsectors

NAICS	Description	2018 Jobs	2018 Wages	2008–2018 Change	2018–2028 Change
487	Scenic and Sightseeing Transportation	37,292	\$34,660	20%	20%
4539	Other Miscellaneous Store Retailers	395,400	\$30,135	13%	16%
7111	Performing Arts Companies	152,855	\$43,380	12%	9%
7112	Spectator Sports	194,305	\$121,603	6%	9%
7115	Independent Artists, Writers, and Performers	304,246	\$39,839	5%	5%
7139	Other Amusement and Recreation Industries	1,437,671	\$21,101	20%	13%
7211	Traveler Accommodation	1,932,714	\$31,900	7%	5%
31212	Breweries	73,937	\$45,890	179%	32%
31213	Wineries	67,544	\$45,006	63%	14%
31214	Distilleries	15,026	\$67,179	110%	24%
Total/Weighted Average		4,610,989	\$33,620	13%	10%

Certain subsectors included in target matrix (Figure 8.2) have different naming than NAICS code subsector and the business activity falls under NAICS listed above.

Source: EMSI, Garner Economics

Table 8.18: Existing Pool of High-Demand Occupations, 2018

SOC	Description	2018 Jobs	Bright Outlook
43-4051	Customer Service Representatives	2,294	Bright Outlook
43-1011	First-Line Supervisors of Office and Administrative Support Workers	1,305	Bright Outlook
11-1021	General and Operations Managers	1,232	Bright Outlook
13-2011	Accountants and Auditors	937	Bright Outlook
41-3099	Sales Representatives, Services, All Other	466	Bright Outlook
15-1130	Software Developers & Programmers	390	Bright Outlook
15-1151	Computer User Support Specialists	340	Bright Outlook
13-1161	Market Research Analysts and Marketing Specialists	312	Bright Outlook
15-1121	Computer Systems Analysts	266	
13-1111	Management Analysts	251	Bright Outlook
15-1143	Computer Network Architects	238	
13-1199	Business Operations Specialists, All Other	199	Bright Outlook
27-1024	Graphic Designers	190	
15-1142	Network and Computer Systems Administrators	186	
11-3021	Computer and Information Systems Managers	140	Bright Outlook
13-1151	Training and Development Specialists	134	Bright Outlook
15-1199	Computer, All Other	111	
27-2012	Producers and Directors	97	Bright Outlook
27-3041	Editors	70	
27-3043	Writers and Authors	70	
15-1134	Web Developers	68	Bright Outlook
15-1152	Computer Network Support Specialists	62	
15-2031	Operations Research Analysts	61	Bright Outlook
27-4011	Audio and Video Equipment Technicians	59	Bright Outlook
27-3042	Technical Writers	47	Bright Outlook
15-1122	Information Security Analysts	40	Bright Outlook
27-1011	Art Directors	29	

*Bright Outlook noted according to O*Net occupations expected to grow rapidly in the next several years or have many job openings*

*Source: EMSI, O*Net, Garner Economics*

CHAPTER 9: RECOMMENDATIONS TO ACHIEVE SUCCESS



To ensure that Erie County and the Erie Regional Chamber and Growth Partnership (ERCGP) can meet its full potential, leverage its many assets, and strengthen its business climate to retain current companies and attract the recommended business targets, the ERCGP and its many partners must be proactive in driving Erie County’s economic future and setting it apart from other peer jurisdictions.

The following observations, conclusions, and recommendations are based on data and feedback collected during Phase 1. They also build upon the assessments made to prioritize the business targets identified in Chapter 8.

As noted in the introductory chapters, this assessment—and the observations herein—were developed from a site selector’s perspective. The recommendations are built with an eye toward those areas that will differentiate Erie County. The goal of this target industry strategy is to provide a framework for the community to consider its economic development service delivery and activities to support and augment the ERCGP’s work to recruit companies and the work of other City and County entities engaged in economic development. The recommendations look at Erie as a whole but are limited to the successful execution of the targets, since this is not a comprehensive economic development strategic plan. Therefore, current initiatives such as the community’s effort to obtain a public community college are not mentioned by us but should be continued through fruition by the leadership of the community.

Recommendations for action are categorized under three areas of opportunity: Asset Development (Product Improvement), Communicate the Brand (Marketing), and Execute Effectively (Organizational). *In some instances, and where relevant and possible, a cost estimate to implement the noted recommendation has been offered. An estimated timeline for the optimal application of the recommendations is also included.*

FIGURE 9.1: RECOMMENDATION CATEGORIES





Asset Development

1. **Develop your sites and buildings inventory:** *“No Product—No Project”* is the mantra of Garner Economics and site-location advisors working to facilitate location decisions on behalf of corporate clients. Erie County lacks shovel-ready sites, with few sites of 50 acres or more. This limited inventory of available sites and quality buildings suitable for the targeted industries will cause Erie to be passed over on projects that need options on available, quality sites with the necessary infrastructure in place and under control (for sale or under option). The ERCGP should engage a real estate advisory firm to do a market and cost analysis on available properties, 50 acres or greater, to add to the County’s inventory of shovel-ready sites suitable for the targeted industry sectors. This should be from a neutral third party that can offer an unbiased assessment of market potential and infrastructure cost. **Cost:** For advisory firm \$50K+/- . **Timeline:** 2020
2. **Create a sustainable public funding stream for economic development infrastructure projects:** There is a need for a public financing stream to create economic development infrastructure, e.g., office and business parks/spec buildings, water and sewer extensions, broadband access, etc. A best practice example is the Texas model of economic development of a ½ cent sales tax for economic development <https://comptroller.texas.gov/economy/local/type-ab/>. This initiative has since been widely copied by municipalities throughout the country. This program, if enacted, would only be for public infrastructure projects and directly tied to job creation and capital investment that enhances the economic vitality of the County. It is estimated that Erie County collects over \$190 million a year in sales tax. A ½ cent sales tax added would generate approximately \$16 million a year for economic development infrastructure. There are two Pennsylvania locations that have a local option sales tax currently: Allegheny County and the city of Philadelphia.
3. **Enhance the gateways and focus on community beautification:** The ERCGP should engage and facilitate all of the appropriate parties in the County to develop a community gateway/aesthetics plan to enhance the quality of place of Erie County. This should be done in tandem with a unified brand for the County, discussed further below, and with an architectural/landscape firm to assist in the design of the gateways. **Cost:** \$35K for the design and plan. **Timeline:** 2020–2021



Communicate the Brand

1. **Develop a unified brand:** With 38 municipalities in Erie County, more than 40 local, state, and federal economic development organizations housed in Erie County, and nine named Erie jurisdictions in the United States, a unified brand is needed to pool marketing resources into a consistent mark (logo) and tagline. **Cost:** \$25–35K to engage a branding firm to develop the material based on their research. A well-positioned logo should also serve as the signage into Erie County from all access points. **Timeline:** 2021
2. **Conduct external outreach to companies and consultants:** The ERCGP should call on location advisors and companies where there is the highest concentration of advisors and companies, as identified in the TIS. The cluster of location advisors includes Atlanta, Chicago, Dallas/Fort Worth and the New York/New Jersey metro. **Cost:** \$20K annually. **Timeline:** 2020–2025
3. **Create a Lead Generation program:** To jump-start the ERCGP’s ability to fully utilize the business sector targets and subsector targets identified in Chapter 3, the ERCGP should engage a marketing firm to provide lead-generation services that identify qualified investment opportunities. This service should yield a list of companies (including the company’s current location, contact information for the C-level executive responsible for choosing future operation sites, business description [NAICS code, etc.], and magnitude of recent growth) that would be hot prospects for the ERCGP’s recruitment efforts. If done correctly, the lead-generation identification process is methodical and evaluates key company performance metrics including sales, employment, growth, number of locations, and other relevant factors. The process tracks and evaluates “events” undertaken by companies in the identified target business sectors that indicate expansion or consolidation. **Cost:** \$50–75K. **Timeline:** 2020–2021
4. **Revise the ERCGP website:** Re-do your economic development page/portal of the ERCGP website by providing more detailed information related to what the customer is seeking and have the site translated in multiple languages, including French, Spanish, German, Japanese, and any other language based on your FDI activity. Best practice examples include the Economic Development Coalition of Southwest Indiana <https://www.southwestindiana.org/> and the Pittsburgh Regional Alliance <https://www.pittsburghregion.org/>. **Cost:** \$40K. **Timeline:** late 2019.
5. **Create a cadre of Economic Development Ambassadors:** The Erie region is rich with business and academia executives who travel the globe for their respective organizations. The ERCGP can leverage those local connections and engage those executives to promote business investment in the region. Such third-party testimonials are an effective way to promote the area to its peers internationally. The ERCGP should develop an ambassador’s program to train willing business and government leaders to assist the organization in extending the brand of the region as a place for business. The ERCGP staff would provide the ambassadors with talking points, training, and collateral to help them tout the County’s business attributes. **Timeline:** 2020



Execute Effectively

1. **Augment ERCGP economic development staffing:** The ERCGP economic development function needs a full-time staff of 3.5 to enhance its effectiveness and to successfully execute this TIS: A business development person and overall generalist, a business retention specialist, a general project manager, and a part-time support staff. The Chamber should consider outsourcing any research function or need. **Timeline:** 2020–2021
2. **Develop a workforce and talent attraction strategy:** Talent is the new currency for communities, and building the region’s talent pipeline is necessary in achieving success. There are a number of groups involved in talent development and attraction in the Erie region, but based on focus group feedback, no one unified effort or plan to achieve success. The ERCGP should facilitate this effort by conducting a comprehensive talent attraction and workforce development delivery assessment with recommendations for improvement and execution. **Cost:** \$80–100K. **Timeline:** 2020

CHAPTER 10: CALL TO ACTION



To be successful in executing the Target Industry Strategy (TIS), Erie County will need to leverage its unique mix of assets to strengthen the area's product and market its value proposition to the targets. While Erie County has a strong base from which to build, the area must be more proactive in building the assets and infrastructure needed to attract the higher-quality targets and companies. As noted in the Assets & Challenges Assessment, there are several areas where improvement would better set Erie County apart from peer communities. To be successful, the ERCGP needs to focus its targeted industry efforts and find more resources to devote to building economic development product (sites and buildings).

Through this TIS, the ERCGP and the community's leaders can make long-term investments to ensure that Erie County can attract the types of activity it wants. By taking a proactive leadership position, ERCGP can work to help transform Erie County into a place that attracts quality talent and companies while maintaining its character.

To create such change, the ERCGP and the entire community will need to be more proactive and champion for long-term investments that will

service both existing and new companies. ERCGP must take a more structured approach to telling the area's story. With this new strategy, ERCGP should communicate the County's assets more specifically to the desired companies that the community wants to attract, while also leveraging those assets to continue to serve the existing company base.

Inherent in this change will be a more proactive and outward-facing marketing and business recruiting effort. In addition to targeting the optimal industries noted earlier in this report, ERCGP must work with other economic development partners and stakeholders to create and encourage the development of the spaces and places where such activity will occur.

Garner Economics would like to thank the ERCGP staff and leadership for their help and assistance during this process. Their compilation of data and information, as well as their openness and willingness to explore various opportunities to strengthen operations, have contributed to the richness and rigor of this report.

APPENDIX A: FOCUS GROUP PARTICIPANTS

Business

Pete & Cle Austin, E.E. Austin & Son
H. Bender, Team Hardinger
Phil & Ryan Katen, Plastikos, Inc.
Dale & Lynn McBrier, Little Caesars
Nick Scott Jr., Scott Enterprises
Chris Clark, Saint Vincent
Mike Edwards, Marquette Savings Bank
Tim Hunter, McInnes Rolled Rings
Bruce Kern, C.A. Curtze
Christina Marsh, Erie Insurance
Jack Munch, Baldwin Brothers
Keith Taylor, Gannon University
Tom Tupitza, Know Law Firm
Jenny Weigold, UPMC Health Plan
Nick Sun, Sun

Public Sector

Michael Hannan, Edinboro University
Shantel Hillard, Booker T. Washington Center
Bill Jackson, United Way
Jack Lee, Summit Township
John Morgan, Millcreek Township Supervisors
Jeremy Peterson, Erie Metropolitan Transit Authority
Kathy Dahlkemper, County of Erie
Joe Schember, City of Erie
Ralph Ford, Penn State Behrend
John Oliver, VisitErie
Christopher Friday, Erie Parking Authority
Kathy Wyrosdick, City of Erie
Amy Murdock, Erie County Department of Planning
Ben Wilson, GECAC
Gary Horton, UECD/CMCIC

Entrepreneurs

Brian Slawin, Ben Franklin
Kevin Arrington, A+ Strategies and Corporate Solutions
Karl Sanchack, Erie Innovation District
Carl Nicolai, PSNergy
Dan Bensus, Bensus Creative
Sean Fedorko, Radius Co-Work
Bill Scholz, Nodes World
Matt White, Whitethorn Digital
Jon D'Silva, IIP
Aaron Lewis, Sphere Breaks
Matt Flowers, Ethos Copywriting
Cass Wright, CAPS
Julio Reyes, IBI Group
Kristen Santiago, Ethos Copywriting

APPENDIX B: FOCUS GROUP SUMMARY

Three Focus Groups were held in Erie on February 13, 2019. A total of 45 people participated in the focus group sessions. The following is a summary of these responses obtained in person during the sessions.

1. What are several words or phrases that describe Erie County (all of Erie County and its 38 municipalities)?

Responses were overall positive; however, some within the groups pointed to the tendency of the area to be somewhat pessimistic of the area's potential. While most focus groups noted the area's welcoming and family-friendly atmosphere with a hard-working labor force, some noted the tendency to be complacent and parochial.

- Welcoming (2)
- Family-friendly (2)
- Low self-esteem (2)
- Hard-working (2)
- Resurgent (2)
- World-class downtown and bayfront
- Schools of excellence
- Vacation destination
- Emerging
- Melting pot
- Collaborative
- Convenient
- Opportunity
- Lack of opportunity
- Nice small-college atmosphere
- Cold
- Stuck in past
- Parochial
- Gun-shy
- Innovative
- Proud
- Take things for granted
- Not welcoming to minority startups

2. What do you think are some of the biggest obstacles that inhibit Erie County in its ability to attract, expand, or retain businesses and investment?

Participants noted the lack of cohesion of efforts among the County, City, and other municipalities as a hindrance. Participants also noted the high poverty rate and challenges in the City's (Erie) K–12 school districts. The groups also pointed to the lack of a true (public) community college/vocational training program and lack of capital as obstacles to further growth.

- Little cohesion around a central vision (2)
- High poverty rate (2)
- Comfort level in the status quo (2)
- Lack of a community college/vocational training (2)
- Lack of capital (2)
- Lack of achievement in K–12 in the city
- Lack of trained workforce
- Lack of incentives for business recruitment and expansion
- Not a “right to work” state
- No infrastructure to build startups
- Fear of succeeding
- Scarcity of resources

3. On a scale of 1 to 5, with 5 being best, how would you rate the business climate of the City of Erie, Erie County?

When asked to rank the City and the County in terms of business climate, the focus groups ranked the City slightly above average (3.12, with 3.0 being average) and the County slightly below average (2.74, with 3.0 being average). The entrepreneurs group gave the highest scores to both, while the larger employers ranked them as barely average or slightly below.

All groups noted the improvement in relationships with the City in recent years. They point to the change in leadership and the City's proactive attempts to be more business-friendly. The groups noted the lack of a cohesive economic development vision throughout the County and noted the lack of resources available to assist.

- City has worked to be user-friendly, though it lacks tools; new leadership and cooperation between public and private sectors; the policies are lagging a bit, takes time to change things. City staff is available and is interested in helping you succeed. (3)
- County tends to be too focused on a few priorities; no big picture and too cost sensitive. (2)
- The City has permitting, but not as clear or transparent as it could be. Permitting is outsourced to a private group: Building Inspection Underwriters <http://biupa.com/>.
- County (and jurisdictions within it) does not have a unified voice; The mix of boroughs and townships is a hindrance.
- City and County have bent over backwards to help—BIU contractor has been a problem.
- Government picks winners and losers.
- Without a global plan, it will be the same.

4. What do you see as the County’s strengths?

All groups noted the County’s cost of living and level of amenities (including access to four universities) as strengths. Others commented on the region’s lack of natural disasters, new leadership at the City, healthcare, school choices, access to the interstate and port, and strong work ethic.

- All big city amenities at a small city scale (3)
- Access to five universities for training support (3)
- Cost of living (3)
- Geographic location/access to markets (2)
- Quality of life—recreation, arts and culture, sports, shopping
- Interstate(s)
- Diversity of housing options—have nicer neighborhoods ... have variety
- New and enthusiastic leadership
- Low natural disaster risk
- Family friendly/safe place
- Strong opportunities for research and internships
- Excellent healthcare
- Good school choices
- Strong work ethic
- Potential—but they need to seize it
- Port
- Water
- Cost of living is low

5. How do you see the current labor situation in the area (both quality and employee attraction and availability)?

The difficulty in recruiting and retaining professional talent and the lack of competitiveness of compensation in the area were noted by most of the focus groups as negatives for the community. Overall, the groups feel that the quantity of labor is lacking, causing the companies in the area to have to fight for or poach talent. Some noted the low education attainment in the region and lack of strong schools in the City as inhibitors for talent with school-aged children to move to the region.

- Soft skills lacking (2)
- Hard to recruit C-level talent (2)
- Compensation levels aren’t competitive (2)
- Quantity is adequate
- Quality has been held back because we don’t have a community college
- Quantity has been held back because we don’t have a community college
- Educational attainment is lower than the national average
- Quantity low
- Quality average
- Aging workforce
- Competing against each other to get labor; we have to steal from each other
- Woeful lack of diversity in professional sectors
- Schools are a challenge—city school district isn’t a first choice
- Lack of talent to staff tech companies

6. What infrastructure is missing or unsatisfactory in the County?

Participants offered a range of soft and hard infrastructure that is missing throughout the County, with two of the three groups noting the lack of broadband availability outside the City core. Other frequently offered responses centered around the lack of vocational training or apprenticeship opportunities, the lack of public transit or transportation options (bicycle or pedestrian paths), the lack of shovel-ready sites, and the low (though improving) level of technology-use—e.g., sensors, GIS—in municipal operations. Many participants also commented on the lack of aesthetics in the community.

- Broadband in rural; expense in some pockets (2)
- No apprenticeship opportunities/vocational training (2)
- Parks and Rec; not a cohesive system
- We need technology to understand what infrastructure we have
- ED corp/industrial corporation
- Lack of connectivity to rail system
- Lack of shovel-ready sites
- Lack of state-level funding
- Electrical infrastructure
- Traffic management not dynamic
- No pedestrian walkways
- Tired infrastructure
- Downtown doesn't encourage engagement
- Access to state park from downtown
- No bike paths
- No efficient use of public space
- Need a transit/transportation plan

7. What would you work to change about the community, not worried about money or politics?

Responses from the focus groups centered around changing the community's mindset around the area's potential and ability to make positive changes, as well as efforts that would provide for more coordination of efforts around a central vision (i.e., consolidation of services). Other initiatives centered around alleviating poverty and prejudice and providing more support for new and local companies.

- Regionalism; consolidated government (2)
- Changing the community mindset to a more positive one (2)
- Eliminate racism and prejudice—all accepted (2)
- Support growth of new companies (2)
- Anyone has equal opportunity to do what they want
- Consolidate County school districts
- Access to mental health
- Reinvigorate abandoned industrial sites
- Create a public community college
- Cleaning up the city a bit/aesthetics
- Have a world-class public school system
- More headquarters (another Erie Insurance)
- Get rid of BIU (Building Inspection Underwriters)
- Start an angel fund
- Expand and revitalize downtown
- Large investment by Pennsylvania in the City/County
- Local support for local companies
- Lessen poverty

8. Give some examples of local unique and innovative programs or initiatives that you believe are having a positive impact on increasing the competitiveness of the area.

Focus group respondents pointed to initiatives that spark the area’s innovative and entrepreneurial spirit, as well as initiatives that are working to bring the community together. The groups noted the creation of the Innovation District and the cooperation among the area’s colleges and universities and the different areas of excellence pursued by each campus, the work to encourage entrepreneurs, and the work to leverage opportunity zones in the City. Participants also touted the efforts to revitalize downtown and to make the area attractive to tourists year-round.

- Innovation District (2)
- Opportunity zones (2)
- Blue zones; focus on getting population to be healthier
- Mayor (City of Erie) who embraces equity
- People’s supper—bottom-up approach to inclusiveness
- Innovation Beehive Network—in cooperation with four local universities
- Library system (maker space, lots of programs, feed into the entrepreneurial space, coding)
- Largest medical school in the country
- Efforts to attract year-round tourists
- Erie Downtown Development Corp (revamp the core of the City)
- Erie Insurance engagement in the community and other initiatives
- Penn State Erie—plastics engineering program
- Four universities—competing globally
- Converting to a smart city
- Grant to train cyberwarriors
- Recognition that it’s not a single point solution; growth will be in recruiting and growing companies

9. What types of companies do you think would be a good fit for Erie County?

Participants noted industries that can build on the access to broadband in the City’s core, the area’s history in manufacturing, the area’s access to plastics research and resins, and industries that can take advantage of access to fresh water.

- High-tech (2)
- Data and data centers (3)
- Logistics & distribution (2)
- Digital games/software (2)
- Materials (2)
- Plastics (3)
- Agriculture (2)
- Hydroponics
- F&B companies (2)
- Tourism and recreation (2)
- Healthcare (2)
- Those needing fresh water
- Higher ed could/should grow
- Cold industries
- Transportation
- Users of natural gas
- Brewery
- Cyber
- Maritime engineering
- Additive manufacturing
- Industrial IOT

10. What are your past experiences with, and current perceptions of, the various economic development efforts by group(s) involved in investment attraction, retention, and assisting entrepreneurs? How could these efforts or groups be improved?

Participants note the improvement in recent years in economic development efforts but note the parochialism, fragmentation, and lack of resources as a continued impediment. Many of the groups noted the cumbersome nature of having to work through the Building Inspection Underwriters and the outsourcing of efforts to the organization as an impediment.

- Need to be more coordinated regionally, municipalities need to understand what their roles are, lack of institutional knowledge (3)
- We've seen the City and County come together more recently (2)
- LEAD (Lead Economic Development Team) economic development group good start, but needs hierarchy/structure (2); too much fragmentation¹
- Lack of funding for ED efforts; need serious cash flow (2)
- Needs to be a more concerted effort to reach diverse populations
- Change things with BIU
- Lack incentives for capital investment
- There's distrust of the ED group(s)—or skepticism—after the bankruptcy of the GEIDC
- Needs to be supporting entrepreneurship
- Need to get people can believe things can happen here

¹ According to the ERCGP, there are no less than 48 public or public/private organizations that provide some form of economic development service delivery associated with business recruitment, retention, entrepreneurship, hospitality, and downtown redevelopment.

APPENDIX D: ASSETS & CHALLENGES ENDNOTES

Access to Markets

¹500-Mile Radius Results

Geography Name	Year	Total Population
Radius Region	2017	131,054,823

² IBID

³ IBID, close proximity to Canada; FTZ #247

⁴ Interstates 90, 79, and 86 serve the region

⁵ Two Class 1 railroads and Amtrak passenger service http://www.dot7.state.pa.us/BPR_PDF_FILES/MAPS/Statewide/parail.pdf

⁶ Port Erie, 29 ft. channel depth <http://www.porterie.org/about/>

⁷ Erie International Airport (ERI) with daily flights to DTW, CHI, and PHL

⁸ Erie County is lacking access to high-speed broadband internet at the 250 megabits per second (Mbps) or higher levels. This access level is similar to Pennsylvania and higher than the nation.

Erie County's average download speed is 32.63 Mbps, which is lower than the commonwealth and the nation. At least two providers advertise the availability of Gig service in the County.

Access to Labor

⁹ LQ of 1.76; 13,740 production workers

¹⁰ LQ of 1.03; 19,991 Office and Admin Support workers

¹¹ LQ of .68; 1,544 Engineering and Architecture workers

¹² LQ of .77; 1,900 Arts, Design, Entertainment, Sports & Media workers

¹³ LQ of 1.26; 9,400 Healthcare Practitioners & Technical workers

¹⁴ **Average Wages 2013–2018; Source: Emsi**

Highest Figure Shaded

	2013	2018	# Change	% Change
Erie County	\$37,567	\$40,274	\$2,707	7%
Pennsylvania	\$46,961	\$52,004	\$5,043	11%
United States	\$47,593	\$53,258	\$5,665	12%

¹⁵ **2017 Unionization Rate**

	Private	Public	Total
Erie County	3.3%	56.9%	9.8%
Pennsylvania	7.4%	49.8%	12.0%
United States	6.5%	34.4%	10.7%

Data only reported at the MSA level

Source: © 2018 by Barry T. Hirsch and David A. Macpherson, Garner Economics

¹⁶ Five private vo-tech institutions serve Erie, and the Erie County Technical School (public high school). Erie does not have one of the 14 public community colleges in the state. <https://www.education.pa.gov/Postsecondary-Adult/College%20and%20Career%20Education/Pages/Community-Colleges.aspx>

¹⁷ Five, four-year or postgraduate schools in the County, including Penn State Behrend, Mercyhurst University, LECOM, Gannon, Edinboro University

¹⁸ Penn State Behrend; Gannon University

Access to Resources

¹⁹ Erie County ranks 23 out of 67 counties in Pennsylvania in the value of all ag products sold. Erie ranks #1 in the number of grapes produced and sold. Other ag products of significance include corn, soybeans, hay, and aquaculture.

²⁰ LQ of 1.9 in mfg. Nearly 20,000 people employed in the mfg. sector.

²¹ A number of sectors make up this classification with a combined LQ of +/- 1.0

Lead Economic Development Program (Chamber)

²² Three people assigned to economic development department functions, but their roles aren't necessarily aligned with investment growth and retention.

²³ As of 02/2019

²⁴ Chamber volunteer leadership is considering a private sector, 5-year initiative to fund economic development efforts.

²⁵ A consortium of the local economic development groups meet bimonthly, called LEAD—Lead Economic Development Team. There are more than 40 groups engaged in some form of economic development in Erie County.

²⁶ During focus groups, a number of states and data were offered by focus group participants, some of which was factually incorrect.

²⁷ Total of \$30,000 for program related activities (ERCGP), which includes travel, training, and marketing.

Access to Space

- ²⁸ According to CoStar, as of 2/7/2019, there are over 11.2 million square feet of existing industrial space in Erie County with a 7.2 percent vacancy rate, equating to 806,000 vacant square footage. There are limited shovel-ready sites in excess of 50 acres.
- ²⁹ According to CoStar, as of 2/7/2019, there is an aggregate of 5 buildings with a total footprint of 476,444 square feet. The vacancy rate is 2.4 percent, with 11,259 square feet vacant. The five-year average is a 3.8 percent vacancy rate. Class B office space consists of 5.9 million square feet and a vacancy rate of 3.3 percent with 197,000 square feet vacant. There are limited office park developments that will allow a Class A office space campus-like development.

Access to Capital

- ³⁰ A multitude of grant and loan programs: <https://cityof.erie.pa.us/government/economic-community-development/economic-development/>. Projects and incentives are limited to the City of Erie.

Government Impact on Business

- ³¹ According to the ERCGP with data provided by the Erie Water Works, there is 36 MGD excess water and sewer capacity.
- ³² A limited number of incentives offered by the City of Erie <https://cityof.erie.pa.us/government/economic-community-development/economic-development/>. The commonwealth of Pennsylvania offers incentives related to both the Keystone Innovation Zone and the Keystone Opportunity Zone.
- ³³ 13 school districts in Erie County. Test scores are dependent on the school district and may offer a significant disparity.

ACT Average Composite Scores

Highest Score Shaded

	2013	2014	2015	2016	2017
Erie County	19.1	19.7	20.0	20.3	20.9
Pennsylvania	22.7	22.7	22.9	23.1	23.8
United States	20.9	21.0	21.0	20.8	21.0

Source: Pennsylvania Department of Education, Garner Economics

- ³⁴ Based on the feedback from the end user, the companies hiring the graduates of the higher ED institutions in Erie County
- ³⁵ Based on collective feedback from focus groups participants. The City has outsourced its permitting process to a private group. <http://www.biupa.com/>
- ³⁶ One of the highest effective tax rates in Pennsylvania and the U.S. http://www.tax-rates.org/pennsylvania/erie_county_property_tax
- ³⁷ Erie Technology Incubator <http://www.erietech.org/about/what-we-offer>; Erie Innovation District <https://www.erieinnovationdistrict.com/>; <http://nwpaincubators.org/>

Quality of Place

³⁸ 152 homes for sale as of 2/23/2019, according to Zillow.com with the price range of \$350,000 and up.

³⁹ 551 homes for sale as of 2/23/2019, according to Zillow.com with the price range of \$150,000—\$349,999

⁴⁰ Over 380 apartments for rent as of 2/23/2019 according to Apartments.com

⁴¹ **2017 Cost-of-Living Index**

Index	Erie	Pennsylvania
Cost-of-Living Index	86	100
Goods & Services Index	98	100
Grocery Index	97	105
Healthcare Index	86	92
Housing Index	54	91
Transportation Index	103	108
Utilities Index	109	111

Source: C2ER 2017

⁴² Erie Crime Stats

	Property Crime		Violent Crime	
	Crimes Reported	Crime Rate	Crimes Reported	Crime Rate
Erie County	3,745	1,364.1	504	183.6
Pennsylvania	211,220	1,649.4	40,120	313.3
United States	7,694,086	2,362.2	1,247,321	382.9

Sources: Uniform Crime Reports, FBI, Garner Economics

⁴³ Abundant cultural and recreational opportunities exist in Erie, e.g. plays, concerts, etc., <https://www.visiterie.com/events/>

⁴⁴ <https://www.visiterie.com/explore/>

⁴⁵ Based on our own subjective evaluation and stakeholder feedback from the focus groups

⁴⁶ Retail sales in Erie County for 2017 were estimated to be nearly \$4 billion for retail trades, food, and drink sales. It is projected that residents in the County could spend approximately \$3.5 billion on retail purchases. This “retail demand” compared to the retail sales show either a retail gap or surplus. Using estimated data, Erie County has more retail sales than resident demand and therefore has a retail surplus of \$484 million.

⁴⁷ Seven local hospitals with more than 1,000 beds <https://www.eriepa.com/erie-pa-relocation-guide>

⁴⁸ Eighteen (18) AAA three diamond properties; 17, AAA two-diamond properties, as of 2/23/2019

⁴⁹ <https://www.visiterie.com/eat-drink/>

⁵⁰ Based on subjective evaluation and comparison to other revitalized urban CBDs

APPENDIX D: INDUSTRY DETAILS

Specialized industries are highlighted green for location quotients greater than 1.20

NAICS	Description	2018 Jobs	5-Year Change (2013-2018)	2018 Location Quotient	2018 Average Annual Wage
11	Agriculture, Forestry, Fishing and Hunting	697	-46	0.4	\$28,127
111	Crop Production	524	2	0.8	\$27,577
112	Animal Production and Aquaculture	40	-39	0.1	\$27,920
113	Forestry and Logging	24	-4	0.4	\$28,498
114	Fishing, Hunting and Trapping			0.1	
115	Support Activities for Agriculture and Forestry	107	-4	0.2	\$30,858
21	Mining, Quarrying, and Oil and Gas Extraction	52	-82	0.1	\$36,366
211	Oil and Gas Extraction			0.0	
212	Mining (except Oil and Gas)	35	-4	0.2	\$31,740
213	Support Activities for Mining	12	-63	0.0	\$29,566
22	Utilities	421	25	0.9	\$85,426
221	Utilities	421	25	0.9	\$85,426
23	Construction	5,083	-25	0.7	\$42,310
236	Construction of Buildings	1,254	16	0.7	\$39,078
237	Heavy and Civil Engineering Construction	407	27	0.5	\$57,367
238	Specialty Trade Contractors	3,422	-68	0.7	\$41,704
31	Manufacturing	19,425	-3,069	1.9	\$58,100
311	Food Manufacturing	1,758	362	1.3	\$49,401
312	Beverage and Tobacco Product Manufacturing	287	163	1.3	\$30,674
313	Textile Mills	12		0.1	\$49,735
314	Textile Product Mills	23	1	0.2	\$29,217
321	Wood Product Manufacturing	228	-10	0.7	\$27,765
322	Paper Manufacturing	54	-9	0.2	\$37,583
323	Printing and Related Support Activities	533	26	1.4	\$40,399
324	Petroleum and Coal Products Manufacturing	134	22	1.5	\$43,834

NAICS	Description	2018 Jobs	5-Year Change (2013-2018)	2018 Location Quotient	2018 Average Annual Wage
325	Chemical Manufacturing	262	-492	0.4	\$66,998
326	Plastics and Rubber Products Manufacturing	4,414	593	7.4	\$51,721
327	Nonmetallic Mineral Product Manufacturing	237	7	0.7	\$42,943
331	Primary Metal Manufacturing	865	-104	2.8	\$57,820
332	Fabricated Metal Product Manufacturing	3,950	-630	3.3	\$51,370
333	Machinery Manufacturing	1,629	-85	1.8	\$63,701
334	Computer and Electronic Product Manufacturing	717	-314	0.8	\$56,559
335	Electrical Equipment, Appliance, and Component Manufacturing	259	18	0.8	\$47,671
336	Transportation Equipment Manufacturing	3,270	-2,753	2.4	\$88,517
337	Furniture and Related Product Manufacturing	435	84	1.3	\$58,536
339	Miscellaneous Manufacturing	351	39	0.7	\$42,725
42	Wholesale Trade	3,078	-333	0.6	\$52,601
423	Merchant Wholesalers, Durable Goods	1,777	-347	0.7	\$53,736
424	Merchant Wholesalers, Nondurable Goods	970	-51	0.5	\$55,064
425	Wholesale Electronic Markets and Agents and Brokers	330	65	0.6	\$39,256
44	Retail Trade	15,088	-677	1.1	\$25,826
441	Motor Vehicle and Parts Dealers	2,077	88	1.2	\$41,678
442	Furniture and Home Furnishings Stores	343	-30	0.8	\$26,089
443	Electronics and Appliance Stores	362	-72	0.9	\$33,499
444	Building Material and Garden Equipment and Supplies Dealers	1,091	-17	1.0	\$28,217
445	Food and Beverage Stores	2,369	-422	0.9	\$25,663
446	Health and Personal Care Stores	958	-68	1.1	\$34,419
447	Gasoline Stations	1,521	158	2.0	\$18,425
448	Clothing and Clothing Accessories Stores	1,011	-302	0.9	\$15,986
451	Sporting Goods, Hobby, Musical Instrument, and Book Stores	607	-99	1.2	\$17,825
452	General Merchandise Stores	3,458	232	1.4	\$20,965
453	Miscellaneous Store Retailers	821	-59	1.0	\$20,221
454	Nonstore Retailers	470	-85	0.8	\$28,445

NAICS	Description	2018 Jobs	5-Year Change (2013–2018)	2018 Location Quotient	2018 Average Annual Wage
48	Transportation and Warehousing	2,979	135	0.6	\$41,322
481	Air Transportation	36	0	0.1	\$39,439
482	Rail Transportation	95	-25	0.5	\$85,338
483	Water Transportation	0		0.0	\$0
484	Truck Transportation	1,218	73	0.9	\$49,311
485	Transit and Ground Passenger Transportation	698	128	1.3	\$18,723
486	Pipeline Transportation	93	11	2.3	\$82,426
487	Scenic and Sightseeing Transportation	35	24	1.2	\$10,352
488	Support Activities for Transportation	191	12	0.3	\$37,872
492	Couriers and Messengers	323	9	0.5	\$40,710
493	Warehousing and Storage	290	-93	0.3	\$41,575
51	Information	1,095	-225	0.4	\$49,171
511	Publishing Industries (except Internet)	367	-41	0.6	\$56,803
512	Motion Picture and Sound Recording Industries	110	-22	0.3	\$31,157
515	Broadcasting (except Internet)	254	-15	1.1	\$46,188
517	Telecommunications	307	-151	0.5	\$52,651
518	Data Processing, Hosting, and Related Services	20	1	0.1	\$34,341
519	Other Information Services	36	3	0.1	\$26,057
52	Finance and Insurance	5,495	41	1.0	\$75,448
522	Credit Intermediation and Related Activities	1,301	-170	0.6	\$51,524
523	Securities, Commodity Contracts, and Other Financial Investments and Related Activities	270	6	0.3	\$111,081
524	Insurance Carriers and Related Activities	3,925	206	1.7	\$80,926
525	Funds, Trusts, and Other Financial Vehicles	0	0	0.0	\$0
53	Real Estate and Rental and Leasing	1,246	84	0.6	\$37,321
531	Real Estate	948	57	0.5	\$40,325
532	Rental and Leasing Services	295	24	0.6	\$26,651
54	Professional, Scientific, and Technical Services	3,692	23	0.4	\$49,159
541	Professional, Scientific, and Technical Services	3,692	23	0.4	\$49,159

NAICS	Description	2018 Jobs	5-Year Change (2013–2018)	2018 Location Quotient	2018 Average Annual Wage
55	Management of Companies and Enterprises	655	65	0.3	\$81,952
551	Management of Companies and Enterprises	655	65	0.3	\$81,952
56	Administrative and Support and Waste Management and Remediation Services	6,074	556	0.7	\$22,764
561	Administrative and Support Services	5,861	552	0.7	\$21,519
562	Waste Management and Remediation Services	213	4	0.6	\$57,079
61	Educational Services	5,871	67	1.7	\$27,974
611	Educational Services	5,871	67	1.7	\$27,974
621	Ambulatory Health Care Services	7,739	485	1.2	\$67,167
622	Hospitals	5,285	-196	1.3	\$46,669
623	Nursing and Residential Care Facilities	5,553	36	2.0	\$29,807
624	Social Assistance	6,074	723	1.7	\$21,322
71	Arts, Entertainment, and Recreation	2,929	-83	1.3	\$19,752
711	Performing Arts, Spectator Sports, and Related Industries	385	-41	0.6	\$18,404
712	Museums, Historical Sites, and Similar Institutions	156	6	1.1	\$22,322
713	Amusement, Gambling, and Recreation Industries	2,388	-49	1.6	\$19,802
72	Accommodation and Food Services	11,658	714	1.0	\$14,577
721	Accommodation	1,276	105	0.8	\$17,198
722	Food Services and Drinking Places	10,382	609	1.1	\$14,255
81	Other Services (except Public Administration)	6,752	-241	1.1	\$23,867
811	Repair and Maintenance	1,344	-322	1.0	\$41,727
812	Personal and Laundry Services	1,778	87	1.0	\$21,583
813	Religious, Grantmaking, Civic, Professional, and Similar Organizations	3,421	16	1.4	\$18,701
814	Private Households	209	-22	0.3	\$12,984
90	Government	16,064	-596	0.8	\$48,423
901	Federal Government	2,285	14	0.6	\$55,656
902	State Government	4,007	-145	0.9	\$51,624
903	Local Government	9,772	-466	0.8	\$45,419
Total		133,007	-2,621		\$40,274

Source: ESRI, Garner Economics

APPENDIX E: OCCUPATIONAL DETAILS

Specialized occupational categories are highlighted green for location quotients greater than 1.20

SOC Code	Description	2018 Jobs	5-Year Change (2013–2018)	2018 Location Quotient	2018 Avg. Hourly Wage
11-0000	Management	5,129	(147)	0.69	\$45.82
11-1000	Top Executives	1,438	(95)	0.67	\$58.46
11-2000	Advertising, Marketing, Promotions, Public Relations, and Sales Managers	247	(32)	0.40	\$66.70
11-3000	Operations Specialties Managers	1,178	(61)	0.73	\$52.00
11-9000	Other Management	2,266	39	0.74	\$32.36
13-0000	Business & Financial Operations	4,506	(87)	0.65	\$28.69
13-1000	Business Operations Specialists	2,590	26	0.59	\$29.13
13-2000	Financial Specialists	1,916	(113)	0.78	\$28.10
15-0000	Computer & Mathematical	1,825	48	0.48	\$33.00
15-1100	Computer	1,734	23	0.47	\$32.95
15-2000	Mathematical Science	91	24	0.57	\$33.98
17-0000	Architecture & Engineering	1,544	(257)	0.68	\$32.03
17-1000	Architects, Surveyors, and Cartographers	37	(6)	0.21	\$21.30
17-2000	Engineers	966	(213)	0.66	\$36.48
17-3000	Drafters, Engineering Technicians, and Mapping Technicians	541	(38)	0.88	\$24.90
19-0000	Life, Physical & Social Science	570	(21)	0.52	\$32.41
19-1000	Life Scientists	147	15	0.55	\$41.98
19-2000	Physical Scientists	89	(23)	0.38	\$37.28
19-3000	Social Scientists and Related Workers	154	(14)	0.57	\$32.28
19-4000	Life, Physical, and Social Science Technicians	180	1	0.55	\$22.23
21-0000	Community & Social Service	2,983	53	1.36	\$19.70
21-1000	Counselors, Social Workers, and Other Community and Social Service Specialists	2,622	41	1.46	\$19.70
21-2000	Religious Workers	361	12	0.90	\$19.72
23-0000	Legal	500	(15)	0.45	\$40.57
23-1000	Lawyers, Judges, and Related Workers	347	(14)	0.47	\$48.24
23-2000	Legal Support Workers	153	(2)	0.41	\$22.98
25-0000	Education, Training & Library	7,909	(161)	1.05	\$23.01
25-1000	Postsecondary Teachers	2,141	(100)	1.73	\$30.75
25-2000	Preschool, Primary, Secondary, and Special Education School Teachers	3,339	(58)	0.95	\$23.96

SOC Code	Description	2018 Jobs	5-Year Change (2013–2018)	2018 Location Quotient	2018 Avg. Hourly Wage
25-3000	Other Teachers and Instructors	755	(24)	0.63	\$14.56
25-4000	Librarians, Curators, and Archivists	217	(20)	0.95	\$22.31
25-9000	Other Education, Training, and Library	1,458	42	1.07	\$13.88
27-0000	Arts, Design, Entertainment, Sports & Media	1,899	57	0.77	\$19.51
27-1000	Art and Design Workers	625	50	0.84	\$16.46
27-2000	Entertainers and Performers, Sports and Related Workers	648	17	0.92	\$18.96
27-3000	Media and Communication Workers	443	(18)	0.65	\$25.04
27-4000	Media and Communication Equipment Workers	184	8	0.56	\$18.72
29-0000	Healthcare Practitioners & Technical	9,308	323	1.26	\$37.22
29-1000	Health Diagnosing and Treating Practitioners	6,024	289	1.31	\$45.79
29-2000	Health Technologists and Technicians	3,094	25	1.18	\$21.10
29-9000	Other Healthcare Practitioners and Technical	190	9	1.24	\$28.74
31-0000	Healthcare Support	4,584	(364)	1.27	\$14.53
31-1000	Nursing, Psychiatric, and Home Health Aides	2,678	(536)	1.30	\$12.61
31-2000	Occupational Therapy and Physical Therapist Assistants and Aides	432	93	2.67	\$22.67
31-9000	Other Healthcare Support	1,475	78	1.06	\$15.61
33-0000	Protective Service	2,701	(176)	0.91	\$22.94
33-1000	Supervisors of Protective Service Workers	138	(11)	0.57	\$35.94
33-2000	Fire Fighting and Prevention Workers	108	(14)	0.38	\$28.20
33-3000	Law Enforcement Workers	1,223	(57)	1.14	\$30.68
33-9000	Other Protective Service Workers	1,233	(94)	0.89	\$13.49
35-0000	Food Preparation & Serving Related	12,644	584	1.14	\$10.41
35-1000	Supervisors of Food Preparation and Serving Workers	964	20	1.06	\$16.81
35-2000	Cooks and Food Preparation Workers	2,454	103	0.89	\$10.83
35-3000	Food and Beverage Serving Workers	8,099	451	1.29	\$9.72
35-9000	Other Food Preparation and Serving Related Workers	1,127	9	0.95	\$8.96
37-0000	Building, Grounds Cleaning & Maintenance	4,749	14	0.97	\$11.52
37-1000	Supervisors of Building and Grounds Cleaning and Maintenance Workers	212	(13)	0.73	\$16.57
37-2000	Building Cleaning and Pest Control Workers	3,451	(87)	1.00	\$10.97
37-3000	Grounds Maintenance Workers	1,086	114	0.94	\$12.31
39-0000	Personal Care & Service	8,243	1,239	1.44	\$11.50
39-1000	Supervisors of Personal Care and Service Workers	349	67	1.56	\$16.70
39-2000	Animal Care and Service Workers	290	58	1.15	\$11.31

SOC Code	Description	2018 Jobs	5-Year Change (2013–2018)	2018 Location Quotient	2018 Avg. Hourly Wage
39-3000	Entertainment Attendants and Related Workers	809	(105)	1.55	\$9.73
39-4000	Funeral Service Workers	136	19	2.59	\$18.70
39-5000	Personal Appearance Workers	989	7	1.18	\$11.25
39-6000	Baggage Porters, Bellhops, and Concierges	23	1	0.32	\$17.81
39-7000	Tour and Travel Guides	25	4	0.51	\$13.97
39-9000	Other Personal Care and Service Workers	5,622	1,187	1.52	\$11.27
41-0000	Sales & Related	12,956	(654)	0.98	\$15.75
41-1000	Supervisors of Sales Workers	1,401	(123)	0.96	\$21.41
41-2000	Retail Sales Workers	8,414	(461)	1.17	\$10.82
41-3000	Sales Representatives, Services	1,298	92	0.61	\$28.71
41-4000	Sales Representatives, Wholesale and Manufacturing	1,128	(127)	0.77	\$29.32
41-9000	Other Sales and Related Workers	714	(34)	0.76	\$18.26
43-0000	Office & Administrative Support	19,991	(842)	1.03	\$16.11
43-1000	Supervisors of Office and Administrative Support Workers	1,305	11	1.06	\$25.65
43-2000	Communications Equipment Operators	80	(38)	1.01	\$12.41
43-3000	Financial Clerks	2,526	(364)	0.94	\$16.25
43-4000	Information and Record Clerks	5,043	(7)	1.03	\$14.51
43-5000	Material Recording, Scheduling, Dispatching, and Distributing Workers	3,295	(57)	0.94	\$16.20
43-6000	Secretaries and Administrative Assistants	3,257	(177)	0.98	\$16.22
43-9000	Other Office and Administrative Support Workers	4,484	(210)	1.22	\$14.99
45-0000	Farming, Fishing & Forestry	424	(0)	0.42	\$14.35
45-1000	Supervisors of Farming, Fishing, and Forestry Workers	22	1	0.48	\$44.09
45-2000	Agricultural Workers	375	0	0.43	\$12.27
45-3000	Fishing and Hunting Workers	<10	#VALUE!	0.14	
45-4000	Forest, Conservation, and Logging Workers	24	(2)	0.42	\$19.64
47-0000	Construction & Extraction	4,465	(116)	0.74	\$21.53
47-1000	Supervisors of Construction and Extraction Workers	229	(15)	0.42	\$25.37
47-2000	Construction Trades Workers	3,778	(44)	0.80	\$21.49
47-3000	Helpers, Construction Trades	64	(18)	0.31	\$13.43
47-4000	Other Construction and Related Workers	369	(12)	0.98	\$20.77
47-5000	Extraction Workers	26	(27)	0.14	\$22.91
49-0000	Installation, Maintenance & Repair	4,872	(333)	0.94	\$20.24
49-1000	Supervisors of Installation, Maintenance, and Repair Workers	374	(27)	0.93	\$30.58

SOC Code	Description	2018 Jobs	5-Year Change (2013–2018)	2018 Location Quotient	2018 Avg. Hourly Wage
49-2000	Electrical and Electronic Equipment Mechanics, Installers, and Repairers	216	(71)	0.38	\$20.76
49-3000	Vehicle and Mobile Equipment Mechanics, Installers, and Repairers	1,579	(116)	1.02	\$19.36
49-9000	Other Installation, Maintenance, and Repair	2,703	(120)	1.01	\$19.29
51-0000	Production	13,740	(1,732)	1.76	\$16.89
51-1000	Supervisors of Production Workers	887	(41)	1.72	\$26.26
51-2000	Assemblers and Fabricators	2,413	(625)	1.67	\$14.25
51-3000	Food Processing Workers	773	152	1.12	\$13.91
51-4000	Metal Workers and Plastic Workers	5,354	(809)	3.25	\$17.45
51-5100	Printing Workers	274	20	1.31	\$17.77
51-6000	Textile, Apparel, and Furnishings Workers	326	(9)	0.61	\$12.69
51-7000	Woodworkers	229	24	0.98	\$16.62
51-8000	Plant and System Operators	177	(25)	0.67	\$23.77
51-9000	Other Production	3,308	(419)	1.47	\$16.13
53-0000	Transportation & Material Moving	7,154	(27)	0.79	\$15.60
53-1000	Supervisors of Transportation and Material Moving Workers	223	(29)	0.64	\$26.08
53-2000	Air Transportation Workers	104	9	0.36	\$30.47
53-3000	Motor Vehicle Operators	3,160	150	0.84	\$16.16
53-4000	Rail Transportation Workers	57	(23)	0.56	\$25.89
53-5000	Water Transportation Workers	30	1	0.32	\$25.49
53-6000	Other Transportation Workers	369	(9)	1.06	\$12.53
53-7000	Material Moving Workers	3,211	(127)	0.78	\$13.90
55-0000	Military-only	311	(5)	0.45	\$26.43
55-9000	Military-only	311	(5)	0.45	\$26.43
Total		133,007	(2,621)		\$19.72

Source: ESRI, Garner Economics