

Erie County's 21st Century Plan to Effectively Grow the Talent Pipeline

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Prepared for the:



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INTRODUCTION & EXECUTIVE SUMMARY

The Erie Regional Chamber and Growth Partnership (ERCGP) was formed in November 2002 through the merger of three organizations—the Erie Conference on Community Development, the Erie Area Chamber of Commerce, and Erie Insight—to be the voice of the business community providing advocacy and access to people, information, and education.¹ In early 2019, the ERCGP commissioned Garner Economics, LLC to deliver a *Competitive Realities Report and Target Industry Strategy* for Erie County. The recommendations of that report included the ERCGP taking the lead in developing a county-level workforce development strategy. An economic development organization's success is measured in job creation, retention, and investment; in short—wealth creation for a community's citizens. The number one differentiator between Erie and its competition is having irrefutable proof of a skilled workforce that is ready to work on day one as well as a talent pipeline that is ready to fill the jobs of tomorrow. Thus, Garner Economics coined the phrase, *Talent is the New Currency™!*

Acting upon that recommendation and understanding the importance of a skilled workforce, the Chamber again commissioned Garner Economics to conduct a comprehensive workforce development delivery assessment for Erie County with actions needed to improve its current system.



The process for conducting this assessment was laid out in a manner to discover what is working well and where there are gaps in the system. Information was collected to assemble a high-level overview of the workforce development delivery system. An analysis of the information obtained was used to identify gaps that if closed, would lead to an improved system.

A steering committee² was formed to assist as requested with the project. Their supporting efforts included identifying workforce development partners, advising on which partners to interview, providing feedback on survey questions, sharing high level perspectives on an ideal workforce development delivery system, participating in individual interviews and reviewing the draft final report.

**105 Stakeholder
contacts including
82 employers
representing over
10,000 employees.**

The discovery phase included one-to-one in-person or phone interviews with twenty-three (23) workforce development partners, one employer focus group meeting with twelve participants, and one employer survey with seventy respondents representing more than 10,000 Erie County employees for a total of 105 community contacts. During this phase, requests for information were made from the various workforce partners and desktop research was conducted to supplement information. This work is detailed in Chapter 1, Erie County Workforce Stakeholders.

¹ About Us, Erie Regional Chamber and Growth Partnership website eriepa.com

² A list of steering committee members may be found in the Acknowledgments

The synthesis and analysis phase, detailed in Chapter 2, produced the Erie County workforce development delivery assessment that included a mapping of the workforce development assets. In addition, a skills gap evaluation was completed for the County. The results of this phase culminated in a SWOT (Strength, Weaknesses, Opportunities, and Threats) Analysis. Included in this section is an alignment of workforce delivery assets to Erie's target industries.

Chapter 3 contains a new analysis developed by Garner Economics to evaluate college graduate retention, known as the **Garner Economics College Graduate Retention Analysis**. A refresh on workforce data provided in the *Competitive Realities Report and Target Industry Strategy* is also included.

The work outlined in Chapters 2 and 3 led to the development of observations and recommendations that are offered in the recommendations chapter (Chapter 4). Six recommendations are organized into three categories: Transformational, Organizational, and Expansion.

COVID-19 PANDEMIC

The discovery and findings in this report were conducted prior to the COVID19 Pandemic. This national closing down response, known as the Great Pause, has led to an unprecedented rise in unemployment. As we emerge from the Great Pause to the Great Pivot (as termed by Garner Economics) and people begin to return to work, one constant that will not change is employers will continue to require skilled workers to fill jobs.



Employer Feedback

Seventy Erie County employers representing more than 10,000 employees were surveyed to obtain feedback on the Erie County workforce development delivery system. In addition, an employer focus group was held to obtain greater insights. This 12-participant focus group consisted of leaders with knowledge on the County's workforce development efforts. Both the survey and focus groups were representative of various business sectors and sizes. Below is a summary of the top findings.

Positive Employer Survey Findings

- Positive perception of four-year colleges and universities
- Ninety-four percent of survey respondents plan to hire over the next three years
- Most survey respondents are interested in engaging in work-based learning
- Workforce & Economic Development Network [WEDnetPA] training reimbursement resources are valued
- Positive perception of the Erie County Career Pathway Alliance
- Positive perception of Career Street
- Majority of employers provide career development opportunities to their employees



Neutral Employer Survey Findings

- College graduates, adult education technical training completers, and technical school completers are perceived as meeting a preparedness level needed for a job
- Only half of those surveyed engage in customized technical training of their employees
- Limited use of WEDnetPA resources by survey respondents who have engaged in customized training
- Survey respondents did not indicate they use the public workforce system in job candidate recruitment



Negative Employer Findings

- Focus group employers perceive Erie County workforce system as disconnected and stuck in the past
- Lack of available skilled candidate pool from entry to senior positions
- Not enough technical training facilities and lack of a public community college is a hindrance in building the talent pipeline
- High school students are not prepared for work
- Workforce resource communications are not effective
- Students lack soft skills necessary for work
- Current training offerings do not meet employer needs
- Limited use of IRC [industry recognized credentials] for hiring outside of required occupational licenses
- Lack of confidence in the workforce to support local industry expansion and recruitment
- Concerns about the ability of Erie County to retain its skilled workforce



Workforce Development Delivery System Stakeholders

Fifty-three workforce stakeholders from education, workforce organizations, economic development groups, industry associations, and community organizations were identified. Twenty-three of those were selected to participate in either in-person or phone interviews. The purpose of the interviews was to obtain an understanding of the Erie County workforce development delivery system, from both a long- and short-term talent pipeline perspective and to map these resources to understand the strengths and gaps of the current system.



Workforce Service Delivery Assessment Summary

The information collected during the discovery phase was synthesized and analyzed by Garner Economics to evaluate what is working well and identify gaps. A summary of the top strengths and weaknesses along with identified opportunities and threats are listed below based on the synthesis and analysis of information obtained. It should be noted that barriers to employment were not evaluated in this assessment. The strengths and weaknesses are elaborated throughout the report. A narrative is provided below on the opportunities and threats. The insights gleaned through the SWOT analysis are used to formulate the recommendations provided.

Strength, Weaknesses, Opportunities and Threats (SWOT) Assessment of Erie County's Workforce Service Delivery System

Strengths	Weaknesses
<ul style="list-style-type: none"> - Good high school graduation rate with most school districts above the state average - Good presence of Science, Technology, Engineering, and Math [STEM] programs with several STEM academies - Availability and access to Career and Technical Education [CTE] programs - Career Street - Erie County Career Pathway Alliance - Alignment of career pathways to regular and CTE programs - Four-year colleges and universities offering a variety of programs of study with unique, high-tech facilities - Good university/industry partnerships 	<ul style="list-style-type: none"> - Lack of an Erie County workforce development overarching strategic plan, organization, and messaging - Lack of real-time data to document workforce development delivery system outcomes - Disconnected short-term training system that is a barrier to advancing the skills and education attainment levels - Students graduating without the soft skills employers' value - Lack of affordable two-year postsecondary institutions - Limited dual enrollment opportunities for CTE students - Limited internships and apprenticeships for high school students - Inability to access national and federal public community college specific grants
Opportunities	Threats
<ul style="list-style-type: none"> - Increase computer and digital literacy education through PAsmart grant opportunities at all high schools - Monitor potential new grant funding opportunities associated with Governor Wolf's Command Center recommendations - Increase employer usage of WEDnet resources for training 	<ul style="list-style-type: none"> - No 'bricks and mortar' public community college - On average, 26% of postsecondary graduates remain in Erie

Opportunities

There are a few opportunities highlighted in the SWOT analysis. The first is to increase digital literacy and computer learning at the high school level. It is noted that several high schools are already taking measures to improve student digital learning opportunities. However, with the speed of technology changes, all schools want to have programs in place that can keep pace. The College Board has a relatively new Advanced Placement (AP) course known as Computer Science Principles designed to increase understanding of computer science fundamentals and increase students' engagement in associated careers. The downside is the costs associated with AP programs. Teacher training through Teacher in the Workplace grants and other supports are available to assist high schools in ensuring they have teachers prepared to provide quality instruction in this program. There are also other digital literacy and computer information programs with curriculum available that schools may use to further expand this type of instruction. With the PA Smart grants available, there is ample opportunity to expand student learning in this area.

Another opportunity is for Erie County to obtain resources currently identified in Governor Wolf's budget and associated with the Governor's Economic and Workforce Development Command Center. Currently the Governor's budget proposes \$12 million for competitive grants to address employment barriers and an additional \$2 million funding for the WEDnetPA program. The survey analysis showed that while employers are engaging in technical training for their employees, only a small percentage of them are receiving WEDnetPA funding reimbursement. It may be helpful in the immediate future to engage employers in a dialogue to better understand why they are not using these funds. Insights gained from those conversations may be helpful to expand Erie employer led training for skill development through leveraging current and additional new WEDnetPA funding.

Threats

There are two significant threats to the vitality of Erie County's workforce development delivery system. The first is the absence of a bricks and mortar public community college. The second is the low retention rate of college graduates.

The synthesis and analysis of information and data presented in subsequent chapters shows that the current workforce development delivery system does not allow for easy upward mobility of the adult working population. The region needs a bricks and mortar public community college that provides technical education and training through flexible career pathways with on and off ramps. Pennsylvania acknowledges the important role of community colleges on its website, stating:

Community colleges are unique among institutions in Pennsylvania because of their local support. As a result, they are particularly responsive to the educational needs of their sponsoring areas. Not only do they provide a diversity of two-year associate degree and certificate programs in the occupational and technical areas, but they also are an important means of access for students in the arts, sciences, and professions seeking to transfer at the end of two years to four-year institutions.

Further, community colleges are at the forefront of remedial and developmental education, dual enrollment opportunities for secondary school students, workforce development and public safety training. Within their regional service areas, these institutions have expanded educational

opportunities for individuals from all walks of life and have contributed significantly to the economic, social and cultural development of their area.³

Pennsylvania Commission for Community Colleges is the primary advocate on behalf of the 14 community colleges. Its website acknowledges “the increasingly important role of community colleges in educating and training current and future generations of workers by providing *affordable* and *responsive* higher education to hundreds of thousands of Pennsylvanians each year.”⁴

Reviewing employment growth for Pennsylvania metropolitan statistical areas (MSAs) close in size to Erie shows that MSAs that have a public community college have experienced positive employment growth while Erie, during the same timeframe, experienced negative employment growth. This data supports the positive economic impact a community college has on the local community.

***Comparison of Pennsylvania MSA With Similar Population by
Public Community College and Economic Growth***

Metropolitan Statistical Area (MSA)	Population	Public Community College	Job Growth 2013–2018
York	448,273	Harrisburg Area Community College–York	5%
Reading	420,152	Reading Community College	6%
Erie	272,061	None	-2%
East Stroudsburg	169,506	Northampton Community College-Monroe	5%

Source: US DOL Bureau of Labor Statistics, Data USA

Data provided in Chapter 2 (Table 2.1) shows that the occupations with the largest openings are those associated with short- and medium-term training. Currently in Erie County this training is offered through adult education evening programs at high schools or at technical training facilities. Neither of these provide a career pathway for individuals. This is the disconnection in Erie County’s short-term training because there is a lack of connectivity from adult education and technical training institutes to further education advancement. There is an additional threat because the technical training facilities in Erie are expensive ranging from \$15,000 to \$20,000 for tuition and fees (Table 1.17). The average tuition and fees for a Pennsylvania community college is \$5,274 (page 61). The result of this current situation is that most often individuals are filling these jobs lacking the necessary skills, which leads to greater turnover and more challenges for both employers and employees. When job preparation requiring both short- and medium-term training are done at a public community college through flexible career pathways built upon stackable credentials, individuals do not just start with a job, but they can launch a career. When this short- and medium-term training is done at an institution with the same accreditation as four-year colleges⁵, it further provides upward mobility through easier matriculation to a four-year institution thus creating a connected system.

³ <https://www.education.pa.gov/Postsecondary-Adult/CollegeCareer/Pages/Community-Colleges.aspx>.

⁴ <https://pacommunitycolleges.org>

⁵ <https://collegedegreecomplete.com/accreditation-issues-that-can-affect-your-ability-to-transfer-credits/>

The Garner Economic College Graduate Retention Analysis developed in Chapter 2 shows glaring gaps in the ability of Erie to develop and retain its college graduate workforce aligned to the projected needs of its target and existing businesses. This is a threat to Erie County being able to expand and attract businesses. On average, 61% of students who attend a community college will live within 50 miles of that college, whereas, 40% of state university graduates will live within 50 miles of the university. Graduates of elite schools tend to flock to big cities, and nearly 40% are over 500 miles from the university.⁶ To close this gap, Erie County needs to create affordable, flexible pathways for its population. This reinforces the need for a public community college for Erie and to provide upward mobility for its workforce through affordable, flexible career pathways consisting of stackable credentials with an additional benefit of increasing its skilled workforce retention. Additional further evidence to support the case for a bricks and mortar community college for Erie County is found in Recommendation 1 on page 59.

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Vision Statement

Garner Economics has crafted a vision for Erie County's Workforce Development Delivery System based on information obtained through its discovery, synthesis and analysis.

A Future Vision for Erie County's Workforce Development Delivery System

Erie County's ideal workforce development delivery system is a demand-driven, innovative collaboration united under one common strategy, led by a single county-based entity. It will effectively deliver education and training at state-of-the-art facilities to ensure people are prepared for chosen careers, and it ensures businesses have the talent pipeline they need to fill 21st-century jobs.

⁶ Emsi Alumni Insight Tool, 2018, "How Your School Affects Where You Live"

CHAPTER 1: ERIE COUNTY WORKFORCE STAKEHOLDERS

This chapter provides information on the current state of the workforce development delivery system from a supply and demand stakeholder perspective. It begins with the demand side, providing information and feedback on what Erie County employers think of the workforce development delivery system. Information was gathered from two methods: an employer survey and a focus group of area employers. Included in the information gathered are the top skills desired by Erie County employers and employer perceptions of strengths and weaknesses of the current workforce development delivery system.

The employer stakeholder feedback is followed by information obtained from workforce partner groups that are a representative subset of all the Erie County workforce development partners⁷ (supply side). These partners included leaders from educational institutions and training providers, workforce organizations, business associations, economic development, and other community organizations. Information was gathered through a series of interviews and organized in a consistent manner to facilitate identifying the workforce development delivery contributions.

The narrative in this section is organized by long- and short-term talent pipeline development service delivery. Information shared by the partners, data collected, and desktop research are used to map the current state of the local workforce development delivery system.

Summary of Findings

Erie County has a solid long-term talent development pipeline. It also has workforce partners that have a sense of community and a desire to partner for the greater good of Erie County. It does, however, have a disconnect short-term talent delivery system as noted by many local employers. The private training institutions that are a part of this system, have high tuition and fees, making it challenging for working adults to attend. In addition, these institutions lack accreditations that make it easier to transfer credits to four-year universities. While the adult technical training facilities are more affordable, they do not provide a path for upward mobility. The short-term adult technical training facilities visited were adequate but lacked state-of-the-art equipment. Overall, the program completers in the short-term training institutions are not at the level to keep pace with employer demands which leads to employers hiring individuals without skills and training them on the job. This process as previously stated is leading to employer dissatisfaction with the quality of the general population workforce as noted in the survey (page 16). One bright spot in the short-term training system are the continuing education programs offered by the universities that are serving Erie residents in large numbers.

While there is funding being secured for STEM, apprenticeship programs and other initiatives, there is no avenue to secure the abundance of funding available through national and federal programs specifically designed for community colleges. This is a huge gap for Erie as national community college funding often pays for training and purchasing of equipment for laboratories. National and federal community college grant funding especially for equipment does usually require matched community funding. However, often employers are incentivized to contribute to these matching grants as they are the direct benefactors of them.

⁷ A list of all Erie County identified workforce partner stakeholders may be found in Appendix A.

In evaluating Figure 1.13 and the narrative that follows that begins on page 28, it is clear that the community is lacking an affordable workforce development training institution that can provide short-term skill training in state-of-the-art facilities while also enabling a career pathway for upward mobility of its adult population. Our recommendations found beginning on page 58, can help close this gap.

Section 1.1 What Do Employers Think?

A demand-driven workforce development delivery system is one designed to contribute to the community's economic growth by providing training and services that meet the needs of employers. That is to say – the employer is the primary customer. With this end goal in mind, the first step is to understand the employer's perspective on the current workforce delivery system. In partnership with the ERCGP, Garner Economics conducted a two-prong approach to engage employers in this assessment. The first prong was conducting a survey that would gain insights into employer perceptions of the workforce they currently hire, what skills employers need, and their perspectives on the current workforce development delivery system. The second prong was to conduct a focus group interview with employers representing a diverse cross-section of business sectors to provide deeper insights into the employer survey responses.

Section 1.1.1 Employer Survey

In partnership with the ERCGP, Garner Economics conducted an electronic survey of approximately 750 Erie County employer chamber members promoted by the chamber via email over a two-week period from December 9 through December 18, 2019. There were 70 respondents to the survey. The respondent pool was diverse, representing 16 industry clusters (Table 1.1) and approximately 10,000 employees (Table 1.2). January 2020 data from the Pennsylvania Center for Workforce Information and Analysis shows about 124,700 people are employed in the County. For analysis purposes, survey results from some industry clusters that require a similar workforce skill set such as Construction and Utilities are grouped together.

Table 1.1 Industry Sectors Represented in Survey

Respondents by Sector	Respondents
Manufacturing	13
Professional, Scientific, and Technical Services	7
Health Care and Social Assistance	6
Construction	5
Finance and Insurance	5
Other Services (except Public Administration)	5
Transportation and Warehousing (Logistics)	5
Utilities	4
Real Estate and Rental and Leasing	4
Educational Services	4
Retail Trade	3
Accommodation and Food Services	3
Information	2
Arts, Entertainment, and Recreation	2
Wholesale Trade	1
Public Administration	1
All Sectors	70

Table 1.2 Survey Respondents by Size

Respondents by Sector	Number of Employees						
	0–25	26–50	51–100	101–250	251–500	501–1000	Over 1001
All Sectors	31	10	10	11	2	1	5
Construction and Utilities*	5	1		2	1		
Finance and Insurance	1	2		2			
Health Care and Social Assistance	1			1	1		
Manufacturing	2	3	6	1			1
Profession, Scientific, Technical Services, and Information*	5	1	2	1			
Transportation and Warehousing (Logistics)	3			2			

*Combined sectors for analysis purposes

Education Level of New Hires

The majority of those surveyed (39 respondents) hire high school students for entry-level positions. The second-largest number of those surveyed (16 respondents) indicated they hire bachelor's degree graduates for entry-level positions (Table 1.3).

Table 1.3 Entry-Level New Hire Education Levels

Respondents by Sector	Entry-Level New Hire Education Level Required				
	High School	Technical Certificate	Associate Degree	Bachelor's Degree	Other
All Sectors	39	4	8	16	3
Construction and Utilities*	5		3		1
Finance and Insurance	2			3	
Health Care and Social Assistance	5			1	
Manufacturing	9	2	1		1
Profession, Scientific, Technical Services, and Information*	3		1	5	
Transportation and Warehousing (Logistics)	4	1			

*Combined sectors for analysis purposes

The survey data shows that all 16 Erie County business sectors represented in the survey hire some high school graduates for some entry-level positions. Respondents provided clarifying information in comments shared. While the high school requirement is representative of the minimum education level needed, it does not rule out that applicants for these entry-level positions may have postsecondary degrees. Comments provided by respondents broken down by industry sector are listed in Table 1.4. It is worth noting that several comments indicated a desire to hire entry-level positions with an associate degree.

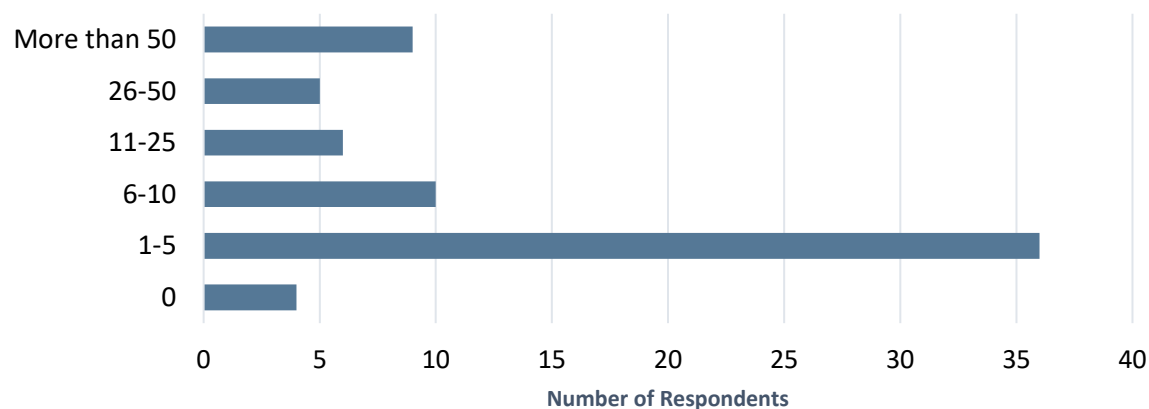
Table 1.4 New Hire Education Level Required Per Respondent Comments

Industry Sector	Comments
All Other Sectors	<ul style="list-style-type: none"> • Associate degree is preferred • Either paralegal or associate degree serves well for most positions • Entry-level field service technicians prefer associate degree
Construction and Utilities	<ul style="list-style-type: none"> • We can apprentice so educational attainment is not a factor
Finance and Insurance	<ul style="list-style-type: none"> • No comments
Health Care and Social Assistance	<ul style="list-style-type: none"> • No comments
Manufacturing	<ul style="list-style-type: none"> • Salaried professionals typically require bachelor's degree • GED, technical certificate or equivalent
Professional, Scientific, Technical Services, and Information	<ul style="list-style-type: none"> • Latest hire only has high school degree but has shown great willingness to learn • Most entry-level jobs are four-year college degree
Transportation and Warehousing (Logistics)	<ul style="list-style-type: none"> • Drivers require commercial driver's license (CDL) • Only require high school diploma degree but 90% of employees have baccalaureate • Senior manager positions require a bachelor's degree

Hiring Trends

The survey queried respondents to gain insights into hiring trends over the next one to three years. Estimates are that about 1,100 entry-level positions will need to be filled by the 70 survey respondents. The respondents are from organizations that employ an estimated 8% of the currently employed workforce in Erie County.

Figure 1.1 Estimated Number of Entry-Level New Hires*

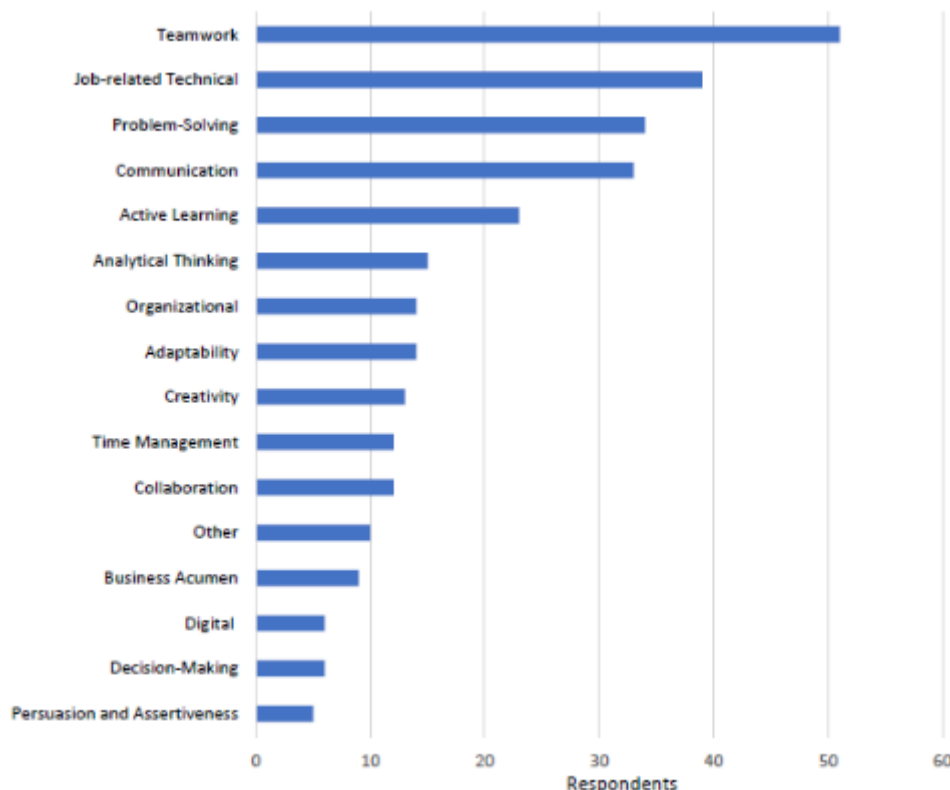


*Over one- to three-year period

Top Skills Desired in New Hires

Employer survey respondents were asked to select their top three skills desired in new hires from a list provided. The responses are shown in Figure 1.2 with the top in-demand skills from the list provided, which are teamwork, technical, problem-solving, and communication. These skills are consistently the top ones identified across all industry sectors and are sometimes referred to as “soft or basic skills” by companies and academia.

Figure 1.2 Top Skills Desired in New Hires



For the category of “Other” skills, Erie County employer respondents provided the following answers for desirable skills in entry-level new hires. Results are shown in a word cloud in Figure 1.3.

Figure 1.3 Word Cloud of “Other” Desired Entry-Level Skills Responses



Top Technical Skills Desired in New Hires

Employers were asked to further define what technical skills they find most desirable in new hires. This question was open-ended and yielded a variety of responses. However, there was a common thread across all industry sectors: computer skills. While computer skills are desired in all entry-level hires, the expertise level of computer skills ranged from basic to more advanced. A summary table of the range of entry-level desired computer skills is cataloged in Table 1.5.

Table 1.5 Catalogue of Respondents Desired Entry-Level Computer Skills

Catalog of Desired Entry-level Computer Skills
Basic Computer
Advanced Computer
Microsoft Office Suite
Security
Social Media
Digital Acumen
Digital Marketing
Data Analysis

In addition to the high-level computer skills mentioned above, some respondents desired the following specific programming or application software skills listed in Table 1.6.

Table 1.6 Detailed Entry-Level New Hire Desired Computer Skills

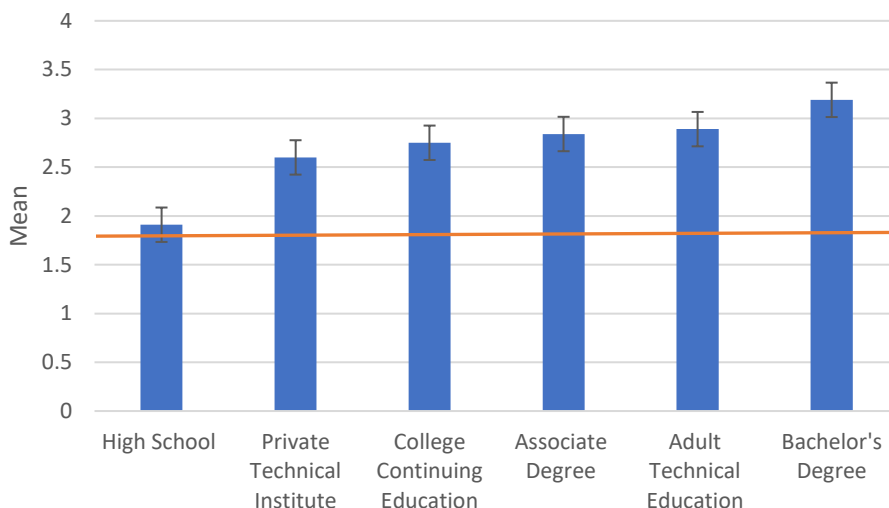
Application Software Skills	Program or Platform Skills
G-Suite, Trello, Jira, Square, Adobe, Quick Books, Slack, Teams, MailChimp	Java, HTML, DSP/SSP, GitHub
Customer Relationship Management (CRM) Enterprise Resource Planning (ERP) Customer Management System (CMS)	CNC machine

Other specific desired entry-level skills shared were more occupation-specific, such as occupational licensing skills required for nurses, health care technicians, and commercial truck drivers.

Preparedness of New Hires

Employers were asked to give their perception on a scale from one to five (with five being the best), of the preparedness of the general population and graduates from different education attainment levels for work. The question specifically pertained to new hires in terms of their preparedness, defined as the ease of trainability, retention, and advancement. Their responses (Figure 1.3) indicate they view graduates of postsecondary education and training programs as better prepared for work than high school graduates or the general population.

Figure 1.3 Employers' Perception of New Hires' Work Preparedness by Educational Attainment



Note: Horizontal line indicates the perception of Erie County general population (Mean 1.81)

Work-Based Learning

Survey respondents were asked whether their company engages in work-based learning with high school students and if they answered yes, they were asked the type of work-based learning activities. Only 19% indicated their organizations engaged (Figure 1.4). Of those survey respondents who indicated their employer engages in high school work-based learning, job shadowing was the most common activity. There were no other high school work-based learning opportunities that respondents engaged in other than those listed in Figure 1.5.

Figure 1.4 Survey Respondents Engaging in High School Work-Based Learning

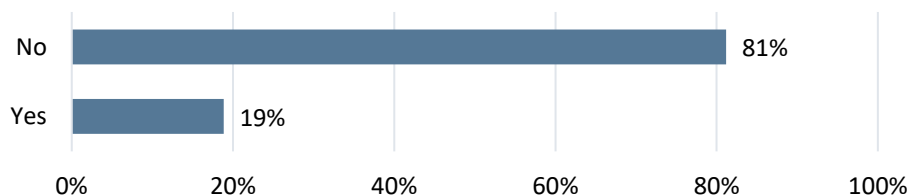
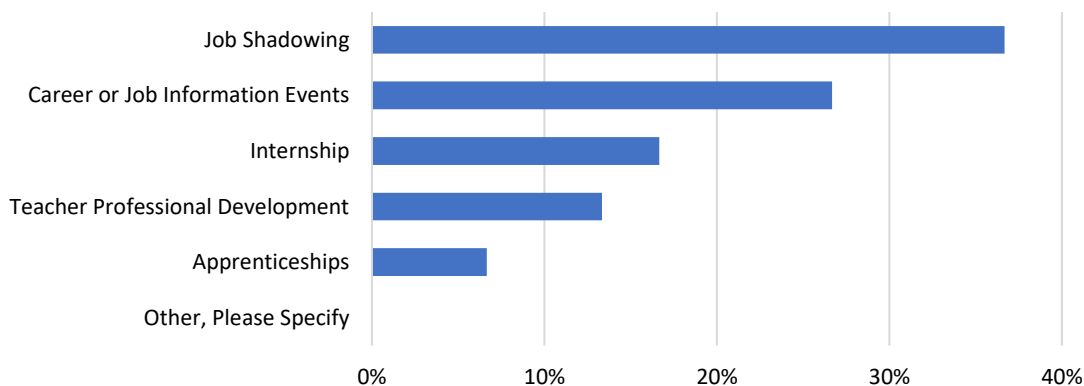


Figure 1.5 Respondents Engaged in Specific High School Work-Based Learning Activities



Of the survey respondents who indicated they were not engaged in high school work-based learning activities, 61% indicated they would like to engage in high school work-based learning opportunities. In reviewing this information at the sector level, only two out of the 13 manufacturer respondents currently engage in high-school work-based learning; however, the remaining 11 are interested in engaging. Other sectors that are interested in engaging in high school work-based learning opportunities include the construction, utilities, information and professional, scientific and technical services sectors.

Industry-Recognized Credentials

Respondents were asked to list industry credentials they use in their hiring process. Seventy-one percent of respondents answered none. Of the remaining 29% that do, a majority of those listed are professional licenses often required for a specific occupation. Table 1.7 lists the survey respondents noted industry recognized credentials by industry sector used in hiring.

Table 1.7 Industry Recognized Credentials and Licenses Used in Hiring Process by Industry Sector

Industry Sector	Industry Recognized Credentials
Finance and Insurance	Certified Public Accountant (CPA) License
Construction and Utilities	Apprenticeship Certification Professional Engineering License
Healthcare	Healthcare-Related Professional Licenses (RN, LPN, OT (Occupational Therapist), PT (Physical Therapist), SLP (Speech Language Pathologist), Pharmacists)
Manufacturing	None noted by survey respondents
Professional, Scientific, and Technical Services and Information	BICSI (Building Industry Consulting Services, International) Google Analytics Certification Google Ad Certified AIA License (American Institute of Architects) Microsoft Certifications Java IAB Adobe AIRS
Transportation and Warehousing	Commercial Truck Driver (CDL)
Other Sectors	CDL Water Treatment Licenses SHRM Certified Property Manager NCIDQ (National Council for Interior Design) American Society Pension Professionals and Actuaries Video Production

In general, occupations that require licenses were the most common industry-recognized credentials listed, with the healthcare industry sector having the largest number. This was followed by information technology certifications. For the professional, scientific, and technical services and information sectors, a variety of new credentials were listed including BICSI (Building Industry Consulting Services International)⁸. Also falling into the “Other” category were video production certifications, but specific credentials were not listed. The manufacturing sector did not list any preferred industry credentials for new hires.

Job Candidate Recruitment Resources

Survey respondents were asked “Who/what is your best local resource for job candidate recruitment?”. This open-ended question led to a variety of responses that have been aggregated and presented in Table 1.8.

Table 1.8 Respondents Local Resources for Job Candidate Recruitment

Preferred Candidate Recruitment Resources by Number of Responses
Networking
Local Colleges and Universities
Social Media
Indeed
Technical or Trade Schools
Local Private Recruiters
Nonprofit Social Services Training Organization
Company Website
Newspaper

Employer Training

Employers were asked “Has or does your company engage in job-related training services either at your company or at another location from a local training provider(s) in the last three years?”. The results were about evenly split with 51% of the respondents indicating they engage. For those 35 employers who do engage in employee training, each was asked to identify the training providers and, on a scale from one to five with five being highly satisfied, provide their satisfaction with the training. Results may be found in Table 1.9.

⁸ More information on BICSI may be found at bicsi.org

Table 1.9 Employer Training Provider Responses

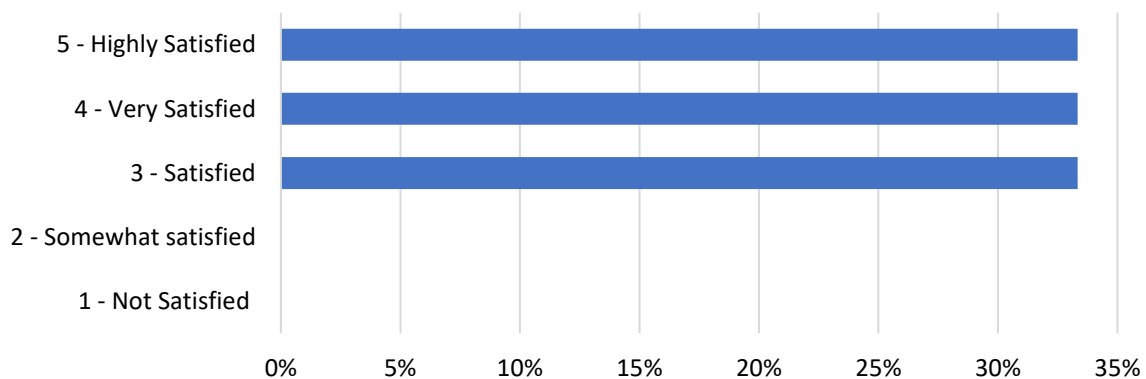
Institution	Number of Respondents	Average Response Rating*
Penn State Behrend	13	3.77
Gannon University	13	3.3
External Private Provider	10	3.6
Mercyhurst University	10	3.2
Edinboro University	10	3
Erie Institute of Technology	8	3
Erie Regional Manufacturing Partnership	6	2.83
Great Lakes Technical Institute	5	3
NW PA Industry Resource Center	5	2.8
Northern Pennsylvania Regional College	4	2.75

*Response scale was 1 to 5 with 5 indicating highly satisfied (Mean 2.5)

Workforce and Economic Development Network Resources

Pennsylvania has created a funding resource for employers to provide training for new and existing employees made available through the Department of Community and Economic Development, known as the Workforce and Economic Development Network of Pennsylvania (WEDnetPA) program. There are various rules around employer qualification and the type of training eligible; however, its intent and purpose are to strengthen the skill sets of the existing workforce and provide an economic development training tool for recruiting new businesses. Edinboro University is the administrator of the WEDnetPA program for the Erie area. Employer survey participants were asked if they participated in job-related technical training for their employees, if they received reimbursement from the WEDnetPA program for that training. There were 33 respondents who answered this question which aligns with the previous job-related training engagement question. Of those 33, only six had used the WEDnetPA program. Their satisfaction with the program is noted in Figure 1.6.

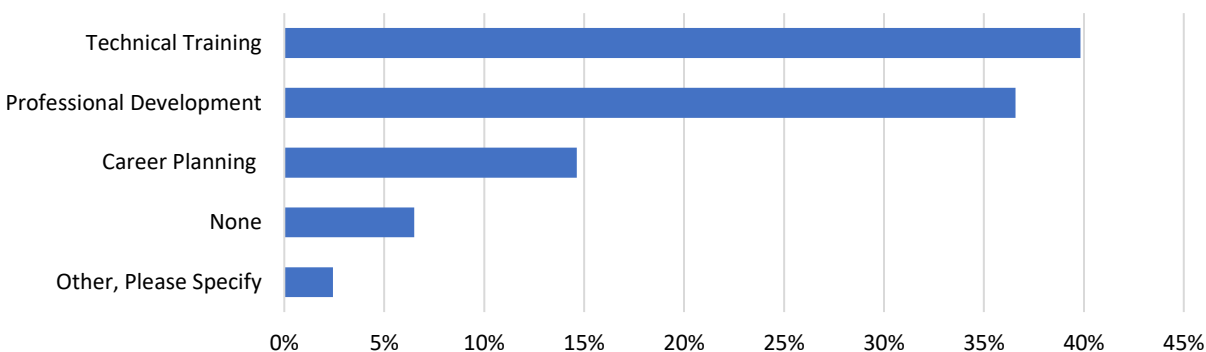
Figure 1.6 Employer Respondents' Satisfaction with WEDnetPA Program



Current Employee Development Opportunities

Employer survey participants were queried on which career development opportunities they provide for their employees from a list provided. The intent of this question was to gather insights on the type of career development opportunities employers offer to employees. Their responses to the list of career development activities are shown in Figure 1.7.

Figure 1.7 Current Employee Development Opportunities



The “Other” training responses included English as a second language classes and attending conferences.

Strengths of Erie County Workforce Development Delivery System

The respondents were asked “What do you believe is the greatest strength in the Erie County workforce development system?”. This was an open-ended question to share their perception of the strengths of the Erie County workforce development delivery system. There were 44 responses provided. The common thread identified in shared strengths was the local colleges and universities.

Weaknesses of Erie County Workforce Development Delivery System

There were 69 gaps or weaknesses identified by survey respondents, significantly more than strengths identified. There was consistency in identifying gaps in the workforce development delivery system with a lack of enough technical training programs including lack of a technical college and lack of training facilities to support advanced manufacturing coming in as the number one identified gap in the current delivery system. There were 28 instances where this was cited as a weakness across a variety of industry sectors including manufacturing, construction, transportation and warehousing, and other industry sectors not disaggregated. The second-largest identified gap (11 instances) was a lack of soft skills, which include work ethic and communication skills.

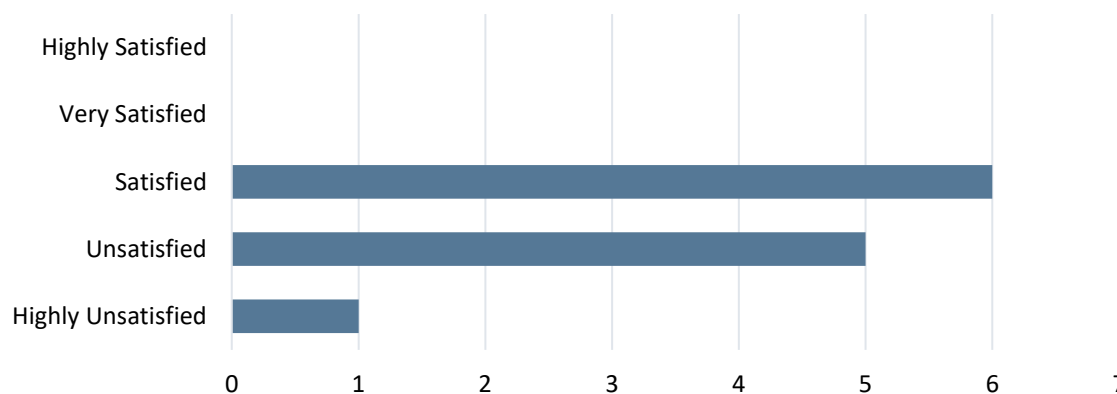
Section 1.1.2 Employer Focus Group

Garner Economics held one focus group meeting to collect employer input regarding the effectiveness of the workforce development delivery services. Twelve participants representing eleven employers employing over 5,000 workers, participated in the focus group.⁹ Fifteen questions were asked of the participants and their responses were recorded. Below is a summary of responses received organized by questions asked.

Erie County Workforce Development Delivery System Perceptions

When looking at the workforce development delivery system¹⁰, the focus group participants were evenly split between being satisfied and unsatisfied with the current system (Figure 1.8). However, there were no participants that were highly or very satisfied with the current workforce development delivery system in Erie County.

Figure 1.8 Focus Group Satisfaction with Erie County Workforce Development Delivery System



This satisfaction with the current system question was followed up by providing a choice of words or phrases that could best describe the current system. Interviewees were provided with 20 positive words or phrases and 10 negative choices. Each participant was asked to select one or two phrases they felt would best capture their perception. They also had the option to provide their own word or phrase. Figure 1.9 provides a summary of the words or phrases selected by participants. In reviewing the list, only one positive word selection was made in describing the current system. The top phrase that most participants selected was “not cohesive.” This was followed by “stuck in the past,” “adequate four-year institutions,” and a concern for the “expense” of postsecondary institutions, resulting in student debt. Table 1.10 contains a list of all words or phrases provided to participants.

⁹ A list of employer focus group participants may be found in Appendix B

¹⁰ The participants were given a broad definition of the workforce development delivery system that included high schools, career and technical schools, two-year colleges, four-year colleges, adult education and training facilities and programs, employer customized training solutions, workforce organizations, and supporting organizations.

Figure 1.9 Words that Best Describe Erie County Workforce Development Delivery System

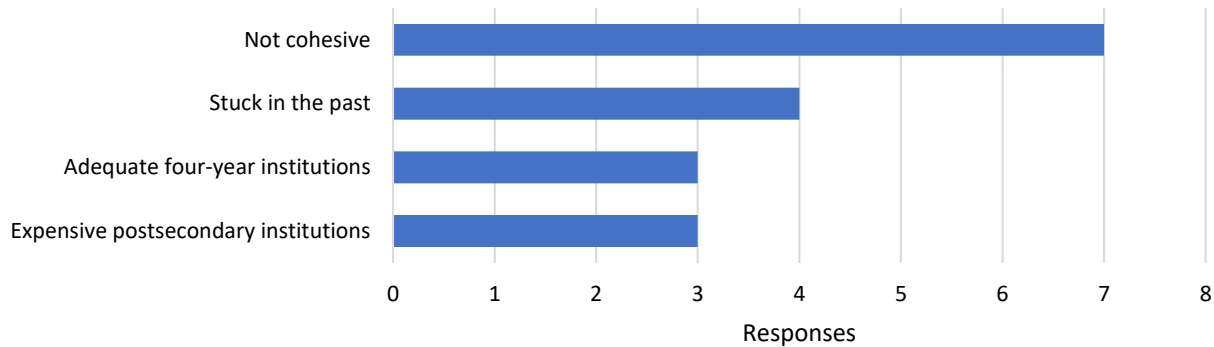


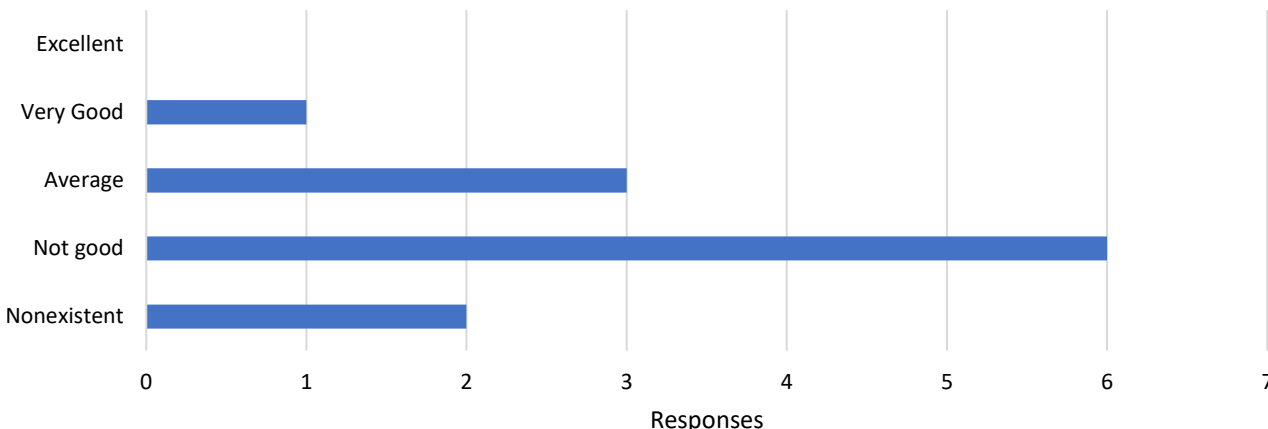
Table 1.10 Workforce Development Delivery System Descriptor Word/Phrases Provided

Helpful	Nonexistent	Achieves its goals
Accessible	Understands my company's hiring needs	Not accessible
Customer-service oriented	Excellent lab facilities	Prepares people for jobs
Does not prepare people for jobs	Affordable	Expensive
World-class facilities	Difficult	Tech savvy
Stuck in past	Innovative	Provides great training
Efficient	Organized	Teaches cutting-edge technical skills
Provides soft skills instruction	Random	Excellent employer support
Inadequate employer support	Collaborative	Lacking equipment
Good communications	Not cohesive at all	Coordinated

Workforce Development Delivery System Communications

Focus group participants were then asked to provide feedback on the general communications they receive regarding the workforce development delivery services available to their organization from the various Erie County workforce development partners. Most participants shared that communication was 'not good' as shown in Figure 1.10.

Figure 1.10 Perceptions on Communications of Workforce Development Services Available

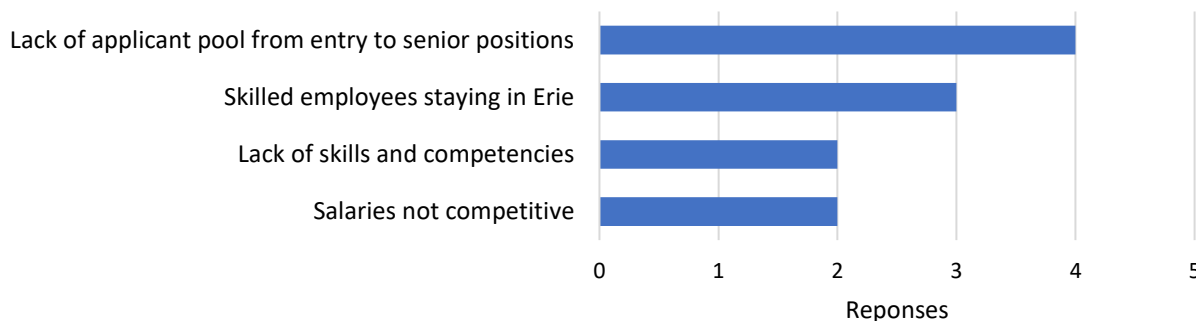


Some comments associated with this question included a lack of understanding by the workforce partners of what constitutes effective communications. Participants specifically shared that email is overused and thus not the most effective communication vehicle.

Hiring Challenges

Focus group participants were then asked if they have been challenged in making hiring decisions over the past one to three years. Eighty-three percent of the participants (10) responded yes. They were then asked to provide clarifying comments, which are summarized in Figure 1.11. The top response was a lack of applicant pool from entry-level to senior positions followed by skilled employees leaving Erie. Participants also cited a lack of skills and competencies required for the job and salaries not being competitive.

Figure 1.11 Comments on Hiring Challenges



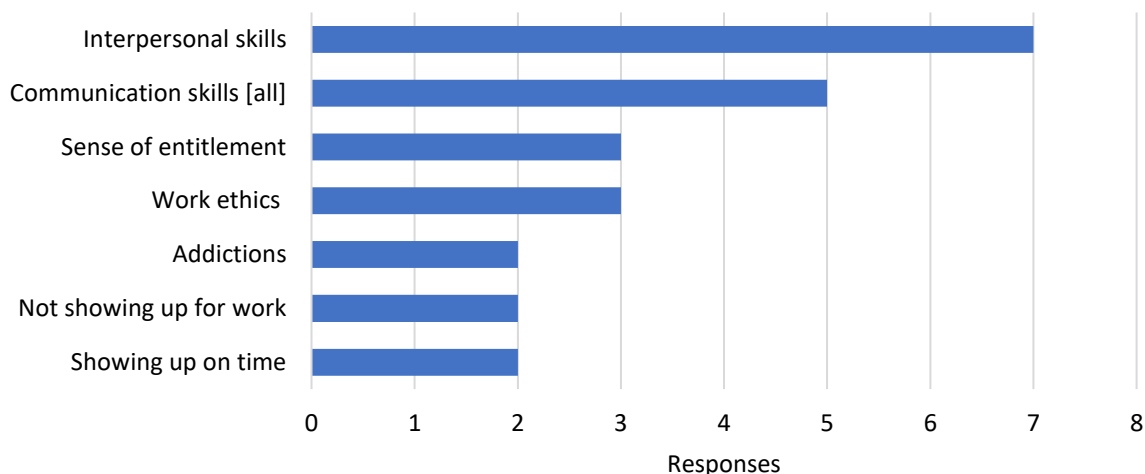
Soft Skills Perceptions

The focus group questions then moved to a discussion on soft skills possessed by new hires, with 10 respondents indicating that new hires do not have the soft skills their organization requires.¹¹

¹¹ Soft skills, defined by the US Department of Labor, are fundamental to work readiness success and include professionalism or work ethic, oral and written communication skills, teamwork and collaboration skills, and critical thinking or problem-solving skills.

Those that indicated that new hires are lacking soft skills were then asked to describe which skills were missing. Interpersonal skills, defined as those behaviors and tactics a person uses to interact with others effectively, were considered the most insufficient in new hires. Communication skills came in second. A list of soft skills the focus group shared that are insufficient in new hires may be found in Figure 1.12.

Figure 1.12 Insufficient New Hire Soft Skills



Business Expansion Support

The focus group discussion moved to obtaining participants' confidence in the current workforce development delivery system to support the expansion of their organizations. This question provided a split response as shown in Table 1.11.

Table 1.11 Confidence in System Supporting Company Expansion

Yes/No	Response
Yes	4
Noncommittal	2
No	6

Comments provided during this question included that several companies have become creative in how they retain workers, leading to better incentives in their hiring process. Other comments included that the current workforce development delivery system resources (or lack thereof) make it harder to expand.

New Business Expansion Related to Employee Recruitment and Training

Following the discussion on having the workforce development delivery system to support their business expansion, participants were asked whether they felt that the current system could support business recruitment. **All twelve participants said that the current system could not support new business attraction in Erie.**

Public Workforce System Candidate Recruitment Services

Participants were asked if they use the Northwest PA CareerLink to assist with job candidate recruitment or hiring process.¹² The responses were evenly split with six people stating they have used the organization and six stating they did not.

For the six that used the Northwest PA CareerLink services, they were further queried to determine their satisfaction. Only one was satisfied; one was somewhat satisfied and four were unsatisfied with the services provided. Comments provided from the four indicating dissatisfaction included that the online job candidate services “do not work” in assisting with job candidate recruitment.

Industry Credentials in Hiring Decisions

The focus group participants were asked if their company hire or give a preference to hiring to someone who has an industry credential that is relevant to the job. When asked if their company hires or gives preference to hiring someone who has an industry credential relevant to the job, 11 participants responded “yes,” with only one saying they did not use industry credentials.

Customized and On-site Training Offerings

Participants were asked if the on-site training¹³ offerings available from the Erie County workforce development delivery system meet their company’s training needs. Most participants (10) answered that the current training offerings did not meet their company’s needs. Some additional comments around this question included that most participants (8) did not believe on-site training for their company was available. Two indicated that they have robust internal training programs and would not use external outside trainers.

Employee Retention

Participants were asked if they were concerned about their company’s ability to retain its employees. Most participants (10) responded they were concerned while only two were not concerned.

The focus of the additional comments shared were around retaining quality employees. One of the biggest threats cited is that the education system encourages students to move around and make career changes. Another threat cited was the lack of skilled machinists. Some discussed increasing wages to retain employees. A few discussed that the Gig Economy¹⁴ and the fact that it encourages individuals to make a change every two years which contributes to retention issues. Some closing comments addressed how investing in employees leads to retention.

¹² Northwest PA CareerLink is part of the Pennsylvania public workforce system whose role is to facilitate the communication and interaction between its client job seekers and employers through an array of services including job training. More information available at <https://www.nwpajobconnect.org/careerlink>

¹³ On-site training is defined as training offered at the employer’s facility.

¹⁴ The Gig Economy is defined as a labor market characterized by the prevalence of short-term contracts or freelance work as opposed to permanent jobs.

Workforce Retention

Participants were asked whether they had concerns about Erie County retaining its emerging workforce from high schools and colleges. The responses are listed in Table 1.12. A majority (75%) of focus group participants are concerned about retaining Erie County's skilled workforce.

Table 1.12 Erie County Emerging Workforce Retention Concerns

Yes/No	Response
Yes	9
Somewhat	1
No	2

Section 1.2 Workforce Partners Feedback

Garner Economics evaluated the supply side of the Erie County workforce development delivery system to gain insights on how it collectively develops the talent for local industry. This assessment included the following:

- Identifying all workforce development partners and those to interview
- Interviewing all steering committee members
- Interviewing select workforce development partners
- Conducting additional desktop research

These workforce partners included leaders from educational institutions and training providers, workforce organizations, business associations, economic development, and other community organizations. The develop list of workforce partners and those interviewed may be found in Appendix A. Information was gathered through a series of interviews and all but a few interviews were conducted at the stakeholder's place of work. Information consistently gathered from all partners included questions related to:

- What do they do?
- What is their workforce development contribution?
- Whom do they partner with?
- Do they have grant funding?
- How do they work with employers?
- What data do they share?
- Do they have facilities?
- What workforce related boards or committees do they serve on?
- Do they have budget information they can share?

Additional information that was unique to each stakeholder was gathered to help better understand the direct value each brings to the system. The information that follows is a summary of the findings from the workforce partner discovery process.

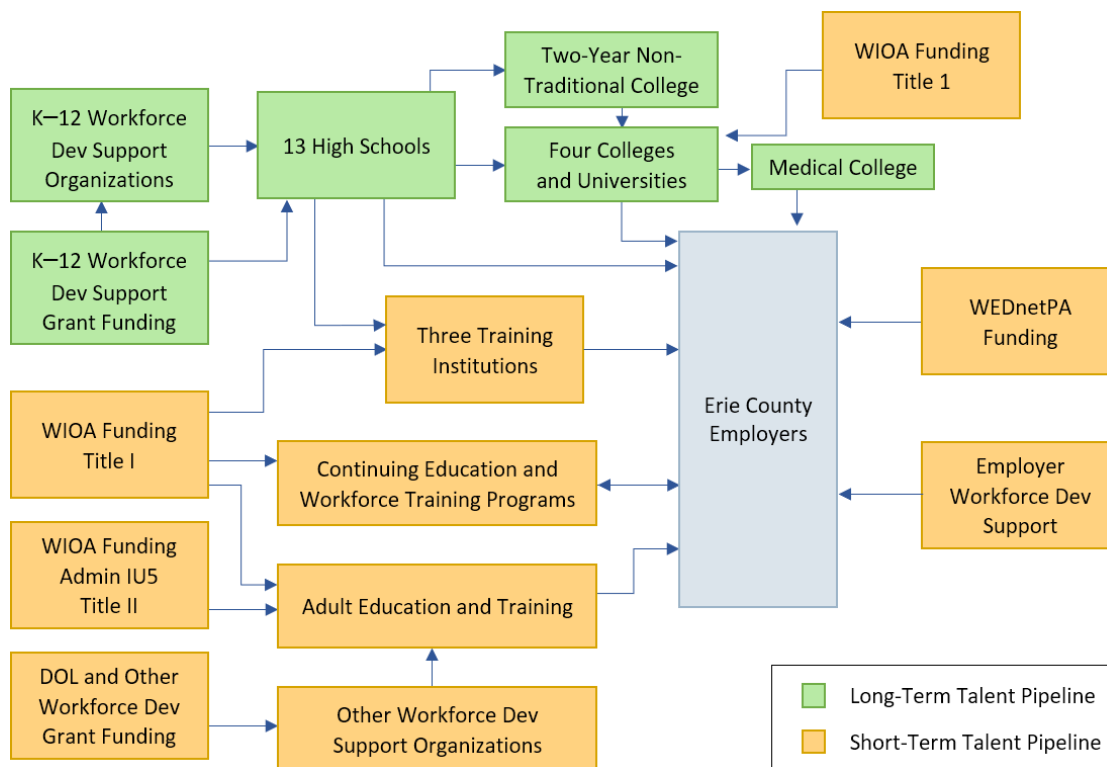
1.2.1 Workforce Development Delivery System Mapping

Figure 1.13 is a high-level diagram of the Erie County workforce development delivery system. It is comprised of the education and training providers that directly develop Erie County's workforce and organizations that provide support to them. It is organized in terms of two approaches:

- Long-term talent pipeline development (Green) defined as the traditional career pathway from high school to postsecondary to the workforce or from high school to the workforce.
- Short-term talent pipeline development (Gold) defined as the education and training system designed to skill up the workforce in a shorter timeframe. The training and education programs in this category usually last a few weeks to two years. These programs are often associated with individuals who are already employed and looking for career advancement, those who are underemployed seeking a different career, those who are unemployed and looking for work, and those who have dropped out of school.

The workforce development delivery system is complex. To enable an assessment of the current system, boundaries have been structured to enable analysis of how services are delivered and supported using the above definitions of the approaches provided for long- and short-term talent pipeline development. This high-level perspective on the Erie County workforce development delivery system is based on interviews, desktop research and project scope. For these reasons, some workforce partners may not be included in the narrative.

Figure 1.13 Flow Chart of Erie County Workforce Development Key Partners and Resources



Long-Term Talent Pipeline

Erie County High Schools

Initial desktop research was completed on the fourteen high schools identified in the workforce partner stakeholder list using the Future PA Ready Index. Using that data, Garner Economics estimates that about 2,700 students graduated from Erie County high schools 2018. These graduates overwhelmingly favored attending a college in Erie County with approximately 2,250 *indicating* their top college choices were Penn State Behrend, Edinboro, and Gannon Universities¹⁵. It is estimated about 60% of 2018 graduates enrolled in post-secondary institutions¹⁶ and about 500 went directly into the workforce with most of those students entering the workforce coming from Erie High School.¹⁷ Specific data reviewed, and high schools selected to visit are found in Table 1.13. High schools were selected for on-site visits based on data and proximity.

¹⁵ Students may indicate their colleges of choice on SAT and ACT college entrance exams

¹⁶ Data excludes Erie High School as this data was not available in PA Future Ready Index

¹⁷ Source: PA Future Ready Index, Erie High School and Garner Economics

Table 1.13 Information on Erie County High Schools, 2017–18

High School	Enrollment	Graduation Rate (Percent)	Percent Completed Work-Based Learning Experience	Percent Earned Industry Recognized Credential	Percent Enter PA Workforce
Corry	638	87.8	7	27.2	20.8
Erie**	2402	71.4	3.4	25.3	IS*
Fairview*	517	98.3	41.5	6.5	13.6
Fort LeBoeuf	690	98.8	6.9	11.4	14.6
Girard	518	95.8	5.4	8.5	22.6
Gen McLane**	717	96.6	5.7	10.7	9.1
Harbor Creek**	696	96	96.8	13	16.3
Iroquois**	596	92.1	8.7	2.2	26.9
McDowell**	2201	94.1	2.2	5.8	14.5
North East	517	93.5	9.3	19.5	23.1
Northwestern	503	90.8	16.7	0	14.5
NWPA Collegiate Academy	853	100	0	0	6.6
Seneca	457	94.1	13.4	10.7	20.8
Union City	343	90.3	21.5	29.1	26.9

**Used CTE enrollment to project graduating students entering workforce*

***High schools selected for site visit*

Source: Future Ready PA Index, IS denotes incomplete data*

The on-site school visits were conducted to provide insights to science, technology, engineering, and math (STEM) education; computer skills development; career readiness preparation; Advanced Placement (AP) coursework; dual enrollment; career and technical education (CTE); and work-based learning through asking consistent questions and data requests of all visited institutions. The following is a summary of interview discussions and observations recorded during the visits.

All schools visited are engaged in the career pathway approach for all students to help them gain insights in career opportunities and choices. This allows the students to select from one of five PA-designated career pathways listed in Table 1.14.

Table 1.14 Five-PA-Designated Career Pathway Clusters

Career Pathway Clusters
Engineering & Industrial Technology
Science & Health
Business, Finance & Information Technology
Arts & Communication
Human Services

Source: Erie Together

Each career pathway cluster has aligned programs of study. Students have an opportunity to engage in courses, including STEM courses and work-based learning opportunities aligned to their selected pathway. Students also have the flexibility to change career pathways. The career pathway is designed to prepare students to continue their education at a postsecondary institution.

All schools visited had a priority placed on STEM, and Fairview, Harbor Creek, and McDowell highlighted their STEM Academies. Harbor Creek shared they used Teacher in the Workplace grants to assist with Teacher Training. Erie and General McLane highlighted student opportunities for hands-on training received through their advanced manufacturing programs that included 3-D printers, CAD/CAM, and robotics. Iroquois also offers courses utilizing similar equipment and currently developing an advanced manufacturing program. One area that stood out were those schools providing teacher training and professional development to ensure they had the skill set necessary to provide the cutting-edge instruction. General McLane specifically discussed teacher training associated with instruction innovation courses using the Innovation Collaborative and Inventionland curricula.

All schools offered AP courses, but each had varying degrees of participation. Only Erie High School had AP testing available at no cost. In discussion with schools visited, participants shared that AP courses compete with dual enrollment courses and thus students are often only able to choose one option. Computer skill development was present at all schools visited; however, there were varying degrees of computer technology courses available. In reviewing requested AP course information, none of the schools offered AP Computer Science Principles—although when questioned, a few responded that they were in the process of training teachers and looked to offer this course soon. AP Computer Science Principles is one of the newest courses available and is designed to encourage student interest in pursuing computer science programs. All schools have iPads available for students.

Area high schools have CTE opportunities available for all students, with 11 of the high schools leveraging the Erie County Technical High School, a high school dedicated to CTE, for this purpose. Erie High and Corry High School have their own career and technical education facilities. However, three of the visited high schools (General McLane, Iroquois, and McDowell) are developing their own career and technical education programs in manufacturing with several schools linking these activities to STEM. In addition, some of the advanced CTE programs at Erie County Technical School (ECTS) are linked to honor classes. Edinboro University has a unique CTE opportunity for students where they can participate in their Drone Academy in partnership with North Coastal Flight School and earn a Drone Pilot Certification. This program is just accepting its first students from General McLane and Erie High Schools. Erie High School began offering a new Maritime program in 2018–19 in partnership with the Bayfront Maritime Center.

ECTS, Erie High School, and Corry High School offer a variety of CTE programs of study with each program aligned to one of the five PA-designated career pathways. All students engaged in CTE programs are required to take National Occupational Competency Testing Institute (NOCTI) exams associated with their program or for students enrolled in machine tool technology and welding, National Institute of Metalworking Skills industry credentials¹⁸.

The Commonwealth of Pennsylvania is encouraging schools to provide work-based learning (WBL) opportunities to students and the Pennsylvania Department of Education provides data on the percentage of students engaged in a WBL experience. Illustrated in Table 1.13, there are two high

¹⁸ PA DOE Assessment information: <https://www.education.pa.gov/K-12/Career%20and%20Technical%20Education/AssessmentInfo/Pages/default.aspx>

schools that stand out in providing these types of WBL experiences: Harbor Creek and Fairview. Inquiries during high school visits revealed that the WBL experiences at Harbor Creek and Fairview high schools were most often job shadowing experiences. Some of the CTE programs offered enable students to have hands-on work experiences aligned with their career choices with some of these experiences associated with apprenticeship programs. Erie High School provided data that showed a significant number of CTE students enrolled in WBL opportunities with over 140 unique employers.

Dual enrollment is a program that allows students to take college-level classes during high school and receive college credit at the respective institution. Edinboro, Gannon, Mercyhurst, Penn State Behrend and Northern Pennsylvania Regional College all offer dual enrollment opportunities for qualifying high school students. Qualifying High school students wanting to engage in dual enrollment usually participate through the Regional Choice Initiative Skills Center where Edinboro, Gannon, and Mercyhurst offered dual enrollment classes. Students are required to pay tuition to participate in dual enrollment classes but usually at a reduced rate. There are limited dual enrollment opportunities for CTE participating students.

Postsecondary Institutions

The evaluation of the postsecondary institutions listed in the traditional talent pipeline development includes both two-year institutions associated with four-year universities and four-year and post-graduate institutions.

Erie County has four, four-year postsecondary and one medical college as noted in Figure 1.13. In evaluating the long-term talent pipeline development, each of the undergraduate institutions was analyzed by top program graduates, workforce development resources, and cost. Each has a variety of programs of study to offer; however, the top program graduates are different among the four. Comparing tuition and fees data available from the Integrated Postsecondary Education Data System (IPEDS), a part of the National Center for Education Statistics, the tuition cost and fees for the 2017–18 academic year for these universities varied from \$10,574 for Edinboro to \$37,170 for Mercyhurst. In addition, all universities provide STEM and career exploration opportunities for students from grade school through high school. Mercyhurst engages its education program students to provide tutoring to at-risk elementary school students in the community. Table 1.15 provides a summary of top program graduates, workforce development resources, and tuition and fees for each institution. All four universities offer internship opportunities with Penn State Behrend offering both internship and cooperative (co-op) experiences. Penn State Behrend had 92 E-Commerce certificate completers (blue highlight). Top program graduates and those with over 100 students are noted in green highlight.

Table 1.15 Erie County Postsecondary Institutions Top Program Graduates, Resources and Tuition/Fees

University	2017–18 Academic Year Tuition/ Fees*	2018 Top Graduate Programs of Study and Graduates**		K–12 Workforce Development Programs	Resources
Edinboro	\$10,574	Social Work	245	Drone Academy	NWPA Innovation BeeHive Network
		Fine/Studio Arts, General	110	Dual Enrollment at RCI	Center for Branding and Strategic Communication
		Business Administration and Management, General	102		
		Speech-Language Pathology/Pathologist	76		
		Early Childhood Education and Teaching	71		
Gannon	\$32,136	Mechanical Engineering	100	Dual Enrollment at RCI	NWPA Innovation BeeHive Network
		Health Professions and Related Clinical Sciences, Other	97		Institute for Health and Cyber Knowledge [I-HACK]
		Registered Nursing/Registered Nurse	78		
		Curriculum and Instruction	66		
		Kinesiology and Exercise Science	60		
Mercyhurst	\$37,170	Intelligence, General	116	Coding Camps	NWPA Innovation BeeHive Network
		Organizational Leadership	45	Cyber camps with Corry High School	MCPc Cyber Education Center
				Dual Enrollment at RCI	
				Elementary school tutoring	
				STEM Girls Summer Camp	
Criminal Justice/Safety Studies	34	Erie Together Admin			
Penn State Behrend	\$15,198	Mechanical Engineering	85	Dual Enrollment	NWPA Innovation BeeHive Network
		Management Sciences and Quantitative Methods, Other	65	Pathways to Success	Knowledge Park
		Business Administration and Management, General	53	Robotics Programs	
		Finance, General	53	STEAM Program Women in Engineering	Advanced Manufacturing & Innovation Center
		Mechanical Engineering/Mechanical Technology/Technician	50		Medical Plastics Center, Polymer/Plastics Processing Lab, Plastics Training Academy
		E-Commerce/Electronic Commerce***	92		

*Source: IPEDS

**Source: Erie County Data Center

***Certificate program

Two of the four-year universities have two-year campuses: Mercyhurst Northeast associated with Mercyhurst University and Porreco College, a two-year college under the umbrella of Edinboro University. Mercyhurst Northeast campus is closing soon and currently completing its last cohort before combining

with Mercyhurst College. Edinboro is in the process of closing the Porreco campus and these programs will move to Edinboro's main campus or on-line beginning in Fall 2020.¹⁹ A newly chartered two-year non-traditional college, Northern Pennsylvania Regional College, housed in offices at Gannon University, began offering courses in 2019. The college uses community locations to deliver class instruction at multiple sites across the region and are brought together via live interactive technology. NPRC offers dual enrollment, associate degree, and workforce development courses. Data provided for NPRC fall 2019 enrollment shows 89 students across a nine-county region enrolled in traditional freshman college-level courses, of which 26 were attending at five Erie County satellite locations. Both spring and fall 2019 NPRC enrollment for the five Erie County satellite locations totaled 66. Figure 1.13 only shows Northern Pennsylvania Regional College as both Porreco and Mercyhurst NE are closing and programs are moving to their parent four-year university.

Table 1.16 Erie County Postsecondary Institutions Top Program Graduates, Resources and Tuition/Fees

University	2017–18 Academic Year Tuition/Fees	2018 Top Graduate Programs of Study and Graduates	
Mercyhurst NE (CAMPUS CLOSING 2020 – Programs moving to main campus)	\$19,120	Registered Nursing/Registered Nurse	87
		Criminal Justice/Safety Studies	75
		Business Administration and Management, General	32
		Licensed Practical/Vocational Nurse Training	22
		Physical Therapy Technician/Assistant	18
Northern Pennsylvania Regional College	\$185.00 per credit hour Residential Tuition for Nine County Residents*	Not available as college opened in 2019	
Porreco* (CAMPUS CLOSING- Programs moving to main campus or online)	\$10,574**	Engineering Technology, General	30
		Business Administration and Management, General	27
		Liberal Arts and Sciences/Liberal Studies	14
		Social Work	11
		Manufacturing Engineering Technology/Technician	10
		Computer and Information Sciences, General	9

Source: IPEDS, Erie County Data Center, *Northern Pennsylvania Regional College website

*Assumes all Associate Degrees awarded by Edinboro are from Porreco College

**Assumes same tuition rate as Edinboro University

K–12 Workforce Development Support Organizations

The Erie County K–12 system has excellent interaction with four of the five universities as previously highlighted: Edinboro, Gannon, Mercyhurst and Penn State Behrend. There are also additional organizations that provide K–12 support, of which three are identified here. These include Career Street²⁰ and Erie County Career Pathway Alliance (ECCPA)²¹, both programs under the auspices of Erie Together²².

¹⁹ <http://www.goerie.com/news/20200415/edinboro-university-to-relocate-porreco-students?rssfeed=true>

²⁰ Information on Career Street may be found at <https://www.careerstreeterie.org/>

²¹ Information on Erie County Career Pathway Alliance may be found at <https://www.erietogether.org/erie-county-career-pathways-alliance>

²² Information on Erie Together may be found at <https://www.erietogether.org/>

Both focus group participants and workforce development partners commented about the value of the Career Street and ECCPA.

Career Street is an organization that serves as a liaison between the Erie County schools—from grade school through high school—and Erie County businesses to provide quality work-based learning experiences. These experiences include plant tours, career fairs, job shadowing, internships, and teacher professional development experiences. Career Street has a robust website that helps scale the services it provides. Educators and employers can create login credentials to access resources and connect.

The Erie County Career Pathway Alliance is an organization that provides career pathway development support to member high schools. Their work includes organizing and leading strategic industry advisory groups with a goal of having one for each of the five PA-designated career pathway clusters. They also create career pathway resources and develop student career exploratory opportunities. The ECCPA has many education and workforce partners including Career Street.

Erie Together is a collaborative effort among various Erie County organizations and businesses working together to elevate prosperity and reduce poverty thus contributing to the Erie region being a community where everyone can learn, work, and thrive. Its focus has evolved since its inception in 2009, and it is now primarily working in leading the efforts associated with the implementation of Pennsylvania’s career pathway strategy through the Erie County Career Pathway Alliance (ECCPA).

K–12 Workforce Development Grant Funding

This assessment is a high-level review of some of the grants available that support K-12 programs in Erie County. PAsmart²³, Teacher in the Workplace and Erie County Gaming Revenue Authority Grants are included in this assessment as being most relevant to funding K–12 efforts. The PAsmart Grants were launched in 2019 with \$20 million set aside for funding direct STEM and computer science projects in K–12 and supporting collaborations. Mercyhurst is a 2019 collaborative grant recipient and uses this funding to support its STEM and Coding Camp programs. In addition, many of the Erie County high schools were successful in securing target grants to support developing their STEM programs including providing associated teacher training through Teacher in the Workplace grants. Erie Together has written and secured several grants to support K-12 career exploration and work-based learning opportunities including additional Business/Education Partnership Grants funded through PAsmart, Hamot Health Foundation Community Promise Grant to support the Science and Health Career Pathway, Erie Insurance Giving Network funding to support the newly launched Business, Finance and Information Technology Career Pathway. NWP Job Connect has been a partner in securing and administering Teacher in the Workplace and Business Education Partnership grants.²⁴

Erie County Gaming Revenue Authority grants are also available and fund a variety of community projects that include youth and education projects. Fairview High School received one of these grants to support the startup of its STEM Academy.

²³ PAsmart Grants provide workforce development funding for many programs some of which are noted in other areas of this report. More information on PAsmart Grants may be found at <https://www.dli.pa.gov/Businesses/Workforce-Development/grants/Pages/pasmart.aspx>

²⁴ Information on NWP Job Connect grants may be found at <https://www.nwpajobconnect.org/workforce-initiatives>

Short-Term Talent Pipeline

Two-Year Training Institutions

Erie has (or recently had) several technical training institutions, each providing specialized training. Of the five listed in Table 1.17, only three are still operational with two recently closing. The only technical school facility visited was the Erie Institute of Technology, a training facility in proximity to a local mall. It is a single building with laboratories focused on the skilled trades, although they do have computer labs. Their primary students are recent military veterans, and they are a 2019 Military Friendly School. All the two-year technical institutes are private for-profit. Table 1.17 lists the cost, status, and top graduate programs of study. Erie Institute of Technology graduates a significant number of Manufacturing Engineering Technicians noted in green highlight. Institutions that are closed or closing are noted.

Table 1.17 Erie County Two-Year Training Institutions Top Program Graduates, Tuition and Fees

Institution	2017-18 Academic Year Tuition/Fees*	2018 Top Graduate Programs of Study and Graduates**	
Erie Institute of Technology*	\$14,990	Manufacturing Engineering Technology/Technician	189
		Computer and Information Sciences, General	39
		Electrical, Electronic and Communications Engineering Technology/Technician	23
Fortis Institute in Erie* (CLOSED 2019)	\$13,157	Business Administration and Management, General	26
		Medical/Clinical Assistant	23
		Heating, Air Conditioning, Ventilation and Refrigeration Maintenance Technology/Technician	22
		Computer Support Specialist	21
		Licensed Practical/Vocational Nurse Training	17
Great Lakes Technical Institute*	\$20,125	Cosmetology/Cosmetologist, General	48
		Veterinary/Animal Health Technology/Technician and Veterinary Assistant	35
		Medical/Clinical Assistant	31
		Health Information/Medical Records Technology/Technician	24
		Dental Assisting/Assistant	21
Institute of Medical and Business Careers*	\$18,000	Unable to obtain/confirm data for Erie campus	
Triangle Technical Institute* (CLOSED 2019)	\$17,056	Electrician	64
		Drafting and Design Technology/Technician, General	5

Source: IPEDS, Erie County Data Center

*Denotes Private For-Profit Institution

Continuing Education and Workforce Training Programs

Continuing education and workforce training programs are offered at four-year universities. Each offers a variety of continuing programs, but the public program offerings only run if a minimum number of students are enrolled. Workforce training is offered to employers in Erie County through their continuing education departments often in the form of contracted training. Since data is not publicly reported on continuing education and workforce training programs, an inquiry was made to the four-year institutions that have a continuing education and workforce training department to provide data. A summary of the information received is provided in Table 1.18.

Table 1.18 Continuing Education and Workforce Training Information by Institution

Institution	Continuing Ed & Workforce Training Programs	Completers	Employers	Dates
Edinboro*	Business Services	635		2014–2015 through 2018–2019
	Information Technology	533		
	Life Science & Healthcare	723		
	Manufacturing	11		
Penn State Behrend— Public	Healthcare (Nursing)	11		2017–2018 through 2019–2020
	Manufacturing	414		
	Professional Dev	7		
Penn State Behrend— Contract	Manufacturing	159	16 unique employers	2017–2018 through 2019–2020
	Professional Dev	874		
	Other	26		

*Employer contracted training included in totals

Edinboro has a significant offering of on-line continuing education programs. For Edinboro online programs requiring a lab, such as healthcare training, an external in-person lab component is required. For Penn State Behrend, much of the manufacturing training provided was associated with the plastics industry.

Adult Education and Technical Training

Adult education is under the administration of Northwest Tri County Intermediate Unit (IU5) who was recently awarded the contract.²⁵ Adult Education services are currently available at 12 satellite locations (Table 1.19). These facilities offer programs in basic reading, math, and writing for individuals. In addition, they offer programs to prepare for and take a general education development (GED) assessment and if they qualify, earn a GED credential equivalent to a high school diploma. It should be noted, though, that individuals can take and earn a GED credential without attending an adult education facility in Pennsylvania.

²⁵ More information on Northwest Tri County IU5 may be found on their website at www.iu5.org/.

Table 1.19 Adult Education Centers in Erie County

Adult Education Centers	Address
Adult Education & Career Readiness Center	1238 French St., Erie 16501
Blasco Memorial Library	160 E. Front St., Erie, PA 16507
Corry Hi-Ed	221 N. Center St., Corry 16407
Erie County Technical School	8500 Oliver Rd., Erie, PA 16509
Fairview High School	7460 McCray Rd., Fairview, PA 16415
International Institute	517 E. 26th Street, Erie, PA 16504
Iroquois High School	4301 Main St., Erie, PA 16511
McKinley Elementary	933 E. 22nd St., Erie, PA 16503
Quality of Life Learning Center	2046 E. 19th St., Erie, PA 16510
St. Benedict Education Center	330 E. 10th Street, Erie, PA 16503
Tech After Hours (Erie High School)	3325 Cherry Street, Erie, PA 165085
Union City Elementary School	91 Miles St, Union City, PA 16438

Source: Northwest Tri-county Intermediate Unit 5 website

The most recent adult education data is only available for 2017–18 as reported by Greater Erie Community Action Committee (GECAC), and Northwest Tri-county IU5 may be found in Table 1.20. The data provided Northwest Tri-County IU5 includes participants from Crawford and Warren Counties.

Table 1.20 2017–18 Adult Education Completers

Adult Ed Admin	Enrolled	Exited	GED Achieved	Placement in Employment
GECAC	156	120	14	74
NW Tri-county IU5	432	326	58	175

Source: <http://www.paadultedresources.org/administrator-resources/>

There are three adult technical training providers in Erie County: Northern Pennsylvania Regional College (NPRC), Regional Career and Technical Center, and Tech After Hours. The Regional Career and Technical Center uses the Erie County Technical School to provide its training programs, and Tech After Hours uses the Erie High School CTE labs. Northern Pennsylvania Regional College does not have facilities and partners with other institutions to use their lab facilities to provide instruction. A summary of program offerings and completion data can be found in Table 1.21.

Table 1.21 Erie County Adult Technical Training Programs

Training Provider	Programs	Tuition	Enrollment	Associated Credentials	Dates
Northern Pennsylvania Regional College	Blueprint Reading		5		2019
	Precision Machining*		8		2019
Regional Career Technical Center	No specific enrollment data by class provided	\$250 to \$660 per seven-week class \$5500 for CDL class	531		2019
Tech After Hours	Auto Mechanic	\$2600 per semester	1	OSHA	2019
	Patient Care		2	OSHA PCA	
	Construction		2	NCCER	
	Welding		5	AWS	
	Machine Trades		3	NIMS	
	Machinist Apprenticeship**		7	NIMS	

*Partnership with Erie Regional Manufacturing Partnership

**Three-year ongoing program

Source: Data provided from respective training provider

Data provided by Northern Pennsylvania Regional College show they provided workforce training to 164 individuals across nine counties in 2019; however, data included for NPRC in Table 1.21 is just for Erie County residents. They did provide contract training for three companies, but none of these companies were in Erie County.

The Regional Career and Technical Center provided data showing 531 enrollees in various programs; however, they were unable to provide a breakdown of enrollment by class or industry credentials earned information. They did share that 441 students were self-paid, indicating that approximately 90 students' tuition was either paid by an employer, was WIOA eligible, or funded by another organization.

Tech After Hours shared program completer data showing that they had 11 program completers including one registered apprentice in 2019. They also reported that from 2017 through 2019, 39 students earned a total of 119 national industry-recognized credentials.

Short-Term Training Support and Funding

There are five organizations included in this workforce development delivery assessment that provide support to workforce training providers that comprise the short-term training ecosystem: County-level Workforce Development Team (CLWDT), Erie Together, Greater Erie Community Action Committee, NWPA Job Connect, and Northwest PA CareerLink. The last two are both a part of the public workforce system funded under the Workforce Innovation and Opportunity Act (WIOA). NWPA Job Connect serves as the regional WIOA entity including staffing the local WIOA board and the Northwest PA CareerLink, administered by ResCare, manages the services provided to WIOA-eligible recipients and community employers.

The (CLWDT) is an ad hoc organization led by the director of Erie Together. Their current focus is on out-of-school youth and training them for jobs in the healthcare profession. Members of this committee include:

- Edinboro University
- Erie Regional Chamber and Growth Partnership
- Erie Together, Committee Chair
- Greater Erie Community Action Committee
- Northern PA Regional College
- Northwest PA Job Connect
- Northwest PA CareerLink
- Penn State Behrend
- Preferred Systems, Inc.
- Local business representatives

The Greater Erie Community Action Committee (GECAC)²⁶ provides many services including helping to better focus available local, state, federal, and private resources to assist low-income individuals and families to acquire useful skills and knowledge, to gain access to new opportunities, and to achieve economic self-sufficiency. Some services provided to low-income individuals include:

- Scholarship management for private secondary schools and college
- Adult education and GED testing services (through 2019)
- Upward Bound program in partnership with Edinboro

The Upward Bound program is designed to prepare low-income students who would be first-generation college for success. College scholarships are capped at \$1000 per student and given directly to the awardee.

The regional public workforce system, NWPA Job Connect²⁷, and Northwest PA CareerLink have a variety of services they offer to their six-county service delivery area in northwest Pennsylvania, which includes Erie County. Highlighted in this assessment are some of the ways they support the short-term training system:

- Providing career and training program guidance to WIOA eligible individuals
- Providing training funding to WIOA eligible individuals
- Assisting with job placement for WIOA eligible training completers
- Other support services for individuals receiving training
- Other grant funding

The public workforce system has a process for approving education and training service providers and specific programs. Eligible individuals can receive an Individual Training Account (ITA) to fund their training. Recipients are either dislocated workers, low-income adults, or out-of-school youth that meet specific federally designated requirements. It should be noted that the allocation of WIOA training dollars varies per training program; however, there is a maximum allowed by NW PA Job Connect of \$5,500 per person for WIOA eligible recipients. A crosswalk of approved training programs to the workforce education and training providers in this assessment is shown in Table 1.22.²⁸

²⁶ More information on GECAC may be found at <https://www.gecac.org/>

²⁷ More information on services provided by NWPA Job Connect may be found at <https://www.nwpajobconnect.org/>

²⁸ Additional information on the Approved Eligible Service Provider List may be found at <https://www.pacareerlink.pa.gov/jponline/JobSeeker/ManageServices/SearchTrainings.aspx>.

Table 1.22 Erie County WIOA-Eligible Training Providers

Institution	Type
Edinboro University	Associate, Bachelor's, Master's
	Continuing Education Certificate
Erie Institute of Technology	Diploma, Associate
Erie Public School Adult Education (Tech After Hours)	Industry Recognized Credential
Great Lakes Institute of Technology	Diploma
Mercyhurst NE (Closing 2020)	Associate Degree
	Certificate of Completion (State Certified Program)
Penn State Behrend	Associate, Bachelor's, Master's
Regional Career and Technical Center	Occupational License (CDL)
	Occupational Certificate/Certification

Source: Eligible Service Provider List, PA CareerLink

Data received from NWPA Job Connect shows that over a three-year period (2017–2019), the Erie offices of Northern PA CareerLink provided services to 26,456 individuals, which include those that completed training. These services range from individuals accessing computers for job searches to resume and job interview assistance to job placement assistance. There was a decrease in the overall number of individuals being served through a variety of services offered in the Erie County Northwest PA CareerLink offices over the last three years. This makes sense as over the same time period the unemployment rate dropped by 1.4%. Of those walking through the door of this office during this timeframe, 229 individuals completed training through an ITA with 130 completing training in 2019. In addition, NWPA Job Connect provided data on the number of eligible youths that received services through the Erie offices of Northwest PA CareerLink (2017–2019): the total number was 148, with 102 of these youths served in 2019. Services provided to youth included paid and unpaid work experiences, occupational skills training, educational courses, leadership development opportunities, adult mentoring, entrepreneurial skills training, and other career support services.

There has been an increase in the number of individuals served by the Erie County Northwest PA CareerLink office who have completed training over the last three years, even as unemployment has decreased, which is positive for the County (Table 1.23).

Once training is completed, Northwest PA CareerLink provides job placement services by assisting individuals with their job search and resume writing and helping match individuals to specific job openings via its employer network and CareerLink job matching platform.

Table 1.23 Erie County Office of Northwest PA CareerLink Data and Unemployment Rate

	2017	2018	2019
Clients Served	13775	6897	5784
ITA Training Completers	17	82	130
Youth Served	37	9	102
Unemployment Rate	5.70%	4.70%	4.30%

Source: NWPA Job Connect

In addition, NWPA Job Connect has successfully secured grant funding to support short-term talent development programs and services. In 2019, it secured the following grants to support workforce development efforts in its six-county service delivery region.

- PAsmart Pre-Apprenticeship Grant: \$60k
- Next Gen Industry Partnership—Convening grant partner with Keystone Edge Next Gen Manufacturing Industry Partnership: \$43,252
- Next Gen Industry Partnership—convening grant partner with NWPA Next Gen Building and Construction Industry Partnership \$36,984.

NWPA Job Connect collaborates with Erie County organizations to implement funded grant proposals. They are a member of County-level Workforce Development Team (CLWDT) focusing on out of school youth training and employment.

Other Employer Support

WEDnetPA is a resource provided through the Department of Community and Economic Development and administered by Edinboro University to provide funding reimbursement to employers for the cost of training employees. Information on this program and employers' perception was presented in the employer survey summary under "Workforce and Economic Development Network Resources" on page 19.

Discovery work showed there are five organizations that work directly with employers to provide workforce development-related services listed in Table 1.24 along with services provided to employers.

Table 1.24 Organizations Providing Employer Workforce Development Related Services

Organization	Workforce Development Services Provided
Erie Regional Chamber and Growth Partnership (ERCGP)	Leading effort to unify workforce development service delivery in Erie County.
Erie Regional Manufacturing Partnership ²⁹ (ERMP)	Organized by Erie County manufacturers and funded through USDOL grant, provides apprenticeship support services including serving as liaison with education and training facilities
Mercyhurst University	Provides a collaborative environment for education and industry to work together on cybersecurity through its state-of-the-art Cyber Security Facility
Northwest Industry Resource Center ³⁰ (NWIRC)	Serves as Manufacturing Extension Partnership organization. Provides technical support services, including training, to small and midsize manufacturers in service delivery area.
NWPA Job Connect	Provides job candidate recruitment services to employers
Penn State Behrend University	Provides collaborative environment for education and industry to work together through its Knowledge Park and Advanced Manufacturing and Innovation Center
Edinboro University	WEDnetPA grant administrator

Source: Garner Economics

²⁹ More information on ERMP at <https://www.industryneedsyou.com/about-us/ermp/>

³⁰ More information on NWIRC at <https://www.nwirc.org/>

CHAPTER 2: ERIE COUNTY'S WORKFORCE DEVELOPMENT DELIVERY SYSTEM GAP ANALYSIS

The skills gap analysis evaluates how well Erie County is developing its talent pipeline to fill both top growth occupations and occupations aligned to target sectors. The analysis consists of three parts:

- I. An evaluation of the County's top growth occupations and 10-year forecasted growth. This evaluation included the minimum education levels typically required for new hires and the type of on-the-job training needed for proficiency.
- II. A review of the common educational attainment level associated with the occupations that support the six industry targets offered by Garner Economics in its previous engagement compared to the County's current educational attainment level. The six target industries used in this analysis are Food and Beverage Processing/Agriculture and Aquaculture; High Value-Added Manufacturing; High-Value Business Services; Life Sciences; Tech/Gaming/Digital; and Year-Round Experiential Recreation.
- III. The evaluation of 2018–2019 data, which compared college graduates to annual occupational openings. A straightforward comparison shows a skills gap in all target sectors except Year-Round Experiential Recreation.

Analysis of Top Growth Occupations

Using national data, Garner Economics analyzed the Erie County *top* growth occupations and 10-year forecasted growth including evaluating the education levels typically required for job entry and the type of on the job training needed for proficiency (Table 2.1). Information in the chart is highlighted in orange and green denoting these two categories:

- Orange: Occupations that require education and training greater than a high school degree but less than a four-year degree and/or medium on the job training
- Green: Occupations that usual require at least a high school diploma and short-term, on-the-job training

The occupations highlighted in orange are also referred to as *middle skills* jobs. The workforce development delivery system would be preparing these workers through the short-term talent development system. However, because the short-term and CTE training data is challenging to obtain by program completers consistently across all providers, it is hard to determine if Erie is on track to develop this workforce aligned to projected growth. However, assuming there are gaps in these top growth occupations, one way that they could be closed is to bring all adult education and postsecondary technical training programs (diploma and associate degree) together at an affordable 'bricks and mortar' community college that can create career pathways that can move individuals from no skills to occupational training to middle skill completers ready for work with increased wage opportunity and the possibility to continue their education at a four-year institution. For example, in looking at Table 2.1, both personal care aides, licensed-practical nurses, emergency medical technicians and registered nurses are all identified as high-growth occupations for the next ten years. A person can be trained as a personal care aide, find employment, and continue their education and training, often while working, to become an LPN, RN, EMT or another type of healthcare technician all at the same community college moving from low wage to higher wage, more skilled employment.

Table 2.1 Top Occupational Change & Forecasted Growth, 2018–2019

Ranking of Erie County employment growth and forecast for detailed occupations along with typical education needed for field entry.

Description	Rank for 1-Year Change	Rank for 10-Year Forecast	Typical education needed for entry	Typical on-the-job training needed to attain competency
Personal Care Aides	1	1	High school diploma	Short-term on-the-job training
Home Health Aides		2	High school diploma	Short-term on-the-job training
Combined Food Preparation and Serving Workers		3	No formal educational credential	Short-term on-the-job training
Registered Nurses*	2	4	Bachelor's degree* (Postsecondary certificate and license)	-
Medical Assistants		5	Postsecondary certificate	-
Nursing Assistants		6	Postsecondary certificate	-
Landscaping and Groundskeeping Workers		7	No formal educational credential	Short-term on-the-job training
Bus Drivers, School or Special Client		8	High school diploma	Short-term on-the-job training
Licensed Practical/Licensed Vocational Nurses		9	Postsecondary certificate	-
Medical Secretaries		10	High school diploma	Moderate term on-the-job training
Food Preparation Workers	9		No formal educational credential	Short-term on-the-job training
Physicians and Surgeons, All Other	4		Doctoral or professional degree	Internship/residency
Emergency Medical Technicians and Paramedics	6		Postsecondary certificate	-
Claims Adjusters, Examiners, and Investigators	3		High school diploma	Long-term on-the-job training
General and Operations Managers	8		Bachelor's degree	-
Loan Officers	10		Bachelor's degree	Moderate term on-the-job training
Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic	7		High school diploma	Moderate term on-the-job training
Computer-Controlled Machine Tool Operators, Metal and Plastic	5		High school diploma	Moderate term on-the-job training

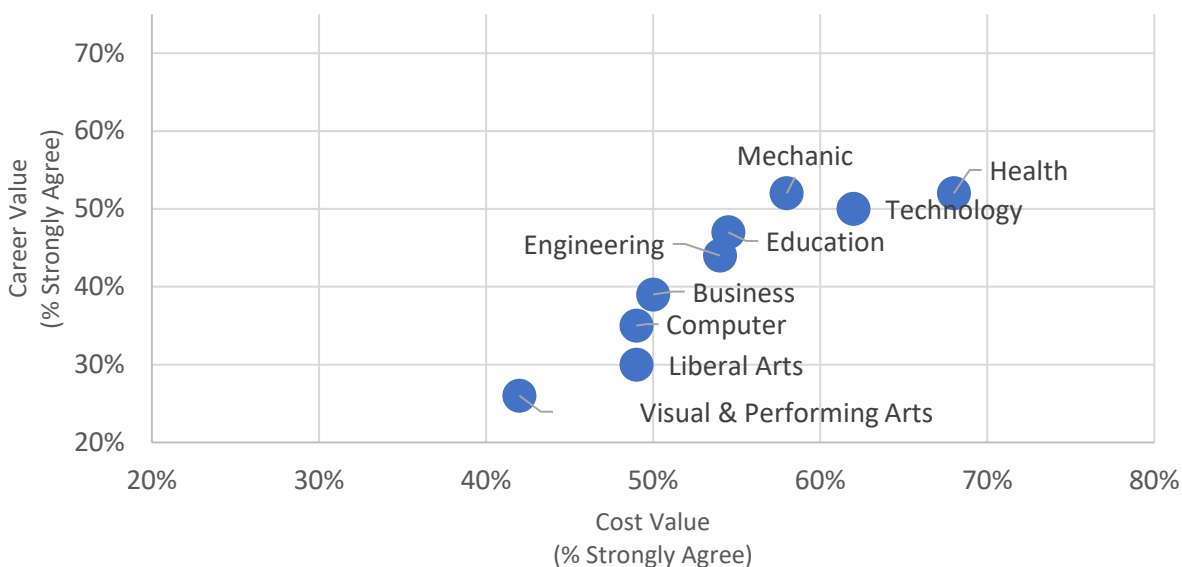
*RN degrees may be completed at two-year institutions; BSN degree is completed at four-year institution

**Bus drivers usually require a CDL license in Pennsylvania

Source: EMSI (2019 data provided by client), BLS, Garner Economics

According to a January 2020 report by Georgetown University’s Center for Education and the Workforce, approximately half of all the college degrees awarded are certificates and associate degrees with 94% of certificates and 57% of associated degrees being earned are in career-oriented programs of study.³¹ This trend is further supported by a recent joint survey report published by Strada Education Network and Gallup that shows occupational associate degrees have more value to degree recipients shown in Figure 2.1.³²

Figure 2.1 The Value Equation by Field of Study for Associate Degree



Base: US Adults age 18–65, not currently enrolled, who graduated with a terminal associate degree in the year 2000 or later; n=17,168

Source: Strada-Gallup Education Consumer Survey.

This type of workforce development, career pathway and upward mobility, is what is missing in Erie County. This is the gap a public community college can close.

Analysis of Occupations Aligned to Target Clusters

Garner Economics evaluated the educational attainment levels for those employed in occupations that support the six industry targets. In-demand occupations within each target were evaluated for the average educational attainment levels according to Bureau of Labor Statistics profile (full list of occupations is in the Appendix). These results were compared to the overall Erie County 25+ educational attainment³³. An overview of these target industry families can be seen in Figure 2.2 and the results of this educational attainment comparison are shown in Table 2.2.

³¹ “The Overlooked Value of Certificate and Associate Degrees, What Students Need to Know Before They Go to College,” Center for Education and the Workforce, Georgetown University, January 27, 2020.

³² “Changing the Value Equation for Higher Education,” Strada Education Network and Gallup, 2019

³³ Age 25 and over is a standard data set for measuring educational attainment in a population. This age group starts with “Young Adult” at ages 25-44 and includes all older groups. Ages 18-24 are considered “College Age”. Ages 25+ are used in this analysis because most who have attended post-secondary education immediately after high school and have completed degrees or certifications.

Figure 2.2: Erie County Industry Targets

Life Sciences	High Value-Added Manufacturing	Food & Beverage Processing/ Agriculture & Aquaculture	High-Value Business Services	Tech/Gaming/Digital	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 	<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

Source: Target Industry Study, Garner Economics

Table 2.2: Educational Attainment for Target Occupations

National educational attainment achievement for occupations in identified industrial targets for Erie County

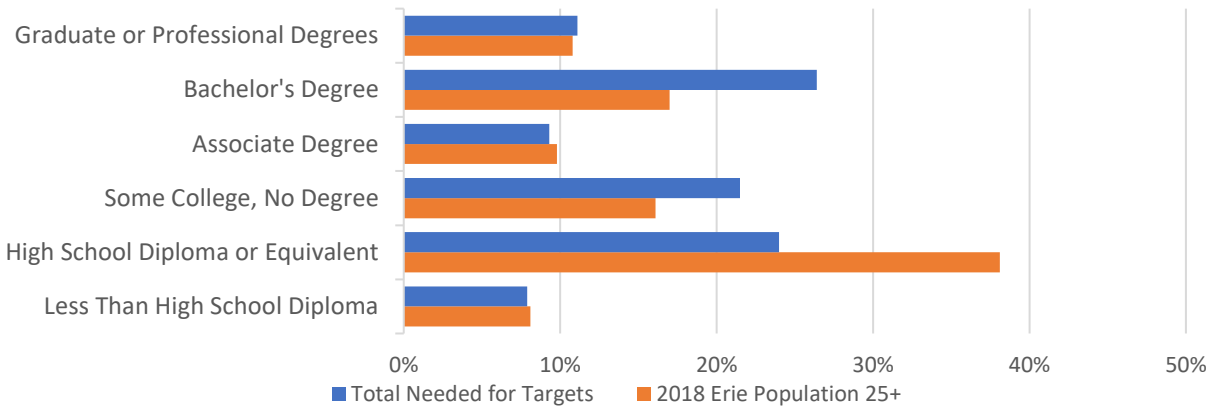
Description	Less than high school diploma	High school diploma	Some college, no degree	Associate degree	Bachelor's degree	Graduate or Professional Degree
Life Sciences	8.1%	25.3%	21.0%	11.9%	17.3%	16.4%
High Value-Added Manufacturing	12.2%	36.9%	23.4%	9.1%	14.1%	4.4%
Food & Beverage Processing/ Agriculture & Aquaculture	18.3%	42.0%	22.3%	8.0%	7.6%	1.8%
High-Value Business Services	1.7%	15.6%	23.3%	10.6%	35.2%	13.7%
Tech/Gaming/Digital	1.3%	9.9%	18.4%	9.9%	41.9%	18.6%
Year-Round Experiential Recreation	8.9%	25.1%	22.1%	8.5%	26.3%	9.1%
Total All Targets	7.9%	24.0%	21.5%	9.3%	26.4%	11.1%
Erie Educational Attainment 25+	8.1%	38.1%	16.1%	9.8%	17.0%	10.8%
<i>Difference</i>	<i>0.2%</i>	<i>14.1%</i>	<i>-5.4%</i>	<i>-0.5%</i>	<i>-9.4%</i>	<i>-.3%</i>

All jobs in high-demand occupations for identified Erie target industries.

Source: EMSI (2019 data provided by client), BLS, Garner Economics

Figure 2.3 is a representation of the data in Table 2.2. It shows that the Erie County workforce has more high school graduates than two- and four-year graduates. While not a perfect comparison, as the target sector workforce is a subset of the overall County workforce, it does show that there is an overabundance of high school graduates. It also shows that the target industries will continue to demand college completers (26.4%). As technology advancements continue to impact jobs in these occupations, these gaps will continue to increase. This trend can be mitigated by the County successfully implementing a strategy to increase its educational attainment.

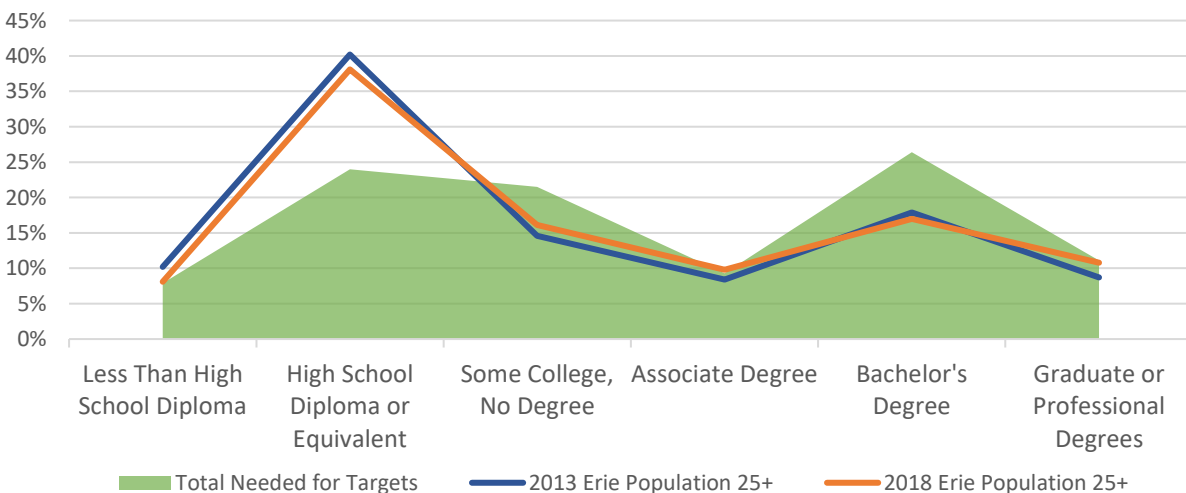
Figure 2.3: Educational Attainment Gap Analysis Graph for Target Occupations



Source: EMSI (2019 data provided by client), National Center for Education Statistics, BLS, Garner Economics

A further analysis was done to evaluate how Erie County has improved its college educational attainment levels over time. The results, shown in Figure 2.4, show that the Erie County 25+ educational attainment level has only made a small improvement over a five-year period, which is some progress. The green shaded area shows the current combined occupational educational attainment required to support Erie County's target industries. Additional data tables of the data behind this analysis may be found in Appendix C.

Figure 2.4: Erie Educational Attainment 2013, 2018 Compared to Education Attainment for Target Occupations



Source: EMSI (2019 data provided by client), National Center for Education Statistics, BLS, Garner Economics

Analysis of 2018 Graduates to 2019 Target Industry Annual Openings

The third analysis was a matching of 2018 Erie County college graduates by degrees/certificates awarded to 2019 annual occupational openings for the target industries for Erie. A straightforward comparison shows a skills gap in all target industries except Year-Round Experiential Recreation. This analysis further considered the projected retention of college graduates in Erie on the skills gap. The estimated college retention rate is 39%, determined by the Garner Economics College Graduate Retention Analysis model for one-year post graduation. When this college graduate retention rate is applied, this gap grows significantly as shown in Table 2.3.

Table 2.3: Gap Analysis Summary by Target Industry of Annual Openings (2019) to Degree/Certificates Awarded (2018)

Description	Certificates	Associate	Bachelor's	Graduate	Total Degrees/ Certificates	Annual Openings	Gap	Gap (Retention Model*)
Life Sciences	181	282	486	1,217	2,166	2,178	-12	-1,333
High Value-Added Manufacturing	106	113	332	229	780	2,474	-1,694	-2,170
Food & Beverage Processing/ Agriculture & Aquaculture	26	109	167	153	455	2,855	-2,400	-2,678
High-Value Business Services	126	182	559	222	1,089	1,973	-884	-1,548
Tech/Gaming/Digital	145	161	833	264	1,403	1,355	48	-808
Year-Round Experiential Recreation	121	174	761	205	1,261	997	264	-505

All jobs in high-demand occupations for identified Erie target industries.

**Retention model uses a Graduate Retention Analysis for 2019, which estimates that an average 39% of graduates with degrees granted from Erie County institutions remain in the area.*

Source: EMSI (2019 data provided by client), National Center for Education Statistics, BLS, Garner Economics

Erie Target Industries and the Local Talent Pipeline

A final analysis was conducted to evaluate how education and training service providers aligned with delivering the talent pipeline for target industries. While the postsecondary institutions provide an abundance of offerings, the top five programs based on completers were used for this analysis along with information previously reported in the Garner Economics *Competitive Realities Report*. Data is not publicly available on CTE completers by program of study, so alignment was made based on interviews. This analysis gives a high-level snapshot to Erie to help understand how its workforce development delivery system aligns to target industries. It is intended to be used as assistance in shaping an Erie County industry sector approach for workforce development offered in Recommendation 2, Chapter 4.

Figure 2.5: Education and Training Asset Mapping

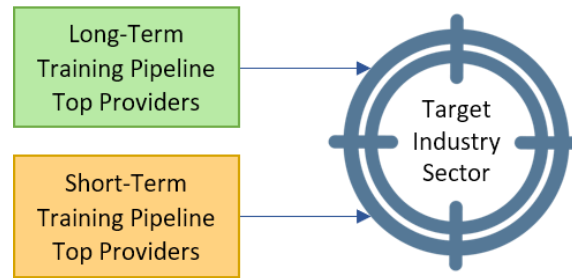


Table 2.4 Workforce and Training Service Delivery Alignment to Target Sectors

Sector	Long Term Pipeline	Short Term Pipeline
Food & Beverage Processing/Agriculture & Aquaculture	Penn State Behrend Gannon University	Penn State Behrend (Continuing Ed and Workforce) Erie High School Maritime Program Regional Career & Tech School** (CDL)
High Value-Added Manufacturing	Penn State Behrend Gannon University Erie County Technical School* Erie High School CTE* Corry CTE*	Penn State Behrend (Continuing Ed and Workforce) Regional Career & Tech School** Tech After Hours
High-Value Business Services	Edinboro Mercyhurst Penn State Behrend Gannon University	Penn State Behrend (E-Commerce Certificate) Erie Technical Institute Fortis Institute
Life Sciences	Edinboro Gannon University LECOM Mercyhurst Penn State Behrend Erie County Technical School* Erie High School CTE* Corry High School CTE*	Great Lakes Technical Institute Edinboro (Continuing Ed & Workforce)
Tech/Gaming/Digital***	Edinboro Gannon University Mercyhurst Penn State Behrend	Erie Technical Institute
Year-Round Experiential Recreation	Mercyhurst Erie High School Maritime Program* Erie County Technical School* Erie High School CTE* Corry High School CTE*	Penn State Behrend

*CTE completer data required to properly map. Alignment assumption made based on interview.

**Program completer data not received from RCTS. Alignment assumption made based on interview.

***Major available – program graduate data is low

Source: Top program graduate data 2018-2019, college websites and Garner Economics Erie Competitive Realities Report (CRR)

CHAPTER 3: ERIE BY THE NUMBERS - ECONOMIC DYNAMICS & EMPLOYMENT UPDATE

This chapter updates key data on the labor market of Erie County, Pennsylvania, from the *Competitive Realities Report & Target Industry Strategy* released April 15, 2019. This data profile begins with the residents who live within the County, then explores commuting patterns with the surrounding area. We then transition to employer-based information for those working in Erie County and local college enrollment and graduate retention. Data that gives a snapshot of the workforce in Erie County was updated for this report.

↑ → ↓ Each section is marked with an indicator showing improvement, neutrality, or decline.

↑ Labor Force

Table 3.1 Change in Labor Force

	2018	2019	5-Year Change 2013–2018	5-Year Change 2014–2019	1-Year Change 2018–2019
Erie County	128,738	130,305	-5%	-3%	1.2%
Pennsylvania	6,408,890	6,491,640	-1%	2%	1.3%
United States	162,075,000	163,539,000	4%	5%	0.9%

1.2%

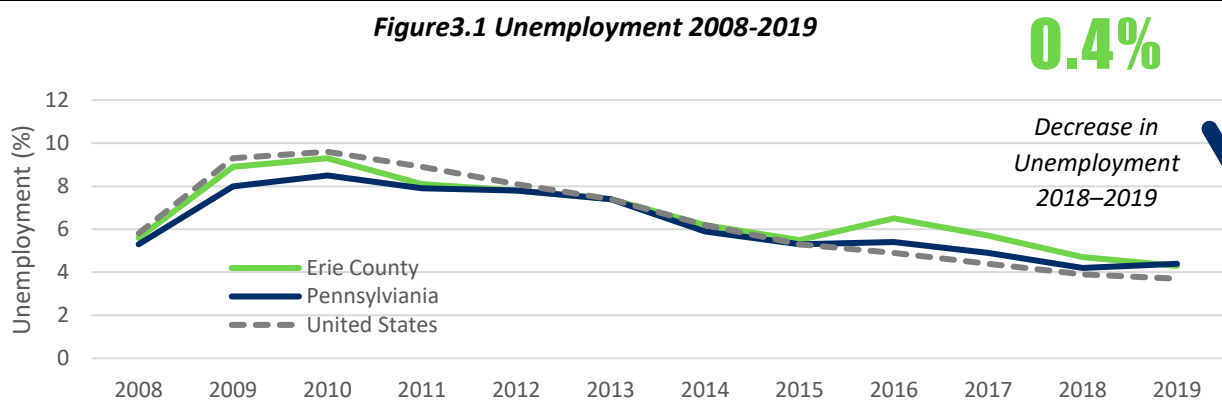
Increase in Labor
Force 2018–2019

Source: Bureau of Labor Statistics, Garner Economics

The annual average labor force in Erie County has increased by 1.2% since 2018. With this improvement, the overall five-year change for the County's labor force moved from a 5% loss to a 3% loss. Erie County's one-year growth was better than the national-level change and just behind Pennsylvania.

↑ Unemployment

Figure 3.1 Unemployment 2008-2019



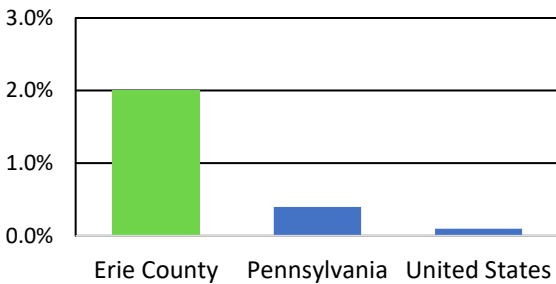
Source: Bureau of Labor Statistics, Garner Economics

Unemployment has mirrored the commonwealth and the nation. Erie County experiences a sharp increase in 2016 followed by a steep decline through to 2019. The annual average unemployment for Erie County in 2019 was 4.3%, down from 4.7% in 2018. The highest annual unemployment rate was 9.3 percent in 2010 and the lowest was 4.3 for 2019.



Labor Force Participation

Figure 3.2 Change in Labor Force Participation, 2017–2018



Among residents ages 16 and over in Erie County in 2018, 61.2% participated in the labor force. This rate has increased 2% since 2017, which is higher than the commonwealth and the nation’s growth, which were 0.4% and 0.1% respectively. The updated five-year span (2013–2018) shows Erie County dropping only 0.3% which is on par with nationwide participation.

Table 3.2 Labor Force Participation

	2017	2018	5-Year Change 2012–2017	5-Year Change 2013–2018	1-Year Change 2017–2018
Erie County	59.2%	61.2%	-3.3%	-0.3%	2.0%
Pennsylvania	62.4%	62.8%	-0.4%	-0.1%	0.4%
United States	63.2%	63.3%	-0.6%	-0.3%	0.1%

2%

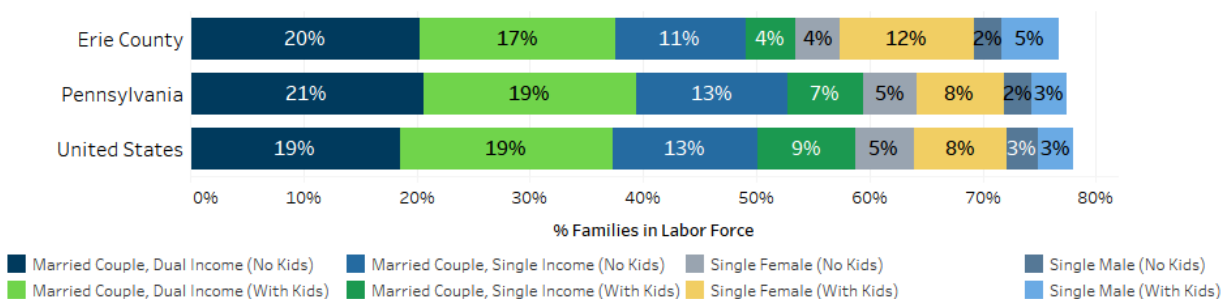
Increase in Labor Force Participation, 2017–2018

Source: US Census Bureau, Garner Economics



Labor Force Participation—Families

Figure 3.3 Labor Force Participation by Detailed Type of Family, 2018



Source: US Census Bureau, Garner Economics

Among all families in Erie County, 76.2% participate in the labor force, which is a 0.8% increase since 2017 data. As seen in the detailed chart above, the primary types of families working are married couples with *Married-Couple Families, Dual Income (No Kids)* being the largest segment at 20% of all families. 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 levels.

Table 3.3 Labor Force Participation by Type of Family, 2018

	Married Couples	Other Families	Total Families
Erie County	53.4%	23.3%	76.7%
Pennsylvania	59.4%	18.1%	77.5%
United States	58.8%	19.2%	78.0%

Source: US Census Bureau, Garner Economics



Labor Force Draw

Figure 3.4 Drive-Time Analysis (45-Minutes), 2019



Source: ESRI, 45-Minutes from the Crossroads of Interstate I-79 & I-90

374,552

Population

40.9

Median Age

183,562

Labor Force

176,402

Average Employment

3.9%

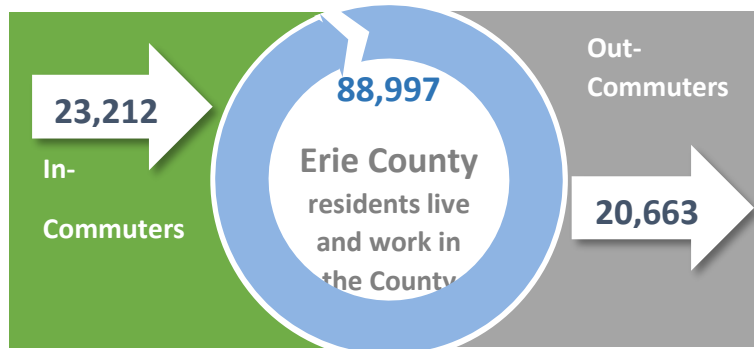
Unemployment Rate

The effective labor draw analysis considers the pool of active workers residing within the representative drive-time from a site. Within a 45-minute drive from Erie County, the population and labor force are higher, which enlarges the reach for possible commuters. The drive-time area labor force in 2019 is 183,562, which is more than a 3,000 increase from 180,752 in 2018. The number of employed also increased by nearly 6,500 from 2018 to 2019 estimations, which played into lowering the unemployment rate from 6% to 3.9%.



Commuting Patterns

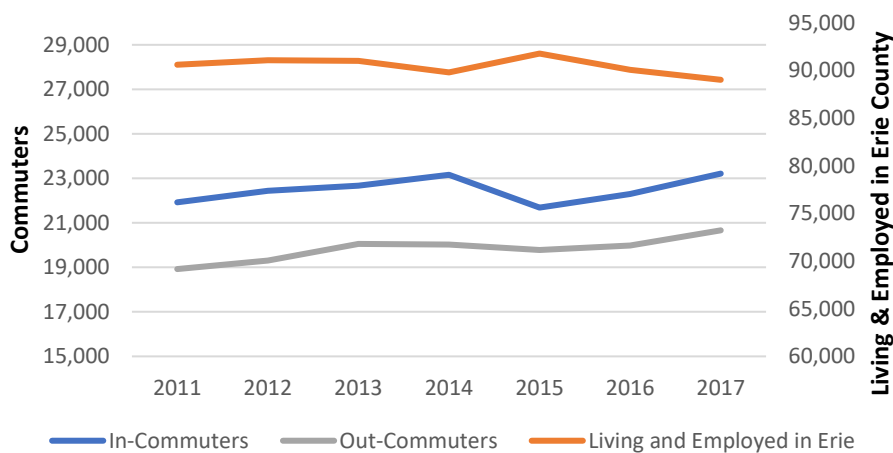
Figure 3.5 Commuting Patterns, 2017



Source: 2017 US Census Bureau, Longitudinal Employer-Household Dynamics (LEHD) excluding federal workers, Garner Economics

Erie County retains most of its residents for work and imports commuters for jobs leaving a net inflow of +2,549 according to 2017 data that includes private and public workers (except federal workers). In 2015, the net inflow of commuters was +1,911, an increase of more than 600.

Figure 3.6 Commuting Trends, 2012–2017



Although the net commuting number is positive, showing more workers coming into the area, it is concerning that not all segments are growing at the same pace.

From 2012 to 2017, there was a general decline in residents choosing to stay in the

County for work. In-Commuting patterns show a dip in 2015 and then a return to growth while the Out-Commuting trend shows a steady increase across this same time from. The growth of commuters and decline of residents staying in the county to work indicates a mismatch of residents and jobs.

Source: 2017 US Census Bureau, Longitudinal Employer-Household Dynamics (LEHD) excluding federal workers, Garner Economics



Wages

Figure 3.7 Average Annual Wages, 2019

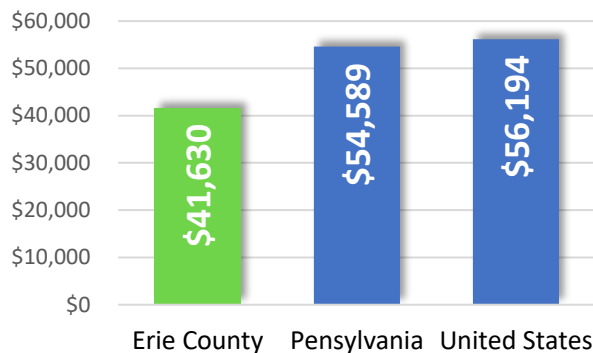


Table 3.4 Average Annual Wages, 2014–2019

	2014	2019	5-Year Change*	5-Year % Change*
Erie County	\$41,818	\$41,630	(\$188)	-0.40%
Pennsylvania	\$52,764	\$54,589	\$1,825	3.50%
United States	\$53,644	\$56,194	\$2,550	4.80%

*Adjusted for inflation

Source: Emsi, Garner Economics

In 2019, the estimated average wage per job in Erie County equaled \$41,630 annually. Erie County's average annual wage is the lowest among the benchmark geographies for 2019. Adjusted for inflation, wages decreased in the past five years by 0.4%. Pennsylvania and the United States grew modestly over this same period.



Postsecondary Credentials Granted in Erie County

Figure 3.8 Erie County Postsecondary Awards by Type, 2018

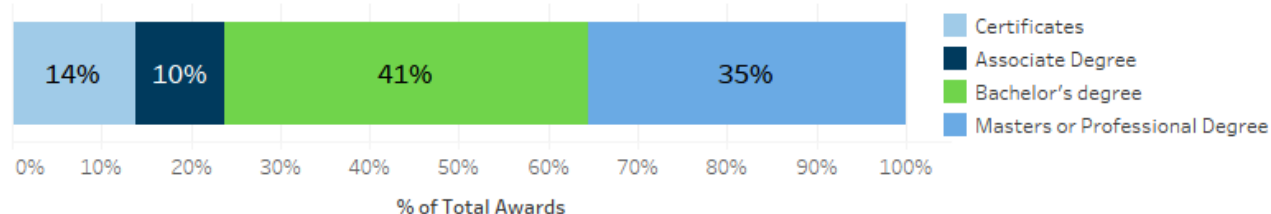


Table 3.5 Erie County Postsecondary Awards, 2017–2018

Award Level	2017	2018	Change
Certificates below the Baccalaureate	692	710	3%
Associate Degree	515	657	28%
Bachelor's Degree	2,696	2,708	0%
Certificates above the Baccalaureate	234	212	-9%
Master's Degree	1,325	1,346	2%
Doctorate Degree	992	1,010	2%
Total	6,454	6,643	3%

Erie County colleges and universities awarded 6,643 credentials to students in 2018. A majority of these degrees were bachelors or higher (76%) while only 10% were associate degrees, and 14% were certificates at varying levels. The number of associate degrees increased by 28% from 2017 to 2018.

Source: National Center for Education Statistics, Garner Economics

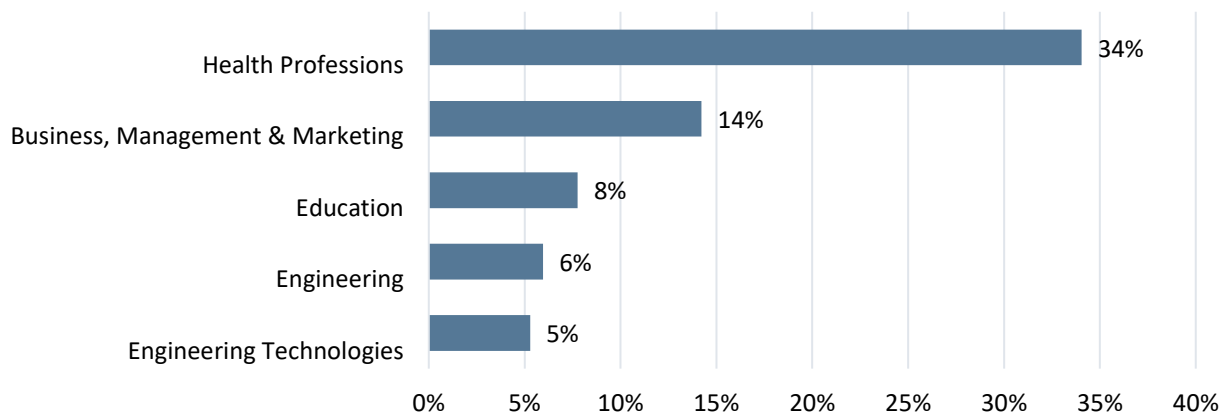
Table 3.6 Erie County Associate Degrees Awarded, 2018

Institution Name	2018
Mercyhurst University—North East Campus (CLOSING 2020)	224
Edinboro University of Pennsylvania	121
Fortis Institute in Erie	81
Triangle Technical Institute (CLOSED 2019)	69
Great Lakes Institute of Technology	63
Erie Institute of Technology, Inc.	47
Pennsylvania State University—Penn State Erie—Behrend College	28
Gannon University	24

Of the associate degrees granted by Erie County colleges, 45% came from Mercyhurst University's North East Campus, which is closing in 2020, moving programs to their main campus. Triangle Technical Institute, which closed in 2019, awarded 69 Associate degrees in 2018.

Source: National Center for Education Statistics, Garner Economics

Figure 3.9 Top Five Areas of Study (Degrees Awarded), 2018



Source: National Center for Education Statistics, Garner Economics



Graduate Retention Analysis for Erie County postsecondary Institutions

The professional social media platform LinkedIn lists self-identified alumni from colleges and universities and their current hometown. Because the data is self-reported, it may also include some students readying to enter the workforce or seeking internships. This LinkedIn profile data can be mined and used as an indicator of area college graduate retention in the Erie region.

The total number of people on LinkedIn who listed that they are alumni from an Erie area institution is 80,720. Of that number, 20,847 or 26% live in the Erie area, according to their LinkedIn information. Great Lakes Institute of Technology and the Erie Institute of Technology had higher retention rates for all graduate years at 64% and 62% respectively.

Table 3.7 Graduate Retention Analysis: Erie Postsecondary Alumni Currently Living in Erie by Institution

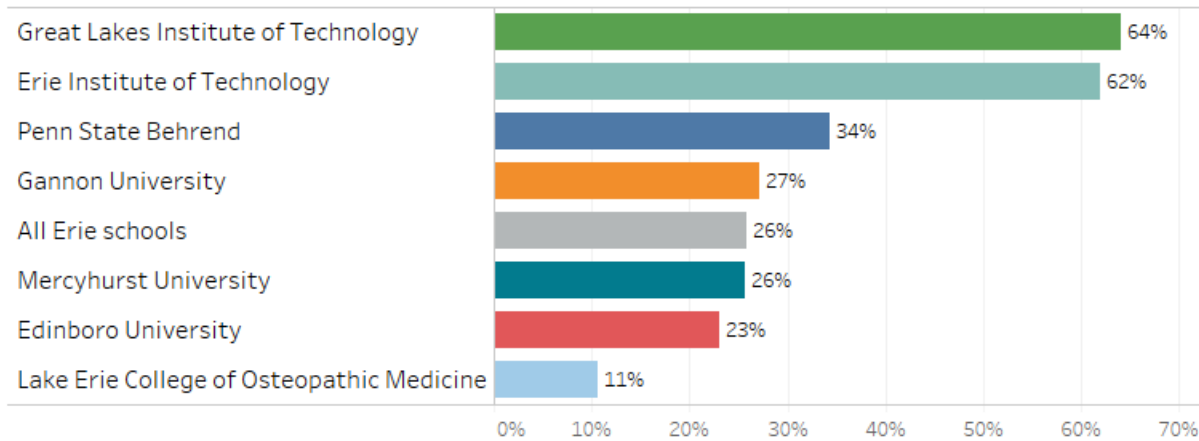
Institution	Category	2009	2014	2018	2019	All Years
Edinboro University	Total on LinkedIn	1,634	1,755	1,062	1,598	28,808
	Erie Residents LinkedIn	499	574	441	771	6,621
	Percent	31%	33%	42%	48%	23%
Erie Institute of Technology	Total on LinkedIn	69	91	85	56	829
	Erie Residents LinkedIn	44	72	73	48	514
	Percent	64%	79%	86%	86%	62%
Gannon University	Total on LinkedIn	1,043	1,368	1,007	733	20,214
	Erie Residents LinkedIn	319	437	428	332	5,491
	Percent	31%	32%	43%	45%	27%
Great Lakes Institute of Technology	Total on LinkedIn	62	167	143	88	1,054
	Erie Residents LinkedIn	31	103	116	74	676
	Percent	50%	62%	81%	84%	64%
Lake Erie College of Osteopathic Medicine	Total on LinkedIn	478	743	687	1,372	5,236
	Erie Residents LinkedIn	30	73	124	216	553
	Percent	6%	10%	18%	16%	11%
Mercyhurst University	Total on LinkedIn	1,299	1,420	937	715	16,654
	Erie Residents LinkedIn	353	475	345	278	4,269
	Percent	27%	33%	37%	39%	26%
Penn State Behrend	Total on LinkedIn	374	928	1,007	848	7,925
	Erie Residents LinkedIn	103	350	438	402	2,723
	Percent	28%	38%	43%	47%	34%
All Erie Schools	Total on LinkedIn	4,959	6,472	4,928	5,410	80,720
	Erie Residents LinkedIn	1,379	2,084	1,965	2,121	20,847
	Percent	28%	32%	40%	39%	26%

Source: LinkedIn, Garner Economics

Notes:

- Northern Pennsylvania Regional College only had four people connected.
- Mercyhurst Northeast was also not on LinkedIn as a separate campus. The assumption is that Mercyhurst University will have data for both locations.

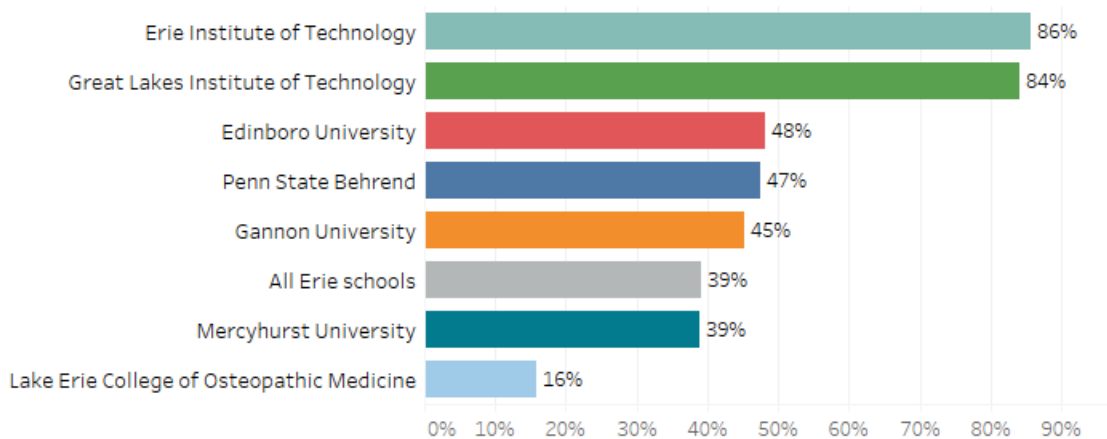
Figure 3.10 Graduate Retention Analysis: Percentage of Erie Postsecondary Alumni Currently Living in Erie by Institution (all years)



Source: LinkedIn, Garner Economics

The trend for 2019 shows a growing percentage of students staying in the Erie area compared to past years in Table 3.7. This may be attributed to the growing used of the LinkedIn tool in addition to college graduate retention. Great Lakes Institute of Technology and the Erie Institute of Technology retained the most students with 84% and 86% of graduates living in Erie. This pattern follows the Emsi Alumni Insight observation that a higher percentage of those who attend a community college will live within 50 miles of the school.

Figure 3.11 Graduate Retention Analysis: Percentage of Erie Postsecondary Alumni Currently Living in Erie by Institution (2019)

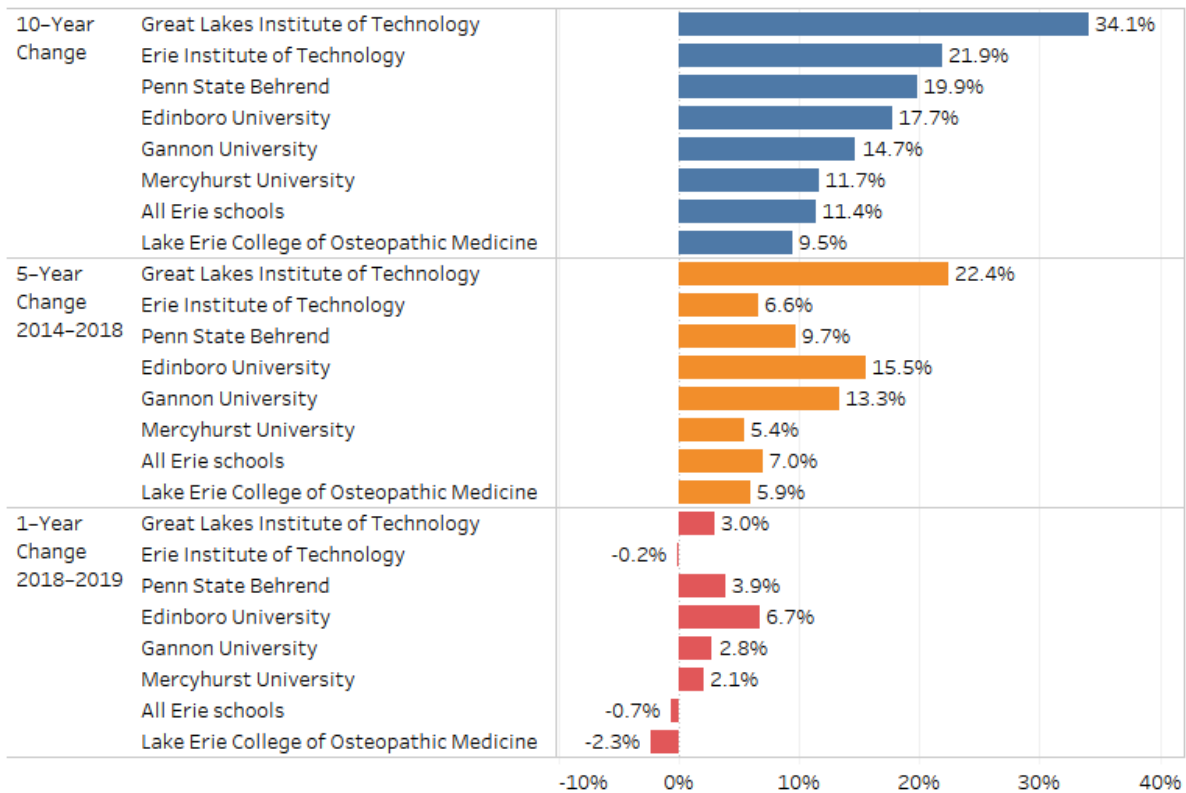


Source: LinkedIn, Garner Economics

Notes:

- Northern Pennsylvania Regional College only had four people connected.
- Mercyhurst Northeast was also not on LinkedIn as a separate campus. The assumption is that Mercyhurst University will have data for both locations.

Figure 3.12 Graduate Retention Analysis: Change in the Percentage of Erie Postsecondary Alumni Living in Erie by Institution



Source: LinkedIn, Garner Economics

Notes:

- Northern Pennsylvania Regional College only had four people connected.
- Mercyhurst Northeast was also not on LinkedIn as a separate campus. The assumption is that Mercyhurst University will have data for both locations.

CHAPTER 4: RECOMMENDATIONS³⁴

Six recommendations are offered to move Erie County from its current workforce development delivery system to its future desired state as described in the suggested vision statement on page 9. Two recommendations are considered transformational (described in Table 4.1).

Table 4.1 Erie County Workforce Development Recommendations

Transformational Recommendations*	Organizational Recommendations	Business Expansion Recommendation
R1: Establish a brick-and-mortar public community college to build a workforce to support Erie County's economic growth. The community college will have a focus on state-of-the-art laboratories and skills-based programs that align with both target industry sectors and skilled trades	R2: Create an umbrella workforce development organization within the Erie Regional Chamber and Growth Partnership	R5: Increase high-value internship and apprenticeship work-based learning opportunities for high school students, including tracking experiences and measuring outcomes
R4: Advocate for the development and implementation of a world-class soft skills program to close employer-identified gaps	R3: Develop and implement an effective, holistic workforce development communications plan that will improve communications on available workforce resources.	
	R6: Develop a set of workforce development metrics that drive change and document that Erie County is producing the workforce to support its current and new employers	

³⁴ Recommendations noted with an asterisk are considered by Garner Economics as transformational, and if implemented could have a profound positive impact on the economic vitality of Erie County.

Section 4.1 Recommendations



***Recommendation One: Establish a brick-and-mortar public community college to build a workforce to support Erie County's economic growth. The community college will have a focus on state-of-the-art laboratories and skills-based programs that align with both Erie's target business sectors and skilled trades.**

Workforce development delivery system observations:

- Lack of stackable, flexible career pathways for the adult population
- Lack of affordable postsecondary education that provides both occupational training and educational advancement
- Not enough state-of-the-art training facilities to support short-term talent pipeline development
- Lack of dual enrollment opportunities for career and technical education for high school students
- Lack of affordable training opportunities aligned to top growth occupations to ensure a prepared workforce
- Gap in educational attainment levels to match the hiring needs of employers that comprise Erie County's target industries
- Lack of preparedness of high school students for work
- Lack of opportunity for national and federal grants available to community colleges



Public community colleges are the cornerstone for providing a pathway for upward mobility for many adults who have a high school diploma or did not finish their education. They achieve this by offering affordable, high quality, relevant programs of study in state-of-the-art facilities that keep pace with industry advancement. This upward mobility is accomplished by creating career pathways with on- and off-ramps that enable their students to have the flexibility needed to advance their careers while managing life. Effective public community colleges are

building programs based on career pathways where students earn a short-term occupational industry-recognized credential (weeks or months), and then continue to a one-year diploma and/or associate degree at the same institution.

Once students complete an associate degree, they can continue their education by transferring to a local four-year institution (if desired). Pennsylvania public community colleges are accredited by the Middle States Commission on Higher Education, enabling easy transferability of credits. Analyzing 2018 BLS educational attainment wage data, associate degree graduates earn on average 18% more than high school graduates. Bachelor's degree graduates earn on average 64% more.³⁵

³⁵ Bureau of Labor Statistics, Current Population Survey, 2018, age 25 and over, full-time wage and salary workers

CNBC recently ranked the top states that are winning the war on talent development.³⁶ Garner Economics evaluated the top five states identified by CNBC plus Pennsylvania for the number of public community colleges per capita (Table 4.2). The findings show the community college availability per capita is significantly better in these top ranked states than Pennsylvania.

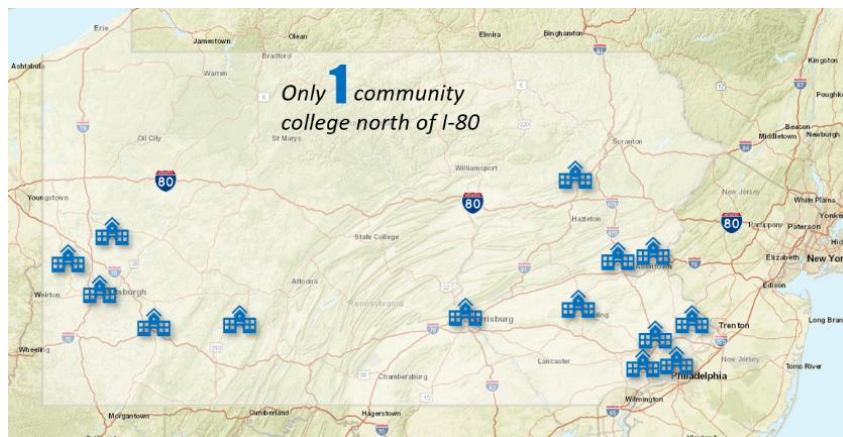
Table 4.2 Comparison of Community College Per Capita from CNBC Top Talent States

State	CNBC Rank	Number of Public Community Colleges	Population	Community Colleges Per Capita
MA	1	15	6,892,503	459,500
WA	2	34	7,614,893	223,967
VA	3	23	8,535,319	371,101
GA	4	22	10,617,423	482,610
CO	5	13	5,758,736	442,980
PA	Not Ranked	14	12,801,989	914,428

Source: collegesimply.com, state community college websites, US Census Bureau, Garner Economics

There are fourteen brick-and-mortar public community colleges in Pennsylvania. The map of these community colleges (Figure 4.1) shows that there is only one located above Interstate 80 in Luzerne County. The closest public community college in proximity to Erie is in Butler, approximately 105 miles south.

Figure 4.1 Pennsylvania Map Showing Location of 14 Community Colleges



Key takeaways from employer feedback noted that there are currently not enough affordable, effective training facilities to develop the skilled workforce needed in Erie. In addition, many of the laboratory facilities do not contain the equipment needed to prepare a future workforce ready to fill the high-tech jobs of today and tomorrow. This is particularly true in advanced manufacturing where the impact of Industry 4.0 is requiring a higher level of technical skills. There are adult technical training facilities located at high schools. They are adequate but not cutting-edge, and their enrollments are understandably low. Erie County has a high number of high school graduates. The community needs a brick-and-mortar public community college that allows its residents to earn college credentials for skills mastered while obtaining

³⁶ "Top 10 States that are winning the war for talent," CNBC, July 10, 2018

the training and education needed for a successful career. What would further propel Erie ahead is housing adult education and adult technical training at a public community college.

Erie County is missing opportunities to bring national and federal grant funding available only to public community colleges into the area because it lacks this type of institutions. There are USDOL and national grant funders such as the Strada Education Network, that provide funding for workforce training and equipment to public community colleges. Usually these grants require matching funding from the end user.

During site visits, Garner Economics observed that there are limited dual enrollment opportunities for career and technical education students. The creation of a public community college with skilled programs of study would provide opportunities for CTE students to earn college credit while in high school. This would enable a career pathway for further educational advancement as well as increased upward mobility by enabling students to earn postsecondary certificates while still in high school, providing them opportunities to earn higher starting wages after graduation.

Last, the upward mobility of a community's workforce can only happen where education and training opportunities enable advancement and are affordable. The 2017–18 tuition and fees for the private for-profit technical training facilities available to Erie County residents range from \$13,157 to \$20,125. In comparison, the average 2017–18 tuition and fees to attend a Pennsylvania public community college were \$5,274.³⁷

A new public community college in Erie would be transformational and a stake in the ground for a community that is working hard on several fronts to propel itself toward a new level of economic prosperity. Erie cannot achieve this economic success without creating upward mobility opportunities for its workforce and increasing their skill sets that align with the needs of the County's diverse business sectors.

Lead: Erie County and Erie Regional Chamber and Growth Partnership (ERCGP)
Timeline: 2020–2021
Resources: TBD by the Pennsylvania Department of Education and local funding options

³⁷ Source: Integrated Postsecondary Education Data System (IPEDS), National Center for Education Statistics, 2018–2019 and Garner Economics



Recommendation Two: Create an umbrella workforce development organization within the Erie Regional Chamber and Growth Partnership.

Workforce development delivery system observations:

- The skills gap analysis shows there are gaps across multiple target industry sectors
- There is no county-level organization leading the entire workforce delivery system
- Employer perception of the workforce development delivery system is that it is stuck in the past and it is not cohesive³⁸
- Erie is a midsize county of over 270,000 that seeks to improve its economic future
- Erie County is challenged in retaining its workforce

Garner Economics observation and that of the focus group participants is that the workforce development delivery system in Erie County is not cohesive and needs a single point of leadership to effectively target limited resources. ERCGP could affect this change by creating a workforce development organization, which would be permanently housed in the chamber and aligned to its economic growth strategy and serve all Erie County employers. The business community should help drive this effort since they are the end user of the product (students) coming from the academic institutions. The organization would represent all sectors, but subsectors representing Erie's targeted industries and largest clusters of employment would have special attention. This office would be staffed with a workforce development director with experience in both economic and workforce development with a mission to coordinate all resources together under a single cohesive plan. The initial charge of this office is to develop a holistic workforce development strategic

The workforce development delivery system in Erie County is not cohesive and needs a single point of leadership to effectively target limited resources.

³⁸ The Garner Economics *Competitive Realities Report and Target Industry Strategy* found focus group participants described Erie as "content with status quo" with a tendency to be complacent and parochial.

plan to address the workforce gaps highlighted in the full report using ideas presented in the best practices' sections. Two key areas of strategic focus for this new office are (1) improving short-term training of the adult population through affordable, flexible, and career pathways consisting of stackable credentials and (2) retaining its college graduates. These are the two identified threats in the SWOT Analysis. Solutions for both are linked to the establishment of a "bricks and mortar" community college. Information contained in Table 2.4, Workforce and Training Service Delivery Alignment to Target Sectors, may be helpful in organizing the sector approach.

Best Practices: The Center for Education and Workforce at the US Chamber of Commerce Foundation has developed a curriculum to help establish a demand-driven workforce development program. It is available online at <https://www.uschamberfoundation.org/reports/tpm-curriculum>.

A good starting point for laying the groundwork for the new Chamber workforce development department is to talk with other local chambers who have established workforce development offices. Below are several chambers that have made good progress in leading workforce development efforts in their communities.

Chamber Organization	Link	MSA Population
Cobb Chamber of Commerce (Georgia)	https://www.cobbchamber.org/economic-development/workforce-development.aspx	*756,900
Greater Des Moines Partnership (Iowa)	https://www.dsmpartnership.com/growing-business-here/business-resources/talent-development-resources/future-ready-dsm	655,400
Greater Green Bay Chamber (Wisconsin)	http://www.greatergbc.org/workforce/	321,600

*County population

There are also many economic development organizations that are engaged in workforce development efforts. One best practice example is Billings Works, a collaboration of Billings businesses and organizations hosted by Big Sky Economic Development in Billings, Montana. (www.billingsworks.org).

Lead: ERCGP and employers
Timeline: 2021 and ongoing
Resources: \$250k to \$300k annually - estimated



Recommendation Three: Develop and implement an effective, holistic workforce development communications plan that will improve communications on available workforce development resources.

Workforce development delivery system observations:

- Employer feedback results showed that 67% of the participants felt that communications from the workforce development delivery system ranged from not good to nonexistent
- Employer focus group participants shared that email is not an effective form of communication
- Survey results showed limited use of industry recognized credentials especially in the manufacturing sector for hiring decisions
- There are training resources that are valued but may not be fully utilized by employers
- Employers did not identify some workforce development resources by correct names, thus their knowledge of the organizations engaged may be limited

The focus group participants shared that the workforce development delivery system in Erie County does not have an effective communication process to share workforce delivery information and resources. This is a common problem for many communities. An Erie County example of ineffective communications is the survey data showing employers are not recognizing or using industry recognized credentials (IRC) in their hiring process. These credentials are being earned by students across multiple education and training providers and yet, employers have a lack of awareness on what they are or how to use.

Currently, there are workforce resources available from multiple partners; however, each has its employer communication process. Employers in the focus group shared that they are inundated with email messages and spam filters are removing many mass email distributions. They also shared that email is no longer an effective form of communication because of its overuse but were challenged to identify a more effective form of communication.

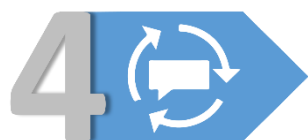
The new (recommended) Chamber workforce organization should survey its employers on how best to improve workforce development communications. Information and insights gleaned can inform the development of an improved communication plan that will provide effective and regular communication messaging to employers to increase information sharing on valued workforce resources. The organization of workforce messaging through an overarching plan should help to improve the effectiveness of employer communications. Alternatives to email messaging include using social media to drive members to workforce information hosted on the Chamber's website. Workforce website messaging should be succinct, relevant, and require no more than two clicks to find information. Another approach is to include a workforce information section in regular Chamber member communications. If there are regular employer meetings or events, finding innovative ways to share the workforce or training resource information during these events are other options. Whatever communication vehicle is used, it is important to understand what type of workforce development and training information employers want and need to know and how their preferred method of communication. It is recommended though that proposed suggestions provided are verified through an employer survey process. The communications plan would extend to all employers.

Best Practices: The Association of Chamber of Commerce Executives has an abundance of chamber communication and social media best practice plans available for download to members.

Partners: ERCGP and County-level Workforce Development Team (CLWDT),

Timeline: Ongoing

Resources: \$75k year one for initially branding plus annual budget allocation thereafter



***Recommendation Four: Advocate for the development and implementation of a world-class soft skills (power skills) program to close employer-identified gaps.**

Workforce development delivery system observations:

- Employer survey respondents identified teamwork, problem-solving, and communication skills among the top skills desired in new hires
- Survey results showed employers do not believe high school graduates are prepared for work
- Erie County School Superintendents have an existing, effective, leadership organization
- Ten out of 12 employer focus group participants said new hires do not have the soft skills their organization requires
- Focus group participants indicated that interpersonal, communication, and work ethic are the highest missing soft skills

The outcome of both the employers surveyed and focus group participants shows that Erie County workforce delivery system does not have a unified, consistent, and world-class approach to soft skills development for its future talent. The results of the survey and focus group mirror results from a 2019 National Skills Gap Survey conducted by Adecco, a national recruitment and staffing organization, which showed that 44% of executives surveyed indicated that a lack of soft skills is the biggest gap they saw in the US workforce.³⁹

Therefore, Garner Economics recommends that the Chamber advocate for a world-class program that would provide instruction on the soft skills employers seek in the workplace. This program would be either a semester long or could be integrated with other coursework across multiple grades. Insights gathered in the Erie County workforce development delivery assessment report should be used as background information in developing the program. Erie County school superintendents should take the lead in developing the program and determining how to best leverage the existing resources and efforts in development. The leadership of the school superintendents is a necessity for a world-class soft skills program to be implemented throughout high schools. The approach and intensity for implementing a soft skills program should parallel the approach used for STEM program development. As the President of Berry College recently said, soft skills are “power skills.” They allow people to work in an environment of mutual understanding and respect for people and company culture.

*Soft skills are
“power skills”*

³⁹ Source: <https://www.adeccousa.com/employers/resources/skills-gap-in-the-american-workforce/>

Best Practices: There are not an abundance of documented best practices of schools effectively teaching employer-desired soft skills in high schools, which provides an opportunity for Erie County to become a national leading practice. Currently many state and local school districts across the country are focusing on teaching social and emotional learning (SEL) skills in their curriculum. Many academics and community leaders view teaching SEL skills as teaching soft skills. The development of an effective soft skills program must ensure a common and agreed upon definition of soft skills that is aligned with the Erie business community. However, the development and implementation of this program will want to build upon any social and emotional skill development curriculum currently in place.

Below are some background papers to provide a starting point for the development and implementation of this recommendation. These three papers provide some information that may be helpful in finding common ground between the employer and academic perspectives on soft skills in developing this transformational recommendation.

- PA DOE Career Ready Skills: In Pennsylvania, the DOE rolled out its soft skills instruction as Pennsylvania Career Ready Skills in October 2018. There are three domains covered in a curriculum that is to span from kindergarten to 12th grade: (1) self-awareness and self-management, (2) establishing and maintaining relationships, and (3) social problem-solving. A link to the summary paper may be found here: <https://www.education.pa.gov/K-12/CareerReadyPA/CareerReadySkills/Pages/default.aspx>
- “Businesses say students aren’t mastering basic workplace skills. Are they right?” Sarah Goner, the Hechinger Report, November 30, 2018. In this article, she presents a few best practices in teaching employer-desired soft skills in high schools. <https://hechingerreport.org/businesses-say-students-arent-mastering-basic-workplace-skills-are-they-right/>
- *The Soft Skills That Matter and How to Incorporate into K12 Curriculum* by Hanover Research: This paper provides information on how to incorporate some of the soft skills the Erie business community noted as deficient into the K–12 curriculum. <https://www.hanoverresearch.com/media/Incorporating-Soft-Skills-into-the-K-12-Curriculum.pdf>

Partners: Erie County School Superintendents organization, ERCGP and Erie Together

Timeline: 2021–2022

Resources: Leverage existing school superintendent organization to develop and determine budget



Recommendation Five: Increase high-value internship and apprenticeship work-based learning opportunities for high school students, including tracking experiences and measuring outcomes.

Workforce development delivery system observations:

- Only 19% of employer survey respondents currently engage in high school work-based learning (WBL)
- Of the remaining 89% that do not currently engage in high school WBL, 69% indicated they would like to engage
- There is state funding available to support apprenticeship and internship programs
- Current federal policy has eased the implementation of apprenticeships while maintaining quality training
- WBL aligned to students' career plans can help retain the current workforce
- There is limited use of industry-recognized credentials earned by students in employer hiring decisions
- Career Street has a good track record of serving as a successful liaison between educators, students, and employers in organizing WBL experiences
- The Erie Regional Manufacturing Partnership is an organization that has helped provide apprenticeship liaison and other services and funding for employers mostly associated with machine tool technology careers

Garner Economics suggests that the new (recommended) ERCGP workforce organization work with Career Street in developing a sector-based approach for increasing meaningful high school internship or apprenticeship WBL experiences.⁴⁰ New federal policy enacted June 15, 2017, supports the expansion of apprenticeships as a solution to close the skills gap by easing the regulatory burden, thereby making more apprenticeship programs eligible for federal funding.⁴¹ Also, there is grant funding available through PASmart. With more funding at the federal and state level, the timing is right to include internship and apprenticeship expansion in the Erie County workforce development plan.

The expansion of high school WBL efforts should be executed in a manner that provides meaningful and measurable return on investment for employers that includes assessing the value of industry recognized credentials. We recommend bringing in expert counsel to assist with the start up. Ideally these experts would have a proven track record in developing and launching sustainable WBL programs, including success with high school student WBL programs across a variety of industry sectors with a focus on increasing internships and apprenticeships. Sustainability of a quality high school WBL ecosystem will most likely require more long-term resources dedicated to this effort.

Best Practices: Career Street serves as the intermediary between the business and education communities is an Erie County best practice. The suggested new role of the Chamber's (recommended)

⁴⁰ <https://www.careerstreeterie.org/about/what-is-career-street>

⁴¹ Presidential Executive Order 13801

workforce development office, would be to assist Career Street in expanding high school WBL through engaging more employers from the High-Value Manufacturing sector and other industry targets.

A best practice example for increasing employer engagement is “Launch Greenville, an initiative led by the Greenville South Carolina Chamber to expand industry engagement in internships and apprenticeship programs. Within two years they have moved from 11 employers engaging to 31, with an estimate of 150 students engaged in paid work opportunities.

<https://www.greenvillechamber.org/launchgvl>

Partners: Career Street, ERCGP

Timeline: 2021–2024

Resources: Initial funding for WBL consultant (\$50k–\$75k) and ongoing funding to support



Recommendation Six: Develop a set of workforce development metrics that drive change and document that Erie County is producing the workforce to support its current and potential employers.

Workforce development delivery system observations:

- Erie County Data Center has a full-time data coordinator
- Annual institutional data reported on state or national websites is the only education data easily accessible
- Multiple workforce partners providing a variety of education and training programs with no consistent outcome reporting
- Public workforce system data on individuals trained at the program and training provider level for those served at Erie County CareerLink office is not readily available
- Continuing education completers data at the program level is not readily available
- Data on employer contract training is not readily available
- CTE program enrollment and completion data by school is not readily available
- Only aggregate adult education completer data, not facility-specific data for Erie, is available
- Adult technical training program completers data is not readily available
- Short-term training program completers and job placement and retention data not readily available
- Apprenticeship program enrollment and completers data is not readily available

What gets measured gets done

The current state of workforce development data is inadequate; therefore, the current system, especially short-term training, has little accountability to the community. The recommended ERCGP workforce organization’s strategic plan should include real-time tracking of key county-level workforce development metrics to understand the efficiency of the current system and how it is responding to the implementation of the strategic plan. The data received should be shared and used for continuous process improvement.

Some types of data that can be monitored are CTE data on program enrollment/completers and WBL internships/apprenticeships at both the high school and postsecondary levels. Other metrics could include regular data reporting (quarterly) on relevant continuing education completers, adult technical training completers, public workforce-funded training at the program and institution level for Erie County, and employer return on investment for internship and apprenticeship engagement. Efforts should include regular surveying of employer satisfaction with the implementation of the workforce development strategic plan. At the end of the day, the metrics measured should align with Erie's strategic plan and tell the story of how the community is developing its talent pipeline in real time while holding workforce development partners accountable. The new (recommended) Chamber workforce organization should partner with the Erie County Data Center on this work.



Best Practices: Erie County has some expertise available to help design a workforce development dashboard to track progress and both are good starting points for implementing this recommendation. Information on these two current practices are found below.

1. Dashboard hosted by The Erie Community Foundation at www.erievitalsigns.org—includes many key indicators displayed using Tableau platform. For the workforce development, a similar approach can be used to evaluate the health of its workforce development strategic plan.
2. Dashboard compiled by the Erie County Data Center—features a variety of Erie County economic data to help the community leaders make more informed decisions. Currently it includes a workforce evaluation link. Data Center information may be accessed at <https://www.flagshipopportunityzone.com/erie-pennsylvania-market-data>.

Additional sources to assist with this effort include *Garner Economics Competitive Realities Report*, labor force data; and Chapter 3 of this report, *Erie by the Numbers*.

Partners: ERCGP and Erie County Data Center

Timeline: Ongoing

Resources: Initial funding to develop an online data entry portal (\$25k)

CONCLUSION

Erie County has a workforce system with some very good assets. It also has some glaring gaps that need to be addressed for the County to achieve its economic development goals. Employers have a favorable perception of the four-year colleges and universities in Erie. Its long-term talent pipeline development, defined as students from K-12 through its four-year institutions, is very good. The local schools have a focus on graduating students prepared for STEM careers, and their graduation rates for most school districts are above the state average. In 2018, approximately 2,250 graduating high school seniors indicated Penn State Behrend, Edinboro, and Gannon Universities combined as their top college choices with about 60% of all 2018 high graduates enrolling in postsecondary education. Erie County is challenged, though, to keep those graduates, as Garner Economics' Graduate Retention Analysis model shows that only 39% of students remain in Erie after their first year of completing college, and only 26% remain after all years.

In evaluating the skills gap, it is evident that Erie County needs a strategic effort to provide affordable, flexible, and stackable career pathway opportunities that lead to increasing its educational attainment and closing the identified skills gaps. Having a public community college with technical skill training is a key solution for Erie to close the identified gaps. Many identified high-growth occupations are middle-skills jobs. Individuals can be successfully trained for these jobs that require moderate on-the-job training through technical community college diploma or degree programs. Similarly, individuals can be successfully prepared for those occupations requiring short-term training through community college occupational certificate programs. What is important is to develop flexible, affordable career pathways consisting of stackable credentials that enable upward mobility for its members of the workforce who are in middle-skill jobs. This can be reinforced by employers incentivized hiring individuals with industry credentials at higher wages and providing additional career pathway opportunities after hiring.

Erie County also has an opportunity to set itself apart by developing a world-class soft skills program delivered to its high school students. Lack of soft skills is the number one issue cited by employers in the workforce. By leveraging the leadership of the school superintendents and other community assets, a soft skills development program can be implemented that can set Erie apart from other communities and ensure job candidates have the soft skills employers' value.



Workforce development best practices all have at their core employers, educators, workforce professionals, economic development, local chambers, and community leaders working together under one strategic effort with strong leadership. Implementing the recommendations outlined in **Erie County's 21st Century Plan to Effectively Grow the Talent Pipeline** will help accelerate the Erie Regional Chamber and Growth Partnership's economic development plan and propel Erie forward

APPENDICES

Appendix A — Erie County Workforce Development Partners

Partners	
Booker T. Washington (Mercyhurst University)	Intermediate Unit 5 (NW Tri-county Intermediate Unit) *
Career Street*	Iroquois Jr/Sr High School*
Corry Area High School	Lake Erie College of Osteopathic Medicine
Corry Higher Education Council	McDowell High School*
Eagle's Nest Leadership Corp	Mercyhurst University*
Edinboro University*	National Tooling & Machining Association (NTMA)
Erie AFL-CIO Council	Northeast High School
Erie Center for Arts and Technology	Northern Pennsylvania Regional College*
Erie County Data Center*	Northwest PA Collegiate Academy
Erie County Technical School*	Northwest PA Industrial Resource Center*
Erie High School*	Northwest Senior High School
Erie Institute of Technology*	Northwest PA CareerLink*
Erie Public School—Adult Education & Tech After Hours*	NWPA Dept of Community & Economic Dev*
Erie Regional Chamber & Growth Partnership*	NWPA Job Connect*
Erie Regional Manufacturing Partnership*	Office of Vocational Rehab Services
Erie Together*	Penn State Behrend*
Fairview High School*	Perseus House of Cs of Excellence
Fort LeBoeuf Senior High School	Preferred Systems
Gannon University	Re-Entry program, Erie County Services
General McLane High School*	Regional Career and Technical Center*
Girard High School	RGC Resource and Governance Consulting, LLC
Great Lakes Institute of Technology	Robert Benjamin Wiley Community Cs (Charter School)
Greater Erie Community Action Committee (GECAC)	Seneca High School
Harbor Creek High School*	Steel Valley Authority
HVA Senior Living Alliance (Health Care Venture Alliance)	Union City High School
IBEW Local 56—Electricians Union	Young Entrepreneur Society, Inc.
Institute of Medical and Business Careers	

*Interviewed by Garner Economics

Appendix B — Employer Focus Group Participants

Name	Company
Dan Adamus	Northwest Institute of Research Learning Resource Center
Brenda Bennett	Transportation Solutions
Chris Clark	St. Vincent/AHN
Lori Dever	Industrial Sales and Manufacturing
Chuck Knight	Shaffner, Knight, Minnaugh & Co
Jim Rutkowski	Industrial Sales and Manufacturing
Christine Simon	Scott Enterprises
Kristin Talarico	Erie Insurance
John Weber	Smith Provisions
Tracy White	Logistics Plus
Jim Willates	Machining Concepts/ERMP
Mary Beth Wright	Velocity Network

Appendix C — Skills Gap Analysis Supporting Data

Degrees/Certificates Awarded to Educational Attainment

Matching of Erie County Degrees/Certificates Awarded to Educational Attainment for Target Occupations

	Certificates	Associate	Bachelor's	Graduate
Total Degrees Awarded for Targets, 2018	386	379	1,457	1,408
Percent of Total Degrees Awarded for Targets, 2018	10.6%	10.4%	40.1%	38.8%
Educational Attainment for Targets	<i>not reported</i>	10.0%	26.4%	12.4%
Total Erie Educational Attainment Age 25+ years	<i>not reported</i>	9.8%	17.0%	10.8%
Difference in Educational Attainment		-0.2%	-9.4%	-1.6%
Difference in Degrees and Erie Educational Attainment		0.7%	21.6%	29.6%

All jobs in high-demand occupations for identified Erie target industries are included.

Source: National Center for Education Statistics, BLS, US Census Bureau, Garner Economics

Degrees/Certificates Awarded per Target

Erie County Degrees/Certificates Awarded for each Target Occupations

Description	Certificates	Associate	Bachelor's	Graduate	Total
Life Sciences	181	282	486	1,217	2,166
%	8%	13%	22%	56%	100%
High Value-Added Manufacturing	106	113	332	229	780
%	14%	14%	43%	29%	100%
Food & Beverage Processing/Agriculture & Aquaculture	37	109	167	153	455
%	8%	24%	36%	34%	100%
High-Value Business Services	126	182	559	222	1,089
%	12%	17%	51%	20%	100%
Tech/Gaming/Digital	145	161	833	264	1,403
%	10%	12%	59%	19%	100%
Year-Round Experiential Recreation	121	174	761	205	1,261
%	10%	14%	60%	16%	100%

All jobs in high-demand occupations for identified Erie target industries are included.

Source: National Center for Education Statistics, Garner Economics

Detailed Tables

Erie Target Occupations: Education & Training Needed

Occupations in identified target occupations and education & training needs

Description	Typical Education Needed for Entry	Typical On-the-Job Training Needed	Work Experience	Bright Outlook
Web Developers	Associate degree	None	None	⚙️
Computer Network Support Specialists	Associate degree	None	None	
Radiologic Technologists	Associate degree	None	None	⚙️
Writers and Authors	Bachelor's degree	Long-term	None	
Compliance Officers	Bachelor's degree	Moderate term	None	
Insurance Underwriters	Bachelor's degree	Moderate term	None	
Sales Representatives, Technical, and Scientific Products	Bachelor's degree	Moderate term	None	
Computer and Information Systems Managers	Bachelor's degree	None	5 years or more	⚙️
Financial Managers	Bachelor's degree	None	5 years or more	⚙️
Industrial Production Managers	Bachelor's degree	None	5 years or more	
Medical and Health Services Managers	Bachelor's degree	None	Less than 5 years	⚙️
General and Operations Managers	Bachelor's degree	None	5 years or more	⚙️
Human Resources Specialists	Bachelor's degree	None	None	
Management Analysts	Bachelor's degree	None	Less than 5 years	⚙️
Training and Development Specialists	Bachelor's degree	None	Less than 5 years	⚙️
Market Research Analysts and Marketing Specialists	Bachelor's degree	None	None	⚙️
Business Operations Specialists, All Other	Bachelor's degree	None	None	⚙️
Accountants and Auditors	Bachelor's degree	None	None	⚙️
Computer Systems Analysts	Bachelor's degree	None	None	
Information Security Analysts	Bachelor's degree	None	Less than 5 years	⚙️
Software Developers and Programmers	Bachelor's degree	None	None	⚙️
Network and Computer Systems Administrators	Bachelor's degree	None	None	
Computer Network Architects	Bachelor's degree	None	5 years or more	
Computer, All Other	Bachelor's degree	None	None	
Operations Research Analysts	Bachelor's degree	None	None	⚙️
Industrial Engineers	Bachelor's degree	None	None	⚙️
Mechanical Engineers	Bachelor's degree	None	None	
Art Directors	Bachelor's degree	None	5 years or more	
Graphic Designers	Bachelor's degree	None	None	
Producers and Directors	Bachelor's degree	None	Less than 5 years	⚙️
Editors	Bachelor's degree	None	Less than 5 years	
Registered Nurses	Bachelor's degree	None	None	⚙️
Technical Writers	Bachelor's degree	Short-term	Less than 5 years	⚙️
Physicians and Surgeons, All Other	Doctoral or professional degree	Internship/residency	None	⚙️
Pharmacists	Doctoral or professional degree	None	None	

Electricians	High school diploma	Apprenticeship	None	
Claims Adjusters, Examiners, and Investigators	High school diploma	Long-term	None	
Industrial Machinery Mechanics	High school diploma	Long-term	None	
Machinists	High school diploma	Long-term	None	
Pharmacy Technicians	High school diploma	Moderate term	None	⚙️
Insurance Sales Agents	High school diploma	Moderate term	None	⚙️
Sales Representatives, Services, All Other	High school diploma	Moderate term	None	⚙️
Sales Representatives, Wholesale, and Manufacturing	High school diploma	Moderate term	None	⚙️
Billing and Posting Clerks	High school diploma	Moderate term	None	⚙️
Production, Planning, and Expediting Clerks	High school diploma	Moderate term	None	⚙️
Insurance Claims and Policy Processing Clerks	High school diploma	Moderate term	None	⚙️
Maintenance and Repair Workers, General	High school diploma	Moderate term	None	⚙️
Electrical, Electronic and Electromechanical Assemblers	High school diploma	Moderate term	None	
Assemblers and Fabricators, All Other	High school diploma	Moderate term	None	
Food Batchmakers	High school diploma	Moderate term	None	
Food Cooking Machine Operators/Tenders	High school diploma	Moderate term	None	
Computer-Controlled Machine Tool Operators	High school diploma	Moderate term	None	
Extruding and Drawing Machine Setters, Metal and Plastic	High school diploma	Moderate term	None	
Cutting, Punching, and Press Machine Setters	High school diploma	Moderate term	None	
Molding, Coremaking and Casting Machine Setters	High school diploma	Moderate term	None	
Multiple Machine Tool Setters, Metal and Plastic	High school diploma	Moderate term	None	
Welders, Cutters, Solderers, and Brazers	High school diploma	Moderate term	None	
Chemical Equipment Operators/Tenders	High school diploma	Moderate term	None	
Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters	High school diploma	Moderate term	None	
Mixing and Blending Machine Setters, Operators/Tenders	High school diploma	Moderate term	None	
Inspectors, Testers, Sorters, Samplers and Weighers	High school diploma	Moderate term	None	
Packaging and Filling Machine Operators/Tenders	High school diploma	Moderate term	None	
Production Workers, All Other	High school diploma	Moderate term	None	
First-Line Supervisors of Office & Administrative Support	High school diploma	None	Less than 5 years	⚙️
Executive Secretaries/Administrative Assistants	High school diploma	None	Less than 5 years	
First-Line Supervisors of Production & Operating Workers	High school diploma	None	Less than 5 years	
Tellers	High school diploma	Short-term	None	
Customer Service Representatives	High school diploma	Short-term	None	⚙️
Shipping, Receiving, and Traffic Clerks	High school diploma	Short-term	None	
Stock Clerks and Order Fillers	High school diploma	Short-term	None	⚙️
Secretaries and Administrative Assistants	High school diploma	Short-term	None	⚙️
Office Clerks, General	High school diploma	Short-term	None	⚙️
Helpers—Production Workers	High school diploma	Short-term	None	⚙️
Driver/Sales Workers	High school diploma	Short-term	None	

Light Truck or Delivery Services Drivers	High school diploma	Short-term	None	⚙
Physician Assistants	Master's degree	None	None	⚙
Occupational Therapists	Master's degree	None	None	⚙
Bakers	No formal educational credential	Long-term	None	
Butchers and Meat Cutters	No formal educational credential	Long-term	None	
Cooks, Restaurant	No formal educational credential	Moderate term	Less than 5 years	⚙
Food Preparation Workers	No formal educational credential	Short-term	None	⚙
Janitors and Cleaners	No formal educational credential	Short-term	None	⚙
Industrial Truck and Tractor Operators	No formal educational credential	Short-term	None	
Cleaners of Vehicles and Equipment	No formal educational credential	Short-term	None	⚙
Laborers and Freight, Stock, and Material Movers, Hand	No formal educational credential	Short-term	None	⚙
Packers and Packagers, Hand	No formal educational credential	Short-term	None	⚙
Heating, Air Conditioning, Refrigeration Mechanics	Postsecondary certificate	Long-term	None	⚙
Tool and Die Makers	Postsecondary certificate	Long-term	None	
Health Technologists and Technicians, All Other	Postsecondary certificate	None	None	⚙
Medical Assistants	Postsecondary certificate	None	None	⚙
Phlebotomists	Postsecondary certificate	None	None	⚙
Audio and Video Equipment Technicians	Postsecondary certificate	Short-term	None	⚙
Heavy and Tractor-Trailer Truck Drivers	Postsecondary certificate	Short-term	None	⚙
Bookkeeping, Accounting, and Auditing Clerks	Some college, no degree	Moderate term	None	⚙
Computer User Support Specialists	Some college, no degree	None	None	⚙

All jobs in high-demand occupations for identified Erie target industries.

Source: BLS, Garner Economics

Seventy-Seven Different Degrees or Certificated Awarded for Target Occupations, 2018

Detailed degrees awarded in 2018 by Erie County institutions matched with detailed high-demand occupations in identified target industries

Area of Study	Certificates	Associate	Bachelor's	Graduate	Total
Osteopathic Medicine/Osteopathy*				563	563
Pharmacy				292	292
Business Administration and Management, General		85	101	93	279
Registered Nursing/Registered Nurse	1	87	153	12	253
Mechanical Engineering			118	66	184
Computer and Information Sciences, General		59	20	39	118
Pre-Medicine/Pre-Medical Studies	117				117
Fine/Studio Arts, General			104	7	111

Health Professions and Related Clinical Sciences, Other			97		97
E-Commerce/Electronic Commerce	92				92
Physician Assistant				81	81
Finance, General			80		80
Health Services Administration				72	72
Management Sciences and Quantitative Methods, Other			72		72
Accounting			63	7	70
Electrician		64			64
Medical/Clinical Assistant	54				54
Organizational Leadership	3			42	45
Mass Communication/Media Studies			30	13	43
Occupational Therapy/Therapist				41	41
Marketing/Marketing Management, General			38		38
English Language and Literature, General			35		35
Management Information Systems, General			35		35
Registered Nursing, Nursing Administration, Nursing Research and Clinical Nursing	4		29		33
Journalism			32		32
Business Administration, Management and Operations, Other			31		31
Computer Engineering, General			16	11	27
Computer/Information Technology Services Administration and Management, Other	24				24
Public Health, General			24		24
Industrial Engineering			23		23
Heating, Air Conditioning, Ventilation and Refrigeration Maintenance Technology/	22				22
Computer Support Specialist		21			21
Computer Software Engineering			21		21
Computer Science			20		20
Fashion Merchandising			20		20
Public Administration				18	18
Business/Commerce, General		17			17
Business/Managerial Economics			17		17
International Business/Trade/Commerce			16		16
Marketing, Other			16		16
Welding Technology/Welder	11	4			15
Operations Management and Supervision			15		15
Communication and Media Studies, Other			14		14
Mathematics and Computer Science				14	14
Art/Art Studies, General			5	8	13
Health Services/Allied Health/Health Sciences, General			13		13
Accounting and Related Services, Other	13				13
Speech Communication and Rhetoric			11		11
Business, Management, Marketing, and Related Support Services, Other			11		11
Manufacturing Engineering				10	10
Social Sciences, General			5	5	10
Graphic Design			10		10

Allied Health and Medical Assisting Services, Other		9			9
Radiologic Technology/Science—Radiographer		9			9
Information Technology Project Management			7		7
Creative Writing			7		7
Social Sciences, Other				7	7
Building/Property Maintenance		7			7
Executive Assistant/Executive Secretary	7				7
Radio and Television Broadcasting Technology/Technician			5		5
Computer Programming/Programmer, General			5		5
Accounting Technology/Technician and Bookkeeping	5				5
Web Page, Digital/Multimedia and Information Resources Design	4				4
Fine and Studio Arts Management			4		4
Pre-Pharmacy Studies		4			4
Logistics, Materials, and Supply Chain Management			4		4
Entrepreneurship/Entrepreneurial Studies			4		4
Health/Health Care Administration/Management			3		3
Nursing Practice				3	3
Insurance			3		3
Bioinformatics			2		2
Visual and Performing Arts, General			2		2
Medical Office Assistant/Specialist	2				2
Finance and Financial Management Services, Other	2				2
Culinary Arts/Chef Training	1				1
Marketing Research			1		1
Drama and Dramatics/Theatre Arts, General			1		1
Total degrees	362	366	1,343	1,404	3,475
Percent of Total	10.4%	10.5%	38.6%	40.4%	100%

All jobs in high-demand occupations for identified Erie target industries.

Source: National Center for Education Statistics, Garner Economics

Gap Analysis: Summary by Target of Annual Openings to Degrees/Certificates Awarded

Matching of Erie County Degrees/Certificates Awarded to Annual Openings for Target Occupations

Occupation	Typical education needed for entry	Annual Openings	Certificates	Associate	Bachelor's	Graduate	Total Degrees	Gap	Gap *(Retention Model)
General and Operations Managers	Bachelor's degree	27	3	102	167	153	425	398	139
Computer and Information Systems Managers	Bachelor's degree	173		161	214	132	507	334	25
Financial Managers	Bachelor's degree	98	15	102	212	111	440	342	74
Industrial Production Managers	Bachelor's degree	142		102	174	93	369	227	2
Medical and Health Services Managers	Bachelor's degree	75		102	159	168	429	354	92

Claims Adjusters, Examiners, and Investigators	High school diploma	71		17	3		20	(51)	(63)
Compliance Officers	Bachelor's degree	143		17			17	(126)	(136)
Human Resources Specialists	Bachelor's degree	72		17			17	(55)	(65)
Management Analysts	Bachelor's degree	174	3	17		42	62	(112)	(150)
Training and Development Specialists	Bachelor's degree	138		17			17	(121)	(131)
Market Research Analysts and Marketing Specialists	Bachelor's degree	69		17	77	12	106	37	(28)
Business Operations Specialists, All Other	Bachelor's degree	102		17	11		28	(74)	(91)
Accountants and Auditors	Bachelor's degree	50	15	17	143	7	182	132	21
Insurance Underwriters	Bachelor's degree	502	15	17	146	7	185	(317)	(430)
Computer Systems Analysts	Bachelor's degree	194	4	59	55	39	157	(37)	(133)
Information Security Analysts	Bachelor's degree	311	4	59	47	39	149	(162)	(253)
Software Developers and Programmers	Bachelor's degree	175			64	11	75	(100)	(146)
Web Developers	Associate degree	449	4	59	52	39	154	(295)	(389)
Network and Computer Systems Administrators	Bachelor's degree	232	4	59	27	39	129	(103)	(182)
Computer Network Architects	Bachelor's degree	313	4	59	78	50	191	(122)	(239)
Computer User Support Specialists	Some college, no degree	112		80	20	39	139	27	(58)
Computer Network Support Specialists	Associate degree	417	4	80	52	39	175	(242)	(349)
Computer, All Other	Bachelor's degree	164	24		7		31	(133)	(152)
Operations Research Analysts	Bachelor's degree	450			72	14	86	(364)	(416)
Industrial Engineers	Bachelor's degree	209			23	10	33	(176)	(196)
Mechanical Engineers	Bachelor's degree	106			118	66	184	78	(34)
Art Directors	Bachelor's degree				125	15	140		
Graphic Designers	Bachelor's degree	166	4		12		16	(150)	(160)
Producers and Directors	Bachelor's degree	239			3		3	(236)	(238)
Editors	Bachelor's degree	427			118	13	131	(296)	(376)
Writers and Authors	Bachelor's degree	524			129	13	142	(382)	(469)
Audio and Video Equipment Technicians	Postsecondary certificate	252			5		5	(247)	(250)
Pharmacists	Doctoral or professional degree	199		4	13	292	309	110	(78)

Physicians and Surgeons, All Other	Doctoral or professional degree	38	117		13	563	693	655	232
Physician Assistants	Master's degree	154			13	81	94	(60)	(117)
Occupational Therapists	Master's degree	240			13	41	54	(186)	(219)
Registered Nurses	Bachelor's degree	16	5	87	195	15	302	286	102
Radiologic Technologists	Associate degree	212		9	13		22	(190)	(203)
Pharmacy Technicians	High school diploma	113			13		13	(100)	(108)
Health Technologists and Technicians, All Other	Postsecondary certificate	318		9	110		119	(199)	(272)
Medical Assistants	Postsecondary certificate	52	56		13		69	17	(25)
Phlebotomists	Postsecondary certificate	155		9	13		22	(133)	(146)
Cooks, Restaurant	No formal educational credential	11	1				1	(10)	(11)
Insurance Sales Agents	High school diploma	162			3		3	(159)	(161)
Sales Representatives, Services, All Other	High school diploma	70			11		11	(59)	(66)
Sales Representatives, Technical and Scientific Products	Bachelor's degree	321	92				92	(229)	(285)
Sales Representatives, Wholesale and Manufacturing	High school diploma	29	92		20		112	83	15
First-Line Supervisors of Office and Administrative Support Workers	High school diploma	20	7	102	132	93	334	314	110
Billing and Posting Clerks	High school diploma	107	5	17			22	(85)	(98)
Bookkeeping, Accounting, and Auditing Clerks	Some college, no degree	26	18	17	63	7	105	79	15
Tellers	High school diploma	65		17			17	(48)	(58)
Customer Service Representatives	High school diploma	6		17			17	11	1
Production, Planning, and Expediting Clerks	High school diploma	96		17			17	(79)	(89)
Shipping, Receiving, and Traffic Clerks	High school diploma	67		17			17	(50)	(60)
Stock Clerks and Order Fillers	High school diploma	14		17			17	3	(7)
Executive Secretaries and Executive Administrative Assistants	High school diploma	115	7	17			24	(91)	(106)
Secretaries and Administrative Assistants	High school diploma	15		17			17	2	(8)
Insurance Claims and Policy Processing Clerks	High school diploma	131		17	3		20	(111)	(123)
Office Clerks, General	High school diploma	7		17			17	10	0

Electricians	High school diploma	68		64			64	(4)	(43)
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	Postsecondary certificate	140	22				22	(118)	(131)
Maintenance and Repair Workers, General	High school diploma	12		7			7	(5)	(9)
Welders, Cutters, Solderers, and Brazers	High school diploma	21	11	4			15	(6)	(15)

Source: EMSI (2019 data provided by client), National Center for Education Statistics, BLS, Garner Economics

All jobs in high-demand occupations for identified Erie target industries.

*Retention model uses a LinkedIn Analysis, which estimates that an average 39% of graduates with degrees granted from Erie County institutions remain in the area.

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Erie County Workforce Development Delivery Assessment Steering Committee		
Member	Title	Organization
Mary Bula	Director	Erie Together
Aldo Jackson	Dean of Erie Operations (AJ Palumbo Academic Center)	Northern Pennsylvania Regional College
Amy Murdock	Director, Government Affairs	Erie Regional Chamber and Growth Partnership
Shane Murray	Superintendent	Iroquois School District
Jacob Rouch, Chair	Vice President, Economic Development	Erie Regional Chamber and Growth Partnership
Kim Thomas	NWPA Director	PA Department of Community & Economic Development
Ben Wilson	One-Stop Operator	NWPA Career Link
Beth Zewe	Executive Director, Continuing Ed & Workforce Development & Ombudsperson	Edinboro University

ABOUT GARNER ECONOMICS, LLC

We are data-driven strategists helping companies, communities, and organizations—large and small, urban and rural—achieve success.

We offer site-location advisory services, analytical research, industry targeting, strategic action planning, and organizational assessments with a wealth of expertise to companies, communities, and organizations globally. We are based in Atlanta, Georgia, with offices also in North Carolina.

ABOUT THE AUTHOR

Debra Lyons is a principal strategist with Garner Economics, specializing in workforce development solutions. With over 25 years in workforce development, she specializes in strategic planning, working with clients to formulate a blueprint to link education and workforce development with a primary focus on alignment to economic development.

Debra leveraged a career of working as a design engineer, an associate engineering professor, and an entrepreneur consultant to lead the first workforce development office in Georgia in the administration of Governor Sonny Perdue. It was there that she was able to tap into her unique skill set to design and build a state-of-the-art, data-driven effort known as *Georgia Work Ready*—focusing on ensuring that Georgia’s emerging, transitioning, and current workforce had the foundational work readiness skills needed for successful employment. In these endeavors, she was able to build successful coalitions to achieve a team approach to community workforce development success.

From 2011-2018, Debra held Director and VP roles at ACT, Inc. She provided strategic leadership for community-based, employer-driven, workforce development initiatives now successful and sustainable in over 29 states. She was the chief architect for the technology platform that provides real time data to communities on workforce development progress.

Debra has received numerous leadership awards including her team receiving the IEDC Silver Shovel Award for Human Capital in 2014. As a national workforce development expert, she has authored papers and articles and is a frequent speaker at webinars and conferences.