



THOMAS P. MILLER & ASSOCIATES

# Northwest Commission Regional Skills Gap Analysis

Prepared by Thomas P. Miller & Associates and NC3T



## Acknowledgements

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### All Host Locations and PREP Partners

Clarion County Economic Development Corporation  
Clarion University Small Business Development Center  
Economic Progress Alliance of Crawford County  
Erie Regional Chamber and Growth Partnership  
Grove City College

Lawrence County Economic Development Corporation  
Oil Region Alliance (Venango County)  
PREP Partners  
Penn-Northwest Development Corporation  
Warren County Chamber of Business and Industry

### All Input Session Participant Organizations

Acutec Precision  
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Clarion Blueprint  
Clarion Forest VNA  
Clarion Industries  
Colony Homes  
Community Foundation  
Crawford County Government  
Crawford County K-12 Career Education Alliance  
Custom Engineering  
Destination Eire  
ECUA  
Edinboro University  
Ellwood National Forge  
City of Erie  
Erie Forge and Steel  
Erie Public Schools  
Erie Together  
Eriez Mfg  
Flowline  
GE  
Industrial Sales  
Infocision  
Jameson Care Center  
Joy Cone  
Laurel Technical Institute  
Lawrence County Social Services

MCRC  
Maple Donuts  
Meade Consulting  
Mohawk ASD  
Noise Solutions  
NW IRC  
PA CareerLink  
PA General Energy  
Partners for Performance NW PA WIB  
Penn State Shenango  
Precision Manufacturing Institute  
Primary Health Network  
PSB Industries  
READ  
School to Work  
Shenango Valley Chamber of Commerce  
TCCS  
Titusville Community Development Agencies  
Union School District  
United Refining Co.  
United Way  
Venango Technology Center  
Warren Chamber of Commerce  
Warren County  
Warren County Career Center  
Warren County School District  
Warren Forest Higher Education Council  
West Central Job Partnership  
Zurn

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## Introduction

In March 2014, the State of Pennsylvania announced grant funding for its Jobs 1<sup>st</sup> Regional Partnership Grant with the purpose of increasing employer engagement and developing employer-driven training programs between workforce and economic development organizations across the state. The Northwest Pennsylvania region was awarded the grant to fund three specific tracks: Cross Training, Skills Gap Analysis, and Small Business Development Center Training Classes.

The Northwest Pennsylvania region consists of eight counties: Clarion, Crawford, Erie, Forest, Lawrence Mercer, Venango, and Warren. Over the past ten years, the population of the region has declined by 2 percent and the aging population (55 years of age and older) has increased. The diversity of the region ranges from a large urban presence in Erie County to extremely rural areas in the outlying counties.

The Northwest Commission acted as fiscal agent, convener, and project contact for the Skills Gap Analysis. The Northwest Pennsylvania Partners for Regional Economic Performance Partners (NWPA PREP Partners) provided input and feedback for the analysis, assisted in identifying education and workforce assets, assisted in engaging stakeholders, and identified input session locations.

## Project Approach

Thomas P. Miller and Associates (TPMA) and National Center for College & Career Transitions (NC3T) together (“the Project Team”) provided detailed research and analysis of the Northwest Pennsylvania region in order to identify imbalances in workforce supply and demand and develop strategies to attract, retain, and educate its workforce. A combination of desktop analysis and stakeholder engagement was employed to create a profile of the current workforce situation and capacity. Building upon this profile, recommendations were developed to strengthen the regional workforce to address future challenges and opportunities.

### *Task 1, Project Launch*

The Skills Gap Analysis was separated into ten tasks, beginning with the Project Launch. At the Launch meeting, the project team met with the Northwest Commission and NW PREP Partners and discussed concepts of success and a plan for sustained communication. The group identified current regional strengths, challenges, and opportunities. Members provided input and determined the analysis would focus on the region’s manufacturing and healthcare sectors and also explore information about emerging industries.

### *Task 2, Desktop Analysis*

In the second task, the project team conducted a Desktop Analysis to evaluate other research conducted to date. These studies included, but were not limited to:

- Pennsylvania Department of Labor and Industry’s Center for Workforce Information and Analysis (CWIA)
- *Destination Erie Existing Conditions Trends Report*
- *Erie Regional Career Planning Project – Go for the Gold*  
A Career Driven Education Model using the Educonomy Implementation Platform, Joseph B. Kent
- *Rebuilding PA’s Manufacturing Future*

Investing in the Prosperity of PA's Hardworking Families and Eliminating Hundreds of Millions of Dollars in Public Costs, Steel Valley Authority

*Task 3, Regional and County Labor Market Profiles*

Supplementing the Pennsylvania Center for Workforce Information and Analysis (CWIA) data with data available from Economic Modeling Specialists, Intl. (EMSI), TPMA prepared a regional labor market profile and county-specific profiles for the third task. The profiles included the following elements:

- Demographic and Labor Force Characteristics
- Industry Analysis
- Occupation Analysis
- Human Capital

*Task 4, Review of Existing Education and Workforce Assets*

NC3T worked with education and training providers across the region to identify programs and training efforts, specifically in manufacturing and healthcare related degrees and certifications. NC3T gathered data on programs and completers in the region.

*Task 5, County Input Sessions*

The project team held input sessions throughout the Northwest Pennsylvania region (including Clarion, Crawford, Erie, Lawrence, Mercer, Venango, and Warren Counties) to identify the strengths and challenges of current workforce development efforts. TPMA summarized findings from the county input sessions and referenced information garnered in the recommendations to address workforce challenges.

TPMA developed an electronic survey after the input sessions to obtain feedback from employers regarding workforce issues, in-demand occupations, and anticipated hiring practices. TPMA summarized the survey results (included as Appendix A3).

*Task 6, Mid-Point Presentation*

In Task 6, TPMA reviewed progress, initial common themes, and early recommendations with PREP Partners. TPMA obtained feedback from the PREP Partners regarding exploration of Best Practices.

*Task 7, Best Practice Review*

TPMA researched Best Practices on: Implementation, Structure, Processes and Strategies/Collaborative Projects and Community Efforts to Increase Awareness of In-Demand Occupations. TPMA developed a summary of Best Practices for potential replication. (See Appendix A1.)

*Task 8, Career Pathways Mapping*

NC3T developed region-specific Career Pathways for Machining, Welding/Fitting, Industrial Maintenance, Nursing and Electronic Medical Records. (See Appendix A2.)

*Task 9 and 10, Report and Final Presentation*

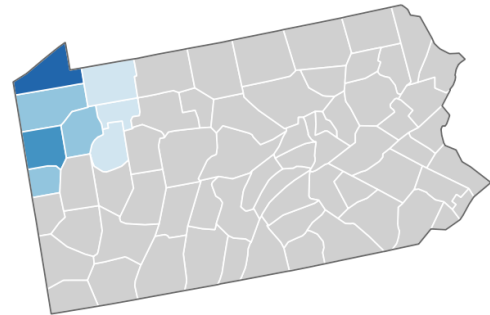
The project team drafted, edited, and presented the final report to the Northwest Commission, PREP Partners, and stakeholders.

## Northwest Pennsylvania Labor Market Profiles (*Demand*)

### Regional Profile

#### Executive Summary

The population in Northwest Pennsylvania (NWP) has declined by three percent over the past ten years. The population has also been aging, with the population of 55 years and older increasing significantly, while the population decreased among all other age groups, except 20-34 year olds, which increased by two percent. Projections indicate that the two subsets of the population expected to grow are those 55 and over and those under the age of five. These declining and aging trends may impact the availability of labor in the region.



About 345,000 workers participate in the region's labor force. Of these, about 330,000 are employed. The unemployment rate for NWP is 4.9 percent, which is lower than the rate for Pennsylvania (5.8 percent), and the U.S. (5.9 percent). The older worker population (55 years and older) in NWP is estimated to be about 93,000 in 2014. The aging workforce calls for sustainable planning for workforce development in the region.

The largest broad industry sectors in NWP are Health Care and Social Assistance, Manufacturing, and Government. The largest sector, Health Care and Social Assistance, has been growing steadily since 2004 and is expected to continue growing. The second largest sector, Manufacturing, took a hit between 2004 and 2009, but has rebounded, adding almost 3,000 jobs since 2009.

The area's top occupations include Office and Administrative Support Occupations, Sales and Related Occupations, Production Occupations, Food Preparation and Serving Related Occupations, and Healthcare Practitioners and Technical Occupations. Among these top occupations, Office and Administrative Support Occupations, Food Preparation and Serving Related Occupations, and Healthcare Practitioners and Technical Occupations are most often required to staff companies within key industries in this region. Regarding Manufacturing specifically, top occupations include Machine Tool Cutting Setters, Operators, and Tenders, Metal and Plastic; Miscellaneous Assemblers and Fabricators; and Machinists.

Among the occupations with the highest projected job growth from 2014-2019 in NWP, about 40 percent require a high school diploma or equivalent. Approximately 24 percent require no high school degree, 10 percent require a credential, 6 percent an associate's degree, and 18 percent a bachelor's degree or higher. Over 70 percent of these jobs require some type of training, which is mostly on-the-job training. However, most employers prefer candidates that already have additional educational experience and/or training rather than having to provide training.

## Demographics

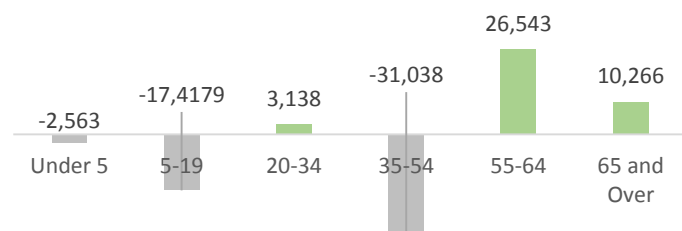
The population in NWPA has declined from 725,394 to 714,320 in the past ten years.<sup>1</sup> The population declined by two percent, compared to the state growth rate of four percent, and the national rate of nine percent. The population is projected to continue to decline over the next five years.

NWPA has an aging population. In the past ten years, the population of individuals between 55 and 64 years old increased by 25 percent, while the population decreased in all other age groups. This trend is projected to continue over the next five years, with the largest population increase expected among those over the age of 65. The aging population is a concern as it will impact the availability of labor in the region over the next decade.

## Age Distribution

Age	2014 Population	Change, 2004-2014		Change, 2014-2019	
Under 5	38,638	-2,563	-7%	1,603	4%
5-19	132,730	-17,419	-13%	-4,698	-4%
20-34	131,664	3,138	2%	-5,478	-4%
35-54	178,449	-31,038	-17%	-11,893	-7%
55-64	105,855	26,543	25%	694	1%
Over 65	126,984	10,266	8%	13,837	10%

## Change in Age Distribution 2004-2014



NWPA is a racially homogenous area of the country, with over 90 percent of the 2014 population identifying as White. The White population shrank by four percent from 2004-2014 while the black population increased by 12 percent and the Hispanic population increased by 35 percent.<sup>2</sup>

## Race Distribution

Race	2014 Population	Change, 2004-2014	
White	645,473	-26,738	-4%
Black	34,213	3,670	12%
Hispanic	16,154	5,667	35%
Two or More Races	11,109	4,106	59%
Asian	6,085	2,122	54%
American Indian or Alaskan Native	1,128	74	7%
Native Hawaiian or Pacific Islander	158	23	17%

## COUNTY 2014 POPULATION

Clarion	39,615
Crawford	86,974
Erie	281,657
Forest	7,758
Lawrence	88,950
Mercer	114,995
Venango	53,695
Warren	40,674

<sup>1</sup> EMSI Analyst 2014.

<sup>2</sup> The Hispanic population includes Hispanics in White, Black, Two or More Races, Asian, American Indian or Alaskan Native, Native Hawaiian or Pacific Islander.

## Income

Median household income in the NWPA region between 2008 and 2012 varied from about \$36,500 to just under \$45,250.<sup>3</sup> All eight counties fell below the state and national average for median household income. However, this could be offset by a less expensive cost of living. Erie County took the lead for the highest median household income over those years, but still had a poverty rate above the state and national average. Comparatively, while having a median household income of \$36,686, Forest County's poverty rate of 12.8 percent was second lowest in the region. The lowest poverty rate belonged to Warren County at 12.0 percent.

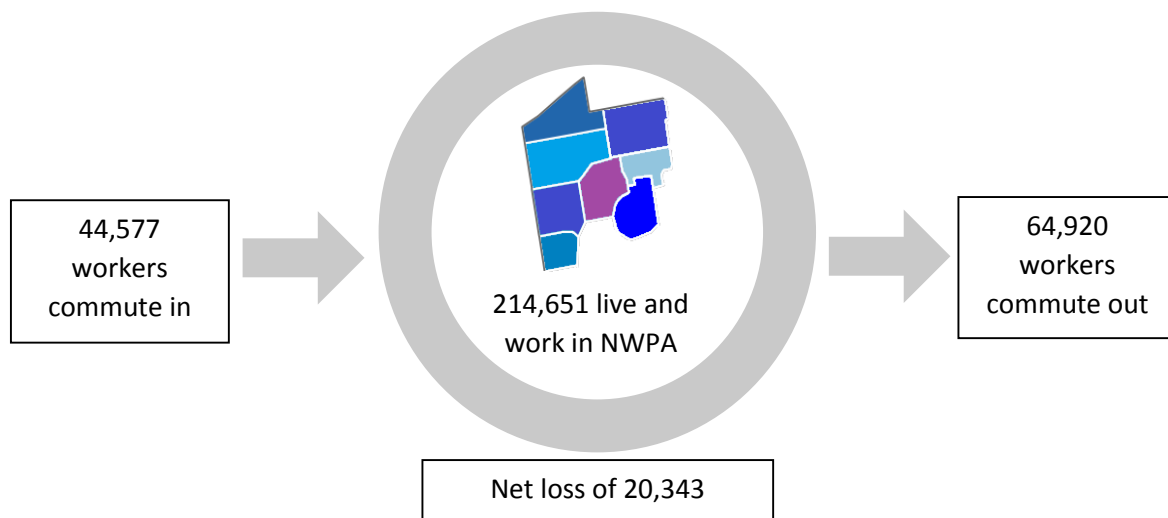
	MEDIAN HOUSEHOLD INCOME	POVERTY RATE
<b>Clarion</b>	\$43,059	17.3%
<b>Crawford</b>	\$41,664	16.8%
<b>Erie</b>	\$45,249	16.1%
<b>Forest</b>	\$36,686	12.8%
<b>Lawrence</b>	\$44,079	13.8%
<b>Mercer</b>	\$43,589	13.2%
<b>Venango</b>	\$41,814	16.3%
<b>Warren</b>	\$43,108	12.0%
<hr/>		
<b>Pennsylvania</b>	\$52,267	13.1%
<b>U.S.</b>	\$53,046	14.9%

<sup>3</sup> U.S. Census Bureau 2008-2012



#### Commuting Pattern and Labor Force Availability

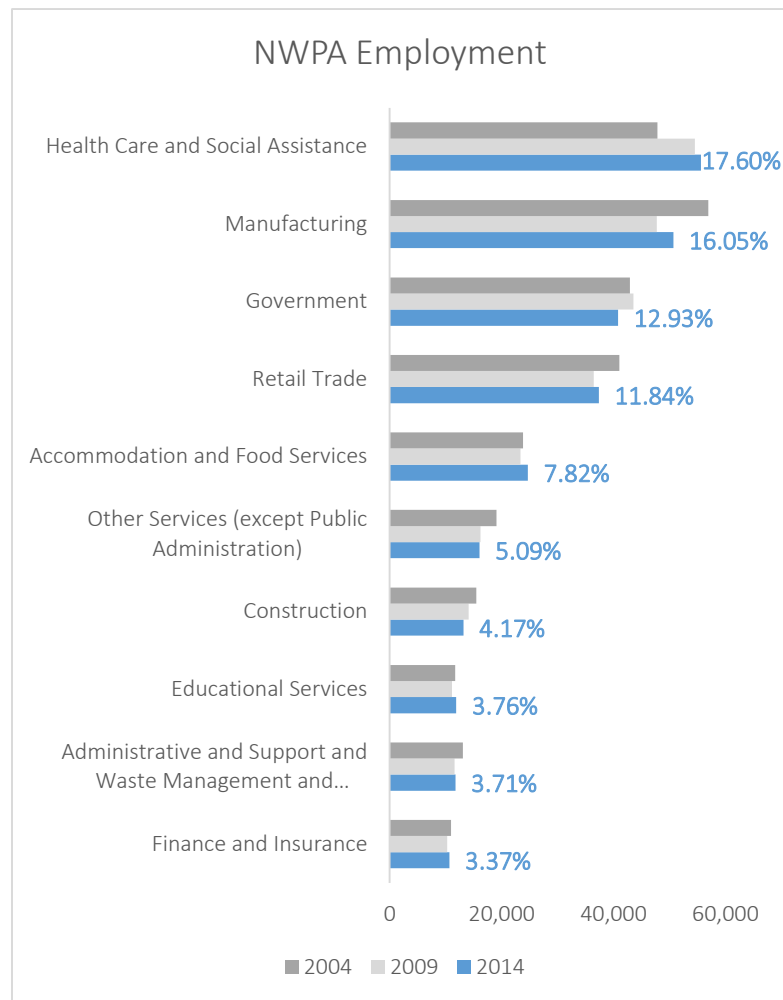
With over 44,500 workers commuting in and just under 65,000 commuting out, NWPA is a net exporter of workers.<sup>4</sup> The region sends the most workers who work outside of the area to Butler County (8,077, 2.9 percent), Beaver County (4,132, 1.5 percent), and Mahoning County, Ohio (2,883, 1.0 percent). Most of the workers coming from outside of the region are from Allegheny County (5,629, 2.2 percent), Butler County (4,753, 1.8 percent), and Trumbull County (1.4 percent). Over 258,000 workers are employed in the region, with over 214,500 workers both living and working in the area, and almost 45,000 commuting in from outside the region other counties.



<sup>4</sup> U.S. Census Bureau, OnTheMap, 2012 (most recently available). <http://onthemap.ces.census.gov/>

### Industry Analysis

The broad industry sectors in NWPB employing the most workers are Health Care and Social Assistance (55,603, 17.60 percent), Manufacturing (50,709, 16.05 percent), Government (40,851, 12.93 percent), Retail Trade (37,407, 11.84 percent), and Accommodation and Food Services (24,718, 7.82 percent).<sup>5</sup> Among these top five industries, Manufacturing has experienced the most change, losing over 9,000 jobs between 2004 and 2009 but also gaining just under 3,000 back in the five years since. The Health Care and Social Assistance sector, on the other hand, has grown steadily since 2004, adding more than 7,000 jobs in 10 years.



<sup>5</sup> These industries are by 2-digit NAICS code. EMSI Analyst 2014.

### Key Industry Analysis

Diving a bit deeper, the tables below show the top ten largest industries by employment in NHPA.<sup>6</sup> Among these key industries, Individual and Family Services is expected to have the highest growth over the next five years, followed by Nursing Care Facilities (Skilled Nursing Facilities); Colleges, Universities, and Professional Schools; and Other General Merchandise Stores. Within the manufacturing industry sector, the industries that are expected to experience the highest growth include Railroad Rolling Stock Manufacturing, Machine Shops; Turned Product; and Screw, Nut, and Bolt Manufacturing; and Other Fabricated Metal Product Manufacturing.

### Employment in Key Industries

Industry	2014 Jobs	Change, 2004-2014		Change, 2009-2014		Projected Change, 2014-2019	
Restaurants and Other Eating Places	19,059	1,050	6%	1,107	6%	36	0%
Education and Hospitals (Local Government)	15,515	-971	-6%	-1,680	-10%	-172	-1%
General Medical and Surgical Hospitals	11,758	-1,051	-8%	-1,124	-9%	86	1%
Local Government, Excluding Education and Hospitals	9,756	-392	-4%	-225	-2%	-192	-2%
Individual and Family Services	8,422	4,182	99%	213	3%	1,189	14%
Colleges, Universities, and Professional Schools	8,338	443	6%	932	13%	466	6%
State Government, Excluding Education and Hospitals	6,523	-484	-7%	-352	-5%	56	1%
Offices of Physicians	6,235	550	10%	-14	-0%	333	5%
Nursing Care Facilities (Skilled Nursing Facilities)	5,814	551	10%	496	9%	613	11%
Other General Merchandise Stores	5,552	984	22%	469	9%	350	6%

### Employment in Key Manufacturing Industries

Industry	2014 Jobs	Change, 2004-2014		Change, 2009-2014		Projected Change, 2014-2019	
Railroad Rolling Stock Manufacturing	5,445	840	18%	717	15%	250	5%
Plastics Product Manufacturing	4,772	-877	-16%	308	7%	-387	-8%
Machine Shops; Turned Product; and Screw, Nut, and Bolt Manufacturing	3,158	358	13%	581	23%	151	5%
Metalworking Machinery Manufacturing	2,685	-390	-13%	316	13%	-365	-14%
Other Fabricated Metal Product Manufacturing	2,192	18	1%	524	31%	-269	-12%
Forging and Stamping	1,885	195	12%	117	7%	28	1%
Architectural and Structural Metals Manufacturing	1,817	-517	-22%	-146	-7%	171	9%
Other Wood Product Manufacturing	1,740	-572	-25%	186	12%	-190	-11%
Iron and Steel Mills and Ferroalloy Manufacturing	1,610	586	57%	179	12%	255	16%
Foundries	1,544	141	10%	351	29%	169	11%

<sup>6</sup> These industries are by 4-digit NAICS code.

Among these top industries, average earnings vary widely, from under \$15,000 a year for Restaurants and Other Eating Places, to almost \$100,000 a year for Offices of Physicians. The average earnings in key manufacturing industries range from \$44,378 (Other Wood Product Manufacturing) to \$97,152 (Railroad Rolling Stock Manufacturing).

### Establishments and Earnings in Key Industries

Industry	2014 Jobs	Total Earnings	Establishments
Restaurants and Other Eating Places	19,059	\$14,514	1,010
Education and Hospitals (Local Government)	15,515	\$67,613	390
General Medical and Surgical Hospitals	11,758	\$52,655	17
Local Government, Excluding Education and Hospitals	9,756	\$54,363	410
Individual and Family Services	8,422	\$23,525	1,644
Colleges, Universities, and Professional Schools	8,338	\$28,827	10
State Government, Excluding Education and Hospitals	6,523	\$83,923	152
Offices of Physicians	6,235	\$99,877	530
Nursing Care Facilities (Skilled Nursing Facilities)	5,814	\$36,300	53
Other General Merchandise Stores	5,552	\$26,329	143

### Establishments and Earnings in Key Manufacturing Industries

Industry	2014 Jobs	Total Earnings	Establishments
Railroad Rolling Stock Manufacturing	5,445	\$97,152	6
Plastics Product Manufacturing	4,772	\$50,995	79
Machine Shops; Turned Product; and Screw, Nut, and Bolt Manufacturing	3,158	\$55,769	156
Metalworking Machinery Manufacturing	2,685	\$61,104	144
Other Fabricated Metal Product Manufacturing	2,192	\$59,489	45
Forging and Stamping	1,885	\$65,249	27
Architectural and Structural Metals Manufacturing	1,817	\$53,628	58
Other Wood Product Manufacturing	1,740	\$44,378	71
Iron and Steel Mills and Ferroalloy Manufacturing	1,610	\$85,729	13
Foundries	1,544	\$68,275	23

#### Occupation analysis

The region's top occupations by employment include Office and Administrative Support Occupations, Sales and Related Occupations, Production Occupations, Food Preparation and Serving Related Occupations, and Healthcare Practitioners and Technical Occupations.<sup>7</sup> The median hourly earnings range from \$9.34/hour for Food Preparation and Serving Related Occupations to \$34.55/hour for Management Occupations.<sup>8</sup>

#### NWPA's Occupation Mix

Occupation	2014 Employment	% of Total Employment	Median Hourly Earning
Office and Administrative Support Occupations	46,876	14.83%	\$13.72
Sales and Related Occupations	34,373	10.88%	\$13.19
Production Occupations	33,281	10.53%	\$15.94
Food Preparation and Serving Related Occupations	27,887	8.83%	\$9.34
Healthcare Practitioners and Technical Occupations	18,981	6.01%	\$30.61
Transportation and Material Moving Occupations	18,793	5.95%	\$13.88
Education, Training, and Library Occupations	17,899	5.66%	\$23.25
Personal Care and Service Occupations	14,198	4.49%	\$9.64
Construction and Extraction Occupations	13,044	4.13%	\$18.03
Healthcare Support Occupations	12,572	3.98%	\$11.37
Installation, Maintenance, and Repair Occupations	12,239	3.87%	\$17.06
Management Occupations	11,984	3.79%	\$34.55
Building and Grounds Cleaning and Maintenance Occupations	11,278	3.57%	\$9.91
Business and Financial Operations Occupations	10,456	3.31%	\$24.92
Community and Social Service Occupations	8,228	2.60%	\$17.10
Protective Service Occupations	7,129	2.26%	\$19.07
Architecture and Engineering Occupations	4,074	1.29%	\$28.81
Arts, Design, Entertainment, Sports, and Media Occupations	4,010	1.27%	\$15.27
Computer and Mathematical Occupations	3,096	0.98%	\$26.02
Military occupations	1,877	0.59%	\$21.35
Farming, Fishing, and Forestry Occupations	1,306	0.41%	\$13.30
Legal Occupations	1,240	0.39%	\$28.49
Life, Physical, and Social Science Occupations	1,170	0.37%	\$25.98

<sup>7</sup> These occupations are by 2 digit SOC code (Standard Occupational Classification System).

<sup>8</sup> EMSI Analyst 2014.

### Employment Change

The table on the next page shows employment and change by occupation.<sup>9</sup> Five occupations on the list (bolded) are the top five occupations that are most often required to staff companies within key industries in NWP. The category of Production Occupations is the only top occupation not falling within the top 10 key industries. Among these five key-industry-required occupations, all but Office and Administrative Support Occupations are projected to grow in the next five years, adding over 3,000 jobs in the region. Office and Administrative Support Occupations is still projected to lead in openings with over 1,200 per year, but these jobs will be due to current positions becoming available. Among the top occupations, the category of Sales and Related Occupations is projected to experience the sharpest decline in the next five years (413 jobs lost), followed by Production Occupations (237 jobs lost), and Farming, Fishing, and Forestry Occupations (114 jobs lost).

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<sup>9</sup> These occupations are by 2 digit SOC code.



## Employment Change by Occupation

Occupation	2014 Employment	Change, 2004-2014		Change, 2009-2014		Projected Change, 2014-2019		Projected Annual Openings
<b>Office and Administrative Support Occupations</b>	46,876	-3,657	-7%	-396	-1%	-23	-0%	1,212
Sales and Related Occupations	34,373	-2,790	-8%	543	2%	-413	-1%	1,191
Production Occupations	33,281	-3,784	-10%	1,959	6%	-237	-1%	903
<b>Food Preparation and Serving Related Occupations</b>	27,887	764	3%	1,287	5%	360	1%	1,163
<b>Healthcare Practitioners and Technical Occupations</b>	18,981	953	5%	113	1%	1,182	6%	677
Transportation and Material Moving Occupations	18,793	-80	-0%	642	4%	595	3%	622
<b>Education, Training, and Library Occupations</b>	17,899	-148	-1%	-1,033	-5%	293	2%	482
Personal Care and Service Occupations	14,198	1,801	15%	563	4%	1,025	7%	549
Construction and Extraction Occupations	13,044	-1,410	-10%	-532	-4%	-41	-0%	392
<b>Healthcare Support Occupations</b>	12,572	2,597	26%	1,035	9%	1,183	9%	505
Installation, Maintenance, and Repair Occupations	12,239	-496	-4%	366	3%	375	3%	403
Management Occupations	11,984	-982	-8%	-430	-3%	125	1%	344
Building and Grounds Cleaning and Maintenance Occupations	11,278	-1,099	-9%	-4	-0%	172	2%	314
Business and Financial Operations Occupations	10,456	-467	-4%	114	1%	230	2%	319
Community and Social Service Occupations	8,228	237	3%	-319	-4%	212	3%	261
Protective Service Occupations	7,129	315	5%	270	4%	169	2%	251
Architecture and Engineering Occupations	4,074	-19	-0%	164	4%	139	3%	145
Arts, Design, Entertainment, Sports, and Media Occupations	4,010	-505	-11%	-144	-3%	-21	-1%	127
Computer and Mathematical Occupations	3,096	-253	-8%	50	2%	159	5%	94
Military occupations	1,877	-431	-19%	-65	-3%	9	0%	46
Farming, Fishing, and Forestry Occupations	1,306	-352	-21%	-104	-7%	-114	-9%	43
Legal Occupations	1,240	-68	-5%	-33	-3%	30	2%	32
Life, Physical, and Social Science Occupations	1,170	-16	-1%	-22	-2%	55	5%	53

#### Industry and Occupation Connections

Although key industries are highly diversified, they do share some common workforce requirements. TPMA recommends targeting these top occupations and industries in the region and supporting education programs that provide talent for these growing areas.

#### Connection between Top Occupations and Key Industries

Top Occupations	Key Industries
Office and Administrative Support Occupations	Colleges, Universities, and Professional Schools Offices of Physicians Local Government, Excluding Education and Hospitals General Medical and Surgical Hospitals State Government, Excluding Education and Hospitals
Food Preparation and Serving Related Occupations	Restaurants and Other Eating Places Education and Hospitals (Local Government) Nursing Care Facilities (Skilled Nursing Facilities)
Healthcare Practitioners and Technical Occupations	General Medical and Surgical Hospitals Offices of Physicians Nursing Care Facilities (Skilled Nursing Facilities)
Education, Training, and Library Occupations	Education and Hospitals (Local Government) Colleges, Universities, and Professional Schools Local Government, Excluding Education and Hospitals Individual and Family Services
Healthcare Support Occupations	Nursing Care Facilities (Skilled Nursing Facilities) Individual and Family Services General Medical and Surgical Hospitals Offices of Physicians



### Manufacturing Occupations

The following table displays the top 10 occupations that are most often required to staff companies within manufacturing in NWP. <sup>10</sup> Median hourly earnings for these occupations in NWP range from \$11.16 at the low end for Laborers and Material Movers, Hand to \$24.44 at the high end for First-Line Supervisors of Production and Operating Workers.

Top Occupations in Manufacturing based on Employment Levels

Occupation	2014 Employment	Median Hourly Earnings
Machine Tool Cutting Setters, Operators, and Tenders, Metal and Plastic	2,970	\$15.54
Miscellaneous Assemblers and Fabricators	2,619	\$13.13
Machinists	2,446	\$17.68
Welding, Soldering, and Brazing Workers	2,296	\$16.25
Laborers and Material Movers, Hand	1,995	\$11.16
Miscellaneous Production Workers	1,909	\$12.32
Electrical, Electronics, and Electromechanical Assemblers	1,842	\$12.70
First-Line Supervisors of Production and Operating Workers	1,802	\$24.44
Inspectors, Testers, Sorters, Samplers, and Weighers	1,564	\$14.43
Maintenance and Repair Workers, General	1,307	\$15.29

Among 50,709 manufacturing workers in NWP, approximately a quarter of them (12,548) are older workers (55 years and older). These workers are expected to retire in the next ten years. The key manufacturing industry that is expected to have the greatest retiree population is Railroad Rolling Stock Manufacturing.

Age Distribution of Workers in Manufacturing Industries

Industry	2014 Employment	25 and Less		25-54		55 and Older	
Manufacturing Sector	50,709	3,906	8%	34,255	68%	12,548	25%
<b>Key Manufacturing Industries</b>							
Railroad Rolling Stock Manufacturing	5,445	257	5%	3,768	69%	1,419	26%
Plastics Product Manufacturing	4,772	520	11%	3,257	68%	995	21%
Machine Shops; Turned Product; and Screw, Nut, and Bolt Manufacturing	3,158	293	9%	2,154	68%	711	23%
Metalworking Machinery Manufacturing	2,685	191	7%	1,815	68%	679	25%

<sup>10</sup> Occupations are by 4 digit SOC code.

### Occupations in Key Manufacturing Sectors

This table shows employment and growth changes in occupations that are required to staff companies within key manufacturing sectors, including Railroad Rolling Stock Manufacturing, Plastics Product Manufacturing, Machine Shops; Turned Product; and Screw, Nut, and Bolt Manufacturing, and Metalworking Machinery Manufacturing in NWPA. Among these key-manufacturing-industry-required occupations, the category of Welding, Soldering, and Brazing Workers is projected to experience the highest growth, while the category of Machine Tool Cutting Setters, Operators, and Tenders, Metal and Plastic is expected to undergo the sharpest decline over the next five years.

Top Occupations in Key Manufacturing Industries

Occupation	2014 Employment	Change, 2009-2014		Projected Change, 2014-2019	
Machinists	1,536	279	22%	39	3%
Welding, Soldering, and Brazing Workers	1,215	165	16%	55	5%
Electrical, Electronics, and Electromechanical Assemblers	1,017	130	15%	31	3%
Machine Tool Cutting Setters, Operators, and Tenders, Metal and Plastic	972	114	13%	-89	-9%
Laborers and Material Movers, Hand	580	53	10%	-19	-3%
First-Line Supervisors of Production and Operating Workers	580	64	12%	-18	-3%
Computer Control Programmers and Operators	570	130	30%	41	7%
Miscellaneous Assemblers and Fabricators	560	49	10%	-10	-2%
Inspectors, Testers, Sorters, Samplers, and Weighers	547	84	18%	8	1%
Maintenance and Repair Workers, General	391	44	13%	-16	-4%

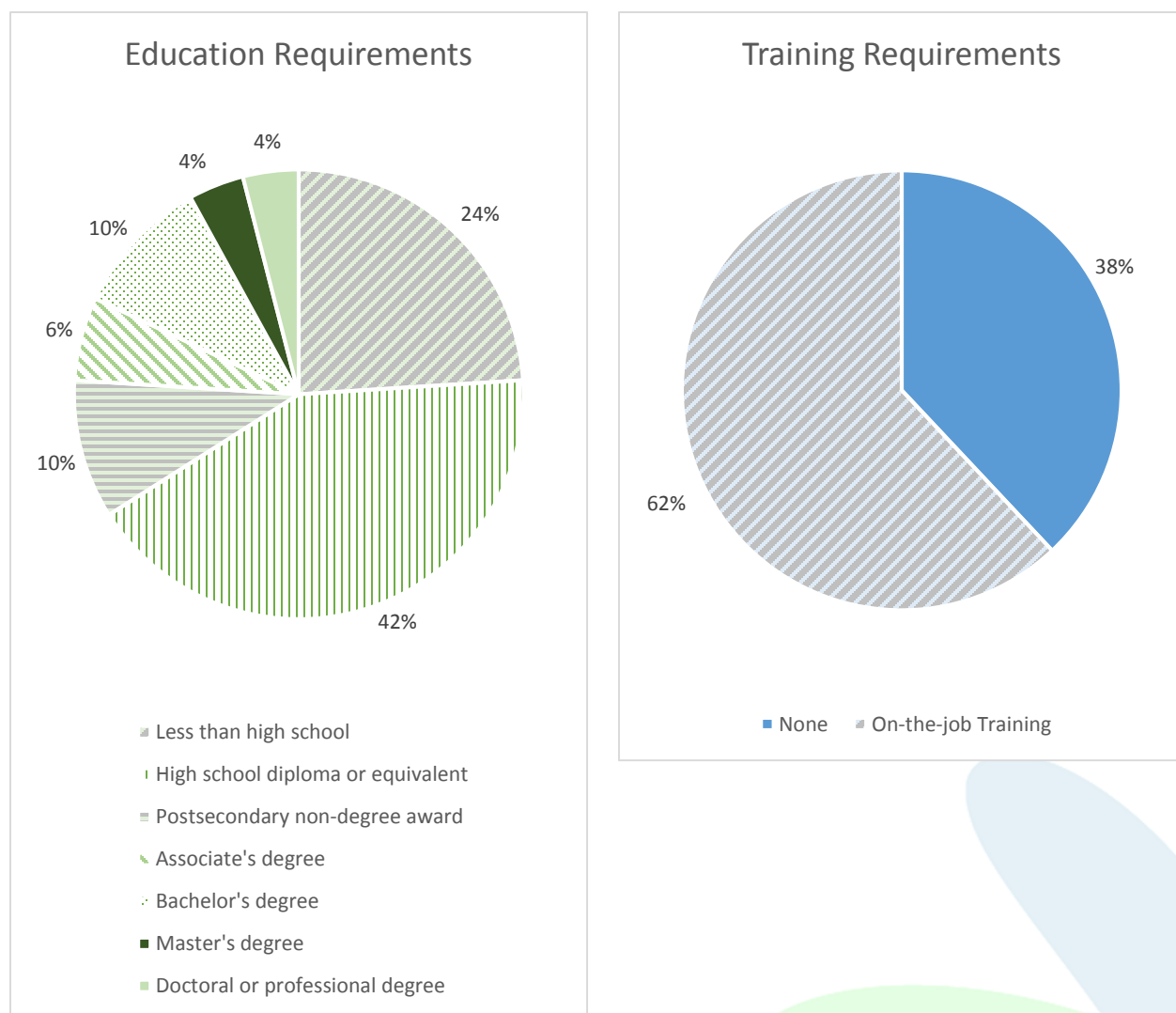
Key manufacturing sectors in NWPA share some common workforce requirements. TPMA recommends targeting these top occupations and sectors in the region to support educational programs that provide talent for these growing areas.

### Connection between Top Occupations and Key Manufacturing Industries

Top Occupations	Key Manufacturing Industries
Machinists	<ul style="list-style-type: none"><li>• Railroad Rolling Stock Manufacturing</li><li>• Plastics Product Manufacturing</li><li>• Machine Shops; Turned Product; and Screw, Nut, and Bolt Manufacturing</li><li>• Metalworking Machinery Manufacturing</li></ul>
Welding, Soldering, and Brazing Workers	<ul style="list-style-type: none"><li>• Railroad Rolling Stock Manufacturing</li><li>• Machine Shops; Turned Product; and Screw, Nut, and Bolt Manufacturing</li></ul>
Electrical, Electronics, and Electromechanical Assemblers	<ul style="list-style-type: none"><li>• Railroad Rolling Stock Manufacturing</li><li>• Machine Shops; Turned Product; and Screw, Nut, and Bolt Manufacturing</li></ul>
Machine Tool Cutting Setters, Operators, and Tenders, Metal and Plastic	<ul style="list-style-type: none"><li>• Plastics Product Manufacturing</li><li>• Machine Shops; Turned Product; and Screw, Nut, and Bolt Manufacturing</li><li>• Metalworking Machinery Manufacturing</li></ul>
Laborers and Material Movers, Hand	<ul style="list-style-type: none"><li>• Railroad Rolling Stock Manufacturing</li><li>• Plastics Product Manufacturing</li></ul>

### Education and Skills for High Demand Jobs

Among high demand jobs in NWPA, approximately one-fourth require less than a high school degree. Over 40 percent require a high school diploma or equivalent, 10 percent require a postsecondary non degree award, and the final 24 percent require an associate's degree or higher.<sup>11</sup> Just under 70 percent of these jobs require some type of training. Most employers prefer candidates that already have additional educational experience and/or training rather than having to provide on-the-job training. Thus, TPMA recommends targeting the education and training programs most required for high demand jobs to support the region's workforce needs and opportunities.



<sup>11</sup> A total of 50 occupations with the highest projected job growth from 2014-2019 are included in this analysis. These occupations are with 5 digit SOC code. EMSI Analyst 2014.

## Human Capital

About 345,000 workers participate in the NWPA Region labor force. Of these, just under 330,000 are employed. Over the last 20 years, employment in the region reached its peak in June of 2000 and was at its lowest in January 1994. The unemployment rate for the region 4.9 percent, which is lower than the rate for Pennsylvania (5.8 percent), and the U.S. (5.9 percent).

### EMPLOYMENT, 1994-2014 <sup>12</sup>

<b>Peak</b>	June 2000 342,029	+4.7% (compared to Sept, 2014)
<b>Trough</b>	January 1994 309,451	-5.3% (compared to Sept, 2014)
<b>Sept 2014</b>	326,820	4.9% Current unemployment

### Labor Force Participation Rate

The labor force participation rate is a major indicator of the labor market. It represents the proportion of the population that is in the labor force. Labor force participation rates are affected by various factors, including demographic composition of the population as well as structural changes in the economy.

Labor force participation rate is sensitive to demographic change because the participation rates vary across age, gender, and race. Based on 2009-2013 ACS estimates, the national labor force participation rate for those 55-years-and-older was 39.2 percent, compared with a labor force participation rate of 81.9 percent for those between 25 and 54. The labor force participation rates for these two age groups in NWPA are both slightly lower than the national rate.<sup>13</sup> 79.7 percent of the NWPA population between 25 and 54 participate in the labor force, and 35.6 percent of those over 55 join in the labor force.

In addition to the national and state data provided by the American Community Survey, one can derive the county and regional labor force participation rate via population and labor force statistics.

### NWPA Labor Force Participation Rate

County	Labor Force Participation Rate
Erie	62.3%
Venango	59.4%
Warren	59.0%
Lawrence	58.7%
Crawford	58.2%
Mercer	57.2%
Clarion	57.1%
Forest	27.3%
<b>Region</b>	<b>59.4%</b>

The national labor force participation rate has decreased since 2000, a trend that is expected to continue in the next decade. One of the major reasons for the decline is the aging of the baby-boom generation. In 2000, baby boomers were the heart of the workforce, falling into the high participation rate group of 36-to-54 years old. However, as this large group of individuals began to retire, the effects were felt on the overall participation rate. It is worth mentioning that the participation rate of older workers has been increasing in the past ten years, but it is still significantly lower than those of the middle age groups.

The older worker population (55 years and older) in NWPA is estimated to be 92,902 in 2014.<sup>14</sup> These older workers are expected to retire in the next ten years. The aging workforce calls for sustainable planning for workforce development in NWPA.

<sup>12</sup> U.S. Bureau of Labor Statistics, 1994.9-2014.9 (most recently available). <http://www.bls.gov/data/>

<sup>13</sup> 2009-2013 American Community Survey 5-Year Estimates

<sup>14</sup> The older worker population (55 years and older) in NWPA is estimated by multiplying the population of this age group by the corresponding labor force participation rate.

## Northwest Pennsylvania Existing Education Assets (Supply)

### Existing Education Supply

NC3T looked to two sources to gather information on education outcomes in Northwest Pennsylvania: the Integrated Postsecondary Education Data System (IPEDS), a federal government reporting system offering detailed information on postsecondary programs, and individual surveys of secondary-level career and technical education programs.

A review of career technical centers, private trade schools, and two/four year postsecondary institutions indicates that there are 35 education and training providers in NWPA, with the largest number located in Erie County. In 2013, there were 10,729 individuals across all programs who received a certification or postsecondary degree ("completers").

NWPA Education / Training Providers		
County	Total Institutions	Total Completers
Clarion	3	1,669
Crawford	4	652
Erie	13	6,566
Forest	0	0
Lawrence	5	589
Mercer	6	1,185
Venango	3	22
Warren	1	46
<b>TOTAL</b>	<b>35</b>	<b>10,729</b>

To analyze the supply of potential employees in the three target industries, NC3T collected and analyzed data based on Classification of Instructional Program Codes, or CIP Codes.

Two of the strategic sectors, Healthcare and Advanced Manufacturing, can be analyzed by CIP Codes. There are no major CIP Code categories specifically targeted to energy industry-related professions; they are scattered throughout the codes allocated to manufacturing and construction. Therefore, completers of interest to the energy sector are reflected within the Advanced Manufacturing data.

## Manufacturing Training and Completers

Of the 35 educational institutions in NWPA, 17 had students who completed manufacturing related degrees or certificates in 2013.

NWPA Education / Training Providers			
County	Total Institutions	# with Manufacturing completers in 2013	# of Completers
Clarion	3	1	27
Crawford	4	3	81
Erie	13	7	576
Forest	0	0	0
Lawrence	5	2	484
Mercer	6	2	74
Venango	3	1	28
Warren	1	1	9
<b>TOTAL</b>	<b>35</b>	<b>17</b>	<b>1,279</b>

In 2013, there were 1,279 completers in NWPA who received a certification or postsecondary degree in an advanced manufacturing or energy related program. The majority of completers earned their credentials in Erie and Lawrence counties.

These programs include the following CIP Codes:

- CIP 14: Engineering (typically 4-year degrees)
- CIP 15: Engineering Technologies and Engineering-related Fields
- CIP 46: Construction Trades
- CIP 47: Mechanic and Repair Technologies/Technicians
- CIP 48: Precision Production
- CIP 49: Transportation and Materials Moving

Most of these completers received certifications or Associate's Degrees, as seen in the following table:

2013 Completers by Type of Degree - Advanced Manufacturing CIPs	
Type of Degree	# of Completers
HS Degree w/program completion	123
Certification, 0-1 years required	135
Certification, 1-2 years required	309
Associate's Degree	332
Certification, 2-4 years required	0
Bachelor's Degree	295
Post-Bachelor's Certification	1
Master's Degree	84
Post-Master's Certification	0
Doctorate (Practice)	0
<b>TOTAL</b>	<b>1,279</b>

NC3T looked at the number of 2013 completers by CIP Code and found the following outcomes (top 20 listed):

<b>2013 Completers by Advanced Manufacturing CIP Code</b>		
<b>CIP</b>	<b>Description</b>	<b>Completers</b>
48.0508	Welding Technology/Welder	213
14.1901	Mechanical Engineering	137
46.0302	Electrician	103
14.1001	Electrical and Electronics Engineering	89
49.0205	Truck and Bus Driver/Commercial Vehicle Operator and Instructor	83
15.0303	Electrical, Electronic and Communications Engineering Tech/Technician	81
49.0202	Construction/Heavy Equipment/Earthmoving Equipment Operation	65
15.0805	Mechanical Engineering/Mechanical Technology/Technician	59
15.0613	Manufacturing Engineering Technology/Technician	53
47.0201	HVAC and Refrigeration Maintenance Tech/Technician	45
48.0501	Precision Machining	37
47.0604	Automobile/Automotive Mechanics Technology/Technician	36
48.0503	Machine Shop Technology/Assistant	36
14.3201	Polymer/Plastics Engineering	33
14.0903	Computer Software Engineering	26
15.0699	Industrial Production Technologies/Technicians, Other	26
15.1301	Drafting and Design	23
47.0303	Industrial Mechanics and Maintenance Technology	21
48.051	Computer Numerically Controlled (CNC) Machinist Tech/CNC Machinist	21
14.0901	Computer Engineering, General	15

### **Manufacturing Analysis**

Given a total of 1,279 completers in related CIP Codes against 2,779 annual openings in occupational groups related to manufacturing (including energy extraction), a clear undersupply of completers is evident in the region. This is compounded by an oversupply in engineering (145 openings versus 578 completers), resulting in an undersupply in construction trades, mechanic and repair technologies/



technicians, precision production, transportation and materials moving (2,634 openings versus 701 completers). The calculated oversupply in engineering must be balanced with the regional 4-year colleges and universities that confer degrees with completers who do not have a permanent residence in the area and return to permanent residence after graduation.

## Healthcare Training and Completers

Of the 35 educational institutions in NWSA, 27 had students who completed healthcare related degrees or certificates in 2013.

NWSA Education / Training Providers			
County	Total Institutions	# with Healthcare completers in 2013	# of Completers
Clarion	3	3	359
Crawford	4	2	46
Erie	13	11	2,125
Forest	0	0	0
Lawrence	5	4	78
Mercer	6	5	214
Venango	3	2	51
Warren	1	0	0
<b>TOTAL</b>	<b>35</b>	<b>27</b>	<b>2,873</b>

In 2013, there were 2,873 completers in NWSA who received a certification or postsecondary degree in a healthcare program. The majority of completers earned their credentials in Erie County. These programs include CIP Code 51: Health Professionals and Related Programs.

2013 Completers by Type of Degree - Healthcare CIP	
Type of Degree	# of Completers
HS Degree w/program completion	52
Certification, 0-1 years required	80
Certification, 1-2 years required	519
Associate's Degree	567
Certification, 2-4 years required	69
Bachelor's Degree	517
Post-Bachelor's Certification	68
Master's Degree	237
Post-Master's Certification	2
Doctorate (Practice)	762
<b>TOTAL</b>	<b>2,873</b>

NCST looked at the number of 2013 completers by CIP Code and found the following outcomes (top 20 listed):

2013 Completers by Healthcare CIP Code		
CIP	Description	Completers
51.3801	Registered Nursing/Registered Nurse	555
51.1901	Osteopathic Medicine/Osteopathy	490

51.3901	Licensed Practical/Vocational Nurse Training	245
51.2001	Pharmacy	230
51.3999	Practical Nursing, Vocational Nursing and Nursing Assistants, Other	143
51.0203	Speech-Language Pathology/Pathologist	139
51.0801	Medical/Clinical Assistant	134
51.0806	Physical Therapy Technician/Assistant	75
51.1102	Pre-Medicine/Pre-Medical Studies	62
51.0601	Dental Assisting/Assistant	58
51.0912	Physician Assistant	46
51.2308	Physical Therapy/Therapist	42
51.0808	Veterinary/Animal Health Technology/Technician and Veterinary Assistant	41
51.0707	Health Information/Medical Records Technology/Technician	39
51.0907	Medical Radiologic Technology/Science - Radiation Therapist	38
51.2306	Occupational Therapy/Therapist	37
51.3501	Massage Therapy/Therapeutic Massage	34
51.3899	Registered Nursing, Nursing Administration, Nursing Research and Clinical Nursing, Other	32
51.0899	Allied Health and Medical Assisting Services, Other	31
51.0908	Respiratory Care Therapy/Therapist	30

### Healthcare Analysis

Given a total of 2,873 completers in related CIP Codes against 1,182 annual openings in healthcare, a clear oversupply of completers is evident in the region. However, it should be noted that some programs are national in scope, such as the Lake Erie College of Osteopathic Medicine, which had 782 completers in 2013. Further, there may be over/undersupply in specialty areas. For example, an oversupply may exist with 139 speech-language pathologists.

## Common Themes, Recommendations, Innovation, and Conclusions

### *Common Themes*

The Northwest Pennsylvania region has experienced significant challenges in the last few years including a declining population, aging workforce, and upheaval within the previous workforce board administration. Community members note concern over the declining population and lack of employer succession planning. Common themes within the counties reflect the recognition of the challenges, but more importantly, the community members display a thirst for action to address workforce challenges and stagnation.

Planning fatigue was a common theme throughout the region. Community members noted that they had attended many planning sessions, input sessions, and brainstorming meetings, but did not see any action resulting from the events. Members indicated a frustration in verbalizing the same challenges with no concrete follow-up to the sessions. In some counties, participants seemed to be paralyzed, waiting for someone else to solve their collective issues and find it difficult to think about solutions within their power. Instead, they were waiting for a transformative leader/convener, legislation, or funding to address their needs and challenges. Several employers indicated intentional disengagement from regional workforce collaboration and hesitancy to act as future leaders because of past challenges and lack of action.

All counties in the region recognized work readiness as a skills gap. Communication, customer service, information literacy, research, math concepts, and teamwork were all noted as important foundational skills often missing from the regional workforce. Yet, work readiness skill training can often be overlooked, identified as too broad of a skill set, and difficult to fund. One member noted that “no one wants to pay for” soft skill training. Generational differences also were often viewed negatively (e.g. face-to-face communication versus text communication).

Regional feedback mechanisms to identify common industry needs mainly include educational advisory committee meetings, which participants noted often consist of an overly broad review of particular curriculum and limited impact. When curriculum updates are suggested, educational providers are often limited by regulations regarding allowed instruction time. Educational providers believe they have limited agility to align courses with industry needs, resulting in existing resources not well-aligned to demand.

Community members also noted gaps in career guidance and exploration. They identified the need to promote in-demand jobs more widely throughout the community to increase awareness of those occupations with the strongest outlook.

The region lacks cohesiveness. Some counties lack resources and leadership while pockets of excellence exist in others (see *Innovations in Place* – Appendix 4). A number of regional organizations and independent industry leaders have implemented training sessions, job shadowing, and career awareness efforts, but the innovation is piecemeal. One industry leader noted that the area is “service-rich” yet programs are “an inch deep and a mile wide.”

## Recommendations

- **Empower a convener** – To address the region’s thirst for action, the region should identify, empower, and stand behind a convener to act as an intermediary among education and training providers, employers, and workforce and economic development partners. The role of the convener is paramount to the success of implementation of recommendations; the region is ready for a strong entity to lead the region to the next phase. In Mercer and Lawrence Counties, the West Central Job Partnership is already serving in this capacity. In the northwest, the Northwest Pennsylvania Workforce Board could be a natural choice—particularly with new leadership in place. The Northwest Commission also could provide support, facilitating communication between the two, spreading information to other key stakeholders across the region, and encouraging participation in regional workforce efforts.
- **Link and leverage resources** – Build upon existing strengths and pockets of innovation by partnering with regional partners with similar goals and aligning existing services and resources. As partners begin planning together, they may identify gaps in services/resources, and pursue funding to support innovation. Linking the efforts could assist with grant funding requests, reflecting the unity of the region—minimizing competition within the region for similar funding opportunities and strengthening the competitiveness of those submitted.
- **Develop a demand-driven implementation structure** – Developing a cohesive and unified employer engagement strategy will bring industry and education, workforce, and economic development partners together and will build credibility over time. Demand-driven structures also tend to hold all partners accountable. The existing Industry Partnerships can serve as a foundation and, with a concerted effort to engage and empower additional industry leaders, can realize greater impact. The Advanced Diversified Manufacturing Industry Partnership in Northwest Pennsylvania and the Advanced Manufacturing Industry Partnership of Lawrence and Mercer Counties are already in place. These partnerships should be revisited to explore ways they can re-energize and evolve further by continuing to identify common needs, build additional relationships with industry, and lead solutions at a grass-roots level. When solutions are suggested from within the partnerships, members have a vested interest to see the success, encourage colleagues to join in the solution, and become more demand-driven. Recommendations include identifying and engaging industry champions, employing a peer-to-peer approach to elicit additional employer involvement, defining roles and responsibilities, drafting and implementing a formalized action plan, adopting “strategic doing” practices, and replicating this approach with other industries. The Oh-Penn Action Plan and related Action Teams can serve as examples for others throughout the region. The Erie Regional Manufacturer Partnership is in the process of replicating the Oh-Penn planning process and related Memorandum of Understanding defining partner roles.
- **Collapse and re-energize Advisory Committees** – Educational providers can garner more effective and comprehensive feedback from employers by partnering with one another and forming regional sector oversight committees with one committee for each sector in each Local Workforce Area. This will allow the educational providers to obtain consistent feedback, exhibit its partnership to employers, and potentially engage additional employers because of the reduced

time commitment. Furthermore, it will enhance coordination among educational partners along the educational spectrum (e.g., K-12, career and technical centers, community colleges, universities) to create more seamless career pathways. TPMA suggests the Advisory Committees be connected to the Industry Partnerships to create cohesiveness with other aspects of sector partnership and career pathway work. Additionally, partners should focus on the most in-demand career pathways and identify opportunities to strengthen and streamline the pathways (e.g. merge competing but unfilled training programs).

- **Start small and gain momentum** – The initial action plan should prioritize a few key initiatives, allow partners to focus on initial small steps, and gain momentum. By focusing on only a few things, the partners will be able to witness progress, gain credibility, and move forward to the next initiative. Funding streams from various resources should be explored to determine where alignment and braided funding is possible. Funds can be linked and leveraged for greater impact.
- **Coordinate a regional career awareness campaign** – Each Workforce Board already develops an “In-demand Occupation List”. This list can serve as a starting point and can be vetted with employers to ensure it represents the most current industry trends. Partners should create a regional awareness campaign to promote it widely throughout the community, linking from partner web sites, partner e-newsletters, and other publications. Leaders also could approach local media to invite their partnership in generating attention through regular appearances, columns, etc. to promote careers with the most potential. Partners also should engage educational leaders to share the list and brainstorm additional ideas about how to get the information into the hands of students and parents. Furthermore, partners should organize professional development opportunities for teachers and guidance counselors to not only ensure they are aware of the list, but also understand the jobs that are on it and the career pathways for individuals to become prepared for those jobs. Additionally, cross-sector career development working groups could be created to coordinate career development activities among K-12, post-secondary education and training, workforce system, and other community-based organizations.
- **Ensure career planning for every youth** – The region should aim to provide academic and career plans for all students by the 8<sup>th</sup> grade and update them on an annual basis. Creation of a spectrum of community-based, employer-based and connected learning experiences via school districts would serve as a strong awareness and recruitment tool for employers. Career exploration activities should be embedded throughout the school experience. Ninth grade career exploration is recommended as a curriculum requirement. In the 11<sup>th</sup>/12<sup>th</sup> grade an introduction elective course (at least ½ year) is recommended for industry exploration including a mix of career understanding and core skills and technology in respective fields, industry connections, guest speakers, and site visits. The course could be designed in conjunction with local employers, providing opportunities for employer engagement. Key concepts in engineering, manufacturing, and technology that relate to local industries could be explored. Each high school could offer “Engineering by Design” and “Careers in Health” courses.
- **Increase adult education and training opportunities** – Expand the availability of Associate Degrees of Applied Science across the region, including the use of CTC facilities for remote lab space. The Northwest Pennsylvania Technical Education and rural community college initiatives

can be further explored to address the issue of increasing adult education and training opportunities.

- **Develop a strategy to support foundational skill development (basic skills and employability skills)** - Many best practices exist in readiness, pre-apprenticeship, and contextualized remediation programs. Partners should explore additional ways to address this critical gap by leveraging existing partner resources, including Adult Basic Education, Workforce Innovation and Opportunity Act, and TANF funding. Particular focus should be given to those industries that provide the most opportunity for individuals to enter into and advance along career pathways.

### *Innovation in Place*

Although the region faces challenges, many area leaders and partners have developed innovative practices to address workforce issues. Innovative practices include, but are not limited to: Area Blueprint Initiatives, Crawford County Roundtable, Career Street, Erie Together, Oh-Penn Manufacturing Collaborative, Oh-Penn Manufacturing Readiness Program, Summer Jam, independent employer practices (e.g. Elwood Group facility tours), UPMC job shadowing program, and the Northwest Pennsylvania Workforce Innovation Fund (see Appendix 4).

Innovative employer practices are recommended for continued identification and promotion.

### *Conclusion*

Because of the region's thirst for action, the Northwest Pennsylvania region is primed to act on recommendations. Community members note the unique nature of their area, and are committed to creating a premier region known for its innovation, workforce, and adaptable environment. New Workforce Board leadership and WIOA legislation present an opportunity for the region to identify a strong convener and utilize leadership from the PREP partnership to address workforce issues and, ultimately, transform the workforce.

## Appendix

A1. County Profiles

A2. Best Practices

A3. Career Pathways

A4. Survey Findings

A5. Innovation and Resources in Place

A6. About TPMA and NC3T

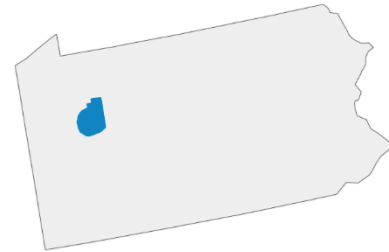


## A1. County Profiles

### Clarion

#### Executive Summary

Similar to the other counties in this region, the population in Clarion has been declining and aging. The population in Clarion has decreased from 40,507 to 39,615 over the past ten years, at a rate of two percent in the past ten years. The population of 55-years-and-older increased significantly, while the population decreased among all other age groups. These declining and aging trends are projected to continue in the next five years.



Clarion's median income from 2008 to 2012 was \$45,059, putting it at the middle of the eight-county-region. Its poverty rate is 17.3 percent which is much higher than the poverty rate of Pennsylvania (13.1 percent). Clarion County is a net exporter of workers, sending the most workers to Butler, Allegheny, and Venango counties.

About 19,170 workers participate in the Clarion County labor force. Of these, 18,239 are employed. The unemployment rate for Clarion County is 4.9 percent, which is lower than the rate for Pennsylvania (5.8 percent), and the U.S. (5.9 percent). The older worker population (55 years and older) in Clarion County is estimated to be 4,966 in 2014. These older workers are expected to retire in the next ten years. The aging workforce calls for sustainable planning for workforce development in Clarion County.

The largest broad industry sectors by employment in Clarion County are Government, Health Care and Social Assistance, Retail Trade, Accommodation and Food Services, and Manufacturing. It is worth noting that almost all of the major industry sectors have been declining over the past ten years, especially in Government and Manufacturing. The only major industry sector that has significantly grown is Health Care and Social Assistance, with a growth rate of 48 percent from 2004 to 2014.

The county's top occupations by employment include Office and Administrative Support Occupations, Sales and Related Occupations, Food Preparation and Serving Related Occupations, Education, Training, and Library Occupations, and Transportation and Material Moving Occupations. Among these top occupations, Office and Administrative Support Occupations; Food Preparation and Serving Related Occupations; and Education, Training, and Library Occupations are most often required to staff companies within key industries in this county.

Among the occupations with the highest projected job growth from 2014-2019 in Clarion County, almost half require a high school diploma or equivalent. Approximately 14 percent of these high demand jobs require a Bachelor's Degree or above. Over 80 percent of these jobs require some type of training, which is mostly on-the-job training.

## Demographics

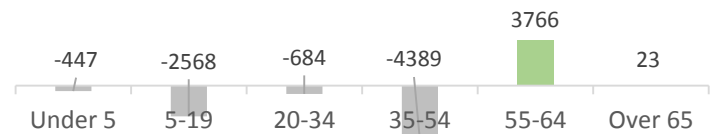
The population in Clarion has declined from 40,507 to 39,615 over the past ten years, at a rate of two percent.<sup>15</sup> The population is projected to continue declining over the next five years. Clarion County has an aging population. In the past ten years, the population of 55-years-and-older increased significantly, while the population decreased in all other age groups. This trend is projected to continue over the next five years. The aging population is a concern as it will impact the availability of labor in this region over the next decade.

Compared to the other counties in this region, Clarion County has relatively high percentage of those identifying as White. However, the White population shrank by three percent from 2004-2014 and is the only race that did not experience growth in the past ten years. The top three fastest growing races in the county are those identifying as Two or More Races, Hispanic, and Asian.<sup>16</sup>

### Age Distribution

Age	2014 Population	Change, 2004-2014		Change, 2014-2019	
Under 5	1,984	-1	0%	-83	-4%
5-19	7,539	-951	-11%	-477	-6%
20-34	8,284	-141	-2%	-615	-7%
35-54	9,362	-1,662	-15%	-691	-7%
55-64	5,521	1,230	29%	161	3%
Over 65	6,925	633	10%	804	12%

### Change in Age Distribution 2004-2014



### Race Distribution

Race	2014 Population	Change, 2004-2014	
White	38,280	-1,233	-3%
Black	417	48	13%
Hispanic	282	85	43%
Two or More Races	344	128	59%
Asian	228	67	42%
American Indian or Alaskan Native	58	10	21%
Native Hawaiian or Pacific Islander	5	2	67%

<sup>15</sup> EMSI Analyst 2014.

<sup>16</sup> The Hispanic population includes Hispanics in White, Black, Two or More Races, Asian, American Indian or Alaskan Native, Native Hawaiian or Pacific Islander.

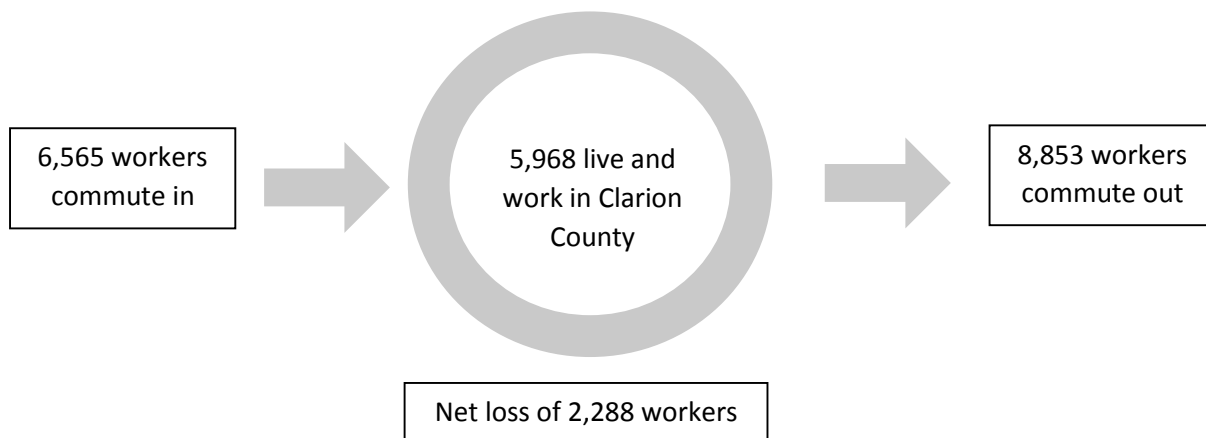
### Income

Clarion's median income from 2008 to 2012 was \$45,059, putting it at the middle of the eight-county-region.<sup>17</sup>

	MEDIAN HOUSEHOLD INCOME ('08-'12)	POVERTY RATE
<b>Clarion</b>	\$43,059	17.3%
<b>Pennsylvania</b>	\$52,267	13.1%
<b>U.S.</b>	\$53,046	14.9%

### Commuting Pattern and Labor Force Availability

With almost 6,600 workers commuting in and more than 8,800 commuting out, Clarion County is a net exporter of workers.<sup>18</sup> The county sends the most workers to Butler (1,248, eight percent), Allegheny (907, six percent) and Venango (894, six percent) counties, and receives the most commuters from Armstrong (1,296, 10 percent), Venango (764, 6 percent) and Jefferson (705, 6 percent) counties. Over 12,500 workers are employed in Clarion County, including 5,968 of workers both live and work in the county, and 6,565 workers commuting from other counties.

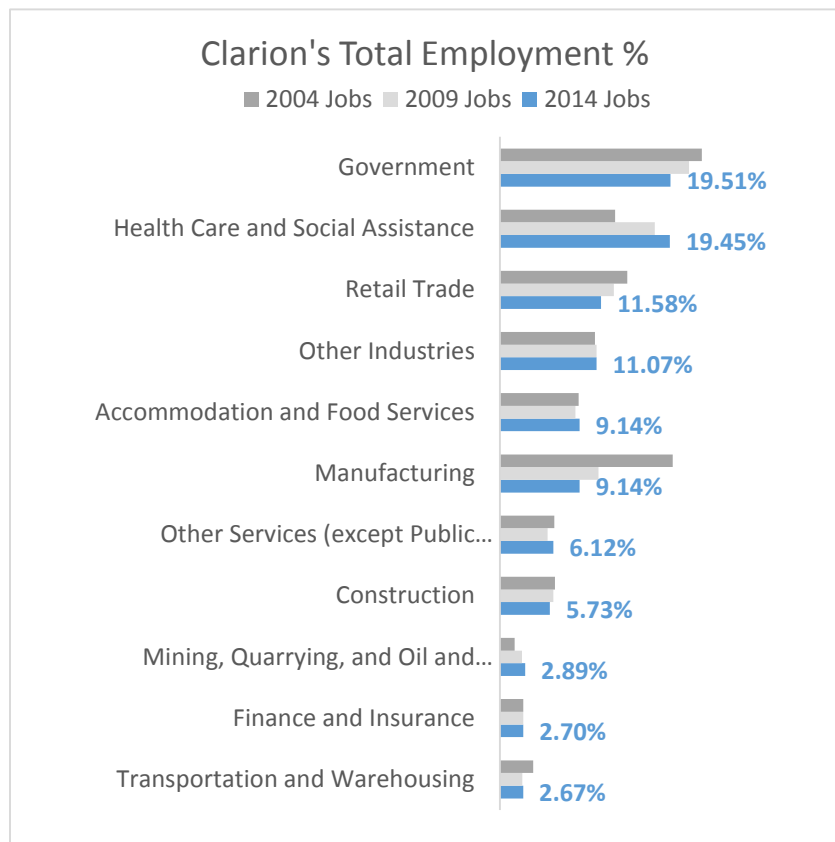


<sup>17</sup> U.S. Census Bureau 2008-2012

<sup>18</sup> U.S. Census Bureau, OnTheMap, 2012 (most recently available). <http://onthemap.ces.census.gov/>

### Industry Analysis

The broad industry sectors in Clarion County employing the most workers are Government (3,038, 19.51 percent), Health Care and Social Assistance (3,028, 19.45 percent), Retail Trade (1,803 11.58 percent), Accommodation and Food Services (1,423, 9.14 percent), and Manufacturing (1,422, 9.14 percent).<sup>19</sup> It is worth noting that almost all of the major industry sectors have been declining in the past ten years, especially in Government and Manufacturing. The only major industry sector that has significantly grown is Health Care and Social Assistance, with a growth rate of 48 percent from 2004 to 2014.



<sup>19</sup> These industries are by 2-digit NAICS code. EMSI Analyst 2014.

### Key Industry Analysis

Drilling a bit deeper into the industries in the county, the tables below show the top ten largest industries by employment in Clarion County.<sup>20</sup> Among these key industries, Individual and Family Services is projected to have the highest growth over the next five years, followed by Residential Intellectual and Developmental Disability, Mental Health, and Substance Abuse Facilities; and General Medical and Surgical Hospitals.

### Employment in Key Industries

Industry	2014 Jobs	Change, 2004-2014		Change, 2009-2014		Projected Change, 2014-2019	
Education and Hospitals (Local Government)	1,240	-115	-9%	-102	-8%	-11	-1%
Restaurants and Other Eating Places	1,067	33	3%	42	4%	2	0%
Education and Hospitals (State Government)	945	-119	-11%	-52	-5%	-10	-1%
Individual and Family Services	842	720	591%	275	49%	212	25%
Other Wood Product Manufacturing	639	-648	-50%	-12	-2%	-281	-44%
General Medical and Surgical Hospitals	450	19	4%	125	39%	14	3%
Residential Intellectual and Developmental Disability, Mental Health, and Substance Abuse Facilities	421	345	454%	172	69%	99	23%
Local Government, Excluding Education and Hospitals	405	-138	-25%	-113	-22%	-6	-2%
Other General Merchandise Stores	395	-106	-21%	-32	-7%	-64	-16%
Nursing Care Facilities (Skilled Nursing Facilities)	298	-45	-13%	4	2%	-1	0%

Among these top industries, average earnings vary widely, from around \$12,000 a year for the Restaurants and Other Eating Places, to almost \$70,000 a year for Education and Hospitals (State Government).

### Establishments and Earnings in Key Industries

Industry	2014 Jobs	Average Earning	Establishments
Education and Hospitals (Local Government)	1,240	\$65,482	18
Restaurants and Other Eating Places	1,067	\$12,142	65
Education and Hospitals (State Government)	945	\$69,580	1
Individual and Family Services	842	\$25,373	85
Other Wood Product Manufacturing	639	\$48,991	11
General Medical and Surgical Hospitals	450	\$53,039	1
Residential Intellectual and Developmental Disability, Mental Health, and Substance Abuse Facilities	421	\$20,148	13
Local Government, Excluding Education and Hospitals	405	\$38,810	45
Other General Merchandise Stores	395	\$26,809	9
Nursing Care Facilities (Skilled Nursing Facilities)	298	\$35,443	5

<sup>20</sup> These industries are by 4-digit NAICS code.

### Occupation analysis

Clarion county's top occupations include Office and Administrative Support Occupations, Sales and Related Occupations, Food Preparation and Serving Related Occupations, Education, Training, and Library Occupations, and Transportation and Material Moving Occupations.<sup>21</sup> Notably, seven of the top 10 occupations provide lower median earnings compared to the median for all occupations in Clarion County (\$15.64/hour) and in the U.S. (\$20.06/hour). The three exceptions are Healthcare Practitioners and Technical Occupations (\$27.42/ hour), and Education, Training, and Library Occupations (\$23.64/ hour), and Construction and Extraction Occupations (\$17.25/ hour).<sup>22</sup>

Clarion's Occupation Mix

Occupation	2014 Employment	% of Total Employment	Median Hourly Earning
Office and Administrative Support Occupations	2,059	13.22%	\$12.34
Sales and Related Occupations	1,632	10.48%	\$12.17
Food Preparation and Serving Related Occupations	1,557	10.00%	\$8.81
Education, Training, and Library Occupations	1,329	8.54%	\$23.64
Transportation and Material Moving Occupations	1,034	6.64%	\$13.48
Construction and Extraction Occupations	1,017	6.53%	\$17.25
Personal Care and Service Occupations	961	6.17%	\$9.44
Production Occupations	943	6.06%	\$14.11
Healthcare Practitioners and Technical Occupations	807	5.19%	\$27.42
Installation, Maintenance, and Repair Occupations	737	4.74%	\$16.79
Healthcare Support Occupations	648	4.16%	\$10.32
Management Occupations	621	3.99%	\$28.95
Building and Grounds Cleaning and Maintenance Occupations	507	3.26%	\$11.00
Community and Social Service Occupations	479	3.08%	\$16.37
Business and Financial Operations Occupations	340	2.18%	\$22.81
Protective Service Occupations	215	1.38%	\$20.26
Arts, Design, Entertainment, Sports, and Media Occupations	145	0.93%	\$14.26
Architecture and Engineering Occupations	116	0.75%	\$25.25
Military occupations	101	0.65%	\$21.41
Farming, Fishing, and Forestry Occupations	94	0.60%	\$11.03
Computer and Mathematical Occupations	93	0.60%	\$23.42
Life, Physical, and Social Science Occupations	76	0.49%	\$26.43
Legal Occupations	58	0.37%	\$25.44

<sup>21</sup> These occupations are by 2 digit SOC code (Standard Occupational Classification System).

<sup>22</sup> EMSI Analyst 2014.

### Employment Growth

Tracking job growth is key as well, with the table on the next page showing employment and growth by occupation.<sup>23</sup> Five occupations on the list (bolded) are the top five occupations that are most often required to staff companies within key industries in Clarion County. Notably, four of these key-industry-required occupations are projected to grow in the next five years, including Personal Care and Service Occupations; Healthcare Support Occupations; Food Preparation and Serving Related Occupations; and Education, Training, and Library Occupations. Office and Administrative Support Occupations is the only key-industry-required occupation that is projected to decline. However, it is worth noting that while it is projected to decline, it still has a large number of annual openings. This is likely because of the retirement of the older worker population. Further analysis is needed to identify the potential demand for talent in this industry even as it is projected to shrink.

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<sup>23</sup> These occupations are by 2 digit SOC code.



## Employment and Growth by Occupation

Occupation	2014 Employment	Change, 2004-2014		Change, 2009-2014		Projected Change, 2014-2019		Projected Annual Openings
<b>Office and Administrative Support Occupations</b>	2,059	-421	-17%	-194	-9%	-34	-2%	49
Sales and Related Occupations	1,632	-331	-17%	-130	-7%	-62	-4%	54
<b>Food Preparation and Serving Related Occupations</b>	1,557	28	2%	72	5%	20	1%	62
<b>Education, Training, and Library Occupations</b>	1,329	-56	-4%	-59	-4%	5	0%	32
Transportation and Material Moving Occupations	1,034	-362	-26%	-23	-2%	3	0%	31
Construction and Extraction Occupations	1,017	-38	-4%	-29	-3%	77	8%	46
<b>Personal Care and Service Occupations</b>	961	455	90%	189	24%	141	15%	49
Production Occupations	943	-876	-48%	-221	-19%	-60	-6%	27
Healthcare Practitioners and Technical Occupations	807	-59	-7%	-58	-7%	3	0%	23
Installation, Maintenance, and Repair Occupations	737	-42	-5%	26	4%	52	7%	30
<b>Healthcare Support Occupations</b>	648	179	38%	44	7%	69	11%	29
Management Occupations	621	-62	-9%	-24	-4%	18	3%	19
Building and Grounds Cleaning and Maintenance Occupations	507	-69	-12%	0	0%	5	1%	15
Community and Social Service Occupations	479	150	45%	73	18%	60	13%	24
Business and Financial Operations Occupations	340	-51	-13%	-5	-2%	22	6%	13
Protective Service Occupations	215	-58	-21%	-30	-12%	4	2%	7
Arts, Design, Entertainment, Sports, and Media Occupations	145	-30	-17%	-18	-11%	-6	-4%	5
Architecture and Engineering Occupations	116	-16	-12%	-17	-13%	16	14%	6
Military occupations	101	-22	-18%	-4	-4%	0	0%	2
Farming, Fishing, and Forestry Occupations	94	-31	-25%	2	2%	-7	-8%	3
Computer and Mathematical Occupations	93	-20	-18%	-5	-6%	3	4%	2
Life, Physical, and Social Science Occupations	76	1	2%	3	4%	9	12%	4
Legal Occupations	58	-6	-9%	-4	-7%	5	8%	NA



### Industry and Occupation Connections

The connection between the top occupations and key industries are summarized in the following table. Although key industries are highly diversified, they do share some common workforce requirements. TPMA recommends to target these top occupations and industries in Clarion County and support education programs that provide training for these growing areas.

Connection between Top Occupations and Key Industries

Top Occupations	Key Industries
Office and Administrative Support Occupations	<ul style="list-style-type: none"> <li>• Education and Hospitals (Local Government)</li> <li>• Education and Hospitals (State Government)</li> <li>• Other Wood Product Manufacturing</li> <li>• General Medical and Surgical Hospitals</li> <li>• Other General Merchandise Stores</li> </ul>
Food Preparation and Serving Related Occupations	<ul style="list-style-type: none"> <li>• Education and Hospitals (Local Government)</li> <li>• Restaurants and Other Eating Places</li> <li>• Education and Hospitals (State Government)</li> <li>• Nursing Care Facilities (Skilled Nursing Facilities)</li> </ul>
Education, Training, and Library Occupations	<ul style="list-style-type: none"> <li>• Education and Hospitals (Local Government)</li> <li>• Education and Hospitals (State Government)</li> <li>• Local Government, Excluding Education and Hospitals</li> </ul>
Personal Care and Service Occupations	<ul style="list-style-type: none"> <li>• Education and Hospitals (State Government)</li> <li>• Individual and Family Services</li> <li>• Residential Intellectual and Developmental Disability, Mental Health, and Substance Abuse Facilities</li> <li>• Local Government, Excluding Education and Hospitals</li> </ul>
Healthcare Support Occupations	<ul style="list-style-type: none"> <li>• Individual and Family Services</li> <li>• General Medical and Surgical Hospitals</li> <li>• Residential Intellectual and Developmental Disability, Mental Health, and Substance Abuse Facilities</li> <li>• Nursing Care Facilities (Skilled Nursing Facilities)</li> </ul>

The following table displays the top 10 occupations that are most often required to staff companies within manufacturing in Clarion County.<sup>24</sup> Median hourly earnings for these occupations in Clarion range from \$9.85 at the low end for Packaging and Filling Machine Operators and Tenders to \$21.66 at the high end for Sales Representatives, Wholesale and Manufacturing.

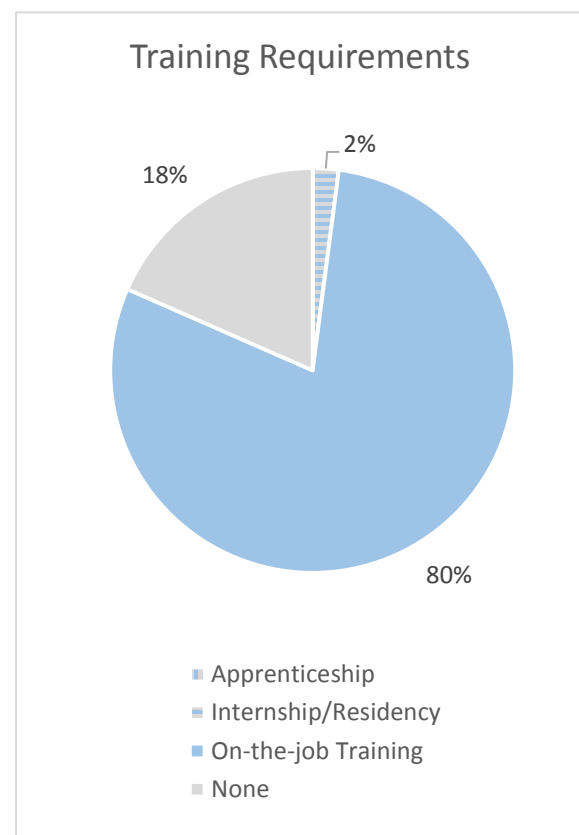
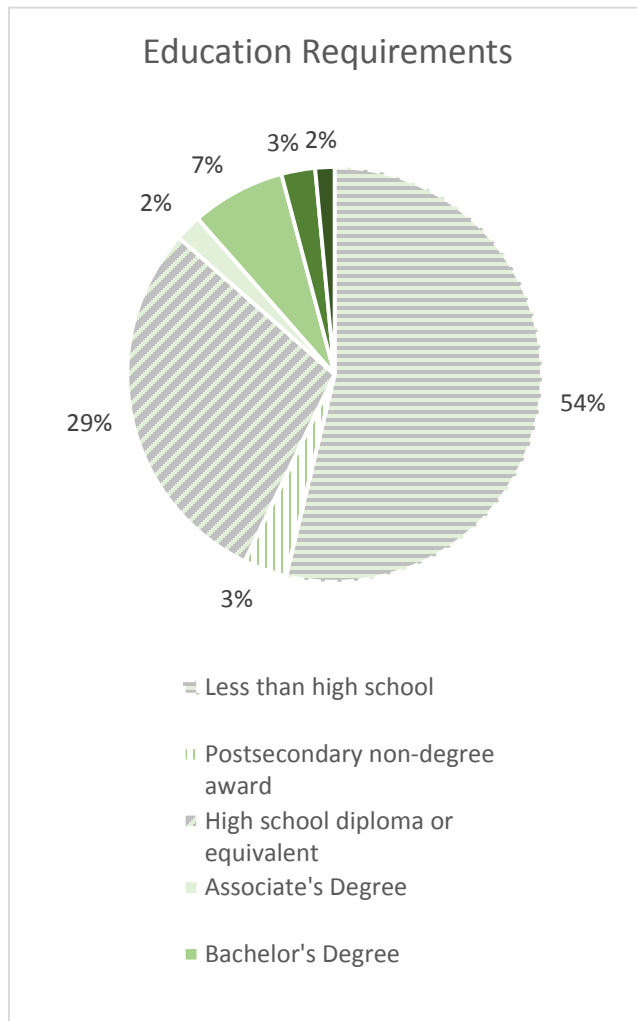
### Top Occupations in Manufacturing based on Employment Levels

Occupation	2014 Employment	Median Hourly Earnings
Woodworking Machine Setters, Operators, and Tenders	205	\$11.58
Miscellaneous Assemblers and Fabricators	132	\$12.31
Laborers and Material Movers, Hand	115	\$10.24
Driver/Sales Workers and Truck Drivers	62	\$14.14
First-Line Supervisors of Production and Operating Workers	55	\$21.42
Miscellaneous Production Workers	45	\$11.07
Carpenters	43	\$14.96
Sales Representatives, Wholesale and Manufacturing	39	\$21.66
Maintenance and Repair Workers, General	32	\$14.22
Packaging and Filling Machine Operators and Tenders	31	\$9.85

<sup>24</sup> Occupations are by 4 digit SOC code.

### Education and Skills for High Demand Jobs

Among high demand jobs in Clarion County, almost half require a high school diploma or equivalent.<sup>25</sup> Approximately 14 percent of these high demand jobs require a Bachelor's Degree or above. Over 80 percent of these jobs require some type of training, which is mostly on-the-job training. TPMA recommends targeting the education and training programs most required for high demand jobs to support the region's workforce needs and opportunities.



<sup>25</sup> A total of 50 occupations with the highest projected job growth from 2014-2019 are included in this analysis. These occupations are with 5 digit SOC code. EMSI Analyst 2014.

## Human Capital

About 19,170 workers participate in the Clarion County labor force. The labor participation rate for population over 16 years old is 57.2 percent, which is among the lowest in this region. Of these, 18,239 are employed. The unemployment rate for Clarion County is 4.9

percent, which is lower than the rate for Pennsylvania (5.8 percent), and the U.S. (5.9 percent). Over the last 20 years, employment in Clarion County was at its highest in October 2005 and lowest in January 1996.

### EMPLOYMENT, 1994-2014<sup>26</sup>

<b>Peak</b>	October 2005 20,568	+4.6% (compared to Sept, 2014)
<b>Trough</b>	January 1996 15,519	-7.0% (compared to Sept, 2014)
<b>Sept 2014</b>	18,239	4.9% Current unemployment

#### *Labor Force Participation Rate*

The labor force participation rate is a major indicator of the labor market. It represents the proportion of the population that is in the labor force. Labor force participation rates are affected by various factors, including demographic composition of the population as well as structural changes in the economy.

Labor force participation rate is sensitive to demographic change because the participation rates vary across age, gender, and race. Based on 2009-2013 ACS estimates, the national labor force participation rate for those 55-years-and-older was 39.2 percent, compared with a labor force participation rate of 81.9 percent for those between 25 and 54.

The national labor force participation rate has decreased since 2000, a trend that is expected to continue in the next decade. One of the major reasons for the decline is the aging of the baby-boomer generation. In 2000, baby boomers were the heart of the workforce, falling into the high participation rate group of 36-to-54 years old. However, as this large group of individuals began to retire, the effects were felt on the overall participation rate. It is worth mentioning that the participation rate of older workers has been increasing in the past ten years, but it is still significantly lower than those of the middle age groups.

The older worker population (55 years and older) in Clarion County is estimated to be 4,966 in 2014.<sup>27</sup> These older workers are expected to retire in the next ten years. The aging workforce calls for sustainable planning for workforce development in Clarion County.

<sup>26</sup> U.S. Bureau of Labor Statistics, 1994.9-2014.9 (most recently available). <http://www.bls.gov/data/>

<sup>27</sup> The older worker population (55 years and older) in Clarion County is estimated by multiplying the population of this age group by the corresponding labor force participation rate.

### Input Sessions

Clarion County community members noted that there is a negative perception among parents and students regarding careers in manufacturing and vocational training at the area Career Centers. The idea persists among parents and students that they must pursue a four-year college degree in order to be successful. Education providers noted that they are under pressure from legislation to meet certain regulations, and the mandates are restrictive when curriculum could be updated. Currently, curriculum is reviewed through advisory councils and surveys sent to employers, community members, and parents.

Soft skills and math aptitude are lacking within the workforce, according to input session participants. Area universities offer mock interviews and soft skills training, but more work needs to be completed to prepare students/youth/ individuals to communicate effectively and appropriately in the workplace. Co-ops and internships were highlighted as successful ways of helping students build technical and soft skills.

Retention is a problem within healthcare, especially with home health aides. The position is emotionally and physically taxing, and does not pay a family-sustaining wage. Many home health aides are hired on a part-time basis, which also adversely affects retention. Finding affordable child care and reliable transportation is difficult for many area residents. Some employers have informally started their own carpooling program.

The Blueprint Community Initiative is in the strategic planning stage where community assets will be leveraged and the team will explore actions to make the area more attractive and competitive. Many area professionals live outside of Clarion County, and the initiative will hopefully encourage citizens to move to the same area where they are employed.

Resources that are helpful in the community include: Human Resource Roundtable groups, PA CareerLink resources, and the Small Business Development Center.

## HIGHLIGHTED IN-DEMAND OCCUPATIONS

Machinists	Manufacturing Operators
Field Service Technicians	PLC Technicians
Fabricators	Electronic Technicians
Welders	Home Health Aides
Forklift Drivers	Registered Nurses
Procurement Managers	Medical Assistants
Quality Inspectors	Front Office Assistants

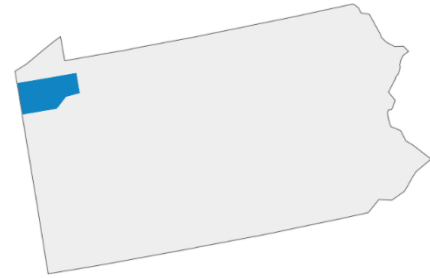
## HIGHLIGHTED IN-DEMAND SKILLS

Soft Skills	General Math
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## Crawford

### Executive Summary

The population in Crawford has declined by three percent over the past ten years. The population has also been aging, with the population of 55-years-and-older increasing significantly, while the population decreased among all other age groups. These declining and aging trends are projected to continue over the next five years, which may impact the availability of labor in this county.



Crawford's median income from 2008 to 2012 was \$41,664, putting it at the second lowest of the eight-county-region. Its poverty rate is 16.8 percent, which is much higher than the poverty rate of Pennsylvania (13.1%). Crawford County is a net exporter of workers, sending the most workers to Erie, Mercer, and Venango counties.

About 42,007 workers participate in the Crawford County labor force. Of these, 40,108 are employed. The unemployment rate for Crawford County is 4.5 percent, which is lower than the rate for Pennsylvania (5.8 percent), and the U.S. (5.9 percent). The older worker population (55 years and older) in Crawford County is estimated to be 11,612 in 2014. The aging workforce calls for sustainable planning for workforce development in Crawford County.

The largest broad industry sectors by employment in Crawford County are Manufacturing, Government, and Health Care and Social Assistance. The largest sector, Manufacturing, has resumed growth since 2009, which suggests a potential for future growth if trends hold. The second largest sector, Health Care and Social Assistance, has been steadily growing since 2004, also indicating the potential for future growth.

The county's top occupations by employment include Office and Administrative Support Occupations, Production Occupations, Food Preparation and Serving Related Occupations, Sales and Related Occupations, and Transportation and Material Moving Occupations. Among these top occupations, Office and Administrative Support Occupations, Production Occupations, and Food Preparation and Serving Related Occupations are most often required to staff companies within key industries in this county.

Among the occupations with the highest projected job growth from 2014-2019 in Crawford County, more than half of the jobs require a high school diploma or equivalent. Approximately 17 percent of these high demand jobs require a Bachelor's Degree or above. Over 70 percent of these jobs require some type of training, which is mostly on-the-job training.

## Demographics

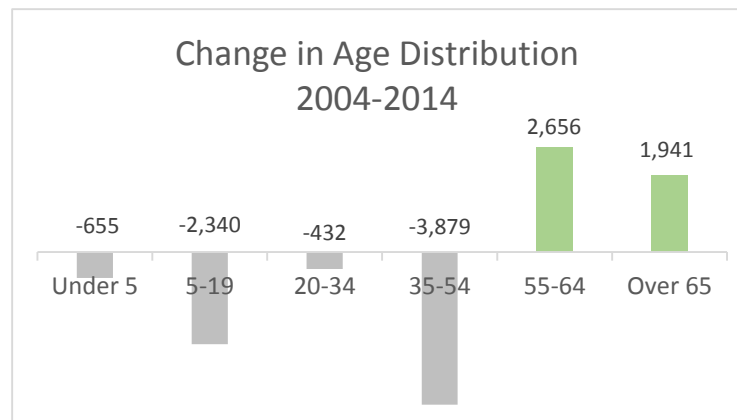
The population in Crawford has declined from 89,681 to 86,974 in the past ten years.<sup>28</sup> The population declined by three percent, compared to the state growth rate of four percent, and the national rate of nine percent. The population is projected to continue to decline over the next five years.

Crawford County has an aging population. In the past ten years, the population of 55-years-and-older increased significantly, while the population decreased in all other age groups. This trend is projected to continue over the next five years, except for the age group of under-five. The aging population is a concern as it will impact the availability of labor in this county over the next decade.

Compared to the other counties in this region, the population in Crawford County lacks diversity, with over 96 percent of the 2014 population identifying as White. The White population shrank by four percent from 2004-2014. The top three fastest growing races in the county are those identifying as Hispanic, Two or More Races, and Asian.<sup>29</sup>

## Age Distribution

Age	2014 Population	Change, 2004-2014		Change, 2014-2019	
Under 5	4,734	-655	-12%	102	2%
5-19	16,471	-2,340	-12%	-620	-4%
20-34	14,796	-432	-3%	-894	-6%
35-54	21,868	-3,879	-15%	-1,884	-9%
55-64	13,211	2,656	25%	5	0%
Over 65	15,892	1,941	14%	2,042	13%



## Race Distribution

Race	2014 Population	Change, 2004-2014	
White	82,770	-3,554	-4%
Black	1,530	63	4%
Hispanic	1,032	369	56%
Two or More Races	996	282	39%
Asian	468	144	44%
American Indian or Alaskan Native	162	-12	-7%
Native Hawaiian or Pacific Islander	17	1	6%

<sup>28</sup> EMSI Analyst 2014.

<sup>29</sup> The Hispanic population includes Hispanics in White, Black, Two or More Races, Asian, American Indian or Alaskan Native, Native Hawaiian or Pacific Islander.

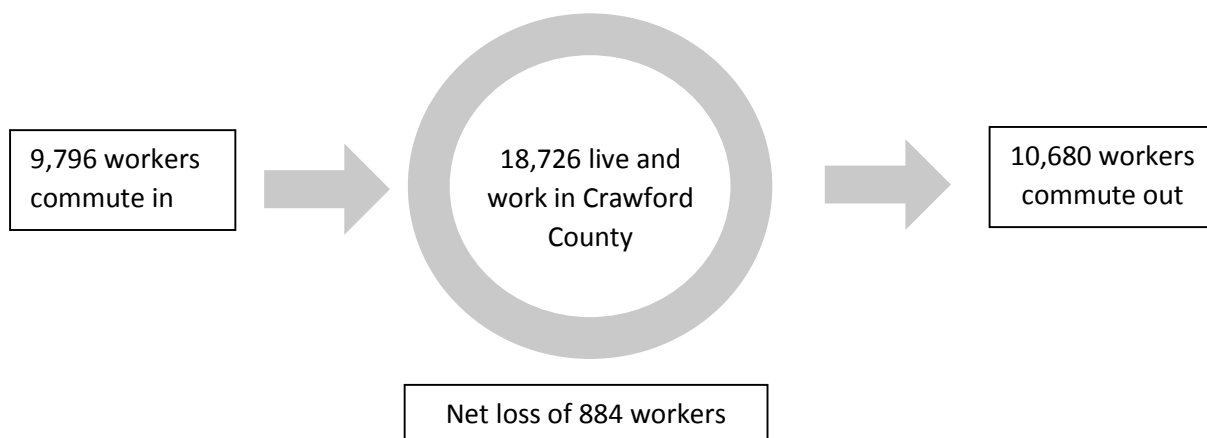
### Income

Crawford's median income from 2008 to 2012 was \$41,664, putting it at the second lowest of the eight-county-region. Its median household income lagged behind the state and national average.<sup>30</sup>

	MEDIAN HOUSEHOLD INCOME ('08-'12)	POVERTY RATE
<b>Crawford</b>	\$41,664	16.8%
<b>Pennsylvania</b>	\$52,267	13.1%
<b>U.S.</b>	\$53,046	14.9%

### Commuting Pattern and Labor Force Availability

With almost 9,800 workers commuting in and more than 10,600 commuting out, Crawford County is a net exporter of workers.<sup>31</sup> The county sends the most workers to Erie (5,498, 19 percent), Mercer (1,161, six percent) and Venango (1,270, four percent) counties, and receives the most commuters from Erie (2,432, nine percent), Venango (1,707, six percent) and Mercer (1,276, five percent) counties. Over 28,500 workers are employed in Crawford County, with 18,726 workers both living and working in the county, and 9,796 workers commuting from other counties.



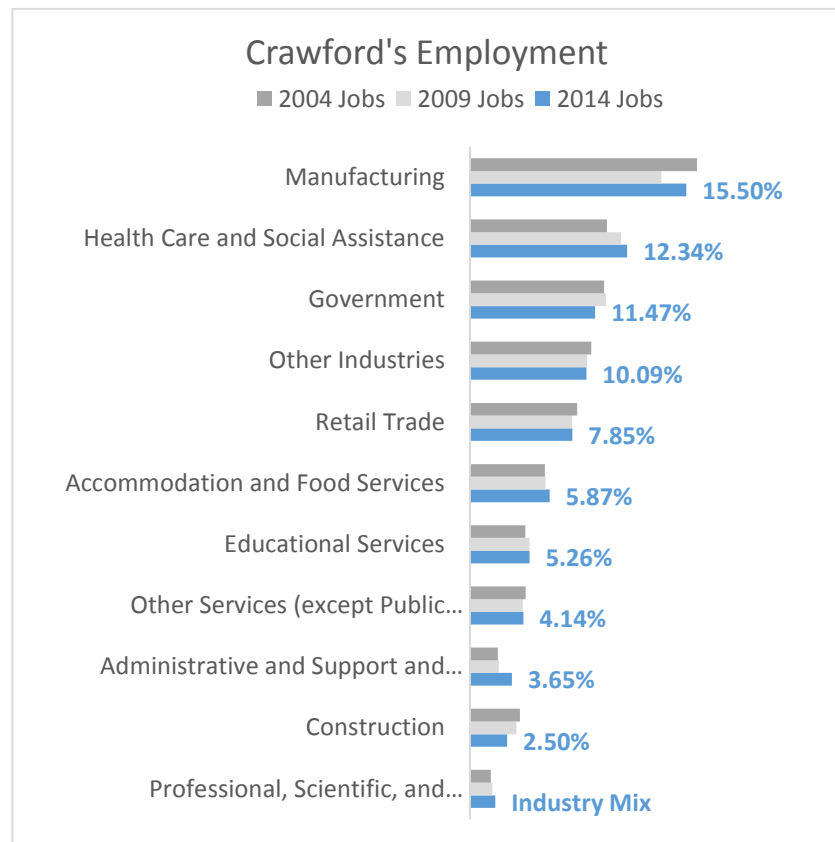
<sup>30</sup> U.S. Census Bureau 2008-2012

<sup>31</sup> U.S. Census Bureau, OnTheMap, 2012 (most recently available). <http://onthemap.ces.census.gov/>



### Industry Analysis

The broad industry sectors in Crawford County employing the most workers are Manufacturing (7,710, 21.32 percent), Health Care and Social Assistance (5,603, 15.50 percent), Government (4,461, 12.34 percent), Retail Trade (3,650, 10.09 percent), and Accommodation and Food Services (2,836, 7.85 percent).<sup>32</sup> It is worth noting that the largest sector Manufacturing has resumed growth since 2009, which suggests a potential for future growth. The second largest sector Health Care and Social Assistance has been steadily growing since 2004, indicating the potential for future growth.



<sup>32</sup> These industries are by 2-digit NAICS code. EMSI Analyst 2014.

### Key Industry Analysis

Drilling a bit deeper, the tables below show the top ten largest industries by employment in Crawford County.<sup>33</sup> Among these key industries, General Medical and Surgical Hospitals is projected to have the highest growth over the next five years, followed by Machine Shops, Turned Product, and Screw, Nut, and Bolt Manufacturing; and Colleges, Universities, and Professional Schools.

#### Employment in Key Industries

Industry	2014 Jobs	Change, 2004-2014		Change, 2009-2014		Projected Change, 2014-2019	
Restaurants and Other Eating Places	2,001	225	13%	34	2%	31	2%
Colleges, Universities, and Professional Schools	1,841	200	12%	3	0%	107	6%
Metalworking Machinery Manufacturing	1,824	195	12%	485	36%	-38	-2%
Education and Hospitals (Local Government)	1,628	-351	-18%	-343	-17%	-10	-1%
General Medical and Surgical Hospitals	1,482	95	7%	52	4%	129	9%
Local Government, Excluding Education and Hospitals	1,443	147	11%	17	1%	-19	-1%
Plastics Product Manufacturing	1,008	224	29%	190	23%	34	3%
Machine Shops; Turned Product; and Screw, Nut, and Bolt Manufacturing	876	301	52%	330	60%	111	13%
State Government, Excluding Education and Hospitals	869	-30	-3%	-31	-3%	1	0%
Other General Merchandise Stores	697	109	19%	21	3%	61	9%

Among these top industries, average earnings vary widely, from under \$15,000 a year for Restaurants and Other Eating Places, to almost \$90,000 a year for State Government, Excluding Education and Hospitals.

#### Establishments and Earnings in Key Industries

Industry	2014 Jobs	Average Earning	Establishments
Restaurants and Other Eating Places	2,001	\$14,137	128
Colleges, Universities, and Professional Schools	1,841	\$26,977	3
Metalworking Machinery Manufacturing	1,824	\$58,408	95
Education and Hospitals (Local Government)	1,628	\$69,179	58
General Medical and Surgical Hospitals	1,482	\$60,309	3
Local Government, Excluding Education and Hospitals	1,443	\$47,752	79
Plastics Product Manufacturing	1,008	\$49,141	20
Machine Shops; Turned Product; and Screw, Nut, and Bolt Manufacturing	876	\$57,914	37
State Government, Excluding Education and Hospitals	869	\$88,541	18
Other General Merchandise Stores	697	\$27,520	18

<sup>33</sup> These industries are by 4-digit NAICS code.

## Occupation analysis

The county's top occupations include Office and Administrative Support Occupations, Production Occupations, Food Preparation and Serving Related Occupations, Sales and Related Occupations, and Transportation and Material Moving Occupations.<sup>34</sup> Half of the top 10 occupations provide higher median earnings compared to the median for all occupations in Crawford County (\$15.91/hour).<sup>35</sup> The median hourly earnings range from \$9.48/hour for Food Preparation and Serving Related Occupations, to \$31.42/hour for Healthcare Practitioners and Technical Occupations.

## Crawford's Occupation Mix

Occupation	2014 Employment	% of Total Employment	Median Hourly Earning
Office and Administrative Support Occupations	5,240	14.49%	\$12.66
Production Occupations	4,993	13.81%	\$15.53
Food Preparation and Serving Related Occupations	3,345	9.25%	\$9.48
Sales and Related Occupations	3,289	9.09%	\$12.78
Transportation and Material Moving Occupations	2,229	6.17%	\$12.44
Healthcare Practitioners and Technical Occupations	1,925	5.32%	\$31.42
Education, Training, and Library Occupations	1,824	5.05%	\$22.79
Management Occupations	1,566	4.33%	\$29.12
Construction and Extraction Occupations	1,541	4.26%	\$16.35
Installation, Maintenance, and Repair Occupations	1,490	4.12%	\$16.26
Building and Grounds Cleaning and Maintenance Occupations	1,486	4.11%	\$9.61
Personal Care and Service Occupations	1,400	3.87%	\$9.94
Healthcare Support Occupations	1,204	3.33%	\$11.55
Business and Financial Operations Occupations	974	2.69%	\$22.38
Community and Social Service Occupations	955	2.64%	\$16.10
Protective Service Occupations	763	2.11%	\$20.00
Architecture and Engineering Occupations	394	1.09%	\$25.58
Arts, Design, Entertainment, Sports, and Media Occupations	366	1.01%	\$13.98
Farming, Fishing, and Forestry Occupations	339	0.94%	\$12.57
Computer and Mathematical Occupations	285	0.79%	\$23.40
Military occupations	228	0.63%	\$21.08
Life, Physical, and Social Science Occupations	166	0.46%	\$23.46
Legal Occupations	158	0.44%	\$22.45

<sup>34</sup> These occupations are by 2 digit SOC code (Standard Occupational Classification System).

<sup>35</sup> EMSI Analyst 2014.

### Employment Growth

The table on the next page shows employment and growth by occupation.<sup>36</sup> Five occupations on the list (bolded) are the top five occupations that are most often required to staff companies within key industries in Crawford County. Notably, all of these five key-industry-required occupations are projected to grow in the next five years, adding approximate 400 jobs in Crawford County.

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<sup>36</sup> These occupations are by 2 digit SOC code.



## Employment and Growth by Occupation

Occupation	2014 Employment	Change, 2004-2014		Change, 2009-2014		Projected Change, 2014-2019		Projected Annual Openings
<b>Office and Administrative Support Occupations</b>	5,240	141	3%	203	4%	141	3%	152
<b>Production Occupations</b>	4,993	-129	-3%	664	15%	143	3%	152
<b>Food Preparation and Serving Related Occupations</b>	3,345	260	8%	157	5%	124	4%	149
Sales and Related Occupations	3,289	-142	-4%	51	2%	-14	0%	115
Transportation and Material Moving Occupations	2,229	-73	-3%	81	4%	55	2%	72
<b>Healthcare Practitioners and Technical Occupations</b>	1,925	209	12%	159	9%	177	9%	79
<b>Education, Training, and Library Occupations</b>	1,824	-209	-10%	-226	-11%	32	2%	50
Management Occupations	1,566	-11	-1%	-54	-3%	14	1%	46
Construction and Extraction Occupations	1,541	-197	-11%	-173	-10%	-56	-4%	43
Installation, Maintenance, and Repair Occupations	1,490	-63	-4%	82	6%	67	5%	52
Building and Grounds Cleaning and Maintenance Occupations	1,486	56	4%	78	6%	69	5%	52
Personal Care and Service Occupations	1,400	21	2%	-48	-3%	29	2%	46
Healthcare Support Occupations	1,204	164	16%	133	12%	109	9%	47
Business and Financial Operations Occupations	974	57	6%	70	8%	59	6%	37
Community and Social Service Occupations	955	128	15%	-66	-6%	60	6%	35
Protective Service Occupations	763	41	6%	9	1%	9	1%	25
Architecture and Engineering Occupations	394	10	3%	23	6%	33	8%	17
Arts, Design, Entertainment, Sports, and Media Occupations	366	-41	-10%	-20	-5%	8	2%	13
Farming, Fishing, and Forestry Occupations	339	-138	-29%	-60	-15%	-38	-11%	12
Computer and Mathematical Occupations	285	15	6%	24	9%	59	21%	17
Military occupations	228	-46	-17%	-6	-3%	1	0%	6
Life, Physical, and Social Science Occupations	166	24	17%	3	2%	18	11%	9
Legal Occupations	158	6	4%	12	8%	16	10%	6

### Industry and Occupation Connections

Although key industries are highly diversified, they do share some common workforce requirements. TPMA recommends to target these top occupations and industries in Crawford County and support education programs that provide talent for these growing areas.

### Connection between Top Occupations and Key Industries

Top Occupations	Key Industries
Office and Administrative Support Occupations	<ul style="list-style-type: none"> <li>Colleges, Universities, and Professional Schools</li> <li>Metalworking Machinery Manufacturing</li> <li>General Medical and Surgical Hospitals</li> <li>Local Government, Excluding Education and Hospitals</li> <li>State Government, Excluding Education and Hospitals</li> <li>Other General Merchandise Stores</li> </ul>
Production Occupations	<ul style="list-style-type: none"> <li>Metalworking Machinery Manufacturing</li> <li>Plastics Product Manufacturing</li> <li>Machine Shops; Turned Product; and Screw, Nut, and Bolt Manufacturing</li> </ul>
Food Preparation and Serving Related Occupations	<ul style="list-style-type: none"> <li>Restaurants and Other Eating Places</li> <li>Colleges, Universities, and Professional Schools</li> <li>Education and Hospitals (Local Government)</li> </ul>
Healthcare Practitioners and Technical Occupations	<ul style="list-style-type: none"> <li>General Medical and Surgical Hospitals</li> </ul>
Education, Training, and Library Occupations	<ul style="list-style-type: none"> <li>Colleges, Universities, and Professional Schools</li> <li>Education and Hospitals (Local Government)</li> <li>Local Government, Excluding Education and Hospitals</li> </ul>

The following table displays the top 10 occupations that are most often required to staff companies within manufacturing in Crawford County.<sup>37</sup> Median hourly earnings for these occupations in Crawford range from \$10.27 at the low end for Laborers and Material Movers, Hand to \$21.72 at the high end for First-Line Supervisors of Production and Operating Workers.

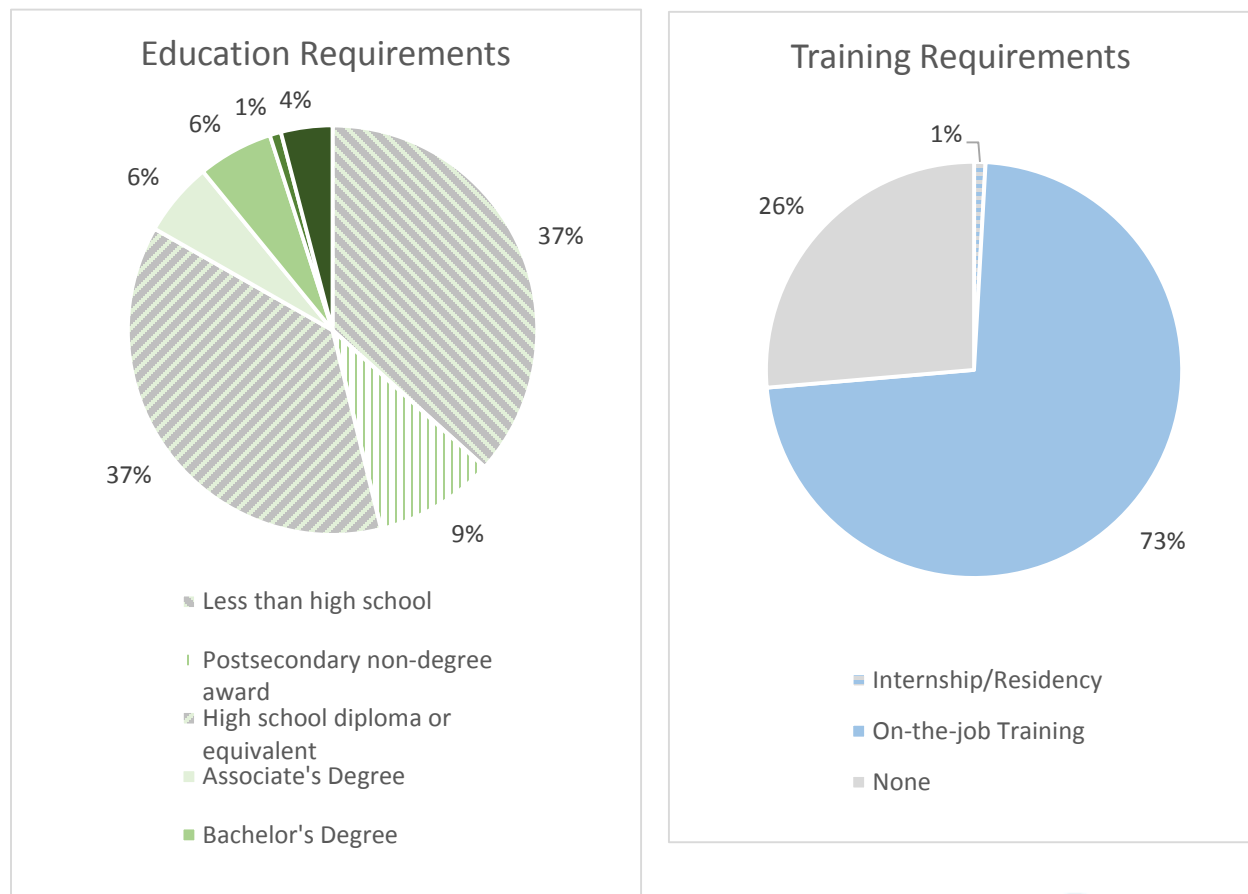
### Top Occupations in Manufacturing based on Employment Levels

Occupation	2014 Employment	Median Hourly Earnings
Machinists	589	\$16.58
Machine Tool Cutting Setters, Operators, and Tenders, Metal and Plastic	549	\$16.32
Laborers and Material Movers, Hand	375	\$10.27
Miscellaneous Assemblers and Fabricators	350	\$12.51
Computer Control Programmers and Operators	343	\$15.95
First-Line Supervisors of Production and Operating Workers	304	\$21.72
Inspectors, Testers, Sorters, Samplers, and Weighers	264	\$13.57
Miscellaneous Production Workers	224	\$12.45
Tool and Die Makers	214	\$20.23
Maintenance and Repair Workers, General	187	\$14.18

<sup>37</sup> Occupations are by 4 digit SOC code.

#### Education and Skills for High Demand Jobs

Among high demand jobs in Crawford County, more than half of the jobs require a high school diploma or equivalent.<sup>38</sup> Approximately 17 percent of these high demand jobs require a Bachelor's Degree or above. Over 70 percent of these jobs require some type of training, which is mostly on-the-job training. TPMA recommends targeting the education and training programs most required for high demand jobs to support the region's workforce needs and opportunities.



<sup>38</sup> A total of 50 occupations with the highest projected job growth from 2014-2019 are included in this analysis. These occupations are with 5 digit SOC code. EMSI Analyst 2014.

## Human Capital

About 42,007 workers participate in the Crawford County labor force. The labor participation rate for population over 16 years old is 58.2 percent, which is in the middle in this region. Of these, 40,108 are employed. Over the last 20 years, employment in Crawford County was at its highest in June 2008 and lowest in January 1994. The unemployment rate for Crawford County is 4.5 percent, which is lower than the rate for Pennsylvania (5.8 percent), and the U.S. (5.9 percent).

### EMPLOYMENT, 1994-2014<sup>39</sup>

<b>Peak</b>	June 2008 42,190	+5.2% (compared to Sept, 2014)
<b>Trough</b>	January 1994 36,082	-10.0% (compared to Sept, 2014)
<b>Sept 2014</b>	40,108	4.5% Current unemployment

#### **Labor Force Participation Rate**

The labor force participation rate is a major indicator of the labor market. It represents the proportion of the population that is engaged in the labor force. Labor force participation rates are affected by various factors, including demographic composition of the population as well as structural changes in the economy.

Labor force participation rate is sensitive to demographic change because the participation rates vary across age, gender, and race. Based on 2009-2013 ACS estimates, the national labor force participation rate for those 55-years-and-older was 39.2 percent, compared with a labor force participation rate of 81.9 percent for those between 25 and 54.

The national labor force participation rate has decreased since 2000, a trend that is expected to continue in the next decade. One of the major reasons for the decline is the aging of the baby-boomer generation. In 2000, baby boomers were the heart of the workforce, falling into the high participation rate group of 36-to-54 years old. However, as this large group of individuals began to retire, the effects were felt on the overall participation rate. It is worth mentioning that the participation rate of older workers has been increasing in the past ten years, but it is still significantly lower than those of the middle age groups.

The older worker population (55 years and older) in Crawford County is estimated to be 11,612 in 2014.<sup>40</sup> These older workers are expected to retire in the next ten years. The aging workforce calls for sustainable planning for workforce development in Crawford County.

<sup>39</sup> U.S. Bureau of Labor Statistics, 1994.9-2014.9 (most recently available). <http://www.bls.gov/data/>

<sup>40</sup> The older worker population (55 years and older) in Crawford County is estimated by multiplying the population of this age group by the corresponding labor force participation rate.



### Input Sessions

Crawford County community members noted that industry and education can build better partnerships with collaborative efforts and created the Crawford County Roundtable to address barriers to employment. The Roundtable has four separate teams that meet monthly: Research, Funding, Design, and Communications Work Teams. The Work Teams dig deeper into root causes of unemployed or underemployed citizens and develops initiatives to help them return to the labor force. Generational poverty, child care challenges, substance abuse, and declining population were all identified as barriers to employment.

Industry partners noted that succession planning is rarely in place in regional businesses, and this will become a problem in the next five to ten years, as workers retire. Industry partners also noted that Workforce Investment Board (WIB) is currently in a re-organization phase, and industry is hoping for a better relationship with the WIB after restructuring.

As with other counties, Crawford County members noted an overall negative perception among parents and students regarding careers in manufacturing and vocational training. The idea persists among parents and students that they must pursue a four-year college degree in order to be successful.

Resources that are helpful in the community include: PA CareerLink resources, WorkKeys skill validation, local HR group, Partners in Education initiative, the Advanced Manufacturing Industry Partnership, and the Crawford County Roundtable.

## HIGHLIGHTED IN-DEMAND OCCUPATIONS

Machinists	Accountants
Energy (e.g. Biomass Energy)	Computer Technicians
Certified Nursing Assistants	HR/Benefits Specialists
Welders	Home Health Aides
Pipefitters	Registered Nurses
Megatronics	Medical Assistants
Engineers	Retail Associates
Electronics	Plumbers

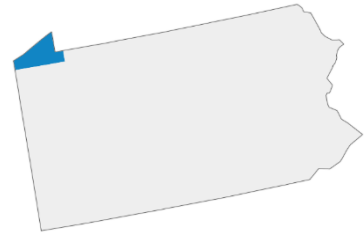
## HIGHLIGHTED IN-DEMAND SKILLS

General Math	Soft Skills
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## Erie

### Executive Summary

Erie County is the largest of the eight-county region, with a population of nearly 282,000. This is an increase of 3,800 residents over the past 10 years. The population has grown at a much slower rate than the state and national rates. The county's population has also been aging with the 55-years-and-older population increasing significantly over the past several years and the population amongst those 35-54, 5-19 and under five declining. Notably, this trend is projected to continue over the next five years, likely impacting the availability of labor here over the next decade.



Over 138,000 workers participate in the Erie County labor force. Of these, about 132,000 are employed, and 6,700 are unemployed. The unemployment rate for Erie County is 4.8 percent, which is lower than the rate for Pennsylvania (5.8 percent), and the U.S. (5.9 percent). Over the last 20 years, employment in Erie County was at its highest in July 1999 and lowest in February 2010.

Erie's median income from 2008 to 2012 was \$45,249. While this is the highest throughout the region, it lags behind the state and national average, \$52,267 and \$53,046 respectively. Erie County is a net importer of workers, 22,000 workers commuting into the County and 19,000 commuting out.

The largest broad industry sectors in Erie County are Health Care and Social Assistance, and Manufacturing. Health Care and Social Assistance has been steadily growing since 2004. Manufacturing employment has declined from 2004-2009, with growth since then. Within these broad categories, the largest industries are Railroad Rolling Stock Manufacturing, General Medical and Surgical Hospitals, Individual and Family Services, Plastics Product Manufacturing, and Offices of Physicians.

The top occupations in the region related to Health Care and Social Assistance, and Manufacturing include: Production Operations, Healthcare Practitioners and Technical Occupations, Office and Administrative Support Occupations and Education, Training and Library Occupations. Of these, Healthcare Practitioners and Technical Occupations are expected to experience the most growth, adding over 670 jobs over the next five years. However, all occupations are projected to have high annual openings. This is likely due to older employees retiring out of the workforce.

## Demographics

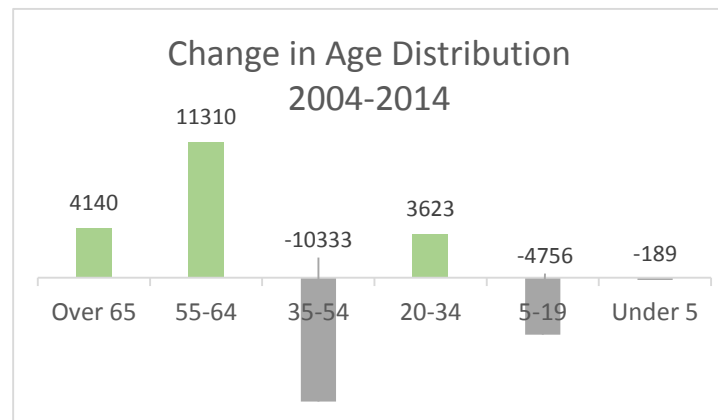
The population in Erie has grown from 277,862 to 281,657 in the past 10 years.<sup>41</sup> The growth rate of one percent is much slower than the state growth rate of four percent, and the national rate of nine percent. The population is projected to remain flat over the next five years.

Erie County has an aging population. In the past 10 years, the population of 55-years-and-older increased significantly, while the population decreased in the age groups of 35-54, 5-19, and under five. This trend is projected to continue in the next five years. The aging population is a concern as it will impact the availability of labor in this region over the next decade.

The population in Erie County lacks diversity, with over 85 percent of the 2014 population identifying as White. However, the White population shrank by two percent from 2004-2014 and is the only race that did not experience growth in the past 10 years. The top three fastest growing races in the county are those identifying as Two or More Races, Asian, and Native Hawaiian or Pacific Islander. In the past 10 years, the Hispanic population<sup>42</sup> has increased from 7,214 to 10,913, with a growth rate of more than 50 percent, while the White Non-Hispanic population has remained flat.

### Age Distribution

Age	2014 Population	Change, 2004-2014		Change, 2014-2019	
Over 65	43,644	4,140	10%	5,766	13%
55-64	39,297	11,310	40%	81	0%
35-54	69,584	-10,333	-13%	-3,286	-5%
20-34	57,804	3,623	7%	-1,947	-3%
5-19	54,728	-4,756	-8%	-1,274	-2%
Under 5	16,599	-189	-1%	1,096	7%



### Race Distribution

Race	2014 Population	Change, 2004-2014	
White	241,040	-5,790	-2%
Black	19,937	2,261	13%
Hispanic	10,913	3,699	51%
Two or More Races	5,477	2,140	64%
Asian	3,726	1,408	61%
American Indian or Alaskan Native	483	65	16%
Native Hawaiian or Pacific Islander	81	13	19%

<sup>41</sup> EMSI Analyst 2014.

<sup>42</sup> The Hispanic population includes Hispanics in White, Black, Two or More Races, Asian, American Indian or Alaskan Native, Native Hawaiian or Pacific Islander.

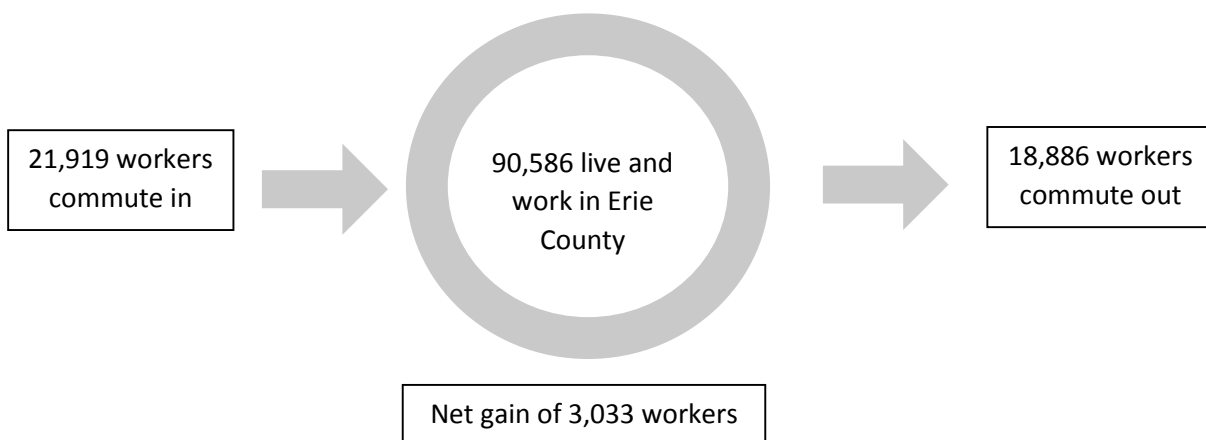
### Income

Erie's median income from 2008 to 2012 was \$45,249 putting it at the top of the eight county region. However, as can be seen in the chart below, median household income lagged behind the state and national average.<sup>43</sup>

	MEDIAN HOUSEHOLD INCOME ('08-'12)	POVERTY RATE
<b>Erie</b>	\$45,249	16.1%
<b>Pennsylvania</b>	\$52,267	13.1%
<b>U.S.</b>	\$53,046	14.9%

### Commuting Pattern and Labor Force Availability

With almost 22,000 workers commuting in, and more than 18,800 commuting out, Erie County is a net importer of workers.<sup>44</sup> The county receives the most commuters from Crawford (5,498, 5 percent), Warren (2,437, 2 percent) and Allegheny (1,743, 2 percent) counties, and sends the most workers to Allegheny (3,252, 3 percent), Crawford (2,432, 2 percent) and Mercer (877, 1 percent) counties. Over 112,500 workers are employed in Erie County, including 90,586 of workers both live and work in the county, and 21,919 workers commuting from other counties.



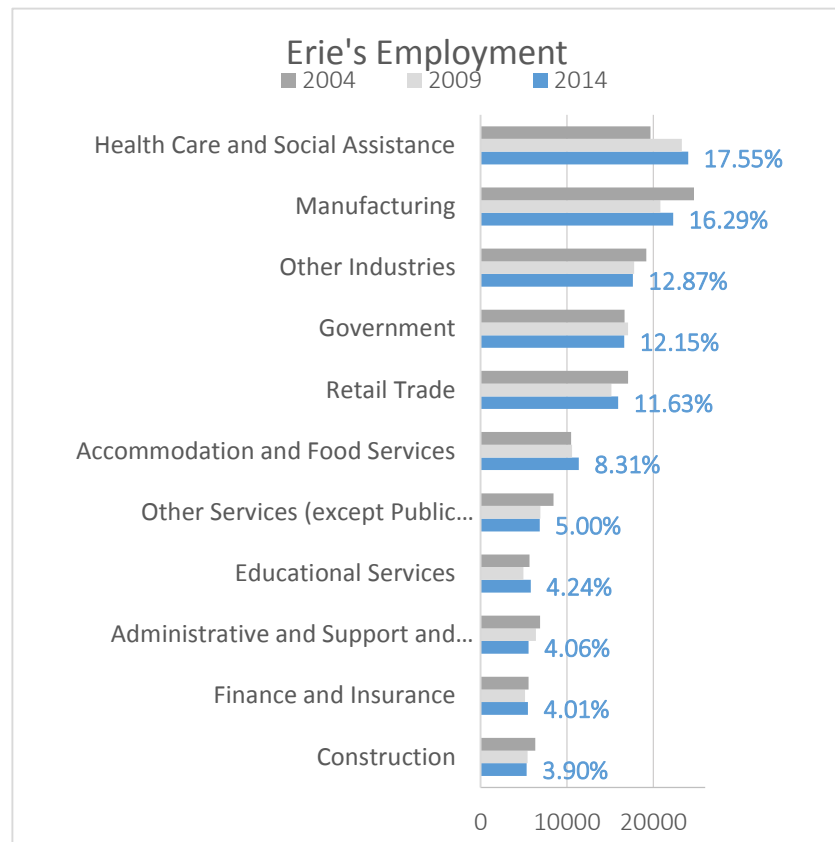
<sup>43</sup> U.S. Census Bureau 2008-2012

<sup>44</sup> U.S. Census Bureau, OnTheMap, 2012 (most recently available). <http://onthemap.ces.census.gov/>

### Industry Analysis

The broad industry sectors in Erie County employing the most workers are Health Care and Social Assistance (24,027, 17.55 percent), Manufacturing (22,302, 16.29 percent), Government (16,635, 12.15 percent), Retail Trade (15,932, 11.63 percent), and Accommodation and Food Services (11,384, 8.31 percent).

<sup>45</sup> It is worth noting that the largest sector Health Care and Social Assistance has been growing over the past 10 years, which suggests a potential for future growth. Employment in the second largest sector Manufacturing decreased from 2004 to 2009; however, it has been steadily increasing from 2009 to 2014.



<sup>45</sup> These industries are by two-digit NAICS code. EMSI Analyst 2014.

### Key Industry Analysis

The tables below show the top 10 largest industries by employment in Erie County. <sup>46</sup>Among these key industries, Individual and Family Services is projected to have the highest growth over the next five years, followed by Offices of Physicians; Railroad Rolling Stock Manufacturing; and Colleges, Universities, and Professional Schools.

### Employment in Key Industries

Industry	2014 Jobs	Change, 2004-2014		Change, 2009-2014		Projected Change, 2014-2019	
Restaurants and Other Eating Places	8,826	782	10%	671	8%	158	2%
Education and Hospitals (Local Government)	5,930	32	1%	-432	-7%	-72	-1%
Railroad Rolling Stock Manufacturing	5,087	1071	27%	626	14%	388	8%
General Medical and Surgical Hospitals	4,989	145	3%	-445	-8%	182	4%
Local Government, Excluding Education and Hospitals	4,144	-89	-2%	-97	-2%	-80	-2%
Individual and Family Services	4,091	2140	110%	302	8%	620	15%
Colleges, Universities, and Professional Schools	3,630	310	9%	880	32%	239	7%
Plastics Product Manufacturing	3,057	-605	-17%	292	11%	-279	-9%
Insurance Carriers	2,910	-10	0%	253	10%	117	4%
Offices of Physicians	2,822	365	15%	35	1%	267	9%

Among these top industries, average earnings vary widely, from under \$15,000 a year for the restaurant industry, to over \$120,000 a year for physicians.

### Establishments and Earnings in Key Industries

Industry	2014 Jobs	Average Earning	Establishments
Restaurants and Other Eating Places	8,826	\$14,980	400
Education and Hospitals (Local Government)	5,930	\$68,765	187
Railroad Rolling Stock Manufacturing	5,087	\$99,251	2
General Medical and Surgical Hospitals	4,989	\$52,707	4
Local Government, Excluding Education and Hospitals	4,144	\$60,727	90
Individual and Family Services	4,091	\$22,464	779
Colleges, Universities, and Professional Schools	3,630	\$29,778	4
Plastics Product Manufacturing	3,057	\$53,033	44
Insurance Carriers	2,910	\$95,810	20
Offices of Physicians	2,822	\$124,233	194

<sup>46</sup> These industries are by four-digit NAICS code.

## Occupation analysis

Analyzing the top occupations in an area helps provide a better picture of a local community, including the types of work most individuals do as well as the skills required from the local labor force. The county's top occupations include Office and Administrative Support Occupations, Sales and Related Occupations, Production Occupations, Food Preparation and Serving Related Occupations, and Healthcare Practitioners and Technical Occupations.<sup>47</sup> Notably, eight of the top 10 occupations provide lower median earning compared to the median for all occupations in Erie County (\$17.28/hour) and in the U.S. (\$20.06/hour). The two exceptions are Healthcare Practitioners and Technical Occupations (\$32.64/ hour) and Education, Training, and Library Occupations (\$24.66/ hour).<sup>48</sup>

## Erie's Occupation Mix

Occupation	2014 Employment	% of Total Employment	Median Hourly Earning
Office and Administrative Support Occupations	20,639	15.07%	\$14.82
Sales and Related Occupations	15,192	11.09%	\$15.47
Production Occupations	15,029	10.98%	\$16.39
Food Preparation and Serving Related Occupations	12,617	9.21%	\$9.75
Healthcare Practitioners and Technical Occupations	8,710	6.36%	\$32.64
Education, Training, and Library Occupations	8,030	5.86%	\$24.66
Transportation and Material Moving Occupations	6,534	4.77%	\$14.78
Personal Care and Service Occupations	6,503	4.75%	\$10.07
Healthcare Support Occupations	5,914	4.32%	\$11.77
Installation, Maintenance, and Repair Occupations	4,946	3.61%	\$17.62
Building and Grounds Cleaning and Maintenance Occupations	4,867	3.55%	\$10.57
Management Occupations	4,851	3.54%	\$40.96
Construction and Extraction Occupations	4,828	3.53%	\$19.40
Business and Financial Operations Occupations	4,749	3.47%	\$28.32
Protective Service Occupations	3,107	2.27%	\$19.19
Community and Social Service Occupations	2,889	2.11%	\$18.38
Arts, Design, Entertainment, Sports, and Media Occupations	2,051	1.50%	\$17.47
Architecture and Engineering Occupations	2,006	1.46%	\$31.24
Computer and Mathematical Occupations	1,400	1.02%	\$27.43
Military Occupations	756	0.55%	\$25.33
Legal Occupations	546	0.40%	\$39.84
Farming, Fishing, and Forestry Occupations	404	0.30%	\$15.55
Life, Physical, and Social Science Occupations	371	0.27%	\$28.64

<sup>47</sup> These occupations are by two-digit SOC code (Standard Occupational Classification System).

<sup>48</sup> EMSI Analyst 2014.

### Employment Growth

Tracking job growth is key as well, with the table on the next page showing employment and growth by occupation.<sup>49</sup> Five occupations on the list (bolded) are the top five occupations that are most often required to staff companies within key industries in Erie County. The key industries that have high demand for each top occupation are shown in the table on the next page. The only occupation that has high employment but is not concentrated in a key industry is Sales and Related Occupations. Notably, three of these key-industry-required occupations are projected to grow in the next five years, including Food Preparation and Serving Related Occupations (two percent); Healthcare Practitioners and Technical Occupations (eight percent); and Education, Training, and Library Occupations (two percent). These three occupations are projected to add around 1,100 jobs in Erie County in the next five years. It is also worth noting that while the top two occupations are projected to decline in the next five years, they still have a large number of annual openings. This is likely because of the retirement of the older worker population in these industries. While new jobs may not be created, existing jobs will need to be replaced as workers retire.

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<sup>49</sup> These occupations are by two-digit SOC code.





## Employment and Growth by Occupation

Occupation	2014 Employment	Change, 2004-2014		Change, 2009-2014		Projected Change, 2014-2019		Projected Annual Openings
<b>Office and Administrative Support Occupations</b>	<b>20,639</b>	<b>-1,950</b>	<b>-9%</b>	<b>-60</b>	<b>0%</b>	<b>-158</b>	<b>-1%</b>	<b>497</b>
Sales and Related Occupations	15,192	-1,516	-9%	396	3%	-333	-2%	489
<b>Production Occupations</b>	<b>15,029</b>	<b>-1,642</b>	<b>-10%</b>	<b>954</b>	<b>7%</b>	<b>-178</b>	<b>-1%</b>	<b>361</b>
<b>Food Preparation and Serving Related Occupations</b>	<b>12,617</b>	<b>791</b>	<b>7%</b>	<b>848</b>	<b>7%</b>	<b>303</b>	<b>2%</b>	<b>544</b>
<b>Healthcare Practitioners and Technical Occupations</b>	<b>8,710</b>	<b>870</b>	<b>11%</b>	<b>88</b>	<b>1%</b>	<b>671</b>	<b>8%</b>	<b>326</b>
<b>Education, Training, and Library Occupations</b>	<b>8,030</b>	<b>223</b>	<b>3%</b>	<b>-250</b>	<b>-3%</b>	<b>174</b>	<b>2%</b>	<b>220</b>
Transportation and Material Moving Occupations	6,534	-167	-2%	281	4%	175	3%	203
Personal Care and Service Occupations	6,503	969	18%	405	7%	495	8%	245
Healthcare Support Occupations	5,914	1,600	37%	661	13%	598	10%	241
Installation, Maintenance, and Repair Occupations	4,946	-301	-6%	192	4%	76	2%	148
Building and Grounds Cleaning and Maintenance Occupations	4,867	-435	-8%	66	1%	10	0%	120
Management Occupations	4,851	-513	-10%	-161	-3%	-4	0%	124
Construction and Extraction Occupations	4,828	-780	-14%	-101	-2%	-144	-3%	108
Business and Financial Operations Occupations	4,749	-370	-7%	-7	0%	-6	0%	122
Protective Service Occupations	3,107	401	15%	231	8%	58	2%	108
Community and Social Service Occupations	2,889	-143	-5%	-183	-6%	20	1%	79
Arts, Design, Entertainment, Sports, and Media Occupations	2,051	-267	-12%	-64	-3%	-56	-3%	57
Architecture and Engineering Occupations	2,006	-13	-1%	113	6%	18	1%	61
Computer and Mathematical Occupations	1,400	-269	-16%	-34	-2%	10	1%	33
Military Occupations	756	-188	-20%	-24	-3%	4	1%	18
Legal Occupations	546	-28	-5%	-22	-4%	-2	0%	11
Farming, Fishing, and Forestry Occupations	404	-39	-9%	8	2%	-15	-4%	12
Life, Physical, and Social Science Occupations	371	-27	-7%	-2	-1%	8	2%	14

### Industry and Occupation Connections

The connection between top occupations and key industries are summarized in the following table. Although key industries are highly diversified, they do share some common workforce requirements. TPMA recommends targeting these top occupations and industries in Erie County and supporting education programs that provide talents for these growing fields.

Connection between Top Occupations and Key Industries

Top Occupations	Key Industries
Office and Administrative Support Occupations	<ul style="list-style-type: none"> <li>Insurance Carriers</li> <li>Colleges, Universities, and Professional Schools</li> <li>Local Government, Excluding Education and Hospitals</li> <li>Offices of Physicians</li> <li>General Medical and Surgical Hospitals</li> </ul>
Production Occupations	<ul style="list-style-type: none"> <li>Railroad Rolling Stock Manufacturing</li> <li>Plastics Product Manufacturing</li> </ul>
Food Preparation and Serving Related Occupations	<ul style="list-style-type: none"> <li>Restaurants and Other Eating Places</li> <li>Education and Hospitals (Local Government)</li> </ul>
Healthcare Practitioners and Technical Occupations	<ul style="list-style-type: none"> <li>General Medical and Surgical Hospitals</li> <li>Offices of Physicians</li> </ul>
Education, Training, and Library Occupations	<ul style="list-style-type: none"> <li>Education and Hospitals (Local Government)</li> <li>Colleges, Universities, and Professional Schools</li> <li>Local Government, Excluding Education and Hospitals</li> <li>Individual and Family Services</li> </ul>

The following table displays the top 10 occupations that are most often required to staff companies within manufacturing in Erie County.<sup>50</sup> Median hourly earnings for these occupations in Erie range from \$11.10 at the low end for Miscellaneous Assemblers and Fabricators to \$26.20 at the high end for First-Line Supervisors of Production and Operating Workers.

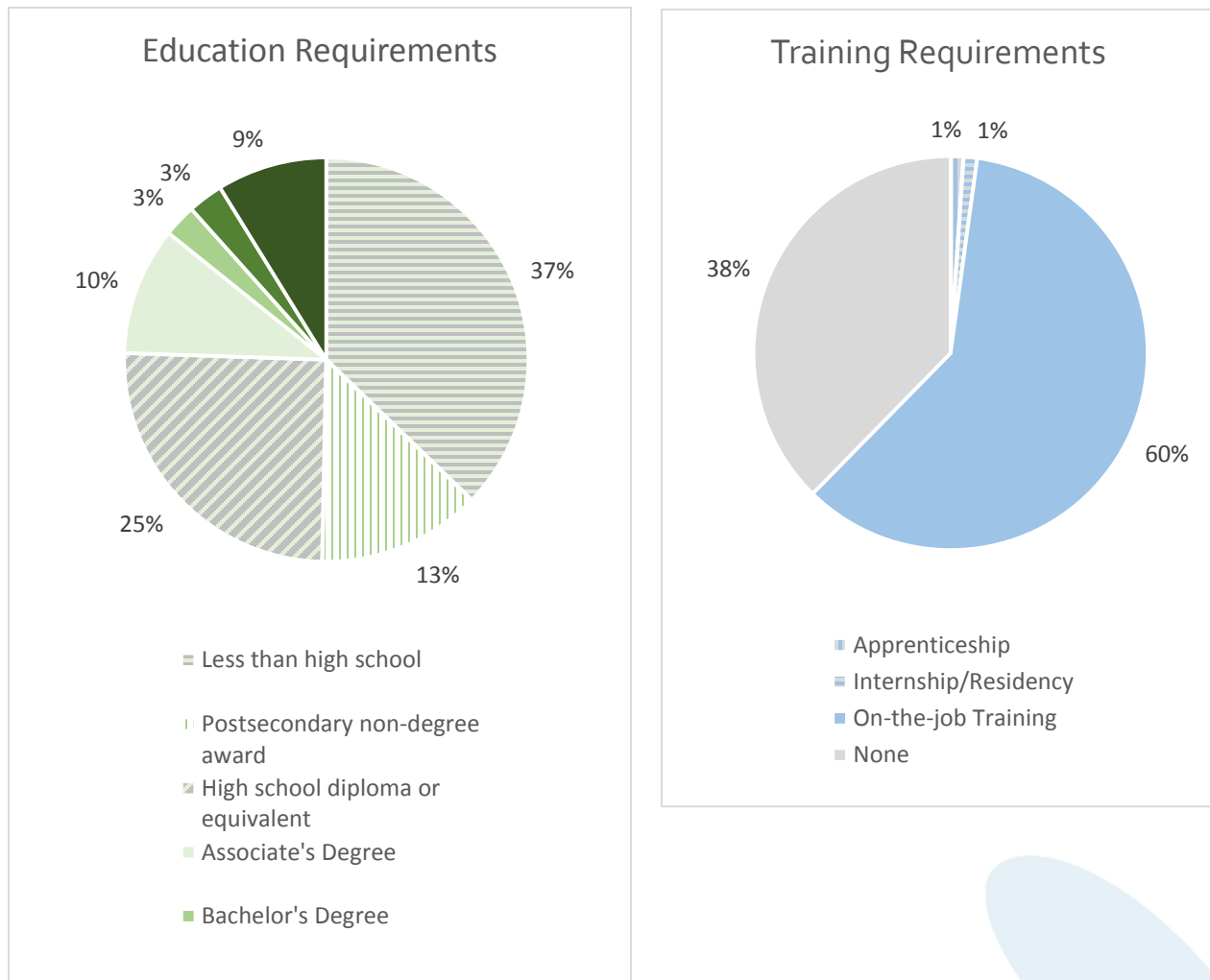
Top Occupations in Manufacturing based on Employment Levels

Occupation	2014 Employment	Median Hourly Earnings
Welding, Soldering, and Brazing Workers	1,442	\$16.16
Electrical, Electronics, and Electromechanical Assemblers	1,352	\$12.95
Machine Tool Cutting Setters, Operators, and Tenders, Metal and Plastic	1,202	\$13.72
Machinists	978	\$18.05
Miscellaneous Production Workers	930	\$11.55
Miscellaneous Assemblers and Fabricators	842	\$11.10
First-Line Supervisors of Production and Operating Workers	801	\$26.20
Inspectors, Testers, Sorters, Samplers, and Weighers	729	\$14.24
Laborers and Material Movers, Hand	708	\$11.79
Molders and Molding Machine Setters, Operators, and Tenders, Metal and Plastic	705	\$15.43

<sup>50</sup> Occupations are by four-digit SOC code.

### Education and Skills For High Demand Jobs

Among high-demand jobs in Erie County, almost half require a high school diploma or equivalent.<sup>51</sup> About one-quarter of these high-demand jobs require a Bachelor's Degree or above. Over 60 percent of these jobs require some type of training, which is mostly on-the-job training. TPMA recommends targeting the education and training programs most required for high-demand jobs to support the region's workforce needs and opportunities.



<sup>51</sup> A total of 50 occupations with the highest projected job growth from 2014-2019 are included in this analysis. These occupations are with five-digit SOC code. EMSI Analyst 2014.

## Human Capital

About 138,614 workers participate in the Erie County labor force. The labor participation rate for population over 16 years old is 62.3%, which is the highest in this region. Of these, 131,904 are employed, and 6,710 are unemployed. The unemployment rate for Erie County is 4.8 percent, which is lower than the rate for Pennsylvania (5.8 percent), and the U.S. (5.9 percent). Over the last 20 years, employment in Erie County was at its highest in July 1999 and lowest in February 2010.

### EMPLOYMENT, 1994-2014<sup>52</sup>

<b>Peak</b>	July 1999 137,977	+4.6% (compared to Sept, 2014)
<b>Trough</b>	February 2010 122,727	-7.0% (compared to Sept, 2014)
<b>Sept 2014</b>	131,904	4.8% Current unemployment

#### **Labor Force Participation Rate**

The labor force participation rate is a major indicator of the labor market. It represents the proportion of the population that is in the labor force. Labor force participation rates are affected by various factors, including demographic composition of the population as well as structural changes in the economy.

Labor force participation rate is sensitive to demographic change because the participation rates vary across age, gender, and race. Based on 2009-2013 ACS estimates, the national labor force participation rate for those 55-years-and-older was 39.2 percent, compared with a labor force participation rate of 81.9 percent for those between 25 and 54.

The national labor force participation rate has decreased since 2000, a trend that is expected to continue in the next decade. One of the major reasons for the decline is the aging of the baby-boomer generation. In 2000, baby boomers were the

heart of the workforce, falling into the high participation rate group of 36-to-54 years old. However, as this large group of individuals began to retire, the effects were felt on the overall participation rate. The participation rate of older workers has been increasing in the past 10 years, but it is still significantly lower than those of the middle age groups.

The older worker population (55 years and older) in Erie County is estimated to be 33,093 in 2014.<sup>53</sup> These older workers are expected to retire in the next 10 years. The aging workforce calls for sustainable planning for workforce development in Erie County.

<sup>52</sup> U.S. Bureau of Labor Statistics, 1994.9-2014.9 (most recently available). <http://www.bls.gov/data/>

<sup>53</sup> The older worker population (55 years and older) in Erie County is estimated by multiplying the population of this age group by the corresponding labor force participation rate.

### Input Sessions

Erie County community members noted that there is a negative perception among parents and students regarding careers in manufacturing and vocational training. The idea persists among parents and students that they must pursue a four-year college degree in order to be successful. The Career Centers have a reputation of having dated equipment and non-competitive wages for teachers. Curriculum is mainly reviewed through advisory councils, but Edinboro University has created customized curriculum for two large area employers: GE and the regional hospital.

Career Street illustrated various careers to 2000 children in one year, but career awareness still needs to be increased in the area for manufacturing jobs. An opportunity to build additional workforce exists with the current refugee population, many of them with strong math skills.

Several competing initiatives are in place, and one member noted that the programs are “a mile wide and an inch deep.” Duplicative efforts, such as three different welding classes that aren’t filled to capacity, present an opportunity to align resources.

Resources that are helpful in the community include: Career Street (Career Street’s “Career Club”), Erie Together, and PA CareerLink.

## HIGHLIGHTED IN-DEMAND OCCUPATIONS

Machinists

Industrial Maintenance

Service Technicians

Control Technicians

Welders

Electronic Technicians

CNC Programmers

## HIGHLIGHTED IN-DEMAND SKILLS

Soft Skills

General Math

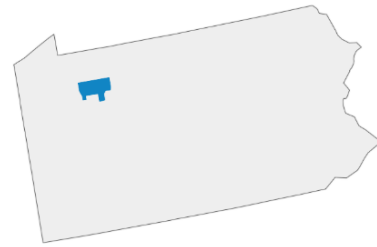
Clean Drug Screen

Clear Criminal  
Background Record

## Forest

### Executive Summary

Compared to the overall aging and declining trend in this region, the population in Forest County has grown with a high growth rate of 27 percent over the past ten years. The middle age groups in Forest County have grown significantly. Particularly, the population of the age groups of 20-34 and 35-54 increased by 97% and 20% respectively. The population is projected to continue growing but at a lower rate of three percent over the next five years.



Forest's median income from 2008 to 2012 was \$36,686 putting it at the lowest of the eight county region. Forest County is a net exporter of workers. Most of the commuting workforce travels to Clarion, Venango and Crawford counties.

About 2,294 workers participate in the Forest County labor force. Of these, 2,172 are employed. The unemployment rate for Forest County is 5.3 percent, which is lower than the rate for Pennsylvania (5.8 percent), and the U.S. (5.9 percent). The older worker population (55 years and older) in Forest County is estimated to be 1,065 in 2014. These older workers are expected to retire in the next ten years, which might impact the availability of workers in Forest County in future.

The largest broad industry sectors in Forest County are Government, Health Care and Social Assistance, and Manufacturing. The largest sector, Government, has significantly grown from 2004 to 2009 but has remained flat since.

Forest County's top occupations include Office and Administrative Support Occupations, Community and Social Service Occupations, Protective Service Occupations, Construction and Extraction Occupations, and Transportation and Material Moving Occupations. With the exception of Transportation and Material Moving Occupations, the other four top occupations are most often required to staff companies within key industries in this county.

Among the occupations with the highest projected job growth from 2014-2019 in Forest County, almost 80 percent of the jobs require a high school diploma or equivalent. Approximately 17 percent of these high demand jobs require a Bachelor's Degree or above. Over 80 percent of these jobs require some type of training, which is mostly on-the-job training.

## Demographics

The population in Forest County has grown from 6,118 to 7,758 in the past ten years.<sup>54</sup> The growth rate of 27 percent is much higher than the state growth rate of four percent, and the national rate of nine percent. The population is projected to continue growing but with a lower rate of three percent over the next five years.

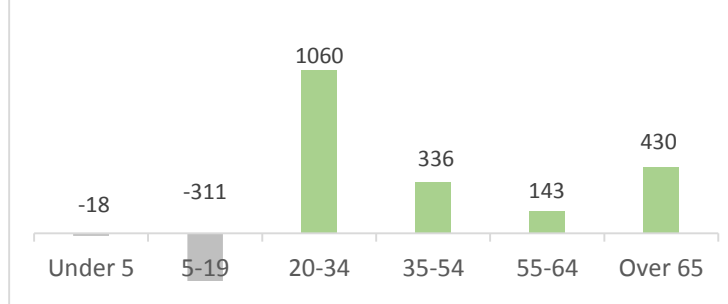
Compared to the over all aging trend in the nation, state and region, the middle age groups in Forest County have grown significantly over the past ten years. Particularly, the population of the age groups of 20-34 and 35-54 increased by 97% and 20% respectively.

Compared to other counties in this region the population of those identifying as White in Forest County has grown by eight percent over the past ten years. Besides the White population, the top three fastest growing races in the county are those identifying as Black, Hispanic, and Two or More Races. In the past ten years, the Black and Hispanic population<sup>55</sup> has grown by 159 percent and 176 percent respectively in this county.

### Age Distribution

Age	2014 Population	Change, 2004-2014		Change, 2014-2019	
Under 5	159	-18	-10%	9	6%
5-19	727	-311	-30%	-123	-17%
20-34	2,150	1,060	97%	73	3%
35-54	2,054	336	20%	177	9%
55-64	1,056	143	16%	36	3%
Over 65	1,612	430	36%	59	4%

### Change in Age Distribution 2004-2014



### Race Distribution

Race	2014 Population	Change, 2004-2014	
White	5,727	413	8%
Black	1,494	918	159%
Hispanic	455	290	176%
Two or More Races	49	14	40%
Asian	18	12	200%
American Indian or Alaskan Native	13	-8	-38%
Native Hawaiian or Pacific Islander	1	0	0%

<sup>54</sup> EMSI Analyst 2014.

<sup>55</sup> The Hispanic population includes Hispanics in White, Black, Two or More Races, Asian, American Indian or Alaskan Native, Native Hawaiian or Pacific Islander.

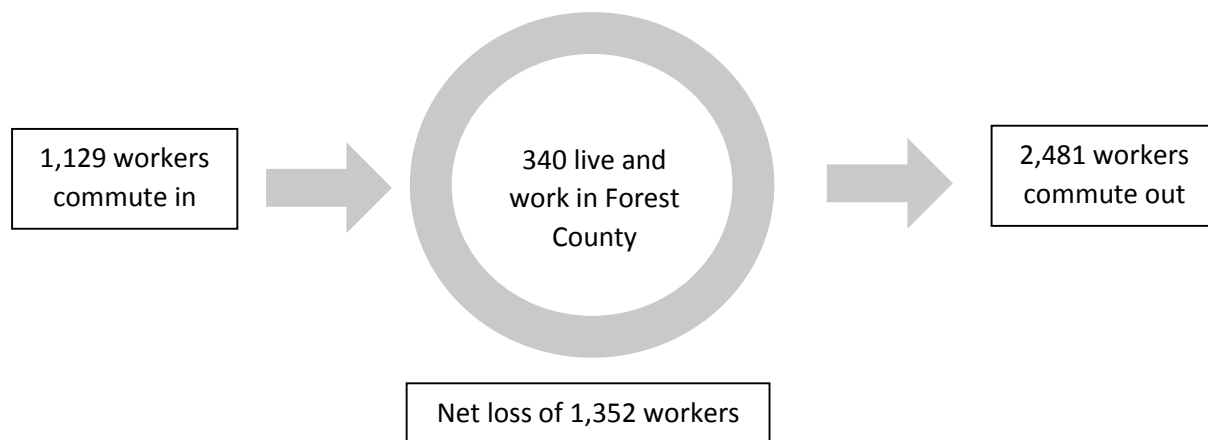
### Income

Forest's median income from 2008 to 2012 was \$36,686, putting it at the lowest of the eight county region. Its median household income lagged behind the state and national average.<sup>56</sup>

	MEDIAN HOUSEHOLD INCOME ('08-'12)	POVERTY RATE
<b>Forest</b>	\$36,686	12.8%
<b>Pennsylvania</b>	\$52,267	13.1%
<b>U.S.</b>	\$53,046	14.9%

### Commuting Pattern and Labor Force Availability

With more than 1,100 workers commuting in and almost 2,500 commuting out, Forest County is a net exporter of workers.<sup>57</sup> The county sends the most workers to Clarion (334, 12 percent), Venango (238, eight percent) and Crawford (163, six percent) counties, and receives the most commuters from Clarion (213, 15 percent), Warren (171, 12 percent) and Jefferson (98, seven percent) counties. Approximate 1,469 workers are employed in Forest County, including 340 of workers both live and work in the county, and 1,129 workers commuting from other counties.



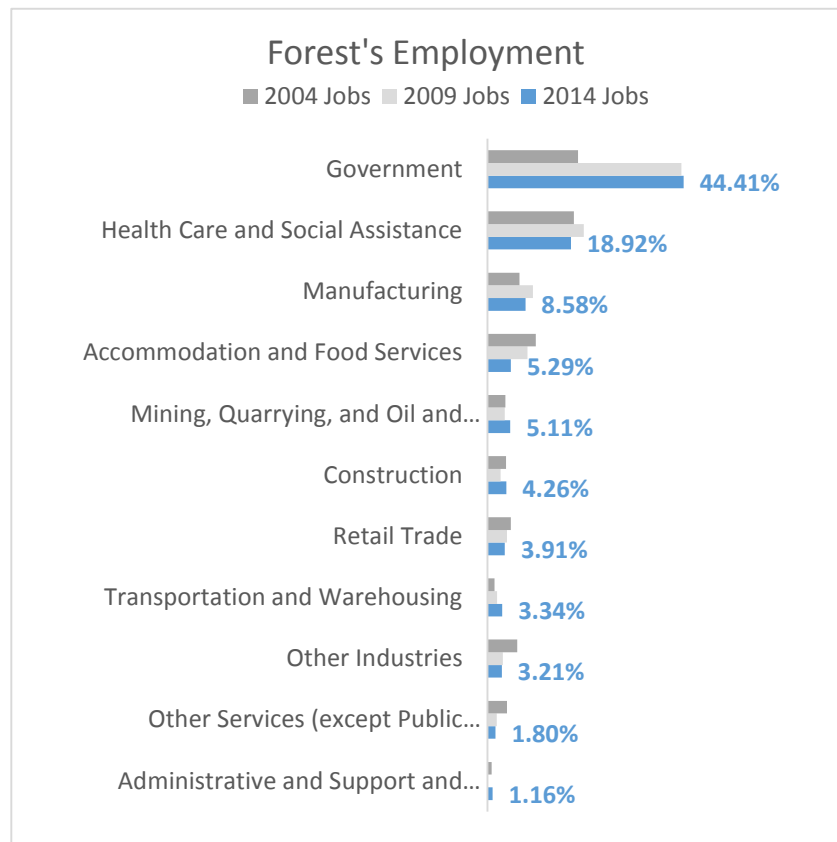
<sup>56</sup> U.S. Census Bureau 2008-2012

<sup>57</sup> U.S. Census Bureau, OnTheMap, 2012 (most recently available). <http://onthemap.ces.census.gov/>



### Industry Analysis

The broad industry sectors in Forest County employing the most workers are Government (1,047, 44.41 percent), Health Care and Social Assistance (446, 18.92 percent), Manufacturing (202, 8.58 percent), Accommodation and Food Services (125, 5.29 percent), and Mining, Quarrying, and Oil and Gas Extraction (121, 5.11 percent).<sup>58</sup> The largest sector Government has significantly grown from 2004 to 2009 but has remained flat since.



<sup>58</sup> These industries are by 2-digit NAICS code. EMSI Analyst 2014.

### Key Industry Analysis

Drilling a bit deeper, the tables below show the top ten largest industries by employment in Forest County.<sup>59</sup> Among these key industries, Sawmills and Wood Preservation is projected to have the highest growth over the next five years, followed by Oil and Gas Extraction; Residential Intellectual and Developmental Disability, Mental Health, and Substance Abuse Facilities; and State Government, Excluding Education and Hospitals.

### Employment in Key Industries

Industry	2014 Jobs	Change, 2004-2014		Change, 2009-2014		Projected Change, 2014-2019	
State Government, Excluding Education and Hospitals	720	549	321%	-12	-2%	95	13%
Residential Intellectual and Developmental Disability, Mental Health, and Substance Abuse Facilities	311	311	NA	24	8%	90	29%
Sawmills and Wood Preservation	200	85	74%	29	17%	110	55%
Local Government, Excluding Education and Hospitals	128	29	29%	26	26%	15	11%
Oil and Gas Extraction	121	24	25%	29	31%	56	46%
Education and Hospitals (Local Government)	107	-22	-17%	3	3%	13	12%
Federal Government, Civilian	72	8	12%	-5	-7%	0	-1%
Individual and Family Services	62	NA	NA	-35	-36%	12	19%
Traveler Accommodation	58	-25	-30%	-37	-39%	-11	-19%
Nursing Care Facilities (Skilled Nursing Facilities)	47	-123	-72%	-50	-52%	NA	NA

Among these top occupations, average earnings vary widely, from under \$16,000 a year for Individual and Family Services, to over \$110,000 a year for Sawmills and Wood Preservation.

### Establishments and Earnings in Key Industries

Industry	2014 Jobs	Average Earning	Establishments
State Government, Excluding Education and Hospitals	720	\$92,689	11
Residential Intellectual and Developmental Disability, Mental Health, and Substance Abuse Facilities	311	\$40,338	1
Sawmills and Wood Preservation	200	\$112,066	2
Local Government, Excluding Education and Hospitals	128	\$49,307	12
Oil and Gas Extraction	121	\$90,548	4
Education and Hospitals (Local Government)	107	\$69,997	6
Federal Government, Civilian	72	\$70,238	7
Individual and Family Services	62	\$15,782	40
Traveler Accommodation	58	\$16,796	5
Nursing Care Facilities (Skilled Nursing Facilities)	47	\$53,884	1

<sup>59</sup> These industries are by 4-digit NAICS code.

### Occupation analysis

Forest County's top occupations include Office and Administrative Support Occupations, Community and Social Service Occupations, Protective Service Occupations, Construction and Extraction Occupations, and Transportation and Material Moving Occupations.<sup>60</sup> The median hourly earnings for all occupations in Forest County is 19.38 /hour, which is among the highest in the eight counties in this region. Three of the top 10 occupations provide higher median earning than the median for the county, including Protective Service Occupations (\$27.11/ hour), Business and Financial Operations Occupations (\$26.04/ hour), and Construction and Extraction Occupations (\$19.57/ hour).<sup>61</sup>

### Forest's Occupation Mix

Occupation	2014 Employment	% of Total Employment	Median Hourly Earning
Office and Administrative Support Occupations	318	13.36%	\$16.09
Community and Social Service Occupations	269	11.30%	\$18.56
Protective Service Occupations	217	9.12%	\$27.11
Construction and Extraction Occupations	173	7.28%	\$19.57
Transportation and Material Moving Occupations	173	7.26%	\$15.31
Personal Care and Service Occupations	116	4.89%	\$10.56
Production Occupations	114	4.78%	\$16.96
Food Preparation and Serving Related Occupations	109	4.60%	\$9.78
Sales and Related Occupations	106	4.46%	\$13.25
Business and Financial Operations Occupations	101	4.25%	\$26.04
Management Occupations	99	4.16%	\$35.41
Education, Training, and Library Occupations	92	3.88%	\$23.76
Installation, Maintenance, and Repair Occupations	83	3.49%	\$19.94
Healthcare Practitioners and Technical Occupations	81	3.39%	\$30.02
Healthcare Support Occupations	80	3.38%	\$12.02
Building and Grounds Cleaning and Maintenance Occupations	73	3.07%	\$10.20
Architecture and Engineering Occupations	41	1.73%	\$29.44
Life, Physical, and Social Science Occupations	32	1.37%	\$29.38
Legal Occupations	25	1.05%	\$24.04
Farming, Fishing, and Forestry Occupations	24	1.01%	\$18.21
Computer and Mathematical Occupations	20	0.84%	\$29.10
Military occupations	19	0.80%	\$23.54
Arts, Design, Entertainment, Sports, and Media Occupations	13	0.53%	\$15.60

<sup>60</sup> These occupations are by 2 digit SOC code (Standard Occupational Classification System).

<sup>61</sup> EMSI Analyst 2014.

### Employment Growth

The table on the next page shows employment and growth by occupation.<sup>62</sup> Five occupations on the list (bolded) are the top five occupations that are most often required to staff companies within key industries in Forest County. Notably, all of the top five key-industry-required occupations are projected to grow over the next five years. These occupations are projected to add around 220 jobs in Forest County over the next five years.

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<sup>62</sup> These occupations are by 2 digit SOC code.



## Employment and Growth by Occupation

Occupation	2014 Employment	Change, 2004-2014		Change, 2009-2014		Projected Change, 2014-2019		Projected Annual Openings
<b>Office and Administrative Support Occupations</b>	318	87	38%	-11	-3%	45	14%	16
<b>Community and Social Service Occupations</b>	269	150	127%	4	2%	59	22%	19
<b>Protective Service Occupations</b>	217	141	184%	7	3%	28	13%	12
<b>Construction and Extraction Occupations</b>	173	50	41%	28	19%	38	22%	12
Transportation and Material Moving Occupations	173	63	57%	33	24%	56	32%	16
Personal Care and Service Occupations	116	-24	-17%	-8	-7%	24	20%	8
<b>Production Occupations</b>	114	5	5%	-26	-19%	51	44%	14
Food Preparation and Serving Related Occupations	109	-100	-48%	-70	-39%	-27	-25%	3
Sales and Related Occupations	106	-22	-17%	0	0%	10	9%	6
Business and Financial Operations Occupations	101	38	61%	-4	-4%	19	19%	6
Management Occupations	99	7	8%	-5	-5%	20	21%	7
Education, Training, and Library Occupations	92	-47	-34%	3	4%	13	14%	5
Installation, Maintenance, and Repair Occupations	83	10	14%	2	2%	17	20%	6
Healthcare Practitioners and Technical Occupations	81	0	0%	-19	-19%	2	2%	3
Healthcare Support Occupations	80	-33	-29%	-23	-23%	0	0%	4
Building and Grounds Cleaning and Maintenance Occupations	73	-35	-32%	-7	-8%	2	3%	3
Architecture and Engineering Occupations	41	17	69%	-6	-13%	12	29%	4
Life, Physical, and Social Science Occupations	32	15	81%	0	0%	8	25%	3
Legal Occupations	25	15	139%	1	3%	4	17%	NA
Farming, Fishing, and Forestry Occupations	24	7	38%	0	1%	6	23%	NA
Computer and Mathematical Occupations	20	8	61%	0	0%	4	22%	NA
Military occupations	19	1	6%	-1	-5%	0	0%	NA
Arts, Design, Entertainment, Sports, and Media Occupations	13	-3	-20%	-1	-8%	2	15%	NA

### Industry and Occupation Connections

The key industries in Forest County share some common workforce requirements. TPMA recommends to target these top occupations and industries in Forest County and support education programs that provide talents for these growing areas.

#### Connection between Top Occupations and Key Industries

Top Occupations	Key Industries
Office and Administrative Support Occupations	<ul style="list-style-type: none"> <li>• State Government, Excluding Education and Hospitals</li> <li>• Residential Intellectual and Developmental Disability, Mental Health, and Substance Abuse Facilities</li> <li>• Sawmills and Wood Preservation</li> <li>• Local Government, Excluding Education and Hospitals</li> <li>• Oil and Gas Extraction</li> <li>• Education and Hospitals (Local Government)</li> <li>• Federal Government, Civilian</li> <li>• Traveler Accommodation</li> </ul>
Community and Social Service Occupations	<ul style="list-style-type: none"> <li>• State Government, Excluding Education and Hospitals</li> <li>• Residential Intellectual and Developmental Disability, Mental Health, and Substance Abuse Facilities</li> <li>• Local Government, Excluding Education and Hospitals</li> <li>• Education and Hospitals (Local Government)</li> <li>• Federal Government, Civilian</li> <li>• Individual and Family Services</li> <li>• Nursing Care Facilities (Skilled Nursing Facilities)</li> </ul>
Protective Service Occupations	<ul style="list-style-type: none"> <li>• State Government, Excluding Education and Hospitals</li> <li>• Residential Intellectual and Developmental Disability, Mental Health, and Substance Abuse Facilities</li> <li>• Sawmills and Wood Preservation</li> <li>• Local Government, Excluding Education and Hospitals</li> <li>• Education and Hospitals (Local Government)</li> <li>• Federal Government, Civilian</li> </ul>
Construction and Extraction Occupations	<ul style="list-style-type: none"> <li>• State Government, Excluding Education and Hospitals</li> <li>• Residential Intellectual and Developmental Disability, Mental Health, and Substance Abuse Facilities</li> <li>• Sawmills and Wood Preservation</li> <li>• Local Government, Excluding Education and Hospitals</li> <li>• Oil and Gas Extraction</li> <li>• Federal Government, Civilian</li> </ul>
Production Occupations	<ul style="list-style-type: none"> <li>• State Government, Excluding Education and Hospitals</li> <li>• Sawmills and Wood Preservation</li> <li>• Local Government, Excluding Education and Hospitals</li> <li>• Oil and Gas Extraction</li> <li>• Federal Government, Civilian</li> <li>• </li> <li>• Traveler Accommodation</li> <li>• Nursing Care Facilities (Skilled Nursing Facilities)</li> </ul>

The following table displays the top 10 occupations that are most often required to staff companies within manufacturing in Forest County.<sup>63</sup> Median hourly earnings for these occupations in Forest range from \$12.27 at the low end for Laborers and Material Movers, Hand to \$28.46 at the high end for Conveyor Operators and Tenders.

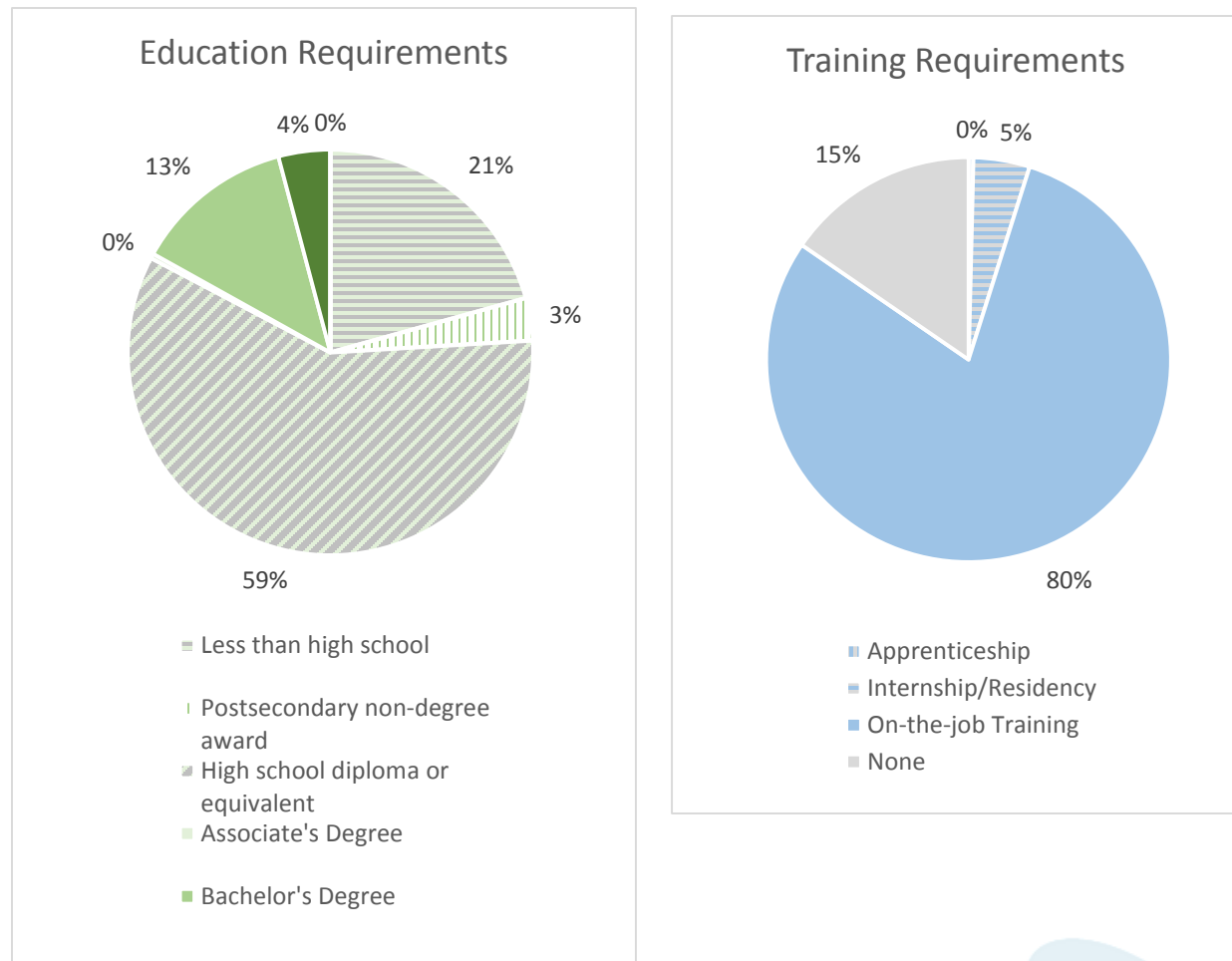
Top Occupations in Manufacturing based on Employment Levels

Occupation	2014 Employment	Median Hourly Earnings
Woodworking Machine Setters, Operators, and Tenders	50	\$13.50
Laborers and Material Movers, Hand	35	\$12.27
Industrial Machinery Installation, Repair, and Maintenance Workers	<10	\$25.26
Driver/Sales Workers and Truck Drivers	<10	\$16.36
Industrial Truck and Tractor Operators	<10	\$17.33
Logging Workers	<10	\$15.07
First-Line Supervisors of Production and Operating Workers	<10	\$26.50
Miscellaneous Production Workers	<10	\$12.69
Conveyor Operators and Tenders	<10	\$28.46
Maintenance and Repair Workers, General	<10	\$17.48

<sup>63</sup> Occupations are by 4 digit SOC code.

### Education and Skills For High Demand Jobs

Among high demand jobs in Forest County, almost 80 percent of the jobs require a high school diploma or equivalent.<sup>64</sup> Approximately 17 percent of these high demand jobs require a Bachelor's Degree or above. Over 80 percent of these jobs require some type of training, which is mostly on-the-job training. TPMA recommends targeting the education and training programs most required for high demand jobs to support the region's workforce needs and opportunities.



<sup>64</sup> A total of 50 occupations with the highest projected job growth from 2014-2019 are included in this analysis. These occupations are with 5 digit SOC code. EMSI Analyst 2014.



## Human Capital

About 2,294 workers participate in the Forest County labor force. The labor participation rate for population over 16 years old is 27.3 percent, which is the lowest in this region, and much lower compared to the regional rate of 59.4 percent. A total of 2,172 are employed. Over the last 20 years, employment in Forest County was at its highest in April

2010 and lowest in January 1995. The unemployment rate for Forest County is 5.3 percent, which is lower than the rate for Pennsylvania (5.8 percent), and the U.S. (5.9 percent).

### EMPLOYMENT, 1994-2014<sup>65</sup>

<b>Peak</b>	April 2010 2,517	+15.9% (compared to Sept, 2014)
<b>Trough</b>	January 1995 1,471	-32.3% (compared to Sept, 2014)
<b>Sept 2014</b>	2,172	5.3% Current unemployment

#### **Labor Force Participation Rate**

The labor force participation rate is a major indicator of the labor market. It represents the proportion of the population that is in the labor force. Labor force participation rates are affected by various factors, including demographic composition of the population as well as structural changes in the economy.

Labor force participation rate is sensitive to demographic change because the participation rates vary across age, gender, and race. Based on 2009-2013 ACS estimates, the national labor force participation rate for those 55-years-and-older was 39.2 percent, compared with a labor force participation rate of 81.9 percent for those between 25 and 54.

The national labor force participation rate has decreased since 2000, a trend that is expected to continue in the next decade. One of the major reasons for the decline is the aging of the baby-boom generation. In 2000, baby boomers were the heart of the workforce, falling into the high participation rate group of 36-to-54 years old. However, as this large group of individuals began to retire, the effects were felt on the overall participation rate. It is worth mentioning that the participation rate of older workers has been increasing in the past ten years, but it is still significantly lower than those of the middle age groups.

The older worker population (55 years and older) in Forest County is estimated to be 1,065 in 2014.<sup>66</sup> These older workers are expected to retire in the next ten years. The aging workforce calls for sustainable planning for workforce development in Forest County.

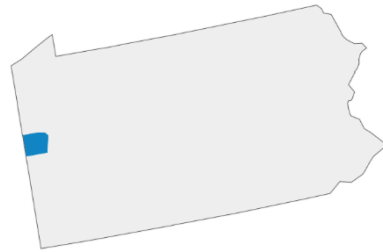
<sup>65</sup> U.S. Bureau of Labor Statistics, 1994.9-2014.9 (most recently available). <http://www.bls.gov/data/>

<sup>66</sup> The older worker population (55 years and older) in Forest County is estimated by multiplying the population of this age group by the corresponding labor force participation rate.

## Lawrence

### Executive Summary

The population in Lawrence has been declining with a rate of five percent during 2004-2014. The population has also been aging, with the population of the age group of 55-64 increasing significantly. The population declined in all the young and middle age groups. The population is projected to continue shrinking and aging over the next five years.



Lawrence's median income from 2008 to 2012 was \$44,079, which is the second highest in this region. However, Lawrence County is a net exporter of workers, with a net loss of 10,041 workers. The county sends the most workers to Allegheny, Mercer, and Butler counties.

About 42,391 workers participate in the Lawrence County labor force. Of these, 40,221 are employed. The unemployment rate for Lawrence County is 5.1 percent, which is lower than the rate for Pennsylvania (5.8 percent), and the U.S. (5.9 percent). Notably, the older worker population (55 years and older) in Lawrence County is estimated to be 12,597 in 2014. These older workers are expected to retire in the next ten years. The aging workforce calls for sustainable planning for workforce development in Lawrence County.

The largest broad industry sectors in Lawrence County are Health Care and Social Assistance and Government. Health Care and Social Assistance has been growing over the past ten years, which suggests a potential for future growth if trends hold. Employment in the second largest sector Government decreased by three percent from 2004 to 2009; it continued to decrease at a faster rate of 14 percent from 2009 to 2014, which suggests a declining trend over the next decade.

The county's top five occupations include Office and Administrative Support Occupations, Sales and Related Occupations, Food Preparation and Serving Related Occupations, Production Occupations, and Transportation and Material Moving Occupations. Among these top occupations, Office and Administrative Support Occupations and Food Preparation and Serving Related Occupations are most often required to staff companies within key industries in Lawrence County. These two occupations are projected to decline in the next five years, but they still have a large number of projected annual openings. This is possibly due to the retirement of the older worker population in these industries.

Among the occupations with the highest projected job growth from 2014-2019 in Lawrence County, almost half require a high school diploma or equivalent. About 16 percent of these high demand jobs require a Bachelor's Degree or above. Over 70 percent of these jobs require some type of training, which is mostly on-the-job training.

## Demographics

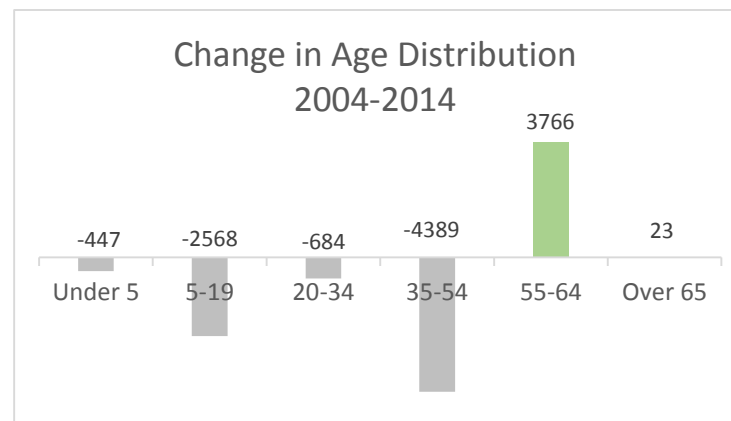
The population in Lawrence has declined from 93,250 to 88,950 in the past ten years.<sup>67</sup> The population declined at a rate of five percent, compared to the state growth rate of four percent, and the national growth rate of nine percent. The population is projected to continue declining at a rate of two percent over the next five years.

Similar to the other counties in this region, Lawrence County has an aging population. In the past ten years, the population of the age group of 55-64 increased significantly, while the population decreased in all the young and middle age groups. This trend is projected to continue over the next five years except for the age group under 5. The aging population is a concern as it will impact the availability of labor in this county over the next decade.

The population in Lawrence County lacks diversity, with over 92 percent of the 2014 population identifying as White. The White population decreased by six percent from 2004-2014. The top three fastest growing races in the county are those identifying as Two or More Races, Asian, and Hispanic.<sup>68</sup>

### Age Distribution

Age	2014 Population	Change, 2004-2014		Change, 2014-2019	
Under 5	4,655	-447	-9%	142	3%
5-19	15754	-2568	-14%	-661	-4%
20-34	14445	-684	-5%	-751	-5%
35-54	22524	-4389	-16%	-1735	-8%
55-64	14064	3766	37%	12	0%
Over 65	17508	23	0%	1418	8%



### Race Distribution

Race	2014 Population	Change, 2004-2014	
White	82,414	-5,463	-6%
Black	3,502	98	3%
Hispanic	1,046	352	51%
Two or More Races	1,501	620	70%
Asian	412	106	35%
American Indian or Alaskan Native	69	-12	-15%
Native Hawaiian or Pacific Islander	8	1	14%

<sup>67</sup> EMSI Analyst 2014.

<sup>68</sup> The Hispanic population includes Hispanics in White, Black, Two or More Races, Asian, American Indian or Alaskan Native, Native Hawaiian or Pacific Islander.

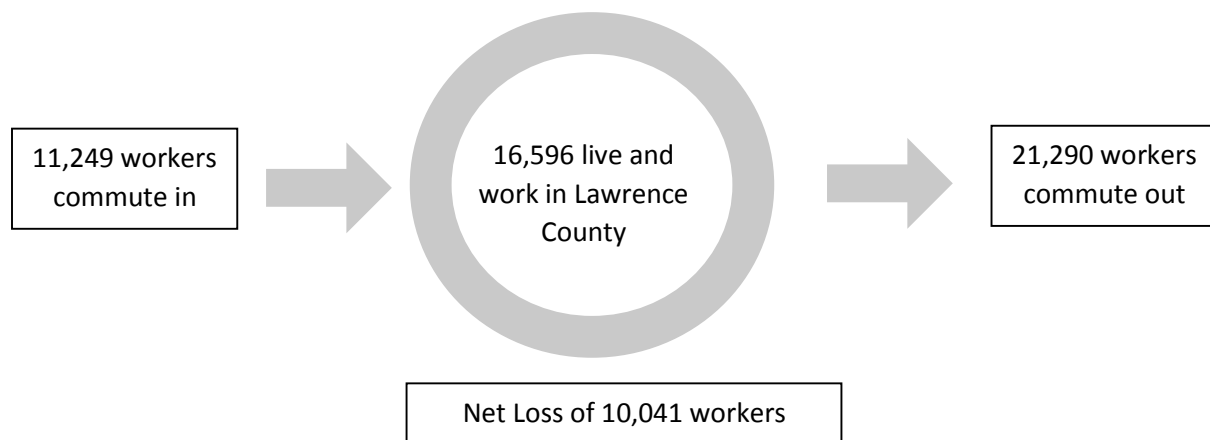
## Income

Lawrence's median income from 2008 to 2012 was \$44,079 putting it at the second highest of the eight county region. However, as can be seen in the chart below, median household income lagged behind the state and national average.<sup>69</sup>

	MEDIAN HOUSEHOLD INCOME ('08-'12)	POVERTY RATE
<b>Lawrence</b>	\$44,079	13.8%
<b>Pennsylvania</b>	\$52,267	13.1%
<b>U.S.</b>	\$53,046	14.9%

## Commuting Pattern and Labor Force Availability

With almost 11,300 workers commuting in and more than 21,200 commuting out, Laurence County is a net exporter of workers.<sup>70</sup> The county sends the most workers to Allegheny (4,475, 12 percent), Mercer (3,419, nine percent) and Butler (3,077, eight percent) counties, and receives the most commuters from Mercer (2,422, nine percent), Beaver (1,989, seven percent) and Butler (1,350, five percent) counties. Over 27,845 workers are employed in Lawrence County, including 16,596 of workers both live and work in the county, and 11,249 workers commuting from other counties.

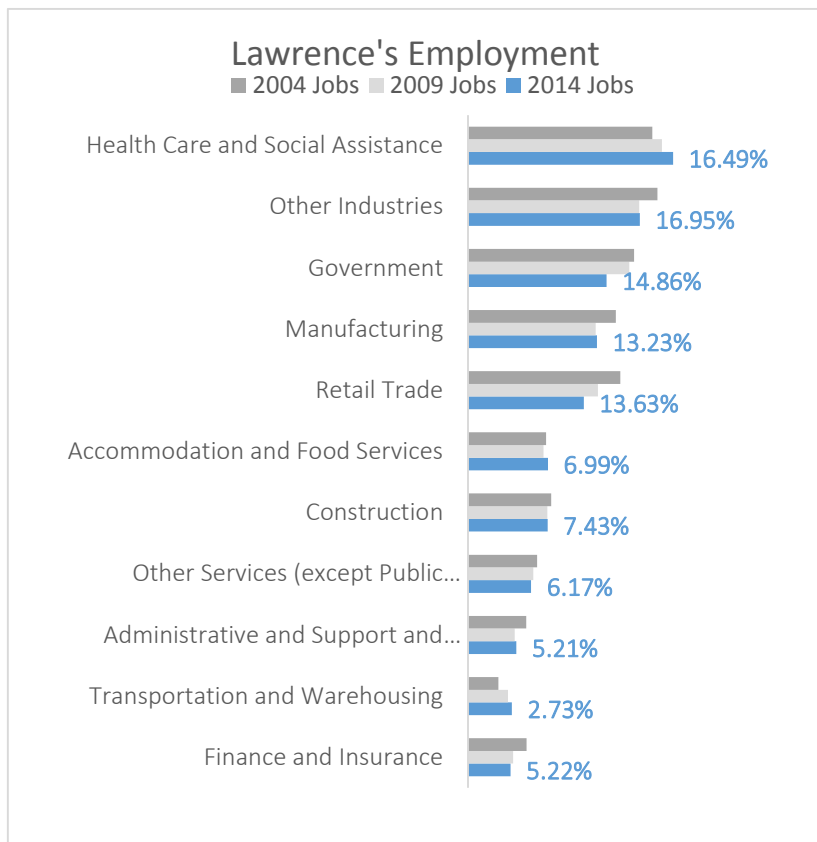


<sup>69</sup> U.S. Census Bureau 2008-2012

<sup>70</sup> U.S. Census Bureau, OnTheMap, 2012 (most recently available). <http://onthemap.ces.census.gov/>

### Industry Analysis

The broad industry sectors in Lawrence County employing the most workers are Health Care and Social Assistance (6,036, 16.49 percent), Government (4,078, 14.86 percent), Manufacturing (3,793, 13.23 percent), Retail Trade (3,402, 13.63 percent), and Accommodation and Food Services (2,348, 6.99 percent).<sup>71</sup> It is worth noting that the largest sector Health Care and Social Assistance has been growing over the past ten years, which suggests a potential for future growth if trends hold. Employment in the second largest sector Government decreased by three percent from 2004 to 2009, and it continued to decrease at a faster rate of 14 percent from 2009 to 2014, which suggests a declining trend over the next decade.



<sup>71</sup> These industries are by 2-digit NAICS code. EMSI Analyst 2014.

### Key Industry Analysis

Drilling a bit deeper, the tables below show the top ten largest industries by 2014 employment in Lawrence County.<sup>72</sup> Among these key industries, Individual and Family Services is projected to have the highest growth over the next five years, followed by Nursing Care Facilities (Skilled Nursing Facilities); Colleges, Universities, and Professional Schools; and Services to Buildings and Dwellings.

### Employment in Key Industries

Industry	2014 Jobs	Change, 2004-2014		Change, 2009-2014		Projected Change, 2014-2019	
Education and Hospitals (Local Government)	2,061	-145	-7%	-215	-9%	-52	-3%
Restaurants and Other Eating Places	1,918	-27	-1%	92	5%	-74	-4%
General Medical and Surgical Hospitals	1,482	-265	-15%	-122	-8%	-59	-4%
Local Government, Excluding Education and Hospitals	1,067	-31	-3%	-5	0%	-44	-4%
Individual and Family Services	1,003	528	111%	281	39%	221	22%
Colleges, Universities, and Professional Schools	908	-58	-6%	-12	-1%	60	7%
Nursing Care Facilities (Skilled Nursing Facilities)	738	17	2%	-23	-3%	95	13%
Services to Buildings and Dwellings	690	-192	-22%	-77	-10%	24	3%
Insurance Carriers	649	-106	-14%	-46	-7%	-49	-8%
Grocery Stores	619	-271	-30%	-305	-33%	-205	-33%

Among these top industries, average earnings vary widely, from under \$15,000 a year for Restaurants and Other Eating Places, to over \$70,000 a year for Education and Hospitals (Local Government).

### Establishments and Earnings in Key Industries

Industry	2014 Jobs	Average Earning	Establishments
Education and Hospitals (Local Government)	2,061	\$70,237	29
Restaurants and Other Eating Places	1,918	\$14,041	106
General Medical and Surgical Hospitals	1,482	\$48,371	3
Local Government, Excluding Education and Hospitals	1,067	\$53,538	44
Individual and Family Services	1,003	\$24,769	87
Colleges, Universities, and Professional Schools	908	\$30,763	1
Nursing Care Facilities (Skilled Nursing Facilities)	738	\$38,813	6
Services to Buildings and Dwellings	690	\$17,408	50
Insurance Carriers	649	\$65,046	8
Grocery Stores	619	\$24,390	20

<sup>72</sup> These industries are by 4-digit NAICS code.

### Occupation analysis

The county's top occupations include Office and Administrative Support Occupations, Sales and Related Occupations, Food Preparation and Serving Related Occupations, Production Occupations, and Transportation and Material Moving Occupations.<sup>73</sup> Half of the top 10 occupations provide lower median earning compared to the median for all occupations in the county (\$16.78/hour).<sup>74</sup>

### Occupation Mix

Occupation	2014 Employment	% of Total Employment	Median Hourly Earning
Office and Administrative Support Occupations	4,924	14.98%	\$13.72
Sales and Related Occupations	3,405	10.36%	\$13.65
Food Preparation and Serving Related Occupations	2,864	8.71%	\$9.33
Production Occupations	2,472	7.52%	\$16.96
Transportation and Material Moving Occupations	2,279	6.93%	\$14.07
Healthcare Practitioners and Technical Occupations	2,043	6.21%	\$27.89
Education, Training, and Library Occupations	2,033	6.18%	\$22.63
Construction and Extraction Occupations	1,966	5.98%	\$17.75
Installation, Maintenance, and Repair Occupations	1,559	4.74%	\$17.73
Personal Care and Service Occupations	1,442	4.39%	\$9.59
Building and Grounds Cleaning and Maintenance Occupations	1,318	4.01%	\$9.60
Management Occupations	1,267	3.85%	\$34.97
Healthcare Support Occupations	1,200	3.65%	\$10.96
Business and Financial Operations Occupations	1,059	3.22%	\$25.86
Community and Social Service Occupations	884	2.69%	\$16.69
Protective Service Occupations	566	1.72%	\$19.04
Arts, Design, Entertainment, Sports, and Media Occupations	402	1.22%	\$14.35
Architecture and Engineering Occupations	290	0.88%	\$27.56
Computer and Mathematical Occupations	276	0.84%	\$27.67
Military occupations	233	0.71%	\$20.84
Legal Occupations	168	0.51%	\$22.14
Life, Physical, and Social Science Occupations	131	0.40%	\$24.24
Farming, Fishing, and Forestry Occupations	88	0.27%	\$12.11

<sup>73</sup> These occupations are by 2 digit SOC code (Standard Occupational Classification System).

<sup>74</sup> EMSI Analyst 2014.

### Employment Growth

Tracking job growth is key as well, with the table on the next page showing employment and growth by occupation.<sup>75</sup> Five occupations on the list (bolded) are the top five occupations that are most often required to staff companies within key industries in Lawrence County. The key industries that have high demand for each top occupation are shown in the table on the next page.

Notably, three of these key-industry-required occupations are projected to grow over the next five years, including Healthcare Practitioners and Technical Occupations, Education, Training, and Library Occupations, and Building and Grounds Cleaning and Maintenance Occupations. These three occupations are projected to add around 163 jobs to Lawrence County over the next five years.

While Office and Administrative Support Occupations and Food Preparation and Serving Occupations are expected to decline, they still have a large number of annual openings. This is likely because of the retirement of the older worker population in these industries. Further analysis is needed to identify the demographic distribution of workers in these industries and the potential need for skilled labor. Although there won't necessarily be new jobs, employers in these industries may face a deficit of qualified workers to replace the current aging workforce.

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<sup>75</sup> These occupations are by 2 digit SOC code.





## Employment and Growth by Occupation

Occupation	2014 Employment	Change, 2004-2014		Change, 2009-2014		Projected Change, 2014-2019		Projected Annual Openings
<b>Office and Administrative Support Occupations</b>	4,924	-912	-16%	-272	-6%	-120	-2%	117
Sales and Related Occupations	3,405	-771	-18%	-85	-3%	-219	-6%	108
<b>Food Preparation and Serving Related Occupations</b>	2,864	-46	-2%	33	1%	-41	-1%	104
Production Occupations	2,472	-335	-12%	-1	0%	49	2%	75
Transportation and Material Moving Occupations	2,279	-23	-1%	1	0%	106	5%	79
<b>Healthcare Practitioners and Technical Occupations</b>	2,043	17	1%	26	1%	104	5%	67
<b>Education, Training, and Library Occupations</b>	2,033	30	1%	-152	-7%	39	2%	57
Construction and Extraction Occupations	1,966	-110	-5%	-31	-2%	88	4%	72
Installation, Maintenance, and Repair Occupations	1,559	-173	-10%	-70	-5%	23	1%	49
Personal Care and Service Occupations	1,442	215	18%	161	11%	157	11%	68
<b>Building and Grounds Cleaning and Maintenance Occupations</b>	1,318	-308	-19%	-89	-7%	20	2%	37
Management Occupations	1,267	-202	-14%	-53	-4%	2	0%	37
Healthcare Support Occupations	1,200	136	13%	78	6%	125	10%	50
Business and Financial Operations Occupations	1,059	-144	-12%	-31	-3%	18	2%	34
Community and Social Service Occupations	884	21	2%	7	1%	41	5%	30
Protective Service Occupations	566	-76	-12%	-8	-1%	9	2%	19
Arts, Design, Entertainment, Sports, and Media Occupations	402	-64	-14%	-15	-4%	21	5%	17
Architecture and Engineering Occupations	290	-25	-8%	4	1%	8	3%	10
Computer and Mathematical Occupations	276	-49	-15%	6	2%	14	5%	8
Military occupations	233	-51	-18%	-8	-3%	1	0%	6
Legal Occupations	168	-33	-16%	-11	-7%	0	0%	4
Life, Physical, and Social Science Occupations	131	10	9%	2	2%	11	8%	6
Farming, Fishing, and Forestry Occupations	88	-37	-30%	-15	-17%	-10	-11%	3

### Industry and Occupation Connections

The connection between top occupations and key industries are summarized in the following table. Although key industries are highly diversified, they do share some common workforce requirements. TPMA recommends targeting these top occupations and industries in Lawrence County and supporting education programs that provide talents for these growing points.

Connection between Top Occupations and Key Industries

Top Occupations	Key Industries
Office and Administrative Support Occupations	<ul style="list-style-type: none"> <li>• Colleges, Universities, and Professional Schools</li> <li>• General Medical and Surgical Hospitals</li> <li>• Grocery Stores</li> <li>• Insurance Carriers</li> <li>• Local Government, Excluding Education and Hospitals</li> </ul>
Food Preparation and Serving Related Occupations	<ul style="list-style-type: none"> <li>• Education and Hospitals (Local Government)</li> <li>• General Medical and Surgical Hospitals</li> <li>• Grocery Stores</li> <li>• Restaurants and Other Eating Places</li> </ul>
Healthcare Practitioners and Technical Occupations	<ul style="list-style-type: none"> <li>• General Medical and Surgical Hospitals</li> <li>• Nursing Care Facilities (Skilled Nursing Facilities)</li> </ul>
Education, Training, and Library Occupations	<ul style="list-style-type: none"> <li>• Colleges, Universities, and Professional Schools</li> <li>• Education and Hospitals (Local Government)</li> <li>• Individual and Family Services</li> <li>• Local Government, Excluding Education and Hospitals</li> </ul>
Building and Grounds Cleaning and Maintenance Occupations	<ul style="list-style-type: none"> <li>• Colleges, Universities, and Professional Schools</li> <li>• Education and Hospitals (Local Government)</li> <li>• General Medical and Surgical Hospitals</li> <li>• Local Government, Excluding Education and Hospitals</li> <li>• Nursing Care Facilities (Skilled Nursing Facilities)</li> <li>• Services to Buildings and Dwellings</li> </ul>

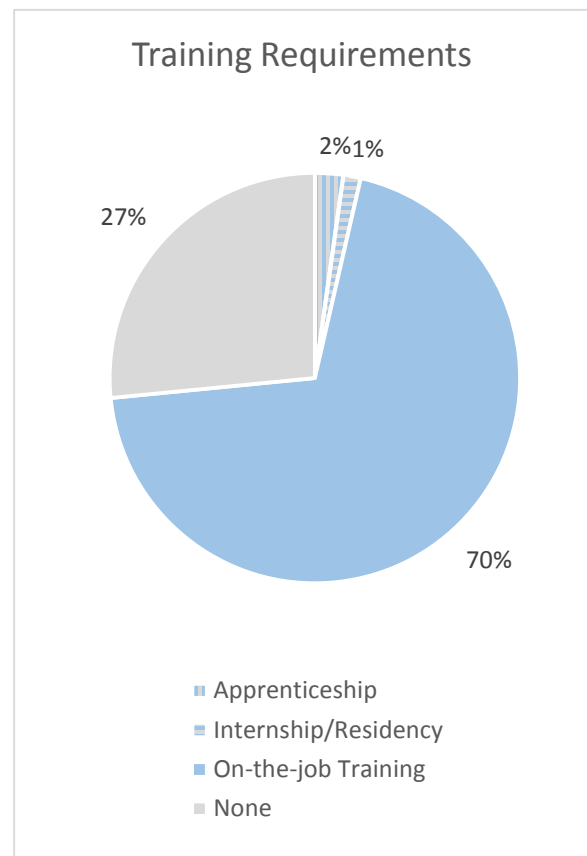
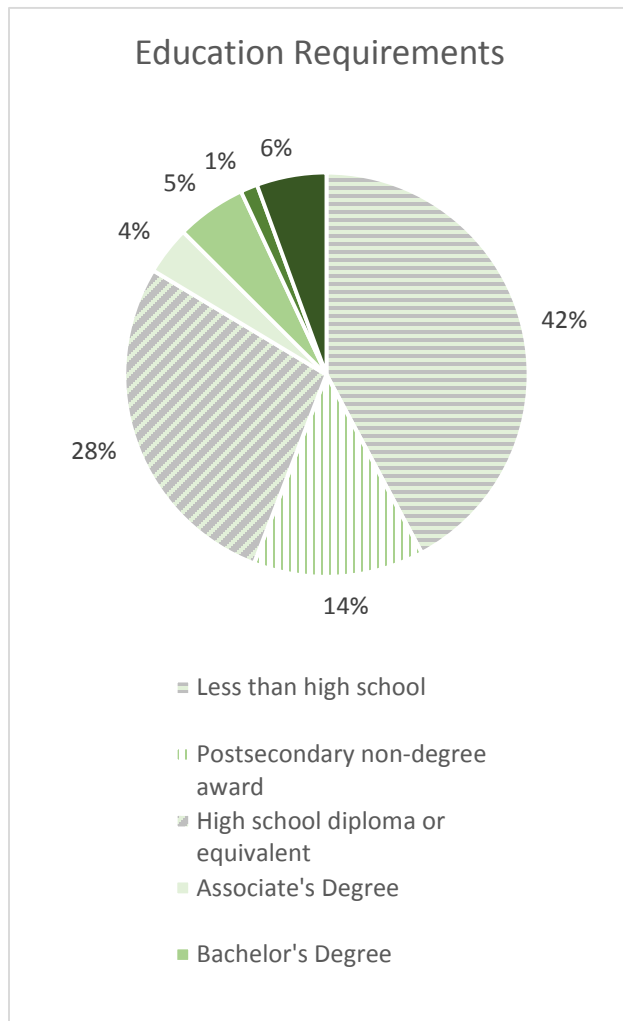
The following table displays the top 10 occupations that are most often required to staff companies within manufacturing in Lawrence County.<sup>76</sup> Median hourly earnings for these occupations in Lawrence County range from \$11.31 at the low end for Laborers and Material Movers, Hand to \$25.12 at the high end for First-Line Supervisors of Production and Operating Workers.

Top Occupations in Manufacturing based on Employment Levels		
Occupation	2014 Employment	Median Hourly Earnings
Machine Tool Cutting Setters, Operators, and Tenders, Metal and Plastic	203	\$18.80
Laborers and Material Movers, Hand	187	\$11.31
Miscellaneous Assemblers and Fabricators	161	\$14.63
First-Line Supervisors of Production and Operating Workers	142	\$25.12
Driver/Sales Workers and Truck Drivers	133	\$14.19
Miscellaneous Production Workers	129	\$13.55
Inspectors, Testers, Sorters, Samplers, and Weighers	126	\$15.83
Welding, Soldering, and Brazing Workers	124	\$15.86
Machinists	122	\$18.52
Forming Machine Setters, Operators, and Tenders, Metal and Plastic	119	\$21.55

<sup>76</sup> Occupations are by 4 digit SOC code.

### Education and Skills for High Demand Jobs

Among high demand jobs in Lawrence County, almost half require a high school diploma or equivalent.<sup>77</sup> About 16 percent of these high demand jobs require a Bachelor's Degree or above. Over 70 percent of these jobs require some type of training, which is mostly on-the-job training. TPMA recommends targeting the education and training programs most required for high demand jobs to support the region's workforce needs and opportunities.



<sup>77</sup> A total of 50 occupations with the highest projected job growth from 2014-2019 are included in this analysis. These occupations are with 5 digit SOC code. EMSI Analyst 2014.

## Human Capital

About 42,391 workers participate in the Lawrence County labor force. The labor participation rate for population over 16 years old is 58.7 percent, which is in the middle in this region. Of these, 40,221 are employed. The unemployment rate for Lawrence County is 5.1

### EMPLOYMENT, 1994-2014<sup>78</sup>

<b>Peak</b>	January 2000 43,555	+8.3% (compared to Sept, 2014)
<b>Trough</b>	February 1994 35,737	-11.1% (compared to Sept, 2014)
<b>Sept 2014</b>	40,221	5.1% Current unemployment

percent, which is lower than the rate for Pennsylvania (5.8 percent), and the U.S. (5.9 percent). Over the last 20 years, employment in Lawrence County was at its highest in June 2000 and lowest in February 1994.

#### **Labor Force Participation Rate**

The labor force participation rate is a major indicator of the labor market. It represents the proportion of the population that is engaged in the labor force. Labor force participation rates are affected by various factors, including demographic composition of the population as well as structural changes in the economy.

Labor force participation rate is sensitive to demographic change because the participation rates vary across age, gender, and race. Based on 2009-2013 ACS estimates, the national labor force participation rate for those 55-years-and-older was 39.2 percent, compared with a labor force participation rate of 81.9 percent for those between 25 and 54.

The national labor force participation rate has decreased since 2000, a trend that is expected to continue in the next decade. One of the major reasons for the decline is the aging of the baby-boom generation. In 2000, baby boomers were the

heart of the workforce, falling into the high participation rate group of 36-to-54 years old. However, as this large group of individuals began to retire, the effects were felt on the overall participation rate. It is worth mentioning that the participation rate of older workers has been increasing in the past ten years, but it is still significantly lower than those of the middle age groups.

The older worker population (55 years and older) in Lawrence County is estimated to be 12,597 in 2014.<sup>79</sup> These older workers are expected to retire in the next ten years. The aging workforce calls for sustainable planning for workforce development in Lawrence County.

<sup>78</sup> U.S. Bureau of Labor Statistics, 1994.9-2014.9 (most recently available). <http://www.bls.gov/data/>

<sup>79</sup> The older worker population (55 years and older) in Lawrence County is estimated by multiplying the population of this age group by the corresponding labor force participation rate.

### Input Sessions

Lawrence County educational providers and industry representatives agreed that a stronger partnership is needed with one another. Education providers noted that many changes have been implemented in the last decade, and it makes it difficult to implement curriculum updates to meet industry standards; state educational regulations drive activities and priorities. Currently, curriculum is reviewed through advisory councils at the region's respective educational providers and the advisory boards meet twice a year. In response to the emerging oil and gas boom in the region, New Castle School of Trades (NCST) and Butler County Community College offer energy related classes. While this is a solid foundation, input session participants identified that more can be done.

Lawrence County community members noted that there is a negative perception among parents and students regarding careers in manufacturing and vocational training at the area Career Centers. The idea persists among parents and students that they must pursue a four-year college degree in order to be successful. Better outreach for career awareness was suggested.

General math, algebra, general chemistry aptitude, and soft skills/communication are lacking within the workforce. A manager from a large county call center that employs 200 to 300 citizens reiterated the importance of communication. Several members noted situations where individuals utilized an entry-level customer service position as a stepping stone to a better career.

Retention is a problem within healthcare, especially with home health aides. The position is emotionally and physically taxing, and it does not pay a family-sustaining wage. Veterans are a potential workforce source, and the group noted the strong work ethic of veterans. However, many veterans are also dealing with barriers that include PTSD and substance abuse.

Resources that are helpful in the community include: PA CareerLink resources, job fairs, and internships.

### HIGHLIGHTED IN-DEMAND OCCUPATIONS

Machinists	Certified Flaggers
Communicators/Customer Service Representatives	Certified High Lift Operators
Sales Representatives	CDL Drivers
Welders	Nursing Assistants
Industrial Electricians	Warehousing, Pickers/Packers
Industrial Maintenance	Certified Nursing Assistants

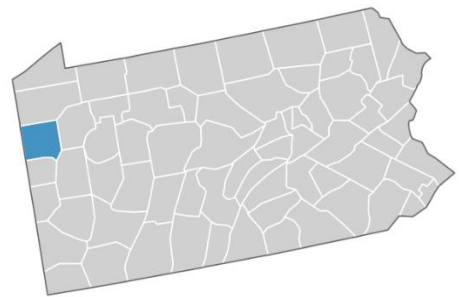
### HIGHLIGHTED IN-DEMAND SKILLS

General math and algebra aptitude	General chemistry aptitude
Clean background record	Clean drug screen
Communication skills	Conflict resolution skills

## Mercer

### Executive Summary

Mercer County is the second largest county in the eight-county Northwest Pennsylvania region, with a population of nearly 115,000. Mercer County's population is aging rapidly, with the 55-64 age group growing 23 percent over the past 10 years and projections suggesting growth in the 65 and over age group over the next five years. The county has little racial diversity, with over 90 percent of the population identifying as White. The Black and Two or More Races (Non-Hispanic) categories are the next highest at 5.7 percent and 1.6 percent respectively.



Over 53,000 workers participate in the Mercer County workforce. Of these, just under 3,000 are unemployed, bringing the unemployment rate to 5.6 percent. This rate is lower than the state and national average. Median household income for Mercer County is just under \$44,000, with a poverty rate at 13.2 percent. This is the third-highest median income in the eight county region and the third-lowest poverty rate. Mercer County has a balanced flow of workers coming in and going out of the county, receiving most of its incoming workers from Lawrence County and sending most to Allegheny County.

The largest broad industry sectors in Mercer County are Health Care and Social Assistance, Manufacturing, and Retail Trade. Health Care and Social Assistance has been steadily growing since 2004, while both Manufacturing and Retail Trade experienced a 2004 to 2009 dip in jobs before growing again between 2009 and 2014. Within these broad categories, the largest industries are Restaurants and Other Eating Places, Education and Hospitals (Local Government), General Medical and Surgical Hospitals, Colleges, Universities and Professional Schools, and Offices of Physicians.

The top occupations in the county are Office and Administrative Support Occupations, Sales and Related Occupations, and Production Occupations. Honing in on key industries in the area, Healthcare Practitioners and Technical Occupations is expected to experience a six percent job growth.

### Demographics

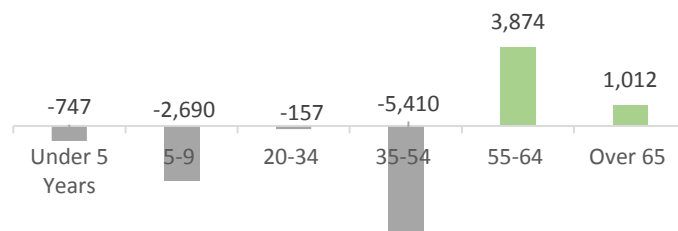
The population in Mercer County shrank from 119,112 to 114,995 over the past 10 years.<sup>80</sup> The decline of 3.6 percent is in contrast to the state growth rate of four percent, and the national growth rate over that same period of nine percent. The population is projected to shrink over the next five years but at a slower rate than over the past 10 years.

Like many of the counties in Northwest Pennsylvania, Mercer County has a rapidly-aging population. The aging of the boomers is quite apparent when looking at data from the past 10 years, with a large percentage of the 35-54 year old population aging into the 55-64 population. This trend will only continue over the next five years, with a marked increase in individuals at or over the age of 65 years old.

### Age Distribution

Age	2014 Population	Change, 2004-2014		Change, 2014-2019	
Under 5	5,689	-747	-13%	241	4%
5-19	21,486	-2,690	-13%	(1,111)	-5%
20-34	19,527	-157	-1%	(392)	-2%
35-54	28,781	-5,410	-19%	(2,238)	-8%
55-64	17,008	3,874	23%	281	2%
Over 65	22,503	1,012	4%	1,775	7%

### Change in Age Distributions 2004-2014



Regarding race, Mercer County is a rather homogenous county, with over 92 percent of individuals identifying as White. However, minority populations in the county are growing, with individuals falling into the Two or More Races category growing over 50 percent during the past 10 years. The Asian and Hispanic<sup>81</sup> populations have grown as well. The largest non-white population is the area's Black population, making up about five percent of the population.

### Race Distribution

Race	2014 Population	Change, 2004-2014	
White	104,206	-5,718	-5%
Black	6,561	226	4%
Two or More Races (non-Hispanic)	1,811	624	53%
Hispanic	1,416	451	32%
Asian	825	268	48%
American Indian or Alaskan Native	156	29	23%
Native Hawaiian or Pacific Islander	19	1	6%

<sup>80</sup> EMSI Analyst 2014.

<sup>81</sup> The Hispanic population includes Hispanics in White, Black, Two or More Races, Asian, American Indian, Native Hawaiian or Pacific Islander.



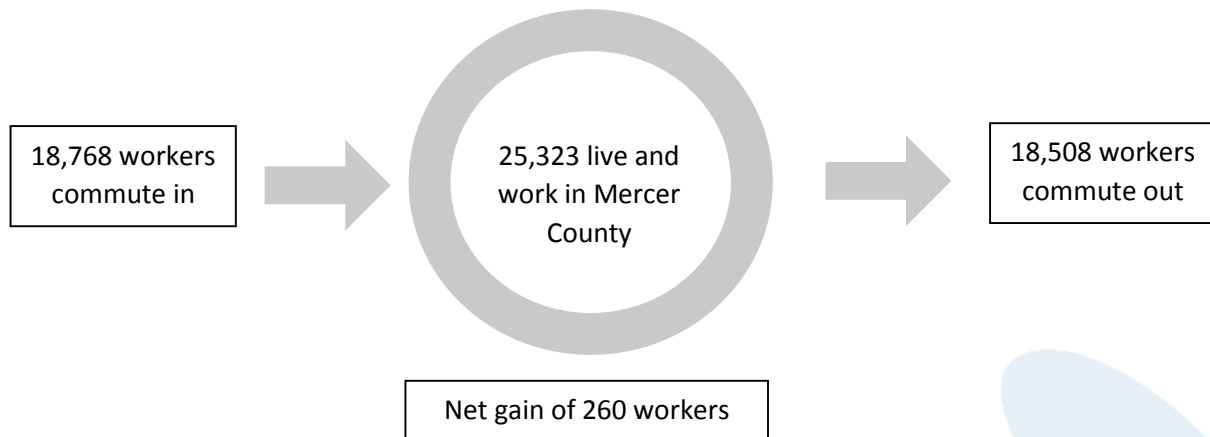
### Income

Mercer County's median income from 2008 to 2012 was \$43,589, putting it behind Erie and Lawrence counties for median household income, but with a poverty rate lower than both. Still, Mercer County's median household income lagged behind the state and national average.<sup>82</sup>

	MEDIAN HOUSEHOLD INCOME ('08-'12)	POVERTY RATE
Mercer	\$43,589	13.2%
Pennsylvania	\$52,267	13.1%
U.S.	\$53,046	14.9%

### Commuting Pattern and Labor Force Availability

With just over 18,750 workers commuting in, and about 18,500 commuting out, Mercer County has a balanced flow of workers.<sup>83</sup> The county receives the most commuters from Lawrence (3,419 workers, 7.8 percent of county workers), Trumbull (2,925, 6.6 percent), and Butler (1,687, 3.8 percent) counties, and sends the most workers to Allegheny (2,694, 6.1 percent), Lawrence (2,422, 5.5 percent), and Butler (1,682, 3.8 percent) counties. Over 44,000 workers are employed in Mercer County, including over 25,000 workers who both live and work in the county, and about 18,750 workers commuting in from other counties.

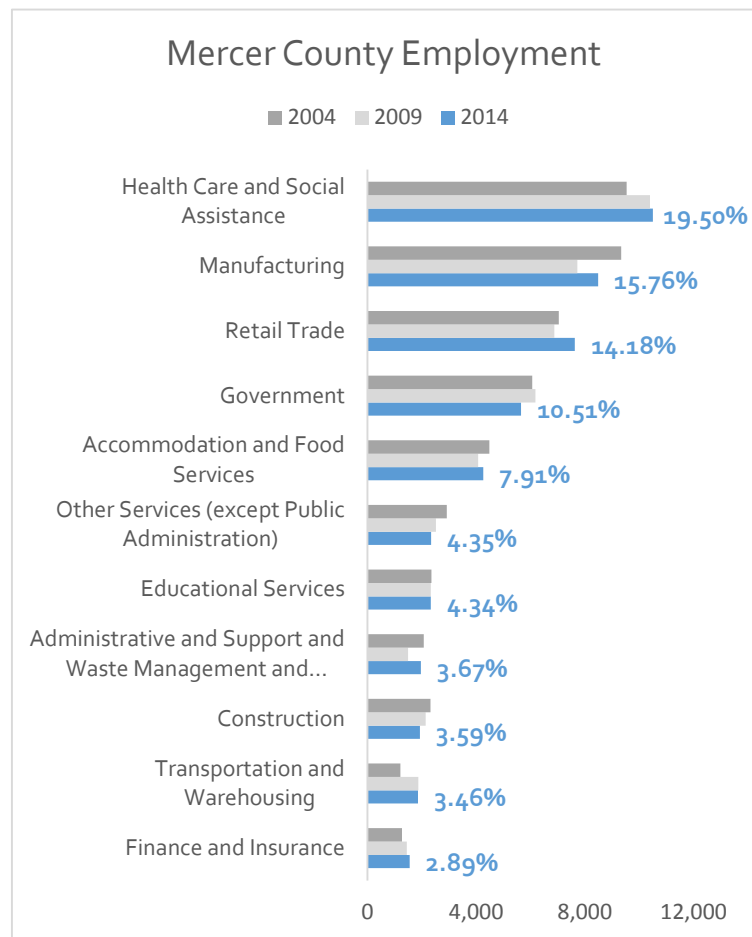


<sup>82</sup> U.S. Census Bureau 2008-2012

<sup>83</sup> U.S. Census Bureau, OnTheMap, 2012 (most recently available). <http://onthemap.ces.census.gov/>

### Industry Analysis

The broad industry sectors in Mercer County employing the most workers are Health Care and Social Assistance (10,510, 19.5 percent), Manufacturing (8,497, 15.8 percent), Retail Trade (7,643, 14.2 percent), Government (5,663, 10.5 percent), and Accommodation and Food Services (4,265, 7.9 percent).<sup>84</sup> The largest sector, Health Care and Social Assistance, has been growing over the past 10 years despite the recession, which suggests a potential for future growth. Like most sectors, employment in the second-largest sector Manufacturing decreased from 2004 to 2009. However, employment in the industry increased between 2009 and 2014.



<sup>84</sup> These industries are by two-digit NAICS code. EMSI Analyst 2014.

### Key Industry Analysis

The tables below show the top 10 largest industries by employment in Mercer County.<sup>85</sup> Among these key industries, Engine, Turbine, and Power Transmission Equipment Manufacturing is projected to have the highest growth over the next five years, followed by Clothing Stores; General Freight Trucking; and Residential Intellectual and Developmental Disability, Mental Health, and Substance Abuse Facilities.

### Employment in Key Industries

Industry	2014 Jobs	Change, 2004-2014		Change, 2009-2014		Projected Change, 2014-2019	
Restaurants and Other Eating Places	3,370	-81	-2%	187	6%	-81	-2%
Education and Hospitals (Local Government)	2,722	-46	-2%	-462	-15%	-3	0%
General Medical and Surgical Hospitals	2,260	-713	-24%	-483	-18%	-67	-3%
Colleges, Universities, and Professional Schools	1,960	-7	0%	62	3%	59	3%
Offices of Physicians	1,471	253	21%	224	18%	21	1%
Local Government, Excluding Education and Hospitals	1,311	-285	-18%	-9	-1%	-22	-2%
Residential Intellectual and Developmental Disability, Mental Health, and Substance Abuse Facilities	1,265	267	27%	261	26%	104	8%
Clothing Stores	1,249	272	28%	184	17%	169	14%
General Freight Trucking	1,016	510	101%	40	4%	118	12%
Engine, Turbine, and Power Transmission Equipment Manufacturing	1,009	1009	--	252	33%	285	28%

<sup>85</sup> These industries are by four-digit NAICS code.

Among these top occupations, average earnings vary widely, from under just above \$15,000 a year for Other Eating Places, to just under \$90,000 a year for Engine, Turbine, and Power Transmission Equipment Manufacturing.

### Establishments and Earnings in Key Industries

Industry	2014 Jobs	Average Earning	Establishments
Restaurants and Other Eating Places	3,370	\$15,021	177
Education and Hospitals (Local Government)	2,722	\$63,932	48
General Medical and Surgical Hospitals	2,260	\$46,295	4
Colleges, Universities, and Professional Schools	1,960	\$27,905	2
Offices of Physicians	1,471	\$78,598	109
Local Government, Excluding Education and Hospitals	1,311	\$53,595	68
Residential Intellectual and Developmental Disability, Mental Health, and Substance Abuse Facilities	1,265	\$32,823	38
Clothing Stores	1,249	\$16,515	83
General Freight Trucking	1,016	\$60,192	39
Engine, Turbine, and Power Transmission Equipment Manufacturing	1,009	\$89,792	1

### Occupation analysis

Analyzing the top occupations in an area helps provide a better picture of a local community, including the types of work most individuals do as well as the skills required from the local labor force. The county's top occupations include Office and Administrative Support Occupations, Sales and Related Occupations, and Production Occupations.<sup>86</sup> Notably, eight of the top 10 occupations provide lower median earnings compared to the median for all occupations in Mercer County (\$16.98/hour) and in the U.S. (\$20.06/hour). The two exceptions are Healthcare Practitioners (\$31.22/ hour) and Education, Training, and Library Occupations (\$23.19/hour).<sup>87</sup>

### Mercer's Occupation Mix

Occupation	2014 Employment	% of Total Employment	Median Hourly Earning
Office and Administrative Support Occupations	7,746	14.37%	\$13.77
Sales and Related Occupations	6,716	12.46%	\$12.45
Production Occupations	5,478	10.16%	\$16.20
Food Preparation and Serving Related Occupations	4,509	8.36%	\$9.22
Healthcare Practitioners and Technical Occupations	3,251	6.03%	\$31.22
Transportation and Material Moving Occupations	3,246	6.02%	\$15.46
Education, Training, and Library Occupations	2,652	4.92%	\$23.19
Personal Care and Service Occupations	2,286	4.24%	\$9.72
Healthcare Support Occupations	2,171	4.03%	\$11.72
Management Occupations	2,045	3.79%	\$35.79
Construction and Extraction Occupations	2,010	3.73%	\$19.38
Building and Grounds Cleaning and Maintenance Occupations	1,960	3.64%	\$10.53
Business and Financial Operations Occupations	1,932	3.58%	\$24.23
Community and Social Service Occupations	1,749	3.25%	\$17.17
Installation, Maintenance, and Repair Occupations	1,709	3.17%	\$17.40
Protective Service Occupations	1,519	2.82%	\$17.63
Architecture and Engineering Occupations	716	1.33%	\$30.38
Computer and Mathematical Occupations	698	1.29%	\$25.61
Arts, Design, Entertainment, Sports, and Media Occupations	644	1.20%	\$14.11
Military Occupations	297	0.55%	\$21.54
Life, Physical, and Social Science Occupations	224	0.41%	\$25.87
Farming, Fishing, and Forestry Occupations	200	0.37%	\$11.63
Legal Occupations	143	0.26%	\$29.11

<sup>86</sup> These occupations are by two-digit SOC code (Standard Occupational Classification System).

<sup>87</sup> EMSI Analyst 2014.

### Employment Growth

Tracking job growth is key as well, with the table on the next page showing job growth by occupation.<sup>88</sup> Five occupations on the list (**bolded**) are the top five occupations that are most often required to staff companies within key industries in Mercer County. The key industries that have high demand for each top occupation are shown in the table on the next page. Notably, four of these key-industry-required occupations are projected to grow in the next five years, including Office and Administrative Support Occupations (two percent); Sales and Related Occupations (two percent); Healthcare Practitioners and Technical Occupations (six percent); and Education, Training and Library Occupations (one percent). These three occupations are projected to add around 520 jobs in Mercer County over the next five years. While some of the top occupations are projected to decline over the next five years, they will still have a large number of annual openings. This is likely because of the retirement of the older worker population in these industries and because of worker turnover. Further analysis is needed to identify the demographic distribution of workers in these industries and the potential demand of talent. Although there won't necessarily be new jobs, employers in these industries may face a deficit of qualified workers to replace the current aging workforce.

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<sup>88</sup> These occupations are by two-digit SOC code.



## Employment and Growth by Occupation

Occupation	2014 Employment	Change, 2004-2014		Change, 2009-2014		Projected Change, 2014-2019		Projected Annual Openings
<b>Office and Administrative Support Occupations</b>	7,746	84	1%	223	3%	169	2%	220
<b>Sales and Related Occupations</b>	6,716	320	5%	477	8%	145	2%	267
Production Occupations	5,478	-688	-11%	438	9%	-101	-2%	155
<b>Food Preparation and Serving Related Occupations</b>	4,509	-202	-4%	137	3%	-34	-1%	187
<b>Healthcare Practitioners and Technical Occupations</b>	3,251	27	1%	9	0%	179	6%	110
Transportation and Material Moving Occupations	3,246	229	8%	116	4%	120	4%	113
<b>Education, Training, and Library Occupations</b>	2,652	-86	-3%	-231	-8%	28	1%	69
Personal Care and Service Occupations	2,286	225	11%	31	1%	170	7%	89
Healthcare Support Occupations	2,171	456	27%	200	10%	230	11%	93
Management Occupations	2,045	-120	-6%	-35	-2%	46	2%	64
Construction and Extraction Occupations	2,010	-221	-10%	-104	-5%	-87	-4%	54
Building and Grounds Cleaning and Maintenance Occupations	1,960	-144	-7%	-23	-1%	85	4%	60
Business and Financial Operations Occupations	1,932	189	11%	148	8%	66	3%	63
Community and Social Service Occupations	1,749	54	3%	-70	-4%	-26	-1%	45
Installation, Maintenance, and Repair Occupations	1,709	-18	-1%	79	5%	99	6%	63
Protective Service Occupations	1,519	-14	-1%	77	5%	58	4%	54
Architecture and Engineering Occupations	716	50	8%	60	9%	34	5%	28
Computer and Mathematical Occupations	698	120	21%	72	12%	47	7%	22
Arts, Design, Entertainment, Sports, and Media Occupations	644	-17	-3%	-18	-3%	9	1%	22
Military Occupations	297	-68	-19%	-10	-3%	1	0%	7
Life, Physical, and Social Science Occupations	224	-29	-11%	-21	-9%	-5	-2%	8
Farming, Fishing, and Forestry Occupations	200	-20	-9%	-13	-6%	-22	-11%	6
Legal Occupations	143	-12	-8%	-4	-3%	1	1%	4

### Industry and Occupation Connections

The connection between top occupations and key industries is summarized in the following table. Although key industries are highly diversified, they do share some common workforce requirements. TPMA recommends targeting these top occupations and industries in Mercer County and supporting education programs that provide talents for these growing fields.

Connection between Top Occupations and Key Industries

Top Occupations	Key Industries
Office and Administrative Support Occupations	<ul style="list-style-type: none"> <li>Colleges, Universities, and Professional Schools</li> <li>Offices of Physicians</li> <li>General Medical and Surgical Hospitals</li> <li>Education and Hospitals (Local Government)</li> </ul>
Sales and Related Occupations	<ul style="list-style-type: none"> <li>Clothing Stores</li> </ul>
Food Preparation and Serving Related Occupations	<ul style="list-style-type: none"> <li>Restaurants and Other Eating Places</li> <li>Education and Hospitals (Local Government)</li> </ul>
Healthcare Practitioners and Technical Occupations	<ul style="list-style-type: none"> <li>General Medical and Surgical Hospitals</li> <li>Offices of Physicians</li> </ul>
Education, Training, and Library Occupations	<ul style="list-style-type: none"> <li>Education and Hospitals (Local Government)</li> <li>Colleges, Universities, and Professional Schools</li> <li>Local Government, Excluding Education and Hospitals</li> </ul>

The following table displays the top 10 occupations that are most often required to staff companies within manufacturing in Mercer County.<sup>89</sup> Median hourly earnings for these occupations in Mercer County range from \$12.08 at the low end for Laborers and Material Movers, Hand to \$24.40 at the high end for Sales Representatives, Wholesale and Manufacturing.

Top Occupations in Manufacturing based on Employment Levels

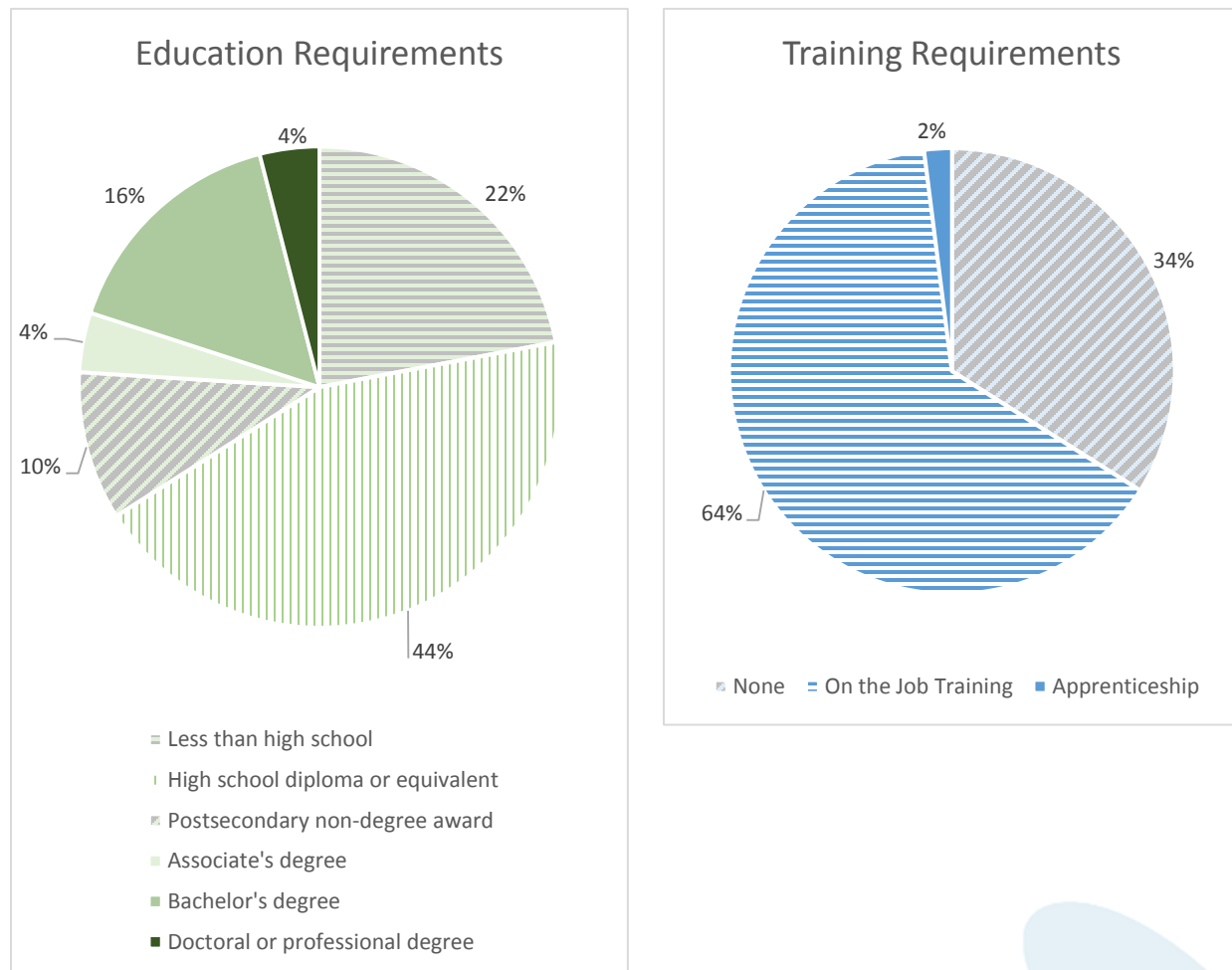
Occupation	2014 Employment	Median Hourly Earnings
Miscellaneous Assemblers and Fabricators	726	\$15.06
Machine Tool Cutting Setters, Operators, and Tenders, Metal and Plastic	643	\$16.33
Machinists	468	\$18.03
Miscellaneous Production Workers	398	\$13.90
Forming Machine Setters, Operators, and Tenders, Metal and Plastic	309	\$17.45
Welding, Soldering, and Brazing Workers	302	\$16.86
Laborers and Material Movers, Hand	299	\$12.08
Maintenance and Repair Workers, General	237	\$16.68
First-Line Supervisors of Production and Operating Workers	231	\$23.63
Sales Representatives, Wholesale and Manufacturing	201	\$24.40

<sup>89</sup> Occupations are by four-digit SOC code.



### Education and Skills for High Demand Jobs

Among high-demand jobs in Mercer County, almost half require a high school diploma or equivalent.<sup>90</sup> About one-fifth of these high-demand jobs require a Bachelor's Degree or above, and just over one-fifth are low-skill positions that require less than high school education. Over 60 percent of these jobs require some type of training, which is mostly on-the-job training. TPMA recommends targeting the education and training programs most required for high-demand jobs to support the region's workforce needs and opportunities.



<sup>90</sup> A total of 50 occupations with the highest projected job growth from 2014-2019 are included in this analysis. These occupations are with five-digit SOC code. EMSI Analyst 2014.

## Human Capital

About 53,570 workers participate in the Mercer County labor force. The labor participation rate for population over 16 years old is 57.2 percent, which is among the lowest in this region. Of these labor force, 50,581 are employed, and 2,989 are unemployed. The unemployment rate for Mercer County is 5.6 percent, which is lower than the rate for Pennsylvania (5.8 percent), and the U.S. (5.9 percent). Over the last 20 years, employment in Mercer County was at its highest in July 1999 and lowest in February 2010.

### EMPLOYMENT, 1994-2014<sup>91</sup>

<b>Peak</b>	October 1998 57,270	+13.2% (compared to Sept, 2014)
<b>Trough</b>	March 2010 46,830	-8.0% (compared to Sept, 2014)
<b>Sept 2014</b>	50,581	4.8% Current unemployment

#### ***Labor Force Participation Rate***

The labor force participation rate is a major indicator of the labor market. It represents the proportion of the population that is in the labor force. Labor force participation rates are affected by various factors, including demographic composition of the population as well as structural changes in the economy.

The labor force participation rate is sensitive to demographic change because the participation rates vary across age, gender, and race. Based on 2009-2013 ACS estimates, the national labor force participation rate for those 55-years-and-older was 39.2 percent, compared with a labor force participation rate of 81.9 percent for those between 25 and 54.

The national labor force participation rate has decreased since 2000, a trend that is expected to continue in the next decade. One of the major reasons for the decline is the aging

of the baby-boom generation. In 2000, baby boomers were the heart of the workforce, falling into the high participation rate group of 36-to-54 years old. However, as this large group of individuals began to retire, the effects were felt on the overall participation rate. It is worth mentioning that the participation rate of older workers has been increasing in the past 10 years, but it is still significantly lower than those of the middle-age groups.

The older-worker population (55 years and older) in Mercer County is estimated to be 15,765 in 2014.<sup>92</sup> These older workers are expected to retire in the next 10 years. The aging workforce calls for sustainable planning for workforce development in Mercer County.

<sup>91</sup> U.S. Bureau of Labor Statistics, 1994.9-2014.9 (most recently available). <http://www.bls.gov/data/>

<sup>92</sup> The older-worker population (55 years and older) in Erie County is estimated by multiplying the population of this age group by the corresponding labor force participation rate.

### Input Sessions

Education providers in Mercer County pursue several avenues when creating or updating curriculum: advisory committees, asking employers to write the curriculum for phlebotomy and medical coding, researching demographics for in-demand fields, and comparing course offerings with other nearby educational providers. Because of time restraints, the career and technical center has a limited amount of time to teach math. The county career and technical center recently built an updated industrial lab with federal funds, and has competency-based certifications and validation assessments included in its curriculum (OSHA 10, WorkKeys®, NIMS, etc.). However, input session members noted that many regional manufacturing organizations do not value certifications, while healthcare organizations rely on proper certifications.

Area employers often need a specific skill, and no matter the type of training a student receives at an educational provider, the student will need company-specific training. Employers need to be realistic when hiring and understand that company-specific training is often necessary. Many organizations do not have the necessary succession planning that they should have in place, as many employees will retire in the next five to 10 years.

Resources that are helpful in the community include: CareerLink resources, area universities, area trade schools, and the county career and technical center.

## HIGHLIGHTED IN-DEMAND OCCUPATIONS

Machinists	Occupational Therapy Assistants
Retail Clerks	Skilled Trade Techs
Phlebotomists	Construction Project Managers
Welders	Home Health Aides
Medical Coding Techs	

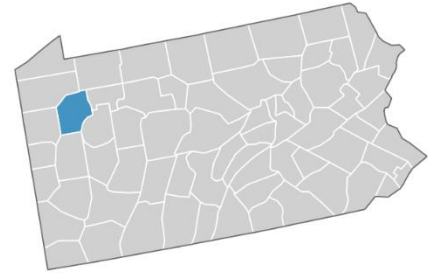
## HIGHLIGHTED IN-DEMAND SKILLS

Customer Service	Information Literacy
Accurate Measurements	Research Skills
Generational Awareness	Math Concepts/Basic Accounting
Leadership	Foundational Skills/Learning Skills
Teamwork	Soft Skills
Proper Tool Use	

## Venango

### Executive Summary

Venango County's population is just over 53,500, making it the third-largest county by population in the Northwest Pennsylvania region. The county's population has been aging, with the population of individuals between 55 and 64 years old growing by 25 percent in the past 10 years. The region has little racial diversity, with over 96 percent of individuals identifying as White.



Over 25,000 workers participate in the Venango County labor force. Of these, about 23,800 are employed, giving the county an unemployment rate of 4.8 percent. Venango's median income from 2008 to 2012 was just over \$41,800. This is the third-lowest median income in the region, with the county also having the third-highest poverty rate at 16.3 percent. Venango County sent slightly more workers out of the county than in 2011.

The largest broad industry sectors in Venango County are Manufacturing, Government, and Health Care and Social Assistance. Encouragingly, Manufacturing has grown since 2004. On the other hand, while experiencing growth from 2004-2009, Health Care and Social Assistance has since experienced job loss. Within these broad categories, the largest industries are Agriculture, Construction, and Mining Machinery Manufacturing; Restaurants and Other Eating Places; and Education and Hospitals (Local Government).

The top occupations in the region are Office and Administrative Support Occupations, Production Occupations, and Sales and Related Occupations. Of these, Production Occupations are expected to experience the most growth, adding over 100 jobs in the next five years. However, all occupations are projected to have high annual openings. This is likely due to older employees retiring out of the workforce.

## Demographics

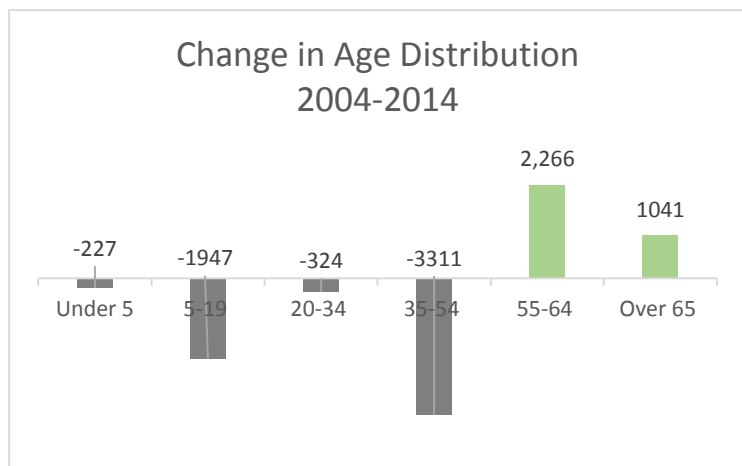
The population in Venango County shrank from 56,197 to 53,695 over the past 10 years.<sup>93</sup> The decline of 4.6 percent is in contrast to the state growth rate of four percent, and the national rate of nine percent over that same time period. The population is projected to shrink over the next five years but at a slower rate than the past 10 years.

Like many of the counties in Northwest Pennsylvania, Venango County has a rapidly aging population. The aging of the boomers is apparent when looking at data from the past 10 years, with a remarkable percentage of the 35-54 year old population aging into the 55-64 population. This trend will only continue over the next five years, with a marked increase in individuals at or over the age of 65 years old.

Regarding race, Venango County is a rather homogenous county, with over 96 percent of individuals identifying as White. However, minority populations in the county are growing, with individuals identifying as Hispanic<sup>94</sup>, Asian, or with "Two or More Races" growing by at least 39 percent each over the past 10 years.

## Age Distribution

Age	2014 Population	Change, 2004-2014		Change, 2014-2019	
Under 5	2,842	-227	-8%	61	2%
5-19	9,328	-1,947	-21%	-186	-2%
20-34	8,359	-324	-4%	-580	-7%
35-54	13,697	-3,311	-24%	-1,258	-10%
55-64	8,938	2,266	25%	24	0%
Over 65	10,531	1041	10%	1143	10%



## Race Distribution

Race	2014 Population	Change, 2004-2014	
White	51,551	-2,990	-5%
Hispanic	610	240	39%
Two or More Races	603	196	48%
Black	585	-32	-5%
Asian	240	84	54%
American Indian or Alaskan Native	94	-2	-2%
Native Hawaiian or Pacific Islander	13	3	30%

<sup>93</sup> EMSI Analyst 2014.

<sup>94</sup> The Hispanic population includes Hispanics in White, Black, Two or More Races, Asian, American Indian or Alaskan Native, Native Hawaiian or Pacific Islander

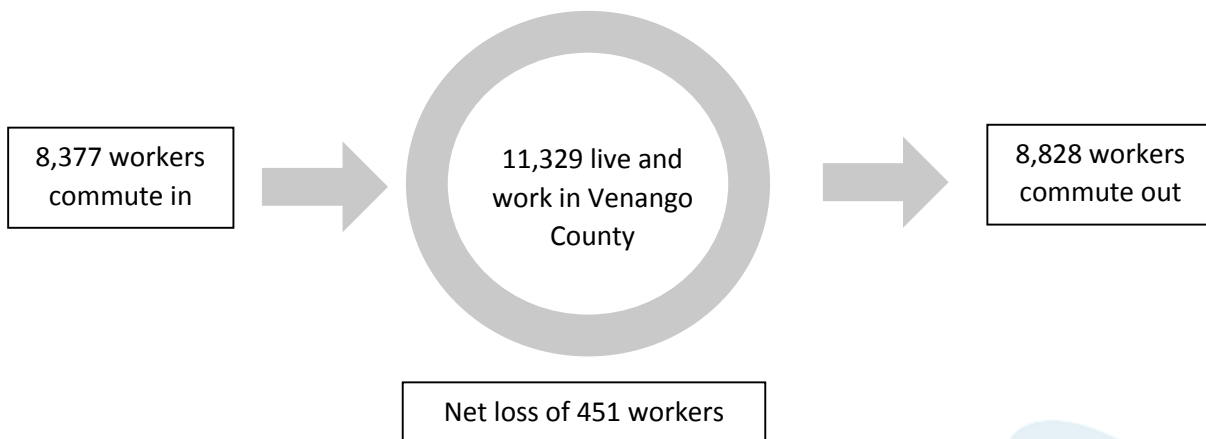
### Income

Venango County's median income from 2008 to 2012 was \$41,184, putting it behind the average Pennsylvania income. More troubling, the poverty rate was higher than Pennsylvania and the nation.<sup>95</sup>

	MEDIAN HOUSEHOLD INCOME ('08-'12)	POVERTY RATE
<b>Venango</b>	\$41,814	16.3%
<b>Pennsylvania</b>	\$52,267	13.1%
<b>U.S.</b>	\$53,046	14.9%

### Commuting Pattern and Labor Force Availability

With almost 8,400 workers commuting in and more than 8,800 commuting out, Venango County has a balanced flow of workers.<sup>96</sup> The county receives the most commuters from Crawford (1,270 workers, 6.4 percent of county workers), Mercer (935, 4.7 percent) and Clarion (894, 4.5 percent) counties, and sends the most workers to Crawford (1,707, 8.5 percent), Allegheny (1,108, 5.5 percent) and Mercer (910, 4.5 percent) counties. Over 19,000 workers are employed in Venango County, including about 11,300 who both live and work in the county, and about 8,400 who commute in from other counties.

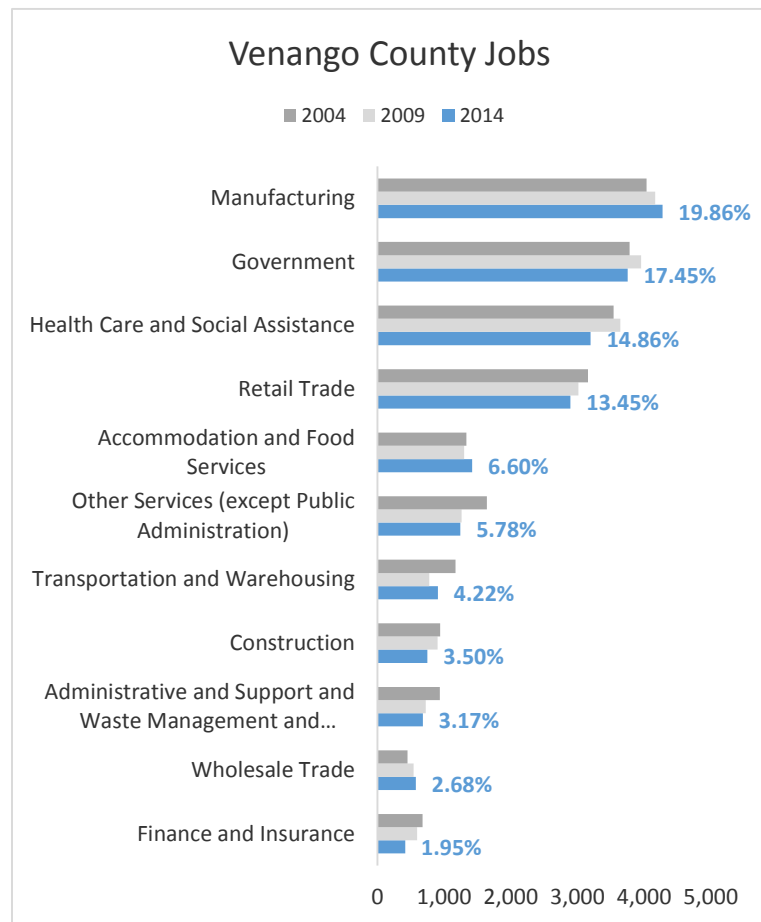


<sup>95</sup> U.S. Census Bureau 2008-2012

<sup>96</sup> U.S. Census Bureau, OnTheMap, 2012 (most recently available). <http://onthemap.ces.census.gov/>

### Industry Analysis

The broad industry sectors in Venango County employing the most workers are Manufacturing (4,278, 19.9 percent), Government (4,278, 17.5 percent), Health Care and Social Assistance (3,200, 14.9 percent), Retail Trade (2,898, 13.5 percent), and Accommodation and Food Services (1,422, 6.6 percent).<sup>97</sup> The largest sector, Manufacturing, has been growing over the past 10 years, which suggests a potential for future growth. This also stands out because the other three biggest industries have all shrunk since 2009.



<sup>97</sup> These industries are by two-digit NAICS code. EMSI Analyst 2014.

### Key Industry Analysis

Drilling a bit deeper, the tables below show the top ten largest industries by employment in Venango County.<sup>98</sup> Among these key industries, Offices of Physicians is projected to have the highest growth over the next five years, followed by Iron and Steel Mills and Ferroalloy Manufacturing.

### Employment in Key Industries

Industry	2014 Jobs	Change, 2004-2014		Change, 2009-2014		Projected Change, 2014-2019	
Agriculture, Construction, and Mining Machinery Manufacturing	1,246	227	22%	54	5%	-28	-2%
Restaurants and Other Eating Places	1,140	89	8%	134	13%	0	0%
Education and Hospitals (Local Government)	1,083	-96	-8%	-61	-5%	-31	-3%
State Government, Excluding Education and Hospitals	914	-654	-42%	-44	-5%	-19	-2%
Local Government, Excluding Education and Hospitals	759	33	5%	14	2%	-27	-4%
Education and Hospitals (State Government)	743	743	--	-100	-12%	-20	-3%
General Medical and Surgical Hospitals	545	-317	-37%	-211	-28%	-150	-28%
Other General Merchandise Stores	473	-10	-2%	-15	-3%	-17	-4%
Offices of Physicians	447	-15	-3%	-42	-9%	11	2%
Iron and Steel Mills and Ferroalloy Manufacturing	425	101	31%	53	14%	6	1%

Among these top occupations, average earnings vary widely, from just above \$13,000 a year for Restaurants and Other Eating Places, to over \$77,000 a year for Offices of Physicians.

### Establishments and Earnings in Key Industries

Industry	2014 Jobs	Average Earning	Establishments
Agriculture, Construction, and Mining Machinery Manufacturing	1,246	\$76,037	4
Restaurants and Other Eating Places	1,140	\$13,258	73
Education and Hospitals (Local Government)	1,083	\$64,241	26
State Government, Excluding Education and Hospitals	914	\$68,409	23
Local Government, Excluding Education and Hospitals	759	\$48,105	37
Education and Hospitals (State Government)	743	\$62,162	1
General Medical and Surgical Hospitals	545	\$49,958	1
Other General Merchandise Stores	473	\$26,435	12
Offices of Physicians	447	\$77,936	38
Iron and Steel Mills and Ferroalloy Manufacturing	425	\$66,290	4

<sup>98</sup> These industries are by four-digit NAICS code.



## Occupation Analysis

Analyzing the top occupations in an area helps provide a better picture of a local community, including the types of work most individuals do, as well as the skills required from the local labor force. The county's top occupations include Office and Administrative Support Occupations, Production Occupations, and Sales and Related Occupations.<sup>99</sup> Notably, over half of the top 10 occupations provide higher median earnings than the median for all occupations in Venango County (\$15.97/hour).<sup>100</sup>

## Venango's Occupation Mix

Occupation	2014 Employment	% of Total Employment	Median Hourly Earning
Office and Administrative Support Occupations	3,195	14.83%	\$12.45
Production Occupations	2,654	12.32%	\$16.53
Sales and Related Occupations	2,417	11.22%	\$11.96
Food Preparation and Serving Related Occupations	1,696	7.87%	\$8.85
Transportation and Material Moving Occupations	1,676	7.78%	\$13.30
Education, Training, and Library Occupations	1,249	5.80%	\$21.62
Healthcare Practitioners and Technical Occupations	1,075	4.99%	\$29.46
Installation, Maintenance, and Repair Occupations	1,032	4.79%	\$16.63
Construction and Extraction Occupations	891	4.13%	\$16.16
Management Occupations	781	3.62%	\$32.00
Personal Care and Service Occupations	748	3.47%	\$9.41
Healthcare Support Occupations	668	3.10%	\$11.16
Business and Financial Operations Occupations	662	3.07%	\$22.15
Community and Social Service Occupations	617	2.86%	\$16.15
Building and Grounds Cleaning and Maintenance Occupations	614	2.85%	\$9.73
Protective Service Occupations	475	2.21%	\$20.70
Architecture and Engineering Occupations	318	1.48%	\$27.06
Arts, Design, Entertainment, Sports, and Media Occupations	228	1.06%	\$13.85
Computer and Mathematical Occupations	163	0.76%	\$23.80
Military Occupations	136	0.63%	\$20.74
Life, Physical, and Social Science Occupations	97	0.45%	\$25.42
Legal Occupations	89	0.41%	\$22.38
Farming, Fishing, and Forestry Occupations	59	0.27%	\$13.03

<sup>99</sup> These occupations are by two-digit SOC code (Standard Occupational Classification System).

<sup>100</sup> EMSI Analyst 2014.

### Employment Growth

Tracking job growth is key as well, with the table on the next page showing job growth by occupation.<sup>101</sup> Five occupations on the list (bolded) are the top five occupations that are most often required to staff companies within key industries in Venango County. The key industries that have high demand for each top occupation are shown in the table on the next page. Notably, one of these top five key-industry-required occupations is projected to grow in the next five years, with Production Occupations expected to undergo five percent growth. While only one of the other top seven occupations is expected to grow in the next five years, these other industries still have a large number of annual openings. This is likely because of the retirement of the older worker population in these industries as well as employee turnover. Further analysis is needed to identify the demographic distribution of workers in these industries and the potential demand of talents. Although there won't necessarily be new jobs, employers in these industries may face a deficit of qualified workers to replace the current aging workforce.

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<sup>101</sup> These occupations are by two-digit SOC code.



## Employment and Growth by Occupation

Occupation	2014 Employment	Change, 2004-2014		Change, 2009-2014		Projected Change, 2014-2019		Projected Annual Openings
<b>Office and Administrative Support Occupations</b>	3,195	-410	-11%	-368	-10%	-50	-2%	130
<b>Production Occupations</b>	2,654	181	7%	132	5%	101	4%	150
Sales and Related Occupations	2,417	-219	-8%	-148	-6%	26	1%	118
<b>Food Preparation and Serving Related Occupations</b>	1,696	-11	-1%	122	8%	-14	-1%	85
Transportation and Material Moving Occupations	1,676	-210	-11%	78	5%	-30	-2%	76
<b>Education, Training, and Library Occupations</b>	1,249	127	11%	-24	-2%	-17	-1%	70
<b>Healthcare Practitioners and Technical Occupations</b>	1,075	-164	-13%	-124	-10%	-39	-4%	49
Installation, Maintenance, and Repair Occupations	1,032	62	6%	43	4%	48	5%	49
Construction and Extraction Occupations	891	-101	-10%	-57	-6%	6	1%	39
Management Occupations	781	-109	-12%	-77	-9%	-6	-1%	37
Personal Care and Service Occupations	748	-196	-21%	-87	-10%	-43	-6%	47
Healthcare Support Occupations	668	-7	-1%	-64	-9%	4	1%	29
Business and Financial Operations Occupations	662	-92	-12%	-49	-7%	7	1%	26
Community and Social Service Occupations	617	-125	-17%	-87	-12%	-24	-4%	28
Building and Grounds Cleaning and Maintenance Occupations	614	-96	-14%	-18	-3%	-38	-6%	30
Protective Service Occupations	475	-143	-23%	-6	-1%	-11	-2%	19
Architecture and Engineering Occupations	318	-6	-2%	7	2%	20	6%	19
Arts, Design, Entertainment, Sports, and Media Occupations	228	-40	-15%	-12	-5%	3	1%	15
Computer and Mathematical Occupations	163	-45	-22%	-16	-9%	5	3%	7
Military Occupations	136	-35	-20%	-8	-6%	1	1%	4
Life, Physical, and Social Science Occupations	97	-10	-9%	-5	-5%	1	1%	7
Legal Occupations	89	-17	-16%	-2	-2%	0	0%	3
Farming, Fishing, and Forestry Occupations	59	-72	-55%	-21	-26%	-16	-27%	7

### Industry and Occupation Connections

The connection between top occupations and key industries are summarized in the following table. Although key industries are highly diversified, they do share some common workforce requirements. TPMA recommends to target these top occupations and industries in Venango County and support education programs that provide talents for these growing points.

Connection between Top Occupations and Key Industries

Top Occupations	Key Industries
Office and Administrative Support Occupations	<ul style="list-style-type: none"> <li>• Education and Hospitals (State Government)</li> <li>• State Government, Excluding Education and Hospitals</li> <li>• Local Government, Excluding Education and Hospitals</li> <li>• Offices of Physicians</li> <li>• Agriculture, Construction, and Mining Machinery Manufacturing</li> <li>• Other General Merchandise</li> </ul>
Production Occupations	<ul style="list-style-type: none"> <li>• Agriculture, Construction, and Mining Machinery Manufacturing</li> <li>• Iron and Steel Mills and Ferroalloy Manufacturing</li> </ul>
Food Preparation and Serving Related Occupations	<ul style="list-style-type: none"> <li>• Restaurants and Other Eating Places</li> <li>• Education and Hospitals (Local Government)</li> </ul>
Education, Training, and Library Occupations	<ul style="list-style-type: none"> <li>• Education and Hospitals (Local Government)</li> <li>• Education and Hospitals (State Government)</li> <li>• Local Government, Excluding Education and Hospitals</li> <li>• State Government, Excluding Education and Hospitals</li> </ul>
Healthcare Practitioners and Technical Occupations	<ul style="list-style-type: none"> <li>• General Medical and Surgical Hospitals</li> <li>• Offices of Physicians</li> <li>• State Government, Excluding Education and Hospitals</li> </ul>

The following table displays the top 10 occupations that are most often required to staff companies within manufacturing in Venango County.<sup>102</sup> Median hourly earnings for these occupations in Venango range from \$11.10 at the low end for Miscellaneous Assemblers and Fabricators to \$26.20 at the high end for First-Line Supervisors of Production and Operating Workers.

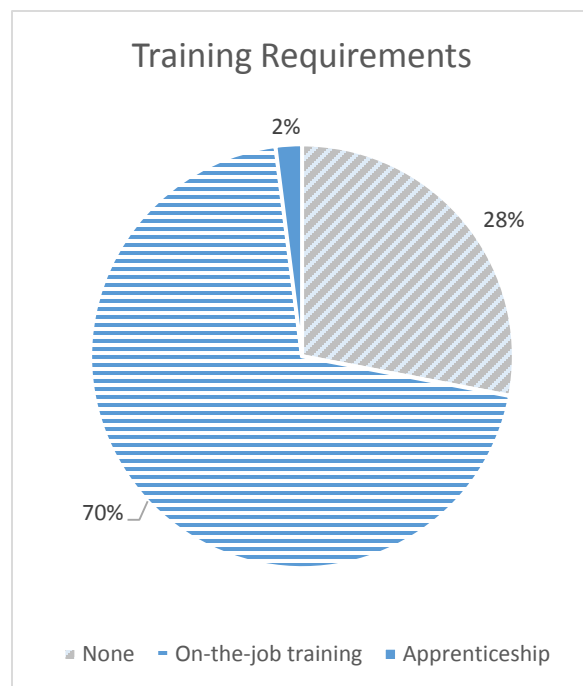
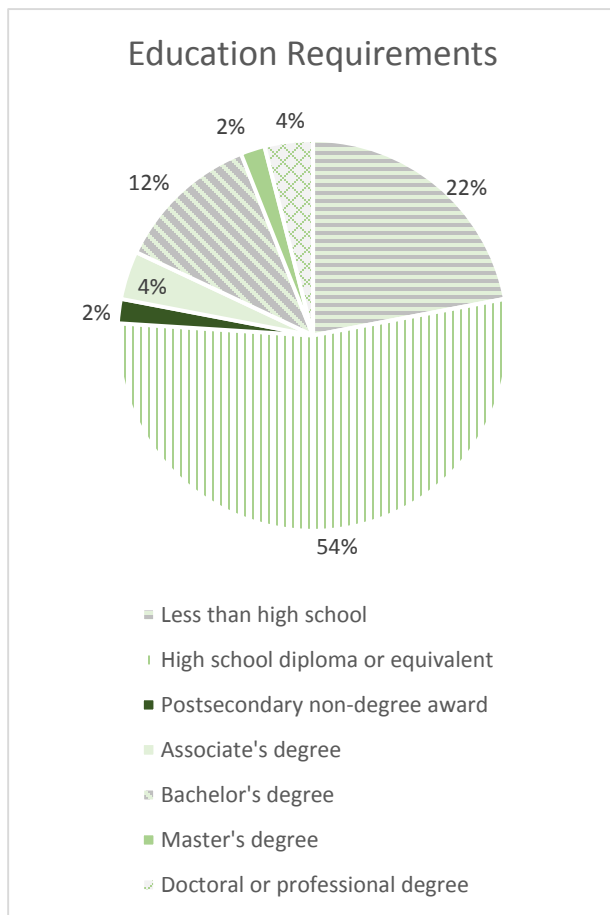
Top Occupations in Manufacturing based on Employment Levels

Occupation	2014 Employment	Median Hourly Earnings
Miscellaneous Assemblers and Fabricators	283	\$15.16
Machine Tool Cutting Setters, Operators, and Tenders, Metal and Plastic	225	\$18.38
Welding, Soldering, and Brazing Workers	219	\$17.38
Machinists	210	\$18.13
Electrical, Electronics, and Electromechanical Assemblers	205	\$11.83
Laborers and Material Movers, Hand	151	\$9.87
First-Line Supervisors of Production and Operating Workers	150	\$24.10
Inspectors, Testers, Sorters, Samplers, and Weighers	139	\$15.36
Industrial Machinery Installation, Repair, and Maintenance Workers	132	\$20.49
Computer Control Programmers and Operators	124	\$17.38

<sup>102</sup> Occupations are by four-digit SOC code.

### Education and Skills for High Demand Jobs

Among high-demand jobs in Venango County, almost half require a high school diploma or equivalent.<sup>103</sup> More than one-quarter of these high-demand jobs require a Bachelor's Degree or above and only 20 percent of these jobs are low-skill positions that require less than high school education. Over 70 percent of these jobs require some type of training, which is mostly on-the-job training. TPMA recommends targeting the education and training programs most required for high-demand jobs to support the region's workforce needs and opportunities.



<sup>103</sup> A total of 50 occupations with the highest projected job growth from 2014-2019 are included in this analysis. These occupations are with five-digit SOC code. EMSI Analyst 2014.

## Human Capital

About 25,029 workers participate in the Venango County labor force. The labor participation rate for population over 16 years old is 59.4 percent, which is the second-highest in this region, just lower than the rate in Erie (62.3 percent). Of these labor force, 23,824 are employed, and 1,205 are unemployed. The unemployment rate for Venango County is 4.8 percent, which is lower than the rate

for Pennsylvania (5.8 percent), and the U.S. (5.9 percent). Over the last 20 years, employment in Venango County was at its highest in August 2000 and lowest in April 1994.

### EMPLOYMENT, 1994-2014<sup>104</sup>

<b>Peak</b>	August 2000 25,820	+8.4% (compared to Sept, 2014)
<b>Trough</b>	April 1994 22,983	-3.5% (compared to Sept, 2014)
<b>Sept 2014</b>	23,824	4.8% Current unemployment

The labor force participation rate is sensitive to demographic change because the participation rates vary across age, gender, and race. Based on 2009-2013 ACS estimates, the national labor force participation rate for those 55-years-and-older was 39.2 percent, compared with a labor force participation rate of 81.9 percent for those between 25 and 54.

#### **Labor Force Participation Rate**

The labor force participation rate is a major indicator of the labor market. It represents the proportion of the population that is in the labor force. Labor force participation rates are affected by various factors, including demographic composition of the population as well as structural changes in the economy.

The national labor force participation rate has decreased since 2000, a trend that is expected to continue in the next decade. One of the major reasons for the decline is the aging of the baby-boomer generation. In 2000, baby boomers were the heart of the workforce, falling into the high participation rate group of 36-to-54 years old. However, as this large group of individuals began to retire, the effects were felt on the overall participation rate. The participation rate of older workers has been increasing in the past 10 years, but it is still significantly

lower than those of the middle-age groups.

The older-worker population (55 years and older) in Venango County is estimated to be 7,768 in 2014.<sup>105</sup> These older workers are expected to retire in the next 10 years. The aging workforce calls for sustainable planning for workforce development in Venango County.

<sup>104</sup> U.S. Bureau of Labor Statistics, 1994.9-2014.9 (most recently available). <http://www.bls.gov/data/>

<sup>105</sup> The older-worker population (55 years and older) in Venango County is estimated by multiplying the population of this age group by the corresponding labor force participation rate.

### Input Sessions

Venango County community members noted that there have been recent challenges at the Workforce Investment Board (WIB), and this has left a gap in collaborating with industry, education, and workforce. However, the group noted that small steps can be made independently without WIB assistance (internal employer training programs, focus groups, action teams, etc.).

A negative perception exists among parents and students regarding careers in manufacturing and vocational training. The idea persists among parents and students that they must pursue a four-year college degree in order to be successful. The region also struggles with generational poverty and non-competitive wages to nearby regions.

Education providers obtain feedback on curriculum via advisory committees. The community members indicated that even though the advisory committees are held, they don't see big changes from their suggestions. Lacking in student skill sets are general math skills, accurate measurement identification, soft skills, and work ethic. Area high schools and universities offer mock interviews, but more work needs to be completed to help individuals communicate effectively and appropriately in the workplace. Current job-shadowing programs help students obtain a realistic viewpoint of manufacturing and healthcare occupations.

Resources that are helpful in the community include: School Counts Program, PA CareerLink resources (including online remediation), HR Groups, High School Industry Clubs, and job shadowing.

### HIGHLIGHTED IN-DEMAND OCCUPATIONS

Machinists	Home Health Aides
Maintenance Technician	PLC Technicians
Electrical Technician/Engineer	Electronic Technicians
Welders/Pipefitters	Registered Nurses
Physician Assistants	Patient Care Technicians
Nurse Practitioners	Electronic Medical Records Technician

### HIGHLIGHTED IN-DEMAND SKILLS

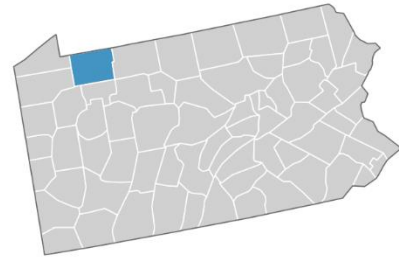
Soft Skills	General Math
Accurate Measurements	Work Ethic (dignity and respect to patients)
Problem Solving Skills	



## Warren

### Executive Summary

Warren County has a population of just over 40,500, making it the third-smallest county in front of Clarion and Forest counties. The county's population is aging, with the 55 to 64 year old population increasing 19 percent in the last 10 years and the 65 and over population projected to grow by nine percent over the next five years. While the county is racially very homogenous – 97 percent of individuals identify as White – minority populations have been growing, with the Hispanic population growing from just under 230 in 2004 to almost 400 in 2014.



Almost 21,000 workers participate in the Warren County labor force. Of these, just over 20,000 are employed, leaving the County with an unemployment rate of 4.2 percent. The County's median income from 2008 to 2012 was just above \$43,000. While this is the fourth-highest throughout the region, Warren County has the lowest poverty rate in the region at 12.0 percent. Warren County is a net exporter of workers, with 12,400 individuals commuting out with under 4,000 coming in to the County to work.

The largest broad industry sectors in Warren County are Manufacturing, Retail Trade, and Transportation and Warehousing. Both Manufacturing and Retail Trade lost a significant number of employees between 2004 and 2009 but have begun to rebound since 2009. Within these broad categories, the largest industries are Warehousing and Storage, Education and Hospitals (Local Government), and Depository Credit Intermediation. Among these, Warehousing and Storage has the highest projected growth and should add 170 jobs to the County over the next five years.

The top occupations in the region are Office and Administrative Support Occupations, Transportation and Material Moving Occupations, and Sales and Related Occupations. More specifically, the Transportation and Material Moving Occupations is projected to add over 110 jobs. However, all occupations are projected to have high annual openings. This is likely due to older employees retiring out of the workforce.

### Demographics

The population in Warren County shrank from 42,667 to 40,674 over the past 10 years.<sup>106</sup> The decline of 4.9 percent is in contrast to the state growth rate of four percent, and the national rate of nine percent. The population is projected to decrease by about 1.6 percent over the next five years.

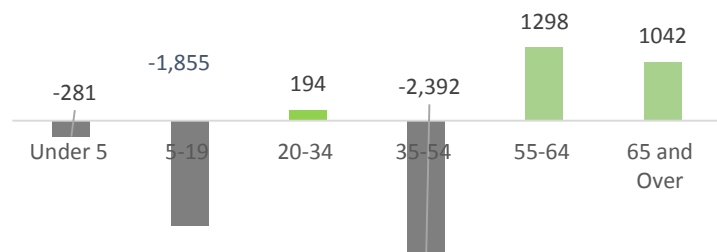
Like many of the counties in Northwest Pennsylvania, Warren County has a rapidly aging population. The aging of the boomers is apparent when looking at data from the past 10 years, with a remarkable percentage of the 35-54 year old population aging into the 55-64 population. This trend will only continue over the next five years, with a marked increase in individuals at or over the age of 65 years old.

Regarding race, Warren County is a rather homogenous county, with over 97 percent of individuals identifying as White. However, minority populations in the county are growing, with individuals identifying as Hispanic<sup>107</sup>, Black, or Two or More Races” growing over 40 percent each in the past 10 years.

### Age Distribution

Age	2014 Population	Change, 2004-2014		Change, 2014-2019	
Under 5	1,974	-281	-14%	37	2%
5-19	6,698	-1,855	-28%	-249	-4%
20-34	6,299	194	3%	-371	-6%
35-54	10,577	-2,392	-23%	-976	-10%
55-64	6,760	1,298	19%	94	1%
65 and Over	8,365	1,042	12%	836	9%

### Change in Age Distribution 2004-2014



### Race Distribution

Race	2014 Population	Change, 2004-2014	
White	39,485	-2,403	-6%
Hispanic	399	180	45%
Two or More Races	329	103	46%
Black	185	87	89%
Asian	169	34	25%
American Indian or Alaskan Native	93	4	4%
Native Hawaiian or Pacific Islander	13	1	8%

<sup>106</sup> EMSI Analyst 2014.

<sup>107</sup> The Hispanic population includes Hispanics in White, Black, Two or More Races, Asian, American Indian or Alaskan Native, Native Hawaiian or Pacific Islander

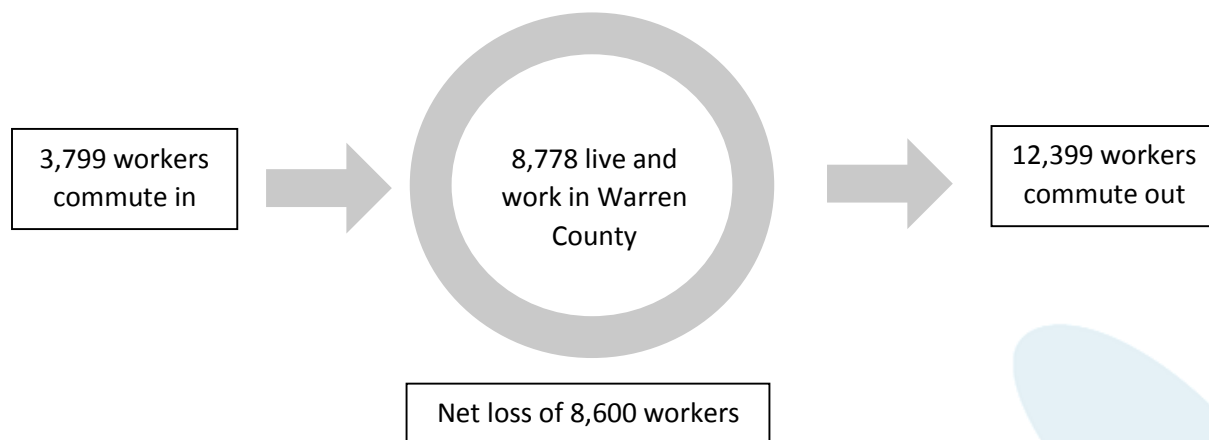
### Income

Warren County's median income from 2008 to 2012 was \$43,108 putting it fourth-highest behind Erie, Lawrence, and Mercer Counties. However, as can be seen in the chart below, Warren County's poverty rate was lower than that of the state and the nation, and was lowest of all eight counties.<sup>108</sup>

	MEDIAN HOUSEHOLD INCOME ('08-'12)	POVERTY RATE
<b>Warren</b>	\$43,108	12.0%
<b>Pennsylvania</b>	\$52,267	13.1%
<b>U.S.</b>	\$53,046	14.9%

### Commuting Pattern and Labor Force Availability

With just under 3,800 workers commuting in, and about 12,400 commuting out, Warren County is a net exporter of workers.<sup>109</sup> The county receives the most commuters from Erie (555, 4.4 percent), Chautauqua (539, 4.3 percent) and Venango (448, 3.6 percent) counties, and sends the most workers to Erie (2,437, 11.5 percent), Allegheny (1,600, 7.6 percent) and Chautauqua (1,328, 6.3 percent) counties. Over 12,500 workers are employed in Warren County, including about 8,800 workers who live and work in the county, and about 3,800 who commute in from other counties.

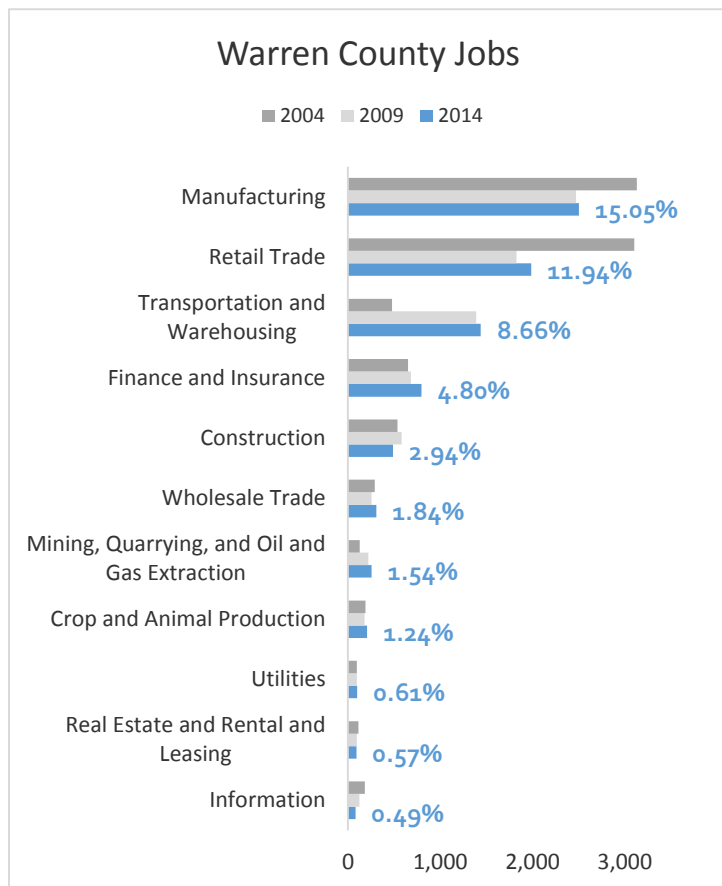


<sup>108</sup> U.S. Census Bureau 2008-2012

<sup>109</sup> U.S. Census Bureau, OnTheMap, 2012 (most recently available). <http://onthemap.ces.census.gov/>

### Industry Analysis

The broad industry sectors in Warren County employing the most workers are Manufacturing (2,505, 15.1 percent), Retail Trade (1,987, 11.9 percent), Transportation and Warehousing (1,441, 8.7 percent), Finance and Insurance (798, 4.8 percent), and Construction (489, 2.9 percent).<sup>110</sup> The top two industries, Manufacturing and Retail Trade, both suffered between 2004 and 2009, but began growing again between 2009 and 2014. Transportation and Warehousing; Finance and Insurance; and Mining, Quarrying, and Oil and Gas Extraction experienced growth over the past 10 years.



<sup>110</sup> These industries are by two-digit NAICS code. EMSI Analyst 2014.

### Key Industry Analysis

The tables below show the top 10 largest industries by employment in Warren County.<sup>111</sup> Among these key industries, Management of Companies and Enterprises is projected to have the highest growth over the next five years, followed by Warehousing and Storage, Nursing Care Facilities (Skilled Nursing Facilities), and General Medical and Surgical Hospitals.

Employment in Key Industries

Industry	2014 Jobs	Change, 2004- 2014		Change, 2009- 2014		Projected Change, 2014-2019	
Warehousing and Storage	895	895	--	-18	-2%	170	19%
Education and Hospitals (Local Government)	743	-227	-23%	-68	-8%	-5	-1%
Restaurants and Other Eating Places	696	91	15%	9	1%	20	3%
Depository Credit Intermediation	695	252	57%	129	23%	53	8%
Management of Companies and Enterprises	683	630	1189%	-267	-28%	211	31%
Individual and Family Services	646	219	51%	-148	-19%	26	4%
Nursing Care Facilities (Skilled Nursing Facilities)	616	18	3%	56	10%	41	7%
General Medical and Surgical Hospitals	550	-7	-3%	-41	-7%	38	7%
Local Government, Excluding Education and Hospitals	499	-57	-10%	-57	-10%	-7	-1%
Forging and Stamping	487	247	103%	96	-16%	23	5%

<sup>111</sup> These industries are by four-digit NAICS code.

Among these top occupations, average earnings vary widely, from under \$18,500 a year for Individual and Family Services, to over \$88,500 a year for Management of Companies and Enterprises.

### Establishments and Earnings in Key Industries

Industry	2014 Jobs	Average Earning	Establishments
Warehousing and Storage	895	\$26,382	1
Education and Hospitals (Local Government)	743	\$69,318	18
Restaurants and Other Eating Places	696	\$14,384	52
Depository Credit Intermediation	695	\$51,668	21
Management of Companies and Enterprises	683	\$88,570	6
Individual and Family Services	646	\$18,475	253
Nursing Care Facilities (Skilled Nursing Facilities)	616	\$31,518	4
General Medical and Surgical Hospitals	550	\$71,574	1
Local Government, Excluding Education and Hospitals	499	\$47,865	35
Forging and Stamping	487	\$61,486	3

## Occupation Analysis

Analyzing the top occupations in an area helps provide a better picture of a local community, including the types of work most individuals do as well, as the skills required from the local labor force. The county's top occupations include Office and Administrative Support Occupations, Transportation and Material Moving Occupations, and Sales and Related Occupations.<sup>112</sup> Notably, seven of the top 10 occupations provide lower median earning compared to the median for all occupations in Warren County (\$17.68/hour) and in the U.S. (\$20.06/hour). The three exceptions are Healthcare Practitioners and Technical Occupations (\$31.08/ hour); Management Occupations (\$34.67); and Education, Training, and Library Occupations (\$21.97/ hour).<sup>113</sup>

## Warren's Occupation Mix

Occupation	2014 Employment	% of Total Employment	Median Hourly Earning
Office and Administrative Support Occupations	2,757	16.57%	\$13.32
Transportation and Material Moving Occupations	1,622	9.75%	\$12.80
Sales and Related Occupations	1,617	9.71%	\$12.65
Production Occupations	1,598	9.60%	\$15.58
Food Preparation and Serving Related Occupations	1,192	7.16%	\$9.77
Healthcare Practitioners and Technical Occupations	1,090	6.55%	\$31.08
Management Occupations	754	4.53%	\$34.67
Personal Care and Service Occupations	744	4.47%	\$8.87
Education, Training, and Library Occupations	689	4.14%	\$21.97
Healthcare Support Occupations	686	4.12%	\$11.45
Installation, Maintenance, and Repair Occupations	683	4.10%	\$16.92
Business and Financial Operations Occupations	639	3.84%	\$26.10
Construction and Extraction Occupations	618	3.71%	\$16.32
Building and Grounds Cleaning and Maintenance Occupations	452	2.71%	\$10.20
Community and Social Service Occupations	386	2.32%	\$17.21
Protective Service Occupations	267	1.61%	\$18.20
Architecture and Engineering Occupations	192	1.15%	\$26.52
Computer and Mathematical Occupations	162	0.97%	\$28.87
Arts, Design, Entertainment, Sports, and Media Occupations	160	0.96%	\$15.64
Military Occupations	107	0.64%	\$21.57
Farming, Fishing, and Forestry Occupations	100	0.60%	\$12.19
Life, Physical, and Social Science Occupations	74	0.45%	\$25.70
Legal Occupations	54	0.32%	\$23.09

<sup>112</sup> These occupations are by two-digit SOC code (Standard Occupational Classification System).

<sup>113</sup> EMSI Analyst 2014.

### Employment Growth

Tracking job growth is key as well, with the table on the next page showing job growth by occupation.<sup>114</sup> Five occupations on the list (**bolded**) are the top five occupations that are most often required to staff companies within key industries in Warren County. The key industries that have high demand for each top occupation are shown in the table on the next page. The only occupation that has high employment but is not concentrated in a key industry is Sales and Related Occupations. Notably, four of these key-industry-required occupations are projected to grow in the next five years, including Transportation and Material Moving Occupations (seven percent); Food Preparation and Serving Related Occupations (two percent); Healthcare Practitioners and Technical Occupations (two percent); and Education, Training, and Library Occupations (two percent). These three occupations are projected to add over 240 jobs in Warren County in the next five years.

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<sup>114</sup> These occupations are by two-digit SOC code.





## Employment and Growth by Occupation

Occupation	2014 Employment	Change, 2004-2014		Change, 2009-2014		Projected Change, 2014-2019		Projected Annual Openings
Office and Administrative Support Occupations	2,757	-273	-9%	83	3%	-16	-1%	83
Transportation and Material Moving Occupations	1,622	464	40%	76	5%	112	7%	65
Sales and Related Occupations	1,617	-109	-6%	-18	-1%	33	2%	64
Production Occupations	1,598	-301	-16%	20	1%	-241	-15%	32
Food Preparation and Serving Related Occupations	1,192	46	4%	-11	-1%	28	2%	50
Healthcare Practitioners and Technical Occupations	1,090	53	5%	34	3%	85	8%	42
Management Occupations	754	28	4%	-22	-3%	35	5%	26
Personal Care and Service Occupations	744	138	23%	-77	-9%	52	7%	26
Education, Training, and Library Occupations	689	-131	-16%	-95	-12%	18	3%	20
Healthcare Support Occupations	686	100	17%	6	1%	49	7%	24
Installation, Maintenance, and Repair Occupations	683	29	4%	12	2%	-7	-1%	19
Business and Financial Operations Occupations	639	-94	-13%	-9	-1%	44	7%	25
Construction and Extraction Occupations	618	-13	-2%	-63	-9%	36	6%	29
Building and Grounds Cleaning and Maintenance Occupations	452	-68	-13%	-11	-2%	17	4%	15
Community and Social Service Occupations	386	2	1%	2	1%	22	6%	15
Protective Service Occupations	267	23	9%	-10	-4%	15	6%	11
Architecture and Engineering Occupations	192	-38	-17%	-21	-10%	-3	-2%	7
Computer and Mathematical Occupations	162	-12	-7%	3	2%	15	9%	6
Arts, Design, Entertainment, Sports, and Media Occupations	160	-42	-21%	3	2%	-1	-1%	5
Military Occupations	107	-22	-17%	-4	-4%	1	1%	3
Farming, Fishing, and Forestry Occupations	100	-20	-17%	-3	-3%	-13	-13%	4
Life, Physical, and Social Science Occupations	74	1	1%	-2	-3%	5	7%	4
Legal Occupations	54	8	17%	-2	-4%	6	11%	2

#### Industry and Occupation Connections

The connection between top occupations and key industries are summarized in the following table. Although key industries are highly diversified, they do share some common workforce requirements. TPMA recommends targeting these top occupations and industries in Warren County and supporting education programs that provide talents for these growing points.

Connection between Top Occupations and Key Industries

Top Occupations	Key Industries
Office and Administrative Support Occupations	<ul style="list-style-type: none"> <li>• Depository Credit Intermediation</li> <li>• Warehousing and Storage</li> <li>• Management of Companies and Enterprises</li> <li>• Local Government, Excluding Education and Hospitals</li> <li>• General Medical and Surgical Hospitals</li> </ul>
Transportation and Material Moving Occupations	<ul style="list-style-type: none"> <li>• Warehousing and Storage</li> <li>• Forging and Stamping</li> </ul>
Food Preparation and Serving Related Occupations	<ul style="list-style-type: none"> <li>• Restaurants and Other Eating Places</li> <li>• Nursing Care Facilities (Skilled Nursing Facilities)</li> <li>• Education and Hospitals (Local Government)</li> <li>• General Medical and Surgical Hospitals</li> </ul>
Healthcare Practitioners and Technical Occupations	<ul style="list-style-type: none"> <li>• General Medical and Surgical Hospitals</li> <li>• Nursing Care Facilities (Skilled Nursing Facilities)</li> </ul>
Education, Training, and Library Occupations	<ul style="list-style-type: none"> <li>• Education and Hospitals (Local Government)</li> <li>• Local Government, Excluding Education and Hospitals</li> <li>• Individual and Family Services</li> </ul>

The following table displays the top 10 occupations that are most often required to staff companies within manufacturing in Warren County.<sup>115</sup> Median hourly earnings for these occupations in Warren range from \$11.10 at the low end for Miscellaneous Assemblers and Fabricators to \$26.20 at the high end for First-Line Supervisors of Production and Operating Workers.

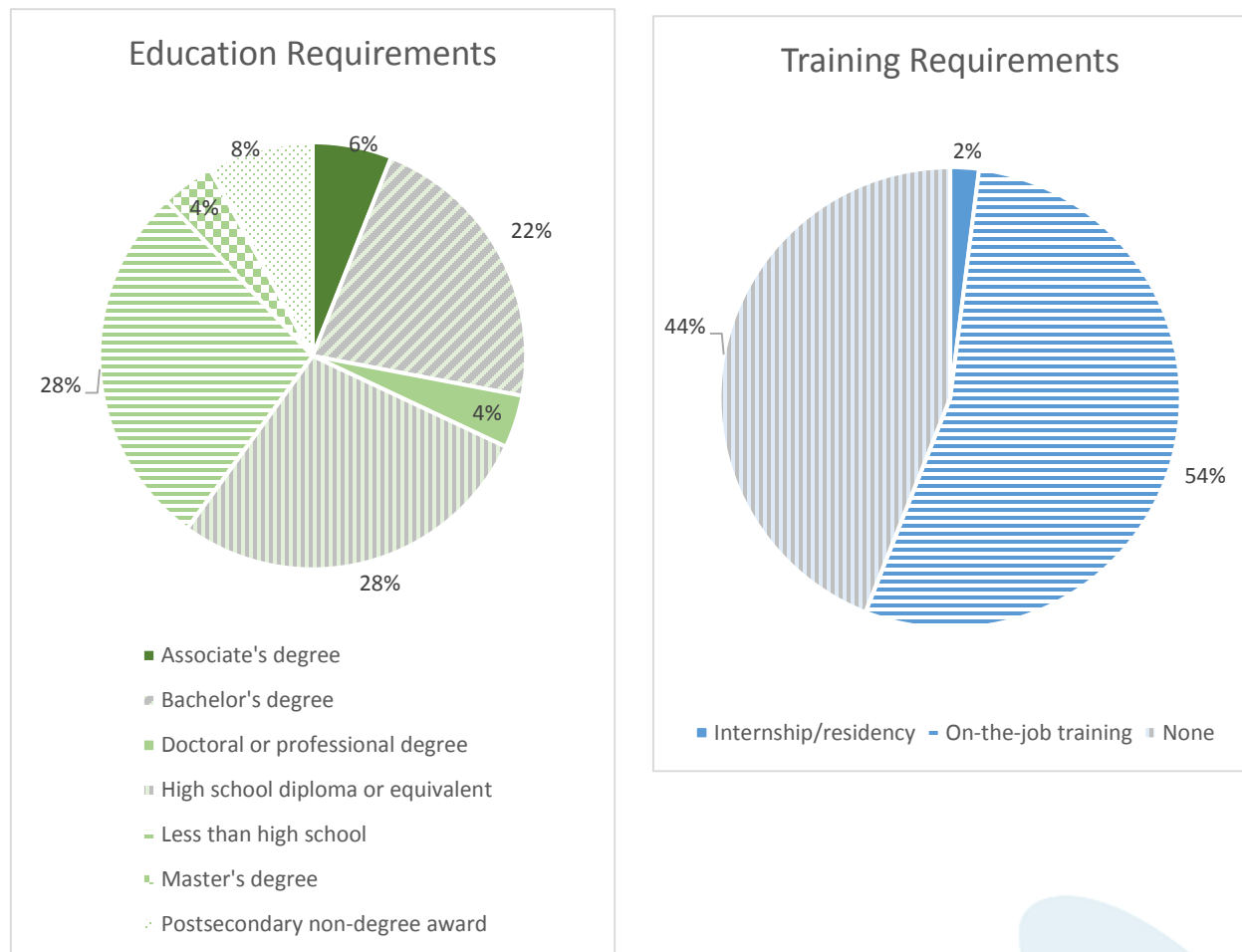
Top Occupations in Manufacturing based on Employment Levels

Occupation	2014 Employment	Median Hourly Earnings
Machine Tool Cutting Setters, Operators, and Tenders, Metal and Plastic	139	\$16.08
Laborers and Material Movers, Hand	126	\$9.70
Miscellaneous Assemblers and Fabricators	124	\$12.75
First-Line Supervisors of Production and Operating Workers	112	\$21.71
Inspectors, Testers, Sorters, Samplers, and Weighers	94	\$13.58
Forming Machine Setters, Operators, and Tenders, Metal and Plastic	92	\$17.94
Miscellaneous Production Workers	90	\$13.23
Industrial Machinery Installation, Repair, and Maintenance Workers	85	\$20.14
Maintenance and Repair Workers, General	73	\$14.27
Machinists	66	\$16.96

<sup>115</sup> Occupations are by four-digit SOC code.

### Education and Skills for High Demand Jobs

Among high-demand jobs in Warren County, almost half require a high school diploma or equivalent.<sup>116</sup> More than one-quarter of these high-demand jobs require a Bachelor's Degree or above and only 20 percent of these jobs are low-skill positions that require less than high school education. Over 50 percent of these jobs require some type of training, which is mostly on-the-job training. TPMA recommends targeting the education and training programs most required for high-demand jobs to support the region's workforce needs and opportunities.



<sup>116</sup> A total of 50 occupations with the highest projected job growth from 2014-2019 are included in this analysis. These occupations are with five-digit SOC code. EMSI Analyst 2014.

### Human Capital

About 20,889 workers participate in the Warren County labor force. The labor participation rate for population over 16 years old is 59.0 percent, which is the third-highest in this region, after Erie (62.3 percent), and Venango (59.4 percent). Of these labor force, 20,006 are employed, and 883 are unemployed. The unemployment rate for Warren County is 4.2 percent, which is lower than the rate for Pennsylvania (5.8 percent), and the U.S. (5.9 percent). Over the last 20 years, employment in Warren County was at its highest in June 2001 and lowest in February 2010.

### EMPLOYMENT, 1994-2014 <sup>117</sup>

<b>Peak</b>	June 2001 22,365	+11.8% (compared to Sept, 2014)
<b>Trough</b>	January 1999 19,428	-2.9% (compared to Sept, 2014)
<b>Sept 2014</b>	20,006	4.2% Current unemployment

#### **Labor Force Participation Rate**

The labor force participation rate is a major indicator of the labor market. It represents the proportion of the population that is in the labor force. Labor force participation rates are affected by various factors, including demographic composition of the population as well as structural changes in the economy.

Labor force participation rate is sensitive to demographic change because the participation rates vary across age, gender, and race. Based on 2009-2013 ACS estimates, the national labor force participation rate for those 55-years-and-older was 39.2 percent, compared with a labor force participation rate of 81.9 percent for those between 25 and 54.

The national labor force participation rate has decreased since 2000, a trend that is expected to continue in the next decade. One of the major reasons for the decline is the aging of the baby-boomer generation. In 2000, baby boomers were the

heart of the workforce, falling into the high participation rate group of 36-to-54 years old. However, as this large group of individuals began to retire, the effects were felt on the overall participation rate. It is worth mentioning that the participation rate of older workers has been increasing in the past 10 years, but it is still significantly lower than those of the middle age groups.

The older worker population (55 years and older) in Warren County is estimated to be 6,035 in 2014.<sup>118</sup> These older workers are expected to retire in the next 10 years. The aging workforce calls for sustainable planning for workforce development in Warren County.

<sup>117</sup> U.S. Bureau of Labor Statistics, 1994.9-2014.9 (most recently available). <http://www.bls.gov/data/>

<sup>118</sup> The older worker population (55 years and older) in Warren County is estimated by multiplying the population of this age group by the corresponding labor force participation rate.

### Input Sessions

Warren County community members noted that there is a negative perception among parents and students regarding careers in manufacturing and vocational training. The Warren-Forest Higher Education Council instructs each student to spend at least a half-day at the vocational training center to explore various types of training and available careers. Many area residents worked in manufacturing 20 years ago and encourage their family members not to pursue manufacturing. However, manufacturing has changed to a safer, cleaner, more tech-savvy environment. The idea persists among parents and students that they must pursue a four-year college degree in order to be successful. Currently, curriculum is reviewed through advisory councils once or twice a year.

The county deals with generational and situational poverty, which makes it difficult for some citizens to see past their current situation. Many potential students do not want to travel very far from their home, and have a limited perception of increasing professional opportunities by widening their travel requirements. The low cost of living in Warren County also carries a lower wage than surrounding areas, which make it difficult to recruit professionals. Soft skills and math aptitude are also lacking within the workforce.

Area employers utilize innovative ideas to address the skills gap. One area employer implemented a summer program where students can work for the organization if their parent currently works there. The organization has found it is a good way to expose youth to manufacturing. Other organizations provide company tours to increase community awareness and outreach.

Resources that are helpful in the community include: Guidance Counselor's Manufacturing Day, Project Jobs data, and PA CareerLink resources.

### HIGHLIGHTED IN-DEMAND OCCUPATIONS

Machinists	Electronics Technicians
Compressor Operators	General Maintenance Technicians
Engineers	Industrial Maintenance
Supply Chain Management	Financial Compliance

### HIGHLIGHTED IN-DEMAND SKILLS

Soft Skills	General Math
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## A2. Best Practices

### *Implementation, Structure, Processes and Strategies/Collaborative Projects*

#### Job Growers Incorporated, Oregon

Staffing agencies are providing a larger share of area employment than ever in the region 3 area of Marion County, Oregon. From 2001 to 2009 the percentage of private sector employment provided by staffing agencies in the Salem Metropolitan Statistical Area (Marion and Polk counties combined) increased from five percent to five and one half percent.

There was a general recognition that it was important to formally include the staffing agencies in the area as part of the workforce system. The agencies themselves were supportive of a forum in which they could collaborate rather than be competitive. With additional emphasis on collaboration, the association with the local workforce investment board also gave the staffing agencies a more direct connection with the economic development agencies, and the community college system, and access to training resources.

Job Growers Incorporated, the local workforce investment board, provides staff and support via workforce funds to the Mid-Willamette Valley Staffing Association, a consortium that has been in existence since 2002. Currently eight staffing agencies (of a total of 15) located in Salem and Marion Counties belong to the association. It is a forum for sharing best practices, networking, collaborating, and promoting the value of the association as a workforce partner. The association meets quarterly. The overall benefit to this best practice is that, with the investment of staff time (paid for by Workforce Investment Act funds), the staffing agencies of the area have been brought into the workforce system and are working as a part of it bring along valuable resources for other initiatives.

Source: <http://www.sedcor.com/business-resources/workforce-development/mid-willamette-staffing-association/>

#### Mid-Ohio Valley Regional Council (WIB-MOV)

The Mid-Ohio Valley Regional Council has created a very unique implementation structure. Aside from traditional WIB personnel roles, the WIB MOV has implemented a targeted approach to achieving its goals by utilizing a steering committee, action teams and action team champions. This best practice highlights the variety of implementation structures one can employ within the workforce investment board framework.

- The Steering Committee is responsible for providing guidance and direction to the activities described in the strategic plan and to oversee and monitor implementation of proposed action plans. This includes identifying top priorities moving forward with regard to the strategic plan goals and action items.
- Action teams are designated to provide input, oversight and monitoring for categories of activity associated with each of the Strategic Plan Pillars. These include Targeted Industries, Entrepreneurship, Business Retention and Expansion, Workforce Supply, Labor Participation, Travel, Tourism & Recreation and Regionalism. Composition of the Action Teams will be based on the categories of activities and will include the partners necessary to successfully implement the projects and activities. These Action Teams will vary in size and are anticipated to include stakeholders necessary for successful implementation. Action Teams will report to the WIB and Steering Committee on their progress and results.

- An Action Team Champion is someone who takes personal interest and responsibility for advancing a particular facet of project implementation. These individuals act as a cheerleader to rally buy-in from partners and stakeholders and as an advocate to build support from others determined to be key to the success of the project. The Action Team Champions can be as involved as they choose in the technical oversight of implementation, but will serve as spokesperson to the WIB and Steering Committee on behalf of the project and may also be called upon to make presentations from time to time about the project to stakeholders and other groups.

Source: <http://www.movrc.org/MOVRc/media/WIB-Files/WIB-MOV-Strategic-Plan-2014-2019.pdf>

### Oh-Penn

Oh-Penn is the first officially-designated interstate region in the country. Comprised of Columbiana, Mahoning and Trumbull Counties in Ohio and Lawrence and Mercer Counties in Pennsylvania, the Oh-Penn Interstate Region covers three Workforce Investment Areas, an entire Metropolitan Statistical Area and 764,722 people. Due to similarities within the key employment sectors of Health Care, Biomedical, and Advanced Manufacturing, the goal of the Oh-Penn initiative is to collaborate and leverage resources in order to enhance economic and workforce development of the five counties which share a common labor force, worker dislocations, current and emerging industries and a collective vision.

Source: <http://www.ohpenn.com/>

### Charlotte Works

Volunteers play an important role in the implementation and success of Charlotte Works programs. With the help of volunteers, job-seekers are able to more effectively develop a successful strategy to find their next job and plan for career management. Utilizing volunteers increases staff capacity and has been identified as a new model for the nation's workforce system. Volunteers assist Charlotte Works in the following capacities: career consulting, job search team facilitation, mock interview coaching, orientation leading, resource assistance, resume coaching, special project assistance, and workshop facilitation.

This best practice encourages collaboration across all spheres of the labor market in order to leverage resources to increase staff capacity.

Source: <http://www.charlotteworks.com/>

### Partners for a Competitive Workforce

The Greater Cincinnati Workforce Network (GCWN) is a regional partnership aimed at improving the workforce to meet employer needs in a variety of industries. The partnership was created by The Greater Cincinnati Foundation and is directed by the United Way of Greater Cincinnati.

A planning process was launched in 2011 from workforce board leaders to align efforts (streamlining resources) and build upon prior successful initiatives. The planning process resulted in the creation of Partners for a Competitive Workforce. A common mission was identified within the partnership, and the region's workforce efforts were streamlined, allowing for a greater impact. Businesses, workforce investment boards, chambers of commerce, educational institutions (secondary and post-secondary), service providers, and philanthropic funders partnered together to provide a common platform to communicate the region's workforce priorities and progress, align and coordinate efforts toward common goals, and continuously improve strategies. From this alliance came three key programs which signifies the value of this best practice:



- The Employers' First Regional Workforce Network coordinates hiring activities and layoff services. Since 2008, Partners for a Competitive Workforce has brought together private and philanthropic funders to help develop talent pipelines for the health care, construction, and advanced manufacturing industries.
- Career Pathways Initiative is an employer led initiative that targets priority sectors and occupations while providing opportunities for advancement. The career pathways process aims to transform institutions involved in education, workforce preparation and social services in ways that improve their capacity individually and collectively to respond to the needs of local residents and employers.
- The Work Readiness Collaborative was convened to focus on building the foundational work readiness skills of our workforce. The collaborative will consist of representatives from community-based service providers, education and training providers, and One Stops.

Source: [www.competitiveworkforce.com](http://www.competitiveworkforce.com)

### The Workforce Boards of Metropolitan Chicago

The Workforce Boards of Metropolitan Chicago is a consortium of five Workforce Boards that have responsibility for development and oversight of the public workforce system in each of their respective local areas. As a consortium of Workforce Boards, the WBMC is a leader in driving workforce development and economic growth in the metropolitan Chicago region through development of a skilled workforce.

The Workforce Boards' successful alliance is based on the knowledge that the metropolitan Chicago area represents a regional economy and, therefore, the challenges in developing a highly skilled workforce that meets the current and future needs of employers are shared across the metropolitan area and counties. Collectively the Workforce Boards are more effective in promoting the regional strategies and policies that address workforce needs, advocating for innovative practices that support such policies, and leveraging resources to address regional issues and advance change.

Activities undertaken by the Workforce Boards of Metropolitan Chicago are designed to influence and inform issues impacting the quality of the regional workforce and can generally be categorized as:

- *Workforce Development* - resources and activities that support development of a regional workforce that possesses the skills and credentials needed by regional employers and that encourage the investment of resources in workforce preparation activities that maximize the employment prospects of the region's residents;
- *Targeted Industry Sectors* - recognizing the unique workforce needs and challenges of the key industries that drive the regional economy, resources and activities provide valuable industry specific information that increases the workforce system's understanding of the industry and actively engages employers; or
- *Data Analysis/Policy* - reports and papers that provide regional data and analysis that supports informed workforce development and economic development decision making and formation of policy.

Source: [www.workforceboardsmetrochicago.org](http://www.workforceboardsmetrochicago.org)

### Hempstead Workforce Investment Board

The healthcare industry in the Hempstead-Long Beach local area needed to increase skills among existing workers, was experiencing a shortage of workers to fill open jobs, and was having difficulty retaining qualified employees. These challenges were negatively impacting efficiency of the health care providers as well as the local economy. Although numerous organizations were aware of the issues and were working to address them, a coordinated effort, in the form of a partnership between the workforce system and the healthcare industry, would more effectively align and focus stakeholder resources. Winthrop University Hospital assisted the Town of Hempstead Workforce Investment Board (WIB) in founding the HempsteadWorks Health Care Skills Partnership, a collaborative effort among the New York State Department of Labor, the WIB, the HempsteadWorks One-Stop System, the Town of Hempstead Department of Occupational Resources (DOOR), which is the local WIA grant recipient, and Hofstra University. Funded under a HempsteadWorks Grant, leadership training was provided by Hofstra University to supervisory personnel at Winthrop University Hospital. By making their supervisors better leaders, Winthrop became more effective in recruiting and retaining nurses. In addition, each summer since 2003, Winthrop employees have served as instructors for the Youth Leadership Classes offered in conjunction with the HempsteadWorks Summer Youth Employment Program. Since the program was established in 2003, the strategic planning team that leads the partnership has increased the local WIB's ability to identify and address worker and skills shortages in the health care industry. In addition, 180 hospital supervisors have participated in customized leadership training and received university certifications. At Winthrop University Hospital, senior HR staff teach leadership to economically disadvantaged youth during the Summer Youth Program, introducing these young workers to leadership concepts within the healthcare industry.

Source: <http://www.hempsteadworks.com/>

### Spokane Workforce Development Council

The Spokane Area Workforce Development Council leads a demand-driven workforce system in Spokane County. SAWDC makes strategic public and private investments to ensure a skilled local workforce that meets the needs of our employers and creates a vibrant economy for the entire region. SAWDC is a stand-alone non-profit, but has an innovative partnership with Community Colleges of Spokane (CCS) to streamline management and increase efficiency.

The SAWDC and CCS have had a long-established partnership and routinely collaborated collaborate to develop additional capacity and provide access to education and training for the region. However, the economic times demanded all sectors work closely together to reduce costs, improve service and expand reach. This re-alignment preserved SAWDC's distinctive role in meeting employer needs, while at the same time connecting CCS, a regional training and education provider, to employers who are seeking the skills CCS students are learning in a wide variety of career and technical programs.

The SAWDC and CCS' Workforce and Continuing Education division share an Executive Director who is responsible for coordinating and leveraging the strengths of each organization to focus on targeted industry sectors and delivery of customized training. Furthermore, the SAWDC offices are co-located with the Spokane Community College campus.

Source: [www.wdcspokane.com](http://www.wdcspokane.com)

### *Community Efforts to Increase Awareness of In-Demand Occupations*

#### Employ Indy

Through sector-based analysis, EmployIndy has taken a concentrated approach to determine where the jobs in Marion County, Indiana are today and will be through 2018. This approach has allowed EmployIndy to identify the training and educational needs of local job seekers for placement in multiple industries and occupations. In collaboration with the Indiana Department of Workforce Development, EmployIndy engaged in an investment analysis to identify current and projected employment opportunities in Marion County for the purpose of identifying high-demand, high-wage occupations for many types of workers. Using Marion County data available through multiple public sources, EmployIndy identified industries with occupations that meet the following, general parameters:

- Economic Development Job Creation Capacity
- High Demand Occupations
- Provide Career Pathways
- Provide Self-Sufficiency
- Educational Requirement Consistent with EmployIndy Eligibility

Source: <https://www.employindy.org>

#### Workforce Development Council of Seattle-King County

The workforce development council of Seattle-King County recently developed a Talent Pipeline Study that shows workforce supply and demand through 2019 in six key sectors, plus occupations in STEM (science, technology, engineering and math). Phase one included Health Care, Manufacturing, and Transportation/Logistics and the second phase included Information Technology, Business Services, Finance/Insurance, and STEM. Three “watch” sectors have been identified that may have a potential impact on the local economy: Professional, Scientific, and Technical Services; Transportation and Warehousing, including Logistics and Supply Chain Management; and Financial Services and Insurance. These studies serve a dual role, one is to provide an occupational supply and demand analysis that aims to calculate potential gaps that may persist without changes in workforce preparation efforts. The other is to keep job seekers informed on both emerging and declining industries.

Source: [www.seakingwdc.org](http://www.seakingwdc.org)

#### Gulf Coast Workforce Board

Workforce Solutions helps area employers address current and future labor shortages in key industries. Industries are identified by rapid growth, as well as by verifiable current or projected labor shortages in high-skill, high-wage occupations. Energy, education, and health services have been identified as current key industries. The Texas Workforce Commission releases frequent estimates produced by the Bureau of Labor Statistics indicating employment in the Houston-Galveston Gulf Coast Region. Every two years, Workforce Solutions compiles a list of in-demand occupations in the region. Looking at a variety of data, jobs expected to have the most growth over the next 10 years are projected. Additionally, Workforce Solutions has developed industry and occupation profiles called “Focus On” guides. Profiles included in “Focus On” guides contain information regarding regional career opportunities, industry descriptions, education requirements, and related salary ranges for specific occupations. As profiles are developed, they are added to the guides to keep job seekers up-to-date on findings that can aide in their job search.

Source: <http://www.wrksolutions.com/>

### Southwest Ohio Region Workforce Investment Board

Although the construction industry has not emerged from its protracted downturn, the Southwest Ohio Region Workforce Investment Board (SWORWIB) recognized a need to make sure trained workers are ready for construction jobs when the freeze ends. The Construction Career Pathways Collaborative was formed between the SWORWIB, the SuperJobs Center, workforce partners, educational providers and the local construction industry to create a diverse pipeline of candidates as positions became available. To prepare the workforce for an impending return of the construction industry, The Collaborative connected initiatives at the middle school, high school, and adult level. Program highlights in 2010 included closely supervised hands-on experience for more than 100 middle school students, and emphasis on applied math, science, and diploma completion at the high school level. A group of training providers developed pre-apprenticeship training at the adult level, and SuperJobs assisted with assessments to qualify workers for union and non-union apprenticeship training programs.

Almost 80 disadvantaged adults graduated from pre-apprenticeship training, and 53 percent were placed into apprenticeship programs or jobs. An infrastructure and construction services firm needed to hire about a dozen construction workers. SuperJobs pre-screened applicants and created a pool of 20 candidates, from which two supervisors and eight laborers were hired. Another prominent construction firm hired several laborers and carpenters after holding a job fair at the SuperJobs Center.

By listening to the needs of the construction industry, the Collaborative is serving both jobseekers and businesses by preparing the workforce for available openings as the economic recovery begins.

Source: <http://www.sworwib.org/>

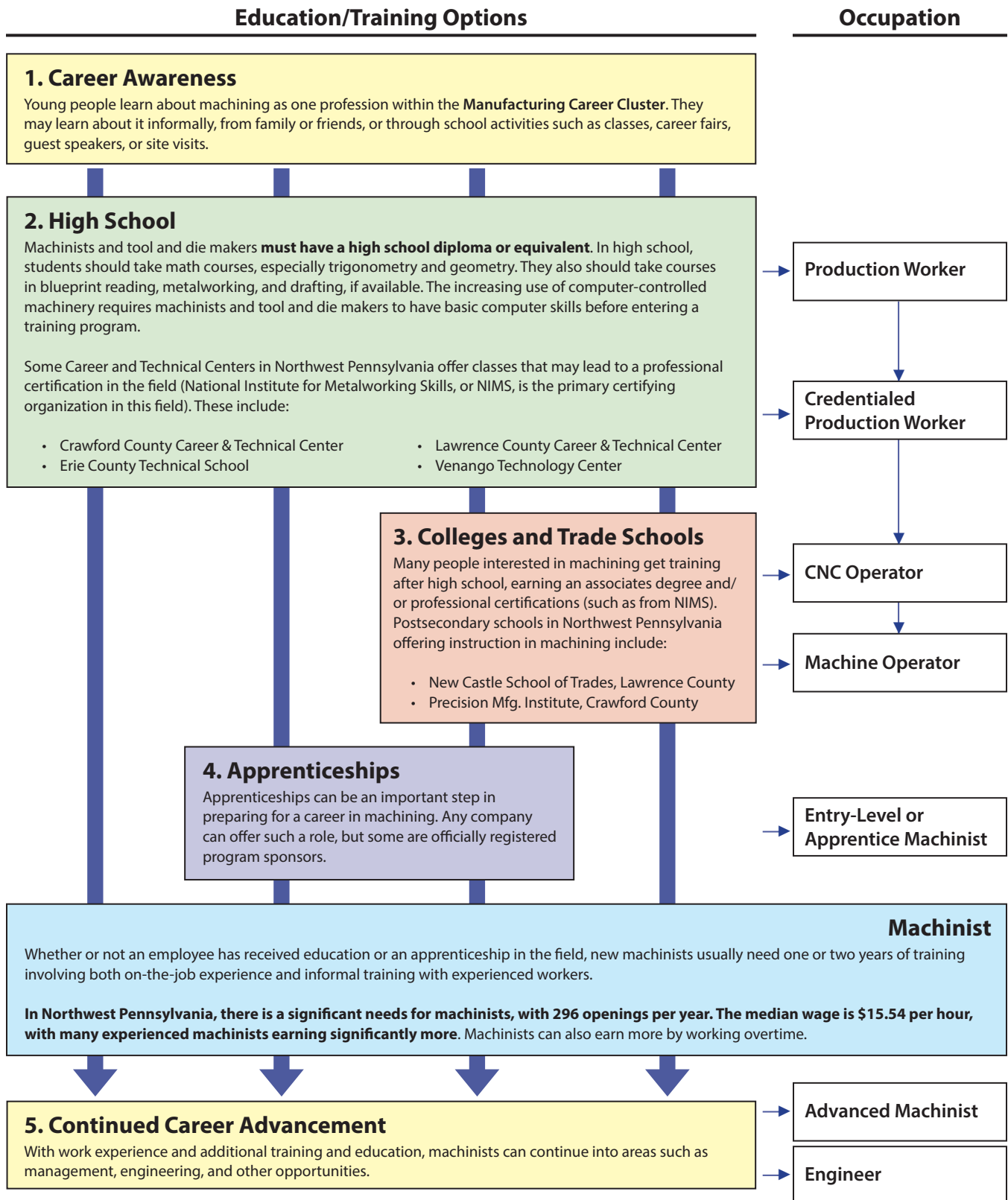
### A3. Career Pathways

- Machining
- Welding/Fitting
- Industrial Maintenance
- Nursing
- Electronic Medical Records

# Becoming a Machinist in NW Pennsylvania

Machinists and tool and die makers set up and operate a variety of computer-controlled and mechanically-controlled machine tools to produce precision metal parts, instruments, and tools. They work in machine shops, toolrooms, and factories. Although most work full time during regular business hours, overtime is somewhat common, as is evening and weekend work.

Machinists train in apprenticeship programs, vocational schools, community and technical colleges, or informally on the job. To become a fully trained tool and die maker takes a combination of several years of technical instruction and on-the-job training. A high school diploma is necessary.



# Guide to Machinist Certifications

Employers rely on independent, professional certifications to gauge the expertise of potential machinists. Some educational programs, both at the high school and postsecondary level, can help students prepare for these

certifications, making them more employable. The following is a list of certifications for machining that are recognized by employers.

<b>Core Certifications</b>	<b>Certifying Organization</b>
Level I Machine Lubricant Analyst	International Council for Machinery Lubrication
Machining Level I - CNC Milling: Operations	National Institute for Metalworking Skills
Machining Level I - CNC Milling: Programming Setup & Operations	
Machining Level I - CNC Turning: Operations	
Machining Level I - Drill Press Skills I	
Machining Level I - Grinding Skills I	
Machining Level I - Job Planning, Benchwork, and Layout	
Machining Level I - Manual Milling	
Machining Level I - Manual Turning Between Centers	
Machining Level I - Manual Turning with Chucking	
Machining Level I - Measurement, Materials and Safety Job	
Metallforming Level I	
Certified Metalworking Fluids Specialist	Society of Tribologists and Lubrication Engineers
Oil Monitoring Analyst	
<b>Advanced Certifications</b>	<b>Certifying Organization</b>
Fluid Power Engineer	International Fluid Power Society
Fluid Power Master Mechanic	
Machining Level I - CNC Turning: Programming Setup & Operations	National Institute for Metalworking Skills
Machining Level II - CNC Milling Skills II	
Machining Level II - CNC Turning Skills II	
Machining Level II - Drill Press Skills II	
Machining Level II - EDM - Plunge	
Machining Level II - EDM Wire	
Machining Level II - Grinding Skills II	
Machining Level II - Manual Milling	
Machining Level II - Turning II	
Machining Level III - CNC Milling Skills III	
Machining Level III - CNC Turning Skills III	
Slide Forming Level II - Slide Forming Operations II	
Slide Forming Level III - Slide Forming Set Up & Operations III	
Stamping Level II - Operate with Compound Dies II	
Stamping Level II - Operate with Deep Draw Dies II	
Stamping Level II - Operate with Progressive Dies II	
Stamping Level II - Operate with Single Hit Tooling II	
Stamping Level II - Operate with Transfer Dies II	
Stamping Level III - Setup with Compound Dies III	
Stamping Level III - Setup with Deep Draw Dies III	
Stamping Level III - Setup with Progressive Dies III	
Stamping Level III - Setup with Single Hit Tooling III	
Stamping Level III - Setup with Transfer Dies III	

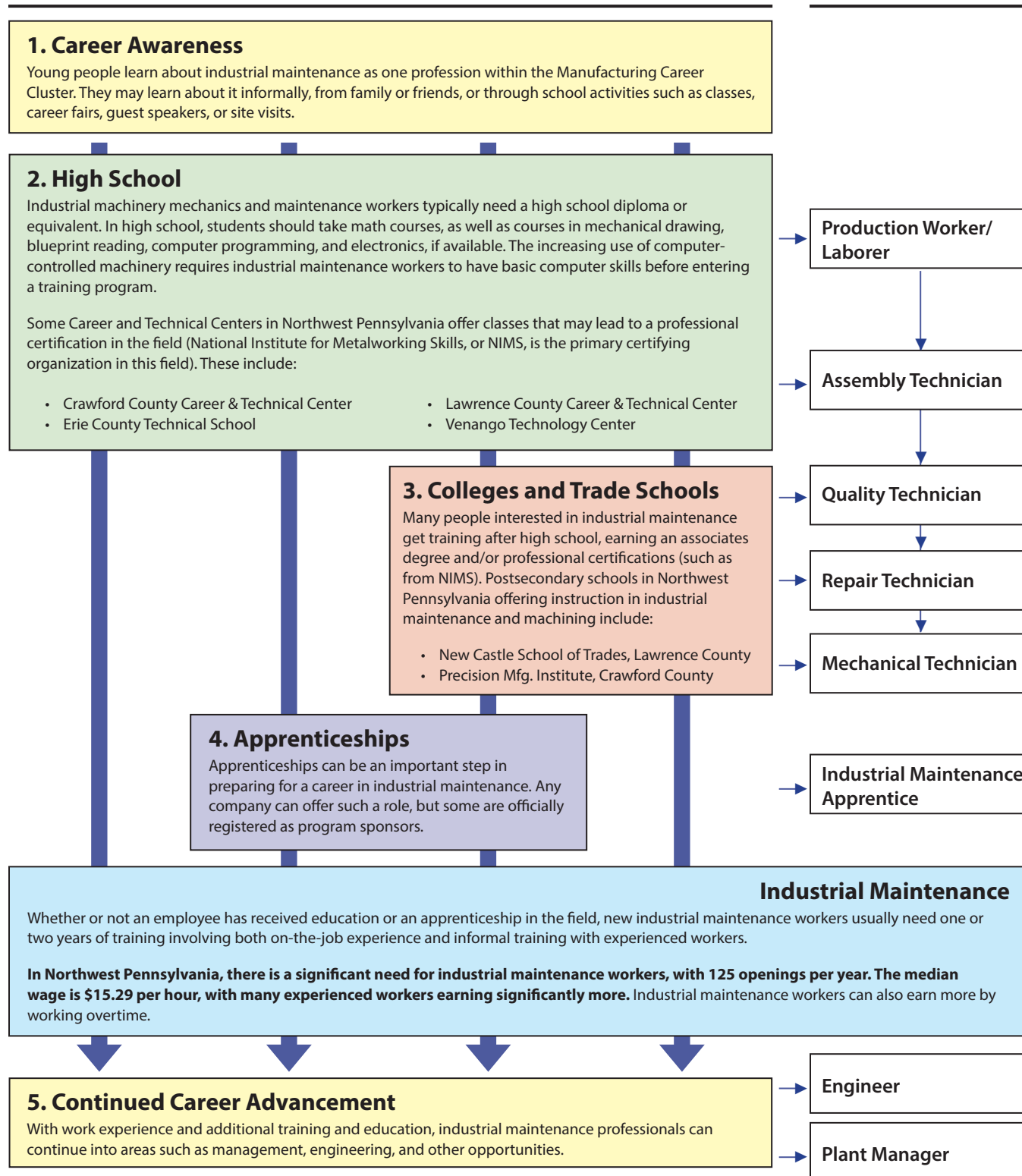
# Becoming an Industrial Machinery Mechanic/Maintenance Worker in NW Pennsylvania

Industrial machinery mechanics and maintenance workers maintain and repair factory equipment and other industrial machinery, such as conveying systems, production machinery, and packaging equipment. They typically work in factories, power plants, or at construction sites. Most work full time, and they may be on call and work night or weekend shifts. Overtime is common.

Industrial machinery mechanics and maintenance workers typically need a high school diploma or equivalent. Industrial machinery mechanics need a year or more of training after high school, whereas maintenance workers typically receive on-the-job training that lasts up to a year. Employers increasingly prefer to hire workers with some education in industrial technology from a community or technical college.

## Education/Training Options

## Occupation





# Guide to Industrial Maintenance Certifications

Employers rely on independent, professional certifications to gauge the expertise of potential industrial maintenance workers. Some educational programs, both at the high school and postsecondary level, can help

students prepare for these certifications, making them more employable. The following is a list of certifications for industrial maintenance that are recognized by employers.

Core Certifications	Certifying Organization
Level I Machine Lubricant Analyst	International Council for Machinery Lubrication
Machining Level I - CNC Milling: Operations	National Institute for Metalworking Skills
Machining Level I - CNC Milling: Programming Setup & Operations	
Machining Level I - CNC Turning: Operations	
Machining Level I - Drill Press Skills I	
Machining Level I - Grinding Skills I	
Machining Level I - Job Planning, Benchwork, and Layout	
Machining Level I - Manual Milling	
Machining Level I - Manual Turning Between Centers	
Machining Level I - Manual Turning with Chucking	
Machining Level I - Measurement, Materials and Safety Job	
Metalfforming Level I	
Certified Metalworking Fluids Specialist	Society of Tribologists and Lubrication Engineers
Oil Monitoring Analyst	
Advanced Certifications	Certifying Organization
Fluid Power Engineer	International Fluid Power Society
Fluid Power Master Mechanic	
Machining Level I - CNC Turning: Programming Setup & Operations	National Institute for Metalworking Skills
Machining Level II - CNC Milling Skills II	
Machining Level II - CNC Turning Skills II	
Machining Level II - Drill Press Skills II	
Machining Level II - EDM - Plunge	
Machining Level II - EDM Wire	
Machining Level II - Grinding Skills II	
Machining Level II - Manual Milling	
Machining Level II - Turning II	
Machining Level III - CNC Milling Skills III	
Machining Level III - CNC Turning Skills III	
Slide Forming Level II - Slide Forming Operations II	
Slide Forming Level III - Slide Forming Set Up & Operations III	
Stamping Level II - Operate with Compound Dies II	
Stamping Level II - Operate with Deep Draw Dies II	
Stamping Level II - Operate with Progressive Dies II	
Stamping Level II - Operate with Single Hit Tooling II	
Stamping Level II - Operate with Transfer Dies II	
Stamping Level III - Setup with Compound Dies III	
Stamping Level III - Setup with Deep Draw Dies III	
Stamping Level III - Setup with Progressive Dies III	
Stamping Level III - Setup with Single Hit Tooling III	
Stamping Level III - Setup with Transfer Dies III	

# Becoming a Welder in NW Pennsylvania

Welders use tools and heat to permanently join metal parts or pieces, melting and fusing them to form a permanent bond. While the manufacturing industry accounts for the largest number of welding positions, welders may work in a variety of industries including construction, shipbuilding, and energy production. Most welders work full time, including evenings and weekends. Overtime is common.

Welders may work outdoors, often in inclement weather, or indoors, sometimes in a confined area designed to contain sparks and glare. When working outdoors, they may work on a scaffold or platform high off the ground. In addition, they may have to lift heavy objects and work in awkward positions while bending, stooping, or standing to work overhead.

## Education/Training Options

## Occupation

### 1. Career Awareness

Young people learn about welding as one profession within the Manufacturing Career Cluster or the Architecture and Construction Career Cluster. They may learn about it informally, from family or friends, or through school activities such as classes, career fairs, guest speakers, or site visits.

### 2. High School

Welders typically need a high school diploma or equivalent. In high school, students should take math courses, as well as courses in blueprint reading, mechanical drawing, physics, chemistry, and metallurgy, if available. The increasing use of robots and other computer-controlled machines requires welders to have basic knowledge of computer skills. An understanding of electricity is also helpful.

Some Career and Technical Centers in Northwest Pennsylvania offer classes that may lead to a professional certification in the field (The American Welding Society is the primary certifying organization in this field). These include:

- Crawford County CTC, Crawford County
- Erie County Technical School, Erie County
- Warren County Area Vocational-Technical School, Warren County

### 3. Colleges and Trade Schools

Many people interested in welding get training after high school, earning an associates degree and/or professional certifications (such as from the American Welding Society). In addition, the U.S. Armed Forces operate welding and soldering schools.

Postsecondary schools in Northwest Pennsylvania offering instruction in welding include:

- Fortis Institute, Erie County
- New Castle School of Trades, Lawrence County
- Precision Mfg. Institute, Crawford County

### 4. Apprenticeships

Apprenticeships can be an important step in preparing for a career in welding. Any company can offer such a role, but some are officially registered as program sponsors.

## Welder

Whether or not an employee has received education or an apprenticeship in the field, new welders usually need one or two years of training involving both on-the-job experience and informal training with experienced workers.

**In Northwest Pennsylvania, there is a significant need for welders, with 169 openings per year. The median wage is \$16.25 per hour, with many experienced workers earning significantly more.** Welders can also earn more by working overtime.

### 5. Continued Career Advancement

With work experience and additional training and education, welders can continue into areas such as advanced welding, management, engineering, and other opportunities.

Production Worker/  
Laborer

Quality Inspection

Welder I

Advanced Welder

Fitter/Fabricator

# Guide to Welding Certifications

Employers rely on independent, professional certifications to gauge the expertise of potential welders. Some educational programs, both at the high school and postsecondary level, can help students prepare for

these certifications, making them more employable. The following is a list of certifications for industrial maintenance that are recognized by employers.

<b>Core Certifications</b>	<b>Certifying Organization</b>
Certified Associate Welding Inspector Certified Robotic Arc Welding Operator Certified Welder Certified Welding Supervisor Radiographic Interpreter	American Welding Society
<b>Advanced Certifications</b>	<b>Certifying Organization</b>
Certified Robotic Arc Welding Technician Certified Welding Engineer Senior Certified Welding Inspector	American Welding Society
<b>Specialty Certifications</b>	<b>Certifying Organization</b>
Structural Welding Special Inspector	International Code Council

# Becoming a Registered Nurse in NW Pennsylvania

Registered nurses provide and coordinate patient care, educate patients and the public about various health conditions, and provide advice and emotional support to patients and their family members.

The majority of registered nurses work in hospitals but some also work in physicians' offices, home healthcare services, nursing care facilities, correctional facilities, schools, clinics, or serve in the military. Most registered nurses work as part of team with physicians and other healthcare specialists. Since nurses often work in facilities that provide

round-the-clock care, many nurses work in rotating shifts, covering all 24 hours. They may work nights, weekends, and holidays and be on call. Nurses who work in offices or schools are more likely to work regular business hours. Approximately 20 percent of nurses work part time.

Registered nurses must graduate from an approved nursing program and pass a licensing examination. Some registered nurses begin their careers as licensed practical nurses (LPN), nursing assistants (CNA), or home health aides and choose to return to school to earn an RN degree.

## Education/Training Options

## Occupation

### 1. Career Awareness

Young people learn about Nursing as one profession within the Health Science Career Cluster. They may learn about it informally, from family or friends, or through school activities such as classes, career fairs, guest speakers, or site visits.

### 2. High School

Nurses typically need a high school diploma or equivalent plus certification. In high school, students should take courses in health and science, in particular anatomy, physiology, biology, chemistry, nutrition, and psychology, if available. While in high school, students may be eligible to earn an LPN or CNA certification. Licensed graduates may qualify for entry-level positions.

Some Career and Technical Centers in the area offer classes that may lead to a license or professional certification in the field (Licenses are issued through the Pennsylvania State Board of Nursing). These include:

- Clarion County Career Center Practical Nursing Program, Clarion County
- Crawford County Career and Technical Center Practical Nursing Program, Crawford County
- Lawrence County Career and Technical Center-Practical Nursing Program, Lawrence County
- Mercer County Career Center, Mercer County
- Venango County Area Vocational Technical School, Venango County

Housekeeping Aide/  
Dietary Aide/  
Home Health Aide

Certified Nursing  
Assistant/  
Certified Nurses Aid

Medical Office  
Assistant

Medical Assistant

### 3. Colleges and Trade Schools

Registered nurses usually take one of three education paths: a bachelor's of science degree in nursing (BSN), an associate's degree in nursing (ADN), or a diploma from an approved nursing program. Upon completions of their studies, registered nurses must pass a license examination to enter the profession.

In nursing education programs, students take courses in anatomy, physiology, microbiology, chemistry, nutrition, psychology and other social and behavioral sciences, as well as in liberal arts. BSN programs typically take 4 years to complete; ADN and diploma programs usually take 2 to 3 years to complete. All programs also include supervised clinical experience. Postsecondary schools in Northwest Pennsylvania offering instruction in nursing include:

- Clarion U. of Pennsylvania, Clarion County
- Erie Business Center, Erie County
- Gannon University, Erie County
- Jameson Health System, Lawrence County
- Pennsylvania State University, Erie County
- U. of Pittsburgh-Titusville, Crawford County
- Edinboro U. of Pennsylvania, Erie County
- Fortis Institute, Erie County
- Great Lakes Institute of Technology, Erie County
- Mercyhurst University, Erie County
- Sharon RHS School of Nursing, Mercer County

Licensed Practical  
Nurse

## Registered Nurses

Even if an employee has received education in the field, new nurses usually need one or two years of training involving both on-the-job experience and informal training with experienced workers.

**In Northwest Pennsylvania, there is a significant need for Registered nurses, with 180 openings per year. The median wage is \$26.04 per hour, with many experienced workers earning significantly more.** Registered nurses can also earn more by working overtime.

### 4. Continued Career Advancement

With work experience and additional training and education, registered nurses can continue into areas such as advanced nursing, midwifery, nurse management, and risk management.

Registered Nurse

Nurse Practitioner

# Guide to Registered Nurse Certifications

Many employers prefer to hire Registered nurses who have a professional certification, in addition to a license. Some educational programs, both at the high school and postsecondary level, can help students prepare

for these certifications, making them more employable. The following is a list of certifications for industrial maintenance that are recognized by employers.

<b>Core Certifications</b>	<b>Certifying Organization</b>
Acute Care Nurse Practitioner (Adult) Nurse Manager and Leader	American Association of Critical-Care Nurses
Certified Registered Nurse First Assistant	Competency and Credentialing Institute
Birth Doula Certification	Doulas of North America
Lamaze Certified Childbirth Educator	Lamaze International
Certified Professional in Healthcare Quality	National Association for Healthcare Quality
Vascular Access-Board Certified	Vascular Access Certification Corporation
<b>Advanced Certifications</b>	<b>Certifying Organization</b>
Clinical Nurse Leader	American Association of Colleges of Nursing
Clinical Nurse Specialist; Wellness through Acute Care (Adult-Gerontology, Pediatric & Neonatal)	American Association of Critical-Care Nurses
Certified in Executive Nursing Practice	American Organization of Nurse Executives Cred. Center
Advanced AIDS Certified Registered Nurse	HIV/AIDS Nursing Certification Board
Advanced Certified Hospice and Palliative Nurse	Hospice and Palliative Nurses Association
Certified Addictions Registered Nurse - Advanced Practice	International Nurses Society on Addictions
Advanced Practice Nurse in Genetics	International Society of Nurses in Genetics
Advanced Certified Hyperbaric Registered Nurse	National Board of Diving and Hyperbaric Medical Technology
Certified Nutrition Support Clinician	National Board of Nutrition Support Certification, Inc.
Certified Registered Nurse Anesthetist	National Board on Cert/Recertification for Nurse Anesthetists
NCLEX - RN	National Council of State Boards of Nursing, Inc.
Advanced Oncology Certified Clinical Nurse Specialist	Oncology Nursing Certification Corporation
Certified Transcultural Nursing - Advanced	Transcultural Nursing Certification Commission
<i>NOTE: MANY SPECIALTY CERTIFICATIONS ALSO AVAILABLE</i>	

# Becoming a Medical Records Technician in NW Pennsylvania

Medical records and health information technicians organize and manage health information data. They ensure its quality, accuracy, accessibility, and security in both paper and electronic systems. They use various classification systems to code and categorize patient information for insurance reimbursement purposes, for databases and registries, and to maintain patients' medical and treatment histories. Technicians typically work at desks or in offices and may spend many hours in front of computer monitors.

Most health information technicians work full time in hospitals or physicians' offices. Some may work in nursing care facilities or for government entities. Technicians who work in healthcare facilities that are always open may work evening or overnight shifts.

Health information technicians typically need a postsecondary certificate to enter the occupation, although they may have an associate's degree. Many employers also require professional certification.

## Education/Training Options

## Occupation

### 1. Career Awareness

Young people learn about Medical Records Technician as one profession within the Health Science Career Cluster. They may learn about it informally, from family or friends, or through school activities such as classes, career fairs, guest speakers, or site visits.

### 2. High School

Medical Records Technicians typically need a high school diploma or equivalent. In high school, students should take courses in health, computer science, math, and biology.

### 3. Colleges and Trade Schools

Medical Records Technicians typically need a postsecondary certificate or associates degree to enter the profession.

Postsecondary certificate and associates degree programs in health information technology typically include courses in medical terminology, anatomy and physiology, health data requirements and standards, classification and coding systems, healthcare reimbursement methods, healthcare statistics, and computer systems. There are numerous certifying organizations in this field, including the American Academy of Professional Coders and the American Health Information Management Association.

Postsecondary schools in Northwest Pennsylvania offering instruction in medical records technology include:

- Erie Business Center, Erie County
- Fortis Institute, Erie County
- Laurel Technical Institute, Mercer County
- Erie Business Center, Lawrence County
- Great Lakes Inst. of Technology, Erie County
- Northwest Regional Technology Inst., Erie County

## Medical Records Technician

Whether or not an employee has received education or an apprenticeship in the field, new Medical Records Technicians usually need one or two years of training involving both on-the-job experience and informal training with experienced workers.

**In Northwest Pennsylvania, there is a significant need for medical records technicians, with 384 openings per year. The median wage is \$15.15 per hour, with many experienced workers earning significantly more.** Industrial maintenance workers can also earn more by working overtime.

### 5. Continued Career Advancement

With work experience and additional training and education, medical records technicians can continue into areas such as office management, clinical data management, and other opportunities.

Receptionist

Housekeeping Aide/  
Dietary Aide/  
Home Health Aide

Medical Office  
Assistant

Electronic Medical  
Records Tech

Medical Office  
Manager

# Guide to Medical Records Technician Certifications

Most employers prefer to hire Medical Records Technicians who have a professional certification. Some educational programs, both at the high school and postsecondary level, can help students prepare for

these certifications, making them more employable. The following is a list of certifications for industrial maintenance that are recognized by employers.

<b>Core Certifications</b>	<b>Certifying Organization</b>
Certified Outpatient Coding Certified Professional Coder-Payer Certified Professional Compliance Officer	American Academy of Professional Coders
Certified Revenue Cycle Specialist	American Association of Healthcare Admin. Management
Certified Coding Associate Certified Coding Specialist Certified Documentation Improvement Practitioner Certified Health Data Analyst Registered Health Information Administrator Registered Health Information Technician	American Health Information Management Association
Certified Medical Reimbursement Specialist	American Medical Billing Association
Medical Administrative Specialist	American Medical Technologists
Registered Medical Transcriptionist	Association for Healthcare Documentation Integrity
Home Care Coding Specialist - Diagnosis Specialty Coding Professional	Board of Medical Specialty Coding and Compliance
Certified Professional in Electronic Health Records Certified Professional in Health Information Exchange Certified Professional in Health Information Technology Health IT Certification Certified Professional in Healthcare Information and Management Systems	Healthcare Information and Management Systems Society
Certified Biometrics Professional	Institute of Electrical and Electronics Engineers
Consumer Health Information Specialization	Medical Library Association
Certified Tumor Registrar	National Cancer Registrars Association
Nationally Certified Insurance and Coding Specialist Nationally Certified Medical Office Assistant National Center for Competency Testing Certified Billing and Coding Specialist	National Healthcareer Association
Certified Medical Coder Certified Medical Compliance Officer Certified Medical Insurance Specialist	Practice Management Institute
Certified Medical Interpreter	The National Board of Certification for Medical Interpreters
<b>Advanced Certifications</b>	<b>Certifying Organization</b>
Advanced Coding Specialist Certified Compliance Professional - Physician	Board of Medical Specialty Coding and Compliance
Certified Clinical Data Manager	Society for Clinical Data Management

#### A4. Survey Findings

The Northwest Pennsylvania Region Skills Gap Analysis survey was sent out electronically to employers located in the Northwest Pennsylvania Region counties including, Clarion, Crawford, Erie, Forest, Lawrence, Mercer, Venango, and Warren.

The purpose of the survey was to capture:

- Demographics of Survey Respondents;
- Employers Assessment of Manufacturing Workforce Skills;
- Manufacturing Industry Challenges;
- Future of Hiring Trends in the Manufacturing Industry

Out of 80 total respondents, 30 individuals identified as working in the manufacturing industry, 4 individuals identified working in the healthcare industry, and 46 individuals identified as working in “other” industries.

Due to the incomplete survey data (i.e., four healthcare survey responses) related to employers’ perceptions, the following survey analysis captures employers’ perceptions of their workplace in the manufacturing industry only.

##### *Survey Approach*

An online survey was distributed by email via Survey Monkey to employers in healthcare and manufacturing industries within the Northwest Pennsylvania Region via the PREP Partners. The Survey remained open from February 13, 2015 through March 4, 2015. Efforts for distribution included:

- Initial survey notice emails were sent from PREP Partners on February 13, 2015
- A final notice sent March 2, 2015

#### **Manufacturing Industry in the Northwest Pennsylvania Region – Demographics**

##### *Respondents by County*

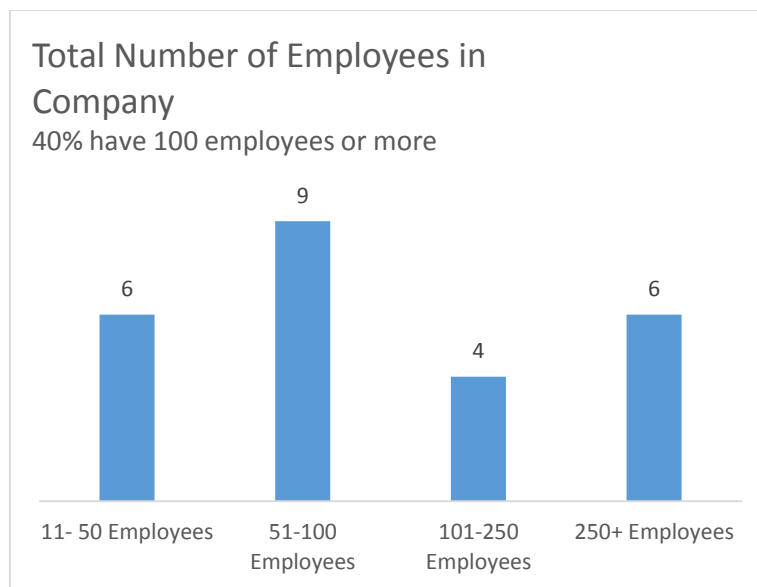
Out of 80 total respondents in the Northwest Pennsylvania Region Skills Gap Analysis Survey, approximately 25 individuals identified as employers in the manufacturing industry. The table below highlights the total number of manufacturing employers’ feedback that is represented in each county. The majority of survey respondents (45.83 percent) reported their company was located in Crawford County.

County	# of Employers
Clarion	2
Crawford	11
Erie	6
Forest	0
Lawrence	1
Mercer	3
Venango	3
Warren	1



### *Employment Totals*

Of the survey respondents in the manufacturing industry, nine companies employ between 51 and 100 employees, six companies employ between 11 and 50 employees, six companies employ 250+ employees, and four companies employ approximately 101-250 employees. When calculated together, these companies account for over 3,000 jobs in the manufacturing industry in Northwest Pennsylvania.



### **Employers' Assessment of Manufacturing Workforce Skills**

In regards to workforce skills of employees in the manufacturing industry, employers note some challenges surrounding their employees' soft and technical skills. Eighty-eight percent of employers report their workers have fair to poor soft skills, and fifty-four percent of employers report their workers have fair to poor technical skills. It appears employers lack confidence in entry-level workers, as forty percent of employers rated the quality of entry-level workers as being poor.

### *Employers' View of the Public Workforce System*

Overall, employers in the workforce system were not completely confident in the system's overall effectiveness, in which twenty-eight percent of respondents rated the workforce system's effectiveness as being poor, while sixty-four percent of respondents rated the system as being fair.

The chart below gives an overview of employers' perceptions of their employees' workforce skills and the overall workforce system.

	Poor	Fair	Good	Excellent	Unsure
<b>Soft Skills of workers</b>	40%	48%	12%	0%	0%
<b>Technical Skills of workers</b>	6%	48%	28%	0%	0%
<b>Quality of Entry-level workers</b>	40%	40%	12%	0%	8%
<b>Quality of high skill workers</b>	12%	36%	44%	4%	4%
<b>Quality of education and training programs</b>	20%	52%	20%	8%	0%
<b>Your understanding of available public workforce system services</b>	20%	48%	28%	0%	4%
<b>The public workforce system's overall effectiveness</b>	28%	64%	0%	0%	8%

### Manufacturing Industry Challenges

Employers reported the most difficult positions to fill in the manufacturing industry are front-line positions including: (1) Production Workers, (2) Machinists, and (3) Laborers and Material Handlers. Numerous employers in the industry report difficulties in finding qualified candidates to hire for open positions. Approximately twenty-one out of twenty-five respondents (84%) rated finding qualified candidates as a 3 or 4 (an ongoing or significant challenge). Furthermore, the majority of employers (52%) reported replacing existing workers is a challenge, perhaps due to an ongoing issue of finding qualified candidates.

As described in more detail in the table below, employers reported the majority of workforce issues presented in the survey do not pose as major challenges in their daily work activities.

How challenging are the following workforce issues for your company?		
	1-2 (Not a challenge)	3-4 (Ongoing/Significant Challenge)
Finding qualified candidates to hire	16%	84%
Training new workers	64%	36%
Adequately assessing and screening clients	64%	36%
Drug screening of candidates	67%	33%
Determining competitive wage levels to attract workers	68%	32%

Identifying skills and knowledge required for jobs at my company	80%	20%
Retaining existing workers	76%	24%
Training existing workers	88%	12%
Replacing existing workers	48%	52%
Meeting my company's HR needs	71%	29%
Navigating workforce services and resources available to my company	67%	34%

**Scale of 1 (not a challenge) to 4 (significant challenge); Green = over 50% of respondents**

### Future of Hiring Trends in the Manufacturing Industry

#### *Employers' Expectations of Hiring Trends in 2016-2017*

	Anticipate 1-5	Anticipate 6-10	Anticipate 11-25	Anticipate 26-50	Anticipate 50+
New Positions	14	2	4	2	0
Number of Replacement Positions	12	5	4	2	0
Number of Retiring Workers	17	2	0	1	0

#### *Employers' Expectations of Hiring Trends in 2018-2019*

	Anticipate 1-5	Anticipate 6-10	Anticipate 11-25	Anticipate 26-50	Anticipate 50+
New Positions	10	3	3	2	1
Number of Replacement Positions	11	3	5	1	0
Number of Retiring Workers	15	3	0	1	0

*Employers' Anticipation of Hiring Trends in 2020-2022*

	Anticipate 1-5	Anticipate 6-10	Anticipate 11-25	Anticipate 26-50	Anticipate 50+
New Positions	8	3	4	1	1
Number of Replacement Positions	9	4	3	2	0
Number of Retiring Workers	10	6	1	0	1

## A5. Innovation and Resources in Place



### **Advanced Diversified Manufacturing Industry Partnership**

<http://www.madeinnwpa.org>

The ADMIP is designed not only to identify human resource needs and skill gaps, but to address them by implementing strategies and training to improve incumbent workers' skills and to provide career ladders that spur innovation and increased efficiency and productivity. In addition, industry partnership work closely with schools, youth councils, support organizations and others to help students focus on the in-demand, high-skill jobs of today's global economy. The industry partnership concept is not just about worker training; it is about constantly evaluating labor-market data and information to stay competitive on the local, state, national and global levels.

### **Area Blueprint Initiatives**

<http://www.padowntown.org/programs-services/blueprint-communities-pennsylvania>

Area Blueprint Communities work to develop stronger local leadership, engage local residents and businesses, develop a clear vision and strategic plan for change and attract investments to build healthier, sustainable communities. The six communities include: the City of New Castle, Clarion Borough, the Curwensville Group (Bloom Township, Curwensville Borough, Penn Township and Pike Township), the Huntingdon County Group (Mapleton Borough, Mount Union Borough and Shirley Township), the Oil Region Group (the City of Parker, Emlenton Borough and Foxburg Borough) and Reynoldsville Borough.



### **Ben Franklin Technology Partners**

<http://cnp.benfranklin.org/>

Ben Franklin Technology Partners (BFTP) provide early stage/technology funding and business support services to emerging tech-based startups and existing manufacturers in 32 counties in Pennsylvania. One of the nation's longest-running technology-based economic development programs, BFTP provides technical expertise and access to a network of innovative, expert resources.



### **Pennsylvania Career Link**

<http://www.nwpacareerlink.org/erie/>

The PA CareerLink is your one-stop center that connects employers and job seekers in the most efficient manner possible. Our highly trained staff offers customers a wide range of materials, consultation services, and online access to a comprehensive database of employment information.



**Career Street**

<http://www.careerstreeterie.org/>

Career Street is a comprehensive program that helps Erie County youth consider their career interests, explore various careers, and understand what is necessary to pursue, obtain and maintain a career they are interested.

**Crawford County Roundtable**

<http://www.crawfordcountyreadprogram.net/roundtable.htm>

Crawford County Roundtable develops an action plan to improve the foundation skills of all its citizens. The Roundtable discusses ways business, industry, government, educational institutes, and community organizations may explore the economic and social case for reskilling adults in Crawford County so they may enter the workforce.



**Erie Together**

<http://www.erietogether.org/>

Erie Together is a movement of hundreds of local individuals, organizations, and businesses working together in strategic ways to prevent and reduce poverty, elevate prosperity, and make the Erie region a community of opportunity where everyone can learn, work and thrive.



**Erie Chamber and Growth Partnership**

<http://www.eriepa.com/>

The Erie Regional Chamber and Growth Partnership is a 501c3 corporation formed in November 2002 through the merger of the Erie Conference, pulling together the Chamber of Commerce, Economic Development, and Growth Partnership to promote the organization's core mission to provide the leadership to attract, retain, and expand business in the region.

**Erie Regional Manufacturers Partnership (ERMP)**

The Erie Regional Manufacturers Partnership is an industry-led, grass-roots partnership of manufacturers addressing workforce issues and area skills gap by exploring ideas and developing innovative solutions.

### **Jobs 1<sup>st</sup>**

[www.pa.gov](http://www.pa.gov)

Jobs1st Pennsylvania Regional Partnership grants have provided funding to increase employer engagement and develop employer-driven training programs between workforce development and economic development organizations across Pennsylvania.



### **Northwest Pennsylvania Resource Center, Inc. (NW IRC)**

<http://nwirc.org/>

The NWIRC has been a single source for consulting and support in virtually every area of manufacturing in the 13 counties of northwest Pennsylvania. They can help increase you bottom and top lines, as well as identify opportunities for improving your manufacturing process. They also have an engineering apprenticeship program connecting to regional manufacturers with post-secondary STEM students for the purpose of developing new products or implementing advanced manufacturing technologies.



### **Oh-Penn Manufacturing Collaborative**

[www.industryneedsyou.com](http://www.industryneedsyou.com)

Oh-Penn Manufacturing Collaborative is a partnership between the Industry Partners of Lawrence and Mercer Counties of Pennsylvania and the Mahoning Valley Manufacturers Coalition. Part of the mission of the joint effort is to stimulate interest in manufacturing careers among young people of eastern Ohio and western Pennsylvania across multiple disciplines, and connect them with the opportunities available to them.

### **Oh-Penn Manufacturing Readiness Program**

[www.industryneedsyou.com/manufacturing-career-readiness-first-cohort-completed/](http://www.industryneedsyou.com/manufacturing-career-readiness-first-cohort-completed/)

The Manufacturing Readiness Program (MRP) was designed to prepare individuals with the basic, fundamental skills and competencies needed to enter into and success in a manufacturing career pathway. The MRP combines two weeks of “soft skills” training, which includes everything from goal planning to the importance of getting to work on time, followed by four weeks of skill training, which includes OSHA-10 and Certified Production Technician critical production functions. Participants receive training in Safety, Manufacturing Processes and Production, Quality Practices and Measurement and Maintenance Awareness. In addition, each participant will also earn a WorkKeys credential.



### **Northwest Commission**

<http://northwestpa.org/>

The Northwest Commission is a local Development District serving an eight-county region of Northwest Pennsylvania. This website is designed to provide an overview of the programs and services administered by the Northwest Commission and guidance on how to take advantage of them. They serve as the Regional Coordinator for the Center for Trade Development, has an International Marketing Program outreach office in Erie and other projects centered on community and business development.



### **Pennsylvania Refugee Program**

<http://www.refugeesinpa.org>

Funded by the US Department of Health and Human Services, Administration for Children and Families, Office of Refugee Resettlement (ORR), the Pennsylvania Refugee Resettlement Program provides a continuum of employment, educational, case management, health and financial support services to newly arrived refugees in the Commonwealth.



### **Summer JAM**

<http://www.careerstreeterie.org/summer-jam-erie>

The JAM Program is a collaborative effort of Erie County, Erie County Gaming Revenue Authority, the Erie Community Foundation, and supportive individuals who have recognized and are willing to address a pressing need in our community and across the country. This effort is designed to provide for the lack of job readiness and employment opportunities for our disconnected youth population.



### **Northwest PA Workforce Innovation Fund**

<http://www.nwpawib.org>

NWPA WIB serves Erie and other counties within the workforce investment areas to ensure that Northwest Pennsylvania will have a skilled workforce that is responsive to the current and future needs of the region through the use of workforce funds in the region.

The NWPA WIB has been awarded a WIF grant to provide collaborative solutions and strategies that can deliver meaningful, positive outcomes for the target populations.





**UPMC Job Shadow Program**

<http://www.upmc.com/locations/hospitals/horizon/careers/Pages/job-shadow-program.aspx>

Job shadow opportunities are available to students who would like to follow a health care professional for up to three days. Additional hours or clinical rotations that involve direct patient contact must complete internship application process.

## A6. About TPMA and NC3T



Thomas P. Miller and Associates (TPMA) is consulting and management firm based in Indianapolis, Indiana, with associate offices in Lisbon, Ohio and Lexington, Kentucky. From its founding in 1989, TPMA has provided consulting services focused on economic development, workforce development,

and education solutions to help communities maximize their assets—physical and human—in order to build better societies and economies. TPMA provides clients with services to design, develop, and implement programs, including, but not limited to:

**Strategic Planning** – TPMA has been developing and implementing strategic plans and serving as change agents for 25 years. Our focus is not just on strategic ideas, but strategic leadership and action-oriented goals, helping leaders to identify opportunities and mobilize resources for implementation. We take a collaborative approach to strategic planning because the greatest impact is achieved through the aligned goals of an organization and its stakeholders.

**Labor Market and Industry Analysis** – Successful strategies begin with a thorough understanding of the drivers of a community’s workforce and economic conditions. TPMA has the capability to examine workforce requirements, supply relationships, economic impacts, and company targets for more than 1,100 industries across 3,000+ U.S. counties.

**Asset Mapping** – TPMA catalogues the unique strengths and capacities of organizations, institutions, initiatives, and leaders within a geographical area. This provides a comprehensive profile of what is available to build upon. We shy away from ‘cookie cutter’ strategies for clients and focus on customized solutions by building assets through innovation and knowledge.

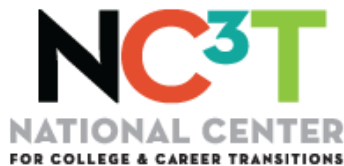
**Project Management** – Our project management portfolio includes short and long-term relationships focused on implementation of action plans and strategies. TPMA has served as interim staff for organizations in many capacities, including as executive staff through transitional periods and as additional human capital assistance with implementation activities.

**Professional Development and Training Services** – Every team can benefit from professional development to strengthen the quality of services provided or increase the cohesiveness of the team. TPMA provides useful, interactive activities, focusing on effective services techniques, customer engagement, and use of research software. TPMA customizes each training session to best meet the team’s needs and staff capabilities.

**Grant Writing and Funding Research** – TPMA has developed strategies that draw on best practices and proven methods that help keep organizations on track for a prosperous and sustainable future. Because of this strategy and a strong commitment to employing a grassroots, hands-on approach, TPMA has been able to secure over \$110 in funding from federal, state and foundation sources in the last five years and more than \$200 million since our founding. As an example, TPMA wrote three successful US Department of Labor Workforce Innovation Fund grants for the West Central Jobs Partnership in Pennsylvania, the Fulton-Montgomery-Schoharie Workforce Development Board in New York, and the Workforce Initiative Association in Ohio.

**Program Design and Evaluation** – In the last several years, TPMA has designed and developed program and evaluation plans for four successful federal Department of Labor grantees, totaling \$18 million in awards. We develop logic models to understand the flow of resources, activities, outputs, outcomes, and impact and work to identify the right metrics and measurement tools to gauge a program’s success. Our evaluation work includes developmental, formative, summative, and return-on-investment analyses to truly understand the complete picture of not just a program’s results, but also the unique elements that led to its successes and challenges.

#### National Center for College & Career Transitions (NC3T)



The National Center for College and Career Transitions, or NC3T, has a twofold mission: *Every Teen with a Dream and a Plan, and Every Community with a Capable, Ready Workforce*. The organization works to connect schools, postsecondary institutions, and employers in order to introduce students to the array of options available to them and to help students prepare for the types of opportunities for which they are best suited. Currently, NC3T is pursuing this mission through the following initiatives:

- **The Pathways Innovation Network:** A group of communities in New York and Pennsylvania that are moving toward the development of a wall-to-wall college/career pathways system model within their schools.
- **Northeast PA Jobs First project:** NC3T is contracted to provide workforce analysis, identification of all education, training and adult education resources, and facilitation the development of a regional education-workforce community plan.
- **Pennsylvania CTE Best Practices:** Since 2010, NC3T has provided support to the Pennsylvania Department of Education, creating case studies and professional development relating to promising practices in career and technical education across the state. NC3T has deep understanding and extensive relationships with CTE providers across the Commonwealth.
- **The Employer Engagement Toolkit:** A resource, currently under development, designed to help educators understand effective ways to work and partner with employers.
- **Consulting:** Focused on pathways development, career and technical education, STEM education, and community-level coalition building, NC3T has provided customized consulting for districts and departments of education in approximately twenty states.

Through its consulting work, NC3T helps strengthen the connection between education and employers to design career-themed high school programs that link into postsecondary education and training. The firm provides research, analysis, and support to state agencies responsible for education at the high school and college levels, as well as national organizations involved in connecting business and education. NC3T is focused on the practical application of CTE, with an emphasis on day-to-day operations including Perkins compliance and developing effective and highly in-need programs of study; the firm also offers its clients a broader analysis of CTE trends, policy and funding.